



# Surf Life Saving IRB Competition

## Gear and Equipment Regulations 2024





## **IRB COMPETITION GEAR AND EQUIPMENT REGULATIONS**

Inflatable rescue boat (IRB) competition is intended to bring together IRB operators to test and develop their skills and fitness using one of the most important items of surf lifesaving rescue equipment.

In IRB competition it is acceptable to prepare gear and equipment used to the highest standard; however, within the rules and regulations as laid out by SLSA. Safety and fair competition are of paramount importance.

All IRB operators entering and competing in IRB competition should be conversant and compliant with these gear and equipment regulations, including current SLSA and manufacturer's gear and equipment specifications.

If a gear and equipment issue is identified, which is not covered in this document, the IRB Competition Referee may seek advice from scrutineers and technical advisors to assist in making a decision on the issue in question.

### **CONTENTS**

IRB GEAR AND EQUIPMENT – COMPLIANCE AND SCRUTINEERING	3
PERMISSIBLE IRB EQUIPMENT AND MODIFICATIONS	5
1. IRB HULLS	5
2. ANCILLARY EQUIPMENT	6
3. SPARK PLUGS	6
4. OUTBOARD MOTORS	6
5. SURF KITS	8
6. PROPELLER GUARDS	9
7. PROPELLERS	9
8. FUEL	12
9. COMMUNICATION AND VIDEO DEVICES ON IRBs	13
10. HELMETS	13
11. PERSONAL PROTECTIVE EQUIPMENT	14
12. GENERAL OPERATOR AND GEAR AND EQUIPMENT SAFETY	14
APPENDIX	15
(A) OUTBOARD MOTOR MODIFICATIONS	15
(B) FUEL SAFETY	23
(C) POWERCRAFT CODE OF CONDUCT	26
(D) REFERENCES	26
(E) SLSA CIRCULARS	26



## **IRB GEAR AND EQUIPMENT – COMPLIANCE AND SCRUTINEERING**

### **Compliance:**

- a) All IRB gear and equipment used for the purpose of IRB competition must:
- ✦ Be approved by SLSA and listed in this document
  - ✦ Comply with both SLSA's and the SLSA approved manufacturer's specifications
  - ✦ Be fully operational and in a serviceable and seaworthy condition
  - ✦ All IRB gear and equipment used for the purpose of IRB competition must be in the "out-of-the-box" form (except for the SLSA approved modifications as listed in this bulletin). Out-of-the-box is defined as the original specifications, design, accessories and tolerances as the product was manufactured
  - ✦ Be genuine equipment, parts or components from manufacturers or suppliers approved by SLSA
  - ✦ New or modified equipment will not be approved during IRB season (1 April to 1 October)

### **Non-compliance:**

- a) In the event that IRB gear and equipment is found to be non-compliant with the regulations of this document, SLSA has the right to investigate the circumstances and take the appropriate course of disciplinary action (as per the competition rules and the SLSA Surf Sports Manual). This may include (but not limited to):
- ✦ Equipment being impounded and not being used for the event
  - ✦ Suspension from the competition

### **Scrutineering:**

- a) ALL IRB gear and equipment used for the purpose of IRB competition must be presented for and pass the scrutineering requirements as listed in the compliance section of this document.
- b) Gear and equipment may be scrutineered at any stage of the competition at the discretion of the referee, including pre competition, during competition or post competition.
- c) Gear and equipment scrutineers will be appointed for every IRB competition event. Gear and equipment technical advisors may also be appointed to assist with scrutineering.
- d) Each club will be responsible for having available a minimum of four (4) club members, one of whom shall be the team manager (or their appointee), when presenting gear and equipment for safety and compliance scrutineering.
- e) The use of measuring equipment (jigs, templates, comparative examples and other devices) may be used as a guide to establish where or not the equipment is as per SLSA and manufacturer specifications.
- f) IRB GEAR AND EQUIPMENT WILL BE COMPARED TO NON-MODIFIED MANUFACTURER'S SAMPLES FOR THE PURPOSE OF COMPARATIVE SCRUTINEERING.
- g) Each competing club may present for scrutineering a maximum of two (2) propellers for each outboard motor that passes scrutineering. There is no maximum number for all other items of IRB gear and equipment.
- h) At the discretion of the Chief Gear and Equipment Scrutineer and Competition Referee, failed equipment at the pre-competition inspection may be addressed and re-inspected a further one time only.



### Scrutineering Process:

1. Arrive at least 30 minutes prior to your club's scheduled scrutineering time. Please note that the scrutineering schedule will be posted on [www.sls.com.au](http://www.sls.com.au) after the close off of entries.
2. Report to the scrutineering registrar with all forms and documentation filled in correctly (please see below for the correct scrutineering forms).
3. Follow directions from scrutineering marshals and move through the designated scrutineering station.
4. Submit all completed forms to the scrutineering registrar following completion of scrutineering.

### Scrutineering documents:

1. Scrutineering forms are to be completed for all equipment prior to inspection.
  - ✦ IRB fuel safety and compliance check record
  - ✦ IRB hull safety and compliance check record
  - ✦ IRB motor safety and compliance check record (includes propeller guard and surf kit checks)
  - ✦ IRB propeller safety and compliance check record
2. Motor sealing forms are required for all motors. These are to be laminated and attached to each motor presented for inspection. If any club has misplaced motor sealing forms need to contact their State or SLSA to receive a copy of original form.

### Preparation of IRB Gear and Equipment for Scrutineering:

1. Motors and Motor seals
  - ✦ Clean and free of excess grease, oil and foreign substances
  - ✦ Clearly marked with club identification number
  - ✦ Air box removed
  - ✦ Carburettors fitted
  - ✦ Restrictor plates and restrictor bolts in situ and orientated correctly
  - ✦ Motor Seals clean, intact, unbroken and legible
  - ✦ Fitted with only genuine components or parts of an approved type
  - ✦ Motor Sealing Form laminated and attached via elastic band to gear shift lever
2. Propeller Guards
  - ✦ Fitted correctly (e.g., propeller blades do not protrude outside guard)
  - ✦ Free of breaks
  - ✦ Free of sharp edges
  - ✦ Fixing bolts of approved type as recommended by guard manufacturer
3. Propellers
  - ✦ Removed from motors and grouped together
  - ✦ Clean and free of excess grease, oil and foreign substances
  - ✦ Free of sharp shards, nicks or metal splinters
  - ✦ **CLEARLY ENGRAVED** with their club identification marking and number which must be clearly visible when installed on the motor.



4. Hulls
  - ✦ Floor boards fitted. Please note: Scrutineer may request that the floor boards be removed to check integrity.
  - ✦ Inflated to scrutineering pressure as directed by the Registrar. A Scrutineer will be available in the 'Hull Inflation Area' with a liquid filled gauge to assist with this
  - ✦ Marked clearly with Maritime / waterways number
  - ✦ Fitted with compliance plates securely fixed and in a legible condition
5. Ancillary equipment
  - ✦ Must be laid out on the floor of the respective IRB
  - ✦ Clubs are reminded that paddles, whistle, tow rope and knife are to be removed for competition
6. Fuel cells
  - ✦ Empty
  - ✦ Clipped into position on the floorboard
  - ✦ Sharp edges (e.g., hose clamps) taped or covered with protective material
7. Fuel
  - ✦ Rated at 98 octane (refer to page 11 of this document)
  - ✦ Contain no additional added ethanol (i.e., e5 and e10 fuels and the like are not permitted for use at championships)
  - ✦ Premixed with two stroke oil at club's normal fuel/oil ratio
  - ✦ Contain no additives other than oil of an approved type
  - ✦ All fuel containers must be of an approved type and labelled with an individual club identification marking (e.g., Wombat SLSC no. 1)

## PERMISSIBLE IRB EQUIPMENT AND MODIFICATIONS

### 1. IRB HULLS

Approved hulls: The following IRB hulls are approved for IRB competition:

Thundercat Gen 3
Zodiac Milpro ZMSR 385
Achilles SSX 385

- ✦ The IRB must have the SLSA approved surf craft plate affixed to the transom
- ✦ The IRB must be registered and clearly identified as per State/Territory Maritime requirements

#### Modifications:

There are no permissible modifications for IRB hulls. All hulls must comply with both SLSA's and the SLSA approved manufacturer's specifications.



