

# Sea-Legs

The Pontoon Lift that Goes Where You Go



## Installation Guide Twin Tube

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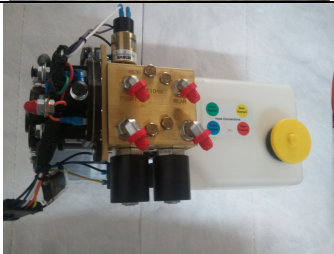
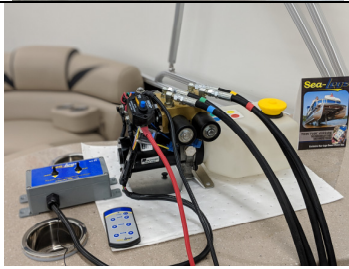

Sea-Legs is a hydraulic pontoon lift that attaches to a pontoon boat, making it the lift that goes where you go. This guide gives you step-by-step procedures for the installation of Sea-Legs on 18 foot to 26 foot two-tube pontoons. For larger boats, contact Sea-Legs for assistance.

Installation normally takes two people. For many tasks, it is advisable to have one person on the boat and one under the boat. Installation by two installers should take about 2 hours per boat.

Sea-Legs installation can be done outdoors (in good weather) or indoors. Installers must have access to the underside of the boat, either on creepers or standing or squatting (if a boat hoist is used). There must be up to 6 feet of clearance above the boat to fully extend Sea-Legs and bleed air from the system. **Installation CANNOT be done on the water, under any circumstances.**





## Sea-Legs Components

Sea-Legs are usually shipped or delivered on a pallet. Each complete set of Sea-Legs will contain the following items:

<p><b>Sea-Legs Modules (2).</b> The modules (Legs) are made of fabricated and extruded aluminum with each Leg containing two cylinders, with fittings into which hydraulic hoses are connected. When attached to the boat, the Legs extend to lift the boat out of the water or retract to lower the boat back onto the water. The Legs are connected across the front by a four (4) foot-wide beveled pad or foot.</p>	
<p><b>Sea-Legs Pump (1) or Power Unit.</b> The Sea-Legs pump holds oil and pumps it either into Sea-Legs cylinders (extend Legs, raise boat) or out of them and into the reservoir tank (retract Legs, lower boat). The pump or power unit will be in a separate box on the shipping pallet.</p>	
<p><b>Sea-Legs Installation Kit (1).</b> Components include:          Installation instructions          Nuts and bolts needed for installation          Positive (red) and negative (black) battery cables – 1 each          Hoses (2) for the front Leg – blue &amp; green banded          Hoses (2) for the rear Leg – red &amp; yellow banded          Remote control receiver with 1 transmitter</p>	
<p><b>Sea-Legs Oil (2).</b> Sea-Legs use approximately 7 quarts of environmentally-safe Chevron Clarity hydraulic fluid. Each set is shipped with two gallons of oil. Please use this and only this oil for your Sea-Legs installation. If you have oil left over after installation, you should keep it in your shop for future use. If you run out, call Sea-Legs to order more oil.</p>	

**IF YOU ARE MISSING ANYTHING OR HAVE DAMAGED PARTS, PLEASE CALL SEA-LEGS IMMEDIATELY AT 952-934-7000 FOR REPLACEMENT INFORMATION.**

## Step 1: Place Pontoon on Blocks, Prepare Boat

<p>1. Prepare an installation area in a clean, dry, hard-surfaced area. Using a trailer or forklift, place the pontoon boat on blocks, one under each corner of the boat. Ideally the blocks will be 6 to 8 inches high. Be careful to position the weld seams over the blocks. Clear the area around and under the boat.</p>	
<p>2. Place protective tarps or cloths on the boat's carpeting and seats, and clear the area around, underneath and above the boat. Remember that you will need up to 6 feet above the boat – watch out for ceiling beams, lights, trees or wires. (Lower your bimini top!).</p>	
<p>3. Gather the shop tools you will need for Sea-Legs installation. We recommend:</p> <ul style="list-style-type: none"> <li>Wrench (impact wrench if available)</li> <li>Drill (cordless preferred)</li> <li>Hole saw drill bits (2")</li> <li>Steel drill bits (5/16" and 1/8")</li> <li>Ratchet (1/2"), extension and sockets</li> <li>Wrenches – open end – (1/2", 9/16", 5/8", 11/16")</li> <li>Cylinder repair (3/4", 1-1/16", 1-1/8" wrench)</li> <li>C-Clamps (4 minimum)</li> <li>Automotive creepers (2 recommended)</li> <li>Shop light, safety goggles, tarps</li> <li>Small step-ladder</li> <li>Broom and dustpan, shop vacuum, shop towels</li> <li>Extension cords, funnel, tie-wraps, tape measures</li> </ul>	 

