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POINT & CLICK ON BOLD LINKS



Dive Watches *Time, Technology & Style*



When trying to determine if a particular watch is suitable for diving, first of all, look for a water-resistance rating of at least 200 meters, or 20 atm. The apparent overkill on the depth rating means that the watch should hold up fine underwater for most normal diving conditions. But a watch claiming to be water-resistant to 100 meters (330 feet) should be sufficient for recreational scuba diving, especially since those safe diving limits are set at 40m (130 feet).

So what's the deal?

It is a matter of conventions that are, if not outright misleading, then certainly grounds for a great deal of confusion. However, the table (below) should provide some guidelines for buyers. First of all, the water-

resistance ratings provided by manufacturers result from testing done under controlled circumstances. Basically, they indicate resistance to water penetration, assuming there is no movement by either the watch or the water, at a particular depth. The ratings do not take into account what happens if the watch is bumped or jarred.

In reality, several factors are at work simultaneously on a watch while underwater. Pressure is the most significant, but as a diver moves through the water, additional pressure is exerted. The watch cases of diving watches must be adequately water (pressure) resistant and be able to endure the galvanic corrosiveness of seawater. So, the cases are generally made

out of materials like stainless steel, titanium, ceramics and synthetic resins or plastics. Gold may be a problem just because it's softer.

Seals must be used at each point where the case can be opened, and at other joints. This is primarily the case-back and crown (covering the stem). They may also be placed between the crystal and case unless a sealant is used. These seals, or gaskets are usually o-rings made of rubber or some other synthetic. Every watch made for diving should also feature screw-down case-backs and crowns. A case-back that screws down tight against a seal works much better than any type of back that is pressed in. The same goes for the crown; it needs to screw

in so it seals tight against the o-ring to prevent any seepage around the stem.

Pressure testing

Changing batteries in a dive watch invariably also

The Rolex Oyster Perpetual Submariner is a line of watches manufactured by Rolex, designed for diving and known for their resistance to water. The first Submariner was introduced to the public in 1954 at the Swiss Watch Fair.

Copied by other watch makers, the Rolex Submariner is recognised as a classic which has appeared in eleven James Bond movies



means it must go in for a renewed pressure test in hyperbaric chamber, so make sure you return your precious time piece to an authorized dealer.

Bezel

Analog diving watches will often feature a rotating bezel, which allows for an easier reading of elapsed time of under one hour from a specific point. This is also used to compute the length of a dive. The bezel is 'unidirectional', i.e. it contains a ratchet, so it can only be turned counter-clockwise to increase the apparent elapsed time. This is an important 'fail safe' feature. If the bezel could be turned clockwise, this could suggest to a diver that the elapsed time was shorter than it was, thus indicating a falsely short elapsed time reading, and therefore, falsely low air consumption assumptions, which are highly dangerous. Some dive watch models feature a lockable bezel to minimize the chance of unintentional bezel operation under water.

Ornamental feature of the past

With the advent of digital dive watches and the widespread use of dive computers, the exclusive use of a rotating bezel is now considered a rudimentary diving technique. Most contemporary dive watches with conspicuous 15 or 20 minute markings on their bezels are the result of copying a Rolex bezel design of the 1950s. Back then divers typically planned a dive to a certain maximum depth based on now obsolete U.S. Navy dive tables, and dove according to the planned dive profile. ■

Classification of diving watches

Watches are classified by their degree of water resistance.

Water resistance rating

Water Resistant to 50 m

Water Resistant to 100 m

Water Resistant to 200 m

Diver's 100 m

Diver's 200 m or 300 m

Diver's 300+ m for mixed-gas diving

Suitability

Swimming (no snorkeling related activity) and fishing.

Recreational surfing, swimming, snorkeling, sailing and water sports

Suitable for professional marine activity and serious surface water sports

Minimum ISO standard (ISO 6425) for recreational scuba diving.

Suitable for recreational scuba diving.

