Surf Life Saving Australia Procedure

Procedure Name:	IRB Outboard Motor Sealing
Issued:	July 2017

1. EQUIPMENT COVERED BY THIS PROCEDURE

1.1. All SLSA endorsed two stroke IRB outboard motors (motors) used for Surf Life Saving purposes are covered by this procedure however, all 2 stroke motors that are supplied to Surf Life Saving will be sealed at manufacture.

1.2. Two stroke direct injection IRB outboard motors are required to be sealed and must also have method(s) to control or test electronically controlled elements as well.

Why does SLS seal IRB engines?

SLSA has insisted on all motors being sealed to ensure outboard motors are not tampered/modified or performance enhanced outside of the manufacturer specifications. This also ensures a level playing field for all IRB competitors.

An outboard motor that is found to be out of manufacturer specification will be reported to SLSA, the relevant SLS State/Territory Centre and the National Technical Advisor (if applicable). There are serious consequences for modifying an outboard motor.

What is an outboard motor seal?

A motor seal is a uniquely numbered security plastic seal with the SLSA logo and lock wire.

2. WHAT COMPONENTS ARE SEALED?

2.1. There are four seals applied to all motors upon release from the supplier to ensure that the following outboard motor parts:

a. Cylinder head
b. Crankcase
c. Intake manifold
d. Engine mount

3. HOW IS THE OUTBOARD MOTOR SEALED?

3.1. Factory Sealing

3.1.1. All two stroke outboard motors used for SLS operations (lifesaving and competition) must be sealed by the manufacturer prior to dispatch to a marine dealership or other party.

3.1.2. The outboard motor will be fitted with a complete set of SLSA authorised motor seals, chronological in sequence.

3.1.3. An official SLSA 'motor sealing form' (MSF) will be completed by the manufacturer with the allocated club/service and seal numbers noted.

3.2. Order & Delivery of the motor

3.2.1. The club/service orders the outboard motor from the manufacturer with an official 'surf club' order form.

3.2.2. Upon delivery of the motor, the marine dealer and club/service are to check that the seal numbers match the MSF and that the seals are intact and not damaged.

3.2.3. If the seal is damaged or is incorrect, the motor must be returned to the manufacturer for the complete re-fit of new seals and competition of a new MSF.

3.3. Motor Sealing Form (MSF)

3.3.1. Completed copies of the MSF are distributed to the following parties:

Form Colour		Action
White	Original	Retained and filed by the outboard motor manufacturer
Blue	1st copy	Sent/emailed to Surf Life Saving Australia
Green	2nd copy	Sent to relevant SLS State/Territory office (Attn: Sports Manager)
Yellow	3rd copy	Sent with motor to purchasing club/service

3.3.2. The receiving club/service is to enter the motor sealing numbers into SurfGuard It is important that the numbers are entered correctly. The club/service is to retain the MSF for competition scrutineering and may be required for lifesaving gear and equipment inspection (State/Territory Centre requirement).

3.3.3. The Chief Scrutineer/Gear Inspector will request the Yellow MSF at gear inspection/competition scrutineering to ensure the numbers match. MSFs are mandatory for IRB competition scrutineering and must be presented when requested. Clubs are encouraged to laminate the MSF for this purpose.

4. MOTOR RE-SEALING

State/Territory centres may require clubs/services to reseal motors used for lifesaving operations. Clubs/services are advised to check with their State/Territory centre for local requirements.

4.1. Damaged seal

The seal is corroded, frayed or damaged wire and/or damaged plastics; but not broken.

4.2. Broken seal

The sealing wire is no longer intact and/or does not form a continuous closed loop through the sealing bolt. Motors with broken seals are non-compliant for IRB racing and must not be used in IRB sport. Motors that are solely used lifesaving operations do not need to replace broken engine seals.

4.3. Replacing a seal

Should a seal be broken or damaged and need replacing, the club/service is to undertake the following.
The club/service is to fill in the IRB Motor Resealing Request Form (page 5) and return to SLSA.
E) equipment@slsa.asn.au P) (02) 9215 8000

SLSA will appoint an authorised re-sealer who will arrange with the club/service for a suitable time to replace the seal(s). An SLSA authorised re-sealer and/or outboard motor manufacturer authorised service agent will carry out the appropriate inspection of the outboard motor.

4.3.1. Damaged seal
Should the seal only be damaged and not broken, a new seal will be applied and a 'motor resealing form' (MRF) will be completed.

4.3.2. Broken seal
An SLSA authorised resealer and/or outboard motor manufacturer authorised service agent will carry out the appropriate disassemble, measurement and inspection of the outboard motor. The degree of disassembly and inspection will depend on the seal that is broken.

