CARBON CAT

T9 - T10 - T11

Owner’s Manual

Revision 6, 6/14/2024

Contents

Owner’s Manual and Reference

READ THIS MANUAL
CAREFULLY

Introduction

Hello New Aspen Carbon Cat Owner,

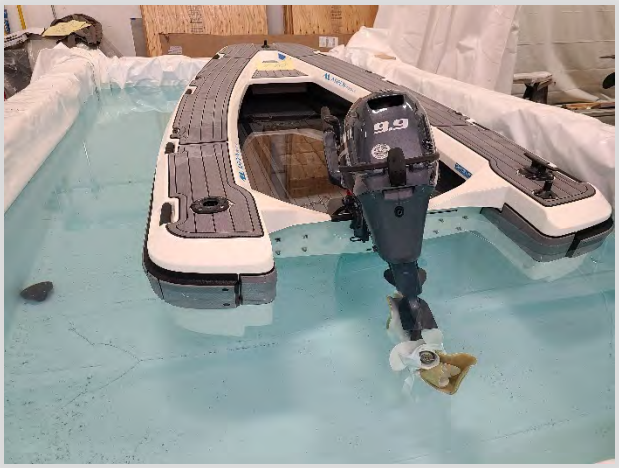
The boat you have just purchased is a special blend of very detailed design, high tech engineering, and space age materials. The genesis of the Carbon Cats started with many years of using inflatable or RIB inflatables and being frustrated with their leaks, longevity, sun deterioration, and capabilities in a chop. They were also frustrating while carrying and storing the things a tender normally packs onboard. I was dissatisfied with their performance on nearly every level. I wanted the "magical boat" that could match the weight of an inflatable but give me the performance of a much larger boat! I wanted a "real" boat that could last many years.

Your new Aspen Carbon Cat starts with a **patent pending hull** form that is tailored to the work a tender does. Tenders have people stepping on and off (must be stable). It runs from cove to cove and at times island to island in a chop. The ride must be soft and dry (my wife hates salt spray). I take lots of things along in my tender: crab pots, snorkel gear, fuel cans, groceries, and fishing gear; it functions as a speedy pickup truck for my larger boat. Your Carbon Cat has room under the deck for so many things. The full deep forward hull section splits the waves open and then folds them back into a catamaran hull shape that gives it a soft yet very stable ride with significantly lower power requirements than an inflatable.

The design details also include **3 watertight compartments**, one for each cat sponson and a third under the level floor. In use, these compartments act like a double bottom hull in severe impacts keeping the hull watertight. Interestingly the US Coast Guard does not allow these watertight compartments to be counted in its level flotation testing or stability testing. I think their concern has been inconsistent build quality of some builders. So, in addition to the watertight compartments your Carbon Cat also has 3" thick closed cell EVA foam (same as used in life jackets) bonded to the inside hulls.

This combined with EVA motor flotation blocks at each stern and the Sea Deck foam fender material allowed the **Carbon Cat to meet all US Coast Guard flotation requirements** with all three watertight compartments open and filled with water. These tests were performed in Aspen's test tank with multiple concrete blocks. You might ask why didn't you foam fill the hull's lower compartments?

USCG Floatation Testing w/ Concrete



USCG Floatation Testing w/ Concrete

If you have owned a small tender for several years, you may have noted that the boat gets heavier and heavier every season. What is happening? The USCG approved urethane pour foam is slowly absorbing water. It is supposed to be closed cell foam and most of it is, but a portion always has open cells, and this allows water intrusion. If you expect a long-lived boat, airtight chambers that can be inspected and drained if needed are more advantageous.

The final component to a long-lived tender is **a combination of materials and engineering design** to give you exceptional strength while also being exceptionally tough. Some competitors talk a lot about carbon fiber, and it's true that carbon fiber is exceptionally strong. Some fibers can reach 180,000 pounds per square inch in tensile strength. But having very strong fibers is not the whole story to high strength. Carbon fiber is very strong in tensile but far weaker in compression. It is also very important to understand that to build a high strength beam (IE Hull) when you double its thickness it has an 8-fold increase in strength. To get the strengths Aspen wanted for the carbon cat we use a mix of E-glass fibers (strong in compression), carbon fibers (strong in tensile) Divinycell core sections (for thickness gain) to build a composite structure that can take the bouncing, banging, and typical impacts a user is going to have. Our goal was a tough boat, not a brittle boat. The design has 32 3D computer cut Divinycell or Coosa coring components and uses the same vinyl ester resins and Armorcote gel coat as an Aspen Catamaran.

This may be more info than you hoped for, but understanding the design should give you confidence when you are out on the water.

Smooth Cruising,

Larry Graf

CEO / Chief Engineer

Aspen Power Catamarans

Specifications

Model	T9	T10	T11
Length	9’2”	10’2”	11’2”
Beam	5’4”	5’4”	5’4”
Hull Weight	126	139	151
Total Weight	132	147	187
Horsepower Rating	6 / 9.9	6 / 9.9	6 / 9.9 / 15 / 20

