

Engine Sealing Protocol

1. Purpose

In order for competition between vehicles to be fair, it is necessary for all vehicles to comply with the rules under which this category races, namely the CAMS Group 3E rules (3E Rules). With regard to engines, this is done by ensuring that when an engine is built, its specifications are checked by an Accredited Engine Sealer ("Sealer") who is accredited by the Street Sedan Racing Association of Australia ("SSRAA") and if these checks show the engine to be in accordance with the 3E Rules a set of seals applied to it to ensure that the engine, during its racing life, has not been changed and so remains in its as-checked (compliant with the 3E Rules) form.

All engines in cars competing in the Combined Touring Car ("CTC") Championship must have a set of seals applied that prevent the major components, such as crankshaft, pistons, camshaft, cylinder head etc, being removed without breaking at least one such seal. All seals must be numbered and recorded by the SSRAA. Seals can only be applied by an accredited SSRAA sealer or, in the case of Temporary Seals only, by the SSRAA itself through members of its Technical Committee.

2. Types of Engine Seal

There are two types of seals,

Permanent Seals: These are applied to an engine that has been checked by a Sealer and shown to be compliant in all aspects with the manufacturer's specifications as defined in the RVCS Documents, FIA or CAMS Homologation Papers and Manufacturer's relevant Workshop Manuals and the Group 3E Rules. The Accredited Engine Sealer will at the time of applying the seals have recorded the items checked and their values. A copy of this data will be left with the competitor and a copy forwarded to the SSRAA along with the seal numbers applied. These seals remain valid until the engine is dismantled as described in Section 7.

Temporary Seals: These are used where a competitor wishes to use an engine, which the competitor deems to comply with the 3E Rules but which has not been checked and shown to comply with the 3E Rules by a Sealer and which the competitor does not intend to dismantle the engine at that time. In this case a set of Temporary Seals are applied to the engine such that the major components, such as crankshaft, pistons, camshaft, cylinder head etc cannot be removed without breaking at least one such seal. These seals must only be applied by a Sealer or by two members of the SSRAA Technical Committee. Temporary Seals are applied as a way of ensuring the engine remains unchanged from the time the engine is first used in competition with the SSRAA until it is fully checked by a Sealer the first time the engine is to be dismantled following the application of the Temporary Seal.

Replacement Seals: These are seals which are used to replace a previously applied Permanent Seal or Temporary Seal which has been removed in conformance with the Maintenance Requirements of Section 6 of this Protocol. The Replacement Seal is from then on to be considered for all purposes to be of the type specified by Section 6.

3. Competitor's Responsibilities

The competitor is responsible for :

- Ensuring that the car they present to each race meeting is compliant with the 3E rules.
- Ensuring that the requirements of this protocol are followed.
- Ensuring that no seal is broken except in accordance with the procedures detailed in this protocol.
- Providing the 3E Rules, all homologation documents and workshop manuals to their engine builder and Sealer in order to ensure that the engine is built and checked according to the requirements of the 3E Rules.
- Ensuring they contact the SSRAA (Gus Barbara on 0418 211 913) should they not understand any aspect of this Protocol or require any more detailed instruction on this Protocol.

4. Sealer's Responsibilities

The Sealer is responsible for:

- Ensuring that they have a copy of the 3E Rules and understand their content and have obtained all homologation documents and workshop manuals from the competitor or engine builder prior to inspecting the engine for its compliance with the manufacturer's specifications and the 3E Rules.
- Ensuring that they have had no involvement in the building of the engine that is about to be checked and sealed.
- Ensuring that the necessary checks required for ensuring an engine is in compliance with the manufacturer's specifications and 3E Rules listed in Section 5 have been properly carried out.
- Applying sufficient Seals to the engine to ensure that the major components, such as crankshaft, pistons, camshaft, cylinder head etc cannot be removed without breaking at least one such seal.
- Documenting the numbers of all seals applied to an engine and reporting this to the SSRAA.
- Documenting all measurements made on SSRAA Engine Sealing Form and for returning a copy of this completed form to the SSRAA within seven (7) days of the checks being completed.
- Ensuring that no Seal is applied to an engine containing a non-compliance with the manufacturer's specifications and the 3E Rules.
- Reporting to the SSRAA the details of any engine checked which contains non-compliant components and so has not had Seals applied.
- Retaining a copy of SSRAA Engine Sealing Form for all engines they have checked or sealed.

