

When installing the keel the keel must be on the ground and the boat lowered onto it. To ensure that the keel is pressed tightly against the boat the boat's weight should be lowered onto the keel. Lower the boat until the Travelift straps are slightly loose. Then the weight is on the keel and the straps are just supporting the boat enough to keep it stable.

The keel is attached with stainless steel hardware: A flat washer, a lock washer and a nut on each keel bolt. Before the nuts are run down more bedding must be applied under the flat washer on the stud coming into the boat, get a little caulking up higher on the threads and in the nut to help lubricate the nut as it is torqued. Run down the nuts with an air gun if you'd like, but apply final torque by hand using the torque wrench set according to the chart:

Bolt Size	Socket Size	Required Torque
1/2"	3/4"	45 ft lbs
3/4"	1 1/8"	250 ft lbs
1"	1 1/2"	350 ft lbs
1-1/4"	1 7/8"	500 ft lbs

The keel bolts must be tightened in sequence. As later bolts are tightened the keel will be pulled up closer against the hull and the first bolts that were torqued will become loose again. Make sure to tighten all the bolts and then go back and tighten them all again. Do this until you can use the torque wrench and go through every bolt on the keel without any of them turning any more. Each one will be at the correct torque and the wrench will just click on each showing the proper tightness.

The sequence of torquing the bolts can pull the keel sideways. Alternately tightening bolts on one side and then the other can help with this but it's necessary to **MAKE SURE** the keel stays plumb. Re-measure from the sheer, just like in the dry-fit step to make sure that when the keel is fully tightened it is also straight.