		GROUP	MODEL
KIA MOTORS *The Power to Surprise®*		Electrical	Forte (TD)
		NUMBER	DATE
		PS223	**October 2012**

PITSTOP TECHNICAL OPERATIONS

| SUBJECT:	FORTE LOCK CONFIRMATION INOP WITH REMOTE START ACCESSORY

Some remote start equipped Forte's may not indicate that the doors have been locked. The customer may state that the vehicle will not flash the hazard lights or sound the horn when locking the doors with the transmitter. As designed, the vehicle should flash the hazard lights and sound the horn after pressing the lock button two (2) times within five (5) seconds.

If this concern is occurring, verify if it is related to the remote start control module by checking the position of the overhead interior light switch. If the switch is in the "OFF" position, move the switch to the "DOOR" position and retest the system. If the system performs properly, refer to the procedure below to address the customer's concern.

1. Remove and isolate the negative battery terminal from the battery.
   NOTE: Record customer's radio presets before disconnecting the negative terminal from the battery.

2. Locate remote start control module ① under the driver's side dash near brake switch as shown in Figure A.
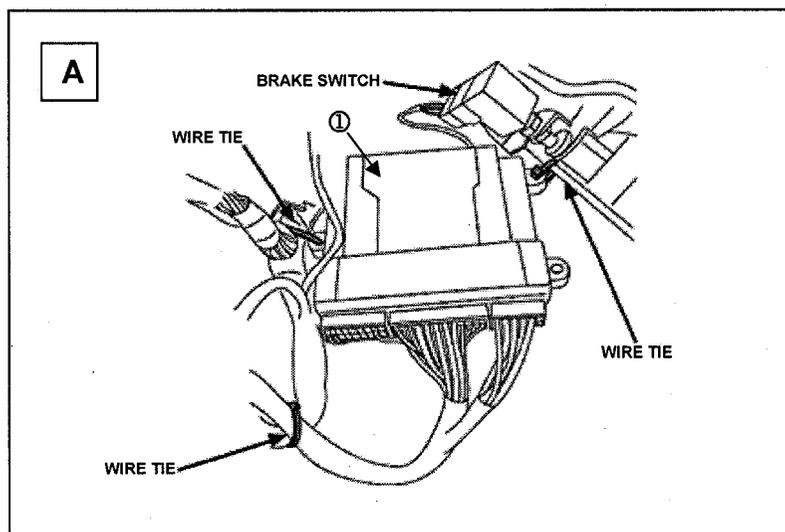
3. Carefully remove the DNA/Software Card ② from the control module ① as shown in Figure B.

4. Locate jumper # 1 on the control module and reposition it to the "UP" position as shown in Figure C.

Fuse & jumper placement reference drawing
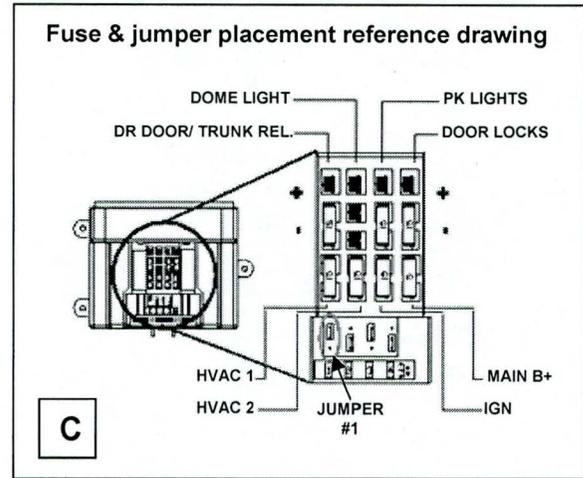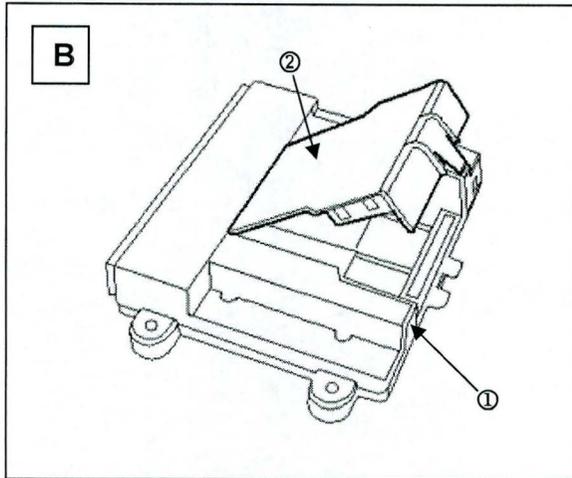
5. Carefully reinstall the DNA/Software Card onto the control module.


⚠ CAUTION

Use care to assure that both rows of the DNA/Software Card multi-pin connectors are aligned and seated properly.

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6. Unplug the 24-pin connector from the remote start control module.

7. Using a scratch awl tool, carefully push out the secondary lock from the smaller of the two (2) ends until it is completely removed from the 24-pin connector (Fig. D).

8. Using a scratch awl tool, carefully push down the terminal metal tab securing the Yellow wire located in cavity twenty (20) (Fig. E).
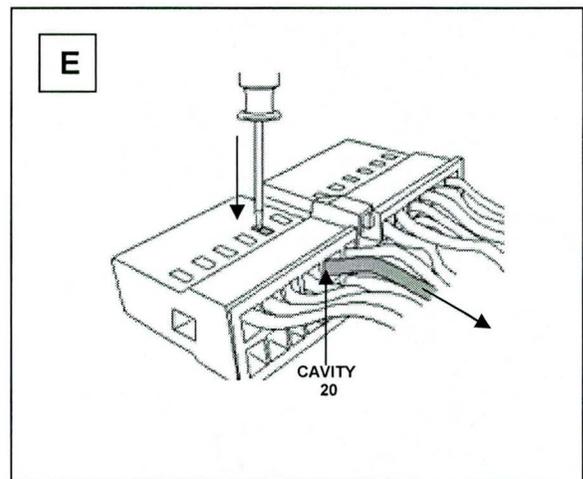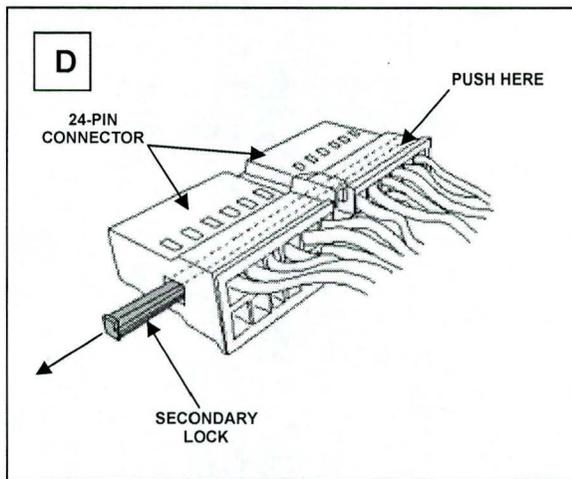
9. Remove the Yellow wire by gently pulling outward as shown in Figure E.

