

Your Ref: Honda Engine
(number L13A4068140)
Our Ref : CI/TP23000587/D

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INSPECTION REPORT OF A HONDA ENGINE WITH NUMBER L13A4068140

1. I refer to your request on 12 January 2023 to conduct a physical inspection of a Honda engine.
2. The purpose of this inspection was to primarily determine whether the Honda engine is a Honda L13A model engine.
3. Following the request, I had carried out a physical inspection of the Honda engine on 16 January 2023 at the premises of Autoforce Service Centre Pte Ltd, 176 Sin Ming Drive #04-07, Sin Ming Autocare, Singapore 575721.
4. Measurements of the bore and stroke of the Honda engine were obtained and thereafter compared with the bore and stroke measurements as stated in the technical specifications of a Honda L13A model engine.
5. I now set out below my observations and comments regarding this inspection.

Inspection of the Honda Engine

6. Firstly, I had noted that the Honda engine was a used engine and not fitted on any motor car at the time of my inspection. It was observed to be a complete assembly with all mechanical parts still intact, within the engine housing. The engine number engraved on the housing was L13A4068140.
7. My visual examination of the engine housing revealed the housing to be of serviceable/satisfactory condition. There was no crack and/or hole observed on the engine housing.
8. Upon my request, the Honda engine was dismantled, specifically the top block was separated from the bottom block. This was to enable me to carry out measurements of its cylinders, in particular the bore and stroke measurements of each cylinder, which typically can be used to determine the engine displacement or more commonly referred to as engine cc or engine size. See photo 1 – 4 below.



Photo 1 shows a general view of the Honda engine that I had inspected. The Honda engine was observed to be a used engine and was not fitted on any motor car. It was also observed to be a complete assembly with all mechanical parts still intact, within the engine housing.



Photo 2 shows another view of the Honda engine that I had inspected. My visual examination of the engine housing revealed the housing to be of serviceable/satisfactory condition. There was no crack and/or hole observed on the engine housing.

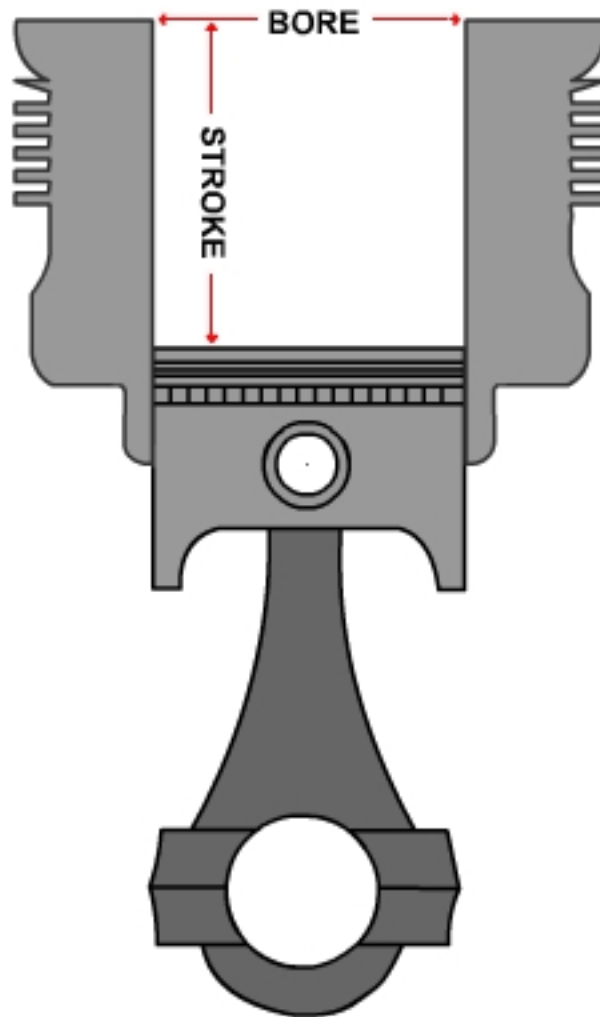


Photo 3 shows a closer view of the Honda engine that I had inspected. My visual examination of the engine housing revealed the housing to be of serviceable/satisfactory condition. There was no crack and/or hole observed on the engine housing.



Photo 4 shows the engine number engraved on the housing of the Honda engine that I had inspected. The engine number was L13A4068140.

9. The bore refers to the measurement of the inside diameter of the cylinder while the stroke refers to the distance the piston moves in one direction of upward or downward movement in the cylinder. See diagram below for illustration purposes.



10. The bore and stroke measurements of the 4 cylinders of the Honda engine are set out in the table below. Photo 5 – 21 thereafter shows the photographs taken during the measurements.

