



Technical information

Information technique
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CALIBRE 3135

CALIBRE 3155

CALIBRE 3175

CALIBRE 3185



CALIBRE 3135, pages 4 – 19

CALIBRE 3155, pages 20 – 25

CALIBRE 3175, pages 26 – 31

CALIBRE 3185, pages 32 – 39

LIST OF SPECIAL ROLEX TOOLS

(can be ordered from the Technical Information Department)

- Ref. 2019 Microstella key
- 2106 Tool for fitting the spring for cam yoke
- 2111 Movement-holder
- 2139 Support for automatic device module
- 2140 Tip for extracting the stud for cam
- 2141 Riveting tool for the oscillating weight axle
- 2142 Mainspring winder



REMARKS

Date correctors

The date correctors (Nos. 3135-645 and 3155-645) are not interchangeable. To be distinguishable the correctors (No. 3135-645) for calibres 3135 and 3175 are nickel-plated, the correctors (No. 3155-645) for calibre 3155 are gilt.

Springs for cam yoke

The spring for cam yoke (No. 3155-635) for calibre 3155 is thicker than the spring for cam yoke (No. 3135-635) for calibres 3135, 3175 and 3185. They are 0.28 mm, respectively 0.21 mm thick. Moreover, the bend at one extremity makes them distinguishable, see Fig. 1.

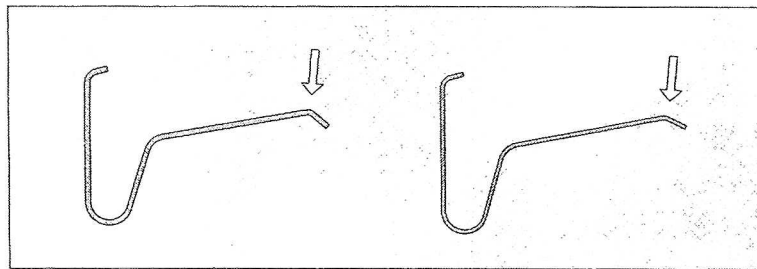


Fig. 1

Second wheels

The second wheel (No. 3155-360) for calibres 3155 and 3185 has a pivot-shank longer than the one of the second wheel (No. 3135-360) for calibres 3135 and 3175. The second wheels must be coated with Epilame.

Dials

The dials for calibres 3035 and 3075 can serve respectively for calibres 3135 and 3175, on condition that the feet are 2.40 mm long. Dial feet 2.60 mm long must be shortened. Dials for calibre 3055 can serve without modification for calibre 3155.

Lubrication

It is important, before assembling the movement, to refer to the lubricating charts where the points of lubrication and the type of lubricants to be used are shown.

In the text only the most particular points are mentioned.

Epilame coating

Coating with Epilame should be carried out as follows :

- Immerse the parts in Fixodrop* Epilame for at least two minutes.
- Dry under hot air (i.e. with a hairdryer) to avoid condensation.

* Can be ordered from the Technical Information Department.



CALIBRE 3135

CONTENTS

List of special ROLEX tools	2
Remarks	3
Technical characteristics	5
Functions of the winding stem	6
Uncasing, dismantling the date indicator mechanism and the movement	7 and 8
Assembling the movement	9-11
Lubricating chart for the movement and the date indicator mechanism	12
Timing and balance diagram	13 and 14
Dismantling and assembling the automatic device module	15 and 16
Lubricating chart for the automatic device module	17
Assembling the date indicator mechanism and fitting the dial and the hands	18
Casing up and fitting the automatic device module	19



CALIBRE 3135

Technical characteristics

Date indicator mechanism with rapid corrector	Automatic winding
Centre second hand	Stop-second device
Annular balance with 2 pairs of Microstella timing nuts	Breguet hairspring
Shock-absorbers for balance and combined in-settings for escape wheel	
Balance bridge adjustable in height by means of 2 nuts	
– Overall diameter	28.50 mm
– Case-fitting diameter	28.10 mm
– Overall height, including automatic device module and date indicator mechanism	6.00 mm
– Number of jewels	31
– Frequency 4 Hz, i.e. vibrations per hour	28.800
– Angle of lift of the balance wheel	52°
– Box of spare parts	No. 03135

Movement seen from above (Fig. 2), idem without automatic device module (Fig. 3), seen from below with date indicator mechanism (Fig.4).