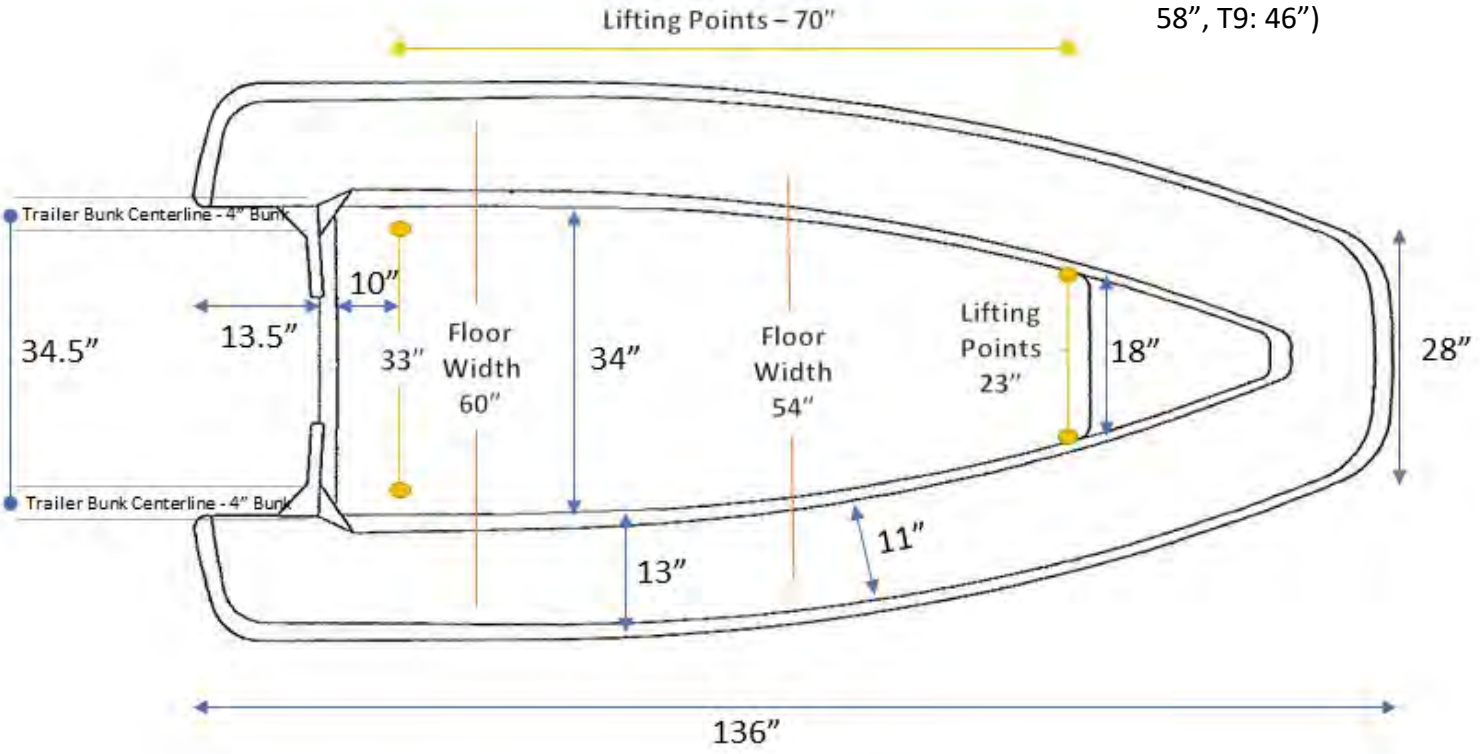
*Max Engine Weight 120 lbs.

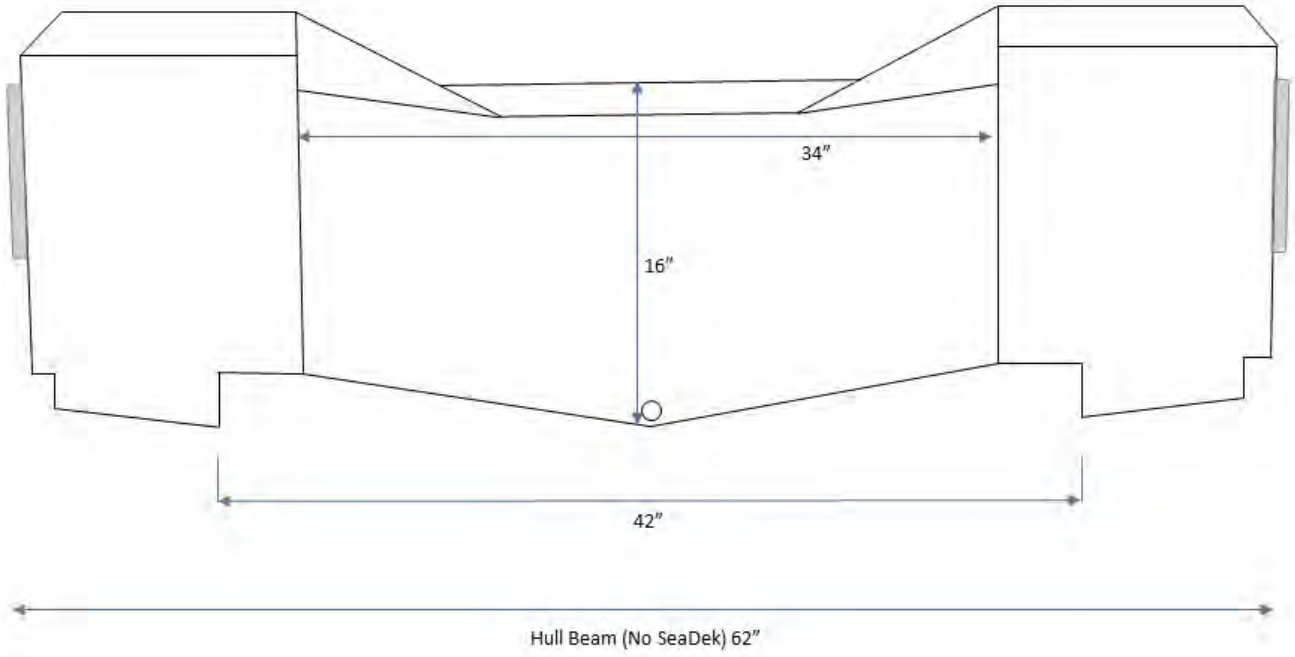
Standard Equipment

- Carbon Fiber and E-glass Composite Construction
- Premium Vinyl Ester Resin
- Divinycell Foam Coring for Added Strength
- CCP ArmorCote ISO NPG Gel Coat, UV Stabilized
- White Hull
- SeaDek HD Gunwale Foam Bumper
- SeaDek Seating
- Removable Foam Block Seating
- Keel Guard UHMW Extrusion
- 7 or 9 Lifting Handles (depending on model length)
- Two 5’ Aluminum Oars
- Rail Blaza LED Navigation Light Combo, Battery Powered
- Composite Mounting Pad on Transom
- Two Burnewiin Cleats (FC5120)
- Three Burnewiin Deck Mounts (GM400)

General Dimensions

(Lifting points on the T10: 58”, T9: 46”)





Hull Identification Number (HIN)

Where is my HIN?

Your **HIN** can be found on the starboard side of the transom, facing forward looking at the transom the top right. Carbon Cat HINs begin with **US - APE** and conclude with the last two digits as the model year.

SAFETY CONSIDERATIONS

A captain's choices and preparation are the cornerstone of a safe day on the water. His/her decisions will affect all on board.

Read and understand this Owner's Manual before leaving shore; as the captain you are responsible. You are also responsible for all on board knowing the plan, where their safety gear is and how to use it.

While wearing a life vest may not be required in your state; as captain you set the rules. A life vest is just smart practice on a small lightweight tender where unexpected events can take place very quickly.

Speed

When you consider high speed turns in a 9' tender moving at 20 mph the boat is covering 1,760 feet per minute, yet the turning center (boat center) is only 4.5 feet forward of the engine. Never make abrupt steering corrections – smooth gentile steering motions are always the safest. Abrupt turns will cause high side G loads and could throw you or passengers overboard. It also puts a rotational side load on the motors clamping bracket. If high G turns are a possibility, you must through-bolt your engine to the transom. You also must stay low and centered in the boat.

