# Table of Contents

2. Boat Specifications  
3. Boat Trailer Measurement  
4. Boat Layout  
5. Battery Selector Panel and Wiring  
6. Breaker Panel Schematic  
7. Switch Panel Schematic  
8. Fuel System Layout  
9. Plumbing Diagram  
10. Helm Area  
11. UFLEX Steering System  
12. Ignition Switches, Engine Shut-Off Cord/Lanyard  
13. Plug and Play Wiring  
14. Fuel-Water Separator - Yamaha  
15. Console / Head Area  
16. VSR Battery System  
17. Bilge Access and Explanation  
18. Bilge Pumps  
19. Freshwater Washdown and Shower System  
20. Livewell Operation  
21. Fishbox Pump  
22. Entertainment Center  
23. Trim Tab Maintenance  
24. Optional Lewmar V-700 Windlass  
25. Lewmar V-700 Windlass Troubleshooting Chart  
26. Optional Marine Head With Waste Tank (Type III MSD Waste Management System)  
27. Optional Porta Potti  
28. Vinyl Care and Cleaning  
29. Aluminum Cosmetic Corrosion (Pitting)  
30. Caring for Aluminum  
31. Caring for Stainless Steel  
32. Windshield, Window and Hatch Care Instructions  
33. Gel Coat
Sailfish 275 DC Specifications

STANDARD FEATURES
- Heavy Duty High Performance Trim Tabs w/ Indicators & Auto Retract Feature
- Dot Matrix Non-Skid
- Stainless Steel Marine Grade Hardware
- 17 SS Cup Holders
- Automatic Bilge Pump (1 - 2000 GPH Aft & 750 GPH Forward)
- High Speed Livewell Pickup
- 30 Gallon Livewell w/ LED Lighting (Transom)
- SailTech Composite Full Length Transom
- SailTech Foam Filled Fiberglass Stringer System
- Flush Mount Hinges and Latches & Deck Plates
- In-Floor Ski Locker
- In-Floor Storage Area
- 10 Micron Yamaha Fuel Filter / Water Separator (Yamaha Only)
- SS Thru Hull Fittings
- LED Bow & Stern Navigation Lights
- Exclusive VDS Hull Design (Variable Deadrise Stepped Hull)
- Boarding Ladder (4 Step w/ Grab Handle)
- Heavy Duty Stainless Steel Rub Rail
- Stainless Steel Propellers
- Carbon Fiber & Kevlar® Reinforced Deck & Hull

Bowl
- Insulated Bow Fish Boxes w/ Overboard Drains
- Finished Anchor Locker w/ Anchor Management System
- Built-In Powder Coated Bow Rails
- Bow Block Off Door
- Bow and Backrest Cushions

Cockpit
- 14 Gallon Freshwater Tank w/ Pull Out Transom Shower, Pullout Shower in Head & Faucet at Sink
- Self Bailing Cockpit
- Oversized Bilge Access
- In-Floor Fish Box w/ Advanced Vacuum Pump, Non Macerated
- Raw Water Wash Down
- VSR Battery Charging System
- Gunwale Rod Storage - Port & Starboard
- Powder Coated Walk Thru Windshield w/ Tempered Glass
- Walk Thru Transom w/ Door & Wave Guard Step
- Fiberglass Console Storage

Helm
- Large Dash Area - Capable of Flush Mounting 12" Screen
- Digital Instrumentation
- Hydraulic Steering w/ Tilt Wheel & Knob
- Finished Fiberglass Head - Sink w/ Pull Out Shower, Corian Counter Tops, SS Port Light, Towel Rack, TP Holder & Storage, Mirror, Light, Lockable Head Door and Sea Grass Removable Flooring in Head

Seating
- Deluxe Captains Chair w/ Flip Up Bolster
- Flip Flop Lounge Seat w/ Storage & Cooler
- 58” Flip Up Transom Seating

Cockpit Galley
- Corian Counter Tops
- Corian Sink Filler w/ Cutting Board - Sink w/ Faucet, Storage Center w/ Pull Out Drawers, LED Strip Lighting, 5 SS Cup Holders, Tilt Out Trash Can, 12 Volt DC Accessory Plug

OPTIONS

Electrical Options
- Fish Finder / GPS / Garmin Electronics (Includes Transducer)
- Thru Hull Transducer
- Stereo (Bluetooth Capable, Satellite Ready, AM/FM w/ 4 Speakers)
- Stereo Transom Remote
- Satellite Radio Upgrade
- Upgrade Sound System - Stereo (Bluetooth Capable, Satellite Ready, AM/FM w/ 4 Speakers, Transom Remote, Amp, 10” Sub, Satellite Radio)
- Built-In 3 Bank Battery Charger

Boat Options
- Power Assist Steering (Standard with Twin 200 Verado’s)
- SS Polished Bow Roller w/ SS Scuff Plate
- Windlass w/ SS Polished Bow Roller & SS Scuff Plate (Includes SS Polished Anchor, Line & Chain)
- Shoot Thru Hull Windlass System (Includes SS Polished Anchor, Line & Chain)
- Flip Up Bow Light
- Underwater LED Lighting (3)
- Pull Up Cleats
- Telescoping Ski Tow Bar
- Removable Bow Table
- Additional Table Base (Cockpit)

Engine Options
- Yamaha
  - F300 - Digital
  - Twin F150 - Mechanical
  - Twin F200 - Digital
  - Twin F200 - Mechanical
- Mercury
  - Verado 300 - Digital
  - Twin 150 - Mechanical
  - Twin Verado 200 - Digital

- 12 Volt Stainless Fridge (Replaces Tilt Out Trash Can)
- Removable Propane Grill
- Electric Grill w/ Shore Power
- Bow & Cockpit Covers
- Additional Splashwell Rod Holders (2)
- Radar Arch w/ Rod Holders - Powder Coated (Canvas)
- Hard top w/ Rod Holders - Powder Coated
- Full Hull Color
- Two-Tone Colored Hull Upgrade (White Bottom w/ Colored Hull Sides)
- Lockable In-Floor Rod Storage

Plumbing Options
- Pump Out Porta Potti
- Hard Top Mist System
- Fresh Water Marine Head w/ Holding Tank with Pump Out & Overboard Discharge

Seating Options
- Port Deluxe Captains Chair Exchange - (In Lieu of Flip Flop Seat)
- Bow Filler Cushion
- Port Side Fold Out Seat (48’)
- Upholstered Aft Cooler Seat (125 Qt. Yeti - In Lieu of Fold Down Seat)

