

# IN PURSUIT OF PERFECTION

We researched, designed, improved, tested, and prototyped the KayakPro Xeon for over 2 years. The objective and target was simple – to make the best Kayak ergometer that has ever been made.

Manufacturing ergometers now for over 22 years has allowed us to learn, adjust, evolve, and improve based upon countless thousands our hours of active use, whilst also absorbing and implementing feedback from clients and supporters.

In an ever-evolving story, we believe with XEON we have arrived.

The improved design features below have allowed us to arrive at this point. We think it is important to share this journey with you, our clients, friends, and supporters.

As a short history, we tested and prototyped many versions

Some of the main design “hidden diamonds” were:

- The arrangement of front leg, guide roller height and location.
- Juxtaposed catch roller location,
- Angle of rope exit,
- Minimization of lateral [chassis and flywheel] movement,
- Minimization of Rope sway at high frequencies,
- The ability to deliver a highly connected and instantaneous “Catch” .. allowing unrestricted full in-boat paddler rotation.



## FUN FACT



We made in total 7 different front leg arrangement prototypes, 4 x with different height Guide rollers – popular “myth” suggesting High guide rollers = better catch – fortunately, with the proving of the various prototypes this turned out to be incorrect.

In on-the-water paddling, it is a requirement for the blade to be in contact, buried, “planted” or secured in the water [The Catch.]

It is imperative this is replicated on an ergometer. A “mid-air” catch as induced by a High front guide roller, leads to poor technique and a flawed replication of true paddling. A High front catch roller also requires a short shaft to be used, so as not to become entangled in the return ropes. This too then distorts any good replication of true paddling technique. The levers of a long shaft are not just desired, but rather required for correct paddling technique. Who wants to learn poor technique- forced to do so by mechanical deficiencies.?

- The internal fan and blade arrangement adjusted to minimize material flex – thereby giving a more resistive, stiffer, and robust flywheel.
- Greater variation and more effective flywheel vent adjustments, leading to a greater **range** of resistance.
- Non-extended flywheel, supported, located, and fixed to the Monocoque frame preventing lateral flywheel torque.
- Shorter overall machine length – but with **improved** technical performance.

### Top 10 Technical Benefits of Xeon.

1. Correct placement of front guide roller height with correct rope exit angle: QED.
2. Catch roller located **behind** the guide roller – provides superior Immediate and instantaneous [not incremental] “Catch”.
3. Monocoque rigid Frame - no vertical or horizontal flex or torque.
4. Flywheel mounted directly to Frame, not extended forward – thereby, no lateral torque, induced by alternate side paddling.
5. Short, supported rope runs within the frame - reducing rope oscillation allowing higher frequency paddling.
6. New Monocoque flywheel fan construction – using stiffer plastics for blades and backers; all produced in one single homogenous casting. - Less distortion.
7. Ability to use correct and selectable shaft length; not governed by limiting mechanics. The result - full un-impeded paddling rotation.
8. Shorter dimensional machine length but incorporating perfect functional mechanics.
9. Original adjustable Nelo Seat and pull bar for familiar paddling comfort.
10. Easy adjust footrest.

All the above and with “Smart ergometer” upgradable Bluetooth virtual and programable paddling.

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