RILEY REGISTER SPARES Ltd - Copper Faced Double Cemjo Gaskets

Please follow these instructions when fitting your gasket to ensure satisfactory performance from the component.

Your new gasket uses a non-asbestos material as the filler and this has different compression characteristic to the traditional asbestos filler, which results in more torque checking being necessary to satisfactorily bed in the gasket.

The following gasket part numbers use this material - **9E350 – 9 hp and SV110 – Side Valve cylinder head gaskets and all 9 hp gasket sets**

When fitting these gaskets, the following instructions must be followed:

A. **Clean any old gasket material and cements from the head and block face** ensuring that you prevent any debris entering the block and head passages and cylinder bores.

B. **Check the cylinder head and block for flatness.** A method for this is outlined in footnote 5**.**

C. **Before assembly check the cylinder head nuts run freely** over the full length of the stud thread. Damaged studs or nuts should be replaced because unless the nuts run freely tightening will not apply the correct clamping load to the gasket.

D. **Lubricate the gasket before assembly**. Having ensured the head block and gasket faces are clean smear a thin coating of grease on both faces of the gasket.

E. **Lubricate the studs before assembly**. The cylinder head stud threads should be lightly lubricated with an oily rag as should the head face where the nuts bear.

F. **Tightening down the cylinder head**

1. Progressively tighten the head nuts in the order shown in the handbook until the required torque is achieved.
2. Check the torque again on a warm engine after 10-15 minutes on fast idle.
3. Drive **carefully on light throttle** for 10 miles after which, when the engine is warm, all the nuts should be checked again.
   a. If the nuts tighten more than a 1/16th of a turn, repeat procedure after a further 10 miles.
   b. If they tighten less than this, it is all right to drive the car for 100 miles, keeping speed down and using light throttle.
4. And repeat when warm after this distance.
5. We recommend that you keep checking every 100 miles **until there is no more take up on the nuts.** Then and only then can you say that the gasket has bedded down properly. Note if one or more nuts continually require a re-torque a likely cause could be the stud pulling out of the block.
6. Please remember that these gaskets are intended for normal road use.

Footnotes:

1. **Thread inserts on Head Studs** – If you are fitting thread inserts, it is essential that these and the studs are fitted with a thread lock and sealer to ensure water does not migrate up the threads resulting in water loss and corrosion.
2. **Considerations on head nut torque**. We are now largely working with what are now old and often corrosion damaged blocks so careful consideration is needed on this topic. Many commercial rebuilders torque to 45 lbf ft, the value recommended in the post war Riley documentation, on the basis that this will identify and allow them to address any block thread issues. The RRSL supplied studs are made from En16T and when lubricated will get to around 80% of yield between 35 to 37 lbs ft torque. This torque level has found to be fully satisfactory with properly bedded RRSL replacement gaskets. Use of higher torques should only be considered for blocks with some sort of thread inserts.
3. **Nuts tend to stick** – Nuts which have been tightened for a while tend to "stick". It is therefore good practice to "unstick" the nut by applying reverse torque until the nut breaks free and then tighten to the correct torque. The amount the nut has tightened is taken from the position the nut was in prior to being "broken free". Note 1/16th of a turn of the nut equates to .003" gasket compression.
4. **Gasket Sets** contain 2 types of Rocker Cover gaskets 9E685 which has an elongated hole in the centre at one end for the rocker oil feed, this gasket is for the **INTERNAL OIL FEED type** engines, **ONLY.** The other gasket is 9E182 which has round holes in the centre at each end; this is for the **EXTERNAL OIL FEED** type engines, **ONLY. Please make sure you use the correct gasket** for your engine**.**
5. **Notes on checking block and head flatness.** If either is significantly out-of-flat, it is recommended that the component in question be skimmed to remove the minimum material to bring back within tolerance. It is difficult to provide firm recommendations on when remedial action is needed. As a general guideline if either component is out of flat by more than 0.002" lengthwise or by more than 0.0015" crosswise further checks by a specialist are advised. There also may be evidence of the material of the block lifting slightly around the head studs; this must be addressed as it reduces the clamping load on the other parts of the gasket. An initial check of flatness can be made in the home workshop with a good quality steel rule and feeler gauges. Place the rule along the length of the head or block and check if it rocks back to front, if so, measure the clearance at the ends. If it does not rock, attempt to insert a feeler gauge of the specified thickness at several points along the head face, particularly between the cylinder bores. If, on either measurement, the feeler gauge goes in, then further checks are advised. Make similar checks across the component. If you suspect the component is out of flatness, a good engine repair shop should be able to confirm and redress the situation.

Feedback to RRSL on your experiences with the parts we have supplied helps your company with continuous improvement.