



Catamaran Owner's Manual

Assembly · Floor Installation · Inflation
Outboard Trim & Cavitation · Care & Repair

FIVE INDEPENDENT AIR CHAMBERS

4 hull tubes (port, starboard, bow safety, transom) plus 1 drop-stitch high-pressure floor. Each chamber is isolated — a single puncture will not compromise the vessel.

APPLICABLE MODELS

Viper 330 · Viper 365 · Viper 400 · Viper Sport 400
WaveRunner 380 S3 · AeroCat 330 / 360 / 380

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VERSION 8.0 · Read fully before first use

WELCOME ABOARD · SECTION 1

Your Aerowave Catamaran

Thank you for choosing an Aerowave inflatable catamaran. Every hull in the Viper, WaveRunner and AeroCat range is built from German VALMEX® drop-stitch and PVC-coated fabric, hand-assembled, pressure-tested and certified for commercial marine use. This manual covers correct assembly, floor installation, inflation pressures, outboard trim, daily operation, post-use care and field repair. Read it in full before launching for the first time.

Vessel at a glance

Hull construction	Twin-tube catamaran, high-frequency welded seams, VALMEX® 7321 PVC-coated fabric (Viper / WaveRunner) or VALMEX® 0.9 mm (AeroCat). Hand-built in dedicated catamaran facility.
Air chambers	Four (4) independent airtight hull chambers — port tube, starboard tube, bow safety chamber, transom chamber — plus one (1) drop-stitch high-pressure floor.
Floor	Drop-stitch high-pressure inflatable deck, secured beneath aluminium retaining brackets on the transom (see Section 3).
Maximum operating pressure	Hull tubes: 3.5 PSI (0.25 bar) · Drop-stitch floor: 8–10 PSI maximum · Keel: 3.5 PSI
Relief valves	Factory-set automatic overpressure valves on each tube. Do not adjust.
Fittings	Stainless D-rings, lifelines, grab handles, stainless transom plate, drainage scupper.
Outboard shaft length	All Aerowave catamarans are engineered for SHORT-SHAFT outboards. Transom height matches CE / ISO short-shaft specification. See Section 6 before fitting an engine.

Before you start

- Unroll the hull on clean, flat ground free of sharp objects, hot bitumen and grit.
- Check the carton inventory: hull, drop-stitch floor, seat bench(es), oars (where supplied), high-pressure pump & gauge, repair kit, carry bag.
- Confirm the supplied aluminium floor brackets on the inside of the transom are fitted and undamaged. These brackets are the most important fitting on the boat — they lock the floor in place.
- Have the manual high-pressure pump and gauge within reach. An accurate pressure gauge is mandatory — do not inflate by feel.

CRITICAL · SECTION 3

Installing the Drop-Stitch Floor

Correct floor installation is the single most important step in assembling your Aerowave catamaran. The drop-stitch floor must sit underneath the aluminium retaining brackets at the rear of the boat, against the inside of the transom. These brackets stop the floor from sliding fore-and-aft under load.

WARNING

Improper floor placement voids warranty and creates a drowning hazard. Read this section twice.

Step-by-step

- 01 Inflate the hull tubes to roughly half pressure**

Approximately 1.5 PSI in each of the four chambers. The tubes should hold their shape but still be soft enough to lift the floor in beneath them. Do not inflate fully yet.
- 02 Lay the deflated drop-stitch floor flat inside the boat**

Bow-end first. Centre it between the two hulls with the valve facing up and toward the stern.
- 03 Slide the rear edge of the floor UNDER the aluminium transom brackets**

There are two brackets fixed to the inside face of the transom (one port, one starboard). The rear edge of the deflated floor must sit cleanly beneath both brackets, hard against the transom.
- 04 Confirm both rear corners are locked beneath the brackets**

Run a finger along the bracket — you should feel the floor fabric continuously underneath. If a corner pops out, deflate the hull tubes slightly and reseal.
- 05 Begin inflating the floor to 8 PSI**

Use the manual high-pressure pump with the supplied gauge. Inflate slowly and evenly. Stop at 8 PSI and check the brackets again.
- 06 Top up to 10 PSI maximum**

Once 8 PSI is confirmed and the brackets are still capturing the rear edge, continue inflating in short bursts until the gauge reads 10 PSI maximum. Close the valve and fit the dust cap. Never exceed 10 PSI.

