

WARNINGS

WARNING: Pushing the KIWI Seal over sharp edged key ways / threads may damage the seal. If this appears to be a risk, place sellotape or similar over the keyway during KSS install process then remove.

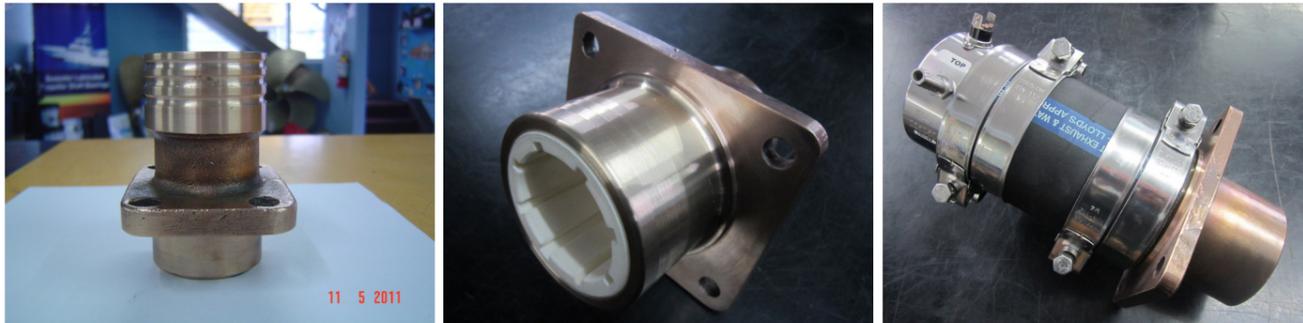
WARNING: At all times when launching the vessel, the seal must be burped at the input hose tail, and the water flow to the seal checked. Upon initial sea trial the seal must be visually inspected to ensure that the water feed is not excessive, forcing water past the seal (internally). This can also be created by a restriction in the stern tube.

WARNING: Check water level in vented loop to ensure correct height of vent to avoid ingress of raw water into vessel and engine.

WARNING: After sea trial the seal should be visually inspected every time the vessel is used. This should be included in a list of other standard procedures required before and after the vessel goes to sea.

If you have any doubts of this installation procedure please contact your local distributor

STUFFING BOX CONVERSION



If your vessel is fitted with an old style rigid stuffing box or admiralty-packing gland, this can be removed and replaced with a Bearing Carrier and KSS of the appropriate size.

Should the KIWI seal be adapted to a packing type gland, then the inside bore of the packing gland must have water grooves similar to a standard shaft bearing to allow for the pressure fed water from the KIWI seal to exit the stern tube without restriction.



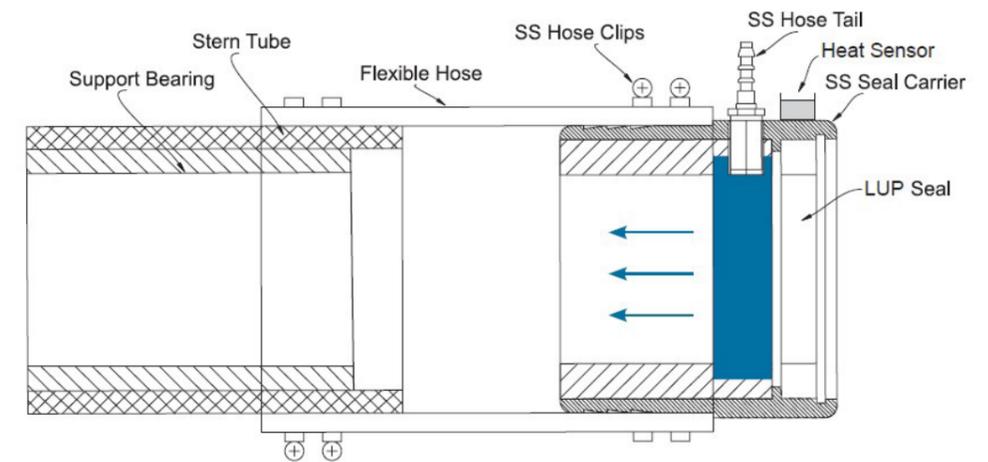
Serial Number:

INSTALLATION INSTRUCTIONS

ALARMED KIWI SHAFT SEAL

KIT INCLUDES:

- 1x Kiwi Shaft Seal
- 1x S/S Water Flow Tap
- 5x S/S Tail
- 1x Thordon Fwd Bearing
- 1x S/S T-Vent
- 1x Heat Sensor Fitted 12V
- 1x Dash Mounted Warning Light
- 1x Audio Alarm
- 1x Dash Mounted Label



FORWARD BEARING

Today's modern engines are generally mounted on flexible rubber mounts. These mounts allow the engine, which is a significant block of steel in ones boat, to move off centre in varying sea conditions. When using a down angle or drop centre gearbox the rubber type mounts also allow the engine to move forward and up on a different plane to the shaft centre line under thrust. All of these extra tolerances will have a negative effect on one's shaft seal over time.

The Thordon Forward Bearing supplied with the Kiwi shaft seal is designed to minimize the added tolerances associated with motor sailing and power boating in all sea conditions.

The Thordon Forward Bearing also ensures that the engine alignment is correct in that your engineer must

adjust the engine to true alignment with the shaft half coupling. He will not be able to move the shaft off centre to line up if the attempt at alignment is poor. If you wish to receive an alignment procedure please contact us.