5. Specification Checking Process

The competitor must have a copy of the manufacturer's specifications (homologation documents and workshop manuals) and CAMS 3E Rules and provide a copy of these to the engine builder prior to the engine build commencing and to the Sealer prior to the Sealer inspecting the engine.

The Sealer must collect the camshaft(s) including and profile information that are to be assembled into the engine directly from Camtech Australia Pty Ltd (Ph: 02 9755 3101) or other specialist with facilities suitable for measuring and documenting the profile of the camshaft (Cam Doctor) for delivery by them to the engine builder at the time of engine assembly and specification checking. No competitor or engine builder is to handle the measured camshaft(s), except to install into engine under supervision of Engine Sealer.

The Sealer is to check that all major engine components being assembled into the engine comply with the 3E Rules and the manufacturer's specification before applying any engine seal. The major engine components to be checked should include but not be limited to

- Bore
- Stroke
- Camshaft Profile
- Engine Block Deck Height
- Conrod Length/Weight
- Valve Sizes and Profiles
- Combustion Chamber Volume
- Cylinder Head Height or Thickness
- Port Sizes and Finishes
- Pistons/Weight
- Inlet Manifold

The Sealer is to document the results of all checks on the SSRAA Engine Sealing Form and return a completed form to the SSRAA Club Secretary within seven (7) days, provide a copy to the competitor and retain a copy. This process is to be completed at the end of checking each engine irrespective of whether the engine is found to fully comply with the 3E Rules or not.

If the engine fully complies with the 3E Rules, the Sealer is to apply sufficient seals to the engine to ensure that the major components, such as crankshaft, pistons, camshaft, cylinder head etc cannot be removed without breaking at least one such seal.

If there are non-compliant parts identified by the Sealer, no seals are to be attached.

Where a competitor is to obtain a complete new engine supplied directly by the vehicle manufacturer, the competitor can opt to not have the engine dismantled and inspected prior to its installation. If the competitor wishes to do this the Competitor must contact the SSRAA prior to receiving the motor from the manufacturer in order for the SSRAA to ensure that appropriate arrangements are made with the Competitor, the Sealer and the engine supplier for the SSRAA so as to ensure that the engine is supplied to the Sealer without it being able to be altered in any way from its condition when manufactured by the vehicle Manufacturer. If such arrangements are able to be made the SSRAA will give written permission to the Sealer to attach seals which will be considered to be Permanent Seals. If such arrangements are not made any seals fitted to the engine will be classified as Temporary Seals for all purposes of this Protocol.

Where a vehicle is sufficiently recently released to the market for there to be insufficient detailed specification data available for the Sealer to check the engine components against, the Sealer is to inspect the engine and record the data for the engine in the same way as if there were specifications available. However, in this case the Sealer shall seal the engine with seals which shall be considered to be Permanent Seals and shall send to the SSRAA the Engine Sealing Form which details only the measurements taken of the engine. It is the responsibility of the Competitor to obtain the specification data as soon as possible from the manufacturer and to supply a copy of this specification data to the SSRAA in order to compare it to the originally measurements taken by the Sealer. Should the engine be found at this time to have been non-compliant, the SSRAA shall advise the competitor of this, shall remove the seals as the engine is non-compliant and the competitor will be subject to the penalties described in Section 10.

The Sealer is to document the numbers of all seals applied to the engine and report this to the SSRAA.

6. Attaching of Seals

Sealers must only apply Seals issued by the SSRAA, no other form of Seal may be used.