Optional Packages
- Entertainment Package - Ski Tow Bar, Removable Bow Table, Stereo with Satellite Radio Upgrade w/ USB Port, LED Underwater Lighting
- Galley Package - 12v Refrigerator, Electric Grill, Shore Power & Built-In Battery Charger for Grill

SPECIFICATIONS

- LOA .......................................................... 26’ 2”
- Length Rigged .......................................... 28’ 2”
- Beam ....................................................... 9’
- Fuel Capacity .......................................... 188 Gallons
- Fresh Water .............................................. 14 Gallons
- Weight .................................................... 7,040 lbs.
- Cockpit Depth Rear .................................... 30’
- Bow Depth .............................................. 38’
- Max Horsepower ...................................... 400
- Draft (Hull Only) ...................................... 18”
- Dead Rise (Multiangle) ................................. 22° - 24°
- Battery Capacity ....................................... 3
- Rod Holders ............................................. 8
- Bridge Clearance with Arch .......................... 8’ 1”
### Sailfish Boat Trailer Measurement Chart

<table>
<thead>
<tr>
<th>Boat Models</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>208 CC</td>
<td>78 in</td>
<td>53 in</td>
<td>28 in</td>
<td>11 in</td>
<td>82 in</td>
<td>218 in</td>
<td>235 in</td>
<td>27 in</td>
</tr>
<tr>
<td>1900 BB</td>
<td>88 in</td>
<td>66 in</td>
<td>37 in</td>
<td>10.5 in</td>
<td>99.5 in</td>
<td>198 in</td>
<td>217 in</td>
<td>24 in</td>
</tr>
<tr>
<td>2100 BB</td>
<td>88 in</td>
<td>66 in</td>
<td>37 in</td>
<td>10.5 in</td>
<td>99.5 in</td>
<td>220 in</td>
<td>240 in</td>
<td>24 in</td>
</tr>
<tr>
<td>220 CC &amp; WAC</td>
<td>87 in</td>
<td>59 in</td>
<td>31 in</td>
<td>14.5 in</td>
<td>102.5 in</td>
<td>216.5 in</td>
<td>243 in</td>
<td>32 in</td>
</tr>
<tr>
<td>240 CC &amp; WAC</td>
<td>92 in</td>
<td>59 in</td>
<td>31 in</td>
<td>15 in</td>
<td>107 in</td>
<td>241 in</td>
<td>272 in</td>
<td>30 in</td>
</tr>
<tr>
<td>270 CC &amp; WAC</td>
<td>94 in</td>
<td>59 in</td>
<td>31 in</td>
<td>15 in</td>
<td>107 in</td>
<td>268 in</td>
<td>302 in</td>
<td>30 in</td>
</tr>
<tr>
<td>275 DC</td>
<td>94 in</td>
<td>59 in</td>
<td>31 in</td>
<td>15 in</td>
<td>107 in</td>
<td>268 in</td>
<td>302 in</td>
<td>30 in</td>
</tr>
<tr>
<td>290 CC &amp; WAC</td>
<td>94.5 in</td>
<td>61 in</td>
<td>32 in</td>
<td>15.5 in</td>
<td>107 in</td>
<td>301 in</td>
<td>336 in</td>
<td>30 in</td>
</tr>
<tr>
<td>320 CC &amp; EXPRESS</td>
<td>105 in</td>
<td>65 in</td>
<td>33 in</td>
<td>16.5 in</td>
<td>115 in</td>
<td>315 in</td>
<td>349 in</td>
<td>38 in</td>
</tr>
</tbody>
</table>
# Sailfish 275 DC Boat Layout

## Key

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Boarding Ladder / Fresh Water Fill</td>
</tr>
<tr>
<td>2</td>
<td>Bilge Access</td>
</tr>
<tr>
<td>3</td>
<td>Fuel Sender and Pick-Up Access</td>
</tr>
<tr>
<td>4</td>
<td>Fuel Fill</td>
</tr>
<tr>
<td>5</td>
<td>Floor Storage</td>
</tr>
</tbody>
</table>

## Key

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Lounge Seat</td>
</tr>
<tr>
<td>7</td>
<td>Head Area</td>
</tr>
<tr>
<td>8</td>
<td>Helm Area</td>
</tr>
<tr>
<td>9</td>
<td>Entertainment Center</td>
</tr>
<tr>
<td>10</td>
<td>30 Gallon Livewell</td>
</tr>
<tr>
<td>11</td>
<td>Anchor Locker</td>
</tr>
</tbody>
</table>
Battery Selector Panel and Wiring

Front View

Back View With Wiring
Breaker Panel Schematic
Fuel System Layout

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fuel Filter Access - Yamaha Only</td>
</tr>
<tr>
<td>2</td>
<td>Fuel Fill</td>
</tr>
<tr>
<td>3</td>
<td>Fuel Tank Location</td>
</tr>
<tr>
<td>4</td>
<td>Fuel Pickups (Shown with dual pickups for twin engines)</td>
</tr>
<tr>
<td>5</td>
<td>Fuel Sender</td>
</tr>
<tr>
<td>6</td>
<td>Primer Bulbs - Yamaha Only</td>
</tr>
</tbody>
</table>

Image of Fuel System Layout with numbered keys corresponding to the Key column.
275 DC Sailfish

1. Bilge Pump
2. Livewell Fill Pump
3. Deck Drain
4. Livewell Drain
5. Transom Washdown Pump
6. Fresh Water Pump
7. Fresh Water Fill
8. Fresh Water Toilet
9. Waste Water Tank
10. Deckside Pump-out
11. Waste Water Discharge
12. Head Vent
13. Fishbox Drains
14. Fresh Water Sink
15. Gulper Grouper Pump
16. Aerator Pump
## Helm Area

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Compass</td>
</tr>
<tr>
<td>2</td>
<td>Brand Specific Motor Guages</td>
</tr>
<tr>
<td>3</td>
<td>Trim Tab Actuator Switches</td>
</tr>
<tr>
<td>4</td>
<td>Binnacle (Shown with Mercury Twin engine set up)</td>
</tr>
<tr>
<td>5</td>
<td>Ignition Switches and Emergency Shut-Off Cord</td>
</tr>
<tr>
<td>6</td>
<td>Optional Windlass Control</td>
</tr>
<tr>
<td>7</td>
<td>Switch Panel</td>
</tr>
<tr>
<td>8</td>
<td>Uflex Tilt Helm</td>
</tr>
<tr>
<td>9</td>
<td>Optional Fusion Stereo</td>
</tr>
</tbody>
</table>
UFLEX Steering System

UFLEX has been the choice for steering for Sailfish boats for the last three years because of the quality of the USA built products.