To install the Kiwi Shaft Seal and Thordon forward bearing the boat should be out of the water.

NOTE: If you are fitting a Kiwi Shaft seal then it must also have a forward support bearing placed within 4 x the shaft diameter from forward end of the bearing to the aft end of the Kiwi Seal hose meaning directly behind the kiwi shaft seal. This is designed to ensure that your shaft remains in the centre of the stern tube at all times regardless of sea conditions.

READ ALL INSTRUCTIONS THOROUGHLY

BEFORE INSTALLING THE KIWI SHAFT SEAL AND FORWARD SUPPORT BEARING

IF YOU DO NOT OR CANNOT FIT A FORWARD SUPPORT BEARING THEN YOU MUST NOT INSTALL THIS SHAFT SEAL

Be sure not to damage the internal seal while handling

1. Unbolt the shaft coupling from the engine coupling.
2. Remove the shaft coupling from the shaft.
3. Clean the shaft with a very fine sand paper (400 to 600 grit paper). Next lightly lubricate the shaft with [soapy water](#) - do not use oil or grease.
4. Slide the shaft as far aft as possible to allow clear access to the stern tube ID.
5. If you have an existing support bearing in the forward end of the stern tube – check that it is still to the manufacturers tolerances. If one is not in place measure the ID of the stern tube and compare to the OD of the standard Thordon bearing supplied in your Kiwi seal kit. If the ID matches the bearing description included in your kit simply place the Thordon bearing in a bag of ice for approx. 3 hours, remove and then as quick as possible gently drift the Thordon bearing down the ID of the stern tube. As the bearing warms up it will grow and lock into place. [No mechanical fastenings are required](#). Slide the shaft forward through the bearing. If you notice that this is a difficult procedure then your stern tube strut alignment is out of tolerance OR you have incorrectly measured and matched the Thordon forward bearing. Please contact our office for assistance.

NOTE: The Thordon forward bearing supplied is unique (as is the bearing in the Kiwi Seal) in that it will not grab the shaft before the alarm system is activated should total lubricant failure occur at any time. It will start to wear at an increasing rate but allow you to get home safely in case of emergency.

6. Lightly lubricate the lip seal with soapy water. Fit the Kiwi Seal over the shaft making sure the S/S nose cone

is securely attached to the hose by the two stainless steel hose clamps/forward end. [Ensure heat sensor and water tail are positioned at top as marked](#). Slide the hose over the stern tube/shaft log making sure that the 2 x stainless steel hose clamps aft end are correctly aligned and tightened. Do not over tighten the hose clamps on to the Kiwi Seal. Ensure clamps are positioned as a mirror image.

7. Re-install the coupling on the shaft. Slide the shaft and coupling back up to the engine. Go through the alignment procedure checking that the flanges are in alignment, vertically / horizontally & in angle face to face within .002" then bolt the two flanges back together.

The alarm system supplied with the KSS is 12V - Please ask if ship system is 24V.

NOTE: Shaft alignment cannot be done off a flexible shaft coupling – one MUST work directly off the gearbox output flange to the steel shaft half coupling.

8. Your Kiwi Shaft Seal incorporates a system that allows the person operating the vessel to see a warning light and hear an audible alarm should the operating temperature of the seal exceed the design parameters. The system alarm is designed to operate BEFORE the KSS condition is compromised so that one can immediately place vessel in neutral check shaft seal which may be hot to touch, check water coolant feed. If nothing can be immediately done then one can safely reduce vessel speed to approx. 5 / 7 knots which will enable the seal to cool down while the vessel heads for the nearest port to undertake inspection of the shaft seal, bearing, stern tube, shaft and vessel cooling system. [Please see following wiring diagram on page 3.](#)

9. Now the shaft seal is in place. Next tee off the pressure side of the engine raw water pump (Note: the water must be sea temperature as warm engine water will corrode S/S shafts & affect bearing tolerances), run a 3/8" hose directly into the male hose fitting on the Kiwi Seal. This will lubricate the Kiwi Seal and bearing. Fit the ball valve provided in the cold water feed line to be able to adjust the water flow delivered by the engine as different vessel speeds, tube IDs, number of bearings and pump capacities affect the amount of water required. As a guide please see water flow chart below, which is checked by removing the hose off the male fitting into the Kiwi Seal and when the engine is out of gear at

cruising RPM check the amount of water delivered into a measured container.

10. Loop & vent the line above the waterline using 1 x S/S T fitting and 3 x S/S tails provided (fitted with thread tape or sealant) to prevent gravity/vacuum feed of raw water into engine ports when the engine is shut down. Do not take water feed off any installed coolers.

NOTE: Do not cross feed water supply in the case of twin installations.

WATER FLOW CHART

Shaft seal size	Min Litres per Min	Max Litres per Min
1"	2.5	4.0
1 1/4"	3.0	5.0
1 1/2"	3.5	6.0
1 3/4"	4.5	7.0
2"	5.0	8.0
2 1/4"	5.5	9.0
2 1/2"	6.0	10.0
2 3/4"	6.5	11.0

3"	7.0	12.0
3 1/4"	8.0	13.0
3 1/2"	9.0	14.0
4"	10.0	15.0
4 1/4"	12.0	16.0
4 1/2"	14.0	17.0
5"	16.0	19.0
5 1/2"	18.0	21.0
6"	20.0	23.0

TEMPERATURE ALARM WIRING DIAGRAM