10. To ensure proper re-locking, carefully push the metal locking tab, located on the top of the terminal, away from the terminal body (Fig. F).

11. Insert the Yellow wire until it "clicks" into place in cavity ten (10) (Fig. G).

12. Reinstall the secondary lock as shown in Figure G.

13. Reconnect the 24-pin connector onto the remote start module.
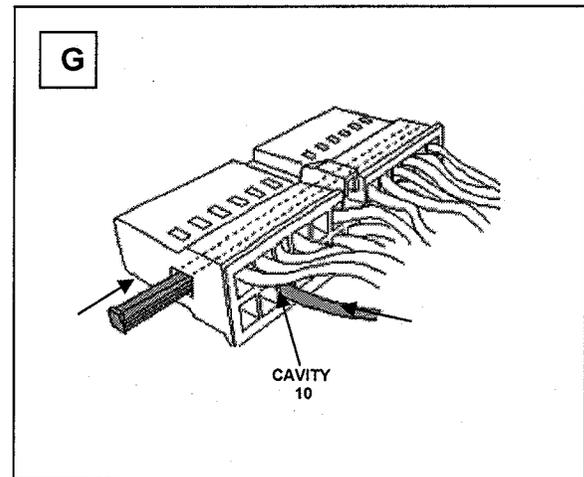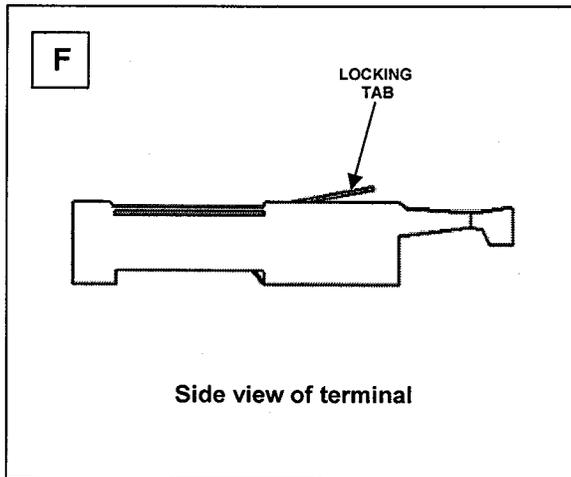
F

LOCKING TAB

Side view of terminal

G

CAVITY 10

SYSTEM POWER UP
Turn the ignition key to the "ON" position. Reconnect the negative battery cable. Turn the ignition key to the "OFF" position.

FUNCTION CHECK
Refer to KGIS > Publication > Accessory info for vehicle specific remote engine start installation instructions and a complete list of functions, to be verified, before delivering the vehicle.

NOTE: Reprogram radio pre-sets as recorded earlier.

KIA TECH TIMES

The Professional Publication for Kia Dealership Technicians & Service Staff

Inside this Issue:

Immobilizer System Identification Before Attempting Reflash

Tech Line cases are sometimes filed by technicians when a vehicle does not start after an attempted re-flash is performed. This often is a result of a mis-identified immobilizer system. The Immobilizer System identification should always be the first step before attempting the reflashing procedure.

A. If the vehicle is equipped with a push button start, it *is* equipped with an internal immobilizer. Key start vehicles are not equipped with an immobilizer, with the exception of some older Amanti (GH) and Sedona (VQ) vehicles with a transponder imbedded in the ignition key.

B. Before attempting the reflash, read the precautions in the TSB (see sample NOTICE below) for clear instructions on determining whether the vehicle is equipped with an immobilizer. This is done by identifying the amber immobilizer indicator light in the instrument cluster, which pictures a vehicle with a key in the center. This amber light will stay on for approximately 15 seconds and turn back

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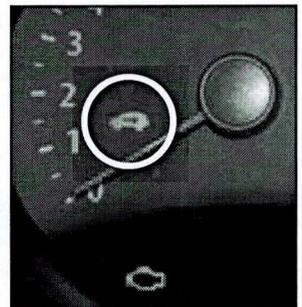
✱NOTICE

<u>When servicing this vehicle, ensure that first determine whether the vehicle is</u> <u>equipped with an immobilizer security system</u> 🔑 <u>before attempting any reflash</u>.

Failure to follow proper procedures may cause the PCM to become inoperative after the upgrade, and may be subject to chargeback.

Techline Tech Tips

Vehicle	Concern	Recommendation Before Calling Techline
2012 Sedona	ESC DTC C1201 – C1211	Check the wheel speed sensor tone wheel that the DTC is associated with and see if it has separated from or slipped on the hub. If the tone wheel has separated from the hub, the hub assembly will need be replaced to correct the DTC.
2005-2008 Sportage	P0711 Trans Temp sensor reoccurs even after replacing the Trans Temp Sensor per TSB TRANS 040.	Verify the transmission fluid is clean and full before doing anything further. Connect the GDS to the vehicle and verify the Trans Temp reading in "Trans Current Data". If the reading looks okay, the circuit is good from PCM to Trans for the temp sensor circuit. Inspect the pin tension at the Trans connector for the temp sensor circuit and TCM and confirm it is tight. Since the sensor was replaced already per TSB 040 and you have confirmed good pin tension at the connector, contact DPSM for Reman Transmission replacement approval due to a faulty pigtail harness inside the Transmission.
2011 or later Optima	Trunk does not open with release lever, even though the doors are unlocked.	Check the BCM data to verify that the release lever signal is OK. Actuate the tailgate/trunk release relay to see that it does open. If OK, check BCM data for door lock status. If any door shows locked status when unlocked the BCM will ignore the release lever input. A poor connection to the door lock actuator lock status switch or a poor internal contact in the door lock actuator will show as a locked door and disable the Tailgate/Rear Hatch as well as the trunk release operation. **NOTE:** *On vehicles equipped with a Smart Key, the hatch or trunk will open whether or not the doors are locked if you have the Smart Key FOB within two feet of the hatch/trunk.*
Optima Hybrid (TF HEV)	Where can I find the brake bleeding procedure?	The brake bleeding procedure is located in KGIS Service Info→Shop Manual→Brake System→Brake System→Repair procedures. *[Intentional repeat of "Brake System."]*

Latest Technical Service Bulletins, Service Actions and Campaigns

Most recent TSBs issued through October 12, 2012:

GEN 055   Optima Hybrid Control Module Upgrades

GEN 056   New Homelink Garage Door Opener Protocol

SST 031r1   4-Wheel Alignment Equipment Recommendations

SST 030r1   Road Force Balancer with Straighttrak Requirement

CHA 039   Caution During Rear Upper Arm Service

ELE 039   Stock Maintenance Procedure -- Hybrid Battery Charging

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⚠ CAUTION

VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN DAMAGE TO THE VEHICLE.