### Installation Tip: Use a Sea-Legs Installation Jack

Sea-Legs manufactures installation jacks designed specifically for Sea-Legs installation. Use of the jack saves wear and tear on your back and shoulders, and makes it easier to align Sea-Legs correctly. If you do not have a Sea-Legs installation jack, a traditional floor jack (with a platform) may be used. If you do not have a Sea-Legs installation jack and would like to purchase one, please contact Sea-Legs at 952-934-7000. Ask about discounted jacks for qualified dealers.

## Step 2: Place Sea-Legs Pump

Sea-Legs are powered by a pump that sits in the corner seat of the boat. The Sea-Legs pump is powered by a Marine Starting battery (minimum 850 CCA required). **Do not use a deep cycle battery.**

1. Locate the above-deck boat compartment in which you will set the Sea-Legs pump. The best spot is typically in the corner seat storage area or changing station. Make sure the compartment is clear and clean and that there is room on both sides and top of the pump.



2. Place the pump in your chosen compartment, and select a spot near it through which to drill a hole to feed the Sea-Legs hydraulic hoses under the boat. Remove the pump and drill a 1/8" pilot hole to insure clearance above and below deck – *be extremely careful not to puncture the pontoons nor hit any wiring.* If the pilot hole proves satisfactory, drill a 2" hole through which to feed the hoses.



3. With one person above the boat and one below, feed one end of each Sea-Legs hose through the 2" hole, routing them through the pontoon support brackets.



4. The hoses with blue and green bands are longer (252") and run to the front Sea-Leg. The hoses with red and yellow bands are shorter (120") and run to the rear Sea-Leg.



5. Run the red and black battery cables through the same hole. Route them along the backside of a cross member under the boat to an area near the transom, then up through the transom and into the battery compartment. (If the battery compartment is adjacent to the Sea-Legs pump compartment, you can run the battery cables through a hole between the compartments.)



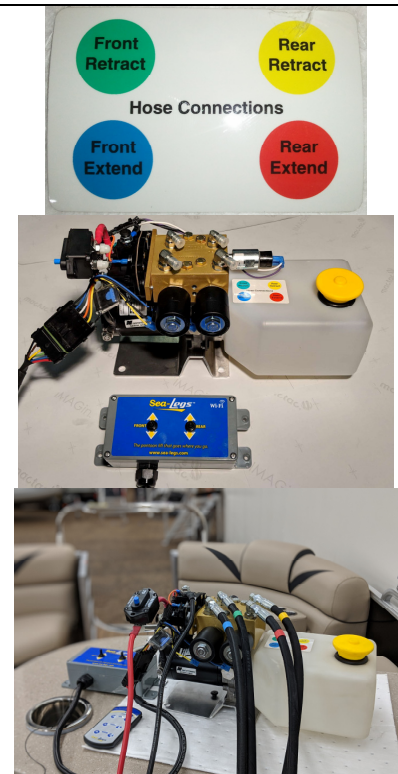
6. Secure the remote control receiver to a **vertical** surface using the four (4) #8 x 3/4" screws provided. Avoid placing the receiver near speakers as it could interfere with the remote control operation.

7. Place the pump assembly back into your selected location. Bolt the pump assembly to the floor using the (4) 5/16" x 1" lags bolts provided. Pre-drilling is recommended.

8. Connect the color-coded ends of the hoses to the proper 90-degree fittings on the manifold shown in the photo at right. Tighten all fittings snugly.