Every helm comes standard with a full stainless steel shaft; cylinders are built with carbon steel pistons, coupled with extra-large end caps to prevent leakage.

All of their connection materials are 304 stainless steel that has been electro-polished and passivated.

For more information on the service and maintenance of your UFLEX system please refer to your UFLEX owner’s manual or view it electronically at http://uflexusa.ultraflexgroup.com/public/File/UFLEX2013_USA.pdf
Ignition Switches, Engine Shut-off Cord/Lanyard

Each Sailfish boat will be equipped with a Yamaha or Mercury ignition switch with an emergency engine shut off cord/lanyard.

This lanyard should be worn at all times while operating the vessel, if the vessel operator falls or moves a unsafe distance away from the helm controls the lanyard will pull out causing the engine to shut down.

Make sure the lanyard is not attached to a part of your clothing that could be easily torn free causing the switch not to pull. See your YAMAHA or MERCURY owner’s manual for more information on this safety feature.

Engine Break-In Period

Each new outboard motor will need to go through a break in period to make sure all of the internal moving parts and components have a chance to correctly mate.

For more information on the break in period specific to your engine please refer to your YAMAHA or MERCURY Owner’s manual.
Plug and Play Wiring
Deutsch Connectors are quick disconnect plugs used for durability and ease of replacing components in your Sailfish Boat.

These water resistant plugs are for use in electrical systems where moisture, salt spray, dirt and dust could affect the electrical connections or systems.

Fuel-Water Separator - Yamaha
All Sailfish Boats Rigged with Yamaha motors are factory installed with 10 Micron Yamaha fuel water separators. Each engine will have its own filter. These filters can be accessed in the bilge access door located at the aft of the boat. For more information on these filters please review your Yamaha Owner’s Manual.
### Console/Head Area

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Optional Jensen Stereo and amp</td>
</tr>
<tr>
<td>2</td>
<td>Large panel for easy access to Console Components</td>
</tr>
<tr>
<td>3</td>
<td>Breaker Panel</td>
</tr>
<tr>
<td>4</td>
<td>Optional Power Assist Pump</td>
</tr>
<tr>
<td>5</td>
<td>Available with optional Porta Potti or Electric Marine Head</td>
</tr>
</tbody>
</table>
The VSR, or Voltage Sensitive Relay, is a very handy little box that solves a load of traditional charging problems on marine electrical systems. It essentially serves as a smart battery switch deciding automatically when either one or two batteries are charged – or discharged. It works great on almost any boat with multiple batteries – and eliminates all of the guesswork that used to come with manual battery switches.

What a VSR does
The VSR is installed between two batteries. Many People are surprised to learn that it is NOT connected to either the alternator or charger output wires! Its setup is much more clever.

It either battery goes above 13.7 volts (due to either alternator or charger output), the VSR connects both batteries together. Both batteries are now charging – without the boat ever having to throw a switch. Alternately, when the system voltage drops back below 12.6 volts, i.e., no more charging, the relay opens and the batteries are separate. This means that both batteries now discharge independently.

How a VSR changes real world boating
Let’s say that a fishing boat has a two battery setup. As is often the case, one of the batteries is dedicated to an important job – starting the engine. The other battery is used for other operations.

As the fisherman runs the boat from hole to hole, the engine alternator elevates the voltage to the cranking battery above 13.7 volts. This triggers the VSR to automatically connect the starting battery and house battery together. Both are now charging. Upon reaching his destination, the boater kills the engine – and, the alternator output – and begins trolling. Because of the lowered voltage, the VSR now disconnects the batteries. Because he is now discharging only one battery, our fisherman is going to have starting power when he needs it later – no matter how long he uses the trolling motor and depletes that trolling battery. Once underway again, the alternator power causes the VSR to reconnect the batteries and begins replenishing the trolling battery.

Back home, the fisherman powers up his onboard battery charger, this increased voltage causes the VSR to once again link the batteries. This means that even a single output battery charger would now be charging both batteries!
Bilge Access and Explanation

The bilge of your boat can be accessed through the large door in the aft of the boat. This large door allows easy access to many of the boat's components.

You may also access it through the two access plates in the splash-well.

The bilge area of your sailfish boat should be checked before, during and after each operation.
Bilge Pumps

All Sailfish Boats are furnished with Rule Bilge Pumps. The Rule 2000 GPH (gallon per hour) pump has a built-in automatic float switch. This is engaged when the water level rises in the bilge and the float rises in the pump causing the pump to turn on.

These pumps can be tested by turning them upside down, the pump should turn on, once turned back over it will run for a few more seconds and then shut off. The pumps also have a manual switch function on the main switch panel.

These pumps are wired into your boat bypassing the battery switch so that they have power at all times, this allows the automatic feature to work while you are away from the boat and the batteries are turned off.

Sailfish boats 240CC and larger are equipped with a forward bilge pump that is an electronic sensor pump.

These pumps have a state of the art internal water sensor that detects water and automatically activates the pump when there is enough present to be pumped out. These pumps can be tested by placing your finger over the “Test Area” on the back of the pump for 5 seconds, the pump will turn on to let you know it is functioning correctly.

All wiring and switches to these pumps are the same as the Rule 2000GPH pumps.
Raw water Washdown system

The raw water wash down on your Sailfish Boat is powered by a Shur-flo Pro Blaster Pump which creates a pressurized system, once the pump is turned on and pressure is created the pump will shut down until more pressure is needed. The raw water wash down pump can be accessed through the bilge access door in the aft of the boat.

To operate make sure the seacock is in the open position. The hose fitting for the wash down is located in the transom splash well, to use simply attach a hose with a nozzle and turn the switch on. Pressure will build up in the hose and the nozzle and as you spray the pump will continue to engage as needed.
**Freshwater Washdown and Shower System**

The freshwater washdown and shower system on your Sailfish Boat is powered by a Shur-flo Pro Blaster Pump which creates a pressurized system, once the pump is turned on and pressure is created throughout the freshwater hoses; once they are all pressurized the pump will shut down until more pressure is needed.

All of the freshwater systems on the boat will operate on this system once the freshwater switch is engaged.

You should allow a few seconds for the system to prime and pressurize before attempting to use any of the showers/sinks etc.

The freshwater holding tank is located behind the fuel tank in the bilge area.

The fill for this tank is located under the boarding latter on the port side of the vessel. The freshwater pump can be accessed through the bilge access door in the aft of the vessel.
Instructions

- Make sure the seacock below the baitwell pump is in the open position (seacock is accessed through the hatch under the transom walk thru door).

- Turn on the livewell switch.