Scale 1.25: 1

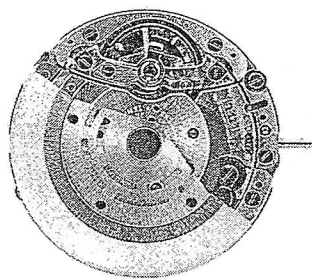


Fig. 2

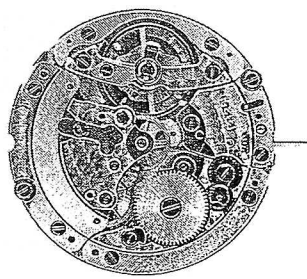


Fig. 3



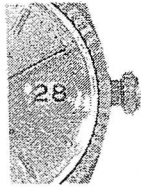
Fig. 4



FUNCTIONS OF THE WINDING STEM

Position 1:

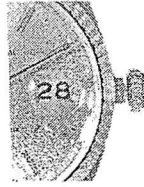
winding crown
unscrewed



winding by hand

Position 2:

winding crown
pulled out
to first catch

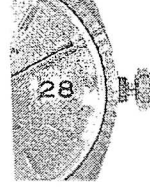


forward:
correction of
date indication

backward:
no function

Position 3:

winding crown
pulled out
to second catch



stop-second for
setting to time



1. UNCASING, DISMANTLING THE DATE INDICATOR MECHANISM AND THE MOVEMENT *

- 1.1. Remove the automatic device module (No. 3135-145), taking out the 2 screws (No. 3135-5110) of the automatic device module.

Dismantling and assembling the automatic device module, see pages 15 and 16.

- 1.2. Uncase the movement, remove the hands and the dial, then refit the winding stem.
- 1.3. Open the bolt of the date indicator seating and remove the date indicator (No. 3135-16100, respectively No. 3135-16200).

- 1.4. Remove the date indicator seating (No. 3135-600) fastened with 4 blue screws (No. 3135-5600), 3 screws on the circumference and the 4th one near the beak of the jumper.

- 1.5. Remove the hour wheel (No. 3135-280), the intermediate date wheel (No. 3135-670), the date corrector (No. 3135-645) and the intermediate date corrector wheel (No. 3135-639).

- 1.6. Remove the screw for date wheel (No. 3135-5625) and the finger for date (No. 3135-623), disengage the spring for cam yoke (No. 3135-635), remove the yoke for cam (No. 3135-633) with the jewel for yoke for cam (No. 3135-9633), the date wheel mounted (No. 3135-625) and the cannon pinion (No. 3135-270) – calibre 3175 (No. 3135-270).

The spring for cam yoke can be left in place.

- 1.7. Let down the mainspring.
- 1.8. Remove the balance guard (No. 3135-118), check the hairspring and the balance.
- 1.9. Loosen the screw for hairspring bridle (No. 3135-5452), remove the balance bridge (No. 3135-120), remove sideways the hairspring from the stud support (No. 3135-450). Tighten the screw for bridle again.

If it is necessary to remove the collet, the lever must rest on the rivet of the balance staff, see Fig. 5, page 8. Proceed carefully not to damage the balance.

* It is recommended that the movement should be pre-cleaned before it is dismantled. This first cleaning can be carried out with the sprung balance and the barrel left in place. This procedure enables the watchmaker to form a better judgement on the conditions of the movement parts. After complete dismantling and the exchange of the parts that need to be replaced a second cleaning is necessary before the movement is reassembled.

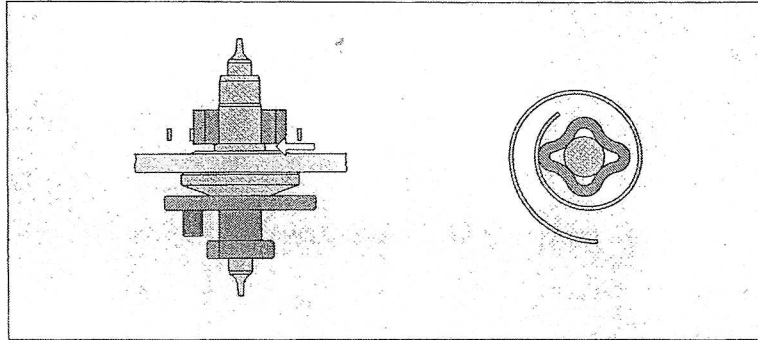


Fig. 5

- 1.10. Remove the pallet bridge (No. 3135-115) and the pallet fork (No. 3135-421).

