

Your Ref: SBE 338B
Our Ref : CI/TP20009233/D

01 September 2020

Goh Wai Hong
Block 301 Clementi Avenue 4
#07-553
Singapore 120301

AUTOMOBILE INSPECTION REPORT OF MOTOR CAR SBE 338B

1. I refer to your request on 28 August 2020 to conduct a physical inspection of a motor car bearing registration number SBE 338B (herein referred to as "**Motor Car**").
2. The purpose of this inspection was to primarily determine: -
 - a) whether the manual transmission assembly on the Motor Car was fitted in a secure manner that will not affect the structural integrity of the Motor Car; and
 - b) whether there was any operational issue(s) to the manual transmission system of the Motor Car.
3. Following the request, I had carried out a physical inspection of the Motor Car on 31 August 2020 at the premises of No. 176 Sin Ming Drive #03-03, Sin Ming Autocare, Singapore 575721. I also conducted a short test drive of the Motor Car during this inspection.
4. I now set out below my observations and comments with respect to this inspection and test drive.

Inspection of the Motor Car

5. The following general information of the Motor Car was first recorded at the time of my inspection: -

Vehicle Registration No.	: SBE 338B
Make / Model	: Honda Civic SIR 4A
Chassis No	: JHMEK4650WS002278
Year of Registration	: 1998 (November)
Mileage	: 190,486km

6. The Motor Car was fitted with a 5-speed manual transmission assembly. The input side of the transmission is bolted to the crankshaft side of the engine block. The left and right drive shafts were observed to be securely fitted from the main shaft, located inside the transmission, to the front left wheel and front right wheel respectively. There was also no crack and/or hole observed on the transmission housing.
7. The transmission of the Motor Car was supported by 2 brackets. One was at the rear of the transmission while the other was at the right side of the transmission. The bracket at the rear of the transmission was mounted onto the engine cross member while the bracket at the right side was mounted onto the right side front chassis, adjacent to the right side front wheel house. Both brackets are with rubber bushings, which absorbs any vibrations arising from the rotation of the transmission gears, minimising any stress to the bracket and correspondingly also minimise any stress to the engine crossmember and right side front chassis that these brackets are mounted onto.
8. The gear selector fork from the transmission to the gear shifter of the Motor Car was observed to be securely fitted on the underside of the Motor Car. The gear selector fork connects to the gear shifter in the interior compartment of the Motor Car through the floorboard. See photo 1 – 8 below.



Photo 1 shows the Motor Car hoisted up at the time of my inspection. The mileage of the Motor Car recorded was 190,486km.



Photo 2 shows a general view of the transmission assembly (arrowed) that was fitted on the Motor Car. The input side of the transmission is bolted to the crankshaft side of the engine block. The left and right drive shafts were observed to be securely fitted from the main shaft, located inside the transmission, to the front left wheel and front right wheel respectively. There was also no crack and/or hole observed on the transmission housing.