Securing the Engine

The Carbon Cat transom is designed to hold the various engines available. However, you must ensure that the engine's round metal clamp pads on the inside of the transom are below and well inside the transom's molded clamping surface. If you shim the motor up or purchase a non-typical engine the clamping pad could be above or on the edge. This is very unsafe; the motor could fall off in use even if the clamp pads are tight. Take clamping the engine on seriously.

Capacity Rating

⚠ DO NOT EXCEED MAXIMUM CAPACITY FOR PERSONS, GEAR, AND

Your Aspen Carbon Cat has a USCG capacity label affixed to the port inside transom showing people and gear capacity as well as engine capacity and weight. You must follow these requirements. Overloading and overpowering are common in boating accidents.

Regardless of number of persons on board, total weight of persons and equipment must not exceed maximum recommended load. Avoid standing or placing heavy weights high up.

Always load craft carefully and distribute loads appropriately to maintain design trim (level).

Weight Distribution

Always consider where your gear and passengers are located. The tender should sit level side to side at rest. It should also be level bow to stern. In higher seas you will need to adjust your passenger's position for trim and speed to reduce spray and improve handling. Often this will mean moving some weight aft to allow the bow to float through larger seas.

Engine Setup

Read the manual and check to see if your Carbon Cat is set to specifications.

The engine height must be set tight to the transom. The *tiller handle steering friction* should be set not too loose, not too tight (it should move smoothly yet still hold direction should your hand bounce off for a moment).

Engine trim pin is typically in the second hole from the transom. Trimming deeper (1st pin location) can improve time to plane with larger loads but also can cause bow steering and spray. Trimmed too far out will cause poor handling and porpoising (sustained, repetitive motion of a bow up and down out of the water).

The fuel tank should be placed centerline, forward of the cross beam near the bow. Make sure your fuel tank vent is open when attempting to start and run the engine.

Boat Setup

While setting up your boat, the most important item is engine placement. *Center the engine* on the transom and the engine clamp bracket resting on the transom. The clamping handles must be tight, nearly as tight as you are physically able to turn without a wrench. For motors 15 HP and above, you must also install 2 through bolts through the motors mounting bracket and transom to ensure it cannot move during hard turns. Use clear silicon to seal any water out of the transom and boat.

Propeller selection will vary from brand to brand and horsepower ratings. In our testing with a Yamaha 9.9 with an accessory tachometer to check RPM we have found 1-inch lower pitch than the stock prop allows for faster planing times and better top speeds. On the Yamaha 15 we found the stock prop gave good performance in the desired RPM range. Our testing with a Suzuki 20 HP showed almost identical performance to the Yamaha 15 in top speed and time to plane with its stock prop. If you're mostly interested in carrying 3-4 people on plane, and top speed is not critical, a 1" lower pitch prop is likely best.

Motor Trim

In our testing, we have found that the second pin hole from the transom has given us good time to plane performance and did not cause any bow-steering or spray at high speeds. We also tested it with the pin in the closest hole to the transom and found it planed out faster and was able to put 4 adults on plane faster but once on plane and running at Wide Open Throttle (WOT), we had some spray from the bow. This spray could be eliminated by not running at WOT. So, if you normally have more passengers, you may find this pin position helpful.

Our testing showed the Doel-fin equipped boats plane faster and cavitate less while coming to plane. The Doel-fins do slow top speed by about ½ mph. But we felt the other advantages outweighed the speed performance. We like the Doel-fins because they have a true foil shape to the blade, this allows efficient lift over a larger attack angle and the rubber material does not break the engine's cavitation plate on heavy impacts.

DURING MOTOR INSTALLATION ON THE WATER, ALWAYS TIE A SAFETY ROPE TO YOUR MOTOR AND SECURE TO THE CLAMPING PAD

Attaching Hardware

The Carbon Cat is a full composite boat, so nearly 100% of the surfaces have a Divinycell core. Accordingly, it is important to specify prior to production any strong points needed for davits or other hardware so Aspen can install higher density core in that area. If you have additional items to install often you will need a backer to spread the load out. All holes must be sealed watertight to keep moisture out of the composite. We typically bed permanent hardware in urethane adhesive for strength and longevity.

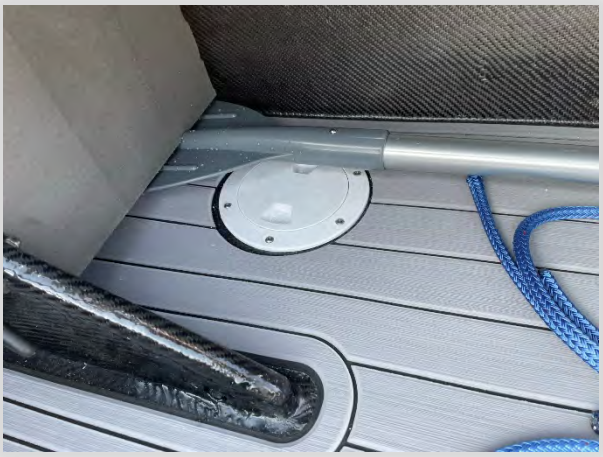
Oar Set Up

The aluminum oars supplied with your Carbon Cat are from West Marine. They are light, adjustable, and easy to stow. They are also easy to get replacements for nationwide. The oars and locks work well, see the photo for our recommendation as to best setup.

Typical End to Joint Measurements

You may find some adjustment to fit your body size is needed. Also, if you row from the bow position the standard oar set up will overlap at your hands. Some rowers like this as it gives them the maximum leverage. Others just cannot get the hang of rowing with an overlap and are better to adjust this out. The oars and locks are tough, but if you pull with all of your “might” you can likely break both the locks and the oar itself. Smooth fluid motion is the best.

Be sure you have the starboard oar in the starboard side and vice versa for port, the thick portion of the oar lock goes on the bow side, so you pull into the thick section of the oar lock. If I am rowing in the center position, I like the engine down/centered with the motor in neutral. If I am rowing from the bow, I often have the motor up. When storing the oars, I like the blade vertical and tucked on the outside edge of the motor foam flotation block at the stern.



This gets them out of the way and clears the floor for other items. It is also a good idea to spray the oars off with fresh water after use to keep the aluminum from deteriorating.

Battery Location

From the factory, the battery box is installed on the port side forward of the foam flotation block. The box is through-bolted into Coosa. We use a 12V, 14 AH AGM battery when required.

Battery Mounted to 16” Coosa Pad, in front of deck plate.