9. Connect the red battery wire to the open end of the resettable breaker fuse using nut and plastic protective nut. Connect the black battery wire to the top center stud (the only one facing directly up). Tighten both wires. Do not connect to the battery.

10. Streamline hoses and wire feeds. Tie with cable ties.








### Step 3: Attach REAR Sea-Legs Module

The Sea-Legs Modules (Legs) raise and lower the boat on the water. Each boat requires two Legs – a front and a rear. Always start with the Rear module (either module can be your Rear module).

1. Choose a Sea-Legs module to be your rear module.
2. Check to make sure all hydraulic fittings on the module and cylinders are properly tightened. **Important: Sea-Legs pushes oil at high pressure through its hoses and to the cylinders. Make sure ALL fittings are tight before proceeding, or you will leak or spray oil upon filling the system. DO NOT OVERTIGHTEN.**
3. Place module onto Sea-Legs jack. (Note: each module weighs about 165 pounds).
4. Wheel the jack (and module) under the boat. The “open” end of the module will be toward the rear of the boat. The support pad (“foot”) points to the front.
5. Position the rear of the module just to the rear of the rear-most full-width cross-member under the boat.
6. You may need to disconnect the hydraulic hoses and run them across the top of the transom. If so, reconnect all hoses and tighten properly.










<p>7. Maintain approximately four (4) inches clearance between the Sea-Legs support pad and the front of the motor pod.</p>	
<p>8. Connect the hydraulic hoses from the pump assembly. The red banded hydraulic hose connects to the solid fitting on the lift module and the yellow banded hydraulic hose connects to the loose fitting. Tighten snugly.</p>	
<p>9. Raise the module so it nearly contacts the cross members. Insure that it is not pinching any hoses or fittings and that the cylinders are clear of cross-members.</p> <p>10. Center the modules between the pontoons, checking the distances from the pontoons at both the front and rear sides of the module.</p>	
<p>11. Clamp the module to the cross-members using two (2) vise-grip locking c-clamps on each side of the module.</p> <p>12. Remove the lift jack.</p>	
<p>13. Wearing safety goggles, drill 5/16" holes through the lift module flanges and cross-members, being careful not to damage any pre-installed electrical wires.</p> <p>14. Drill fourteen (14) holes in total; four (4) on each of the outside flanges (closest to the pontoons) and three (3) each on the flanges on the inside of the modules.</p>	
<p>15. Secure the modules to the cross-members using the 5/16"-18" hex cap bolts and 5/16"-18 flange lock nuts.</p> <p>16. Tighten all snugly, using an impact wrench or 1/2" socket wrench.</p> <p>17. Release the clamps when all fourteen (14) bolts have been tightened.</p> <p>18. Cut the cable tie and lower the foot pad. Verify proper clearance between the pontoon tubes.</p>	

**Note: It may be difficult to tighten screws along the transom. If you prefer, you can leave a clamp or two on to remove and tighten later, when the boat is raised on its Sea-Legs.**

## Step 4: Attach FRONT Sea-Legs Module

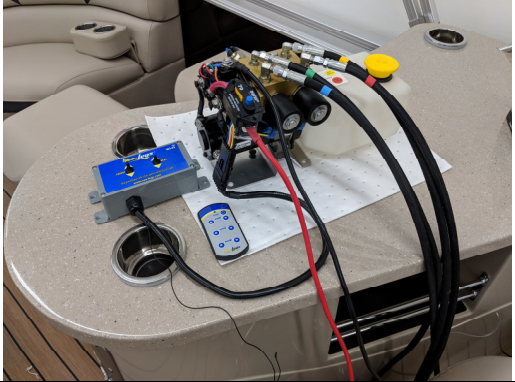

The FRONT Sea-Legs module is attached in the same way as the REAR module.

