

Please route to:

<input type="checkbox"/> Service	<input type="checkbox"/> Init.
<input type="checkbox"/> Sales	<input type="checkbox"/>
<input type="checkbox"/> Parts	<input type="checkbox"/>



**NOTE: Repair only if described symptoms exist or are noticed.**

Date: **October 4, 2004**

Subject: **MX Z X 440®  
Calibration/Warranty†**

No. **2005-2**

† MX Z X 440® Mandatory Calibration Change for Trail Use/Warranty Validation Requirements

YEAR	MODEL	PACKAGE	MODEL NUMBER	SERIAL NUMBER
2005	MX Z X 440	Racing	BM5A	All

**CAUTION:** This vehicle was designed and built for snow cross racing application. It is factory calibrated to use 108+ octane fuel. Use of lower octane fuels like regular or even premium pump fuels are inadequate and will cause severe engine damage. Never run or even start the engine with regular pump fuel.

**Inserts, main jets, jet needles change and switch removal must be performed prior to retail delivery of snowmobile or prior to registration.**

## PARTS REQUIRED

DESCRIPTION	PART NUMBER	QTY
Standard Compression Insert	420 923 870	2
Main Jet (350)	404 106 000	2
Jet Needle 6EHY2-59-3	404 162 066	2
Sealing Cap	293 000 052 [1]	2

[1] When ordering quantity 1 of this part number, dealer/distributor receives a pack of 5 sealing caps.

- Order parts through regular channel.

## PROBLEM

Limited warranty coverage cannot be validated on above mentioned units with factory installed high compression inserts, main jets, jet needles and pipe preheat switch.

## SOLUTION

- Change the high compression inserts for standard compression inserts.
- Remove the pipe preheat switch and the harness (located under console).
- Change main jets and jet needles.

Please route to :

<input type="checkbox"/> Service	<input type="checkbox"/> Init.
<input type="checkbox"/> Sales	<input type="checkbox"/>
<input type="checkbox"/> Parts	<input type="checkbox"/>



**NOTE: Repair only if described symptoms exist or are noticed.**

Date: **October 27, 2004**

Subject: **600 HO SDI Recalibration Update**

No. **2005-3**

YEAR	MODEL	MODEL NUMBER	SERIAL NUMBER
2004	All 600 HO SDI Equipped Vehicles	All	All
2005	MX Z 600 HO SDI Renegade	000BX5A00 and 000BX5B00	All

## PROBLEM

- In some conditions spark plug fouling may be observed during warm-up.
- During rapid acceleration or loss of traction, especially when engine is cold, engine surging may be observed at high RPM.

## SOLUTION

Update calibration parameter in the vehicle ECM.

This new calibration will:

- reduce the possibility of spark plug fouling
- provide more constant performance in altitude
- maintain a more consistent tuned pipe heat to reduce surging
- reduce backfire on deceleration
- improve knock sensor sensitivity for long term reliability

## Two types of procedure:

During the procedure you will have to choose one of these two procedure:

- A) Vehicles that were not updated according to the Warranty Bulletin 2004-7.
- B) Vehicles that were updated according to the Warranty Bulletin 2004-7.