## 2. ANCILLARY EQUIPMENT

Approved ancillary equipment: The following IRB ancillary items are approved for competition:

**Note:** Any MCM fuel cells bought after 28 January 2015 are not approved for use in IRB Competition.

FUEL CELL	RESCUE TUBE
TOH/MCM collapsible triangular fuel cell	Rescue tube as supplied by SLSA or SLS State/Territory Centre
TOH/MCM collapsible concertina fuel cell	
MBF collapsible concertina fuel cell and triangular model fuel cell	
Nauta collapsible concertina fuel cell	
Wilsco collapsible fuel cell	

### Modifications:

There are no permissible modifications for IRB ancillary equipment. All ancillary equipment must comply with both SLSA's and the SLSA approved manufacturer's specifications.

Fuel cells manufactured after the 1 July 2011 must have the protective covering over all fittings (eyelets and brass fittings).

## 3. SPARK PLUGS

Approved spark plugs: The only approved spark plugs are the N.G.K brand:

- ✦ B7 – HS – 10
- ✦ BR – 7HS – 10
- ✦ BP – 7HS – 10

NB: Non pre-gapped spark plugs are acceptable. That is, the models listed above without the numeral 10.

### Modifications:

There are no permissible modifications for spark plugs.

## 4. OUTBOARD MOTORS

Approved outboard motors:

Outboard Motors
Yamaha 25HP 25XMHS
Tohatsu 25HP M25C3/M25H S
Mercury 25HP ME25 Seapro

- ✦ The outboard motor must be correctly sealed as per SLSA outboard motor sealing procedures. Please refer to the SLSA Outboard Motor Sealing and Resealing Process in the appendix of this bulletin.



**Modifications:**

- ✦ Other than the approved modifications as listed in the table below, IRB outboard motors may not be altered
- ✦ and must remain within the original ‘out-of-the-box’ specifications as supplied by the manufacturer.
- ✦ The outboard motor may be tuned but it must remain within the manufacturer’s standard specifications.
- ✦ With the exception of SLSA approved surf kits (see below), all motor parts are to be genuine outboard motor components as provided by the manufacturer.
- ✦ With the exception of Tohatsu and Mercury, no part of the motor may be interchanged with another model or motor produced by another manufacturer i.e., only Tohatsu and Mercury parts may be interchangeable between Tohatsu and Mercury outboard motors.

Modification	Yamaha	Tohatsu	Mercury
Remove- tilt mechanism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remove- tilt lock mechanism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remove- in gear start lock out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remove- steering bracket centre turning lug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Add- pull start extension piece or handle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Add- stainless steel spin clamps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Add- cowling restraint straps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Add- toggle kill switch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Add- tilt friction kit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Add – tilt pin sleeve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Add – spark plug waterproof boots	N/A	<input type="checkbox"/>	<input type="checkbox"/>
Add- steering compression tube	N/A	<input type="checkbox"/>	<input type="checkbox"/>
Add- solid engine mounts (x4)	N/A	<input type="checkbox"/>	<input type="checkbox"/>
Add- solid stainless steel tilt bolt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Add- throttle linkage kit	N/A	<input type="checkbox"/>	<input type="checkbox"/>
Add- bottom cowling (pan) mounts (x2)	N/A	<input type="checkbox"/>	<input type="checkbox"/>
Add- strengthened transom brackets	N/A	<input type="checkbox"/>	<input type="checkbox"/>
Reinforce- swivel bracket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reinforce- steering bracket	N/A	<input type="checkbox"/>	<input type="checkbox"/>

**\*Note:** A full description of the above permissible outboard motor modifications can be found in the appendix.



## 5. SURF KITS

The following are approved surf kit parts:

Surf Kit	APPROVED SURF KITS PART INCLUSIONS
Midcoast Marine and Rescue Products (MCM) Surf Kit including those marked with an *.	Pull start cord extension piece and extended handle
	Stainless steel transom clamps (s/s spin clamps)
	Cowling restraint straps (x2)
	Tilt friction kit
	Tilt pin sleeve *
	Steering compression tube
	Solid engine mounts
	Solid stainless steel tilt bolt
	Throttle linkage kit *
	Pan mounts (bottom cowling mounts)
PSP Engineering Surf Kit	One piece pull start extended handle
	Stainless steel spinners (s/s spin clamps)
	Cowling bungy strap (x1)
	Friction washers
	Steering compression tube
	Solid engine mounts
	Transom brackets
	Pan mounts (bottom cowling mounts)
	Kill switch
TOH Surf Kit by Lakeside Marine	CNC Transom Brackets
	Stainless Spin Clamps
	Pull Start Extension
	Pan Mounts
	Alloy Engine Mounts
	Steering Compression Tube
	Kill Switch
	Cowling Straps
	TOH Guard

- ✦ TOH/MCM and PSP surf kit components are manufactured to fit both Tohatsu and Mercury outboard motors. The parts of both kits can be fitted to either a Tohatsu or Mercury motor in part or full.
- ✦ Tohatsu and Mercury outboard motors may be fitted with a mix of approved surf kit brands.





There are no permissible modifications for IRB surf kits. All IRB surf kits must comply with both SLSA's and the SLSA approved manufacturer's specifications.

## 6. PROPELLER GUARDS

The following are approved propeller guards for IRB competition:

Propeller Guards
MCM- Version 3s
MCM- Version 4
MCM 3N- Nozzle Guard
Programmed Engineering- Version 1
Pro Pell SF
TOH Guard

### Modifications:

There are no permissible modifications for propeller guards. All propeller guards must comply with both SLSA's and the SLSA approved manufacturer's specifications.

The outboard motor gearbox skeg where it protrudes through the propeller guard may be trimmed down level with the propeller guard, if desired.

**Note 1:** The cutting or reducing the length of the outboard motor gearbox skeg where it protrudes below the bottom edge the propeller guard is an approved modification.

**Note 2:** This modification is optional and will be included in a future revision of the SLSA IRB Specification.

**Note 3:** Any MCM propeller guards bought after 28 January 2015 are not approved for use in IRB Competition.

## 7. PROPELLERS

The following propellers are approved for IRB competition:

POWERTECH PROPELLER		
Yamaha	Tohatsu	Mercury
YM30SRA4R8	TN30SRA4R8	TN30SRA4R8
YM30SRA4R9	TN30SRA4R9	TN30SRA4R9
YM30SRA4R10	TN30SRA4R10	TN30SRA4R10
YM30SRA4R11		
Mercury Trophy PROPELLER		
	48-8M0112085	48-8M0112085



1. Overall dimensions and structure.

- ✦ The propeller hub, exhaust tube and bush assembly must not be modified or altered in any way and must be the same as propellers of its make and type were originally manufactured.
- ✦ The propeller blades must remain the same shape as propellers of its make and type were originally manufactured.
- ✦ The removal of any metal around the blade to hub contact area is not permitted.
- ✦ Propeller Weights and Diameters.