<ol style="list-style-type: none"><li>1. Lift your remaining (non-installed) Sea-Legs module onto the Sea-Legs jack (or other floor jack).</li><li>2. Check to make sure all hydraulic fittings on the module and cylinders are properly tightened. <b>DO NOT OVERTIGHTEN.</b></li><li>3. Wheel the jack (and module) under the boat. The “open” end of the module will be toward the rear of the boat. The support pad (“foot”) points to the front</li></ol>	
<ol style="list-style-type: none"><li>4. Position the front of the module just forward of the forward-most full-width cross-member under the boat. Do not allow any portion of the module to extend beyond the front of the boat.</li></ol>	
<ol style="list-style-type: none"><li>5. Connect the hydraulic hoses from the pump assembly. The blue banded hydraulic hose connects to the solid fitting on the lift module and the green banded hydraulic hose connects to the loose fitting. Tighten snugly.</li></ol>	
<ol style="list-style-type: none"><li>6. Raise the module so it nearly contacts the cross members. Insure that it is not pinching any hoses or fittings and that the cylinders are clear of cross-members.</li><li>7. Center the modules between the pontoons, checking the distances from the pontoons at both the front and rear sides of the module.</li></ol>	
<ol style="list-style-type: none"><li>8. Clamp the module to the cross-members using two (2) vise-grip locking c-clamps on each side of the module.</li><li>9. Remove the lift jack.</li></ol>	

<p>10. Wearing safety goggles, drill 5/16” holes through the lift module flanges and cross-members, being careful not to damage any pre-installed electrical wires.</p> <p>11. Drill fourteen (14) holes in total, four (4) on each of the outside flanges (closest to the pontoons) and three (3) each on the flanges on the inside of the modules.</p>	
<p>12. Secure the modules to the cross-members using the 5/16”-18” hex cap bolts and 5/16”-18 flange lock nuts.</p> <p>13. Tighten all snugly, using an impact wrench or 1/2” socket wrench.</p> <p>14. Release the clamps when all fourteen (14) bolts have been tightened.</p> <p>15. Cut the cable tie and lower the foot pad. Verify proper clearance between the pontoon tubes.</p>	

## Step 5: Connect the Remote Control Unit

Sea-Legs are operated via remote control. Each installation kit will include a remote control receiver and two transmitters.

<p>1. Connect the black WeatherPack male end of the remote control wiring harness (on the remote control receiver) to the black WeatherPack female end on the Sea-Legs Pump. It will only fit in one direction. Be sure to close the connection until it snaps.</p>	
<p>2. Pressing the ON button will activate the remote. The remote automatically powers off 60 seconds after the last button is pushed.</p>	

## Step 6: Fill the Hydraulic System and Bleed the Lines

Now that Sea-Legs are attached to the boat, it is time to add oil to the system and bleed the lines. A key to performing this procedure correctly is to work slowly and patiently. A major obstacle to a smoothly functioning



hydraulic system is air in the hoses or lines. Thus, when filling the reservoir tank or raising the boat, don't rush. Patience now saves potential time and trouble later.

1. Connect the battery wires to the proper battery terminals. Red is to positive, black to negative. Sea-Legs requires a battery with at least 850 cold cranking amps (not a deep cycle).

2. *Note: Some dealers prefer a second battery, and/or to include an on-board charger for Sea-Legs.*



3. A typical Sea-Legs installation requires seven (7) quarts of Chevron Clarity AW 32 hydraulic fluid. You receive two gallons of this oil with each set of Sea-Legs. This oil has been approved as "environmentally friendly." ONLY use this oil for your Sea-Legs pump. If you need more oil, call Sea-Legs at 952-934-7000.

4. Check all hoses and fittings on the pump to make sure they are tight.



5. **Never** operate the Sea-Legs pump without oil in the reservoir.

6. Slowly fill the oil reservoir to within 1/2" of the top of the reservoir tank.



7. Press BOAT DOWN on the remote. This will retract all of the module cylinders and draw oil into the hoses and cylinders.

8. Add oil as needed; do not allow the reservoir to drop below 1/2 full. *NOTE: It is advisable to have someone looking under the boat while you are filling with oil, to watch for oil leaks around the fittings or cylinders.*



9. Continue BOAT DOWN until all modules fully retract under the boat and the alarm sounds. **STOP**.

10. Check the oil level in your reservoir; fill (as needed) to within 1" of the top of the reservoir tank.

11. Press FRONT UP on the remote. This will extend the FRONT module cylinders and draw oil into those cylinders.

12. Add oil as needed; do not allow the reservoir to drop below 1/2 full.

13. Press FRONT UP on the remote. This will start to raise your boat off the shop floor (or ground). Continue raising the boat until it begins to lift off of the front blocks. **STOP**. Check all front hoses/fittings under the boat for leaks.