As the functions of the escapment have been perfectly adjusted in the factory by the ROLEX specialists, they should not be modified unless it is absolutely necessary.

- 1.11. Remove the ratchet wheel (No. 3135-305), the yoke for sliding gear (No. 3135-217), the intermediate crown wheel (No. 3135-213), the core for intermediate crown wheel (No. 3135-212), the barrel bridge (No. 3135-105), the barrel (No. 3135-310) and take it to pieces.
- 1.12. Remove the winding bridge (No. 3135-130) – calibre 3155 (No. 3155-130) – calibre 3175 (No. 3175-130) – calibre 3185 (No. 3185-130) – and the spring for balance stop (No. 3135-245), then on the lower side of the bridge, the crown wheel (No. 3135-210) and the core for crown wheel (No. 3135-211).
- 1.13. Remove the train wheel bridge (No. 3135-110) fastened with 3 screws, the third wheel (No. 3135-340), the great wheel (No. 3135-330), the second wheel (No. 3135-360) – calibres 3155 and 3185 (No. 3155-360) – and the escape wheel (No. 3135-410).
- 1.14. Remove the minute pinion bridge (No. 3135-125) and the minute pinion (No. 3135-335).
- 1.15. Remove the cover for winding and setting mechanism (No. 3135-268), the minute wheel (No. 3135-260) – calibre 3155 (No. 3135-260) – calibres 3175 and 3185 (No. 3175-260) – the setting wheel (No. 3135-250) and the setting wheel (No. 3135-250) of the yoke for setting wheel.
- 1.16. Remove the jumper for setting wheel (No. 3135-230), the spring for setting lever (No. 3135-225), the setting lever (No. 3135-220), the yoke for setting wheel (No. 3135-266), the spring for yoke (No. 3135-241), the yoke for sliding pinion (No. 3135-240), the winding stem (No. 3135-201), the sliding pinion (No. 3135-205) and the winding pinion (No. 3135-204).
- 1.17. Dismantle the combined in-settings for escape wheel (No. 3135-0913) and the shock-absorbers for balance upper (No. 3135-0915) and lower (No. 95019-1).



2. ASSEMBLING THE MOVEMENT

For lubrication, see lubricating chart on page 12.

It is necessary to coat with Epilame the second wheel, the escape wheel and the pallet fork to prevent the lubricants from spreading.

- 2.1. Assemble and lubricate the upper and lower combined in-settings of the escape wheel.
The size of the oil drop should be equal to $2/3$ of the diameter of the endstone.
- 2.2. Lubricate the upper and the lower pivots of the minute pinion, fit it in position with the bridge.
- 2.3. Lubricate the lower shoulder of the second wheel; the second-wheel pivot which works in the pivot-shank of the minute pinion must not be lubricated.
- 2.4. Fit the escape wheel, the second wheel, the great wheel, the third wheel and the train wheel bridge.
- 2.5. Fit underneath the winding bridge, the core for crown wheel and the crown wheel (flat toothing on the bridge side). Fit on the main plate the spring for balance stop, its opening in the stud and its round hole on top of the oblong cut of the plate, see Fig. 6. Fit the winding bridge.

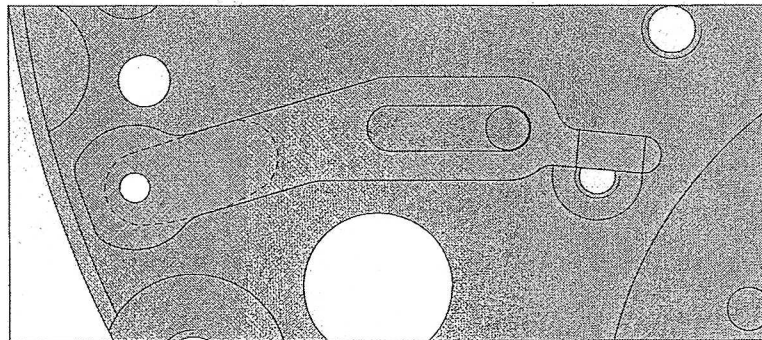


Fig. 6

- 2.6. Lubricate the inner wall of the barrel drum with Olyt grease (ROLEX MR1). The mainspring has undergone special lubrication treatment, but it should be slightly greased if it has been in the baths of a cleaning machine.



