

Your Ref: TP/IP/05515/2021  
Our Ref : CI/TPD21002927/P

4<sup>th</sup> March 2021

**General Investigation Team**

Traffic Police Department  
Singapore Police Force  
10 Ubi Avenue 3  
Singapore 408865

**MECHANICAL INSPECTION REPORT OF MOTOR CAR SJP 5329S**

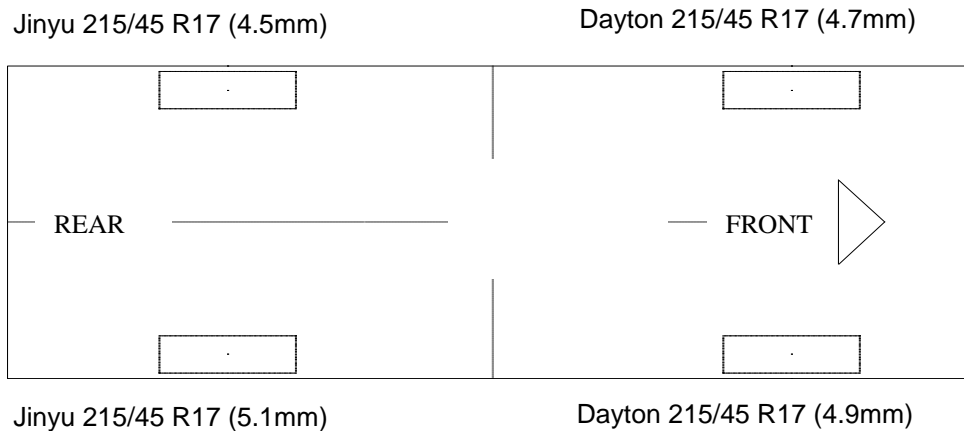
1. I refer to your request on 25<sup>th</sup> February 2021 to conduct a physical inspection of a Motor car bearing registration number SJP 5329S (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 31<sup>th</sup> January 2021.
2. The objective of the inspection is to determine if there was any possible mechanical failure to the Motor car that may have contributed to the accident.
3. Following the request, I had carried out a physical inspection of the Motor Car on 3<sup>rd</sup> March 2021 at the premises of Traffic Police vehicle pound, 517 Airport Road Singapore 539942. I now set out below my observations and comments with respect to this inspection.

**General Condition**

4. The mileage of the Motor car was not recorded due to damage to the engine system as a result of the accident.
5. The Motor car was observed to have sustained damage all around. Its front windscreen, front bonnet, front bumper, left body panel and rear bumper and bonnet was amongst the body parts and various components in the engine compartments were also damaged as a result of the accident.

## Tyres and Wheel Rims

6. The front left tyre was observed to slip off from the Motor Car wheel rim as a result of the accident. However the condition of the Motor car's other 3 tyres was observed to be in serviceable condition. I did not find any tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 4 tyres. The 3 tyres were also observed to be sufficiently inflated for vehicular operation. The tyre brand, tyre size and remaining tread depth of the 4 tyres were recorded as follows:-



7. The front left wheel rim was observed to be damaged and tyre was slip off as a result of the accident. However, the other 3 tyres were observed to be wrapped around alloy wheel rims that were found to be without any damage. See photo 1 – 13 below.



**Photo 1** shows a general view of the Motor Car's rear body at the time of my inspection. The rear portion of the Motor Car was observed to have sustained damaged as a result of the accident.



**Photo 2** shows a general view of the Motor Car's rear body at the time of my inspection. Its rear bumper (red circle), rear bonnet (yellow circle) and its left right brake lamp (arrowed) was amongst the body parts that were also damaged as a result of the accident.