The following tolerances must be maintained:

<b>Mercury and Tohatsu</b>	
<b>PowerTech Gen 1/2/3/:</b>	Minimum weight: 1.9 kilograms Minimum diameter: 242 mm Minimum blade thickness: 2 mm, (10 mm in from all edges.)
<b>Tohatsu/Mercury Trophy:</b>	Minimum weight: 1.9 kilograms Minimum diameter: 242 mm Minimum blade thickness: 2 mm, (10 mm in from all edges.)
<b>Yamaha/PowerTech:</b>	Minimum weight: 1.7 kilograms Minimum Diameter: 242 mm Minimum blade thickness: 2 mm (10 mm in from all edges)

**BLADE SHAPE:** same as previous drawings; PowerTech: 21 mm radius at 242 mm diameter. (Refer previous drawings) Mercury Trophy: 21 mm radius at 242 mm diameter

1. Wear and tear

The following tolerances must be maintained for any propeller:

- ✦ A maximum of 10 mm reduction of the leading edge of the propellers blades is acceptable for PowerTech propellers.
- ✦ A maximum of 5 mm reduction of the leading edge of the propellers blades is acceptable for Mercury Trophy propellers.
- ✦ Refer to applicable minimum blade thickness

2. Refurbishing and repairing

In order to extend the useable life of your propeller, reduce vibration and ensure safe optimum performance:

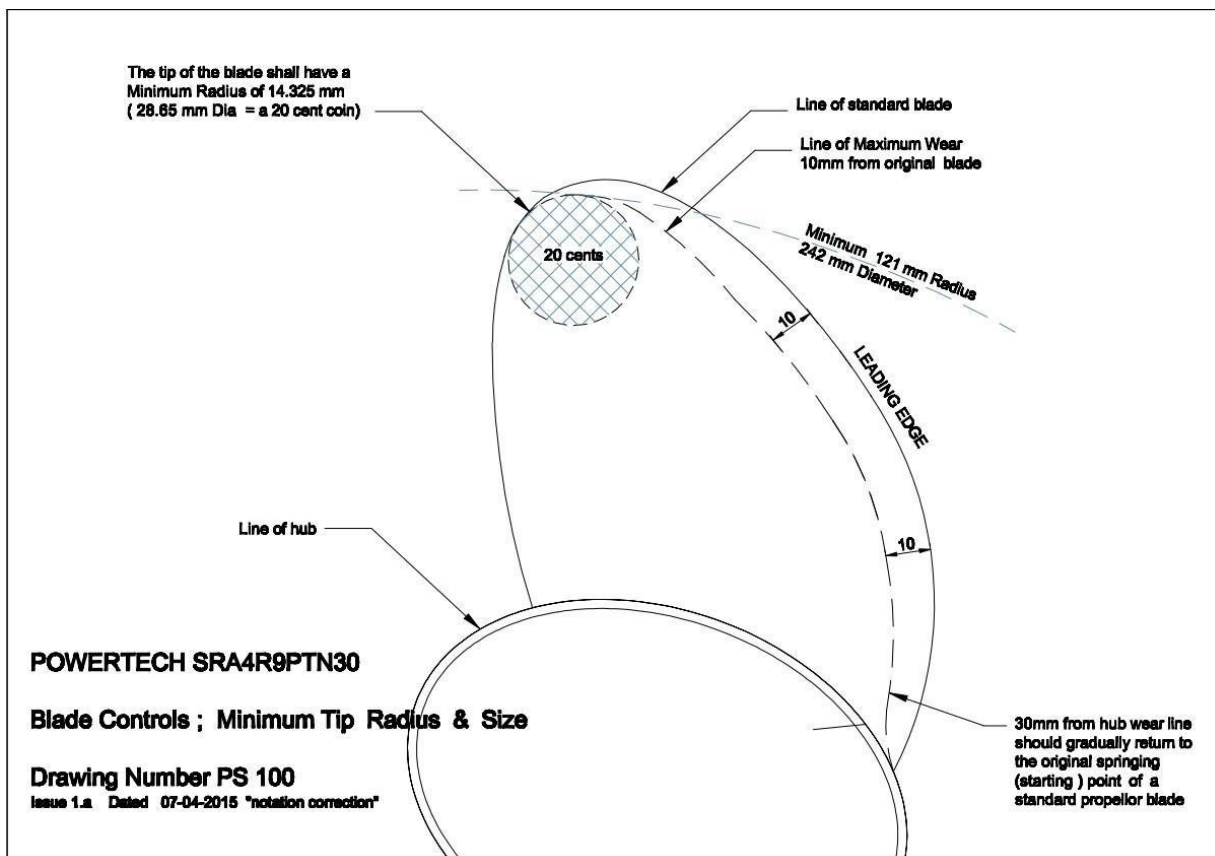
- ✦ It is allowable to repair and or dress the leading edge of each blade.
- ✦ It is allowable to balance the propeller.
- ✦ It is allowable to adjust the pitch of the propeller's blades.
- ✦ It is allowable to adjust the rake of the propeller's blades.
- ✦ It is allowable to adjust the cupping of the propeller's blades.



- ✦ It is allowable to replace the propellers bush with a similar type as it was originally supplied by the original manufacturer.

**Note:** Issues have been raised with a small number of custom hand shaped propellers which were presented for scrutineering. It has since been brought to SLSA's attention that many people carrying out repairs to propellers used in surf lifesaving competition do not fully understand what is expected when the rules state that the **"blade must resemble its original shape"**.

To assist all parties the below drawings have been produced to use as a guide as to what is acceptable. All specifications relative to weight; diameter; thickness etc. remain unchanged from the 2016 season.





## 8. FUEL

The following fuel/oil types are approved for IRB competition:

Two stroke fuel mix containing:

Premium unleaded petrol (PULP)

- ✦ Fuel must be premium unleaded (PULP) petrol with an octane rating of 98, having properties and characteristics as required by Federal / State government regulations.
- ✦ Fuels which contain additional added ethanol e.g., e10 and e5 are not permitted for use.
- ✦ Fuel must be unmodified and of a type that is supplied from a major refinery and readily available from the service station bowser.
- ✦ Fuel must contain no substance that is capable of exothermic reaction in the absence of external oxygen.
- ✦ Any fuel that appears to have been formulated in order to subvert the purpose of these regulations will be deemed to outside them.
- ✦ Only ambient air is to be mixed with the fuel as an oxidant.
- ✦ Only commercially available motor oil of a type approved by the motor manufacturer may be used.
- ✦ Oils containing performance enhancing additives or octane boosters are not permitted.
- ✦ No substance other than oil as described in this rule is permitted to be added to petrol used in competition.
- ✦ If requested, a team representative must advise relevant officials which brand / type and ratio of oil being used.

### **Fuel testing:**

Fuels, oils and fuel/oil mixtures will be tested for compliance with competition regulations. These substances may also be comparatively tested against a base sample at competitions. If these substances return test results outside the tolerances set for the base sample, the substances will be deemed non-compliant, must not be used for competition and will be dealt with as per section 4 under non-compliance.

### **Fuel Safety:**

Please refer to the fuel safety guidelines listed in the appendix of this bulletin.

**Note:** Environmental issues have been noted where in the event of a craft being 'rolled over' at sea, some club

members have carried out the approved 'roll over' procedure on the beach.

This will NOT be tolerated; these motors must be taken to the designated wash down area for repair.



## 9. COMMUNICATION AND VIDEO DEVICES ON IRBs

Competitors are not permitted to use any electronic communication devices (either attached to a craft or to a person) from the commencement of, to the completion of a race.

The use of one video camera attached to an IRB is permitted provided it is installed on a mounting device and toggle strap supplied or recommended by the manufacturer of the device.

Installation shall be permitted only on the transom or cowling of the motor.

The IRB Driver (only) is also permitted to have a video camera on a helmet, worn by them, provided that the camera is installed on a mounting device and toggle strap supplied or recommended by the manufacturer of the device.




## 10. HELMETS

SLSA Approved Helmets		
Bern Brighton H2O Bern Macon H2O	Mission Sports	
Gath Gedi Gath SFC	Gath Helmets	
Predator Uno Predator Short Cut	Predator Helmets Australia	
Sharkskin H-8800	Aquanaut Pty. Ltd.	
Vaikobi Helmets	Vaikobi Helmets	



## 11. PERSONAL PROTECTIVE EQUIPMENT

- ✦ The Lifejackets listed below are specifically approved for both lifesaving operations and IRB competition:

SLSA Approved Lifejackets		
Superior PFD	Ultra PFD	
West Surfing PFD	Nalu Trading Company Pty Ltd <i>trading as West Surfing</i>	
Jetpilot Cause/Eneo Vest	JPI	
Ripcurl (level 50S)	Approved for Victoria Competitors	

- ✦ All certified level 50 Australian Standard (AS4758) life jackets are approved for IRB competitions. These lifejackets must be in high visibility (conspicuous) colour.
- ✦ Other than the SLSA branded Rip Curl lifejackets approved for Victorian Competitors (see above list), Level 50S lifejackets are not approved for SLSA lifesaving operations or IRB competition.
- ✦ SLSA does not permit the use of lifejackets or PFDs designed for use in surf skis, ocean kayaking, or other paddle sports, i.e., the lifejacket design must be consistent with the lifejackets approved for SLSA lifesaving operations (see above).