⚠ WARNING

- Vehicle servicing performed by untrained persons could result in injury to those persons or to others.

- The Kia technician newsletter (Tech Times) is intended for use by professional Kia automotive technicians only. It is written to inform technicians of conditions that may occur on some vehicles. Trained Kia technicians have the equipment, tools, safety instructions, publications and expertise to perform the job correctly and safely.

★NOTICE

The topics covered in this newsletter are designed to assist you with the diagnosis and repair of specific vehicle conditions. Just because a condition is described in this newsletter, do not assume that it applies to your vehicle, or that your vehicle will have that condition. In all cases, the procedures in the applicable Service Manual and/or Electrical Trouble-shooting Manual or on KGIS should be performed first.

Are You Elite Certified?

2012 is swiftly drawing to a close. Are you on track to attain your Elite Certification? Becoming Elite Certified will qualify you for valuable recognition rewards. In addition, attaining this Certification is a pre-qualifier for other Kia Elite programs. Please refer to the Kia Elite Program Guides available on **www.myKiaPerformanceCenter.com**.

Qualifying for the Elite Certification program requires that students are at least trained at the Professional level at the time of program conclusion. The Professional Certification requirements consist of web-based training courses. These web courses are on the **KiaUniversity.com** website 24/7, and they're available for you to take at your convenience, according to your own schedule —*Just remember that you have to complete your certification requirements by December 31, 2012!* Log in to KiaUniversity.com today to check your progress.

Besides the advantages Elite Certification provides in improving your technical skills and growing your career, it will also better enable you to fix your customers' Kia vehicles correctly the first time. By doing this, you'll improve their loyalty to Kia, and help earn their future service business at your dealership.

YOU HAVE LESS THAN 3 MONTHS LEFT TO GET CERTIFIED!

DECEMBER 31
2012

The recently released Pitstop 216 presents an interesting headline for technicians who want to learn more about how best to proceed in troubleshooting a customer's *Bluetooth®* System related concern:

"Use this Pitstop to explain to customers the various troubleshooting techniques to resolve customer concerns related to the Bluetooth® system. The customer concern can be phone will not pair, phone will not reconnect, or other Bluetooth® concern."

With all the various cell phone models and manufacturers available today, the number of phone pairing processes make compatibility issues high on the probable cause list. Knowing where to find phone compatibility information is critical in determining a *Bluetooth®* concern. Kia does a great job in making this information available on the website, as shown in the Pitstop article, as well as the Bluetooth Compatibility button found on the left column of the KGIS homepage. This button gives you links to Kia.com's Consumer Bluetooth and Compatibility web page, Kia *Bluetooth®* Phone System Guide, and Kia *Bluetooth®* "Frequently Asked Questions"

When a customer comes in for service with a *Bluetooth®* concern, the first thing a technician wants to know is whether the problem is a customer *phone* issue or a *Bluetooth®* system one. The Kia Multi-Media Interface Tester (07130-10100) is the quickest way to determine where the problem lies.

The Kia Multi-Media Tester (MIT) will check *Bluetooth®* function, pairing ability, and the AUX and USB inputs quickly and accurately.

Let's revisit the procedure to test the *Bluetooth®* system.

To connect the MIT to the audio head unit:

1. Turn vehicle ignition ON.

2. Connect the MIT's AUX and USB cables to the AUX/USB/iPod ports on the vehicle (as shown in Fig. 1 below).

3. For vehicles without a USB port, a USB power adapter is supplied to power the MIT. In this case, plug the USB into the power adapter, which is then plugged into the power outlet (see Fig 2 below).
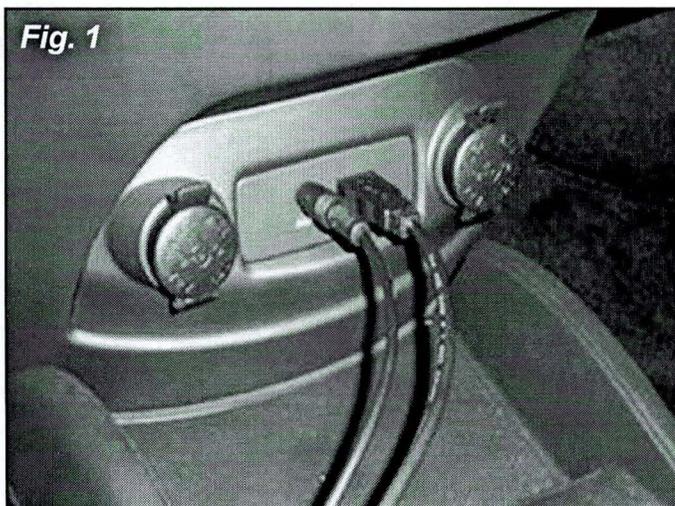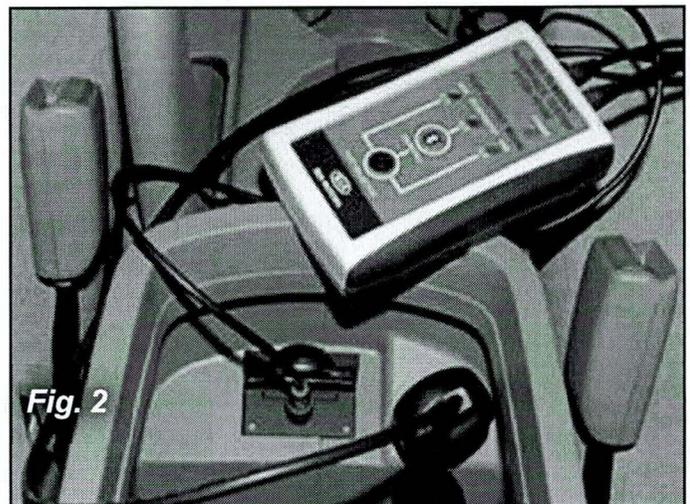

Fig. 2

4. The MIT is ready to use when the green POWER LED is illuminated.

6. Press and hold the TEST SELECTOR button on the MIT until the *Bluetooth®* LED illuminates.

Fig. 1

PAIRING FUNCTION TEST

Set the Head Unit to *Bluetooth®* pairing mode.

For *Bluetooth®* passkey "0000":

1. Press and release the PAIR/CALL button. The LED will blink slowly while pairing is in progress, but will change to a quick flash when pairing is complete.

For all other *Bluetooth®* passkeys:

1. Press and hold the PAIR/CALL button until all 3 LEDs illuminate.

2a. For each passkey digit, perform this process: Press the PAIR/CALL button the number of times that corresponds to the digit number, then press the TEST SELECTOR button to enter the digit; for example, press the PAIR/CALL button 3 times for digit 3 and 8 times for digit 8.

