



ROTATE

WATCH KITS



Watchmaking Guide Miyota 8N24 Edition

The Hudson
The Earle

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PARTS

Movement: Mechanical/automatic, 21 jewel, Japanese Miyota 8N24 movement

Hands

Case: Sapphire glass, stainless steel, 47mm diameter 22mm lug size, 5 ATM waterproof

Stainless steel chain

Dial

Others: Dial feet screws, movement stem, crown

TOOLS

Screwdriver

Tweezers

Spring bar tool

Cutter





Glue

Gloves



Welcome to Rotate's assembly guide! We're so excited for you to get started building your watch.

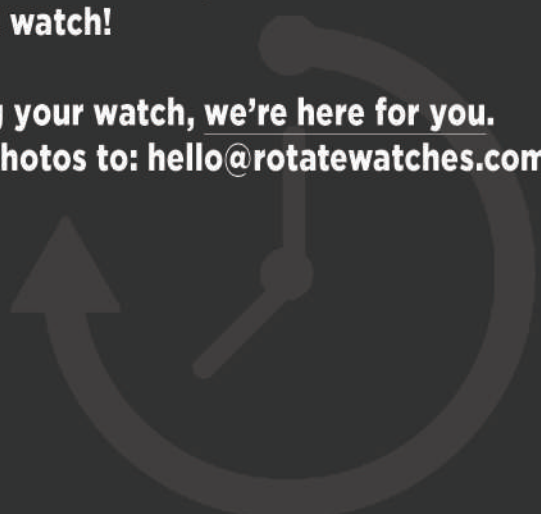
Watchmaking is a careful and patient craft. To ensure an accurate and functional watch, please follow the below guidelines:

-  **Wear gloves at all times.**
-  **Handle pieces with care and set them down gently.**
-  **Take small steps to ensure you don't overcut , overturn, scratch, or smudge the pieces.**
-  **Be patient and take your time. If you struggle, take a deep breathe and revisit it at a later time.**

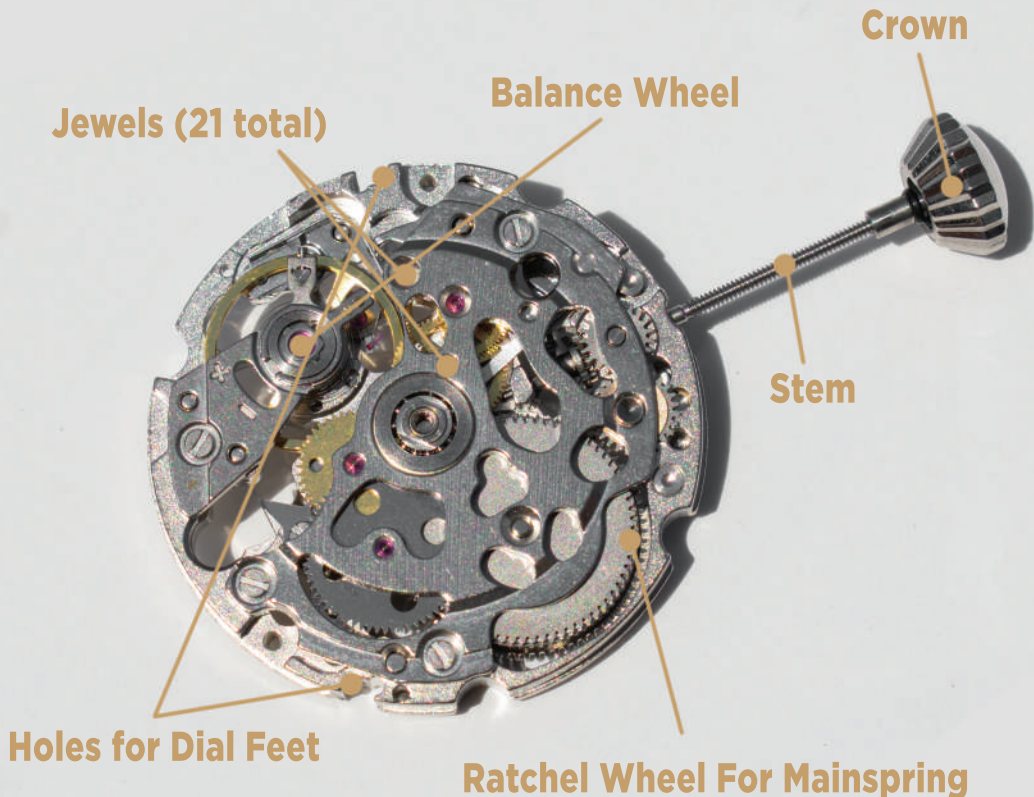
Most importantly, don't forget to enjoy the process! Watchmaking is a beautiful, dying craft. Take the time to learn about each piece, and how they contribute to a fully analog, mechanical watch!