ASSEMBLY · ENGINE · ON-WATER · SECTION 4

Inflation, Engine & Operation

Inflation sequence (full assembly)

01 Hull tubes — half pressure

Inflate all four chambers to ~1.5 PSI in rotation. Inflating one chamber fully before the others will deform the hull.

02 Install floor under transom brackets

Refer to Section 3. Do not skip the bracket check.

03 Floor to 8 PSI

Slow, even strokes with the manual pump. Read the gauge — do not inflate by feel.

04 Floor to 10 PSI maximum

Top up in short bursts. Close the valve, fit dust cap.

05 Hull tubes to 3.5 PSI

Working bow → stern, bring each tube to the marked operating pressure. The pressure-relief valves will vent any excess automatically.

06 Fit seat, sun-top

Drop the seat bench(es) into the supplied clips, fit the Bimini / sun-top if supplied.

Pressure summary

Component	Pressure	Notes
Hull tubes (x4)	3.5 PSI max · 0.25 bar	Relief valves auto-vent excess
Drop-stitch floor	8 PSI → 10 PSI maximum · 0.69 bar	Must be under transom brackets before inflation
Inflation order	Tubes half → floor under brackets → floor 8 → 10 PSI → Release caps	30 min in sun

On-water operation

- Every occupant must wear a correctly-fitted PFD (life jacket).
- Distribute weight evenly fore-and-aft. Avoid loading more than the rated passenger capacity.
- Monitor wind, tide and wave height. Reduce speed in chop. The catamaran hull cuts waves but sharp turns at speed can cause roll-over.

- If the floor feels soft underfoot while on the water, head to shore immediately and re-inflate.
- After crossing a wake, the floor may flex slightly — this is normal. It does not tighten or harden; the drop-stitch core absorbs the load.

AFTER USE · STORAGE · REPAIR · SECTION 5

Care, Storage & Field Repair

Pack-down sequence

01 Rinse the boat with fresh water

Use a soft brush and pH-neutral marine wash. Pay attention to the transom corners, under the floor and around all D-rings.

02 Allow the hull to dry completely

Stand the boat on its side for 30 minutes. Trapped moisture causes mould and accelerates fabric wear.

03 Deflate the floor first

Open the valve, depress the spring core, allow the floor to fully deflate. Remove from beneath the transom brackets.

04 Deflate the hull tubes

Open all four valves simultaneously to allow even deflation. A 12 V pump on reverse speeds this up.

05 Fold the hull bow-to-stern

Fold both gunwales inward toward the centreline, then roll from the stern forward toward the bow. The transom should end up on the outside of the roll.

06 Pack into the carry bag

Place the seat bench, pump and repair kit on top. Do not stack heavy gear on the rolled hull during storage.

Storage

- Store dry, out of direct sunlight, between 5 °C and 35 °C.
- Do not store with the floor under full pressure. For long-term storage, deflate to ~50 %.
- Keep clear of rodents and household chemicals (petrol, solvents, bleach, insect repellent containing DEET).
- Inspect the hull annually: seams, D-rings, valves and the aluminium transom brackets.

Field repair · punctures < 12.7 mm

- Clean & dry the damaged area. Both the hull surface and the patch must be free of grit, oil and moisture. Deflate the affected chamber.
- Cut a circular patch — minimum 76 mm (3 inch) diameter from the supplied patch material. Round corners — never square.
- Apply three thin coats of adhesive to both the hull and the patch. Wait 5 minutes between coats.
- Wait 10–15 minutes, then press the patch on. Roll firmly with a hard cylindrical object (a smooth bottle works).
- Leave 24 hours before re-inflating. For larger damage, contact Easy Inflatables for a factory repair quote.

NEW · CRITICAL · SECTION 6

Outboard Trim, the Trim Pin & Cavitation

More first-time owners report a problem with motor performance than any other single issue — and 9 times out of 10 the cause is the same: the outboard is trimmed too far OUT (tilted up), the prop is too close to the surface, and the motor cavitates. It feels like the engine has lost power, the bow lifts, the prop screams and the boat will not get on the plane. The fix is mechanical, free, and takes 60 seconds.