## PROCEDURE

### General:

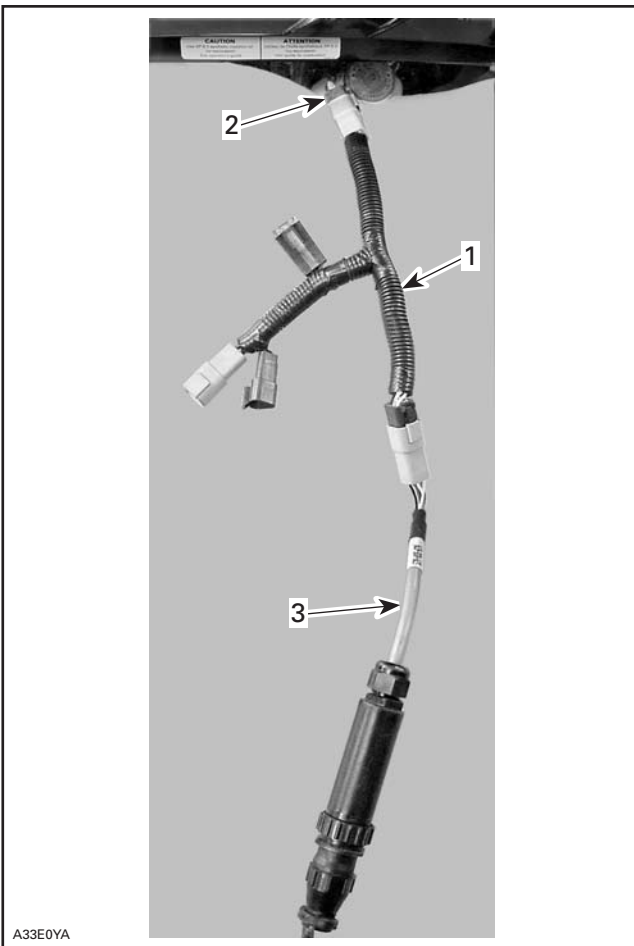
Before processing, make sure to have the latest version of BUDS, (minimum G2.2.7) installed on your shop computer. This new version is available on BOSSWeb\ComCenter\B.U.D.S. & MPEM\B.U.D.S.

- Remove the 6 pin connector from the protective cap, located on the right side of the vehicle.



A0010YA

- Connect the power supply harness [1] (P/N 529 035 869) to the 6 pin connector [2].
- Connect the 6 pin diagnostic cable [3] to the power supply harness [1] (P/N 529 035 869).



A33E0YA

**NOTE:** Injection vehicles already have a 12 V battery; they do not need any external 9 V or 12 V power to allow programming and troubleshooting.

**NOTE:** The use of the power supply harness [1] will keep the vehicle's ECM ON. Not using it will make the ECM shut off after a few seconds.



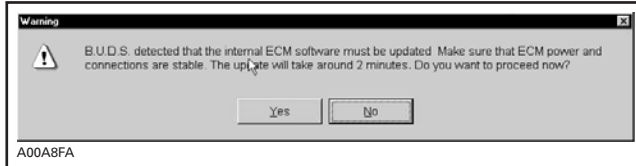
A33E0ZA

- Select the vehicle's protocol in Choose Protocol from the MPI menu. The protocol is KW 2000.
- Click on "MPI" menu; select "Chose speed > 115200".
- Turn the engine shutdown switch to the engine off position.
- Insert the grey DESS cap or any DESS cap onto the vehicle DESS post.
- Using B.U.D.S. read the data from the ECM.

**NOTE:** If the B.U.D.S. system loses communication while connected, press the start/stop button or turn briefly the ignition switch to the START position to reactivate communication. You can also refer to page 4 of this document.

## A) For vehicles that were not updated according to Warranty Bulletin 2004-7:

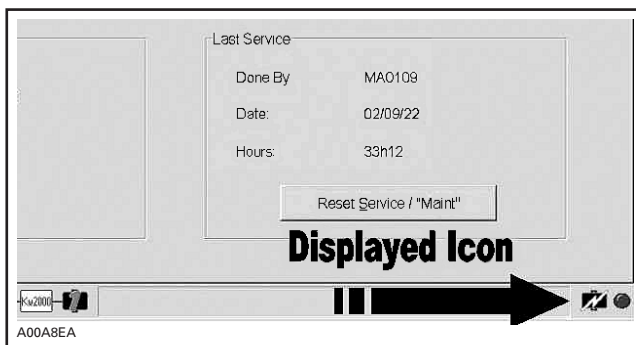
When connecting B.U.D.S. to a vehicle that was not updated according to the Warranty Bulletin 2004-7; if an update is needed, this dialog box would be displayed.