## 12. GENERAL OPERATOR AND GEAR AND EQUIPMENT SAFETY

- ✦ All IRB equipment must be free of sharp edges. If a sharp edge is identified in scrutineering it will be required to be rendered safe.
- ✦ Gear and Equipment must be operated in a safe manner. Please refer to the SLSA Powercraft Code of Conduct in the appendix.

## APPENDIX

### (A) OUTBOARD MOTOR MODIFICATIONS

Modifications must be carried out in line with manufacturer guidelines and fitting instructions.

#### REMOVE:

##### 1. Remove- tilt mechanism

Please refer to the manufacturer's guidelines for the correct removal of this part.

##### 2. Remove- tilt lock mechanism

Please refer to the manufacturer's guidelines for the correct removal of this part.

##### 3. Remove- in gear start lock out

Please refer to the manufacturer's guidelines for the correct removal of this part.

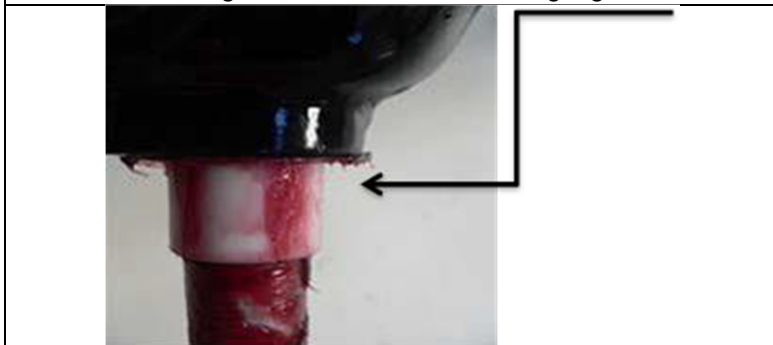
##### 4. Remove- steering bracket centre turning lug

The centre turning lug located on the steering bracket is the **only** lug that is approved for removal. The turning angle of the motor is to be 44 degrees. A +/- 5% tolerance will be allowed for general wear and tear. However, the turning angle must not exceed 46.1 degrees.

*Photo 1: Steering bracket with centre turning lug in situ*



*Photo 2: Steering bracket with centre turning lug removed*





**Photo 3:** Steering bracket with the turning stop removed



The removal of turning stops is **not** permitted

### 1. Pull start handle

TOH SURF KIT	PSP Engineering
	

**Note:** Heat shrink is not to be fitted over the “T” handle.

Heat shrink is only permitted over the shaft on the “T” handles fitted with the spacer which was manufactured by Midcoast Marine and sold prior to 28 January 2015.

THE RECOIL STARTER ROPE MUST BE THE O.E.M. PART.



The emergency starter rope which is supplied with a brand-new outboard motor is not to be fitted to the recoil starter unit.

Production colour of pull start handles may vary.







## 2. Stainless steel spin clamps

TOH SURF KIT	PSP Engineering
 <p data-bbox="389 766 609 798">(5/8 UNC Thread)</p>	 <p data-bbox="925 766 1258 798">(M14 and 5/8 UNC Thread)</p>




## 3. Cowling restraint straps (Max 2)

TOH SURF KIT	PSP Engineering
	

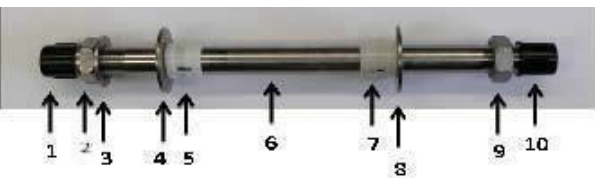

**Note:** The above are the only cowling restraints that can be used. The use of “Tape” around the top & lower cowlings is not permitted.



#### 4. Toggle kill switch

<b>Mercury Quicksilver</b> <b>(Part # 87-14222M)</b>		
		
<b>Mercury Hybrid Kill Switch</b> <b>(Part # 826677S)</b>	<b>Tohatsu Hybrid Kill Switch</b> <b>(Part # TOH-398-06831-SURF)</b>	
		

#### 5. Tilt friction kit



<b>TOH SURF KIT</b>	<b>PSP Engineering</b>
 <ol style="list-style-type: none"> <li>1. End cap -optional</li> <li>2. Nyloc Nut</li> <li>3. Small Stainless Steel washer (42x23mm)</li> <li>4. Friction Washer (50x23mm)</li> <li>5. Nylon Bush</li> <li>6. Solid Stainless Steel Tilt Rod</li> <li>7. Nylon Bush</li> <li>8. Friction Washer (50x23mm)</li> <li>9. Standard nut (Optional to have Nyloc nut)</li> <li>10. End Cap is optional</li> </ol>	 <p>(Friction Washers)</p>




6. Tilt pin sleeve (if purchased prior to 28 January 2015)

TOH SURF KIT	MCM	PSP Engineering
N/A		N/A

7. Spark plug waterproof boots



TOHATSU PART	MERCURY PART (QUICKSILVER)
	

8. Steering compression tube

TOH SURF KIT	PSP Engineering
	



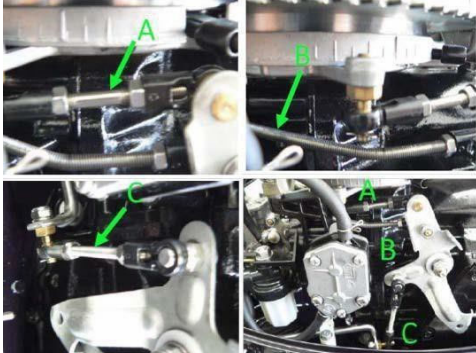
9. Solid engine mounts

TOH SURF KIT	PSP Engineering
	

10. Solid stainless steel tilt bolt (if purchased prior to 28 January 2015)



MCM	PSP Engineering
	<p data-bbox="1110 1125 1162 1157">N/A</p>

11. Throttle linkage kit (if purchased prior to 28 January 2015)



TOH SURF KIT	MCM	PSP Engineering
<p data-bbox="380 1650 431 1682">N/A</p>		<p data-bbox="1240 1650 1292 1682">N/A</p>



## 12. Bottom cowling (pan) mounts

TOH SURF KIT	PSP Engineering
 A yellow, rectangular, slightly curved plastic component, likely a bottom cowling mount, shown next to its clear plastic packaging. The component has a circular logo embossed on its top surface.	 A black, rectangular, slightly curved plastic component, similar to the one in the TOH kit, shown next to a silver metal bolt with a hexagonal head and a lock washer.

## 13. Transom brackets

TOH SURF KIT	PSP Engineering
 Two black, L-shaped transom brackets. A white text box with a green arrow points to a specific part of the bracket, labeled 'Re-inforced cast gusset'.	 A black, L-shaped transom bracket, similar to the one in the TOH kit, shown with a silver metal bolt and nut attached to its top arm.

## 14. Crewman's Rope

Length must be 1200mm and have a minimum of four figure 8 knots in situ.