3a. After the last passkey digit, press and hold the TEST SELECTOR button until the *Bluetooth®* LED flashes.

3b. The *Bluetooth®* LED will blink slowly while pairing is in progress, but will change to a quick flash when pairing is complete.

3c. The vehicle Head Unit should confirm pairing is complete.

If the vehicle passes this easy test you have determined there are no *Bluetooth®* system pairing problems and you can focus on the customer's phone as the source of their concern.

For additional system testing you can perform the following diagnoses:

PLACE A TEST CALL

1. Confirm pairing is complete. The *Bluetooth®* LED will be in a quick flash mode.

2. Press and release the PAIR/CALL button to test the call functionality.

3. Use the vehicle Head Unit controls to answer the call. After confirming the working *Bluetooth®* system, end the call with the vehicle Head Unit.

AUX/LINE-IN FUNCTION TEST

1. Connect the MIT AUX and USB cables to the AUX/USB/iPod ports on the vehicle.

2. Press and hold the TEST SELECTOR button on the MIT until the AUX LED illuminates.

3. The vehicle should default to AUX input. The Head Unit will confirm with a message that the audio input jack test using the MIT is working correctly.

USB FUNCTION TEST

1. Connect the MIT AUX and USB cables to the AUX/USB/iPod ports on the vehicle.

2. Press and hold the TEST SELECTOR button on the MIT until the AUX LED illuminates.

3. The vehicle should default to USB input. The Head Unit will confirm with a message that the USB input test using the MIT is working correctly.

With a little practice you should be able to perform these quick tests in a snap, and reduce your diagnostic time while gaining increased confidence in your ability to troubleshoot and correct a *Bluetooth®* concern.
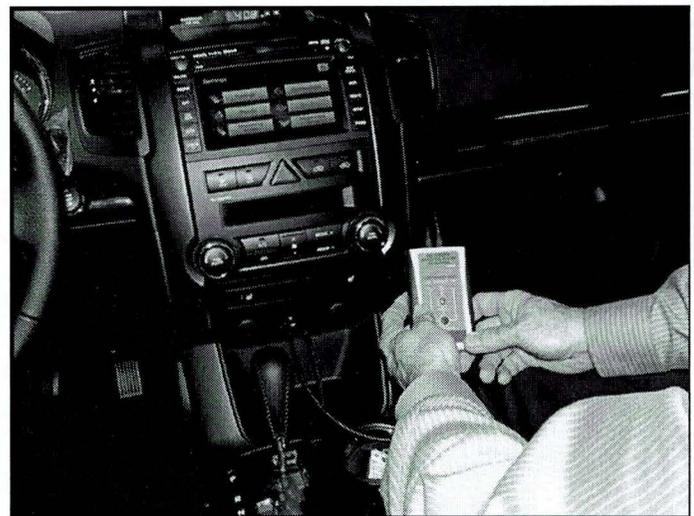
The current design intent for the sunshade has two positions, OPEN or CLOSED; if the sunshade is positioned in any other position, unintended movement remains possible during driving, especially over rough roads because there are no detent positions to hold it in place.

Follow the instructions below to create additional detents, and to reduce unintended movement of the sunshade from the CLOSED position. Do not try to modify the design in any other way in attempting to repair this concern. Detailed instructions can also be found using Pitstop Article PS215.

1. Open the front sunroof sliding glass.

2. Measure from the front edge of track 1" (25mm) and place mark.

3. Using a pair of pliers or a punch make a 0.020" (.5mm) depression in upper track where the measured mark was made to create resistance when closing the sunshade.

4. Repeat the same step on the opposite side, to adjust the rear sunshade detent, pull the headliner down slightly to disconnect the fasteners and make the same adjustment as described to the front track. When complete, snap headliner back into place, make sure your hands are clean when putting headliner back in place. Clean hand-prints as required.

5. If the adjustment you made is too tight, open the detent you created with a screwdriver and re-adjust the detent as required.

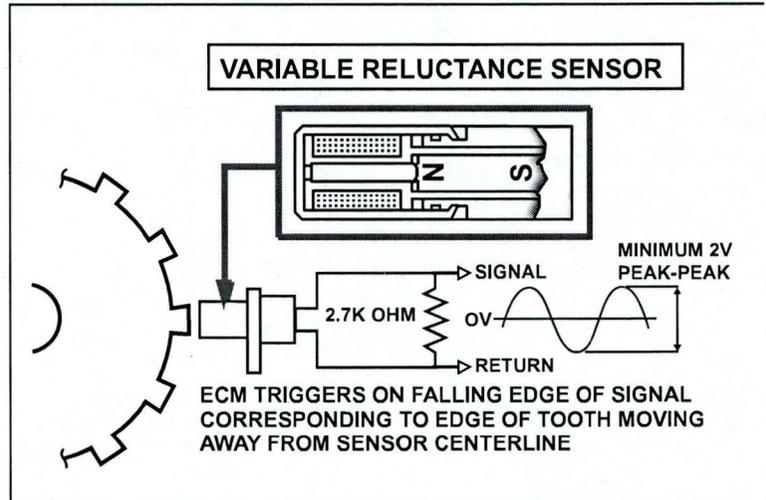This procedure can be applied to the front or rear sunshade
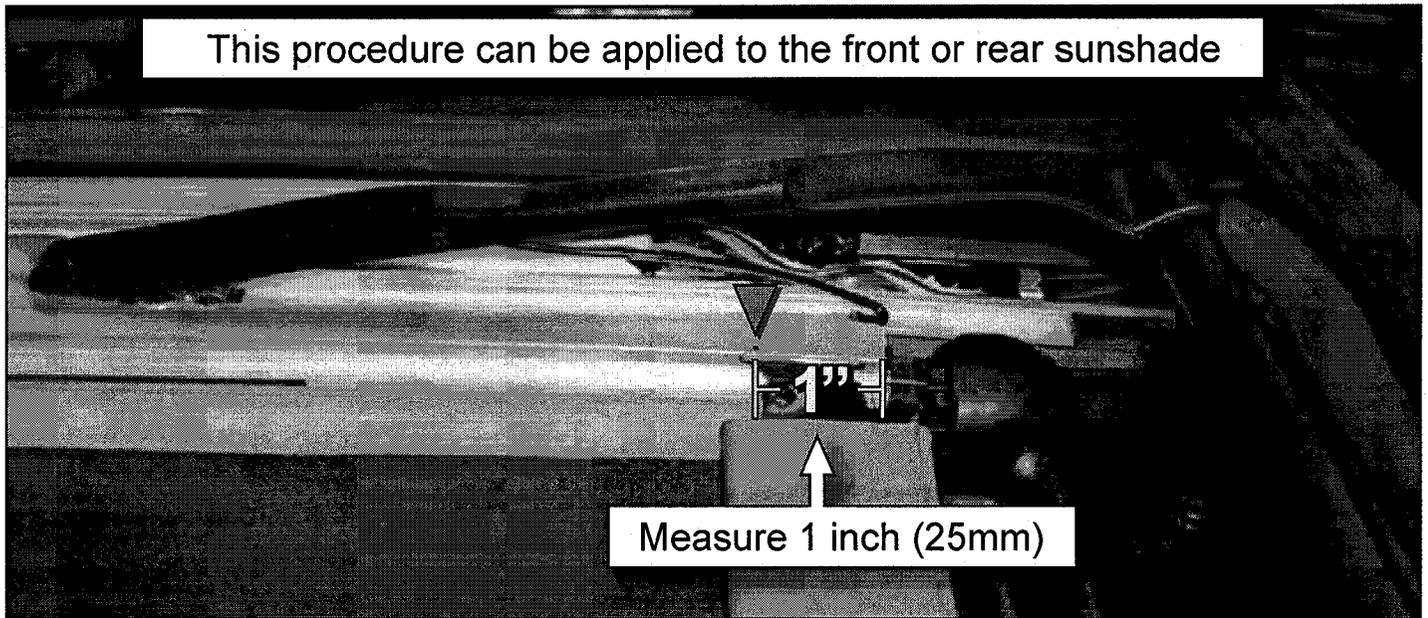
1"