For any struggles building your watch, we're here for you. Please email details and photos to: hello@rotatewatches.com.

LET'S GET STARTED!



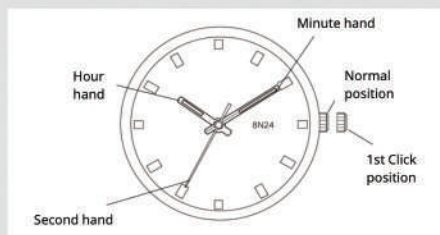
Basic Anatomy of a Movement



How Movements Work (In a Nutshell)

1. Mechanical movements receive power from both kinetic energy and winding the stem.
2. Energy is then stored in the mainspring (inside the watch).
3. The mainspring turns a series of gears, the last of which is connected to the escape wheel, which regulates the speed of the entire chain.
4. Each turn of the escape wheel moves the pallet fork, which causes the balance wheel to swing. This motion is the easiest way to tell if a movement is operational.
5. The balance wheel powers the watch hands. When tuning the movement for accuracy, the balance wheel's speed is adjusted.

About Miyota's 8N24 Automatic Movement



The Miyota 8N24 is an automatic hand-wound mechanical movement that belongs in Miyota's 8000 series. It features 3 hands and a skeleton frame.

About Miyota

Miyota movements are assembled in Japan using only parts manufactured at their Japanese plants, enabling them to ensure quality. The movements undergo strict quality checks and are preferred worldwide for their durability, ease of assembly and disassembly, and high impact resistance. The major parts are all metal, enhancing the beauty of colors and textures.

About Automatic Movements

Automatic movements are mechanical movements that run without batteries. They harness energy through natural motion on the wearer's wrist. A rotor enables power to be stored in a 'self-winding' way so the wearer doesn't need to worry about winding the watch daily for constant operation.

Size 11.5 cm

Height 5.55

Accuracy (per day) -20~+40 sec

Running time >42 hours

Vibration Frequency (per hour) 21600

Jewels 21

To fully wind Turn the crown 40 times

A Brief History of Watchmaking

Forms of timekeeping have been in our history for thousands of years with sundials dating back to the 4th millennium BC in Ancient Egypt. Since then, we have come a long way in time-keeping. Now, we can easily keep track of time with the various devices inhabiting our lives. Due to this shift, one would think that clocks and watches would become near to obsolete. Yet, this is far from the truth. Although our devices have the capability to tell time, they do not provide the background of rich culture and artistry that is backed by clock and watchmaking.

Image: The Melancthon's Watch (dated 1530)



This image depicts the oldest dated watch on Earth created by German locksmith Peter Henlein. Although more than 500 years old, the basic mechanics of this watch still remains the same in mechanical watches today. In fact, Rotate's watches also use the same fundamental spring movement to make the wondrous piece of technology come to life. So as you dive deeper in the art of watchmaking through this kit, you are helping to keep the antique craft of watchmaking alive and appreciated.

The First Wristwatch

The first wristwatch was created in 1868 by the Swiss watch company Patek Philippe for Countess Koscowicz of Hungary. Although perfectly capable of telling time, wrist watches were created as women's jewelry and status symbols. Interestingly, even though it was common practice for men to carry around pocket watches, wrist watches did not catch on initially because of the femininity attached to it. It was only until the first world war that men started wearing wrist watches due to the practical value that it provided as a hands-free time-telling device.



