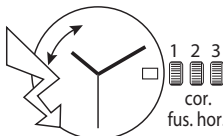
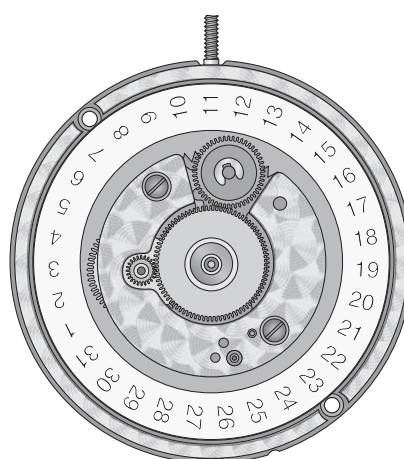
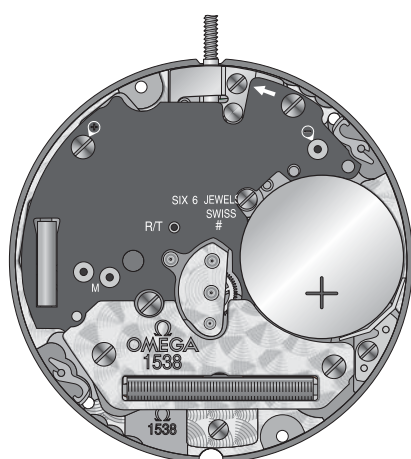
	Technical Guide			TG-19-C-013-E	C
	Prod. by: pelrom	Date: 24.10.2008	3	Modifications: see last page	



CALIBRE 1538



	Version A	Version B	Version C	Version D
<p>10 1/2''' Ø 23,30 mm</p> 				
Height on movement			2.45 mm	
Height on battery			2.60 mm	
Number of rubies			6	
RoHS model	No	No	Yes	Yes



Omega personalised quartz movement, featuring circular graining, rhodium-plating and gilded engraving. Three-hand display - hours and minutes and seconds, date. Time zone. Stepper servo-motor, sixty impulses per minute, inhibition, EOL

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Seconds wheel	
Version 1538A	Version 1538B
Former execution	New execution
7221441227	7221538B30027*
	
	Improve the accuracy of the seconds hand jump. Ref. 7221538B300273 New version from date code: 47/04

Wheel train bridge	
Version 1538A	Version 1538B
Former execution	New execution
7221538B1004807	7221538B1004807
	
	A magnet to stabilise the seconds wheel has been added. New version from date code: 10/04

Version A / B / C

Ref. 722143030012 Ref. 7221538B30027* Old seconds wheel (grey) and intermediate wheel (yellow)

Version D

Kit Ref. 7221530D9999* New seconds wheel (yellow) and intermediate wheel (grey).
Reduction of the play of the wheel engagement to improve seconds hand jump.
New version from date code: 42/07

The policy for local repair is:

We recommend a movement exchange (see Working Instruction no. 31).

In case of local repair, the exchange or replacement of spare parts must be made according to the movement version (see engraving on main plate). Example: On a movement calibre 1538B, the parts to exchange or replace are those mentioned under version 1538B.

Technical modifications on version «B»

Calibre 1538A + 1538B

Application :

When repairing a version A or B, the new components must be used systematically.

Goal of the technical modifications:

Improve the accuracy of the seconds hand jump in relation to the dial markers.

Improvement of the seconds jumps on calibre 1538D

In order to better meet our customers requirements, the jump of the seconds hand on calibre 1538D has been further improved.

Technical modifications on version «D»

Calibre 1538D

Application :

When repairing a version D, the new components must be used systematically.

When ordering one of the two components individually, an automated order of KIT ref. 7221530D9999* is issued.

It comprises:

Seconds wheel ref. 7221530D30027*

Intermediate wheel ref. 7221530D30012

Goal of the technical modification:

Further improve the accuracy of the seconds hand jump in relation to the dial markers, including a reduction of the wheel engagement play.

Interchangeability

New and old wheel executions must not be mixed; there is a **serious risk of blocking**.

Calibre version 1538C was produced with old and new wheel executions. We therefore suggest to systematically use new wheels from the KIT ref. 7221530D9999*.

General information for calibre 1538

Major points

Information on the battery

The used battery depends always on the case reference.