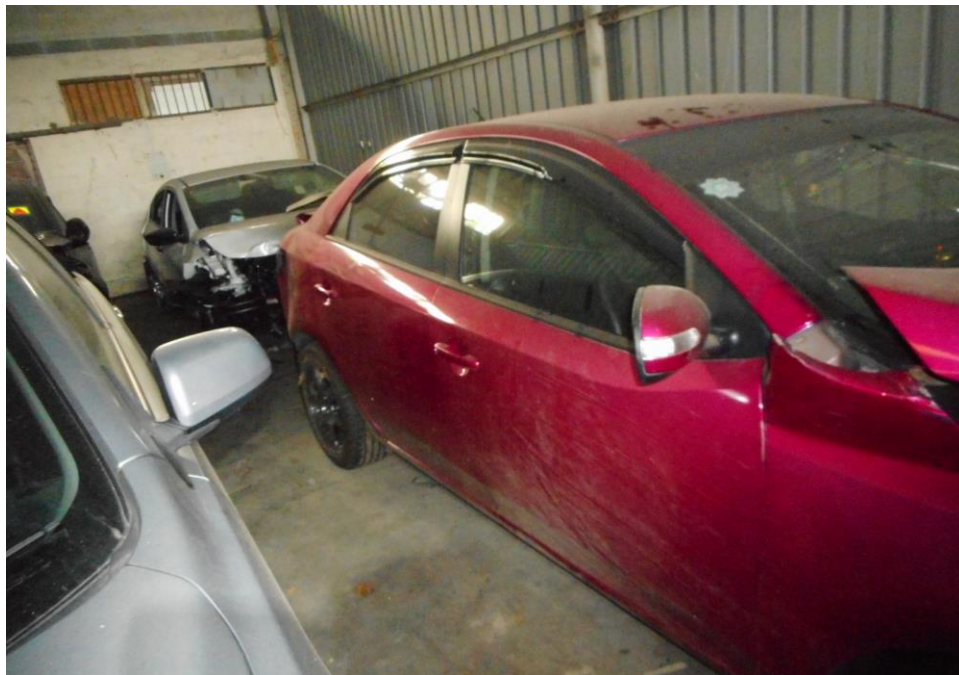
**Photo 3** shows a general view of the Motor Car's front body at the time of my inspection. Its front windscreen (arrowed) and front bonnet (yellow circle) was amongst the body parts and various components in the engine compartments were also damaged as a result of the accident.



**Photo 4** shows the close up view of the Motor Car's front body at the time of my inspection. The Motor car was observed to have sustained damage at its front portion. Its battery (yellow circle), front bumper and body reinforcement panel (red circle) was amongst the various components in the engine compartments were also damaged as a result of the accident.



**Photo 5** shows the close up view of the Motor Car's front body at the time of my inspection. The Motor car was observed to have sustained damage at its front portion. Its engine radiator (circled) was amongst the various components in the engine compartments were also damaged as a result of the accident.



**Photo 6** shows the general view of the Motor Car's right body at the time of my inspection. The Motor car was not affected by the accident.



**Photo 7** shows the general view of the Motor Car's left body at the time of my inspection. The Motor car was observed to have sustained damage at its left portion. Its left body panel was damaged as a result of the accident.



**Photo 8** shows the close up view of the Motor Car's left body at the time of my inspection. The Motor car was observed to have sustained damage at its left portion. Its left body panel (circled) was damaged as a result of the accident.



**Photo 9** shows the condition of the front right tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 4.9mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).



**Photo 10** shows the condition of the rear right tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 5.1mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).



**Photo 11** shows the condition of the rear left tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 4.5mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).



**Photo 12** shows the condition of the front left tyre of the Motor Car, which was observed to be in unserviceable condition with remaining tread depth of approximately 4.7mm. The tyre was also observed to slip off the wheel rim and deflated as a result of the accident.



