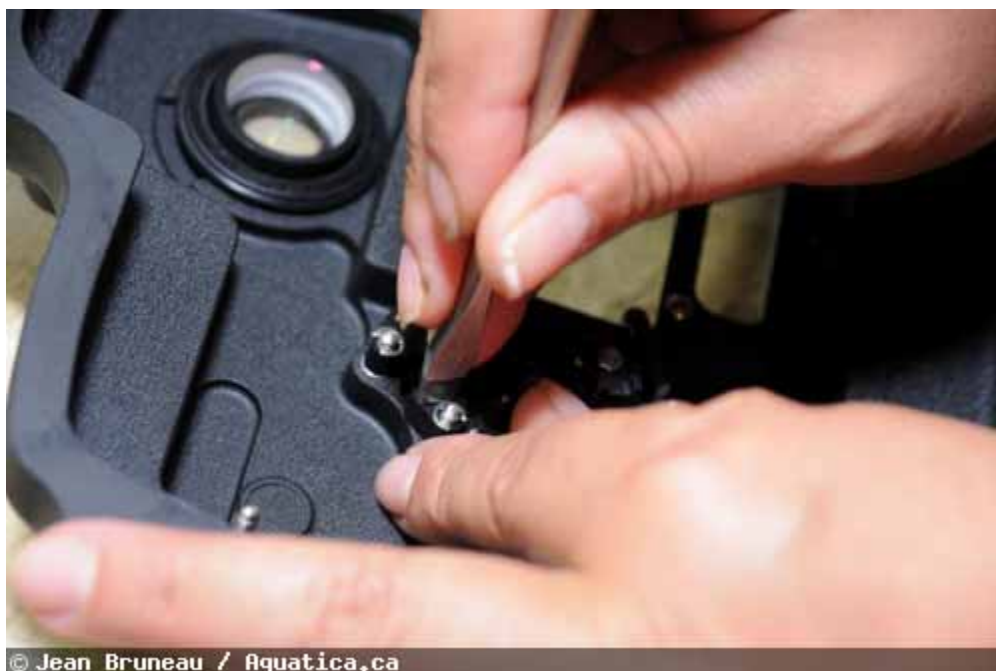


## Chapter 5: Assembly and Testing

The painting and labeling process completed, assembly is now ready to start and all shafts buttons and levers are set in place. This is also when the housing will become personalized to the eventual owner's requirement. If they requested a depth rating upgrade to 130m/ 425ft, it would be installed at this point. Same goes for the strobe connectors which are configured to the preferred configuration – wired bulkheads or fiber optics.



Every single control is tested, adjusted and re-tested. Wired bulkhead strobe connectors are tested for continuity prior to installation with a multi meter and again with actual strobes after they are installed on the housing.



Once every o-ring is in place, every fastener screwed down, every eyepiece element secured, it's time to pressure test the housing. The pressure test tank actually looks like some low-tech giant pressure cooker. In our case, since Aquatica is not in the culinary business, we will built up the hydraulic pressure to the equivalent of 90m /300ft to make sure the housing can stand up to the ruthless rigors of diving.



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Needless to say, a close and thorough inspection of all the internal parts is done afterward in order to detect any signs of water entry. If even so much as one small drop or residual humidity is found, the housing will be torn apart and closely inspected. Once the source of entry is determined, it will be either rebuilt from the ground up if it was a minor issue or sent to the recycling bin if the source could not be pin pointed accurately.



Once the housing has successfully completed the hydrostatic test, the strobe connectors are again subjected to yet another continuity test. Finally the preproduction prototype, and eventually the production models, will be ready to enter the real world.

There are still a few steps before green lighting the final production of housings. The in-house technical staff and some trusted outside field advisers will evaluate the completed preproduction prototype housing underwater to determine if any minor changes need to be done to the final production models. When I say “trusted field advisers,” it means we trust them to be straight to the point and not be afraid to express their opinions. Once out there and put through the tests, it might be that minor changes or modifications need to be made, for example, a control placement might be shifted for better access.

Once a consensus is attained on what the final production version ought to be like, we go back to reprogramming the updated and modified data instruction (if required) into the CNC machine and the cycle starts again, but this time instead of an individual unit, the machine shop will allocate a time window in order to process batches of this new housing.

Only after all of these operations are repeated again, and the owner manual printed, is the packaging procedure finalized, making it available for purchase.



So there you go -- that's my work environment. I certainly hope you enjoyed the visit and that the next time you see an underwater housing, no matter who made it, you'll see more than just a fancy camera container.