- Adjust the black aerator in the livewell to the desired flow (if your model has a livewell in the leaning post you can adjust the aerator to pump water into the transom livewell or the leaning post livewell or both).

- In order to fill the livewell, reach in the access hatch below the livewell and close the red handle ball valve.

- The livewell will fill up until it reaches the Overflow built into the side of the livewell. This allows the water to continually pump in and drain out while maintaining the water level.

- To drain the livewell open the red handle ball valve.
The 275DC is equipped with a diaphragm pump called the Gulper Grouper (pictured below right). The Whale Gulper Grouper pump has no impeller to clog or burn out, Unlike impeller pumps these have no-choke valves that easily pump out fish box waste.

They also offer long term durability, they can run dry without causing damage.

**Troubleshooting**

- Electric Motor Runs but doesn’t pump
- Disconnect pump and turn off all power.
- Disconnect hoses and unscrew housings.
- Check entire hose system for blockage.
- Inspect tricuspid valves for blockage or inverted valve(s).
- If valve(s) are blocked, remove blockage, re-assemble the pump and continue use.
- If a tricuspid valve is inverted, replace with a new tricuspid valve, reassemble the pump and continue use.

If the electric motor will not operate, check that:
- The isolator switch is on.
- There is 12 volts at the battery terminals.
- The in-line fuse / circuit breaker are operational.

If the fuse / circuit breaker has blown, check for debris in pump head and clean out if necessary. Replace the fuse or re-set circuit breaker and run the pump.
Entertainment Center

The Entertainment Center on the 275DC comes standard with a freshwater sink, cooler with retainer and a pull out waste can. It is also available with optional Refrigerator.
Cleaning
The attractive surface appearance of stainless steel cannot be regarded as completely maintenance-free. Our 304 Series Stainless Steel may in fact stain, discolor, or accumulate a layer of surface contamination (dirt and grime) during the normal course of the life cycle.

Minute particles of dust and rust may adhere to the stainless steel during shipping, installation or storage at OEM or retail locations.

Also, please remember that some types of stainless steel fasteners tend to “bleed” over the tabs and onto the boat. To achieve maximum corrosion resistance, the surface of the stainless steel must be kept clean and free of all these contaminants.

NOTE: LENCO RECOMMENDS AN ACID AND WATER SOLUTION TO CLEAN THE TRIM TAB BLADES. MARYKATE’S ON & OFF PRODUCT IS A GOOD CHOICE. RINSE THOROUGHLY UPON COMPLETION. BIODEGRADABLE, BUT PLEASE FOLLOW THE MANUFACTURER’S INSTRUCTIONS BEFORE APPLYING.

Sacrificial Anodes for your Lenco SS Trim Tabs
Be aware that stray currents in your marina or in a visiting marina can cause damage to your trim tab blades if not protected by sacrificial anodes.

- The addition of anodes on each tab will deter electrolysis.
- Do not paint under the anode or the anode itself.
- Check Anode condition frequently. Replace when necessary.

Visual inspection of system
- Periodically inspect all wires, mounting brackets, and hardware for damage.
- Make sure all mounting brackets are secure and working properly.
- Periodically test system for smooth operation.
Optional Lewmar V-700 Windlass

If your boat was has a factory installed windlass there will be a complete owners’ manual in your owners packet. For more detailed information please refer to your windlass owners manual. If you have a thru hull windlass system the remote will be stored forward in the windlass hatch.

Included on this page are some maintenance recommendations and a troubleshooting guide.

**Maintenance**

**General Recommendations**

- After the first two or three anchor recoveries, check the mounting nuts to ensure that the windlass is still fastened tightly to your deck, as it should now be bedded-in.
- Regularly wash down the exterior of your windlass with fresh water.
- Examine all electrical connections for possible corrosion, clean and lightly grease as necessary.
- Anchor rode splice should be checked regularly and remade if there is any evidence of wear.
- The Gypsy should be examined on a regular basis, because it is a high wear item. The Gypsy is designed for short scopes of chain and will last longer if properly used.

**Troubleshooting**

**Anchor Rode pays out independently while windlass is not in use**

This problem is a result of not securing the anchor rode combined with the Gypsy Drive Cap being slack. Tighten the Gypsy Drive Cap using the tool provided and always secure the anchor rode independently of the windlass whenever it is not being deployed or recovered.

**Electrical Troubleshooting**

As with most electrical marine equipment the majority of problems that arise are electrical in nature. Therefore it is essential that the proper voltage be maintained. The proper voltage on a 12 Volt system is 13.5 Volts. (Constant low voltage will destroy the motor). Ensure that electrical cable size is large enough to handle the current draw imposed upon it and keep the voltage drop within acceptable limits. In any circumstance voltage drop due entirely to cable resistance should not exceed 10%.

Follow the charts on the following page to troubleshoot the problem.
### Lewmar V-700 Windlass Troubleshooting Chart

#### Failure to Operate Troubleshoot Chart: Reversing Toggle Control Switch (Part No. 0052519)

<table>
<thead>
<tr>
<th>Question</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there voltage at the input terminal (positive) to the control switch?</td>
<td>If no voltage is present, the battery isolation is OFF, the breaker is tripped or a fuse has blown. The battery may also have been dead or disconnected.</td>
</tr>
<tr>
<td>Yes ▼ No ▶</td>
<td></td>
</tr>
<tr>
<td>Check voltage at the output terminals of the control switch with the switch on forward then reverse.</td>
<td>Control switch is defective.</td>
</tr>
<tr>
<td>Yes ▼ No ▶</td>
<td></td>
</tr>
<tr>
<td>Replace Motor</td>
<td></td>
</tr>
</tbody>
</table>

#### Sluggish Operation Troubleshoot Chart

<table>
<thead>
<tr>
<th>Question</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is windlass overloaded?</td>
<td>Ease the load and ensure the battery is well charged.</td>
</tr>
<tr>
<td>Yes ▼ No ▶</td>
<td></td>
</tr>
<tr>
<td>Check the voltage across the motor leads with the windlass on. (Proper voltage is 13.5V. Constant low voltage will destroy the motor).</td>
<td>There is a severe voltage drop in the circuit.</td>
</tr>
<tr>
<td>Is the voltage low? (Below 11.0V on a 12V system?)</td>
<td>There is a severe voltage drop in the circuit.</td>
</tr>
<tr>
<td>Yes ▼ No ▶</td>
<td></td>
</tr>
<tr>
<td>Is the voltage correct? (Above 11.0V and anchor is not fouled).</td>
<td>The motor is defective. Replace the motor.</td>
</tr>
<tr>
<td>Yes ▼ No ▶</td>
<td></td>
</tr>
</tbody>
</table>
Optional Marine Head with Waste Tank

Type III MSD Waste Management System

CAUTION
Prevent Pump Damage: Flush ONLY organic materials!