Suitable for saturation and advanced technical diving

Notes

NOT suitable for diving

NOT suitable for diving

NOT suitable for diving.

100 m and 150 m ratings are mostly seen on older watches.

The most common ratings for modern dive watches.

Watches designed for mixed-gas diving will have an additional marking **DIVER'S WATCH L M FOR MIXED-GAS DIVING.** ■





Dive Watches

Standards for dive watches

The standards and features for dive watches are regulated by the International Organization for Standardization in the ISO 6425 standard. Besides water resistance standards to a minimum of 100-meter depth rating, ISO 6425 also provides minimum requirements for mechanical dive watches—quartz and digital watches have slightly differing readability requirements. ■



Oris

Swiss manufacturer Oris has joined forces with the Australian Marine Conservation Society (AMCS) by launching the Great Barrier Reef Limited Edition dive watch. Fifty Swiss francs from each piece sold will be donated to AMCS to help protect and preserve the world's largest and most stunning reef system. Water resistant to a staggering 100 bar (1000m, 3281ft) the Oris boasts a host of impressive design elements: multi-piece stainless steel casing with super scratch resistant sapphire face; automatic mechanical movement; easy to read centralized hour and minute displays with dark orange luminescent hands and face markings; helium buildup release button for divers who use pressure chambers; neoprene carrying case with logo and key fob. Also comes with a customized AMCS diver's log book.

www.oris.ch



IWC

Swiss watchmaker IWC Schaffhausen, partner and sponsor of the Jacques-Yves Cousteau Society, has dedicated a fifth special edition to "Le Commandant" in honor of his 100th birthday: the Aquatimer Chronograph Galapagos Islands Edition. This finely crafted timepiece begins with a stainless-steel casing coated with matte black rubber making the watch pressure resistant to 12 bar (120m, 393ft) and comes with a barrage of special features. The sapphire glass dial makes the face nearly scratch proof (you can mar the surface with a diamond but nothing else will affect it) and the mechanical chronograph movement is self-winding and has a 44-hour power reserve. Each watch has an external rotating bezel, date and day display and a patented quick-change bracelet system for use with business or formal attire. IWC makes a sizeable contribution generated by proceeds from the sale of the Aquatimer to the Galapagos-based Charles Darwin Foundation. For 50 years, the foundation has been making visitors aware of the archipelago's uniqueness and providing them with guidelines to ecologically sound behavior and acting as sentries to ensure that the waters are not plundered and that the animals do not fall victim to poachers or predators imported from other seas.

www.iwc.com



Poseidon

Poseidon takes a more traditional approach to dive watches by offering the Chrono. Each watch has a large, easy to read rotating bezel, ultra accurate chronograph movement, super luminescent face index and hands as well as three separate timing dials for seconds, minutes and hours. Chrono's casing is made of stainless steel and is water resistant up to 20 bar (200m, 660ft) and comes in a plethora of face colors making this a fine timepiece for any serious diver. www.poseidonwatches.se



TAGHeuer

THE AQUARACER 500M CALIBRE 5 is as nice a dive watch as you will find anywhere and gives the wearer all the high-end options needed. The brushed stainless steel casing houses an ultra fine chronograph movement with automatic date surrounded by a unidirectional, soft-touch rubber bezel and is water resistant up to 30 bar (300m, 984ft). The crystal face is made of sapphire glass making scratches a virtual impossibility and the antireflective coating lets the luminescent hands and face indexes stand out in any light. For serious sport and technical divers, the 500M has a fine-brushed automatic helium valve which allows gas buildup in the watch to release due to time spent in pressure chambers or diving stations. The black rubber strap has a solid titanium clasp with safety push buttons for easy release and changes. www.tagheuer.com

Timeline

Early dive watches were often developed in response to military and professional needs. Later, they were designed for commercial diving, which started to appear in the 1960s. As a result, professional dive organisations came into being, touting needs for "tool" watches to help conduct dives safely at great depth.