Use Recommendations

When using your Carbon Cat, you have lots of options, the boat is very strong and capable. Personally, I am a bit of a fanatic for running level side to side and trimmed bow to stern level as well. Proper trim allows the hull to work as designed, with the bow splitting the waves and curling them down into the cat tunnel sections. This gives the softest, driest ride over a wide range of conditions. I like speed, but also do not want to run the engine at 5,500 RPMs all day long. After warm-up and initial run to full speed, I back off to about 80% throttle. The typical 3-gallon tank will give you 2 hours at 80% throttle and much longer off plane. I also consider the tender as my last resort, get-home power source for your main ship. At half throttle it uses approximately ½ gallons per hour so about 5 hours pushing, in my case, the bigger Aspen.

Heavy Seas

How much banging will the boat take?

Your Carbon Cat is likely tougher than you, but some common sense is desirable. If you find the boat is airborne you should slow down. If the boat starts to crackle from the impacts, you should likely slow down.

How much weight can I put on the side deck while sitting/walking on it?

The deck was designed for a 250 pound person to step on and off. If you or your passengers weigh more, you should consider spreading the load out with a cushion. Above 300 pounds is not recommended with a standard deck.

The floor is also composite and very strong and includes a vertical stiffener rib on the centerline. It is also designed for 250 pounds of walking load. It might be possible to break it by jumping off a dock with a slamming load. The boats are strong but common sense does apply.

Care of Your Carbon Cat

Washing

Follows the standards of any other boat. If you have waxed the exposed gel coat surfaces (a good idea) you will want to use soap that has wax in it like *Meguiar's Gold* boat soap. The Meguiar's will work on the SeaDek for lifting debris and a light wash. If the SeaDek has more set in stains, it can be washed by liberally spraying "Z Care" directly on it and scrubbing with a bristle hand brush (medium bristle) and rinsing to wash the dirt and stains away.

SeaDek also has their own proprietary cleaner, they suggest letting it sit 3-5 minutes. Importantly, don't put off cleaning any stains, tend to them quickly for easiest results.

Products to avoid on SeaDek:
- o Armor All
- o Simple Green
- o 303 Citrus Boat Cleaner
- o Woody's Wash and Wax
- o Starbrite Mildew

Air Chamber Inspection

The three 4" pies in the floor allow you to inspect and (with a sponge or vacuum) remove any water that has accumulated in the space. A little water is typical as the pie lids do not seal 100% and there may be very slightly porous areas in the deck. In my experience I find 1-2 sponges of water in the cavities every 2-3 weeks. If you have a boat cover this will be very limited. Coating the O-ring on the pie lids prior to install helps them seal better and make future removal easier.

Hull Side Fender Protection. The HD SeaDek is a very tough fender material but if it catches on a nail, bolt, or metal part protruding from a dock it will be damaged. It is best to use small dinghy fenders when working against wood or surfaces with hard edges. A damaged section of the SeaDek can be individually replaced.

Fenders

SS Fender Hangers (Included Standard Spec)

Winter Storage

It is best to empty any moisture from the boat and flip it over for winter storage or cover it to keep the elements out during storage. Any cavities that are left with water could freeze and damage the boat.

SeaDek Damage

SeaDek is wonderful to use to kneel on and to work closely with but it is a foam material nonetheless, and in hot weather it becomes a little more susceptible to damage from sharp objects, deck chairs, and anything that presents a point-load. If you damage it, it is possible to cut a section out with an X-Acto knife and fit a new piece in. The look will not be perfect but if done carefully few will notice. If the surface gets scuffed it is also possible with a small brass brush to re-burnish the surface and hide 90% of the scuff.

Navigation Lights

The Rail Blaza navigation lights are battery powered and we find it best to remove the batteries and spray a corrosion block (BoeShield T-9 or Yamashield) over the metal components when first put in use, and at least annually thereafter. Store them dry in a watertight bag when not in use.

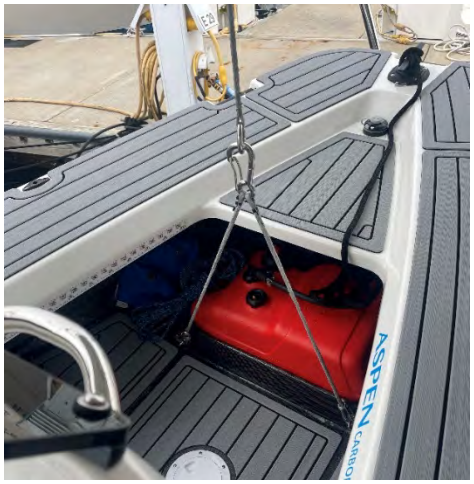
Optional

Lifting Points

The Carbon Cat is built with very strong lifting points at the transom and at the bow. The bridles need to be long enough that the triangle created leaves 60° angles on each side (see photos). Our typical lift lines are 27-29” from the lift holes in the boat to the lift eye on the bridle.

Example of excellent lift bridle angles.

Triangle sides are 27-29” in length.



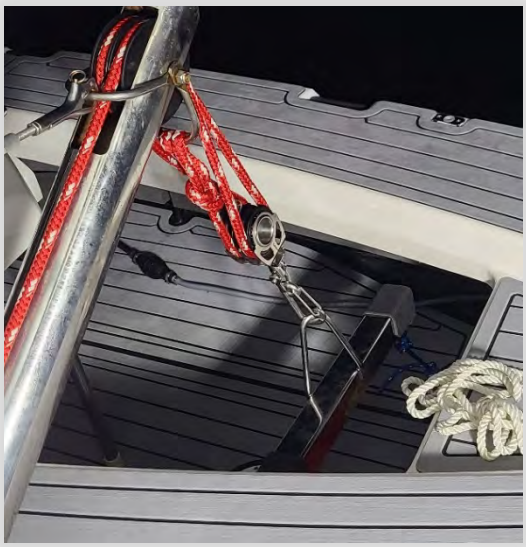
Example of poor bridle angle setup.

This configuration creates a 200-300% increase in lift point loads.

A SS Spreader Bar is the correct solution.

Pictured: Bow T11

SS Spreader Bar Critical for lifts where vertical clearance is tight. Dramatically lowers load on lift points versus flat/short lifting bridle



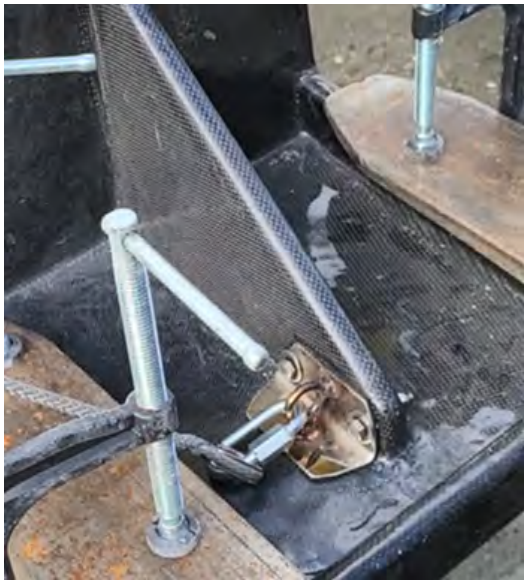
Standard Carbon Cat Lifting Eye Setup

Tested; 705 Pounds to Fracture per pick point, straight pull no bridle angle.