Image: Courtesy of Patek Philippe

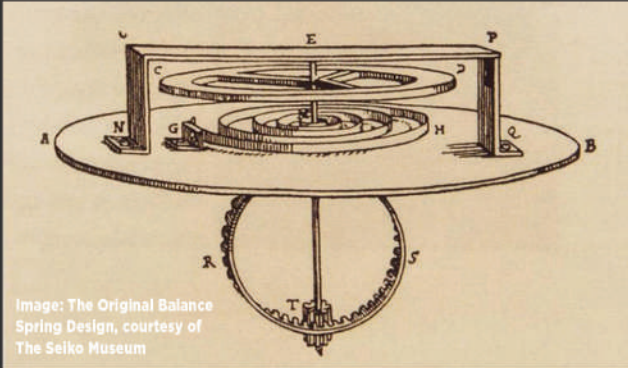


Image: The Original Balance Spring Design, courtesy of The Seko Museum

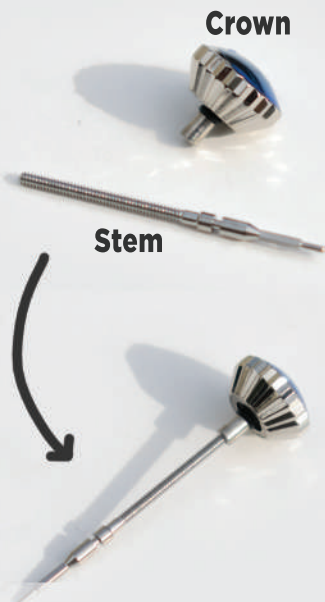
The Balance Spring

One of the most notable steps in timekeeping and watchmaking history is the invention of the balance spring commonly attributed to British physicist Robert Hooke and Dutch scientist Christiaan Huygens. This addition, in collaboration with the balance wheel, created a harmonious oscillator that ensured oscillation at a precise period, which increased accuracy of watches greatly. Thus, the balance spring shifted the role of pocket watches as decorative novelties to essential timekeepers.

ASSEMBLY GUIDE

1. Screw the crown onto the stem.

The stem can be found in the small plastic container.
The crown is tucked over the case.



2. Remove the stem that came inside of the movement.



Press the button highlighted in red (left) as you pull the stem out.

Recommended:
Use tweezers to push the button as you pull the stem out with fingers.