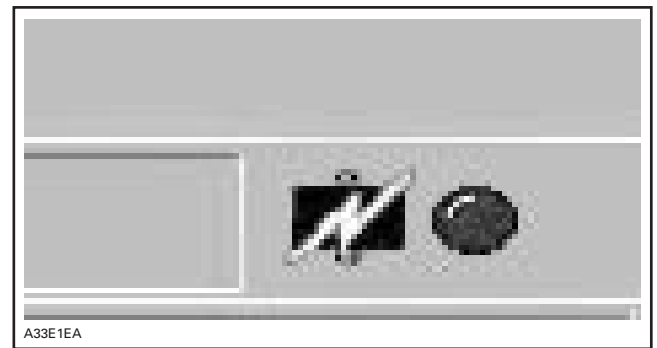
- Click "Yes" ; B.U.D.S. will update the calibration.
- Then click OK on the dialog box after the update has been completed.

## B) For vehicles that were updated according to Warranty Bulletin 2004-7:

When connecting to B.U.D.S. to a vehicle that was updated according to Warranty Bulletin 2004-7: if an update is available, a "spark" will be displayed on the lower right side of the B.U.D.S. screen.



**NOTE:** This icon shows that an update is available. This is not a mandatory update. It should be performed only if the vehicle experienced the problem described on page 1.

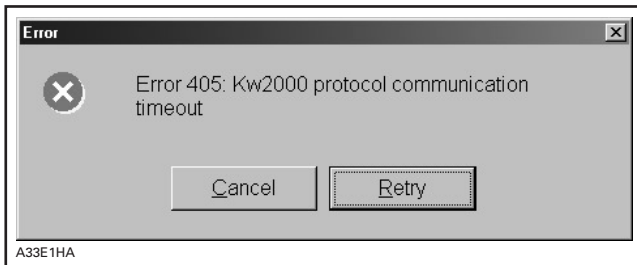


- Click on the Module menu
- Select ECM and select Update.
- Click "YES" in the "Warning, you are about to update the internal ECM software..."
- *If the following error message appears: "The MPI protocol software was lost during the transfer",*  
Click on "Cancel" until all error messages disappear.
- Close all open applications except BUDS.
- If the error message appears again during the transfer,
- Click on the "MPI" menu and select "Choose speed > 57600".
- Click on "Read data" icon.
- If the error message continues to appear,
- Reduce the speed again by clicking on the "MPI" menu and select "Choose speed >..."
- *If error message does not appear, continue with the following.*
- Wait for the message "Update has been successfully transferred into ECM" and click on "OK".
- Click on the "Module" menu and select "ECM".
- Select "Information".
- Check that the Bombardier part number is (420 665 029) and click on "Close".
- Go to the "Vehicle" page of B.U.D.S.
- Click on "Reset Service" button.
- Click on the "WRITE DATA" icon.
- Click "YES" to confirm.
- Remove DESS key when instructed.

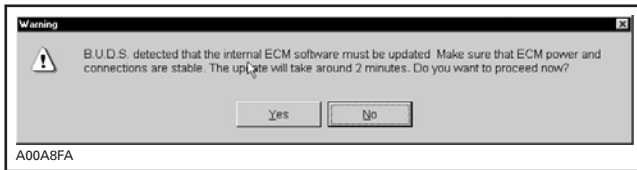
- Disconnect the power supply harness from the vehicle 6 pin connector.
- Start engine and make sure it operates normally through its full RPM range.

## If there is a problem during information transfer:

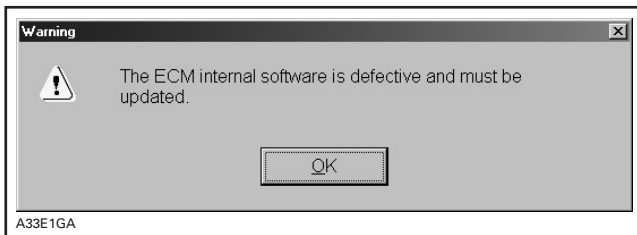
If there is a problem during the information transfer from B.U.D.S. to the vehicle ECM, if the 12V power is lost, or if the 6 pin connector is unplugged; the following message will be displayed:



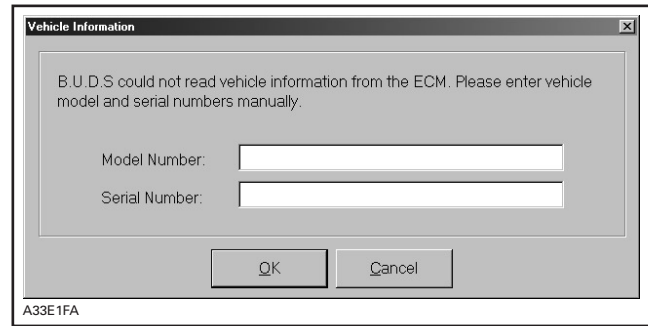
- Select "Cancel"



- Click "OK".
- Restart B.U.D.S.
- Ensure all connections are correct.
- Select "Read data"; the following message will be displayed:



- Click "OK"; the following message will be displayed:



- You must write the complete vehicle model number, using 9 digits; example: 000XXXX00.
- You must also write the complete vehicle serial number.

You will now be back to the normal procedure.

## WARRANTY

Normal warranty applies.

Submit a warranty claim, using the following information:

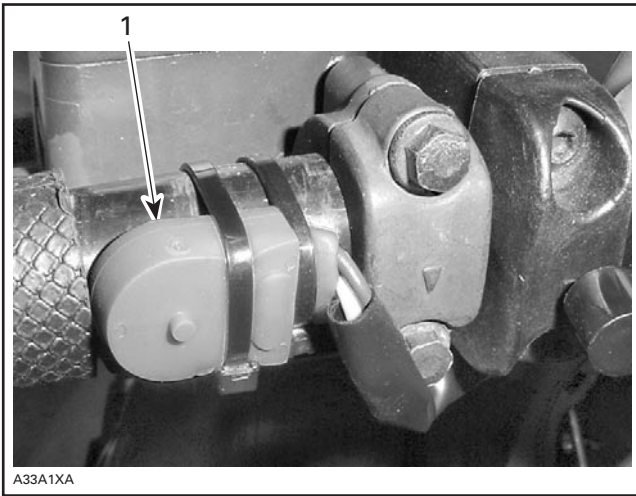
2004 and 2005 MY UNITS	
Job Code	1058
Flat Rate Time	0.3 Hours

For claiming procedure, refer to the *Dealer/Distributor Warranty Guide*.

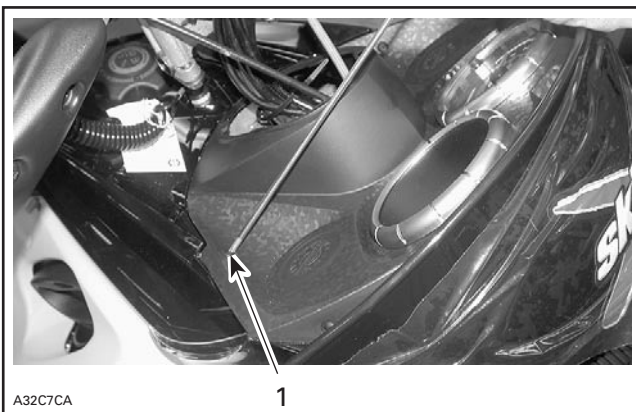
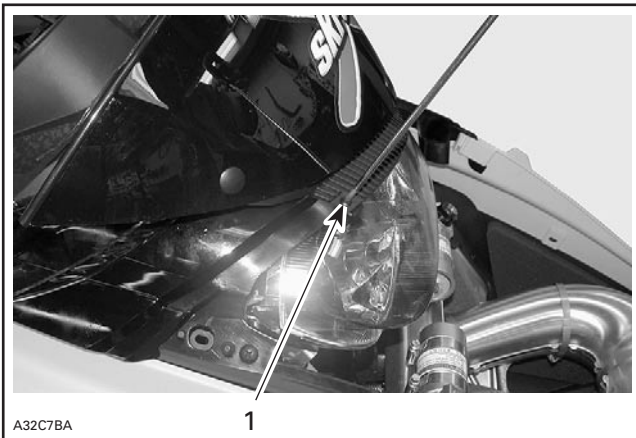
# PROCEDURE

## Pipe Preheat Switch Removal

[1] Pipe preheat switch.