## REINFORCE:

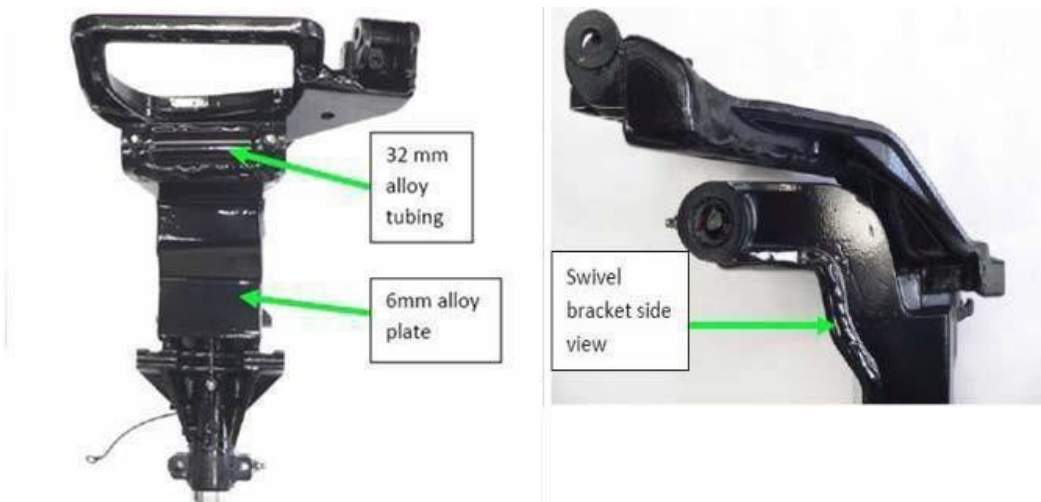
### 1. Steering bracket

The steering bracket is strengthened by welding a piece of 6mm laser cut alloy plate to the underside section of the tiller handle pivot point of the steering bracket.



### 2. Swivel

This is done by folding a 6mm alloy plate and welding it to the swivel bracket in the shallow drive mechanism section of the bracket.





## **(B) FUEL SAFETY**

This document clarifies the storage, containment and refilling procedures of fuels used during the conduct of the SLSA IRB Interstate Championships and Australian Inflatable Rescue Boat Championships.

This document should be used in conjunction with:

Material Safety Data Sheet (MSDS), Infosafe number – AMPHO, Issue date – May 2009

### **POISONS INFORMATION**

A current material safety data sheet will be posted at the fuel marshalling area for all fuels used at the championships.

Additional copies of these will be made available to competitors and management upon request.

### **PERSONAL PROTECTION EQUIPMENT**

When handling fuels it is recommended to use the following personal protection equipment:

- ✦ Protective gloves
- ✦ Safety glasses / protective eyewear

### **TRANSPORT**

This material is classified as a Class 3 (flammable liquid) Dangerous goods according to the Australian code for the transport of dangerous goods and thus is incompatible to be transported with any of the following:

- ✦ Explosives
- ✦ Flammable gases
- ✦ Toxic gases
- ✦ Spontaneously combustible materials
- ✦ Peroxides
- ✦ Infectious substances
- ✦ Radioactive materials.

### **FUEL MARSHALLING AREA**

The fuel marshalling area will be located on the beach adjacent to the competition arena. This area will be a fenced compound approximately 5 metres x 5 metres in size.

The compound will be well ventilated.

The compound will be adequately protected from the sun by a shade shelter.

### **STORAGE**

All fuel containers will be stored in the fuel marshalling area and monitored by fuel marshals. No fuels are to be stored in club tents.

All fuels will be stored in containers of an approved type - typically 20 to 30 litres in capacity which



are checked regularly for damage and leaks.

All fuel containers to be clearly labelled: **“PREMIUM UNLEADED FUEL”**

All fuel containers must also be **“CLEARLY LABELLED”** with the name of the surf lifesaving club that they belong to.

## **STORAGE TIMES**

The fuel marshalling area will be operational for the duration of the events.

Operating times will vary with approximately two hours prior to commencement of racing and one hour after conclusion of racing.

All fuel substances will be removed from the beach outside of these times.

## **DE CANTING / CONTAINMENT**

All fuel will be de-canted from fuel containers to IRB fuel cells on a purpose-built fuel catchment container located in front of the fuel marshalling area.

Correct decanting equipment must be used at all times. Syphoning fuels by mouth is not allowed.

No refuelling will take place inside the IRB's or on the water's edge.

In case of fuel spill outside the fuel catchment container participants should make all efforts to contain the spill as quickly as possible.

A fuel spill kit will be located at the fuel marshalling area at all times.

## **FIRE SAFETY**

The fuel marshalling compound will be clearly sign posted with signage of a similar type to the following:

**“NO NAKED LIGHTS / NO SMOKING WITHIN 20 METRES”** or **“DANGER FLAMMABLE LIQUIDS”**

There is absolutely no smoking within 20 metres of the fuel marshalling area.

The use of two-way radios and mobile telephones around the refuelling area is expressly prohibited.

A fire extinguisher of type carbon dioxide, dry chemical foam will be located at the fuel marshalling area at all times. A fire blanket will be available for use at the marshalling compound.

## **FIRE FIGHTING**

In case of fire emergency, and if safe to do so, a fire extinguisher of type: Carbon dioxide, dry chemical foam is to be used.

For smaller fires a fire blanket, of approved type may be of use.

## **DISPOSAL**

All fuel, fuel mixes and oils shall be removed from the event site.

Any clubs wishing to dispose of fuels during or at the completion of the event shall dispose of these in bulk storage drums of an approved type that will be made available at the venue.

Alternatively, dispose of any waste according to applicable local and national regulations. Labels





should not be removed from containers until they have been cleaned. Do not cut, puncture or weld on or near containers. Empty containers may contain hazardous residues. Contaminated containers must not be treated as household waste.

Containers should be cleaned by appropriate methods and then re-used or disposed of as appropriate. Do not incinerate closed containers. Advise flammable nature.

**NO FUELS ARE TO BE DISPOSED OF ANY OTHER WAY**

**Note: Any club or individual found disposing of fuels in waterways, drains, road gutters or other open areas will be subjected to disciplinary action and may be referred to authorities for possible prosecution.**

**FIRST AID**

- ✦ Shower and freshwater eye wash facilities will be available at the surf lifesaving clubhouse.
- ✦ A portable eye wash bottle will be available at the fuel marshalling area.
- ✦ First aid facilities and personnel will be available at all times during conduct of the event.

**RISK MATRIX**

RISK	RISK TYPE	PREVENTION	CONTROL
Fire / Explosion	Personal / Environmental	Approved warning signage Approved container types Correct decanting procedures No naked flames / smoking No radios or mobile phones Correct storage Shaded storage area	Fire extinguisher Fire blanket Refer to MSDS documents In an emergency call 000 Seek medical assistance
Inhalation	Personal	Ensure well-ventilated area Wear PPE.	Refer to MSDS documents Remove from contaminated area Seek medical assistance
Skin absorption / eye contact	Personal	Only decanter at filling station Use protective eyewear Wear protective gloves Use correct decanting equipment	Wash with fresh water and soap Refer to MSDS documents Seek medical assistance
Ingestion	Personal	Containers clearly labelled Only decanter at filling station Use correct decanting equipment No syphoning by mouth.	Do not induce vomiting Flush mouth and lips with water Refer to MSDS documents Seek medical assistance
Spillage	Environmental	Approved container types Only decanter at filling station Use correct decanting equipment No filling at water's edge	Contain spill, spill kit available



### (C) POWERCRAFT CODE OF CONDUCT

- ✦ **SAFETY** – Ensure the safety of yourself, your crew and the public. Regularly assess risk while operating Powercraft and promote safety at every opportunity.
- ✦ **LIMITATIONS** – Understand the limitations of your craft and crew in different conditions. Always aim to maintain a high level of competency.
- ✦ **SEARCH AND RESCUE** – SLS Powercraft are part of the Emergency Service operations. Always have your craft ready to respond and follow standard operating procedures.
- ✦ **CRAFT** – Your craft is highly visible. Always demonstrate a culture of safety and respect the rights of others in the water.

**Note:** Please also refer also SLSA Surf Sports Manual and in particular Section 1, 2 and 3.

### (D) REFERENCES

For additional information on IRB equipment and competition, please refer to the following resources:

- 1) SLSA Approved Gear and Equipment List
- 2) SLSA Outboard Motor Sealing and Re-sealing Process
- 3) SLSA Surf Sports Manual

On the **member's** portal at: [https://members.sls.com.au/SLSA\\_Online/modules/login/index.php](https://members.sls.com.au/SLSA_Online/modules/login/index.php)

### (E) SLSA CIRCULARS

The Circulars listed below will follow this page.