FLUSH
ADD WATER

EMPTY BOWL
Press 1 second

RETURN TO NORMAL USE
Press Either Button

SET WATER LEVEL

1. Press & Hold
2. Symbols Flash
3. Release when water reaches desired depth

See Owner’s Manual • Apply label to under toilet lid • Part No. 38592 Rev. A
### Optional Marine Head with Waste Tank

#### Type III MSD Waste Management System

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Battery</td>
</tr>
<tr>
<td>2</td>
<td>Fuse</td>
</tr>
<tr>
<td>3</td>
<td>Waste Management System</td>
</tr>
<tr>
<td>4</td>
<td>Master Switch</td>
</tr>
<tr>
<td>5</td>
<td>Controller for Waste Management System</td>
</tr>
</tbody>
</table>

**Diagram:**

- Battery (1)
- Fuse (2)
- Waste Management System (3)
- Master Switch (4)
- Controller for Waste Management System (5)

---

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vent</td>
</tr>
<tr>
<td>2</td>
<td>Inlet</td>
</tr>
<tr>
<td>3</td>
<td>Toilet</td>
</tr>
<tr>
<td>4</td>
<td>Deck</td>
</tr>
<tr>
<td>5</td>
<td>Pumpout</td>
</tr>
<tr>
<td>6</td>
<td>Waste Holding Tank</td>
</tr>
<tr>
<td>7</td>
<td>Vertical Loop Outlet</td>
</tr>
</tbody>
</table>

**Diagram:**

- Vent (1)
- Inlet (2)
- Toilet (3)
- Deck (4)
- Pumpout (5)
- Waste Holding Tank (6)
- Vertical Loop Outlet (7)
Type III MSD Waste Management System

Cleaning

Use Thetford’s Aqua-Clean, a non-abrasive all purpose cleaner, on the bowl and macerator pump. It is specially formulated and thoroughly tested to be safe for all components of your toilet system. It safely removes iron stains and hard water deposit and can be safely used on many other surfaces, including countertops, sinks, showers and tubs. Just squeeze Aqua-Clean onto surface. Allow to sit a few minutes and clean with a sponge. For severely soiled toilets, allow Aqua-Clean to soak overnight.

Never use household cleaners, which can contain bleach, in the toilet system. Household toilet bowl cleaners contain harsh acids. Bleach, petroleum based products, strong acids and abrasives can cause irreversible damage to the toilet system and components.

Winterizing

Use only propylene glycol based, non-toxic antifreeze when storing toilet during freezing conditions. Never use automotive antifreeze or windshield washer solvent to winterize.

Make sure that both the entire supply and discharge systems are thoroughly winterized to ensure complete protection for your system.

Storage

When Storing the system for more than two weeks, thoroughly clean toilet and hoses by flushing with Thetford’s Aqua-Kem, EcoSmart or Aqua-Clean.

Seasonal Start-up

Test the toilet before using by flushing the toilet to check operation. Verify that there are no leaks.

Deodorants

Thetford holding tank deodorants deliver exceptional deodorant performance, tank cleaning and waste digestion.

Formaldehyde-based deodorants like Thetford’s Aqua-Kem deliver unsurpassed odor control even in the hottest conditions. Eco-Smart provides the best non-formaldehyde based odor control. Both are available as liquids in various sized bottles, granular in foil packets, and granular as water-soluble Toss-Ins.

EcoSmart, a liquid available only in a 32-oz bottle, provides enzyme based waste digestion and odor control.

Tissue

To facilitate flushing, it is recommended that you only use toilet tissues especially designed to disintegrate rapidly (unlike household tissues), such as Thetford’s Aqua-Soft (2ply) and RV/Marine Toilet Tissue (1ply).
<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>ACTION / SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toilet does not flush or performance is poor</td>
<td>Waste tank is full</td>
<td>Empty waste tank before continuing to use toilet.</td>
</tr>
<tr>
<td></td>
<td>Clog at pump inlet</td>
<td>Clear clog. DO NOT flush foreign objects.</td>
</tr>
<tr>
<td></td>
<td>Solid object in macerator</td>
<td>DISABLE power. Attempt to remove object. If unsuccessful, contact Thetford Tecma Service (1-800-521-3032). DO NOT flush foreign objects.</td>
</tr>
<tr>
<td></td>
<td>Low Voltage</td>
<td>Check that toilet supply voltage is 12V+/−2V (24V+/−2V) AND that there is no more than a 10% decrease in voltage when macerator is running. If voltage decreases more than this, there may be a wiring problem in the boat.</td>
</tr>
<tr>
<td>Water does not enter bowl during flush or water add cycle</td>
<td>Water supply line kinked or not connected</td>
<td>Check that supply line is properly connected to fresh water supply. Check for kinks in the supply line.</td>
</tr>
<tr>
<td></td>
<td>No power to water pump</td>
<td>Check that fuse/circuit breaker has not tripped. Ensure all electrical connectors to water pump are fully mated.</td>
</tr>
<tr>
<td></td>
<td>Water supply has been turned off</td>
<td>Open water supply valves or reconnect power to supply pump.</td>
</tr>
<tr>
<td></td>
<td>Solenoid not plugged into relay module (where applicable).</td>
<td>Ensure wiring harness to solenoid is fully connected.</td>
</tr>
<tr>
<td>Water continues dripping briefly into bowl after flush cycle is complete</td>
<td>Toilet is installed below the water line with vented loop in water supply line</td>
<td>Normal operation – if only a small amount of water drips from the nozzle.</td>
</tr>
<tr>
<td>Bowl drains dry after flush</td>
<td>Water is siphoning out of bowl due to discharge hose pulled down.</td>
<td>Discharge hose from macerator pump is pulled down. Straighten hose so that top of discharge hose is in line with toilet nozzle.</td>
</tr>
</tbody>
</table>

Note: This Troubleshooting guide is intended to provide a basic service aid in the case of incorrect toilet operation. If the suggested actions above do not resolve the issue, it may be necessary to bring unit in for professional service. Thetford Customer Service – 1-800-521-3032.
Type III MSD Waste Management System

- Rugged Polyethylene holding tank
- Barbed fittings for all hose connections
- Heavy Duty Macerator
- Three run-dry and accidental activation safety features
- Evacuation Pump
- Touch-pad waste management control panel
- Additional dock side evacuation pick up

**System Features**

**Level Indication:** When pressed, the level indicator will illuminate for 1 minute. When the tank level reaches full, the indicator will flash automatically to alert the user to empty the tank.

