



JAGUAR XJ8 ZF5HP24

POOR 3-4 SHIFT- ERRATIC OPERATION - POSSIBLE P1722

COMPLAINT: An XJ8 Jaguar equipped with a ZF5HP24 may develop a consistently poor 3-4 up-shift during an initial drive cycle. All 3-4 shifts afterward was fine. Intermittently it will failsafe with no codes set. Occasionally it may set P1722 while at other times it could have 2nd gear starts and/or sudden neutralizing.

CAUSE: Jaguar defines code P1722 as being a "Transmission Stall Speed Failure" sighting the following possibilities in causing this code to occur:

1. Output speed sensor signal faulty
2. Harness fault
3. Connector pin(s) bent, loose or corroded
4. Transmission Control Module failure
5. Transmission mechanical fault

In many cases this list can be very helpful in discovering the root cause to the erratic transmission operation. However, there is another possible cause that could be easily overlooked and undiscovered since this problem usually manifests itself with an intermittent no start complaint rather than the erratic transmission operation.

If you look at the partial wiring diagram provided in Figure 1, you will notice that the battery is in the trunk. The positive lead of the battery goes to a High Power Protection Module which is also in the trunk. This module then supplies power to the two rear Heel Board fuse boxes, the Engine Management and Engine Compartment fuse boxes. It also supplies power to the Starter Motor and Generator after it passes through a stud called the "False Bulkhead Stud Connector."

This stud is located by the ECM/TCM box in the right rear corner of the engine compartment as seen in Figures 2 and 3. The nuts that hold down the cables to this stud loosens compromising the connection. A careful look at the stud reveals evidence of arcing due to the loose connection. This bad connection allows for a voltage drop to occur during ignition cycle as well as intermittent voltage supply affecting TCM operation.

CORRECTION: If the stud is badly damaged due to severe arcing, it may be necessary to replace it or recondition the threads by chasing it with a die and ensure a secure connection of the cables.

Additional information:

There are a few obvious reasons why this compromised connection through the False Bulkhead Stud Connector can be elusive. As first mentioned, this problem usually causes an intermittent no start complaint which apparently does not always occur. Secondly, why did the TCM produce code P1722 and not the codes which relate to its ignition supply voltage? Maybe the answer to this is that it was not bad enough long enough to set the code.

According to Jaguar, the TCM monitors battery and ignition switched supply voltages at terminals 54 and 55. A permanent supply is used to maintain a battery backed 'memory' at terminal 26. Should this supply be cut, due to battery disconnection, the 'adaptive shift'



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CORRECTION: values will be lost. This will result in a small reduction in shift quality for a period until the adaptations are 're-learned'. Should the ignition switched supply fall outside prescribed limits, the TCM will adopt a 'limp home' mode resulting in inconsistent solenoid control.

DTC P1793 will be logged should the TCM adopt 'limp home' as a result of the supply voltage being greater than 16V or less than 7V with an engine speed greater than 1600 rpm. Should the ignition supply be greater than 7V but less than 9V the TCM will hold the gear that it has currently selected. If after 2.5 seconds, with the engine speed greater than 1600 rpm, the voltage remains at this level DTC P1789 will be logged and 'limp home' mode adopted. The 2.5 second delay is built in to prevent reaction to a momentary voltage fluctuation.

Should the battery become disconnected, XK8 models will require having the window position memory reset. But to expedite the adaptive learning process for some functions of the ECM, Jaguar suggests that you perform the following procedure:

Warning: Perform this procedure with the vehicle on a firm surface (not on a lift) after ensuring that no danger exists to surrounding personnel or property.

Caution: Do not exceed the engine speeds and time durations listed.

1. Engage P and allow the engine to reach normal operating temperature.
2. Press the A/C button to turn the climate control off.
3. Apply the service and parking brakes, and move the transmission selector lever to D.
4. Allow the engine to idle for an additional 2 minutes.
5. Gradually raise the engine speed to 950 RPM. Hold this speed for 45 seconds.
6. Raise the engine speed to 1200 RPM. Hold this speed for 45 seconds.
7. Raise the engine speed to 1500 RPM. Hold this speed for 30 seconds.
8. Allow the engine to return to idle. Move the selector lever to P and switch off the engine.

COMPREHENSIVE COMPONENT MONITOR TRANSMISSION DRIVE CYCLE

The Comprehensive Component Monitor transmission drive cycle will check all transmission system components:

1. Engine and transmission at normal operating temperature. Ignition OFF; ensure that SPORT mode is NOT selected.
2. With gear selector in P and the ignition ON. Check gearshift interlock by attempting to move selector without pressing the brake pedal. Verify P state illumination.
3. Press and hold the brake pedal. Move the gear selector to R. Verify R state illumination.