- 2.7. Assemble the barrel, fit it with the barrel bridge.
- 2.8. Lubricate the 2 pivoting points of the core for intermediate crown wheel, fit it as well as the intermediate crown wheel and the yoke for sliding gear.
- 2.9. Fit the winding pinion, the sliding pinion, the winding stem, the yoke for sliding pinion, the spring for yoke, the yoke for setting wheel, the setting lever, a pin of which must be inserted into the spring for balance stop and the other one into the yoke for setting wheel, then the spring for setting lever and the jumper for setting lever.
- 2.10. Fit the cannon pinion, do not press on the rim of the tothing, the minute wheel, the two setting wheels and the cover for winding and setting mechanism.
- 2.11. Lubricate the pivots of the wheels.
- 2.12. Fit the ratchet wheel.
- 2.13. Fit the pallet fork and the pallet bridge.
- 2.14. Wind slightly the mainspring and lubricate the pallet fork with Moebius grease 9415.

This grease is applied to the impulse plane of the pallet-stones starting with the exit-pallet. Deposit every 4-5 teeth an amount of grease at least equivalent to the quantity given by a medium size oiler. This type of lubrication can momentarily cause a fall of amplitude.
- 2.15. Lubricate, assemble and fit the shock-absorbers for balance. The size of the oil drop should be equal to $\frac{2}{3}$ of the diameter of the endstone.
- 2.16. Fit the sprung balance wheel then the balance bridge, loosen the screw for hairspring bridle for stud holder. Place the bridle for stud holder at home. Tighten the screw for hairspring bridle (if the balance staff has been replaced do not omit to poise the balance wheel).



2.17. Check the balance endshake, which can be corrected by means of the 2 regulating nuts for balance bridge, see Fig. 7.

To alter the endshake, proceed as follows:

- Slightly loosen the balance bridge screws (No. 3135-5110)
- Screw or unscrew, according to what is necessary, the regulating nuts for balance bridge (No. 3135-5120); 1/8th of a turn makes about 0.01 mm.
- Tighten the screws of the balance bridge.