1927 Rolex is credited with creating the first water-proof watch.

1932 Omega introduced the Marine, considered to be the first dive watch.

1930s Panerai produced a number of dive watches for the Italian Navy, water-proof to 650 feet.

1953 Blancpain produced the Fifty Fathoms dive watch worn by Jacques Cousteau in the film, *Le Monde du Silence*.

1954 Rolex introduced the Submariner—the watch of choice for James Bond in the first ten films.

1957 Omega Seamaster was introduced.

1967 Rolex Sea-Dweller introduced, first "ultra water resistant" dive watch, capable of depth to 610m.

1970 Omega Seamaster Professional introduced, capable of depth to 600m. ■





Dive Watches



Audemars Piguet

The high-class Royal Oak Offshore diver watch by Audemars Piguet can withstand pressures of 30 bar due to fine quality gaskets and the unique hexagon screw design mounting the case and face as secure as a sub hatch. With a new twist, the classic click bezel has been replaced with an internal rotating ring with diving scale that is controlled by a rubber coated crown mounted at 10 o'clock on the case. This keeps a diver from inadvertently moving the bezel while diving, always assuring any headings are taken and kept accurately. The finer points of the timepiece are just as impressive: self-winding, Calibre 3120 movement; stainless steel casing; luminescent coatings on watch dial and hands; hours and minute dive time measurements. We especially liked the rugged, octagonal face shape that dominates the face.

www.audemarspiguet.com



RedSea Holystone

RedSea, a new company started just this year by two avid watch enthusiasts, offers the Holystone, a professional dive timepiece with all the rugged extras you need when diving. Water resistant to 30 bar (300m, 984ft), this beautiful dive watch comes in your choice of stainless steel or black PVD (a long lasting protective coating used on high friction cutting tools). Each watch crystal is made of sapphire glass and the arms and face markings are layered eight times with special Lume-Tech coating for ultimate brilliance in dark areas. Both colors of the Holystone come with three separate bands—a five link steel brace-

let for dressing up, Black nylon for more casual wear or a dark rubber dive strap for saltwater use. The large clicking bezel is easy to grab, even with gloves, and best of all, this new watch is priced below US\$600. All watches will be available this winter, and if you place a pre-order, you will be automatically entered to win a free RedSea timepiece of your choice.

Redseawatches.com

Halios BlueRing

The Halios BlueRing is an aesthetic and beautifully crafted dive watch from a great independent brand in Vancouver, British Columbia, Canada. With only 100 models of each dial color, it offers exclusivity in ownership that extends beyond the distinct design and excellent packaging. If you missed your chance on earlier models, such as the Holotype, the BlueRing should be secured quickly since previous editions sold out in months, and the BlueRing is setting a pretty fast pace as well (as of late summer only the silver dial with brushed silver case is still in stock). Features include: water resistant up to 30 bar (300m, 984ft); highly calibrated ETA 2824-2 movement; silver dial with black bezel; domed sapphire crystal for outstanding scratch resistance. Now is the time to order a highly exclusive dive watch from a trusted and well known brand.

www.halioswatches.com/bluering



Luminox

Luminox has been the watch of choice for professionals like Navy SEALs, SCUBA legend Stan Waterman, the U.S. Coast Guard, law enforcement divers and many more. After 20 years of making 200 meter water resistant watches, Luminox has announced its 50 bar (500m, 1500ft) Deep Dive series. Specifically designed and constructed for use by professional divers, these watches can be taken to the deepest depths by technical divers doing their jobs, with all the attributes a true diving watch needs, including: stainless steel, PVD coated casing; screwed on crown with guard cover; sapphire glass face with anti-reflective coating; highly durable rubber strap; automatic helium release valve. The night vision tubes covering the dial, hands and bezel are ultra bright and are rated to last twenty-five years. This is serious gear for serious divers.

www.luminox.com

Watch strap

The choices you have for a strap are typically Rubber, Stainless Steel or Titanium.

Rubber: If its genuine—make sure to check—rubber is strong, comfortable and flexible. It will last for quite some time but will eventually deteriorate, and become brittle and susceptible to tearing.