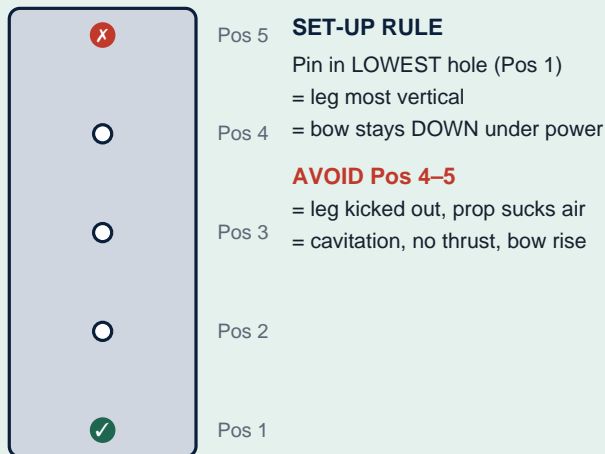
WARNING

All Aerowave catamaran transoms are engineered for **SHORT-SHAFT** outboards. The transom height matches CE / ISO short-shaft specification across the entire range. **Do NOT fit a long-shaft engine — the prop will sit too deep, the cavitation plate will drag, and you will lose 30–40% of available thrust.**

6.1 · The Trim Pin

Every tiller-steered outboard has a **trim pin** — a long stainless pin (sometimes called a tilt pin or trim rod) that runs horizontally through the tilt-bracket of the outboard, just behind the transom clamps. The position of this pin sets the angle of the leg relative to the transom. There are usually **5 pin holes** stacked vertically. Hole 1 (lowest) holds the leg most vertical. Hole 5 (highest) kicks the leg out and back.

TRIM PIN POSITIONS — outboard tilt bracket (side view)



Set-up rule for a brand-new motor on a brand-new boat


- Pull the trim pin out completely (squeeze the spring clip on one end).
- **Insert the pin into the LOWEST hole (Pos 1)** — closest to the transom. This holds the leg as vertical as possible.
- Re-fit the spring clip. Confirm the pin is fully through both bracket plates.
- Launch the boat with a single person aboard. Run up to half throttle in calm water. If the bow porpoises or the boat will not plane, move the pin **UP** one hole (Pos 2) and re-test. Most Aerowave / short-shaft combinations run best at Pos 1 or Pos 2.

■ Never start in Pos 4 or Pos 5. A new owner who launches with the pin in the top hole will almost certainly cavitate (see 6.3).


6.2 · Hydrofoil vs. Permatrim

Once the trim pin is set correctly, some owners want extra bow-lift control — especially when carrying passengers or gear. There are two common after-market fixes that bolt directly to the cavitation plate of the outboard:


HYDROFOIL vs PERMATRIM — top-down view of cavitation plate



Stock cavitation plate
Small area — less lift



Hydrofoil (AUD \$80–\$150)
Bolt-on plastic wings — DIY fix



Permatrim (AUD \$200–\$350)
Solid alloy — best lift & stability

Hydrofoil (cheaper option)	Two plastic wings (Permatrim-style clones, Stingray, Doel-Fin etc.) that bolt to the top and underside of your existing cavitation plate. Typical cost AUD \$80–\$150. Easy DIY install with two stainless bolts. Reduces bow-rise on hole-shot, helps the boat get up on the plane faster, and noticeably reduces cavitation when turning.
Permatrim (premium option)	A solid alloy plate that replaces / extends the stock cavitation plate. Much larger surface area. Typical cost AUD \$200–\$350. Stronger lift, better high-speed stability, will not flex or crack like the plastic wings under heavy use.
Either way	Set the trim pin FIRST (Section 6.1). A hydrofoil or Permatrim does not fix a wrongly-set trim pin — it amplifies whatever trim angle you have.