Measure 1 inch (25mm)

In the last issue, we discussed the 2-wire hall type sensor. In this issue, we will cover the 2-wire magnetic inductive type sensor. This sensor is typically used as a crankshaft position sensor (CKP) and wheel speed sensor (WSS).

This sensor consists of a coil of wire wrapped around a permanent magnet. A toothed reluctor wheel rotates near the magnet in the sensor and changes the magnetic lines of flux, which produces an ac voltage that is monitored by an Electronic Control Unit.

VARIABLE RELUCTANCE SENSOR

N   S

SIGNAL
2.7K OHM   OV
RETURN

MINIMUM 2V PEAK-PEAK

ECM TRIGGERS ON FALLING EDGE OF SIGNAL CORRESPONDING TO EDGE OF TOOTH MOVING AWAY FROM SENSOR CENTERLINE
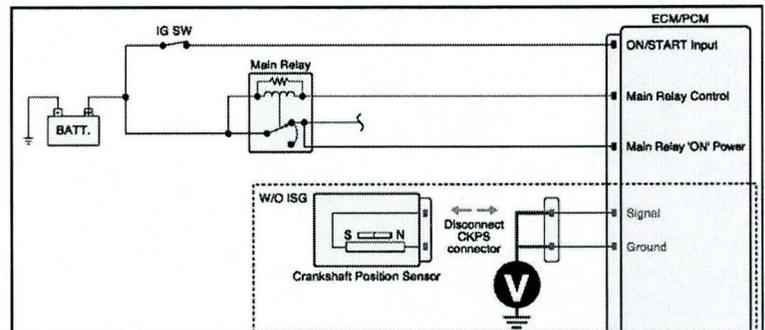
The sensor can be measured with an oscilloscope. Simply disconnect the sensor and place the oscilloscope across the sensor terminals. Crank the engine for the CKP, or rotate the wheel for a WSS.

These values vary by year and model.

For circuit operation, the ECU outputs a bias voltage ranging from 1.0 volts to 2.5 volts.
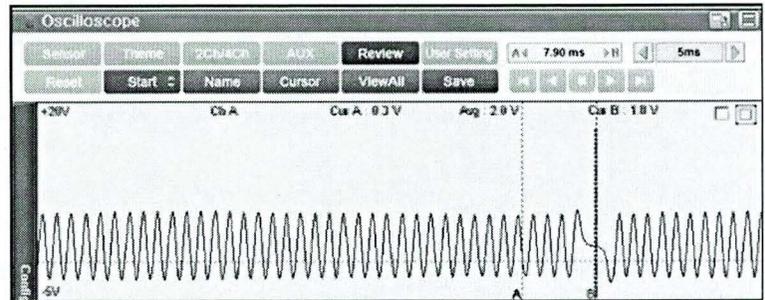
To check the bias voltage, simply disconnect the sensor and with Key ON Engine OFF measure the voltage at both terminals on the harness side. They should be the same.

The sensor's resistance typically is in the range of 600 to 800 Ω and can be measured with an ohmmeter since it is a coil of wire.
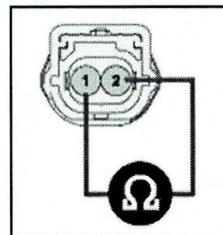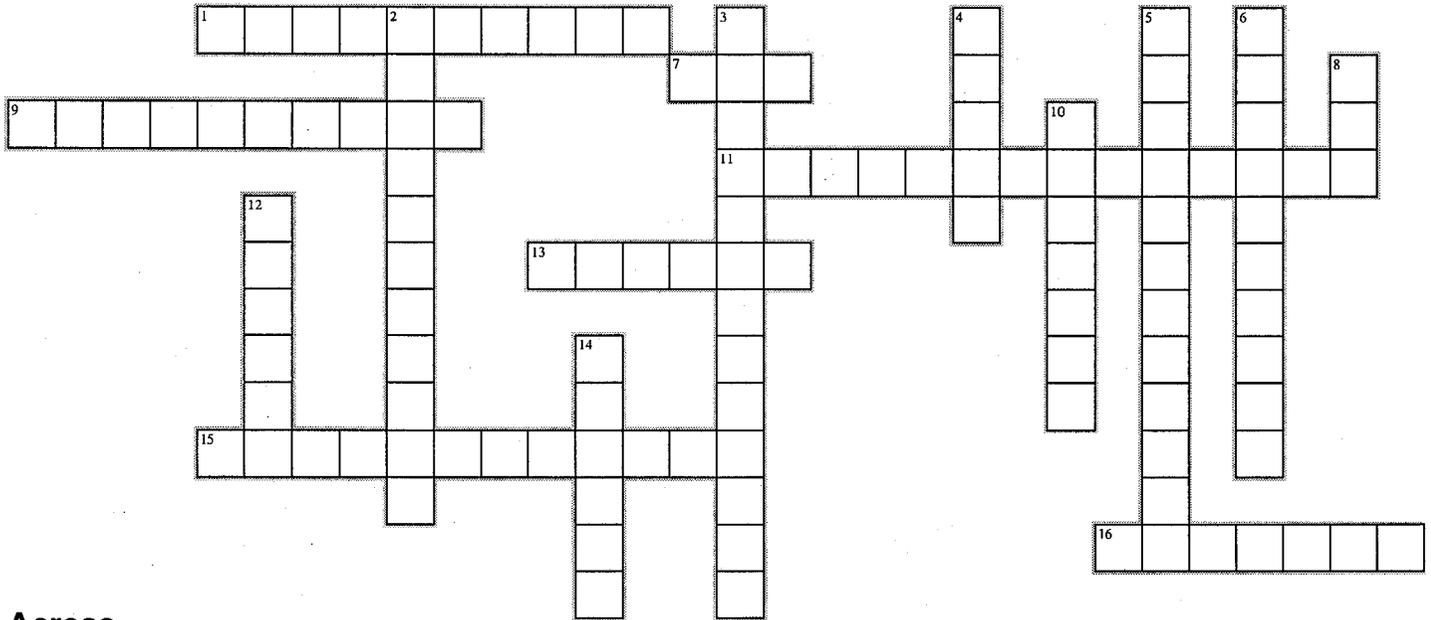
Always check service information for the correct specifications.