Optional **Magnum Lifting Pad**

Used for all console tenders, and for tenders hanging on davits.

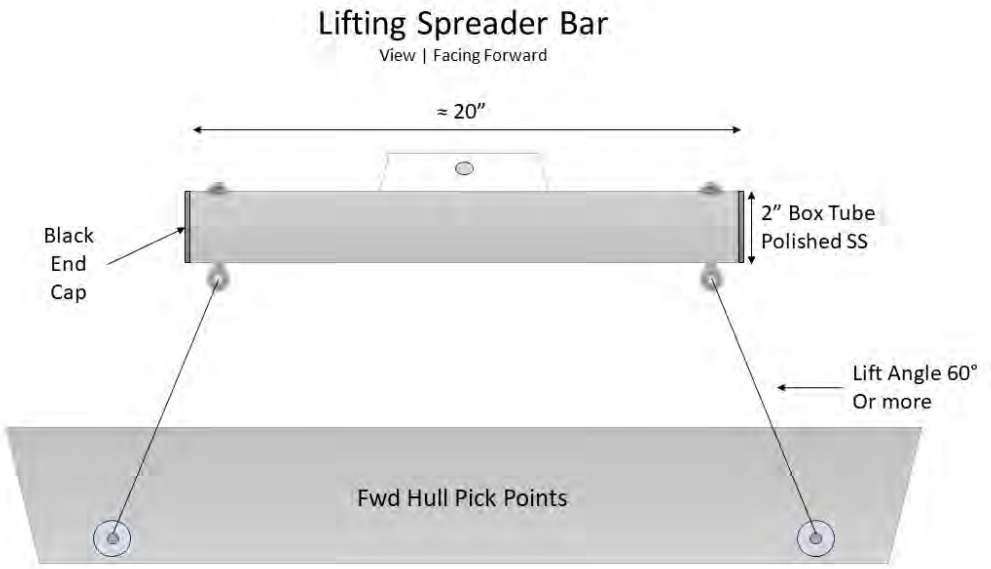
Tested; 1,929 Pounds to Fracture Per Pick Point, Straight Pull.



Note: Design includes Welded SS Bracket w/ eye-bolt through Hull Bottom and Through Bolts in Nevada/forward cross beam

Bottom Side of Magnum Lifting Pad

SS Spreader Bar



Lifting Spreader bar available from Aspen.

2” SS Box Tube, with Seadek endcaps

Tender Davit Capture and Pads

Options:

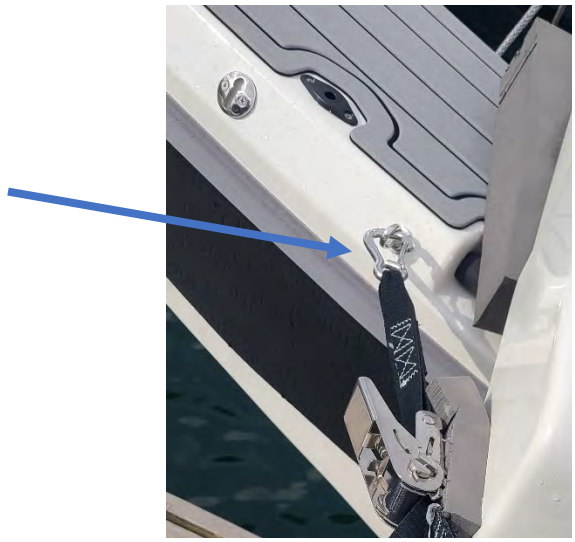
Davit Capture eye bolt option

With 2” x 6” backer plate inside

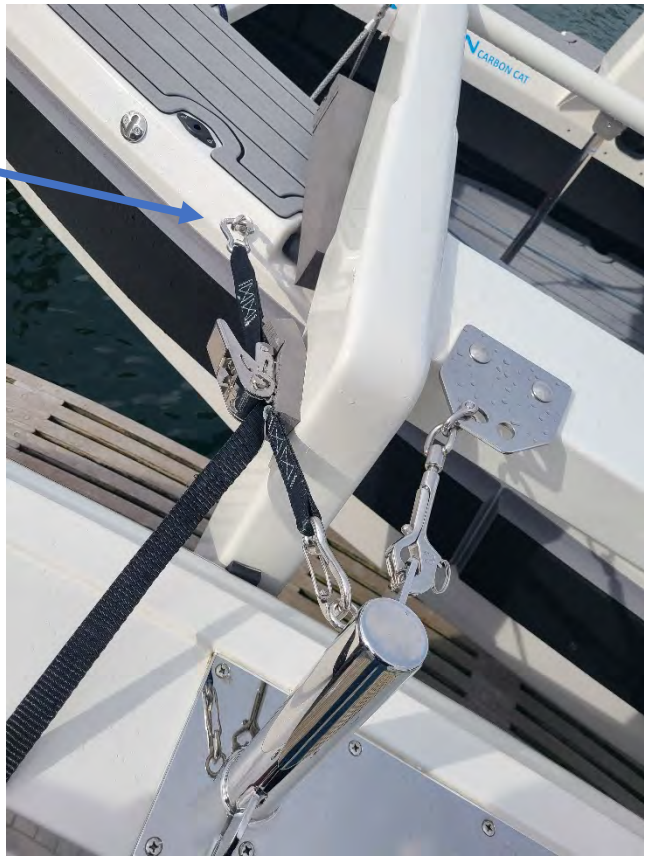
Allows strong point to pull tender into davit cushion.

Note: Requires dedicated strap for bow and stern. Location of eye bolt is determined after tender is hanging from bridles. Goal is a 45° angle to davit for strap. Holds tender into the davit and locates it side-to-side.

Designed for 80 lbs. strapping load.