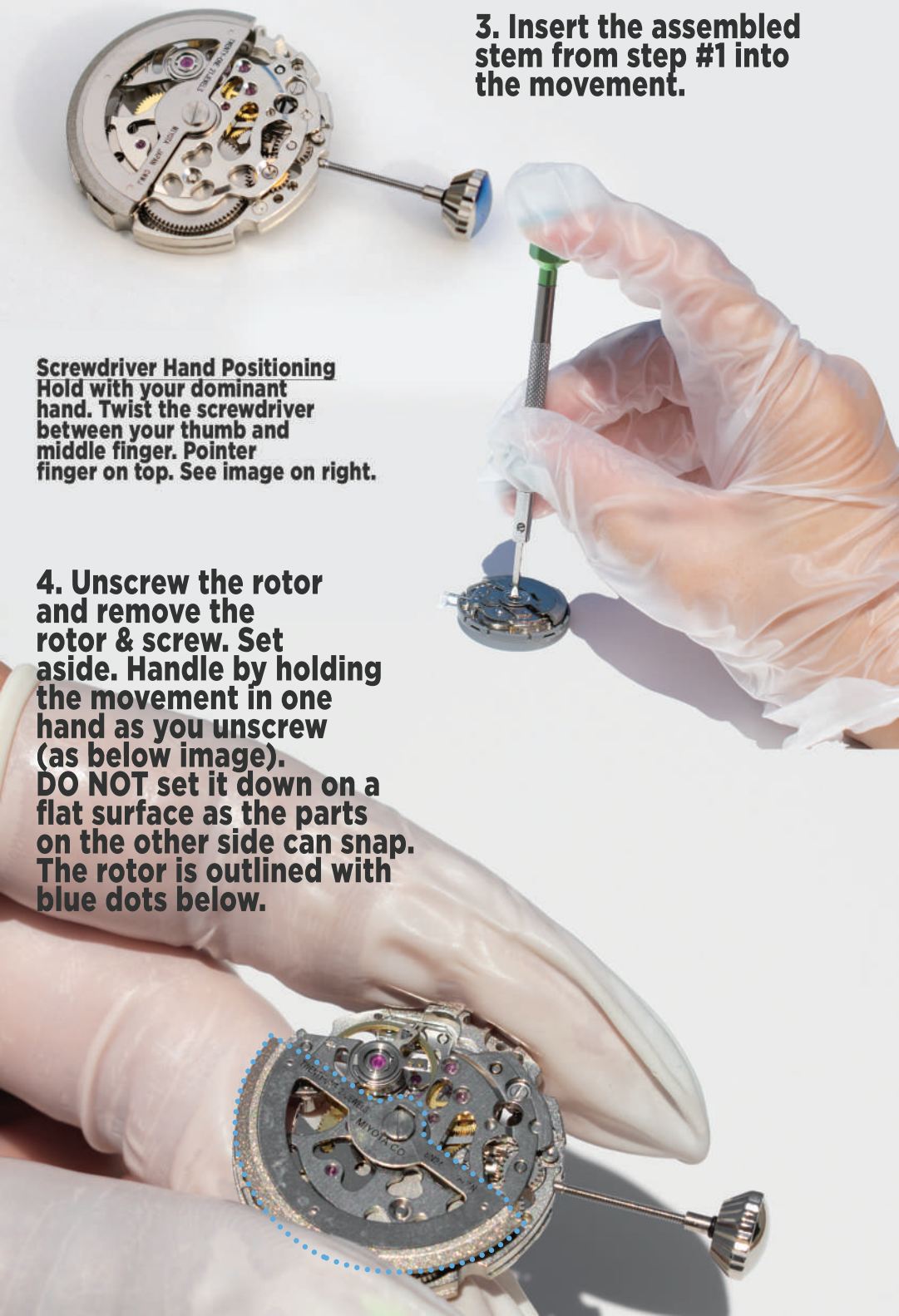


3. Insert the assembled stem from step #1 into the movement.

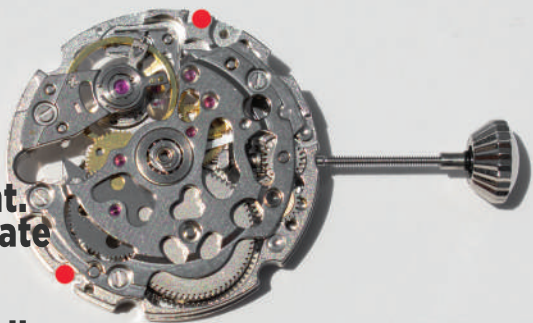
Screwdriver Hand Positioning

Hold with your dominant hand. Twist the screwdriver between your thumb and middle finger. Pointer finger on top. See image on right.

4. Unscrew the rotor and remove the rotor & screw. Set aside. Handle by holding the movement in one hand as you unscrew (as below image). DO NOT set it down on a flat surface as the parts on the other side can snap. The rotor is outlined with blue dots below.