Ref. 1449936	
1.55 V	«Low Drain»
Ø 9.50 mm	H 1.60 mm
Renata	373
VartaChron	V373
UCAR, Energizer, Ray-O-Vac	373
Maxell, Panasonic, Sony	SR916SW

Ref. 1449950	
1.55 V	«Low Drain»
Ø 9.50 mm	H 2.60 mm
Renata	395
VartaChron	V395
UCAR, Energizer, Ray-O-Vac	395
Maxell, Panasonic, Sony	SR927SW

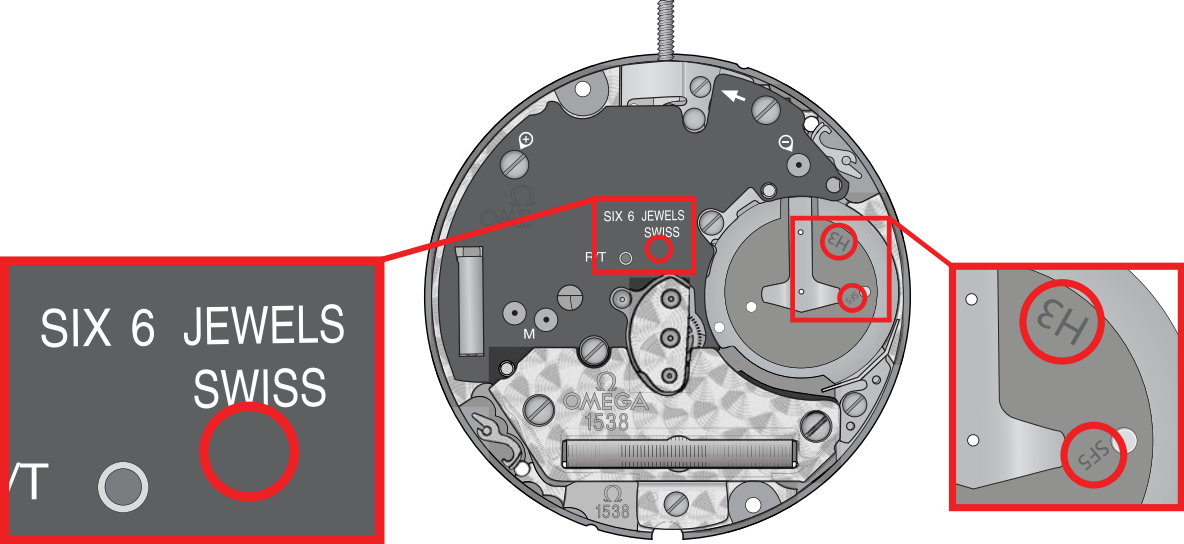
Mandatory tools :

Hand fitting	Ref.
Movement holder for hand setting	507 0023
Tweezers	
Plastic tweezers	502 310 0051

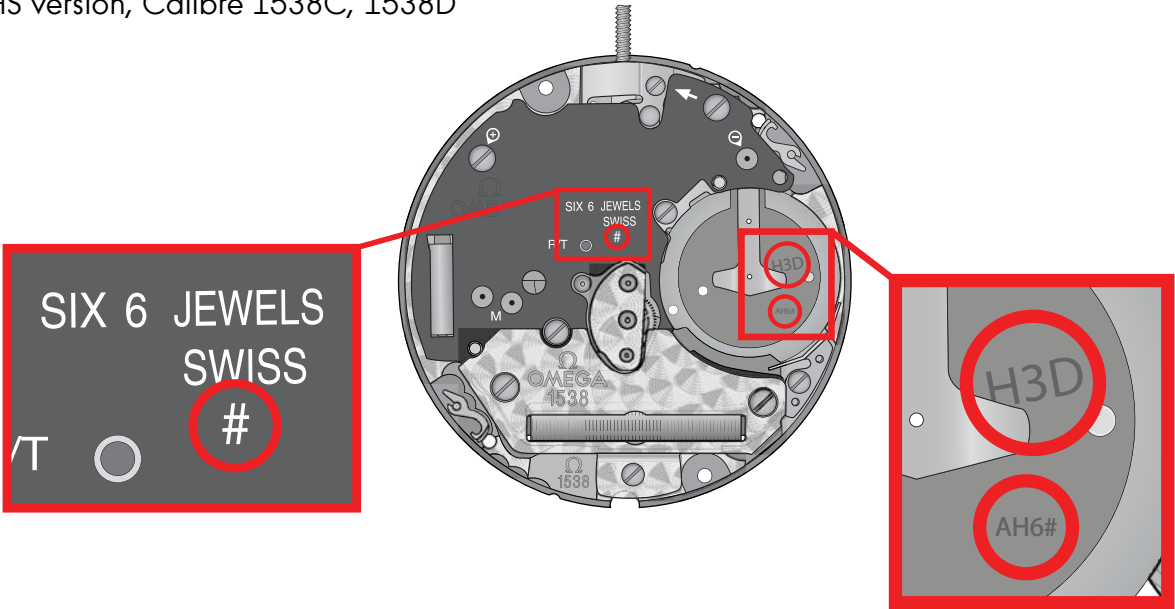
Differences between version 1538A, 1538B, 1538C and 1538D