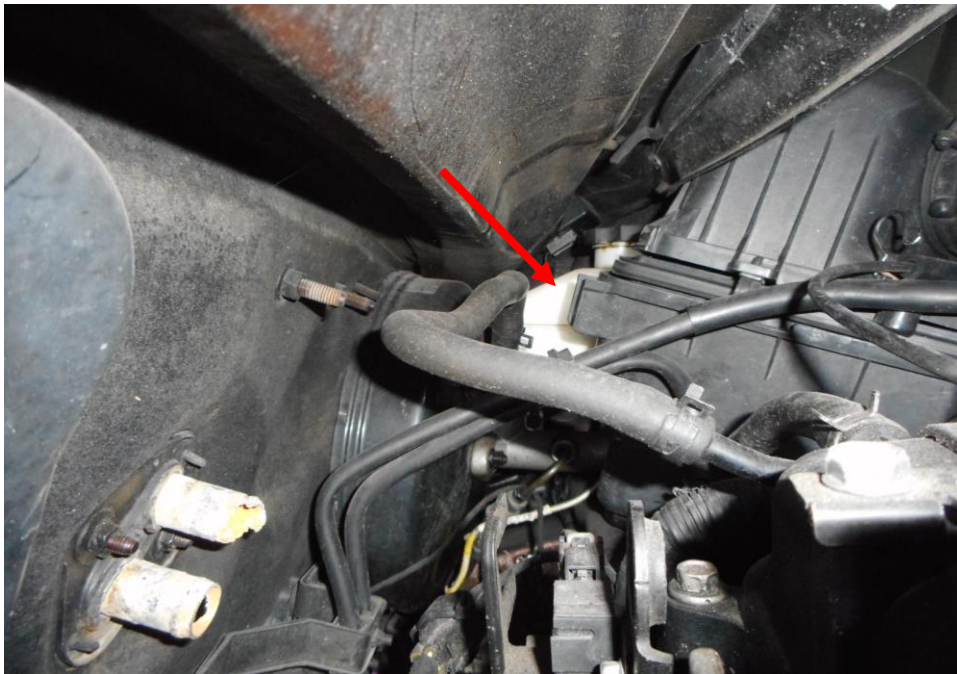
**Photo 13** shows the condition of the front left tyre and rim of the Motor Car, the wheel rim was observed to slip off the wheel rim as a result of the accident

### **Engine Compartment & Operating Fluids**

8. Upon examination of the engine compartment of the Motor Car, I had observed all the parts and components inside the engine compartment to be intact and unaffected by the accident. The engine oil was found to be of sufficient level for operating purposes. Visually, there was also no contamination found to these fluid. However, the brake fluid was not able to be inspected as it was blocked. The engine coolant was observed to be insufficient as the radiator was damaged and coolant had leak out as a result of the accident.
9. Further examination of the engine compartment revealed no sign(s) or indication(s) of fluid leakage and/or fluid stain within the engine compartment of the Motor Car.
10. My subsequent checks on the underside of the Motor Car also revealed no sign(s) or indication(s) of fluid leak and/or fluid stain(s). Visually, the various undercarriage components of the Motor Car were all observed to be intact and without any visible damage. See photo 14 – 18 below.



**Photo 14** shows a general view of the Motor Car's engine compartment. The various parts and components inside the engine compartment were unaffected by the accident. There was also no sign(s) or indication(s) of fluid leakage and/or fluid stain within the engine compartment.



**Photo 15** shows the brake fluid reservoir of the Motor Car at the time of my inspection. The brake fluid reservoir was observed to be block as a result of the accident.



**Photo 16** shows checks being carried out to the engine coolant of the Motor Car at the time of my inspection. The engine coolant was observed to be of insufficient level (arrowed) likely due to the damaged to the front radiator which caused the leakage of coolant.



**Photo 17** shows the engine oil dip stick of the Motor Car at the time of my inspection. The engine oil was observed to be of sufficient level and without any visible contamination.



**Photo 18** shows the undercarriage of the Motor Car, at the area where the engine housing and transmission housing are located. I did not find any sign(s) or indication(s) of fluid leak and/or fluid stain(s) on the underside of the Motor Car.