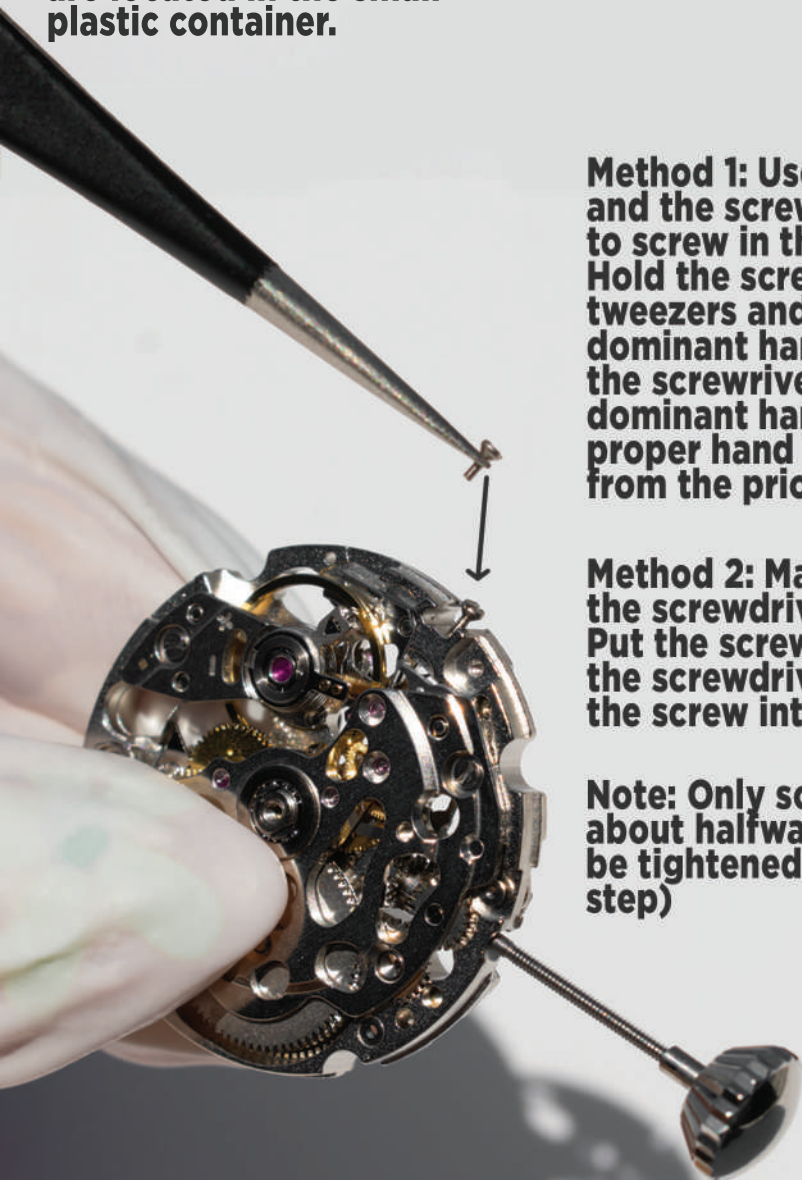
5. Insert dial feet screws into the 2 corresponding holes in the movement. Red dots (right) indicate where the holes are. The 2 dial feet screws are located in the small plastic container.



Method 1: Use tweezers and the screwdriver to screw in the screws. Hold the screw with tweezers and your non-dominant hand. Hold the screwdriver with your dominant hand. Review proper hand positioning from the prior page.

Method 2: Magnetize the screwdriver head. Put the screw onto the screwdriver and twist the screw into its hole.

Note: Only screw down about halfway (they'll be tightened in a later step)





6. Fit the dial onto the top of the movement (the stem will be at 12 o'clock). The two 'dial feet' underneath the dial will fit snugly into the dial feet screws.

Tip: This side can (and should) be worked on over a flat surface.



7. Fasten down the dial feet screws all the way. The dial should be flush with the movement.



CLOSE-UP: The feet on the dial will insert into slots in the movement. It'll be snug to the dial feet screws.

Wrong



Correct



Each hand should be flat on top when installed onto the dial. The metal cusp will be under the hand.

8. Using tweezers, push down the hour hand over the center pinion. As shown below, part the tweezers slightly and push around the hand to secure it down onto its pinion. For additional tips, see 2 pages ahead.



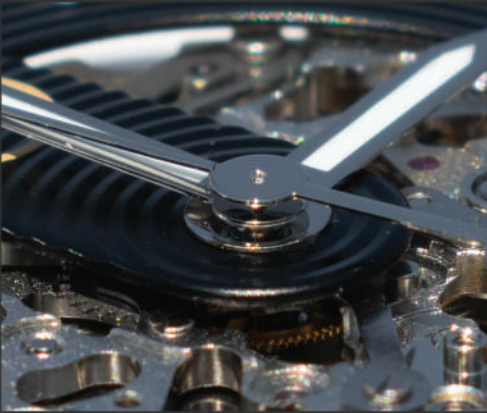
9. Pull the stem out into time-setting position and turn until the hour hand points directly at a digit (ex. 3). Now push the minute hand on to point directly at 12. This is necessary to ensure proper time.



10. Push the second hand on with tweezers. Tip: hold the hand close to the cusp to prevent it from snapping easily. Tap down on the cusp with your finger to mount it in place.