Differences between a non-RoHS version and a RoHS version





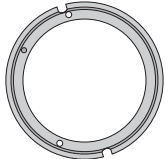
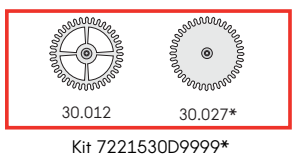






Non-RoHS version, Calibre 1538A, 1538B



RoHS version, Calibre 1538C, 1538D

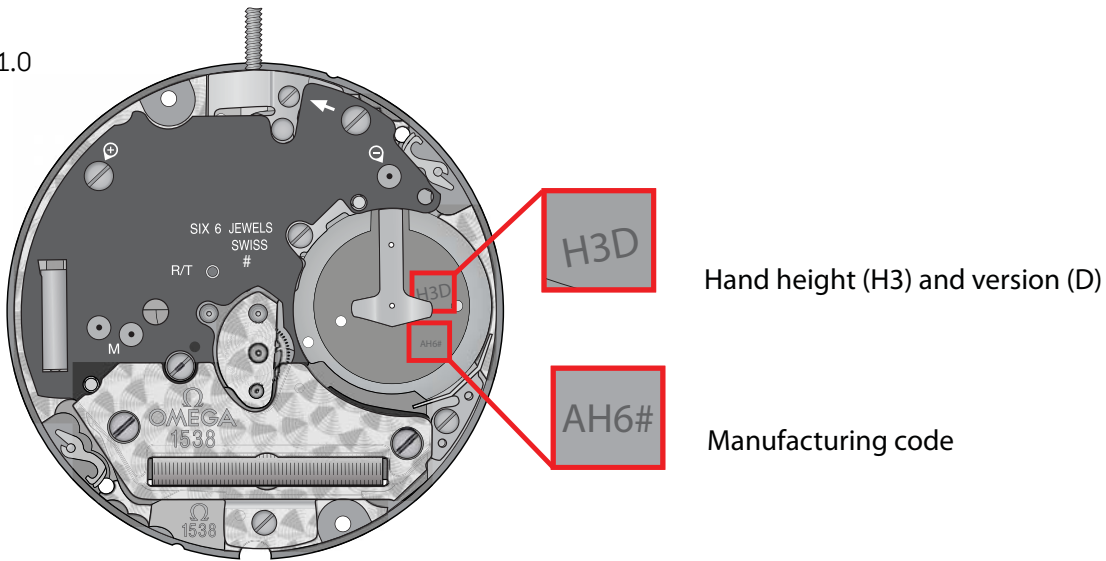


Spare parts list for calibre 1538

Hour wheel	Version	Reference	Dial support screw	Version	Reference
	1538A	7221441255/1		1538A	72200003984
	1538B				
	1538C				
	1538D				
Battery	Version	Reference	Ridle screw	Version	Reference
	1538A	1449936		1538A	72200003987
	1538B				
	1538C				
	1538D				
Dial support	Version	Reference	Kit second wheel + intermediate wheel	Version	Reference
	1538A	72215381010600	 30.012 30.027* Kit 7221530D9999*	1538A	-
	1538B			-	
	1538C			-	
	1538D			7221530D9999*	
Battery insulator	Version	Reference			
	1538A	72214302065100			
	1538B				
	1538C				
	1538D				
Bridle insulator	Version	Reference			
	1538A	72214302065118			
	1538B				
	1538C				
	1538D				
Ridle connector	Version	Reference			
	1538A	72214209035			
	1538B				
	1538C				
	1538D				
Hand setting stem Ø 0.90 mm / L 15.00 mm	Version	Reference			
	1538A	72214305102021			
	1538B				
	1538C				
	1538D				
Hand setting half-stem movement side	Version	Reference			
	1538A	72214305102126			
	1538B				
	1538C				
	1538D				
Hand setting stem Ø 0.80 mm / L 21.00 mm	Version	Reference			
	1538A	72214309140			
	1538B				
	1538C				
	1538D				