Stainless Steel: Is fine for dive watches; the only thing to watch out for is checking that it is genuine stainless steel since other metal straps will rust or corrode.

Titanium: The best choice, if you can afford it, since it is stronger by a third over stainless steel and significantly lighter too, making it feel more comfortable as well. It's also more durable and more corrosion resistant than stainless steel, and hypoallergenic, too, which may be another consideration.

Further consideration: wet-suit clasp. This is a special clasp that makes the strap extendable so it's easy to adjust and wear over a wet-suit. ■





Dive Watches



Reactor

"Our new Poseidon has a number of firsts for us in terms of technology. In addition to the extreme 1,000m depth rating, the watch features an internal rotating bezel that can actually be adjusted underwater," stated Jimmy Olmes, president of Reactor, on their website. Their most seaworthy model to date, Reactor's Poseidon is built from stainless steel and has a substantially thickened case back and crystal face. The watch is available with a black and red dial with rubber strap, a yellow and black dial with two-tone black stainless bracelet, or a limited edition black and orange combination that will include both bands. The stainless bracelets include a wetsuit expander, another first for Reactor.

www.reactorwatch.com



Porsche Design

The first dive watch by Porsche Design since 1983, the P'6780 is not only uber-cool to look at but meets every high performance demand that can be placed on it. Capable of withstanding pressures at up to 100 bar (1000m, 3281ft), the stainless steel case houses an ultra fine automatic movement and bright luminescent dial that is easy to read even in the darkness at its furthest depth range. The strap has a special extension that allows a diver to easily slip it on a wetsuit covered wrist without the hassle of popping the clasp open. But perhaps the most unique and functional design element is a special hinge that allows the watch case to swing upwards out of the titanium bracket. This allows the wearer to quickly move the crown without interference and blocks accidental movement while diving. Warning, if you're ADD like some of us folks with fins, you'll be flipping it up and down endlessly.

www.porsche-design.com



Breitling

Breitling has revived the design of the legendary diver's instrument it launched in 1957. While the technical qualities that have forged the Superocean's reputation have been always been respected, the timepiece has been given a thoroughly updated look. The rubber-molded unidirectional bezel features sloping numerals that look and feel like a dive compass, and the notched edges make it easy to manipulate underwater even with heavy gloves for cold water diving. The strikingly distinctive dial is a continuation of the same vigorous design with oversized numerals and hour markers standing out nicely against the matte black face. This sleek and classy watch is water resistant up to depth of 1,500 meters and has all the attributes of a professional instrument, like the safety valve that automatically releases the accumulated helium when the internal over-pressure reaches around three bar, the self-winding chronometer certified movement and the extremely scratch resistant sapphire crystal that is anti-glare coated on both sides. For deep and dark dives, the hands and hour markers are brilliantly lit making timed calculations a breeze. Several bracelet designs (rubber or steel) and inner dial color combinations (yellow, red, blue, silver and black) are available. www.breitling.com

Victorinox Swiss Army

Precision timing meets extreme diving in the new Dive Master 500 Black Ice Chrono, now equipped with precision, self-winding movement in the same ultra-rugged and highly functional 43 mm sport watch from Victorinox Swiss Army. The 50 bar (500m, 1650ft) water resistance, which gives its name to the Dive Master 500 line, is maintained in this Chrono version which boasts a screw-in case back and crown, sapphire crystal with anti-reflective treatment. Of course, you'll find a unidirectional bezel and luminescent hands, hour markers, logo and bezel markers for super bright readings in deep or dark waters. This dive watch features enhanced legibility of its separate twelve-hour counter at 10 o'clock, date window and small second counter at 6 o'clock. The strap is genuine rubber and comes in several colors to match the dial you choose (black, red and orange). For a more stylish, sophisticated look, a stainless steel bracelet with gunmetal coated PVD is also available.

www.victorinox.com





Dive Watches

Just for Kids

Speedo Junior UV analog watch—Kids will love this fun and entertaining watch as the strap changes color when outside in the sun while simultaneously offering UV protection to the skin underneath.