Completed hands



Additional tips for hands

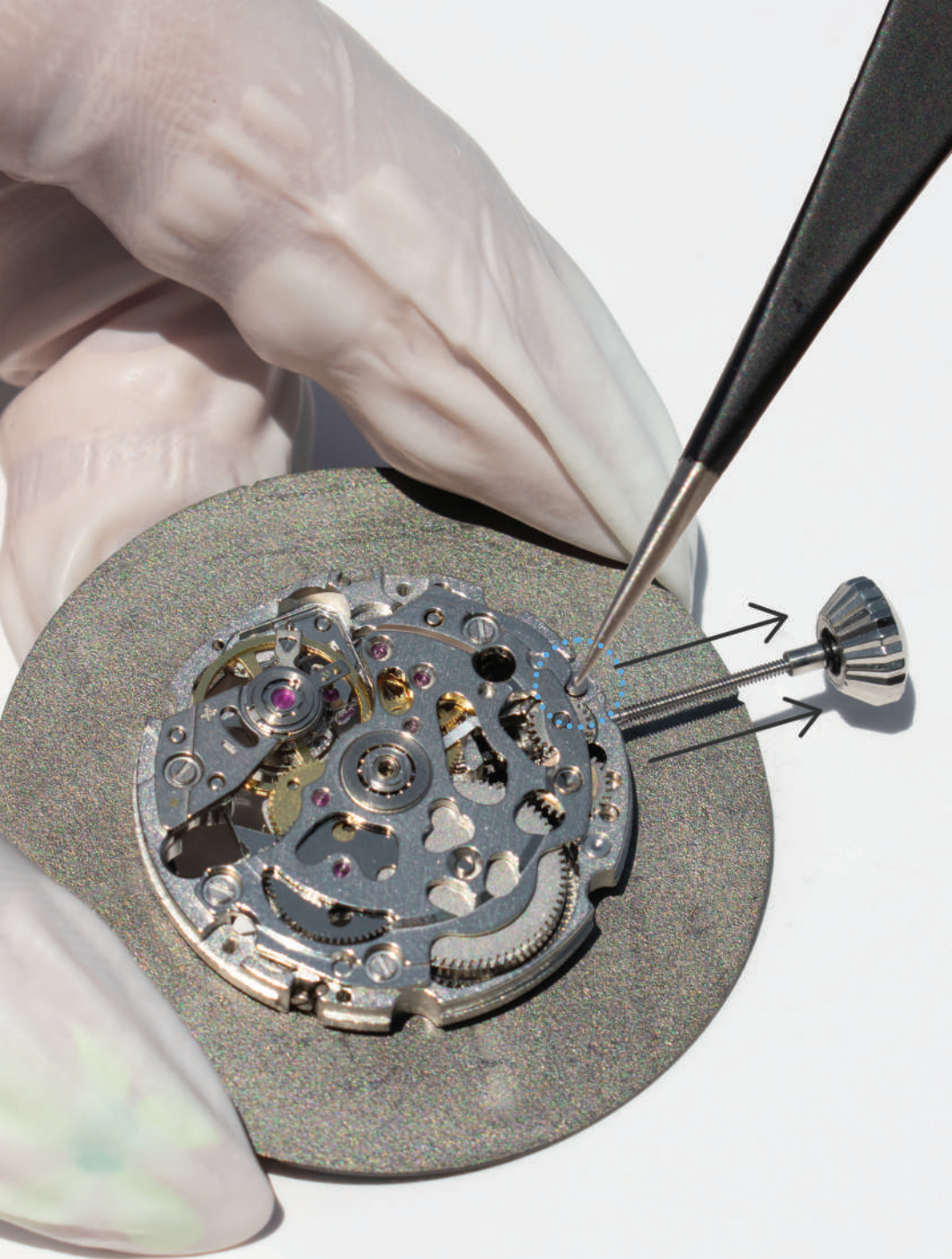
Make sure not to bend the hands, and that once in place, they're pressed securely in place parallel to the dial.

The hands will push into place. There won't be a click, and the hands should tick and stay on their perch.

POSITIONING: Pop the stem time-setting position and turn until the date marker goes to the next date. This is where hands should hit 12:00. Make sure to also install hands at an angle that properly tells time (ex. if the hour hand points directly at a tickmark, so does the minute hand).