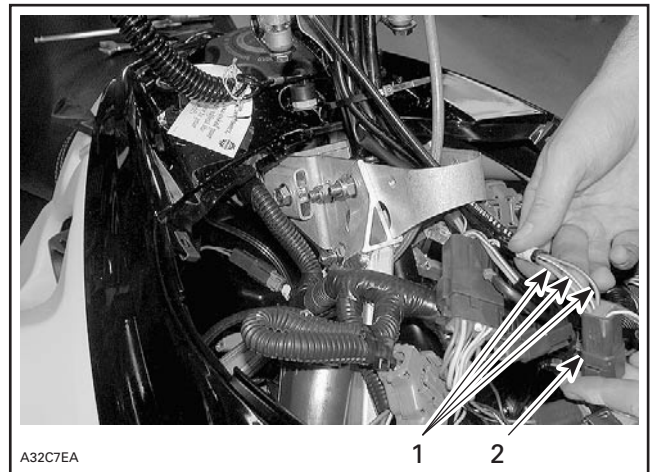
- Remove front and rear screws [1] retaining dash panel and remove dash panel.



- Cut locking ties and remove switch from handlebar.

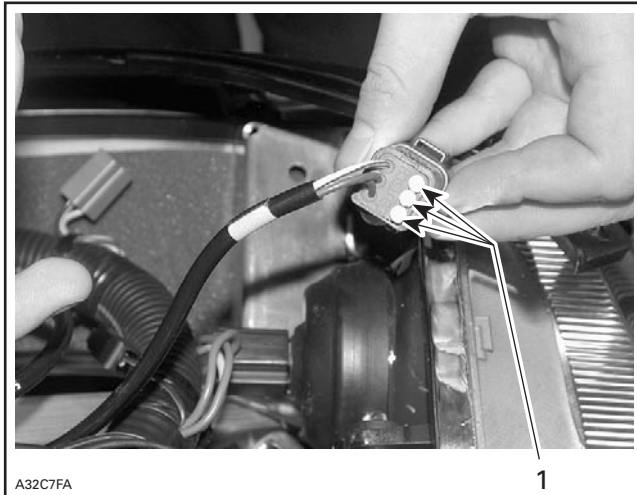


- Pull-out switch harness.
- Follow switch harness [1] to reach connector and unplug connector [2].



- Remove switch wires from connector.
- Refer to Volume REV Series of the 2003 *Shop Manual*, Section 11, sub-section 01, page 6 for procedure on waterproof connector housing wire removal.
- Pull-out switch, sliding harness through locking ties.

- Install sealing caps [1] in holes left by pin removal.



- Plug connectors.
- Reinstall all removed parts.

## Compression Inserts Replacement

- Change high compression inserts for standard compression inserts.

## Cylinder Disassembly

- Remove spark plugs.
- Drain coolant and remove coolant outlet.

### **WARNING**

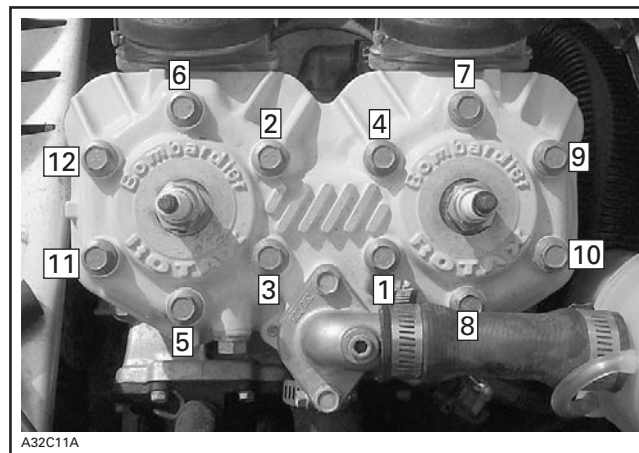
Never drain or refill the cooling system when engine is hot.