	Bore (mm)	Stroke (mm)
Cylinder 1	72.24	79.87
Cylinder 2	72.35	79.87
Cylinder 3	72.74	79.97
Cylinder 4	72.13	79.88

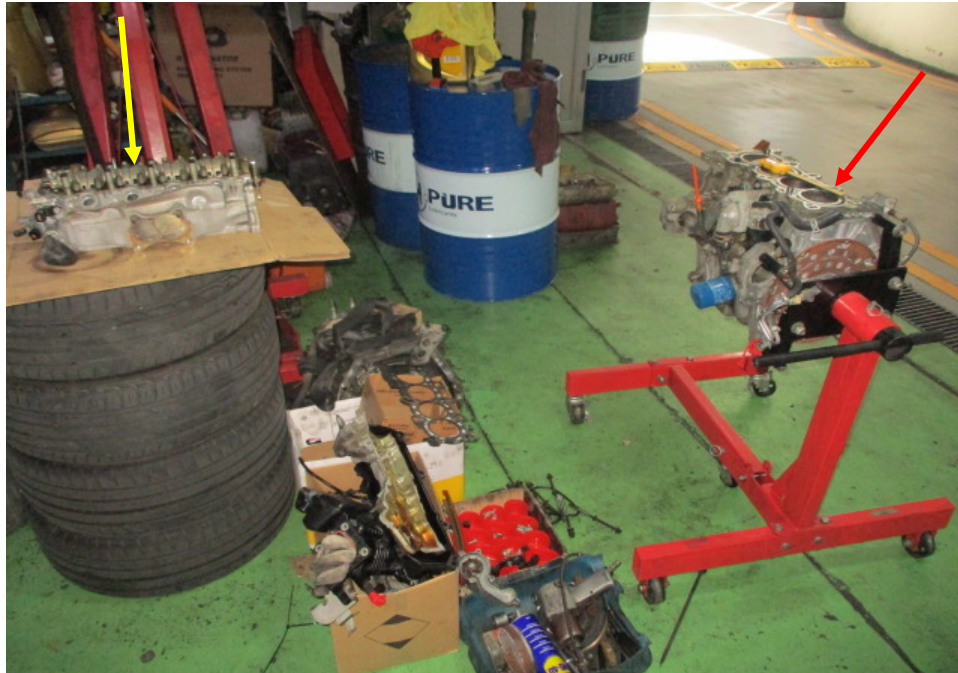


Photo 5 shows the top block (yellow arrow) of the Honda engine separated from its bottom block (red arrow). This was to enable me to carry out measurements of its cylinders, in particular the bore and stroke measurements of each cylinder, which typically can be used to determine the engine displacement or more commonly referred to as engine cc.

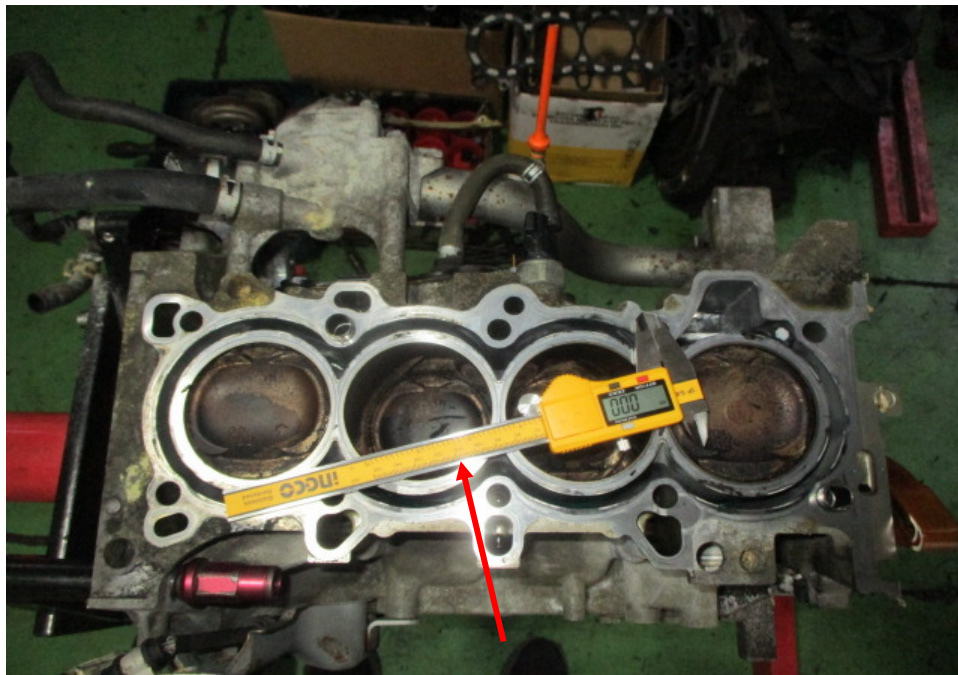


Photo 6 shows the bottom block of the Honda engine and the digital Vernier Caliper (arrowed) that was used to measure the bore and stroke measurements of each cylinder, which typically can be used to determine the engine displacement or more commonly referred to as engine cc. The digital Vernier Caliper was calibrated before the start of the measurements.