Note: The hands should be spaced like in the above snapshot. If the hands' bases are flush against each other, the hands were either pushed in too hard, or not hard enough. This buffer space is necessary for the hands not to jam against each other.

Caution: The second hand perch (part of the movement) can snap off if the second hand is forced on while not aligned properly OR if the hand is removed from an angle. Be gentle to avoid this! Contact us if the perch does snap.



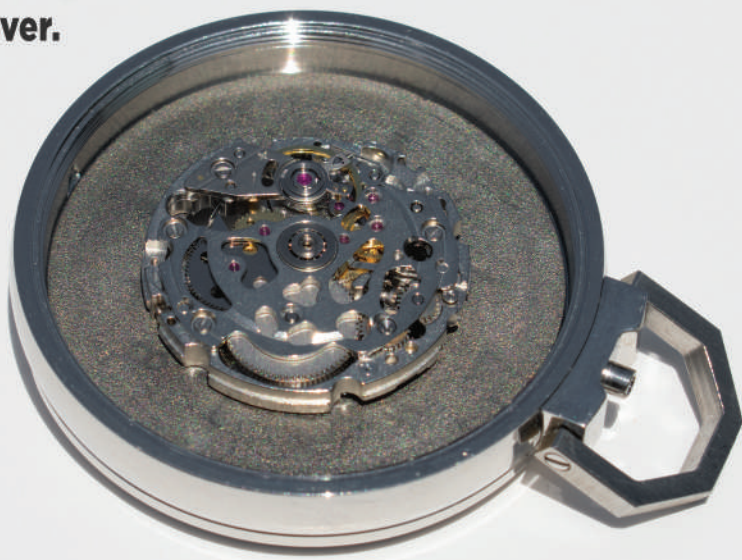
11. Remove the stem by pushing on the button (indicated by blue dots above) located next to the stem while pulling the stem outwards.

**12. Fit the case over the movement.
The latch will be at 12 o'clock.**

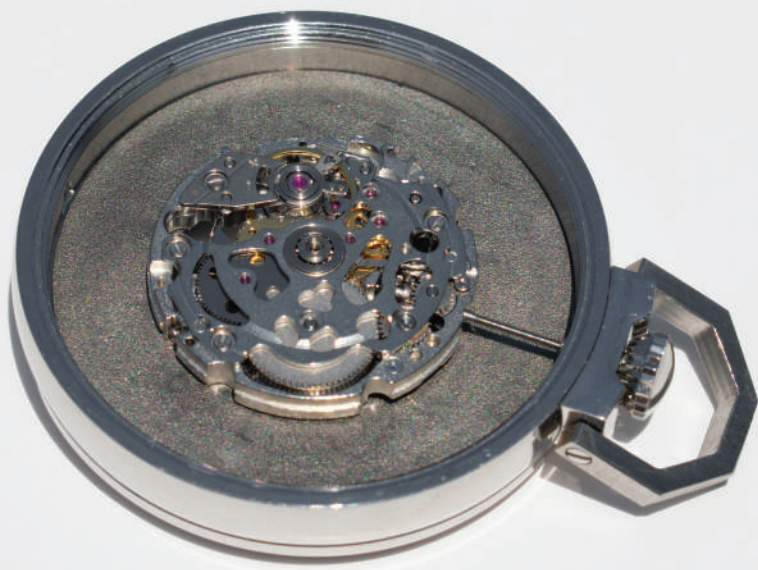
**(remove the plastic case ring from
the case first)**



Flip it over.