### **Braking System & Steering System**

11. For this inspection, I was not able to conduct any tests on the steering system of the Motor Car due to the Motor Car running on electric power steering (EPS) which requires the Motor Car to be started and engine system was damaged as a result of the accident. (Unable to be started)
12. Static brake tests conducted on the Motor Car revealed abnormality. The brake booster do not responded well to the various tests conducted. There was abnormal movement of the brake pedal when it was depressed. As the brake booster was crush into stationary position and was not able to work properly as normal of providing pressure/vacuum in the braking system of the Motor Car. The abnormal movement to the brake pedal was likely cause by the accident. As the brake booster was found to be damaged as the induced impact from the accident to the front engine comparmtent had crush the brake booster into stationary position. See photo 19 below.



**Photo 19** shows the brake booster of the Motor Car at the time of my inspection. The brake booster (circled) was observed to be crushed as a result of the induced impact from accident.

13. My visual examination of the various steering and braking components which had included the rack and pinion, tie rods, tie rod ends and ball joints, brake hoses and brake pipes had revealed that these components were all generally intact and not affected by the accident. See photo 20 - 25 below.



**Photo 20** shows the brake caplier (circled) and brake hose/pipe (arrowed) at the rear left wheel of the Motor Car and it was observed to be intact



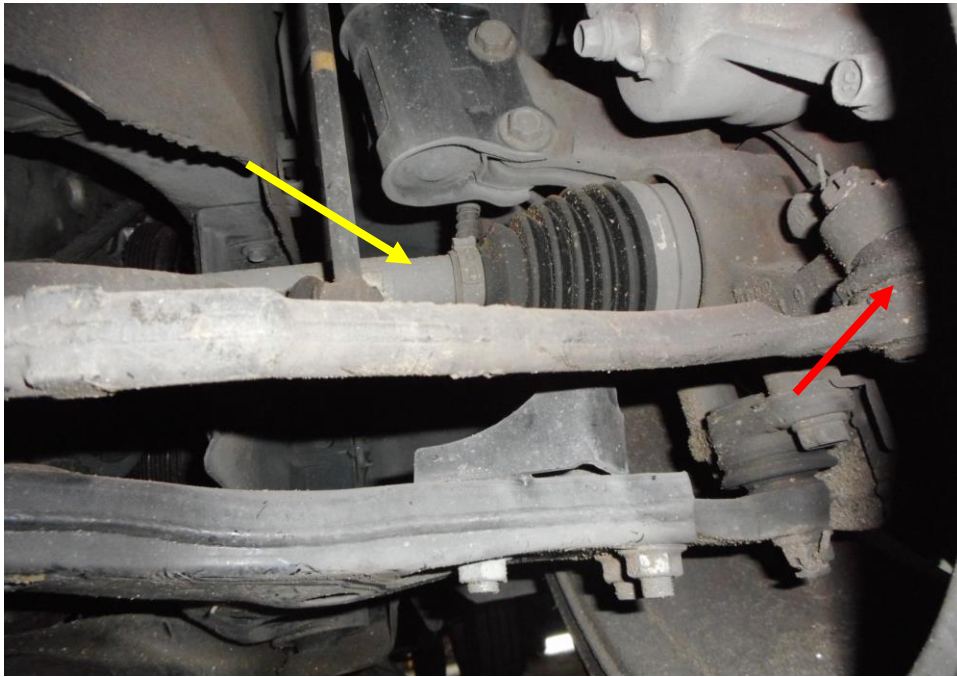
**Photo 21** shows the brake caplier (circled) brake hose/pipe (arrowed) at the rear right wheel of the Motor Car and it was observed to be intact