1. Gear and Equipment – IRB Specification Reminder – IRB Racing  
Document ID: Circular 17 23-24  
Date: 6 September 2023
2. Gear and Equipment – IRB Specification Update  
Document ID: Circular 71/17-18  
Date: 30 May 2018
3. Gear and Equipment – IRB Specification Update  
Document ID: 34/16-17  
Date: 19 December 2016
4. IRB Motor Safety – Throttle Recoil Mechanism, Throttle Tension Toggle and Standardised Kill Switch  
Document ID: 15/23-24  
Date: 25 August 2023

*Mercury Throttle Return Mechanism Kit - Part number 8M8035157  
Available from Mercury Dealers*



## Surf Life Saving Australia - Circular

<b>Title:</b>	Gear and Equipment- IRB Specification Reminder – IRB Racing
<b>Document ID:</b>	Circular 17 23-24
<b>Audience:</b>	States/Territory Centres, Branches & Clubs Club Lifesaving Officers IRB Personnel
<b>From:</b>	SLSA Sport Advisory Committee
<b>Date:</b>	6 September, 2023
<b>Summary:</b>	Notification to all clubs, lifesaving services and IRB operators of changes to the Technical Specifications for IRB Hulls for racing to commence from 1 January 2024..

### BACKGROUND

In 2009 SLSA undertook a review of IRB operations following an increase in member injuries. One recommendation for this review was to produce one soft hull IRB specification that would ultimately increase the consistency of manufacturers that produce hulls for the SLS movement. Following this an IRB working group was formed made up of State Lifesaving and sport experts who were tasked with producing the first version of the specification.

Three manufacturers presented a prototype boat; that was trialled in three States, by over 100 members in varying conditions. From here, there were adjustments made to the specification based on member and State feedback, with the specification presented to the National Committees for approval.

### Decisions

At the 2016 November National Lifesaving meeting, the LMC and LMAC unanimously approved the IRB specification, a copy can be found on the Members Portal/Library/Lifesaving/Equipment/SLSA.

### Implementation Detail – IRB Racing

In 2016 the Surf Sports Committee provided clubs with a clear implementation period for racing stating from 1 January 2023 all clubs would need to use boats that meet the new specifications. Subsequent to this, in May 2018 a circular was issued communicating that the implementation period was further considered and subsequently delayed by 12 months to 1 January 2024.

### PREVIOUS CIRCULARS:

SLSA Circular 34/16-17

SLSA Circular 71/17-18

### INSTRUCTIONS

All clubs are reminded of the implementation period of 1 January 2024 that boats utilised in IRB racing must meet the new specifications.

### FURTHER INFORMATION

Should further information be required please contact Wayne Druery SLSA Sport Manager at: [wayne.druery@sls.com.au](mailto:wayne.druery@sls.com.au)



## Surf Life Saving Australia - Circular

<b>Title</b>	Gear and Equipment- IRB Specification Update
<b>Date</b>	30 May 2018
<b>Document ID:</b>	Circular 71/17-18
<b>Department</b>	Capacity and Capability
<b>Audience:</b>	State/Territory Sport and Lifesaving Managers, Directors, Clubs, Branches, State/Territory CEO's, Sport and Lifesaving committees.
<b>Summary:</b>	This circular provides information on the IRB specification

### BACKGROUND

Surf Life Saving Australia (SLSA) in collaboration with Surf Life Saving (SLS) State/Territory Centres have undertaken an evaluation of the organisation's Inflatable Rescue Boat (IRB) specification to reconfirm the intent of the single class specification and performance requirements of the IRB.

SLSA Technical Specification IRB - SLSA IRB:2015- Version 1.6 was presented to the SLSA Lifesaving Member Advisory and Lifesaving Management Committees, Executive Management Group (EMG) and SLSA Board at their May 2018 meetings.

SLSA IRB:2015 - Version 1.6 was recommended for endorsement to the SLSA Board by both the LMAC and EMG, with the SLSA Board endorsing the recommendation at the May meeting.

Improvements made to SLSA IRB:2015 - Version 1.6 include:

- Change of percentage tolerances to set minimum and maximum;
- Refinement of dimensions and;
- Where required inclusion of performance criteria;
- Formatting (template change);
- Removal of Part D Approval and Compliance – this section will be included in an overarching procedure.

### IMPLEMENTATION DETAIL

No significant design changes were made to the specification; therefore, no transition period is required.

All Manufacturers will be required to build to SLSA IRB:2015 - Version 1.6 as of 28 May 2018.

### IRB HULL ASSESSMENT AND COMPLIANCE

A compliance process for new IRB hulls will be required. Any first of type hulls built to SLSA Technical Specification IRB:2015 - Version 1.6 will first need to be assessed for compliance before any sales of hulls to SLS services can be finalised.

SLSA may require further hulls to be assessed for compliance at any time.

The craft noted in SLSA [Bulletin 04 17-18 IRB Approved Equipment](#) have been approved for use in SLS. These suppliers include Achilles Inflatable Boats, Thundercat Inflatables and Zodiac Milpro.

Other manufacturers may apply to build craft to SLSA IRB:2015 - Version 1.6, now and in the future.



### **SURF SPORT – IRB RACING**

Considering the background and changes to SLSA IRB:2015 - Version 1.6, SLSA's Sport Advisory Committee have extended the transition period for racing to ensure all clubs are given a fair and reasonable opportunity.

All clubs will be able to use hulls that meet SLSA Technical Specification Inflatable Rescue Boat (SLSA IRB: 2015) Version 1.6 until 1 Jan 2024.

Therefore, effective as at 30 May 2018, SLSA's Sport Advisory Committee have deemed that all clubs using previous models of Class 1 soft hull and former Class 2 rigid hull IRB's, will be allowed to continue to use these hulls for surf sport purposes until 1 January 2024.

**Note:** Standard scrutineering process applies to all IRB's as per current carnival rules.

### **FURTHER INFORMATION**

Should further information be required please contact the events team at:

Lifesaving and Hull manufacture compliance	Surf Sports – IRB racing
<a href="mailto:equipment@slsa.asn.au">equipment@slsa.asn.au</a>	<a href="mailto:events@slsa.asn.au">events@slsa.asn.au</a>
Surf Life Saving Australia PO Box 7773 Bondi Beach NSW 2026	Phone: (02) 9215 8000 Fax: (02) 9215 8180



## Surf Life Saving Australia - Circular

Title:	Gear and Equipment- IRB Specification Update
Document ID:	34/16-17
Audience:	State/Territory Centres Branch Centres Clubs, Members
From:	SLSA Coastal Safety
Date:	19 December 2016
Summary:	This circular provides information on the IRB specification

### Background

In 2009, SLSA undertook a review of IRB operations following an increase in member injuries. One recommendation from this review was to produce one soft hull IRB specification that would ultimately increase the consistency of manufacturers that produce hulls for the SLS movement. Following this an IRB working group was formed made up of State lifesaving and sport experts, who were tasked with producing the first version of the specification.

Three manufacturers presented a prototype boat; that was trialed in three States, by over 100 members in varying conditions. From here, there were adjustments made to the specification based on member and State feedback, with the specification presented to the National Committees for approval.

### Decisions

At the 2016 November National Lifesaving meeting, the LMC and LMAC unanimously approved the IRB specification, a copy of which can be found on the Members Portal/Library/Lifesaving/Equipment/SLSA.

### Implementation Detail

Manufacturers will have six (6) months to adjust to the incoming specification. After this period clubs will only be able to purchase the new variety of hulls. Current suppliers to SLSA include Achilles Inflatable Boats, Thundercat Inflatables and Zodiac Milpro. Other manufacturers are able to apply and be approved to build craft to the new specification now and in the future.

Clubs using an old class of IRB will be able to use these boats for lifesaving purposes for the duration of their life. It is not expected that clubs would need to replace these outside their normal asset replacement periods.