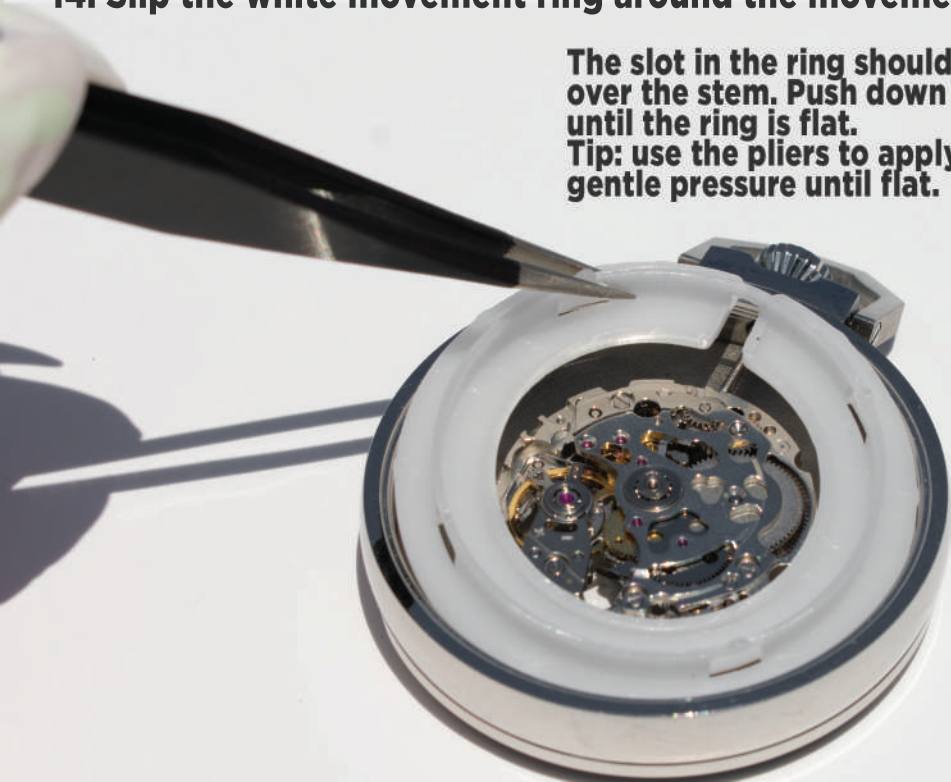


13. Reinsert the stem into the movement, through the case.



14. Slip the white movement ring around the movement.

The slot in the ring should go over the stem. Push down until the ring is flat.
Tip: use the pliers to apply gentle pressure until flat.



15. Rescrew the rotor back onto the movement.



16. Screw the case-back on clockwise





17. Attach the chain to the case by pushing in the chain clasp.

Finished watch!



Final Check

Since our movements are mechanical, they rely on both winding and kinetic energy. To test your movement, simply wind the watch a few twists, then move the movement around to mimic natural hand gestures. The seconds hand is the easiest indicator to tell if the movement is running.

To set the time, pop out the stem to the second position, configure the time, and pop the stem back into the first position. The first position is the correct default position for the watch to run.

Our movements have a power reserve of 40+ hours when wound. In other words, wind every 40 hours. Mechanical movements also rely on the kinetic energy of everyday movement, so if it's idle for a while, make sure to adjust the time.

Tips on Maintaining the movement

- Avoid extended exposure to direct sunlight**
- Be cautious when using the watch underwater**
- Every couple of months, clean the outside of the watch, ensuring to get grime off the straps and case.**
- Avoid chemicals**
- Avoid magnets**
- If you open the watch again, be sure to use the same precautions as the beginning of this guide. Wear gloves, handle pieces with care, and work carefully.**

Warranty Information

Thank you for your interest in Rotate Watches' Watch Kits! This warranty applies to all watch kits purchased from Rotate Watches.

What does the warranty cover?

The warranty will replace all damaged parts EXCLUDING the movement and case pieces free-of-charge if proof of damage is received. Please send photos/videos to hello@rotatewatches.com with the part/tool name and color (if applicable).

For the quickest service, complete the 'Request Replacement Parts' form under our website's "Contact" section.

The warranty also partially covers movements and case pieces.

Please email us photos/videos of the damage to hello@rotatewatches.com. We'll attempt to help repair the damage with you, but if unsuccessful, we can supply a discount code for the factory price.

To obtain warranty service, you must first contact us to determine the problem and the best solution for you: hello@rotatewatches.com.





**CONGRATULATIONS, YOU
JUST ASSEMBLED A WATCH!**





**We're constantly seeking
feedback, testimonials, and pictures!**

Please email all of the above to us:

hello@rotatewatches.com.

Tag us on Instagram [@rotatewatches](https://www.instagram.com/rotatewatches)!