Seals must be applied in a manner so as to prevent the removal of major components, such as crankshaft, pistons, camshaft, cylinder head etc without breaking at least one such seal.

Permanent Seals can only be applied to engines containing components which are **ALL** compliant with the 3E Rules.

Permanent Seals can only be applied by Sealers

Temporary Seals can be applied by Sealers or two members of the SSRAA Technical Committee. Prior to the attachment of a Temporary Seal, it is required that the competitor be able to confirm that to the best of their knowledge the engine complies with the 3E Rules.

Replacement Seals can be applied by Sealers or two members of the SSRAA Technical Committee to replace seals which are broken in accordance with the circumstances described in Section 7(a)

Seal numbers of all Seals attached to each engine by Sealers or SSRAA Technical Committee are to be recorded by the person(s) attaching it and a copy returned to the SSRAA Club Secretary detailing (at minimum) the date of attachment, the competitor, the vehicle and the engine seal numbers applied.

7. Breaking of Seals

Seals can only be broken under the following circumstances:

- a) Where minor unscheduled maintenance needs to be performed which involves removal of components contained under Seals but does not require the engine to be completely dismantled. This is typically work associated with running repairs at race meetings but is not restricted to this.
- b) Where an engine with a Permanent Seal requires complete disassembly, generally associated with re-building the engine.
- c) Where an engine with a Temporary Seal requires complete disassembly, generally associated with re-building the engine.
- d) Where the SSRAA must remove seals due to the circumstances described in Section 6

The processes to be followed under each of the circumstances is as detailed below:

Reason for Break	Type of Seal	Process to be followed
Minor unscheduled maintenance	Permanent Seal	<p>Prior to commencing the work the competitor must contact the SSRAA Technical Committee (Gus Barbara on 0418 211 913) to arrange for two Technical Committee members to be present when the seal is broken.</p> <p>Prior to breaking the seal, the SSRAA Technical Committee members shall be advised of the scope of the work to be undertaken and which seal(s) needs to be broken.</p> <p>The SSRAA Technical Committee members will then confirm the number of the seal(s) that need to be broken, to ensure that it is one that is currently issued to that car/engine.</p> <p>If the seal number checked is in agreement with the records, the seal will be removed by the SSRAA Technical Committee members to allow the work to proceed.</p> <p>The work is to be performed by the competitor under the supervision of the SSRAA Technical Committee members.</p> <p>If the work is completed and the SSRAA Technical Committee members are satisfied that the work undertaken did not involve replacing or altering any component that was checked as part of the original process of checking the engine's conformity with the 3E Rules and subsequent issuing of Permanent Seals, then the SSRAA Technical Committee members can attach Replacement Seal(s) in the same place(s) as the seals removed. These Replacements Seal numbers are to be recorded and forwarded to the SSRAA Club Secretary for amending the seal records for the vehicle/engine concerned. From this point onward the Replacement Seals are to be issued considered as Permanent Seals.</p> <p>If the SSRAA Technical Committee members are aware that the work being undertaken will involve replacing or altering any component that was checked as part of the original process of checking the engine's conformity with the 3E Rules and subsequent issuing of Permanent Seals, then the SSRAA Technical Committee members will, to their best endeavours check the item being replaced against the item being removed. If this check is capable of being properly performed and the check shows the component to be in conformity with the 3E Rules, then on completion of the work, the SSRAA Technical Committee members will attach Replacement Seal(s) in the same place(s) as the seals removed. These Replacements Seal numbers are to be recorded and forwarded to the SSRAA Club Secretary for amending the seal records for the vehicle/engine concerned. From this point onward the Replacement Seals are to be issued considered as Permanent Seals</p> <p>If the SSRAA Technical Committee members are aware that the work being undertaken will involve replacing or altering any component that was checked as part of the original process of checking the engine's conformity with the 3E Rules and subsequent issuing of Permanent Seals but the check described above cannot be properly performed, then the SSRAA Technical Committee members will, to their best endeavours check the item is basically the same as that it replaced. On completion of the work, the SSRAA Technical Committee members will attach Replacement Seal(s) in the same place(s) as the seals removed. This Replacements Seal numbers are to be recorded and forwarded to the SSRAA Club Secretary for amending the seal records for the vehicle/engine concerned. From this point onward the Replacement Seals are to be issued considered as Temporary Seals.</p> <p>If the SSRAA Technical Committee members are aware that the work being undertaken will involve replacing or altering any component that was checked as part of the original process of checking the engine's conformity with the 3E Rules and subsequent issuing of Permanent Seals and the check described shows that the replacement component is not compliant with 3E Rules, the SSRAA Technical Committee members shall advise the competitor that the engine cannot have a seal attached and that the engine should be re-built with complying components which are to be checked on assembly by a Sealer in the same manner as when a complete re-build is performed. The SSRAA Technical Committee members will advise the SSRAA Club Secretary of the issue so as to amend the seal records for the vehicle/engine concerned.</p>