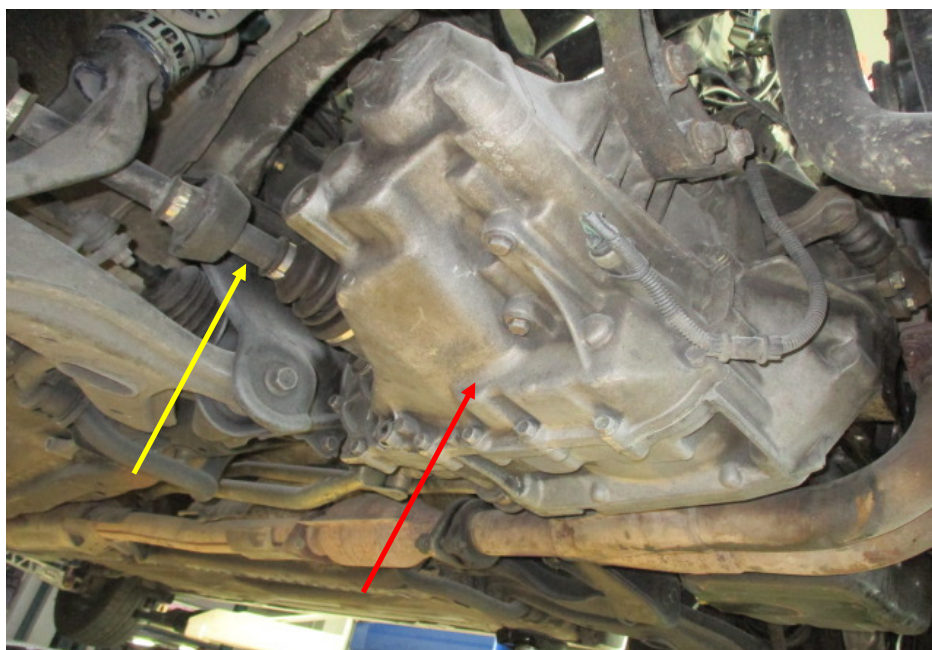


Photo 3 shows a general view of the transmission assembly (red arrow) that was fitted on the Motor Car. There was also no crack and/or hole observed on the transmission housing. The left and right drive shafts were observed to be securely fitted from the main shaft, located inside the transmission, to the front left wheel and front right wheel respectively. The right drive shaft is highlighted by the yellow arrow.



Photo 4 shows another view of the transmission assembly (arrowed) that was fitted on the Motor Car. This was at the input side where the transmission is bolted onto the crankshaft side of the engine block.

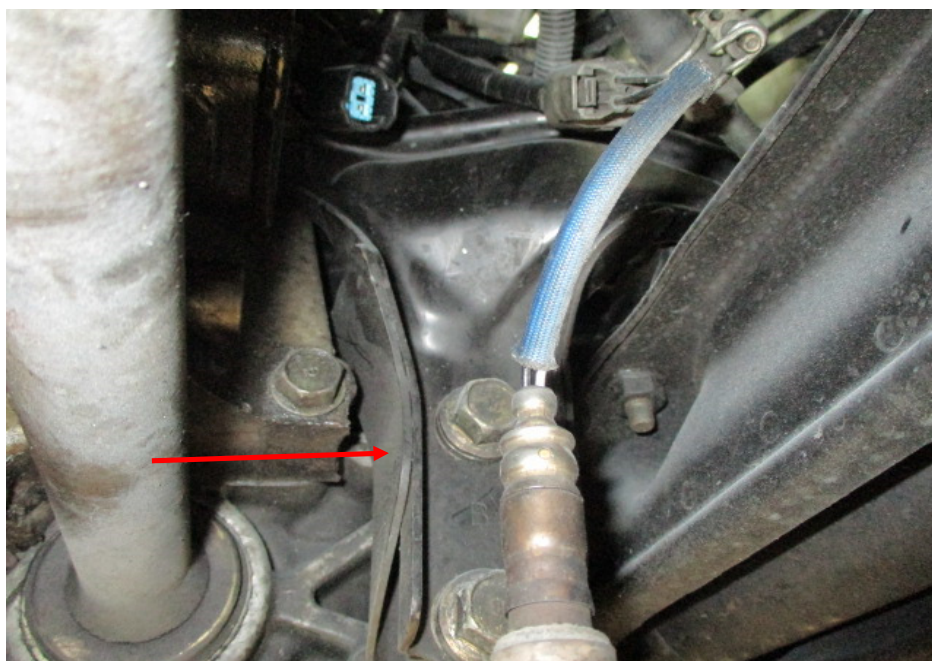


Photo 5 shows the bracket (arrowed) supporting the rear of the Motor Car's transmission. This bracket was mounted onto the engine cross member. The bracket was with rubber bushings that absorbs any vibrations arising from the rotation of the transmission gears, minimising any stress to the bracket and correspondingly also minimise any stress to the engine crossmember.



Photo 6 shows the bracket supporting the right side of the Motor Car's transmission. This bracket was mounted onto the right side front chassis, adjacent to the right side front wheel house. The bracket was with rubber bushings (arrowed) that absorbs any vibrations arising from the rotation of the transmission gears, minimising any stress to the bracket and correspondingly also minimise any stress to the right side front chassis member.



Photo 7 shows the gear selector fork (arrowed) from the transmission to the gear shifter of the Motor Car. The gear selector fork was observed to be securely fitted on the underside of the Motor Car. This gear selector fork connects to the gear shifter in the interior compartment of the Motor Car through the floorboard



Photo 8 shows the gear selector fork, at the side where it connects to the gear shifter in the interior compartment of the Motor Car through the floorboard.

9. The transmission of the Motor Car was operated by a clutch pedal, for engaging and disengaging the transmission gears, and a gear shifter for manually upshifting and downshifting of the transmission gear to be engaged. See photo 9 & 10 below.