Next issue we will cover the digital and analog Mass Air Flow Sensors(MAF).

Test your knowledge of the articles in this issue of TechTimes by completing this crossword puzzle! Answers on page 12.

Across

1. A 2-wire sensor magnetic inductive position sensor's _____ is usually in the range of 600 to 800 ohms.

7. When using the VMI to monitor a CKP sensor on Theta I & II engines, a normal signal will show a " _____ " CKP signal pattern.

9. The process to correct a lock confirmation concern in some Fortes equipped with remote start includes removing and re-securing the _____ _____. (2 words)

11. The Kia Multi-Media Tester (MIT) will check Bluetooth® function, _____ _____, and the AUX and USB inputs quickly and accurately. (2 words)

13. The only 'key start' vehicles that might be equipped with an immobilizer system are some older _____ and Sedona vehicles with a transponder imbedded in the ignition key.

15. Qualifying for the Elite Certification program requires that students are at least trained at the _____ level at the time of program conclusion.

16. Becoming Elite Certified will qualify you for valuable recognition _____.

Down:

2. If the adjustment you made to the upper track of a Panoramic Sunshade on a Sorento (XM) is too tight, you can open the detent you created with a _____.

3. A button on the KGIS homepage can link technicians to helpful information, guides, and FAQs concerning potential Bluetooth® _____ issues with a customer's phone.

4. The two possible causes of a customer's Bluetooth® concern are a _____ issue, or a Bluetooth® System issue.

5. A 2-wire sensor magnetic inductive position sensor, such as a crankshaft position sensor, can be measured by placing a _____ across the sensor terminals and cranking the engine.

6. Some remanufactured 2.4L Theta I & II engines may have had incorrect CKP trigger wheels installed, causing a potential hard start or _____ concern.

8. The presence of an immobilizer system can be determined by placing a vehicle in "key on" position for about 15 seconds and looking for an amber indicator light that pictures a vehicle with a _____ in the center of it, in the instrument cluster.

10. The loupe feature in a GDS Pro laptop will allow you to _____ portions of the screen.

12. Clicking and dragging on the handle of a loupe on your GDS Pro laptop will make the loupe _____ .

14. The purpose of creating additional detents on some Sorento and Sportage sunshade tracks is to reduce unintended movement of the sunshade from the _____ position.

The Panasonic Toughbook® sitting on your GDS Professional has a feature that can help when it comes to making portions of a document easier to view and read on the display screen. This "loupe utility" allows you to magnify portions of the screen as you move the loupe tool around the display, much like a magnifying glass.

To activate your loupe, click on the Windows **Start** button. Select **All Programs,** then **Panasonic,** then **Loupe Utility**.

On the Loupe Utility window, click **OK**. Note the icon indicated by the arrow in the image of the Loupe Utility page to the right; Once you press **OK** to open the Loupe Utility, this icon will show up in the notification area in the lower right area of your display, as shown here:

Clicking this icon at any time will launch your loupe.

Clicking and holding anywhere in the loupe display window will allow you to move the magnifying glass around. If you click on the handle and drag it, you can make the magnifying glass bigger. To hide the loupe, click on the "+" on the handle.
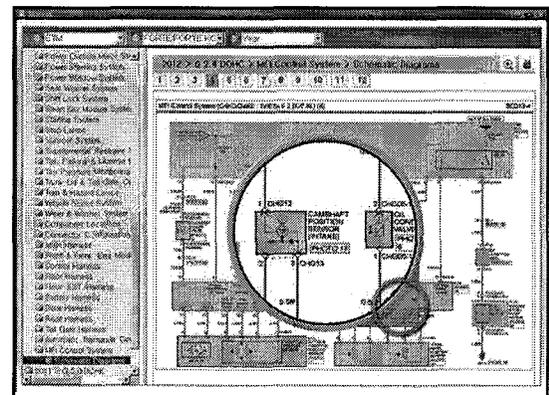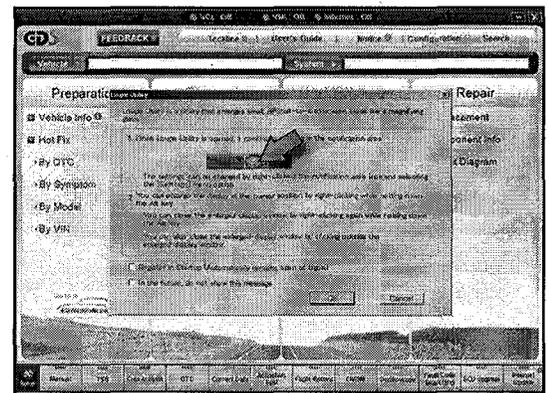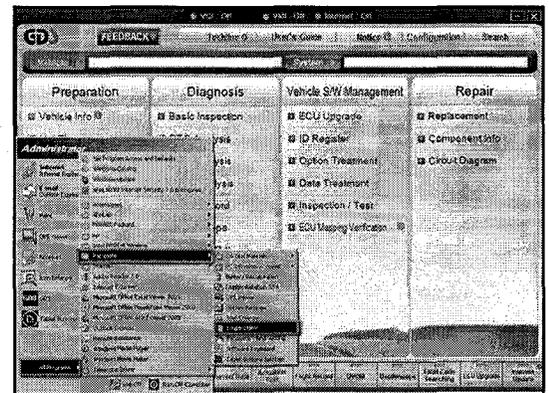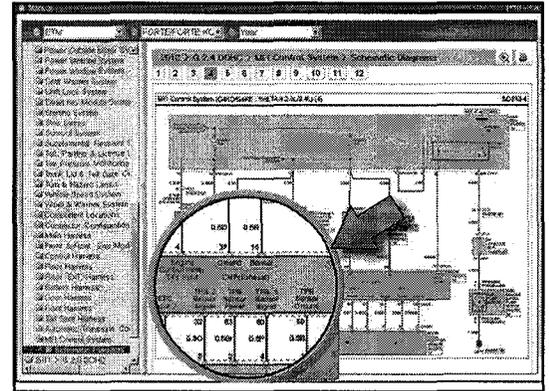
Some remote start equipped Forte's may not indicate that the doors have been locked. The customer may state that the vehicle will not flash the hazard lights or sound the horn when locking the doors with the transmitter. As designed, the vehicle should flash the hazard lights and sound the horn after pressing the lock button two times within five seconds.