14. Press REAR UP on the remote. This will start to raise your boat

off the shop floor (or ground). Continue raising the boat until it begins to lift off of the rear blocks. **STOP**. Check all rear hoses/fittings under the boat for leaks.

15. Press BOAT DOWN on the remote until all modules fully retract under the boat and the alarm sounds. **STOP**. NOTE: As you are lowering the boat, it may help to have someone on the ground guide you, to make sure the blocks have not been moved and/or to make sure the blocks are still lined up on the pontoons' weld seams.

16. Check for clearance above the boat. If clear, press BOAT UP to raise the boat. Make sure the reservoir tank is  $\frac{1}{2}$  full of oil.

17. Raise the boat (BOAT UP) to its full height, or as high as ceiling or vertical clearance will allow. (As before, add oil if needed; do not allow the reservoir tank to fall to less than  $\frac{1}{2}$  full). **STOP**. You may need to toggle between FRONT UP and REAR UP to raise the boat levelly.



18. Press BOAT DOWN on the remote to lower the boat. Always keep an eye on the oil level in the reservoir tank, and continue to add oil if it drops below half full. At this point you only want a half full tank as the oil is flowing back into the reservoir tank.

19. Continue lowering the boat (BOAT DOWN, FRONT DOWN and/or REAR DOWN on the remote), until it comes to rest on the blocks. NOTE: As you are lowering the boat, it may help to have someone on the ground guide you, to make sure the blocks have not been moved and/or to make sure the blocks are still lined up on the pontoons' weld seams.

20. Continue pressing BOAT DOWN on the remote until you hear each module snap up underneath the boat deck. You will hear an alarm sound when the modules snap up fully underneath the boat.

21. To verify that the remote control receiver toggles are operating as expected, toggle each of the Front and Rear switches both ways to ensure proper operation.



NOTE: You may find that the front of the boat rises faster than the rear. This is normal and to be expected, as the majority of the boat's weight (particularly if fully rigged) is in the rear of the boat. In order to keep the boat level during ascent and descent, you may need to toggle between FRONT UP and REAR UP buttons on the remote.

## Step 7: Final Cycle Test and Cleanup

With the Legs fully extended and then fully retracted, most if not all air should be bled from your lines. All that is left is a few testing and clean-up steps.

1. Cycle the boat up and down to clear all air from the hydraulic lines and cylinders. Remember to go slowly and/or pause to let air escape lines, cylinders and reservoir tank. Two full cycles up and down should be sufficient. NOTE: make sure the hoses are clear of the legs so they do not become pinched while the legs are in motion.
2. Raise the boat (BOAT UP) to its full height, or as high as ceiling or vertical clearance will allow. (As before, add oil if needed; do not allow the reservoir tank to fall to less than half full). **STOP**. You may need to toggle between FRONT UP and REAR UP to raise the boat levelly.
3. Walk underneath the boat (fully extended) and use cable ties to tie up all hoses. Clip tie wrap ends and push hoses as far under boat and out of sight as possible. Attach warning stickers to Sea-Legs, if they are not already attached. Use cable ties to secure the hose to each cylinder.
4. Press BOAT DOWN to lower the boat until it rests on blocks. Listen for the Front and Rear Leg modules to snap up under the boat – an alarm will sound after both legs retract fully.



5. Check and fill the reservoir tank to within approximately 1" of the top; install reservoir cap.
6. Troubleshoot any remaining issues. If there is anything you do not understand, feel free to call Sea-Legs at 952-934-7000 for assistance.
7. Clean the area around and below the boat. In particular, you will have metal shavings under the boat to sweep up.
8. Place the Sea-Legs brochure, owners manual and warranty form (all included in the installation kit) and remote control transmitter in the boat glove box (or steering console compartment) for the customer.



Congratulations! You have finished your Sea-Legs install, and the boat is ready for the water. With some experience, install time should be approximately 2 hours (for a two-person crew).