**Sleep Mode:** If the flashing LED is a disturbance, the unit can be put into sleep mode. The unit will emerge from sleep if the system is turned off or the tank level is increased. NOTE: the unit is unable to be put into sleep mode if the tank is 7/8 full or greater.

**Empty Button:** This button needs to be pressed and held for 3 seconds to activate the pump. This eliminates the possibility of accidental operation.

**Averaging:** Two different level averaging methods have been used – one when filling and one when emptying. This compensates for the boat’s movement when the tank is filling, and still allows an accurate reading when emptying.

**Fail Safe Feature:** If no fluid movement is sensed 20 seconds after the pump is set to run, the pump will shut down and indicate a fault check pump and plumbing for a blockage.

**Pump Features**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump</td>
<td>Self-Priming Flexible Impeller with Stainless Steel Wearplate</td>
</tr>
<tr>
<td>Impeller</td>
<td>Jabsco Nitrile compound</td>
</tr>
<tr>
<td>Macerator</td>
<td>Stainless Steel Cutter reduces particle size to 1/8” (3mm) maximum</td>
</tr>
<tr>
<td>Seal</td>
<td>Lip Type</td>
</tr>
<tr>
<td>Ports</td>
<td>Intec – 1-1/2; (38mm) Hose Barb and 1-1/2” N.P.T. (Male) Outer – 1” (19mm) Hose Barb</td>
</tr>
<tr>
<td>Motor</td>
<td>Permanent Magnet Type, Fully Enclosed with Stainless Steel Shaft Includes Run-Dry Protection Device that shuts off pump. Powder coated housing with sealed end bolts and bearings.</td>
</tr>
</tbody>
</table>
**Type III MSD Waste Management System**

**Installation:**
The holding tank should be located close to the toilet. A proper seacock is required if the discharge thru-hull is positioned below the waterline.

Both the discharge thru-hull and the holding tank are installed to prevent a potential siphon. Contact a marine plumber or Jabsco technical support specialist for installation assistance.

Mount on a strong flat surface. Note: the area of installation needs to support the weight of the unit and its contents.

Four mounting feet (included) need to be attached to the platform with four machine or lag screws and four flat washers.

**Plumbing:**
**Each tank contains:**
- 1 x 1 ½" deck pump out – evacuation pickup tube (Install to dockside pump-out deck plate)
- 1 X 1 ½" inlet port – from toilet system
- 1 x 3" O-ring sealed inspiration hatch
- 1 x 1" vent* - connect to vent outlet usually sited high on a vessel’s hull near the gunwale
- 1 x 1” Overboard discharge port macerator pump out. Discharge: connect to the overboard discharge thru-hull fitting.

* See plumbing diagram for recommended installation.

**Maintenance:**
Flush system with clean water to remove any build up of sludge or debris. It is recommended that this process be completed at least once a year. Please reference 18590 Series Macerator datasheet servicing section for details.

**Winter Storage:**
Empty the complete system of all water making sure pipe work and pump are completely free of waste.

The fuses for both the marine head and the waste tank are located behind the dash in the first panel coming off the bus bar, pictured to the left.
Optional Porta Potti

Prepare Unit

- Separate tanks (Fig. 1A & 1B).
- Add Deodorant (Fig. 2A & 2B) and 4-oz of water.
- Close valve (Fig. 2C).
- Recombine Tanks (Fig. 3)
- Fill upper tank with fresh water (Fig. 4). Replace cap and tighten securely.

NEVER add deodorant to fresh water tank.

Before Use

Vent any built-up heat or altitude pressure and prevent splashing: close cover (Fig. 5A), and open and close holding tank valve (Fig. 5B).

To Flush

- Open Valve (Fig. 2A).
- Bellows: Fig. 6.
- Piston Pump: Fig. 7.
- Electric Flush: Fig. 8 For best rinse and efficient water use, press button quickly several times.
- Close valve completely for odor-tight seal (Fig. 2C).

Deodorizing

Recommended holding tank deodorant for best performance:

- Thetford SupremeGreen
- Thetford Aqua-Kem
- Thetford Campa-Chem

Care

Recommended cleaner:
Thetford Aqua-Clean

NEVER use scouring powders, acids or concentrated cleaners, which can damage plastic parts and rubber seals.

Service & Parts

For parts and/or service, contact your RV Dealer.

For warranty issues or more information, call Thetford’s Customer Relations Department:
1-800-521-3032.
Emptying Waste Tank

1. DO NOT OVERFILL TANK. Empty when waste level indicator turns from green to red (Fig. 9). (Toilet without an indicator: open valve to check visually).

2. Be sure valve handle is closed. Separate tanks (Fig. 10).

3. Carry waste tank to a permanent toilet.

4. Remove Pour-Out Spout Cap while it is pointing upward (Fig. 11).

5. Press Air relief valve to prevent splashing (Fig. 12).

6. Rinse, recharge and reassemble unit.

Deodorizing
Recommended holding tank deodorant for best performance:

- Thetford SupremeGreen
- Thetford Aqua-Kem
- Thetford Campa-Chem

Care
Recommended cleaner: Thetford Aqua-Clean

NEVER use scouring powders, acids or concentrated cleaners, which can damage plastic parts and rubber seals.

Service & Parts
For parts and/or service, contact your RV Dealer.

For warranty issues or more information, call Thetford’s Customer Relations Department:
1-800-521-3032.
Vinyl Care and Cleaning

Step-by-Step Cleaning Instructions

<table>
<thead>
<tr>
<th>Type of Stain</th>
<th>Steps:</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Care</td>
<td></td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Dirt Build-Up</td>
<td></td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Ballpoint Ink*</td>
<td></td>
<td>E</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>Chewing Gum</td>
<td></td>
<td>D</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Coffee, Tea, Chocolate</td>
<td></td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grease</td>
<td></td>
<td>D</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Household Soil</td>
<td></td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Ketchup</td>
<td></td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Latex Paint</td>
<td></td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Lipstick</td>
<td></td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Mildew or Wet Leaves*</td>
<td></td>
<td>C</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>Motor Oil</td>
<td></td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil-Based Paint</td>
<td></td>
<td>D</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Permanent Marker*</td>
<td></td>
<td>E</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Spray Paint</td>
<td></td>
<td>B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suntan Lotion</td>
<td></td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Tar / Asphalt</td>
<td></td>
<td>A</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Yellow Mustard</td>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
</tbody>
</table>

Legend

A. Medium-Soft brush, warm soapy water, Rinse / Dry

B. Vinyl Finish Vinyl Cleaner®, Rinse / Dry

C. One (1) tablespoon of ammonia; one-fourth (1/4) cup of Hydrogen Peroxide, three-fourth (3/4) cup of water, Rinse / Dry

D. Wipe or scrape off excess (chill gum with ice before hand)

E. Hemisphere Ink Remover, Rinse / Dry

All cleaning methods must be followed by a thorough rinse with clean warm water.