The Surf Sport committee have provided clubs with a clear implementation period for racing. From 1 Jan 2023, all clubs will need to use boats that meet the new specification. It was considered that there will need to be a significant period of transition, to ensure all clubs are given a fair and reasonable opportunity to do so.

SLSA would like to take this opportunity to thank those that have been involved in the development of this specification, in particular the LMC, LMAC and IRB Working Group.

### For Further Information Contact:

SLSA: P: (02) 9215 8000



## Surf Life Saving Australia - Circular

<b>Title:</b>	IRB Motor Safety – Throttle Recoil Mechanism, Throttle Tension Toggle and Standardised Kill Switch
<b>Document ID:</b>	Circular 15 / 23-24
<b>Audience:</b>	States/Territory Centres, Branches & Clubs Club Lifesaving Officers IRB Personnel
<b>From:</b>	Coastal Safety Team
<b>Date:</b>	25 August, 2023
<b>Summary:</b>	Notification to all clubs, lifesaving services and IRB operators of changes to the Technical Specifications for IRB Motors – mandating the inclusion of a 'throttle recoil mechanism', removal of throttle tensioning mechanisms, and standardisation of the kill switch component.

### BACKGROUND

Surf Life Saving Australia (SLSA) remains committed to the continuous improvement of safety for our members, in 2022 'Circular 49/21-22 – SAFETY ALERT: IRB Throttle Recoil' was issued to all clubs, services and IRB operators. Since this time the National Powercraft Advisory Group under the direction of the National Lifesaving Member Advisory Committee (LMAC) have undertaken an IRB motor safety review. Throughout the review process it was found that not all SLS IRB motor throttles recoiled to low idle when no pressure was being applied by operators, due to the operating environment (dirt, grit, salt, sand, etc.) or poor maintenance. Some of these contributing factors were addressed in Circular 49/21-22. After further investigation and to reduce risk, a trial of a throttle recoil mechanism during the 2022/23 season was endorsed by the LMAC and supported by the SLSA Board.

#### Throttle Recoil Mechanism

A trial of varying throttle recoil mechanisms was conducted across multiple states to ensure sufficient feedback was provided by operators in differing operating environments and with differing levels of experience. The throttle recoil mechanism was based on an existing mechanism developed by Surf Life Saving New Zealand (SLSNZ), with adaptations made to the mechanism based on feedback of previous trials. This feedback was incorporated into the design of the mechanism trialled in 2022/23. The most recent trials found that there was appropriate balance achieved between recoil tension and operators being able to continue to operate for an extended period of time with minimal forearm fatigue.

SLSA will be implementing the mechanism for the 2023/24 season. It understands the financial implications of this decision and will support the implementation process by funding the supply of throttle recoil mechanisms to clubs.

#### Throttle Tension Toggle Mechanisms

In recent years, *Tohatsu* and *Mercury* introduced a throttle tension toggle in the throttle arm design as a feature to enable recreational boat users to tension the throttle control to allow for activities such as cruising and trolling. This has emerged as a potential point of risk due to the build-up of matter leading to the stiffening of the throttle arm and recoil without frequent maintenance or a risk of IRB operators inadvertently tightening the toggle and increasing the tension on the throttle.

The throttle tension toggle has therefore been identified as a potential causal factor for throttle recoil not being effective and given it does not serve any functional purposes of benefit to SLS operations, it has been determined that they will be removed from motors used in surf lifesaving.

#### Standardised Hybrid Kill Switch with Lanyard

As surf lifesaving operate across regions and borders, resource sharing is common during natural disasters and community or sport events; it is important to ensure consistency for our operators. Historically, the factory standard stop buttons with lanyards have typically been removed at pre-delivery stage and replaced with one of two toggle switches which allowed for a simple "on/off" function to electronically kill the IRB motor. Note, the standard factory stop buttons require a lanyard fitting to be inserted correctly for a motor to be started so that the lanyard can be used to kill the motor.

It has been determined that the standardisation of the kill switch component will ensure consistency for operators particularly for training and in emergency situations. As such, SLSA has worked with the approved IRB motor manufacturers to implement a standardised hybrid kill switch with an on/off shroud that allows a lanyard option to be utilised if deemed appropriate. The implementation of this component will continue SLSA's commitment to demonstrating 'best practice', ensure ongoing compliance with regulatory authorities, and assist in the development of risk frameworks for potential future lanyard use under certain circumstances. Note, these switches do not require the lanyard fitting to be inserted for the kill switch to function normally.

The use of a lanyard is not mandatory in lifesaving operations, and this is not changing at this time. However, **please do not discard any of the parts** of the hybrid kill switch provided.



Unlike the previous two components listed in this Circular (the throttle recoil and throttle tension toggle mechanisms), this switch will not be a requirement to retrofit or removal. This component will be phased in through natural attrition but are available for purchase via manufacturers. IRB motor manufacturers will install these switches moving forward as a part of pre-delivery as a standard component. Only authorised IRB motor suppliers are approved to supply these components (*Appendix 3*) as replacement parts.

## DECISION

1. All SLSA affiliated clubs and services must have an approved IRB throttle recoil mechanism correctly fitted to all operational IRB motors from 1 January 2024.
2. SLSA is to supply one IRB motor throttle recoil mechanism per IRB motor for each club/service\* (i.e., if your club has 3 operational IRB motors, your club will be supplied with 3 IRB motor throttle recoil mechanisms).  
*\*Determined by gear and equipment data recorded in Surfguard.*
3. 'Technical Specification - Inflatable Rescue Boat (SLSA IRB-2015) V2.0', Section 3 – Outboard Motors, sub-section 3.4 – Addition of components, to be updated to include the throttle recoil mechanism in due course but shall be taken as modified in conjunction with this circular.
4. All Throttle tension toggle mechanisms to be removed from IRB motors by 1 January 2024.
5. IRB motor manufacturers to remove throttle tension toggle mechanisms from motors sold for SLS operation at pre-delivery stage moving forward.
6. The approved hybrid kill switch to be phased in through natural attrition – newly purchased IRB motors and replacement parts.
7. Lanyards to remain optional for surf lifesaving operations.

## TIMEFRAMES

### Throttle Recoil Mechanism – Installation

- Mandatory installation of the throttle recoil mechanism on all operational IRB motors will take effect from **1 January 2024**, this includes the retrofit to all operational IRB motors clubs/services currently have on hand.
- SLSA is working with suppliers to ensure that mechanisms are delivered to each club to allow sufficient time to install the device.
- SLSA will continue to supply clubs/services with a throttle recoil mechanism for each new IRB motor throughout the 2023/24 season, including any IRB motor currently on order and not yet delivered.

### Throttle Tension Toggle Mechanism – Removal

- Throttle tension toggles must be removed from all operational IRB motors by **1 January 2024**.
- IRB motor manufacturers have commenced removing throttle tension toggles for all IRB motors purchased by SLS services.

### Standardised Hybrid Kill Switch – Implementation

- The standardised hybrid kill switch implementation has commenced and will continue by attrition.
- IRB motor manufacturers and approved IRB accessory suppliers will fit the component pre-delivery for new motors, and only stock and supply this component as a replacement accessory.
- When replacing existing motor on/off switch components clubs must only purchase an approved hybrid kill switch as a replacement from the date of this Circular.

## INSTRUCTIONS

Please see *Appendix 1* for instructions on installation of the throttle recoil mechanism.

It is **recommended** that throttle tension toggles are removed by an authorised marine dealer/mechanic. Please see *Appendix 2* for instructions for removal of the throttle tension toggles.