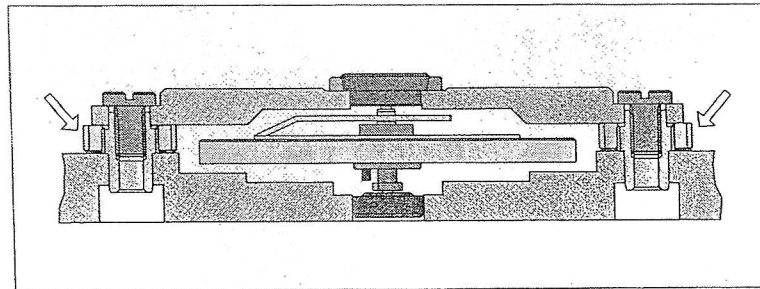


Fig. 7

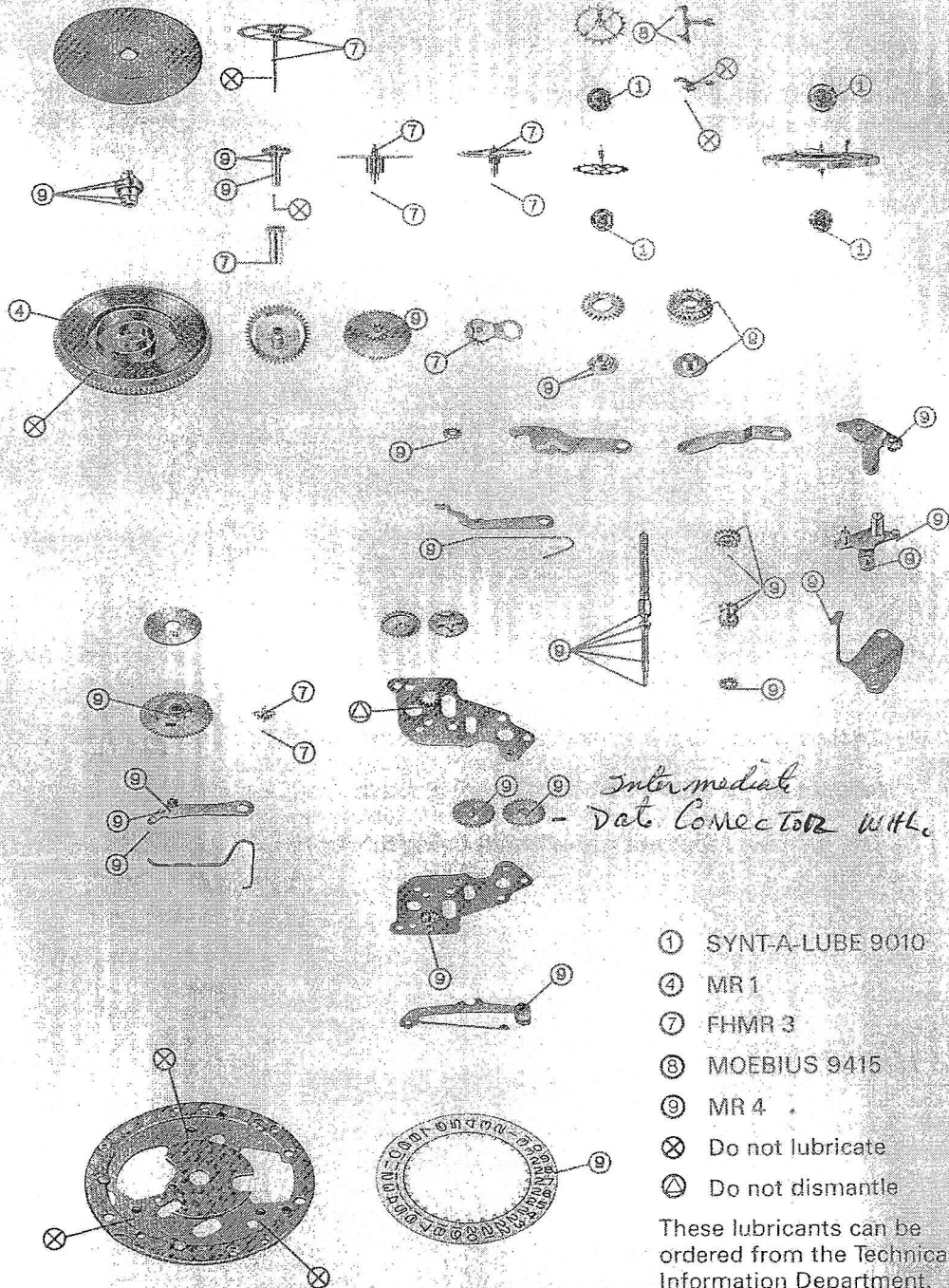
2.18. Check the centring of the hairspring and its truth in the flat.

2.19. Fit the balance guard.

The balance must not run without being lubricated.



3. LUBRICATING CHART FOR THE MOVEMENT AND THE DATE INDICATOR MECHANISM





4. TIMING

- 4.1. If necessary, adjust the beat by means of the stud holder after having loosened the screw for bridle for the stud holder (No. 3135-5115). Tighten the screw.
- 4.2. Check the rate and the amplitude of the balance on a watchtimer and an amplifier, in the following positions:
 - 9 H vertical, crown down
 - 6 H vertical, crown left
 - 3 H vertical, crown up
 - C H horizontal, dial up
 - F H horizontal, dial down
- 4.3. If necessary, correct the rate by means of the timing nuts, see page 14, with the Microstella key Ref. 2019, see Fig. 8.



Fig. 8

It is indispensable to make an identical correction on 2 Microstella nuts that are placed opposite each other, so that the balance is not thrown out of poise.

- 4.4. Once the watch has been cased up and the automatic device module fitted, it is necessary to make 24 hours verifications in different positions and on a wrist-movement simulator. At this stage, a correction can always be made.