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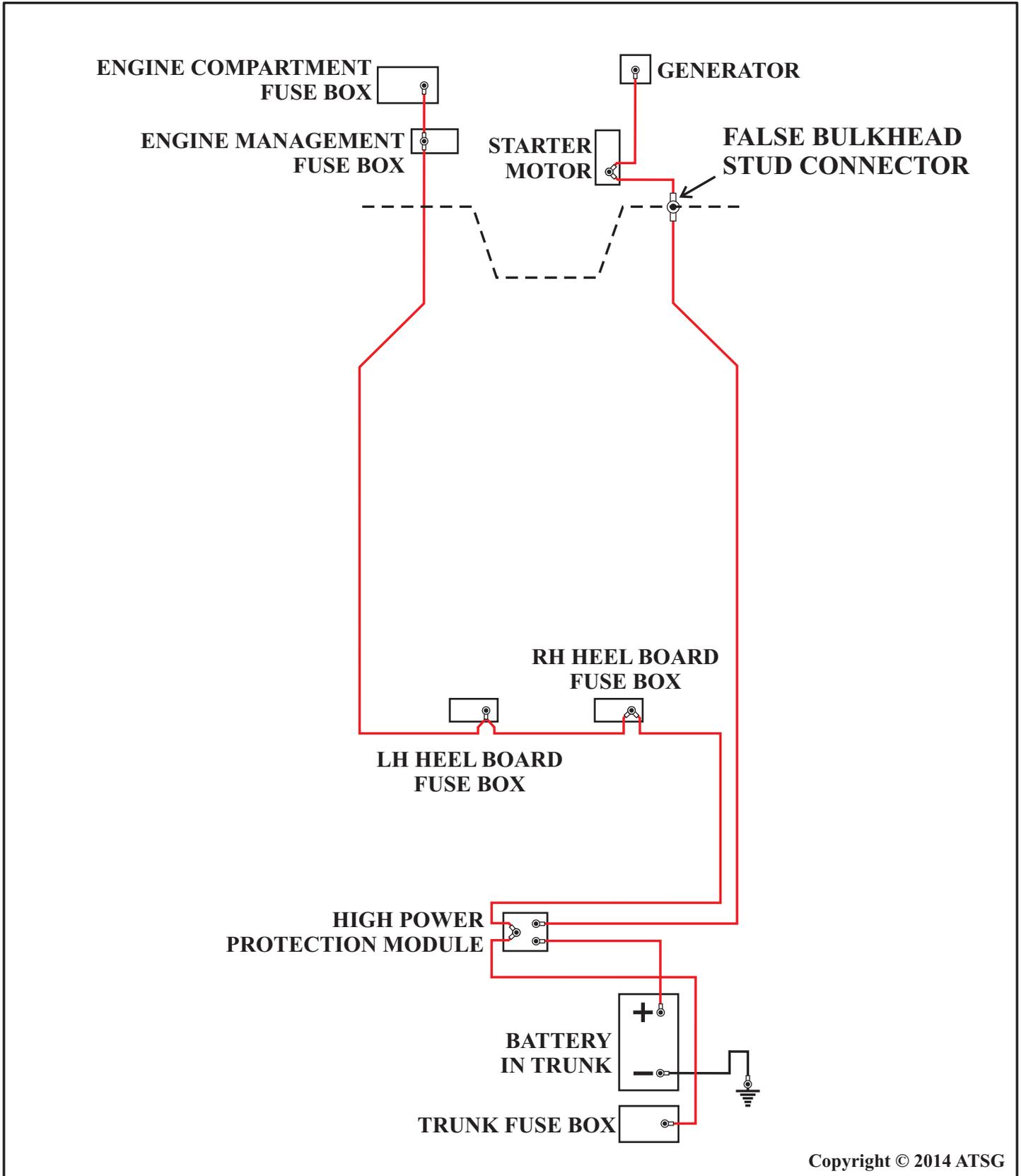
- CORRECTION:**
4. Set the parking brake. Press and hold the brake pedal. Attempt to start the engine. The engine should not start.
 6. With the hand brake set and the brake pedal pressed, move the gear selector to the remaining positions in the J-Gate (D, 4, 3, 2) for five (5) seconds each. Verify the state illumination in each position.
 7. Move the gear selector back to 4. Verify 4 state illumination.
 8. Move the gear selector to D. Verify D state illumination.
 9. Move the gear selector to N. Verify N state illumination.
 10. Select R, release the brakes and drive the vehicle in Reverse for a short distance.
 11. Stop the vehicle.
 12. Select 2 and drive the vehicle up to 65 km/h (40 mph) . Hold 65 km/h (40 mph) for a minimum of five (5) seconds .
 13. Select 3 and hold 65 km/h (40 mph) for a minimum of five (5) seconds.
 14. Select 4 and hold 65 km/h (40 mph) for a minimum of five (5) seconds.
 15. Select D and accelerate to a minimum speed of 80 km/h (50 mph). Hold 80 - 129 km/h (50 - 80 mph) for a minimum of 1.7 kilometers (1 mile).
 16. Stop the vehicle; do not switch OFF the engine.
 17. Use WDS Datalogger (or capable scan tool) to check TOTAL NUMBER OF DTC SET to ensure that transmission DTC monitoring is complete.