<p>Minor unscheduled maintenance</p>	<p>Temporary Seal</p>	<p>Prior to commencing the work the competitor must contact the SSRAA Technical Committee (Gus Barbara on 0418 211 913) to arrange for two Technical Committee members to be present when the seal is broken.</p> <p>Prior to breaking the seal, the SRAA Technical Committee members shall be advised of the scope of the work to be undertaken and which seal(s) needs to be broken.</p> <p>The SSRAA Technical Committee members will then confirm the number of the seal(s) that need to be broken, to ensure that it is one that is currently issued to that car/engine.</p> <p>If the seal number checked is in agreement with the records, the seal will be removed by the SSRAA Technical Committee members to allow the work to proceed.</p> <p>The work is to be performed by the competitor under the supervision of the SSRAA Technical Committee members.</p> <p>If the work is completed and the SSRAA Technical Committee members are satisfied that the work undertaken did not involve replacing or altering any component that would be checked as part of the original process of checking an engine's conformity with the 3E Rules and subsequent issuing of Permanent Seals, then the SSRAA Technical Committee members can attach Replacement Seal(s) in the same place(s) as the seals removed. These Replacements Seal numbers are to be recorded and forwarded to the SSRAA Club Secretary for amending the seal records for the vehicle/engine concerned. From this point onward the Replacement Seals are to be issued considered as Temporary Seals.</p> <p>If the SSRAA Technical Committee members are aware that the work being undertaken will involve replacing or altering any component that would be checked as part of the original process of checking an engine's conformity with the 3E Rules and subsequent issuing of Permanent Seals, then the SSRAA Technical Committee members will, to their best endeavours check the item being removed and the replacement item against the manufacturer's specifications. If this check is capable of being properly performed and the check shows the component to be in conformity with the 3E Rules, then on completion of the work, the SSRAA Technical Committee members will attach Replacement Seal(s) in the same place(s) as the seals removed. These Replacements Seal numbers are to be recorded and forwarded to the SSRAA Club Secretary for amending the seal records for the vehicle/engine concerned. From this point onward the Replacement Seals are to be issued considered as Temporary Seals</p> <p>If the SSRAA Technical Committee members are aware that the work being undertaken will involve replacing or altering any component that would be checked as part of the original process of checking an engine's conformity with the 3E Rules and subsequent issuing of Permanent Seals but the check described above cannot be properly performed, then the SSRAA Technical Committee members will, to their best endeavours check the item is basically the same as that it replaced. On completion of the work, the SSRAA Technical Committee members will attach Replacement Seal(s) in the same place(s) as the seals removed. This Replacements Seal numbers are to be recorded and forwarded to the SSRAA Club Secretary for amending the seal records for the vehicle/engine concerned. From this point onward the Replacement Seals are to be issued considered as Temporary Seals.</p> <p>If the SSRAA Technical Committee members are aware that the work being undertaken will involve replacing or altering any component that would be checked as part of the original process of checking the engine's conformity with the 3E Rules and subsequent issuing of Permanent Seals and the check described shows that the replacement component is not compliant with 3E Rules, the SSRAA Technical Committee members shall advise the competitor that the engine cannot have a seal attached and that the engine should be re-built with complying components which are to be checked on assembly by a Sealer in the same manner as when a complete re-build is performed. The SSRAA Technical Committee members will advise the SSRAA Club Secretary of the issue so as to amend the seal records for the vehicle/engine concerned.</p>
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Complete engine disassembly	Permanent Seal	<p>Prior to commencing the work the competitor must contact the SSRAA Technical Committee (Gus Barbara on 0418 211 913) to advise that a Permanent Seal is to be broken.</p> <p>There are no specific requirements regarding who can break the seal.</p> <p>When the engine is to be re-assembled the procedures described in Section 4 shall be followed.</p>
Complete engine disassembly	Temporary Seal	<p>Prior to commencing the work the competitor must contact the SSRAA Technical Committee (Gus Barbara on 0418 211 913) to advise that a Temporary Seal is to be broken and to provide the name of the Sealer that is to perform the work.</p> <p>The Sealer shall break the seals and shall witness the removal of the components that require being checked for ensuring the engines conformity with the manufacturer's specifications and the 3E Rules. The Sealer shall have these components checked in the same manner as would occur for the checks being done when assembling an engine that are described in Section 4.</p> <p>The Sealer is to document the results of all checks on the SSRAA Engine Sealing Form and return a completed form to the SSRAA Club Secretary, provide a copy to the competitor and retain a copy. This report must show if the engine, on disassembly, was found to be in compliance with the 3E Rules.</p> <p>When the engine is to be re-assembled the procedures described in Section 4 shall be followed.</p>
Non compliance described in Section 6	Permanent Seal	Thee SSRAA Technical Committee shall delegate a member to remove all seals from the engine