Should no modifications be found, the motor will be reassembled (under the supervision of the SLSA authorised motor re-sealer), new gasket/s should be fitted and securing nuts/ bolts tensioned to the factory torque specifications. New seals will be applied and a motor resealing form (MRF) will be completed.

Completed copies of the MRF will be distributed and retained by the club, SLSA and the motor re-sealer.

4.3.3. Inspection of an outboard motor

a. Cylinder head - The technician will remove the cylinder head and will measure/ compare the cylinder head with an "out of the box" genuine part. The technician will also observe exhaust port castings, cylinder sleeves, pistons where possible for any alteration/ modification that may have been performed.

b. Crankcase - No other seals are disturbed or broken it is not necessary to dismantle any components of the motor.

c. Intake manifold - The technician will remove the intake manifold and measure the reed stopper height for specification compliance as provided by the manufacturer of that motor. The technician will also observe any associated specification or any other modifications that may have been performed for non-compliance

d. Engine mount - The technician will remove the power head and visually check for any alterations i.e. modified gaskets, exhaust ports, exhaust outlet and exhaust pipe/ tube modifications. The technician will also check for machining of the power head gasket mating faces and any alteration which is not standard from factory in both casting and machining. The technician will also check the bottom of the crankshaft has not been blocked i.e. with cork or silicone or by any other method. Some manufacturers do have a blind bottom crankshaft spline and other manufacturers do not, it must be as per manufacturer's specifications.

4.3.4. During Competition (damaged seal only)

Damaged seals may be replaced during competition at the discretion of the Chief Scrutineer. An outboard motor with a broken seal cannot be used.

a. The team manager must inform the Chief Scrutineer of the need for replacement seals.

b. The team manager and one other team member must present the outboard motor in a clean condition.

c. The club's copy or photo copy of the motor's MSF must be presented with the outboard motor.

d. The Chief Scrutineer will request the attendance of the following personnel to attend the resealing of the engine:

e. Carnival Referee or appointee

f. Team Manager from the club and one other team member

g. Team Manager from another competing club

h. An SLSA authorised re-sealer (if the Chief Scrutineer is not one).

i. The SLSA authorised re-sealer shall replace the damaged seal/s complete a MRF which is to be signed by all of the above personnel.

j. Copies of the MRF shall be distributed to the appropriate parties.

4.3.5. Restrictions to resealing a motor

a. There has been a major motor malfunction and the motor needs to be fully dismantled.

b. Where components have been removed from the motor without the re-sealer being present.

c. Where a repair will require more than one seal to be broken.

d. If the repair is going to take more than one hour to complete.

e. If the replacement parts are not genuine manufacturer parts specific for the type of engine, in their original sealed packaging displaying the appropriate part number in a legible condition.

5. MOTOR SEAL MAINTENANCE

Motor seals are fragile – it is important to treat them with care during transport, motor use and wash down. It is the IRB operator's responsibility to take care of motor seals.

Some helpful tips:

- Wash all motor seals with fresh water after every use of motor.
- Spray all motor seals with anti-corrosion spray after every use of motor.
- Arrange for renewal or replacement of unbroken seals if they are frayed, damaged or corroded

6. SLSA Authorised Re-sealers

SLSA authorised re-sealers are charged with the task of resealing engines that have had a seal damaged or removed. To become an SLSA authorised re-sealer an individual will first seek and receive endorsement from their State/Territory Centre prior to assessment by SLSA.

The member shall have the following awards and skills prior to endorsement by SLSA as an Authorised Re-sealer

- An Endorsed Scrutineer
- Have received the proper training from a senior SLSA Authorised Re-sealer

It should be noted that no SLSA Authorised Re-sealer may be involved with the resealing of an outboard motor where they are a competitor in IRB Competition.

SURF LIFE SAVING AUSTRALIA: IRB MOTOR RESEALING REQUEST FORM

Please attach a copy of the initial Motor Sealing Form.

<table>
<tr><td colspan="2">Date of Request:</td><td colspan="2">SLSC:</td></tr>
<tr><td colspan="2">Contact Name:</td><td colspan="2">State/Territory:</td></tr>
<tr><td colspan="2">Club Position:</td><td colspan="2">Year of Manufacture:</td></tr>
<tr><td colspan="2">Motor Serial Number:</td><td>Which Seal needs Re-sealing:</td><td>Seal Number:</td></tr>
<tr><td colspan="2" rowspan="4">Motor Make:
Tohatsu ☐
Yamaha ☐
Mercury ☐</td><td>Cylinder Head ☐</td><td></td></tr>
<tr><td>Crank Case ☐</td><td></td></tr>
<tr><td>Inlet Manifold ☐</td><td></td></tr>
<tr><td>Engine Block ☐</td><td></td></tr>
<tr><td colspan="4">Why does the seal need replacing:</td></tr>
</table>