Photo 7 shows measurement being carried out to the bore (arrowed) of cylinder 1 of the Honda engine. The bore measurement of cylinder 1 was recorded to be 72.24mm.



Photo 8 shows measurement being carried out to the stroke of cylinder 1 of the Honda engine. The bore and stroke measurements of the Honda engine were carried out using a digital Vernier Caliper that was calibrated before the start of the measurements.



Photo 9 shows measurement being carried out to the stroke (arrowed) of cylinder 1 of the Honda engine. The bore and stroke measurements of the Honda engine were carried out using a digital Vernier Caliper that was calibrated before the start of the measurements.



Photo 10 shows the stroke measurement of cylinder 1, which was recorded to be 79.87mm.



Photo 11 shows measurement being carried out to the bore (arrowed) of cylinder 2 of the Honda engine. The bore and stroke measurements of the Honda engine were carried out using a digital Vernier Caliper that was calibrated before the start of the measurements.



Photo 12 shows measurement being carried out to the bore (arrowed) of cylinder 2 of the Honda engine. The bore measurement of cylinder 2 was recorded to be 72.35mm.



Photo 13 shows measurement being carried out to the stroke (arrowed) of cylinder 2 of the Honda engine. The bore and stroke measurements of the Honda engine were carried out using a digital Vernier Caliper that was calibrated before the start of the measurements.



Photo 14 shows the stroke measurement of cylinder 2, which was recorded to be 79.87mm.



Photo 15 shows measurement being carried out to the bore (arrowed) of cylinder 3 of the Honda engine. The bore measurement of cylinder 3 was recorded to be 72.74mm.



Photo 16 shows measurement of the stroke of cylinder 3 of the Honda engine that I had inspected. The bore and stroke measurements of the Honda engine were carried out using a digital Vernier Caliper that was calibrated before the start of measurements.



Photo 17 shows measurement being carried out to the stroke (arrowed) of cylinder 3 of the Honda engine. The bore and stroke measurements of the Honda engine were carried out using a digital Vernier Caliper that was calibrated before the start of the measurements.



Photo 18 shows the stroke measurement of cylinder 3, which was recorded to be 79.97mm.



Photo 19 shows measurement being carried out to the bore (arrowed) of cylinder 4 of the Honda engine. The bore measurement of cylinder 4 was recorded to be 72.13mm.



Photo 20 shows measurement being carried out to the stroke (arrowed) of cylinder 4 of the Honda engine. The bore and stroke measurements of the Honda engine were carried out using a digital Vernier Caliper that was calibrated prior to the start of measurements.



Photo 21 shows the stroke measurement of cylinder 4, which was recorded to be 79.88mm.

Honda L13A Engine Technical Specifications

11. In order to determine whether the Honda engine that I had inspected was a Honda L13A model engine, I had compared the measurements of the bore and stroke of the Honda engine with the bore size and stroke size of the Honda L13A model engine, as stated in its technical specifications. According to the technical specification of the Honda L13A model engine, the bore size and stroke size was 73.00mm and 80.00mm respectively.
12. Upon comparison, I note that the bore and stroke measurements of the Honda engine that I had inspected (shown in paragraph 10 above) had corresponded to the bore size and stroke size as stated in the technical specifications of a Honda L13A model engine. The measurements recorded from the Honda engine were all slightly lesser (at maximum 0.87mm lesser). This difference can be attributed to carbon accumulation within the cylinders, as the Honda engine that I had inspected was a used engine.
13. Since the bore and stroke of the Honda engine had corresponded to a Honda L13A model engine, the engine displacement of the Honda engine that I had inspected would then be 1339cc. See technical specifications of Honda L13A model engines below.

Honda L13A/L13B engine specs

Manufacturer	Ogawa plant
Also called	Honda L13
Production	2001-present
Cylinder block alloy	Aluminum
Configuration	Inline-4
Valvetrain	DOHC 4 valves per cylinder SOHC 4 valves per cylinder SOHC 2 valves per cylinder
Piston stroke, mm (inch)	80 (3.15) ←
Cylinder bore, mm (inch)	73 (2.87) ←
	10.5
Compression ratio	10.8
	13.5
Displacement	1339 cc (81.7 cu in) ←

Conclusion

14. In summary, the Honda engine that I had inspected was a Honda L13A model engine. The engine number engraved on the housing of this Honda engine was L13A4068140. The engine displacement of the Honda engine is 1339cc as per the technical specification.



Ang Bryan Tani

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