8. Expiry Date of Seals

Permanent Seals do not have a date after which they will no longer be recognised as being current.

A Temporary Seal MAY only be considered as being current for two (2) years after the date that a Temporary Seal was first affixed to that location or for five (5) race meetings whichever is the latter. When a Temporary Seal is no longer current, the SSRAA will advise the competitor in writing that the Temporary Seals seal is no longer deemed to be current and so to comply with the Regulations under which the competitor races, the engine must be checked in accordance with the requirements of Section 4 of this Protocol before it is further used in SSRAA competitions.

Temporary engine seals MAY also be asked to be removed at the discretion of the SSRAA's Technical Committee prior to the two (2) year period.

9. Accredited Engine Sealers

Detailed below are the names and contact detailed of SSRAA Accredited Engine Sealers

Lance Smith
BARGO NSW
Ph: 0407 434 476

John Waterhouse
FYSHWICK ACT
Ph: 02 6280 5972

Peter Skaza
CARDIFF NSW
Mb: 0411 269 154

Mike Handley
RUSE NSW
Ph: 02 4625 6875

Allan Pitt
LEPPINGTON NSW
Mb: 0409 911 374

Brian Strange (Saloon car only)
Mb: 0423 351 930

10. Penalties

It is a requirement of the NSW Motor Race Championship Sporting Regulations Schedule H (Championship) that only vehicles complying with the rules of that Championship are eligible to score points in that Championship. One element of compliance is that each vehicle must have its engine sealed in accordance with the requirements of this Protocol. For the avoidance of doubt, this means that vehicles which are found to breach the requirements of this protocol will have their points deducted for all races for which they are found to have not complied with the requirements of this Protocol.

11. Post Championship Checking

Competitors who achieve 1st or 2nd or 3rd place in each class in the NSW Motor Race Championship or the SSRAA Club Championship MAY be required to have their engine checked before the championship is awarded. The cost of these checks is to be borne by the competitor.