



**HYT HI
ALUMEN BLUE**

MOVEMENT Exclusive HYT manual-winding movement; fluid hours; minutes; small seconds; power-reserve indicator; 65-hour power reserve

CASE 48.8mm; ALUN 316B aluminum alloy; water-resistant to 100m

STRAP Rubber

PRIME
TIME
+

HYDROMECHANICAL HOROLOGY

HYT introduces the H1 Alumen Blue — the latest addition to the firm's collection of groundbreaking timepieces

BY JACK FORSTER

Although the single biggest trend in watchmaking since the financial crisis of 2009 has been what some industry watchers (including us, on occasion, we have to admit) have called the “return to classicism”, there are still watchmakers and watchmaking houses for whom the art of watchmaking is one that demands risk and innovation. One of the most important of these firms is HYT — the self-proclaimed “hydromechanical horologists”, who developed the first wristwatch in the world to use a hydraulic fluid display to indicate the time.

The first HYT watch was shown at BaselWorld in 2012, where it generated immediate interest as well as a certain amount of healthy skepticism as to whether it could actually work. Both watch journalists and enthusiasts — stung into caution after a series of high-profile and much-touted announcements in previous years of exotic complications that failed to materialize in actual working form — wondered if HYT would prove to be yet another casualty of overambitious design. But that has not proven to be the case — HYT is flourishing and, as if in celebration, has introduced a wide range of new watches using its unique time-display technology for 2014.

We've had a chance to preview a number of them, but one of our favorites is the new H1 Alumen Blue. The watchcase, we are told, is made of a material called “ALUN 316B” — since “alumen” is an old Latin word that is the root of “aluminum”, we think it's safe to assume ALUN 316B is an aluminum alloy, with a combination of brushed and polished finishes and blue anodization applied to the lug tops and bezel.

Any HYT watch, of course, is a showcase for the fluid time-display system, which is just as fascinating to us as it was when we first saw it back in 2012. The system is relatively straightforward to describe. A thin glass tube, filled with two fluids — water, and oil with other chemical substances added to give it color — circles the circumference of the dial. Oil and water are of different densities, so naturally the two fluids don't mix in the tube. The boundary between the two fluids is the point used to read off the hours, while the minutes are read off via a conventional dial and hands. There is a small-seconds subdial in the form of a stylized water wheel between nine and 10 o'clock, as well as an indication of the power reserve at 2:30.

Although the description is simple enough, to have the system not only work, but also work reliably over the long term, is a significant

challenge. The two fluids are contained in sealed, bellows-shaped reservoirs attached to either end of the tube, and for the mechanism to work, the entire system has to be perfectly closed. The glass tube itself has to be uniform inside to within one-micron tolerances, and the two bellows have to operate over many thousands of cycles reliably — to achieve the desired level of robustness, HYT borrowed material for the reservoirs from sensor technology developed originally for NASA, and the interiors are coated in gold. One of the biggest potential problems over the long term is loss of fluid from the system, which would fatally compromise it; to prevent this, the fluid transport mechanism has to be made of materials that are strong enough, and sufficiently impervious to penetration by the liquids, in order to work flawlessly for years at a time.

The combination of micromechanics and microfluidics is inherently an intellectually interesting one, and the expression of the original concept has produced a remarkably fascinating group of watches. The H1 Alumen Blue, however, in its combination of colors, seems an especially fortunate visual composition — a cool and collected celebration of this especially successful marriage of daring and ingenuity. ★