Photo 9 shows the gear shifter (arrowed) that was fitted on the Motor Car, for manually selecting the transmission gear to be engaged. The gear selector fork from the underside of the Motor Car (refer to photograph 7 above) connects to this gear shifter through the floorboard.



Photo 10 shows the clutch pedal (arrowed) of the Motor Car, for engaging and disengaging the transmission gears.

10. I subsequently test drove the Motor Car to primarily determine whether there was any operational issue(s) to its manual transmission system. The Motor Car was driven along the arterial roads in the vicinity of Sin Ming Autocare.
11. The general performance of the transmission system of the Motor Car was satisfactory throughout the Motor Car's short test drive. Operationally, I did not find any abnormal behaviour of the transmission system. I was able to engage the different transmission gears without any significant difficulty. Selecting the required transmission gear by manually upshifting and downshifting of the gear shifter was relatively smooth. The Motor Car was also able to reverse when the gear was manually shifted to reverse. The mileage of the Motor Car at the end of the test drive was 190,487km.
12. In summary, the transmission of the Motor Car was found to be secured properly. It was observed to be supported by 2 brackets with all related components forming a complete manual transmission system, securely fitted/attached. The mounting of the bracket at the right side of the transmission onto the right side front chassis of the Motor Car is the original mounting point for the bracket as my comparison of an automatic transmission of a similar make and model motor car showed the same mounting location. See photo 11 & 12 below.



Photo 11 shows the engine bay of a similar make and model motor car that was fitted with an automatic transmission. This was for comparison of the mounting point of the right side bracket for the manual transmission that was fitted on the Motor Car.

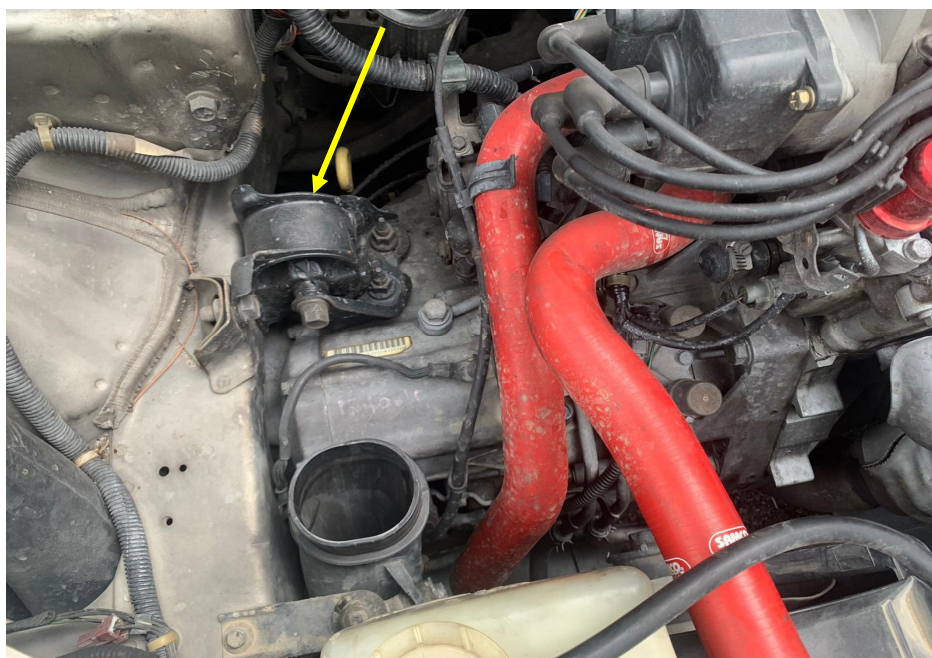


Photo 12 shows the bracket (arrowed) at the right side of the automatic transmission that was fitted on the similar make and model motor car. The mounting location was observed to be the same as the mounting location for the bracket at the right side of the manual transmission that was fitted on the Motor Car (refer to photograph 6 above).

13. The operating condition of the Motor Car's transmission system was found to be satisfactory during a test drive of the Motor Car that I had carried out.



Ang Bryan Tani

AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA

Senior Technical Investigator

Technical Investigation & Accident Reconstructionist (SAE-A)

DISCLAIMER OF LIABILITY TO THIRD PARTIES:- This Report is made solely for the use and benefit of the Client named on the front page of this Report. No liability or responsibility whatsoever, in contract or tort, is accepted to any third party who may rely on the Report wholly or in part. Any third party acting or relying on this Report, in whole or in part, does so at his or her own risk.