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## N-19 scooter **RETIRED**. Upgraded to the [VIPER](#)

**November 2011:** The N-19 has been upgraded to the [VIPER](#), which retains the same proven Submerge exclusive motor and the majority of the same hardware as the N-19, with the exception of the NiMH battery pack. In the [VIPER](#) the NiMH pack is replaced with a lithium pack, as well as 3 speed VENOM electronic speed control, resulting in increased performance, top speed, runtime, and ease of battery maintenance.

The N-19 is a lightweight version of the legendary, record breaking range of Submerge UV scooters...

Introduced in 2007, the N-19 utilized the then state of the art in NiMH battery technology to build a lightweight, compact scooter with as few new components as possible, for the utmost reliability.

The NiMH batteries used in Submerge Scooters are safe, green, lightweight, moderately priced and air travel legal.

Depth rated to a conservative 400 feet, the N-19 has been successfully dived to 500 feet ([see report here](#) )

The N-19 is the perfect companion for your next intermediate distance scooter trek...

Truk Lagoon wreck trek video: [click here](#)

### **Speed/power:**

Independent tests proves the N-19 is the fastest scooter in it's class (under 50 pounds, NiMH scooters) along with the longest range and duration.

### **Sealed, waterproof motor compartment.**

Not only protects motor and bearings from water if the main hull leaks, also isolates the rest of the scooter if the shaft seal leaks. Sealed motor compartment also prevents any objects, dust, dirt, moisture, salt spray or water from entering motor when the scooter is opened up for battery charging.

The addition of this compartment, not available with many other brand scooters, also allows simple confirmation of the shaft seal integrity, with simple vacuum pump and gauge (See accessories)

### **Waterproof battery pack is transparent,**

Allowing easy inspection without disrupting sealing surfaces. Additionally, the top and bottom lid of the battery pack act as overpressure relief valves, not allowing more than 1/2 ata pressure buildup of potentially explosive gases in the event of battery malfunction. Unlike any other brand scooter, our NiMH battery pack seal integrity can easily be confirmed with a simple vacuum test.

### **The N-19 battery pack is splash proof/waterproof at ALL times,**

even when outside the scooter hull... so it won't receive water damage if accidentally splashed carrying from the boat deck to the cabin for charging, or if caught in the rain.

Significance? For live aboard diving, Submerge N-19 battery pack is waterproof when being charged: it can be charged in a salt spray environment without concern; expensive Nickel Metal Hydride batteries are protected at all times; the worst that can happen is some corrosion on the external wires which can be easily replaced.

### **Main hull o-ring design**

eliminates clumsy and high maintenance barrel o-ring design in favor of an over sized (3/16"thick) o-ring, face seal and spring clip pre-tensioning/sealing method. This seal type has been accepted in the Florida cave diving community as the ideal lighting and scooter sealing method.

The large cross section o-ring is more forgiving of contaminants and debris, and does not require greasing with silicone (which tends to attract sand, silt and other debris responsible for seal failures).

### **Portability:**

N-19 SALTWATER scooter is the only scooter in it's class with a full size carry handle on the nose.

### **Ultimate corrosion protection:**

The N-19 is the most corrosion resistant tech scooter available, the HDPE industrial grade pressure hull being impervious to the elements.

All aluminum (which is naturally corrosion prone in a marine environment) on the N-19 is MIL SPEC dichromate sealed and black hard coat anodized for superior corrosion protection. From 2007, this includes the motor end cap, which also has the additional protection of a MIL SPEC epoxy coating.

For divers that want a scooter that can last a lifetime, it should be noted that all external aluminum parts can be replaced at low cost with brand new parts; aluminum does not comprise any major/primary component of the scooter such as the hull, nose cone or tail section.

### **Single handed operation**

Submerge pioneered the use of a control handle specifically designed for single handed tow behind scooters, an idea which has now become an industry standard on all tech scooters designed in the last 10 years. Ours is yet to be matched in terms of ergonomics, simplicity and functionality.

In particular, the Submerge motorcycle style handle incorporates a safety cut-off if the handle is released, a cruise control which can be operated with the control hand, and a backup magnet switch operation in the unlikely event of a trigger wire failure.

### **Mechanical, variable pitch propeller**

Operating on the same principle as helicopters, allows infinitely variable speed settings between the slowest cruise to full speed, allowing divers to precisely match speeds with dive partners. This speed control system eliminates the requirement of complex electronic speed control componentry.

### **Tow behind style scooter: the apex of scooting evolution.**

Submerge Scooters are of the tow behind style, where the diver is attached to the DPV with a tow rope, which eliminates all exertion. The scooter handle is used to activate and guide the scooter only, the diver is not pulled via the arm(s).

This configuration this keeps the moving props in front of the diver, where entanglement risks are low. This is a distinct safety advantage over ride-on style or between the legs DPV's, where the propeller is placed exactly where any loose equipment will be damaged by the props.

In addition, 1 or more additional scooters can easily be towed to extend the divers range whilst also allowing for equipment redundancy, something which is difficult to achieve with other DPV riding styles.

The tow-behind configuration is almost standard equipment for cave/tech divers as it allows more control of position, is the most maneuverable style of DPV operation, allowing the DPV to be used in the tightest of passages.