*T11 Console on Sabre 48 davit system



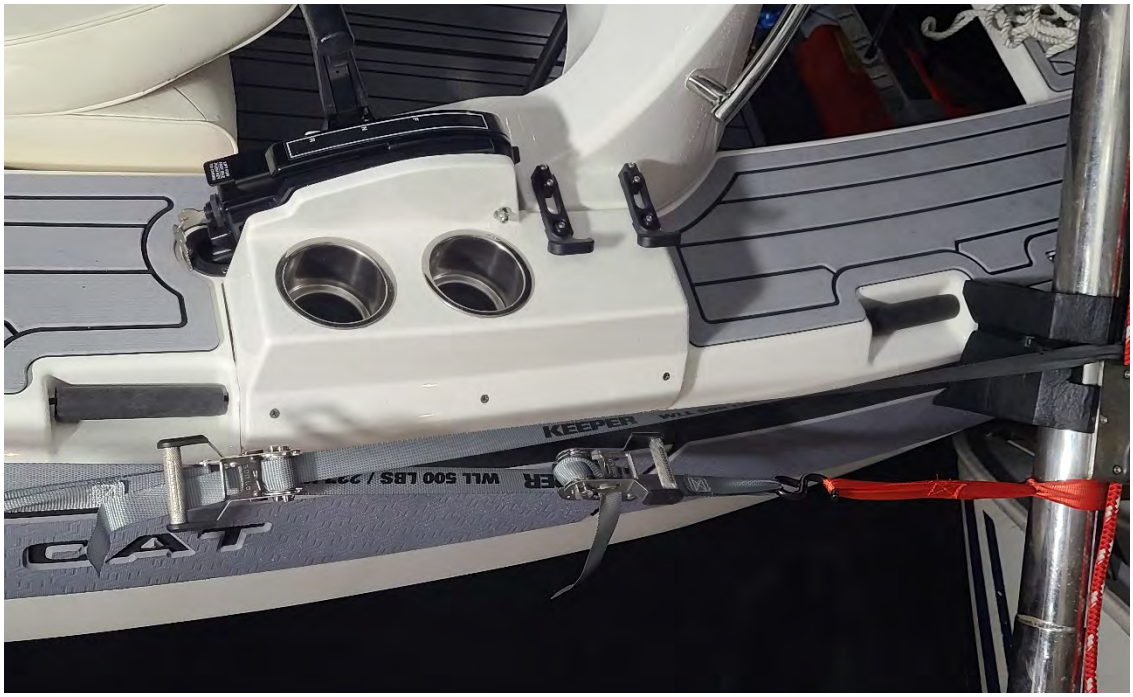
Custom EVA foam davit cushions

Latch onto davit and allows for cushioned tender capture, avoiding any damage to deck. Key to securing tender, pulling the tender into the davit is important, you must stop swinging and hammering effects to avoid putting undue stress on davit and tender.

Lagoon 44 4” Custom Davit Cushion with Deck Side Eye Bolt

T11 Console on Lagoon 44 with side to side X-Strap to deck side eye bolts

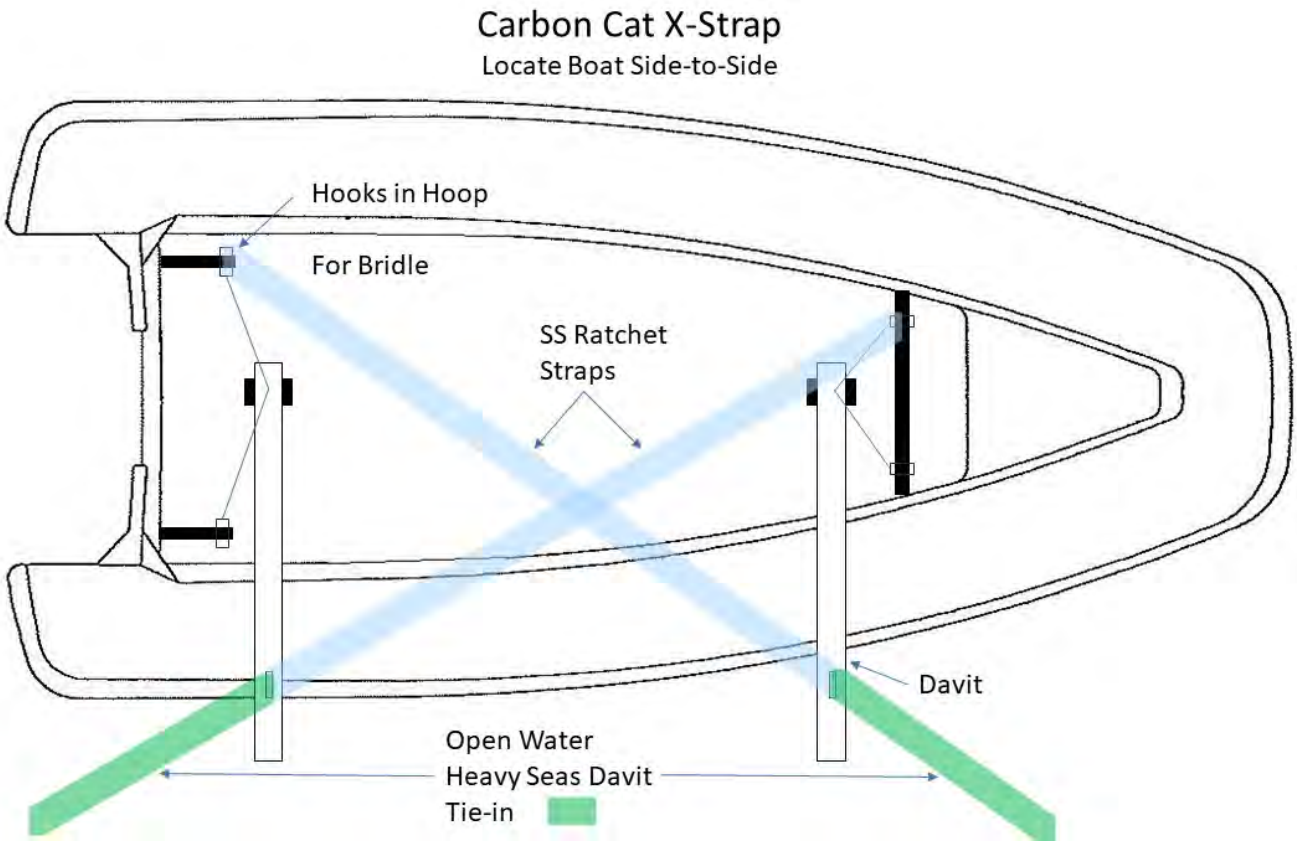
Hold boat in and side to side with two straps



Securing the Carbon Cat Down

The Carbon Cat straps differently than a typical RIB inflatable. On a RIB, when you pull it into the davit the tubes deflect/compress into the boat slightly and create a shape that aids in locating the tender. With a Carbon Cat the sides are harder and do not compress. This means that the boat will need a couple X straps in addition to the two straps pulling it into the davit.

On an Aspen Davit system, the best approach **if you don't have the deck side eye bolts** is to have two *stainless steel* ratchet straps that connect to the lifting loops nearest the davit up over the deck and straight to the davit hook points. Then a second pair of SS ratchet straps that go to the outside lifting points on the tender to the opposite corner of the davit. Basically, the boat is pulled in with the first two ratchet straps and located side to side with the second two straps. In open ocean/sea crossings I have also added two straps from the SS davit unit to the corner vertical posts on the transom rail to lock the whole unit from any movement side to side.