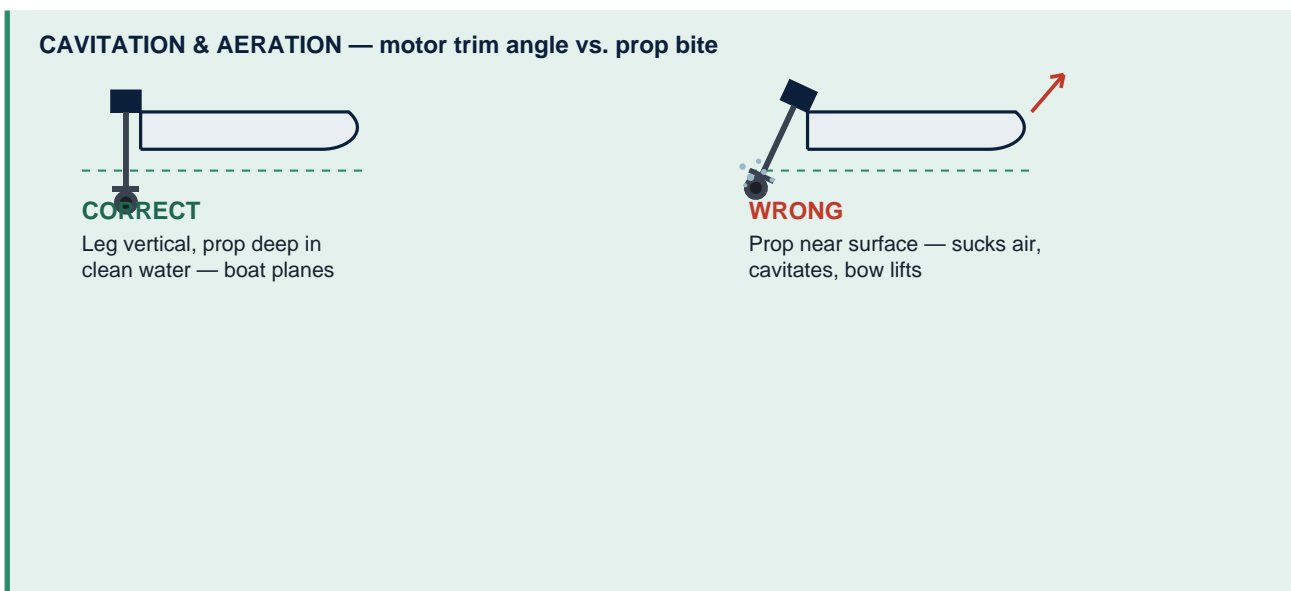
SECTION 6 · CONTINUED

6.3 - Cavitation & Aeration

Cavitation is what happens when the propeller spins so fast in the water that the pressure on the back of the prop blades drops below the vapour pressure of water, and the water literally *boils* into vapour bubbles. Those bubbles collapse against the blade and the prop loses thrust.

Aeration (also called ventilation) is what happens when the prop sucks AIR down from the surface instead of biting into clean water. The result feels identical to cavitation — engine RPM jumps, thrust collapses, the boat will not plane — but the cause is different: the prop is too close to the surface.

On a small inflatable catamaran with a short-shaft outboard, the problem is almost always **aeration caused by trimming the motor too far out**. The trim pin is set too high (Pos 4 or 5), the leg kicks out, the prop rises toward the surface, and as soon as you open the throttle the prop draws air down from behind the transom.



What it feels like on the water

- Engine RPM suddenly screams up — but the boat does not accelerate.
- The bow lifts dramatically and the stern squats. Boat will not get on the plane.
- The prop makes a high-pitched whining or whooshing sound.
- Backing off the throttle restores thrust — only because you let the prop re-bite.

How to fix it — in this order

- **Step 1.** Stop, idle, tilt the engine fully DOWN. Move the trim pin to the LOWEST hole (Pos 1). This is the single most common fix.
- **Step 2.** Re-distribute weight forward. Move passengers or gear one seat forward to keep the bow down.
- **Step 3.** If cavitation persists at Pos 1 with weight forward, fit a hydrofoil or Permatrim (Section 6.2).

- **Step 4.** Check the prop. A damaged or wrong-pitch prop will cavitate even with perfect trim — talk to your outboard dealer about a correctly-pitched aluminium or stainless replacement.

What it is NOT

- It is NOT a hull problem. Every Aerowave catamaran transom is built to CE / ISO short-shaft specification — the transom height is correct.
- It is NOT a warranty issue. Aeration from incorrect trim is operator setup, not a manufacturing defect.
- It is NOT solved by going faster. Opening the throttle further when the prop is already cavitating makes the problem worse and can damage the gearcase.

WARNING

If you are unsure, call us before launching. 9 out of 10 'my new motor doesn't work' calls are fixed by moving the trim pin to the lowest hole. +61 2 4335 1603 · sales@easyinflatables.com.au

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