

MAZDA 6 - AW6A-EL

STUCK IN HIGH GEAR FAILSAFE

COMPLAINT: A Mazda 6 with a V6 3.0L DOHC using the front wheel drive 6 speed AW6A-EL transmission is stuck in high gear fail safe. When referring to Mazda's symptom related diagnostic procedures for no shifting, it states that when the gear position is fixed in 3GR or 5GR due to failsafe operation, malfunction is in the ATX (automatic transaxle). This should be accompanied with a transmission related code or codes but none were stored in the system. Only a P0328 for a failed Knock Sensor. Since a knock sensor is used to detect engine knock or ping (pre-detonation), a complete transmission failsafe condition is not suspected. Past history of knock sensors related to transmission concerns tend to eliminate this code as the cause. Knock codes in some Toyota vehicles have prevented a shift into high gear and some GM vehicles the code elevated line pressure in the transmission causing harsh shifts.

CAUSE: Typically, when a knock sensor indicates a problem, the PCM will retard the spark timing to avoid pre-detonation. In this case, engineers decided to write a program to failsafe the transmission should it think there is a hard failure with the wiring or the sensor itself.

CORRECTION: This two wire sensor is being monitored by the PCM. Should it see voltage go above 4.79 volts, the PCM considers this a hard circuit malfunction. Failure could be related to the sensor itself or related wiring from the connector to the PCM. When the car is raised on the lift, this sensor is located on the engine block below the rear cylinder head area. Inspect the condition of the knock sensor, connector and wiring and correct or replace where necessary.

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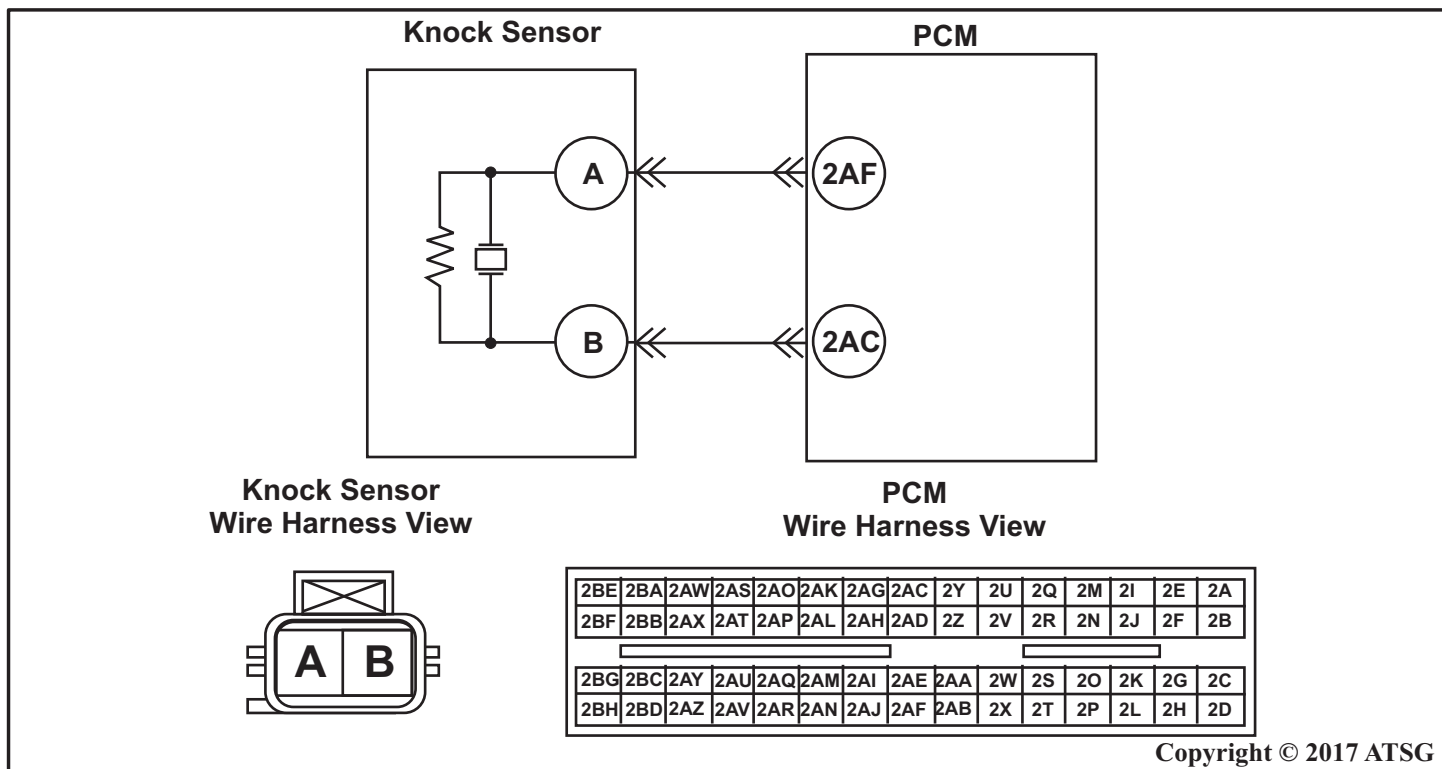


Figure 1