Home Depot now carries SS ratchet straps, but we just found the rubber coated hooks are not stainless – larger marine supply houses do have full SS ratchet straps.

Rainwater Drainage

It is important to have the bow up slightly when stored so the drain plug can be removed, allowing water to drain out at the transom. We have had several owners forget to pull the drain plug and subsequently fold their stainless-steel davits from the rainwater weight in the boat (It will hold 2,800 pounds.) If you forget to put the drain plug in before launching be very careful pulling the boat back up, the davit may not be designed for such a load.

Weaver Leaver Davit System on C90/C100 Aspen

Extendable Vertical post allows proper lift angle. In “up” position, snap-davits locate the tender quick pin allows tube to drop.

For non-Aspen owners we are happy to show build diagrams/photos to aid in your installation.

Trailering

Trailer Make: Karavan

Trailer Model: WCA-1250-46-L

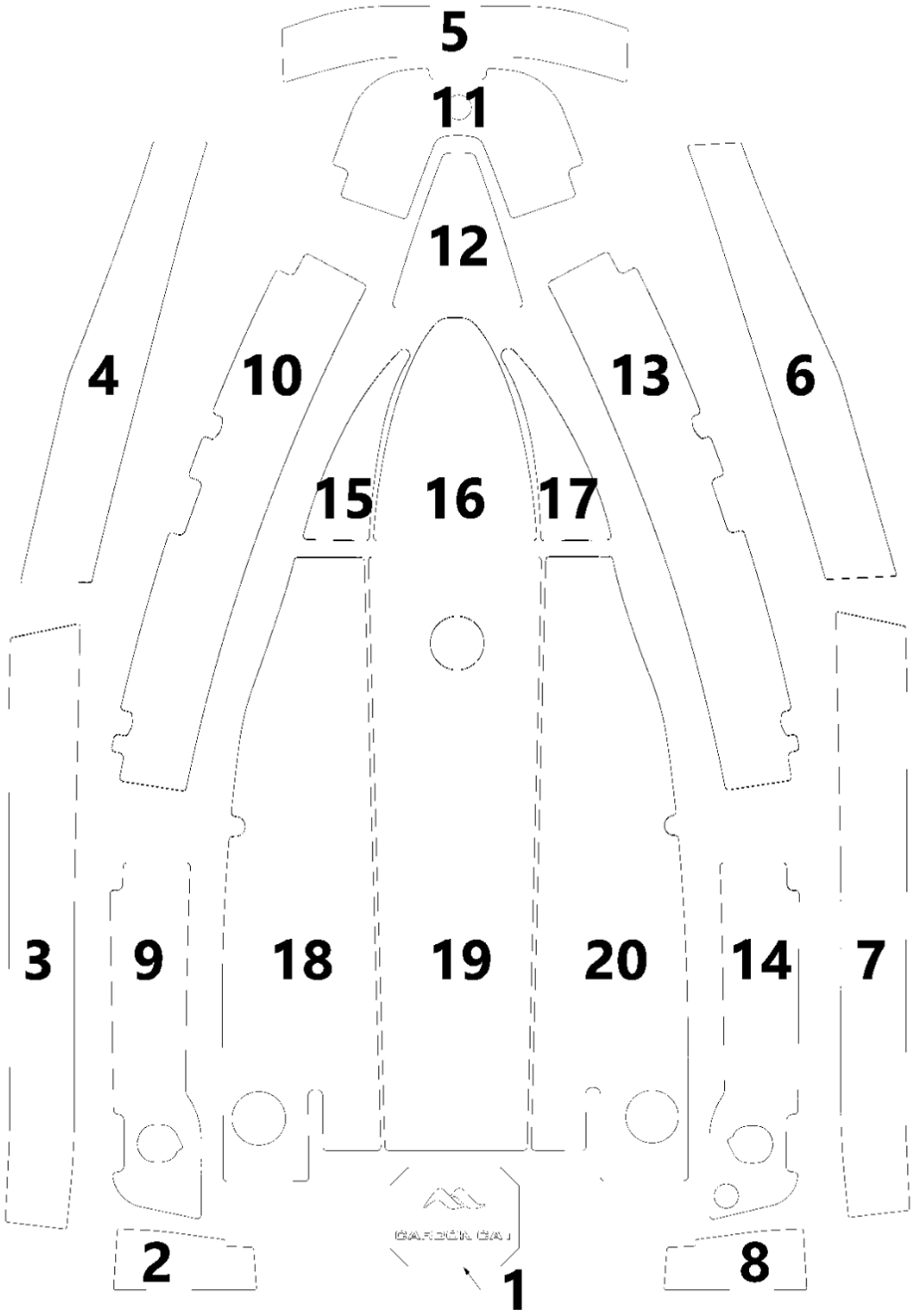
Bunk Measurements:

34” (Centerlines)

