

# Rusty Keel Bolts



## Back Ground Information

- Cast Iron keel use galvanized bolts - There are threaded sockets cast into the keel
  - Lead keels use stainless steel nuts - There are threaded rods cast into the keel
- You can use stainless steel bolts in a cast iron keel, but you should remove and inspect the threads for galvanic corrosion yearly. There is a part number cross reference table at the end of this document.

A bolt only has to engage the threads 1 ½ times the diameter of the bolt to be effective. 90 % of Beneteau Keel bolts are 3 inches or less in length.

## Replacing Information

Use a battery powered drill with a wire brush wheel. Clean the heads down to new metal. Tip: use a shop-vac to clean rust dust and flecks as you clean the heads.

Remove 1 bolt and inspect. At this point you should be able to make a determination if the bolt is structurally sound or needs to be replaced. A complete set of the bolts and washers can be ordered from the Beneteau Spare Parts Department. We will need the Model and Type of keel on of your boat.

14mm bolt uses	22 mm socket
20mm bolt uses	1-3/16 socket
30mm bolt uses	1 7/16 socket

If you have water entering the boat through the bolt hole, replace the bolt and make future plans with your local boat yard to haul, separate and reinstall the keel.

If the head of the bolts are so degraded that the socket will not back it out, use a side grinder to grind two flat sides on the bolt. This should allow you to remove the bolt with a wrench. Worst case scenario: Remove boat from the water, grind the heads

completely off and remove the keel from the hull. Then using the remaining shaft of the bolt, remove the bolts and reinstall the keel.

Coating the heads of the bolts with a rust preventative paint will prolong the life of the bolts. Tip: I have used Trailercoat from West Marine with success.

Do not use sealant on the bolt threads; only use sealant around the bolt heads to keep bilge water out of the bolt socket. You can use a small amount of Never-seez Compound on the threads of the bolts.

The keel to hull joint and exterior seam should be sealed with Marine Adhesive Sealant 5200.

## Keel bolt Torque Specifications.

### **DACROMATISED STEEL BOLTS TYPE 8-8.**

DIAMETER	M14	M20	M24	M30
TORQUE in M.Kg - minimum	5	13	23	45
TORQUE in M.Kg - maximum	9	27	46	90
TORQUE in ft.lb – minimum	36	94	166	325
TORQUE in ft.lb – maximum	65	195	333	651

### **TABLE 6.5.2**

### **STAINLESS STEEL BOLTS TYPE A4-70 and A4-80**

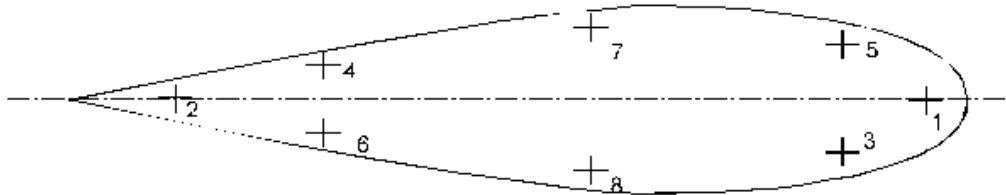
DIAMETER	M14	M20	M24
TORQUE in M.Kg - minimum	5	16	28
TORQUE in M.Kg - maximum	11	32	55
TORQUE in ft.lb – minimum	36	116	203
TORQUE in ft.lb – maximum	80	231	398

### **TABLE 6.5.3**

### **STAINLESS STEEL BOLTS TYPE A4-55**

DIAMETER	M30	M36	M42
TORQUE in M.Kg - minimum	19	33	52
TORQUE in M.Kg - maximum	38	65	104
TORQUE in ft.lb – minimum	137	239	376
TORQUE in ft.lb – maximum	275	470	752

Keel bolts should be tighten in staggered pattern, like lug nuts on a tire.



Size	Galv. Bolt	Galv. Washer		SS Bolt	SS Washer
14 x 50	048552	078826		935640	044464
14 x 70	030802	078826		046971	044464
14 x 100	072589	078826		935555	044464
20 x 70	017541	015056		935700	042338
20 x 80	NA *	015056		044990	042338
20 x 90	017539	015056		954068	042338
20 x 100	NA	015056		024633	042338
20 x 110	040607	015056		935650	042338
24 x 110	NA	NA		053218	042338
30 x 110	017538	011513		NA	NA
30 x 120	NA	NA		036539	013415
30 x 140	NA	NA		015586	013415
30 X 130	032696	011513			
* can be replaced by 017539					