

# A unique spectacle

If the time display is not moving forward, it does not mean that something is wrong with the watch

We all know that time does not stand still. And we cannot go back in time. Yet watch hands can – and still display the right time. How does this work? With a so-called retrograde function.

A retrograde display looks strange when you first see one. After all, a watch dial usually forms a full circle, whether for the minutes or seconds. The dial usually runs round the main display or a small subdial, as is often the case with a small seconds display or chronograph counter. With a retrograde display, the second, minute and hour indicators are all displayed on different parts of a circle. One segment has a start and end point. The key point is that the indicator hand moves along the segment. When it comes to the end, it jumps back to the beginning – it's as simple as that. Theoretically, any feature displayed on a circular dial can also be created as a retrograde feature. Chronographs, calendars, date displays – and of course the three units of time.

The technical implementation required for the movement to carry out this function is not overly complicated, although somewhat fiddly. There are two options:

depending on the design, an snail is integrated in the hour, minute or seconds display. Or else the system operates using two wheels with a sprocket missing on one at the relevant point. If several retrograde displays are required, several snails or wheels are used. In each case, the tension of an additional spring is required for each display to allow the indicator hand to spring back. This is the drawback to the retrograde function as energy is required for this spring-back to occur which is taken from the movement. The more retrograde functions are operating, the higher the output of movement must be. Pierre DeRoche has created the first movement able to house six retrograde seconds mechanisms. While this complication has been introduced to provide an element of fun, it also reveals a totally original approach: all the retrograde hands in this model are driven by gears rather than cams and, thanks to a strip-spring that has replaced the classical balance-spring system, return to their initial positions after "passing on the baton" to the next retrograde hand. This innovation facilitates adjustment and enhances shock

resistance. The TNT Royal Retro is limited to 21 pieces.

German watch maker Rainer Nienaber is a big fan of retrograde displays and is presenting a double retrograde display at the AHCI stand of this year's BASELWORLD. His new Retro-2 Automatic model offers both an hour and minute retrograde display. Some retrograde displays have a conventional one to 60 minutes display; yet Rainer Nienaber breaks with this convention.

His segment scales begin at 30 or 60 so that both hands lie vertical over one another at the 12 o'clock position.

However much these spring-back hands please retrograde fans, they remain an exception in watch-making. Yet one special function is almost always displayed in the form of a retrograde dial: the power reserve display. This informs the wearer how much energy remains in the movement and when it is time to wind the watch up again.

During winding, the hand moves immediately to the top end of the scale to indicate that the power reserve is full. (dd) ■



The TNT Royal Retro by Pierre de Roche comes with six retrograde displays