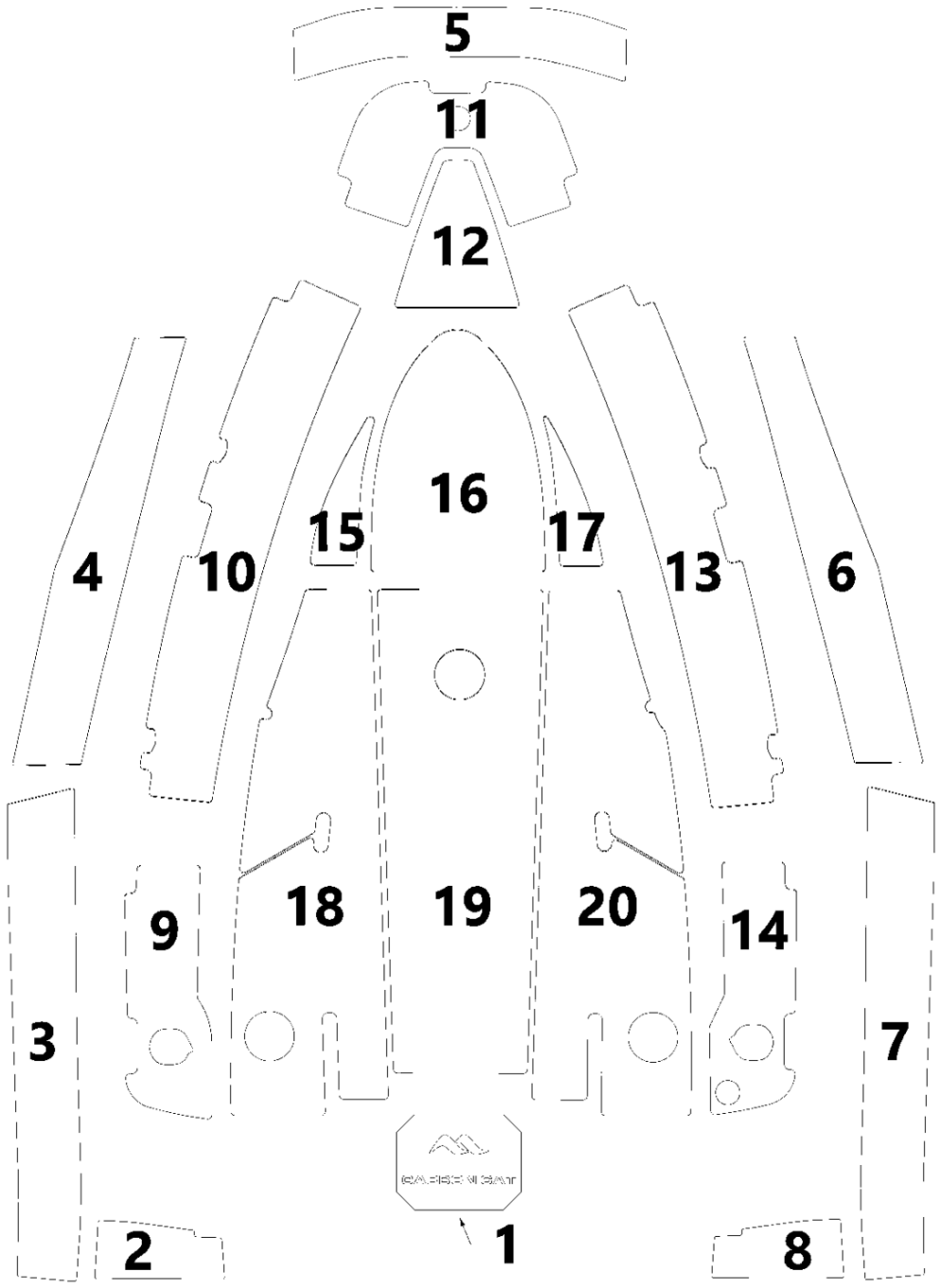
SeaDek Replacement Parts

Reference the Carbon Cat size and the number of replacement part.

11’ Replacement Reference



10’ Replacement Reference



Warranty

CARBON CAT

Consumer Warranty

At Aspen, our goal is to build your new boat with the best materials available from the world's premier vendors. These are installed by expert builders. Each system is fully function-tested in our plant, hull compartments are pressure-tested during factory inspecion prior to delivery.

Basic Agreement

On the issues where we errored, we will take full responsibility and exceed your expectations in every way during your new boat's service. In short, we will be 110% responsible for our work, materials, and equipment; we will also manage a supplier's warranty when possible.

Aspen will cover all parts and labor, but transit expenses are not covered. If the boat is located outside Puget Sound, we will mutually agree to a local service provider for repairs under $1,000, and Aspen will contact and manage the service at our expense. Aspen will provide parts and component freight to the service provider for the first 12 months. In the rare instance the boat needs to return to the factory, the cost of return will be responsibility of the boat owner.

What is Covered:

Hull, Deck, Fiberglass Parts; Structural - **2 Years**

Gel Coat Blistering - **2 Years**

Engine, Transmission; by Vendor: Mercury, Yamaha - **3 Years**

Hardware, Components - **2 Years**

Decking; by Vendor: SeaDek - **Typically 2 Years**

What is Not Covered:

Damage from abuse, impacts, or groundings or commercial use.

Damage of any type when a motor exceeding boat's rated capacity is installed.

Damage to the SeaDek (Decking) from impacts, scrapes, scratches, or UV.

Damage from acid washing gel coat or SeaDek by owner or cleaning companies.

Normal wear and exposure in normal use under normal conditions.

Transport or any expense associated with it being out of service I.E. living expenses, personal transportation.

SeaDek or Gel Coat discoloration for any cause.

Loss while being towed, hung from davit, or while on deck chalks

Transferability: Yes, first year with a $300 service fee.

Effective 4/10/2024

Aspen Power Catamarans - 11656 Knudson Rd. Burlington, WA 98233

Parts List

Material Category	Short Description	Vendor Name	Vendor Part Number	Part Description	QTY	UOM
Commission	Decals: Branding	Aspen	ACC-Decal Set	Aspen Carbon Cat Decal (set of 3)	1	Set
Commission	Decal: Capacity	Aspen	ACC-Capacity Label	T9/T10/T11 Capacity Label	1	Each
Commission	Oars	West Marine Pro	5367289	Aluminum Spoon Blade Adjustable Oar	2	Each
Hardware	Nav Light Mount	T-H Marine	03-4015-11	Rail Blaza StarPort – BLK	1	Each
Hardware	Nav Light Bow	T-H Marine	02-5005-11	Rail Blaza Illuminate IPS Bow Light Red/Green	1	Each
Hardware	Nav Light Stern	T-H Marine	02-5004-11	Rail Blaza Illuminate 360 All Around White	1	Each
Hardware	Nav Light Pole	T-H Marine	02-4067-11	Rail Blaza Extenda Pole	1	Each
Hardware	Transom Drain Plug	Boatwise	PO-PR-02	Drain Plug	1	Each
Hardware	Burnewiin Socket	Burnewiin	GM400	Composite Gunwale Mount for removable cleat	3	Each
Hardware	Burnewiin Cleat	Burnewiin	FC5120	Fender Cleat	2	Each
Hardware	Deck Plate	Fisheries Supply	02227	4" Beckson Deck Plate, White	3	Each
Hardware	Keel Guard	Fisheries Supply	188362	Keel Protector, Black	2'	Foot
Hardware	Lifting Handle Rope	Fisheries Supply	161407	1/4" New England Nylon Rope, Black	32’	Foot
Hardware	Oar Locks	Fisheries Supply	434506	1" Rubber Oar Stopper	2	Each
Hardware	Oar Locks	Fisheries Supply	448754	Gaco Snap-On Oarlock Set	1	Set
Hardware	Lifting Handle Insert	Aspen	193682	PVC Pipe for lifting handles	9	Each
Hardware	Transom Trim	Integrity Marine	R841	Nylon Angle Transom L-Trim, 7/8" x 7/8"- 6' Stick, Black	1	Foot
Hardware	Lifting Handle	McMaster Carr	9282K126	Cushioned Round Grips for lifting handles	7	Each
Hardware	Outboard Mounting	West Marine Pro	SSCL13104	PVC Transom Motor Mounting Pad, Black	1	Each
Hardware	Bow Eye	JY-Marine	B09P7YMG25	1/4" X 2" Shaft Length Bow Eye	1	Each
Upholstery	SeaDek	Aspen	See attached list	SeaDek flooring/deck trails/exterior bumpers	1	Each