Features include: fashion forward design and fun graphics; water resistant to 100 meters; unique comfort strap with pinless buckle; lightweight and waterproof case. Available in other sporty colors.

Retails for US\$40.00.

www.speedousa.com



Caretaking

Subjecting your watch to quick hot and cold temperature changes makes it much more likely to leak due to rapid expansion and contraction of the metal. In addition, chemicals like chlorine are hard on seals.

Take time following any saltwater diving, or swimming in a chlorinated pool to rinse off your watch with fresh water. Rotate the bezel also to flush out any sand. Taking an extra couple seconds for rinsing will make a big difference in terms of longevity, same as it does for gear. ■



The Hammerhead Chrono XL by Freestyle

Freestyle Speaks

Freestyle dive watches stand out from the pack.

X-RAY MAG's Gunild Symes interviewed Freestyle's marketing manager, Chad LaBass, to find out just what makes them tick.

GS: What makes your dive watches different from the others on the market?

CL: Affordability and durability add up to an overall value that separates us from our competitors. We understand that investing in dive equipment can be very expensive; we are proud to make dependable dive watches that don't have to be expensive to be effective.

GS: What makes your company different from others on the market?

CL: The Freestyle difference is

in our product standards. Every watch we make is water resistant to minimum 100 meters, all dive specific watches to 200 meters, and we back all of them with a limited lifetime warranty.

GS: There are different types of divers out there. Which watch do you recommend for each type of diver and why?

CL: Freestyle offers entry level dive watches. We aren't in the business of competing with dive computers or expensive dive watches. We offer quality and value-packed dive watches from US\$100-\$175 for the price-conscious diver. Our recommendations:

Warm water diver

—dives in the tropics, lodging in luxury resorts and liveaboards: **The Hammerhead Chrono XL**. Why? For a stylish and bold look in and out of the water.

Cold water diver

—technical diver, wreck diver, diving in the temperate zones: **The Precision**. Why? It's a proven

performer with analog and digital readout with a nightvision backlight.

Arctic diver

—technical diver, diving the extremes in the polar regions: **The Hammerhead**. Why? It's the staple of our dive line, no-nonsense style and durability.

Researchers

—conservationists and eco-conscious divers: **The Submersion**. Why? Choice between metal or polyurethane band

and comes with a nightvision backlight.

Economy-minded

—middle class divers and university students: **The Hammerhead**. Why? We challenge anybody to find a better dive watch for under \$100.

Weekend warrior

—occasional diver who wants to impress peers with a great dive watch: **The Hammerhead Chrono XL**. Why? For a stylish and bold look in and out of the water.

GS: Which models of your men's and women's dive watches are the most popular and why?

CL: The Hammerhead is our most popular model and has been for years. It's just one of those things, whether from word of mouth or just its classic dive style, the Hammerhead is always on top of our best seller list.

GS: Are there differences in preferences of features and styling in dive watches between

men and women? If so, what are they?

CL: Not necessarily for the Freestyle consumer, they are generally looking to us for a dependable dive watch at a fair price.

GS: What is the future of dive watches? New technologies on the horizon? New fashion and style attitudes? New philosophies in watches in general?

CL: For now we don't have any plans on investing in new technologies, as most of the time new technology will drive the price of watch up. We like our position in the market catering to the entry level diver, and we want to concentrate on offering the most durable and dependable dive watches we can make in the US\$100-175 range. If anything, we will find ways to make them even more stylish and comfortable.

GS: Tell us about your sponsorships in the field of diving.

CL: Currently, we don't have any sponsorship agreements with divers, however we do plan on adding that category later in the year. In fact, we have recently opened up a sponsorship application for aspiring divers:

www.freestyleusa.com/sponsorship

GS: Anything else you would tell our readers about your dive watches and your company?

CL: We are working on a new women's specific dive watch due out Holiday 2010. Stay Tuned! ■