

**Visibility:** Good

**Current:** Moderate

As we near the holidays, our engineering team remains relentless. Life cycle testing has been moving forward rapidly, revealing a couple of components that had room for improvement – one by one we’ve been making Nemo better, stronger and able to last longer.

No further delays have come up and so our May 2019 delivery expectation remains.

**Report:** Nemo delivers air using a linear motor to compress air space behind a silicone diaphragm, one on each side of the pump. These silicone diaphragms pull and stretch many, many times per dive. That’s why high-quality silicone is used – it won’t fatigue over cycles. However, we’ve been still been running into issues of the diaphragms tearing. The engineers have unsuccessfully attacked it from a few angles already, but there’s a new theory which is showing real validity. A change to our piston shape was influenced by the idea that the diaphragm is being popped like a balloon when parallel surfaces meet. To solve this, we’ve introduced a sharper angle to the piston that will allow air pockets to escape rather than explode the diaphragm. We’ve 3D-printed the new part out of ABS, installed it on our newest prototype and begun life cycle testing. Our divers really are our first priority – we’d rather take the time to find the optimal solution now in order put out a long-lasting product that our divers can enjoy for years to come. How do you guys feel about that?

**Forecast:** The next step is to acquire the goal number of hours – so now we wait and cross our fingers that this is the fix we’ve been searching for. The breathing machine is working overtime, running 24 hours per day and the engineering team can monitor its performance remotely in case any issues arise while they are out of the office. In the meantime, the mechanical engineers continue to work with our plastic injection molding vendors to finish the design for manufacturability. We’re hoping to submit for injection molding by mid-January, although this is dependent on our diaphragm issue being completely resolved.

We’re just as excited to get Nemo out on the market as you all are (probably more!) until then, we’ve got some pretty cool merch available in the BLU3 Shop. Check it out

Dive Conditions: Week 11

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