Certain household cleaners, powdered abrasives, steel wool, and industrial cleaners can cause damage and discoloration and are not recommended. Dry cleaning fluids and lacquer solvents should not be used as they will remove printed pattern and gloss. Waxes should be used with caution as many contain dyes or solvents that can permanently damage the protective coating. *Suntan lotion, tree pollen, wet leaves, and some other products can contain dyes that stain permanently.

*Always Remove Stains Immediately!

Do’s & Don’ts

Do’s
- Vinyl Finish Vinyl Cleaner
- Dish Soap (Dawn, Ivory)
- Fantastik
- 303 Aerospace Protectant

Don’ts
- Formula 409
- Murphy’s Oil Soap
- Simple Green
- Armor All
- Son-of-a-Gun
- Turtle Wax / Tar Remover
The information provided is designed to give you a thorough understanding of the factors that can impact the appearance of your anodized aluminum. By using this information, we hope to help you enhance the beauty and value of our products.

**What Causes It?**
Corrosion is a natural phenomenon that affects metals by either a chemical or electrochemical reaction. The rate at which aluminum corrodes depends greatly on the environmental conditions and the amount of preventative maintenance performed. Our goal is to slow down or stop this natural phenomenon we call pitting (or corrosion).

**Anodized Aluminum**
The aluminum on your boat has been anodized. This creates a very hard protective seal on the surface of the aluminum to protect it as much as possible from pitting. When the anodized coating is broken and raw aluminum is exposed, corrosion will take place. Damage from other abrasive impacts can break the anodized coating.

**Chemical Attack**
Corrosive chemicals containing high concentrations of acids or alkalis will remove the anodized coating. Solutions containing chlorine, salts, or ammonia are all harmful to the anodized aluminum on your boat. Many common household cleaners contain chemicals that will remove the anodizing and cause pitting.

<table>
<thead>
<tr>
<th>Avoidable</th>
<th>Unavoidable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong acidic solutions found in cleaners, paint remover, degreasers, etc.</td>
<td>Airborne pollution. Airborne particles from local sources: vehicles, incinerators, paper mills, chemical plants, power plants, etc.</td>
</tr>
<tr>
<td>Concentrated alkaline based solutions. Many concentrated soaps fall into this category.</td>
<td>Harsh chemicals from work performed at local shipyards and dry docks.</td>
</tr>
<tr>
<td>Chlorine, sulfurs, solvents and ammonia based products.</td>
<td>Be aware of local sources that can expose your new boat to corrosive chemicals.</td>
</tr>
</tbody>
</table>
Caring for Aluminum

Tips
Avoid the use of bleach or chlorides to clean the aluminum or nearby components. Chlorides can leach onto the aluminum when used nearby.

Avoid abrasive cleaning products. Never use steel or brass wool, wire brushes, polishing wheels, rubbing or polishing compounds. These items will remove the anodizing and lead to pitting.

Protective Products
There are many different products available to protect aluminum. Some are designed to seal and protect before problems occur and others are designed to use after pitting has appeared.

While these products are effective, they are not one time solutions. Metal protectors must be reapplied on a regular basis. How often a protector should be used varies according to the protector you choose, the types of exposure your boat is subjected to, and how often you use and wash your boat. Follow the application guidelines provided with the protector you choose.

Harmful Cleaners
Bleach (Chlorox, etc.)
Mild abrasive cleaners (Ajax, Comet, Soft Scrub, Rubbing Compounds, etc.)
Strong cleaners (409, Engine Degreasers, Bilge Cleaners, Teak Cleaners, Bottom Cleaners, etc.)

Below are some metal protection products that are readily available at marine retailers.

<table>
<thead>
<tr>
<th>Product</th>
<th>Supplier</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woody Wax CPR</td>
<td>Woody Wax woody-wax.com</td>
<td>800-619-4363</td>
</tr>
<tr>
<td>Boeshield T-9</td>
<td>PMS Products, Inc. boeshield.com</td>
<td>800-962-1732</td>
</tr>
<tr>
<td>Premier Polish</td>
<td>Aquatech aquatech-marine.com</td>
<td>800-853-7760</td>
</tr>
<tr>
<td>Corrosion Block</td>
<td>Lear Chemical learchem.com</td>
<td>800-256-2548</td>
</tr>
</tbody>
</table>
Caring for Stainless Steel

The information provided is designed to give you a thorough understanding of the factors that can impact the appearance of your anodized aluminum. By using this information, we hope to help you enhance the beauty and value to our products.

What Makes Stainless Steel Stainless?
Oxygen is the key element in causing rust, or red oxide on steel and other metals. Stainless Steel contains Chromium which reacts with the oxygen in the air to form a chrome-oxide surface layer that is invisible to the eye, but strong enough to prevent further oxygen from “staining” (rusting) the surface. Higher levels of Chromium and the addition of other alloying elements such as nickel and molybdenum enhance this surface layer and improve the corrosion resistance of the stainless material.

What Determines Different Grades of Stainless Steel?
The grade of Stainless Steel is primarily determined by the amount of the Chromium and Nickel alloys contained in the material. 304 and 316 are the prominent grades of Stainless Steel: 304 contains 1% Chromium and 8% Nickel, while 316 Contains 16% Chromium and 10% Nickel and 2% Molybdenum. The Molybdenum is added to help resist corrosion to chlorides (like sea water and de-icing salts).

Can Stainless Steel rust?
Not in the way steel rusts. Steel will discolor, bubble and flake from red oxide development. Stainless Steel may develop red spots, but this is usually due to Iron particles on the surface of the Stainless Steel. Any Iron particles must be removed and the Stainless Steel cleaned with a high concentration of citric acid or a commercial cleaner specifically designed for Stainless Steel.

Is Stainless Steel Green (Environmentally Friendly)?
Stainless Steel is highly sought after by recyclers and is 100% recyclable. New Stainless Steel typically has a recycled content of between 65% & 80% which makes it one of the highest average content recycled construction materials on the planet.

