

IAME SERIES UAE –TECHNICAL REGULATIONS - APPENDIX 1

General method for measuring the squish height on a L-ring piston

1. Remove the engine from the chassis.
2. The engine must be in racing conditions, no combustion chamber cleaning allowed.
3. Remove the spark plug.
4. Wait until the engine is at ambient temperature.
5. Prepare a segment of tin wire, with the following characteristics:
 - a. Diameter 1.5-1.6mm.
 - b. Total length approximately 100mm.
 - c. 90-120° bend at about 40mm from one tip (the tip to be inserted into the cylinder head).
 - d. This way you will have an almost horizontal segment, about 40mm long, to be inserted into the combustion chamber, and a vertical segment acting as a handle.
 - e. The tip to be introduced must be cut carefully and square.
6. Move the piston approximately 10mm from T.D.C.
7. Looking at the engine from above, the tin must be inserted via the spark plug hole with the horizontal segment parallel to the piston pin (also parallel to the crankshaft), towards the left or right. It must be inserted until the tip gets in contact with the liner.
8. The checking must be done one side at a time, not two sides at the same time.
9. Rotate the crankshaft, by hand or by using a wrench, and take the piston to T.D.C. and beyond, crushing the tin.
10. Immediately, rotate the crankshaft in the opposite direction, to crush the tin a second time.
11. Keep the tin firmly in contact with the cylinder liner, during operation.
12. Carefully extract the tin from the spark plug hole.
13. Look at the tin's end:
 - a. At the tip a **step** must be present, created by the piston ring seat between piston and liner

- b. Before the step, a **flat area** must be present, created by piston crown and cylinder head, which squeezed the tin.
 - c. If these details are not detectable, prepare another tin portion and repeat from point 5.
14. Prepare a good quality caliper with resolution of 1/100mm, either digital or mechanical with dial gauge.
15. As the thin edges on the caliper will be used, it is necessary to check its zero specifically on the thin edges:
 - a. Preferably have available a 1mm gauge. Measure it with the caliper's edge and see the dimension visualized, if the reading is not 1mm then zero the caliper to the 1.00mm gauge, then add 1mm to any reading.
 - b. If a 1mm gauge is not available, at least clean the caliper's edges, close the caliper completely, hold up to the light and check for any gap left between the edges. If needed adjust the caliper's parallelism by adjusting the specific screws.
16. Carefully pinch the tin's end **exactly at the end of the flat area just before the step**. Push carefully on the caliper.
17. While keeping a soft pressure on the caliper, gently move the tin with your fingers allowing the caliper to arrive at the thinnest position. This is the squish reading.
18. Repeat the operations from point 5 to 17, on the opposite side.

The smallest reading between left and right side is the valid squish height.

General method for measuring the squish height on a flat-ring piston

1. Remove the engine from the chassis.
2. The engine must be in racing conditions, no combustion chamber cleaning allowed.
3. Remove the spark plug.
4. Wait until the engine is at ambient temperature.
5. Prepare a segment of tin wire, with the following characteristics:
 - a. Diameter 1.5-1.6mm
 - b. Total length approximately 100mm
 - c. 90-120° bend at about 40mm from one tip (the tip to be inserted into the cylinder head).
 - d. This way you will have an almost horizontal segment, about 40mm long, to be inserted into the combustion chamber, and a vertical segment acting as a handle.

- e. The tip to be introduced must be cut carefully and square.
6. Move the piston approximately 10mm from T.D.C.
 7. Looking at the engine from above, the tin must be inserted via the spark plug hole with the horizontal segment parallel to the piston pin (also parallel to the crankshaft), towards left or right. It must be inserted until the tip gets in contact with the liner.
 8. The checking must be done one side at a time, not two sides at the same time.
 9. Rotate the crankshaft, by hand or by using a wrench, and take the piston to T.D.C. and beyond, crushing the tin.
 10. Immediately, rotate the crankshaft in the opposite direction, to crush the tin a second time.
 11. Keep the tin firmly in contact with the cylinder liner, during operation.
 12. Carefully extract the tin from the spark plug hole.
 13. Look at the tin's end:
 - a. At the tip a small **step** must be present, created by the chamfer at the piston's edge.
 - b. Before the step, a **flat area** must be present, created by piston crown and cylinder head, which squeezed the tin.
 - c. If these details are not detectable, prepare another tin portion and repeat from point 5.
 14. Prepare a good quality caliper, with resolution of 1/100mm, either digital or mechanical with dial gauge
 15. As the thin edges on the caliper will be used, it is necessary to check its zero specifically on the thin edges:
 - a. Preferably have available a 1mm gauge. Measure it with the caliper's edge and see the dimension visualized, if the reading is not 1mm then zero the caliper to the 1.00mm gauge, then add 1mm to any reading.
 - b. If a 1mm gauge is not available, at least clean the caliper's edges, close the caliper completely, hold up to the light and check for any gap left between the edges. If needed adjust the caliper's parallelism by adjusting the specific screws.
 16. Carefully pinch the tin's end **exactly at the end of the flat area just before the small step**. Push carefully on the caliper.
 17. While keeping a soft pressure on the caliper, gently move the tin with your fingers allowing the caliper to arrive at the thinnest position. This is the squish reading.
 18. Repeat the operations from point 5 to 17, on the opposite side.

The smallest reading between left and right side is the valid squish height.