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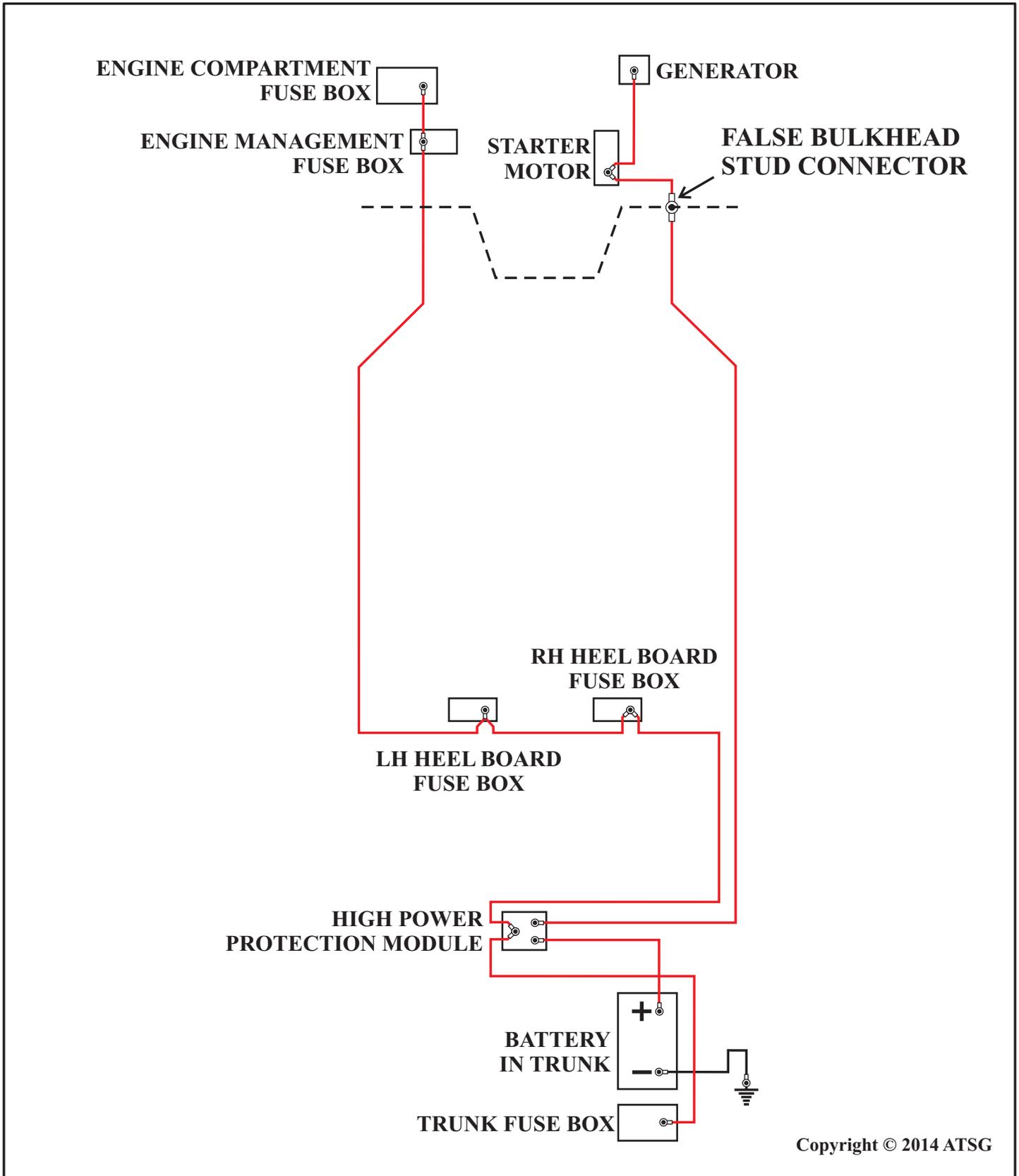
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