Will Stainless Steel Discolor?
Cleaners that are typically used with cement, grout and stone, etc., may contain Muriatic Acid. Stainless Steel is not resistant to Muratic Acid. MURIATIC ACID SHOULD NOT BE USED IF STAINLESS STEEL IS PRESENT. It is not even necessary that the acid touch the Stainless Steel, just the “fumes” from it will cause a discoloration of the Stainless Steel. Other than this, Stainless Steel is usually very resistant to discoloring.
Care Instructions

Regular cleaning with fresh water and a soft cloth will keep and protect your windshield, window, or hatch for years.

**GLASS**
Use commercially available glass cleaners or a mixture of fresh water and vinegar. Do not use abrasives, harsh chemicals, or metal scrapers. Regular cleaning will help assure clarity of the glass for safe boating.

**PLASTIC TYPE WINDSHIELDS**
Never use glass cleaning solutions or dry cloth to clean Plexiglas. Never use acetone, benzene, carbon tetrachloride, or lacquer thinner. The only acceptable cleaners are a small amount of denatured alcohol, clean water, or a commercially available plastic polisher specific for the purpose. Use a soft rag and wash off the plastic windshield first with lukewarm water to avoid scratching the surface.

**WINDOW CHANNELS**
Clean window channels with mild detergent only. Channels can be sprayed with silicon aerosol while sliding the glass back and forth.

**STAINLESS STEEL**
Polish with commercially available metal polishes. A boat or car wax periodically applied will offer extra protection against the elements.

**PAINTED SURFACES**
Clean with fresh water periodically. Touch up scratches and areas where paint has chipped off with touch-up spray paint. Touch up kits are available from the factory. Boat top clips – never slide along windshield framework.

To change clip location, snap on and off the aluminum top track.

**SIDE WING VENT ADJUSTERS**
Use care when opening and closing vent. Do not force.

Never ground windshield with any electrical devices or appliances.

Never use the windshield as a mooring cleat for tying off to a dock, pier or another boat. Never use the windshield as a tie-off attachment for trailering purposes.
Your Boat’s Gel Coat Finish

Congratulations! You are the proud owner of a new power or sail boat. You are also the owner of a new Integrity® gel coat finish on the hull and/or topside, and we would like you to be as proud of it as we are. That beautiful, shiny new color you love is the result of many years of gel coat research, testing and development.

But as proud as we are of the gel coat, no finish is totally impervious to chemicals and weathering. Imagine what a brand new car could look like if allowed to sit at a marina for years with no cover and no washing or waxing. With the same minimum maintenance you would ordinarily give your new automobile’s finish, your boat’s gel coat finish will retain its depth of color and gloss for years.

Overall Maintenance

Normal maintenance of your gel coated fiberglass boat is similar to the care you would give your automobile. Overall, automotive cleaners and waxes work fine, as well as the marine cleaners and waxes.

Cleaning

We recommend general washing to avoid soil build-up and staining. The soil to your gel coat is the result of regular use and environmental pollutants such as soot and smog. Periodic cleaning with a mild detergent is necessary to remove normal deposits of soil.

Waxing

From constant exposure over time to our natural environment and undesired pollutants, the gel coat begins to lose its gloss. To restore your finish to the original gloss and color requires your special attention. After washing with a mild soap or detergent, give the surface a good polishing with a self-cleaning marine or automotive wax. Waxing in the fall and spring is generally recommended to maintain and restore most of the original gloss. If the surface has not been maintained and has weathered badly, and if cleaning and waxing does not restore the finish satisfactorily, compounding will be required.

Compounding

Please see your marine dealer for advice. Polishing and compound (fine abrasive) or rubbing compound (coarser abrasive) is recommended for use on fiberglass boats to remove scratches, stains, or a severely weathered surface. Polishing or rubbing compound can be applied by hand or by pneumatic buffer. After the scratched, stained or weathered surface has been moved, it should be waxed to enhance the gloss and color while providing a seal to retard staining or new soil accumulation.

Discoloration Removal

Your marine dealer is best equipped and trained to do this work. If regular washing and waxing has been neglected, discoloration of the gel coated fiberglass surface may occur.

Note: Do not use caustic or highly alkaline (high pH) cleaners or those containing ammonia. These type of cleaners may darken white or off-white weathered gel coat surfaces. A chemical reaction producing staining occurs if these type of cleaners are used on weathered gel coat. However, the stain may be removed with a rubbing compound or by lightly sanding with 400 grit sandpaper followed by an application of rubbing compound and a thorough waxing.
Gel Coat

Discolored areas are very shallow in depth, literally right on the surface. The discoloration may be removed by gently wet-sanding the affected areas only by using 600 grit, wet or dry specially treated waterproof sandpaper. It’s important to always sand in one direction, this includes the curves too. Use plenty of water to cool and clean the sandpaper and cut back on dust. After you are finished sanding, dry the areas and verify all the discoloration has been removed. If not, repeat the process.

After all the discoloration has been removed, the area will need to be buffed. Using an electrical or pneumatic buffer, buff at low speed (1750 rpm – 2250 rpm), this will restore the luster to the sanded surface. Using a generous amount of rubbing compound, apply it in a circular motion with a soft wool pad. When buffing has been completed, wash off the rubbing compound with clean water, and dry the surface.

To restore the gloss to the affected area, use a high-grade marine or automotive wax.

Repairs
During the life of your boat, some damage to the gel coat surface is unavoidable. We recommend repairs done by trained, experienced professionals at your local marine dealer.

Scratches
If the scratch is in the gel coat surface, not penetrating the fiberglass, use an automotive polishing compound and rub it out. Apply the compound by hand using a damp rag or by using a power buffer. The scratch may not entirely disappear, but it should be noticeably better.

Gouges and Chips
Our recommended patching procedure is to first clean the area needing repair with an acetone solvent to remove all traces of wax and oil. Next, thoroughly mix one tablespoon of “Patch Paste” with two or three drops of catalyst on a scrap piece of cardboard.

Apply the mixture to the pit, chip or gouge with a single-edge razor blade, matching the surface and contour of the area being repaired. Apply slightly more mixture to avoid having to fill the damaged section a second time. Allow the patch to harden thoroughly for a minimum of two to three hours.

Using a fine grit “wet or dry” sandpaper on a sanding block, wet-sand the patch until it is level with the surrounding surface. Finish with a marine or automotive rubbing compound using the same approach as used for the scratches.

Refinishing
For a severely scratched or weathered fiberglass boat that is no longer restorable by using the previous methods, it may then be necessary to refinish it with two-pack- age or two-part aliphatic urethane enamel. This can be done very effectively, but it is recommended refinishing should only be done by experienced professionals.