If this concern is occurring, verify if it is related to the remote start control module by checking the position of the overhead interior light switch. If the switch is in the **"OFF"** position, move the switch to the **"DOOR"** position and retest the system. If the system performs properly, refer to the procedure below to address the customer's concern.

1. Remove and isolate the negative battery cable from the battery.

   NOTE: Record customer's radio presets before disconnecting the negative terminal from the battery.
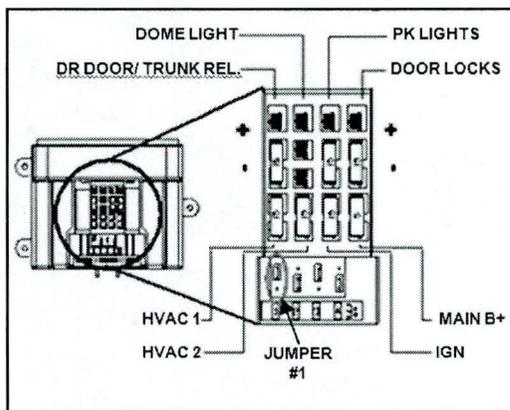
2. Locate the Remote start control module (1) on the driver's side dash near brake switch as shown.
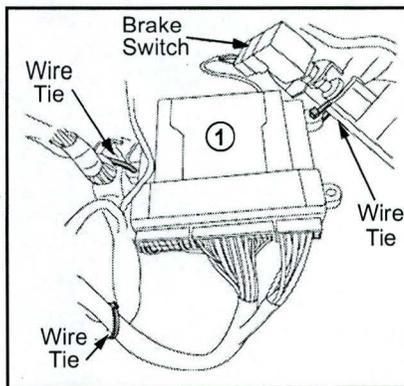
3. Carefully remove the DNA/Software Card (2) from the control module (1).
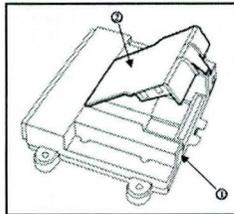
4. Locate jumper # 1 on the control module and re-position it to the **"UP"** position as shown.


5. Carefully reinstall the DNA/Software Card to the control module.

> **⚠ CAUTION**
>
> **Use care to assure that both rows of the DNA/ Software Card multi-pin connectors are properly aligned and seated.**

6. Unplug the 24-pin connector from the remote start control module.

7. Using a scratch awl tool, carefully push out the secondary lock from the smaller of the two ends until it is completely removed from the 24-pin connector.
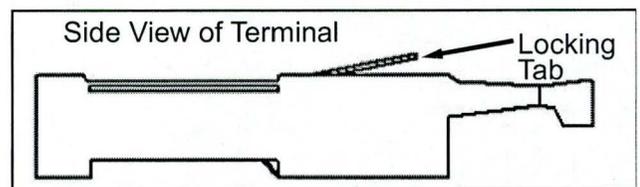
8. Using a scratch awl tool, carefully push down the terminal metal tab, securing the yellow wire located in cavity twenty.
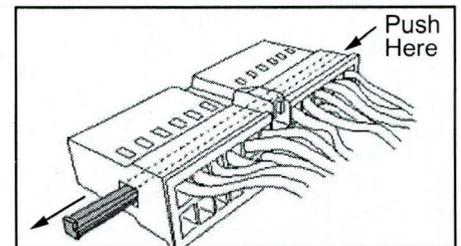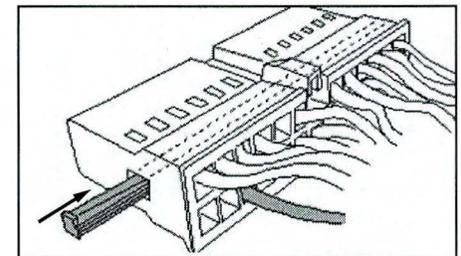
9. Remove the yellow wire by pulling outward.
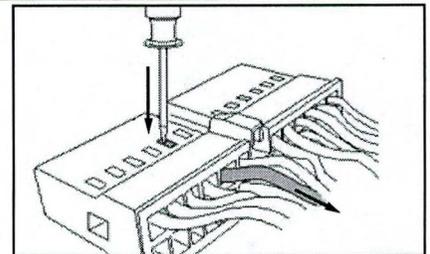
10. Push the metal locking tab located on the top of the terminal away from the terminal body.

11. Insert the yellow wire until it "clicks" into place in cavity ten.

12. Reinstall the secondary lock as shown.

Continued on next page

SYSTEM POWER-UP
Turn the ignition key to the "ON" position. Reconnect the negative battery cable. Turn the ignition key to the "OFF" position.
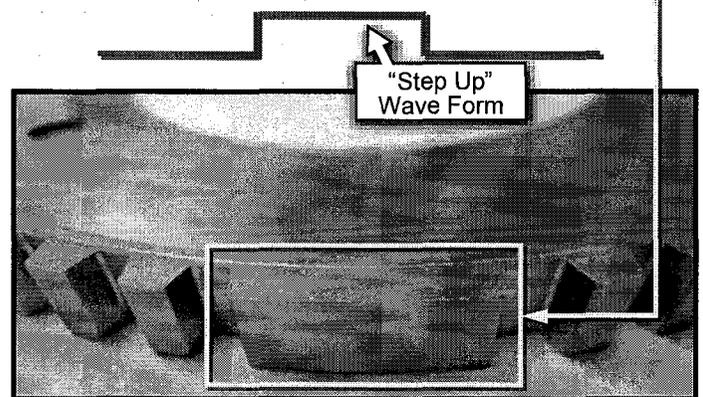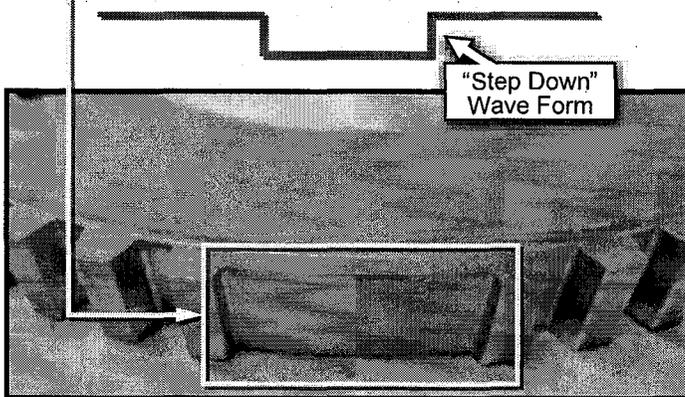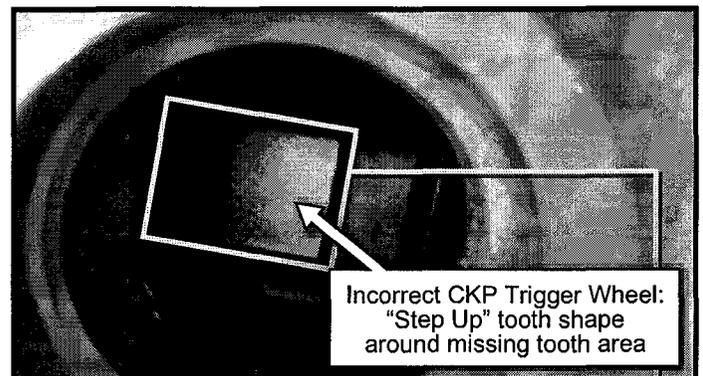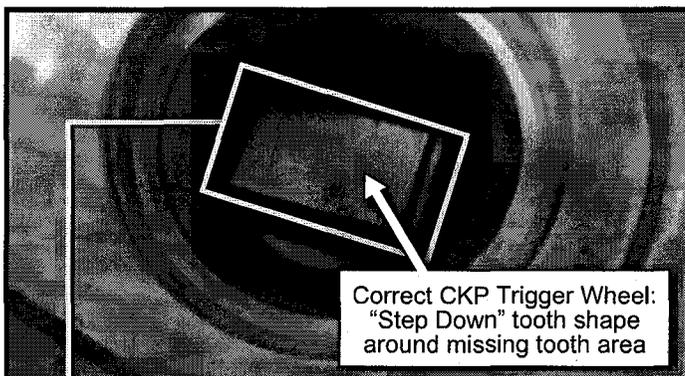
FUNCTION CHECK
Refer to KGIS > Publication > Accessory info for vehicle specific remote engine start installation instructions and a complete list of functions, to be verified, before delivering the vehicle.