## FURTHER INFORMATION

Should further information be required please contact the Coastal Safety Team at: [equipment@slsa.asn.au](mailto:equipment@slsa.asn.au)

Surf Life Saving Australia  
Level 1, 1 Notts Ave  
PO BOX 7773  
BONDI BEACH NSW 2026  
Phone: (02) 9215 8000

## APPENDICES

Appendix 1: Installation Guide – Throttle Recoil Mechanism,  
Appendix 2: Removal Guide – Throttle Tension Toggle Mechanism  
Appendix 3: Approved Hybrid Kill Switches – Mercury and Tohatsu



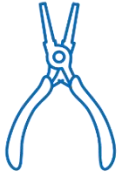


# APPENDIX 1: INSTALLATION GUIDE – THROTTLE RECOIL MECHANISM

## Required Tools

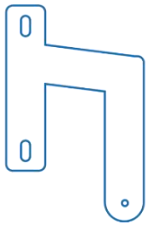


8mm

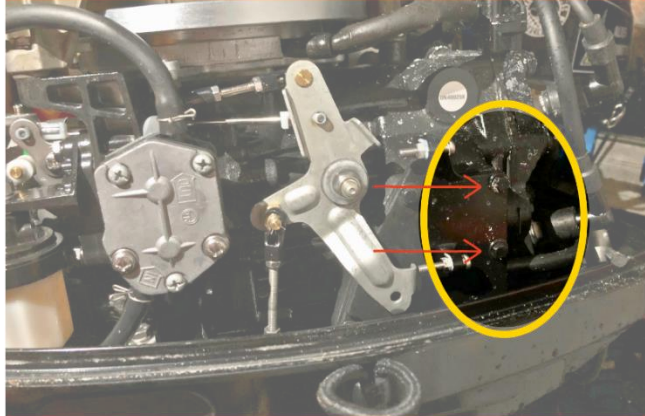


Long nose pliers

## Parts



1. Remove 2 x bolts from casting [8mm]



2. Insert throttle return bracket as shown and screw in bolts.



3. Hook one end of the spring to the return bracket.



4. Hook the opposite end of the spring to the advancer arm.

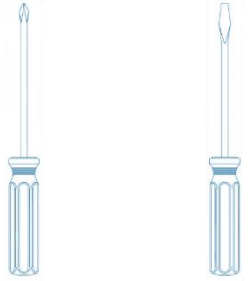




# APPENDIX 2: REMOVAL GUIDE – THROTTLE TENSION TOGGLE MECHANISM

Surf Life Saving Australia **recommends** that throttle tension toggles are removed by an authorised marine dealer/mechanic.

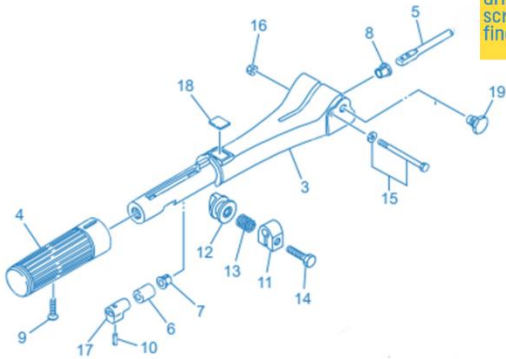
## Required Tools



Phillips head screwdriver

Flat blade screwdriver

## Technical Drawing

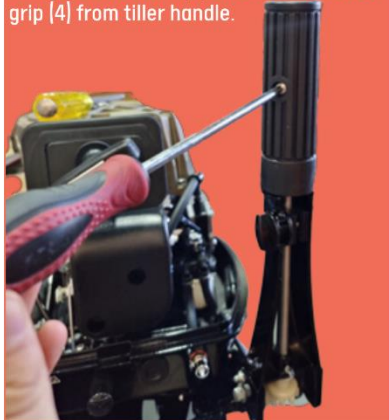


Key

Steps to complete removal of throttle tensioning mechanism.

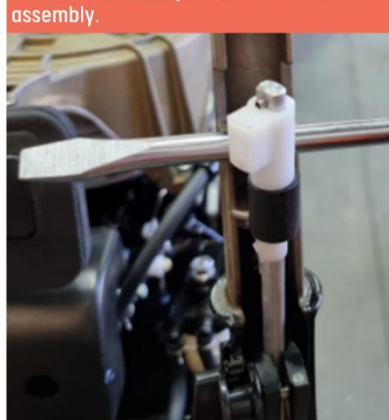
Suggested maintenance that can be completed during this process.

**Step 1**  
Raise tiller handle and remove retaining Phillips head screw (9) and remove rubber grip (4) from tiller handle.



Clean sand and old grease from inside Throttle Grip. If the inside surface of the Throttle Grip is scratched, it can be smoothed off by using a fine Emery Paper.

**Step 2**  
Using a suitable lever, carefully pry the throttle shaft away from the handle assembly.

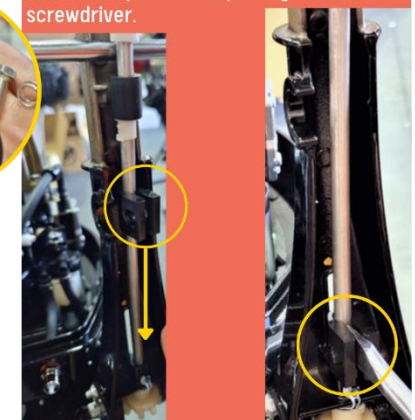


Check condition of bushings (7&8). Bushing (8) may be 'black' in colour, this may cause greater friction in the throttle. The previous, 'white' bushing, is available as a replacement.

**Step 3**  
Turn throttle friction nut (14) and associated parts counter clock-wise (12, 13).

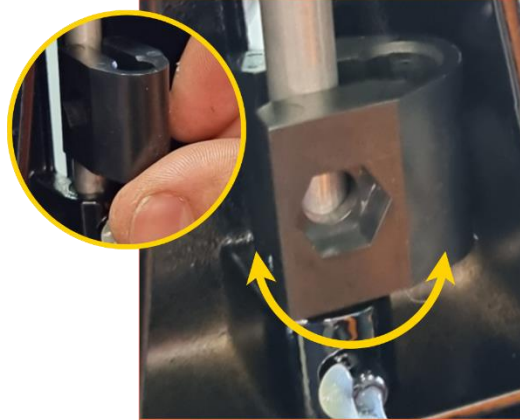


**Step 4**  
Slide throttle friction clamp (11) down the shaft and spread clamp using flat blade screwdriver.



Check and clean throttle shaft (5) after removing throttle friction clamp.

**Step 5**  
Rotate the throttle friction clap (11) to enable removal from throttle shaft.



Apply grease to bushings and throttle shaft.

**Step 6**  
Reposition the throttle shaft into the throttle handle, ensure flange of the white bush (7) is positioned above the locating casting.



Be careful not to damage the spring pin (10) during this process by applying too much force in reassembly.

**Step 7**  
Refit the rubber grip (4) and secure with the retaining screw (9).



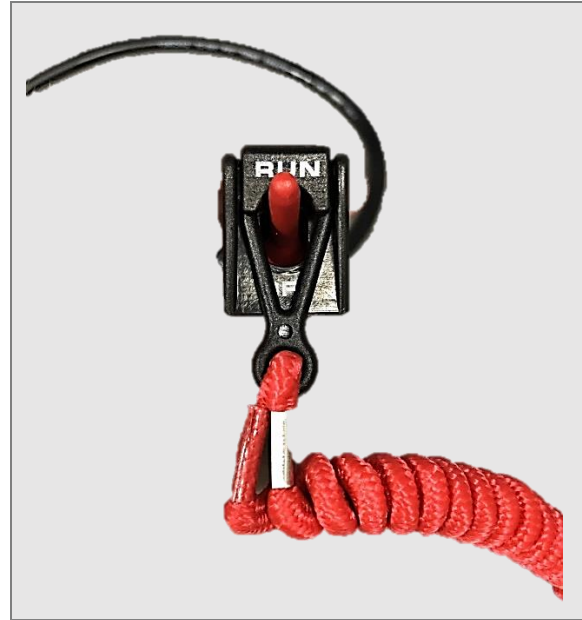
Apply a light film of gearbox oil inside the Throttle Grip; and Apply grease to the retaining Phillips head screw.



## APPENDIX 3: Approved Hybrid Kill Switches – Mercury and Tohatsu



MERCURY approved Hybrid Kill Switch  
Part No.: 826677S



TOHATSU approved Hybrid Kill Switch  
Part No.: TOH-398-06831-SURF