1.0 Information on height of hands

Fig. 1.0

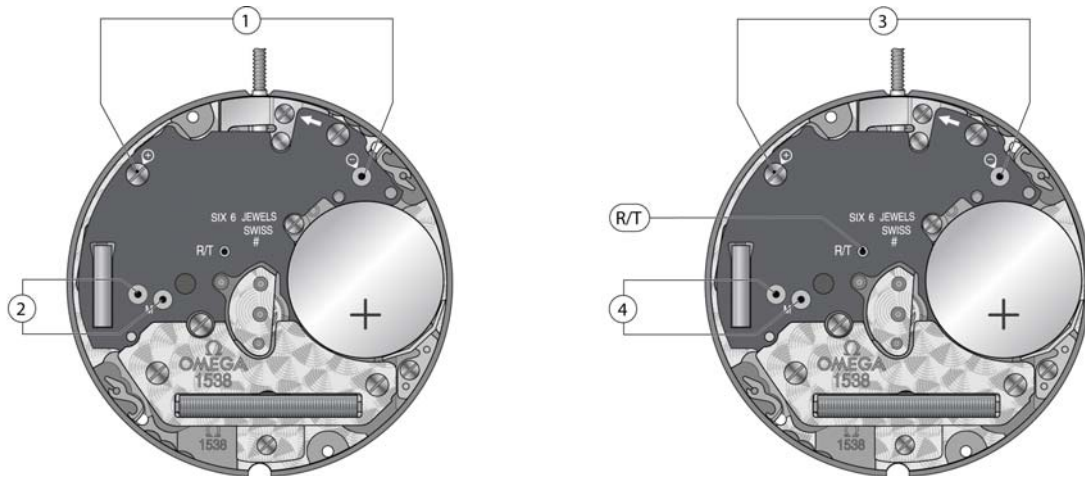


1.1 Runners for hand setting and hand setting force

Description	Movement holder for hand setting	No of runners for hand setting	Minimum force (N)	Maximum force (N)	Support (jewel)
Hours hand	507 0023	4	10	55	no
Minutes hand		2	10	55	no
Seconds hand		1	10	30	yes

Fig. 2.0

2.0 Electrical tests



Pos.	Setting of apparatus	Measurement	Test	Remarks
1	2 V ($R_i \geq 10 \text{ k}\Omega / \text{V}$)	1,55 V	Battery voltage	Measured with battery
2	1 V ($R_i \geq 10 \text{ k}\Omega / \text{V}$)	For Witschi Q 6000: the motor LED lights up at each impulse.	Impulses per minute at the integrated circuit output 1 per second.	Measured with checked battery.
3	10 μA	1,20 μA	Movement consumption	Measured without battery, external supply, 1,55 V
		Jump of four steps every four seconds until supply voltage < 1,30 V	EOL. Consumption higher than normal.	Measurement without battery, with supply voltage < 1.40 V, EOL function after ~ 2 minutes.
	0,5 μA	Operation of the time setting stem switch in position 3	Measured without battery, external supply, 1,55 V.	
	2 V	$\leq 1,30 \text{ V}$ Bring the (R/T) point and track \ominus . Control of motor with 8 steps/ sec at 1,55 V and 32 steps/sec under voltage $\leq 1,30 \text{ V}$ (EOL).	Lower limit for operating voltage.	Measured without battery, variable external supply, starting with 1,55V, continually reduce voltage until movement stops.
4	$\cdot 10 \text{ k}\Omega$	1,3 - 1,8 $\text{k}\Omega$	Coil continuity	Measured without battery.
5	200 μA	110 - 155 μA	Coil isolation	

• Ohmmeters with measuring voltage greater than 0.40V inappropriate; recommended voltage 0.20V.
Ambient temperature 20°C.

Adjustment of the operation by inhibition. The operation can only be measured with a device used to measure intervals of 60 seconds or multiples of 60 seconds. The rate must be measured with ambient temperature between 20°C and 30°C.

Modifications of Technical Guide for Calibre 1538

Technical Guide versions				
Date of first edition:	07.05.2007	Version A	Made by:	pelrom
Date of second edition:	22.01.2008	Version B		rendav
Date of last edition:	24.10.2008	Version C		

Modifications of Technical Guide version B	
Old (version A)	New (version B)
	Additional Kit second wheel + intermediate wheel ref. 7221530D9999*.

Modifications of Technical Guide version C	
Old (version B)	New (version)
	All the information's that are mentioned in red have been modified or updated.