NOTE: Reprogram radio pre-sets as recorded earlier.

Hesitation and/or Hard Start Concern After a 2.4L Remanufactured Short Block Replacement
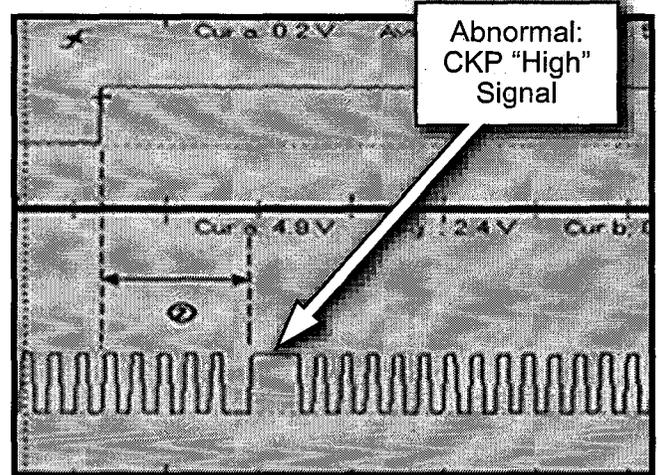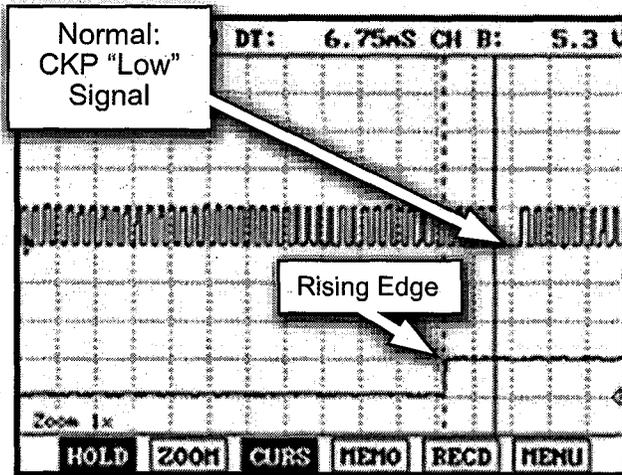
The purpose of this article is to assist in determining whether or not the CKP trigger wheel in 2.4L Theta I & II remanufactured engines is the correct trigger wheel prior to installing a new one on a vehicle. A very small number of remanufactured 2.4L Theta I&II engines may have had incorrect CKP trigger wheels installed, which may cause a hard start or hesitation concern.

To address this concern, remove the CKP sensor to gain access to the CKP trigger wheel. The image of the CKP trigger wheel on the left below illustrators a correct "step down" design, while the image on the right shows an incorrect "step up" design.

Correct CKP Trigger Wheel: "Step Down" tooth shape around missing tooth area

"Step Down" Wave Form

Incorrect CKP Trigger Wheel: "Step Up" tooth shape around missing tooth area

"Step Up" Wave Form

If a remanufactured engine has already been installed into a vehicle without prior inspection of the correct CKP trigger wheel verification, and a hesitation and/or hard start concern is experienced, use the following inspection and diagnostic procedure to identify the cause, since gaining access to CKP trigger wheel is difficult without removing the ladder support frame of the short block assembly.

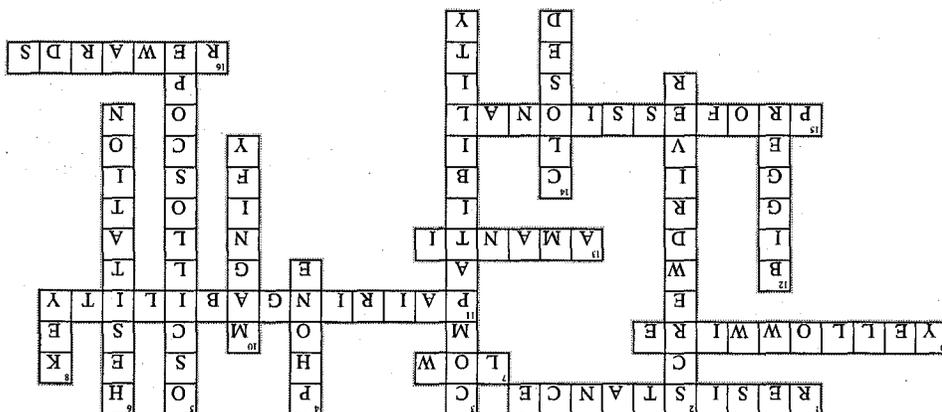Normal: CKP "Low" Signal — Rising Edge

Abnormal: CKP "High" Signal

1. Connect the VMI and monitor CMP and CKP sensors, especially the CKP, to see if the scope pattern for "missing tooth" area is a "low" or "high" signal.

2. If you see a pattern similar to the image on the right, with "high' signal, please order either one of the part numbers below, and install it to correct this concern.

The part number for remanufactured 2.4L Theta I&II short block is **212Y2-25H00BR** or **212Y2-25H00CR**.

Crossword Puzzle Solution

We hope you gave this issue's crossword puzzle on page 8 a try. In case you need a little help, here are the answers to the puzzle clues.