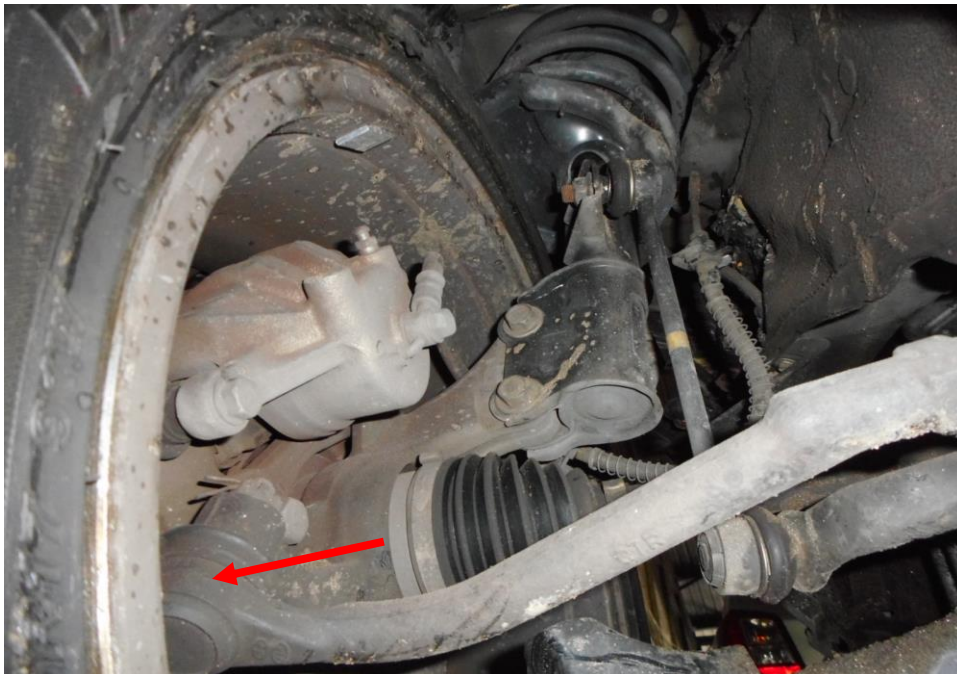
**Photo 22** shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled) had revealed to be intact and without visible damage at the time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.



**Photo 23** shows the brake hose/pipe (arrowed) at the front left wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled) had revealed all to be intact and without visible damage at the time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.



**Photo 24** shows the various undercarriage components at the front right wheel of the Motor Car, in particular the steering tie rod end (arrowed) and drive shaft (yellow arrow). The various steering components were all found to be intact, there was no sign of fluid stain(s) observed on the various undercarriage components.



**Photo 25** shows the various undercarriage components at the front left wheel of the Motor Car, in particular the steering tie rod end (arrowed). The various steering components were all found to be intact, there was no sign of fluid stain(s) observed on the various undercarriage components.

**Electronic Safety / Warning Indicators**

14. The Motor Car's automatic self-test of the functionality of its various electronic operating systems was not able to be conducted as there was damaged to engine system as a result of the accident. (unable to be started)

**Seat Belts**

15. The front right, front left, rear right and rear left seat belts of the "Motor Car" were tested and all the seat belts were able to be fastened securely into the respective pre-tensioners that were fitted at the sides of each seat.

**Operational Behaviour of the Motor Car**

16. Operational test to primarily determine whether there was any abnormality to the engine system, transmission system and braking system of the Motor Car could not be conducted given the extent of damage that it had sustained (Engine systems of the Motor Car damage as a result of the accident.).

**Conclusion**

17. For this particular case, I was unable to determine whether there was any possible mechanical failure to the Motor Car that may have contributed to the accident. The extent of damage that it had sustained had prevented me from carrying out any operational test(s) and/or static test(s) to its engine system, transmission system, steering system and suspension system.
18. The static brake test was able to be conducted and in general our visual inspection of the mechanical components of the Motor Car's braking system appear to suggest that its braking was in serviceable condition at the material time of accident and there was no leakage found at the braking and steering components of the Motor Car, the abnormal found when depressing the brake pedal was likely due to the crushed brake booster at the engine compartment of the Motor Car as a result of the accident.

19. The front left tyre was slip off from the wheel rim as a result of the accident. However, all the other 3 tyres of the Motor Car were also found to be in serviceable condition. I did not find any tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 4 tyres. All the other 3 tyres were observed to be sufficiently inflated for vehicular operation. All 4 tyres were observed with remaining tread depth of approximately 4.5mm to 5.1mm.



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