- Unscrew cylinder head cover then cylinder head inserts.

## Cylinder Head Cover, Cylinder Head and Cylinder Assembly

- Check flatness of part sealing surfaces.
- Refer to LEAK TEST AND ENGINE DIMENSION MEASUREMENT of *Ski-Doo Shop Manual* and look for **Checking Surface Flatness**.

- At assembly, torque cylinder head screws to 29 N•m (21 lbf•ft) in the following illustrated sequence.



- Install socket outlet and tighten screws to 12 N•m (106 lbf•in). **Note position of longer screw.**

**CAUTION:** It is of the utmost importance to proceed with the following changes and/or replacement if standard inserts are installed:

- Main jets have to be changed from 400 PTO side to 350 and from 400 MAG side to 350.
- Jet needles have to be changed from 6EN29-61-3 to 6EHY2-59-3 with E-clip in groove #3.

**NOTE:** After standard compression inserts have been installed and carburetor re-jetted, premium pump fuel (91 octane) should be used.

---

# WARRANTY

Complete a **written** warranty claim form (P/N 484 070 600) using the following information

Claim Type	03 (Predelivery)
Flat Rate Time	1.0 hour
Job Code	01 171

**Do not claim through BOSSWeb** since units are coded without warranty.

For claiming procedure, refer to the *Dealer/Distributor Warranty Guide*.

**IMPORTANT:** Warranty validation is therefore conditional to our receiving of the high compression inserts, the main jets, jet needles the pipe preheat switch **in their original brand new condition**, at our Warranty Parts Return Center.

**NOTE:** Do not delay parts shipment; this would delay limited warranty coverage.

**Canadian Dealers/Distributors**, return to:

Bombardier Inc.,  
Recreational Products,  
Warranty Parts Inspection Center,  
565 de la Montagne,  
Valcourt (Québec)  
J0E 2L0

**USA Dealers/Distributors**, return to:

Bombardier Motor Corporation of America,  
c/o Warranty Department,  
7575 Bombardier Court,  
Wausau, WI  
54401



Please route to:

<input type="checkbox"/> Service	Init.	<input type="checkbox"/>
<input type="checkbox"/> Sales		<input type="checkbox"/>
<input type="checkbox"/> Parts		<input type="checkbox"/>



Date: **October 27, 2004**

Subject: **Power T.E.K. ECM Software Problem**

No. **2005-4**

YEAR	MODEL	ENGINE	PACKAGE	MODEL NUMBER	SERIAL NUMBER
2005	MXZ®	800 HO	Renegade™	BU5A / BU5B	All
			Renegade X	BS5C / BS5D / BS5E / BS5F / BS5G / BS5H / BS5J / BS5K / BS5L / BS5M / BS5N	
	GSX™		Limited	DA5A / DA5B	
	GTX†		Limited	EA5A / EA5B / EA5C	

† GTX is a registered trademark of Castrol Ltd, used under license.

## PROBLEM

It has been brought to our attention that a limited quantity of Power T.E.K.™ ECM™ may have corrupted software causing permanent loss of spark until ECM parameters are updated by the dealers in the involved units.

A perfectly running unit at the pre delivery inspection could also experience the problem at any time during subsequent use; therefore, **ECM update is mandatory.**

## SOLUTION

Install the latest version of B.U.D.S. (G2.2.7 or more recent), and update the ECM parameters in the vehicle **at the pre delivery inspection.**

**NOTE: ONLY** for vehicles that have already been delivered to customer:  
 ► refer to the **WARRANTY** section at the end of this document for claiming procedure.

## PROCEDURE

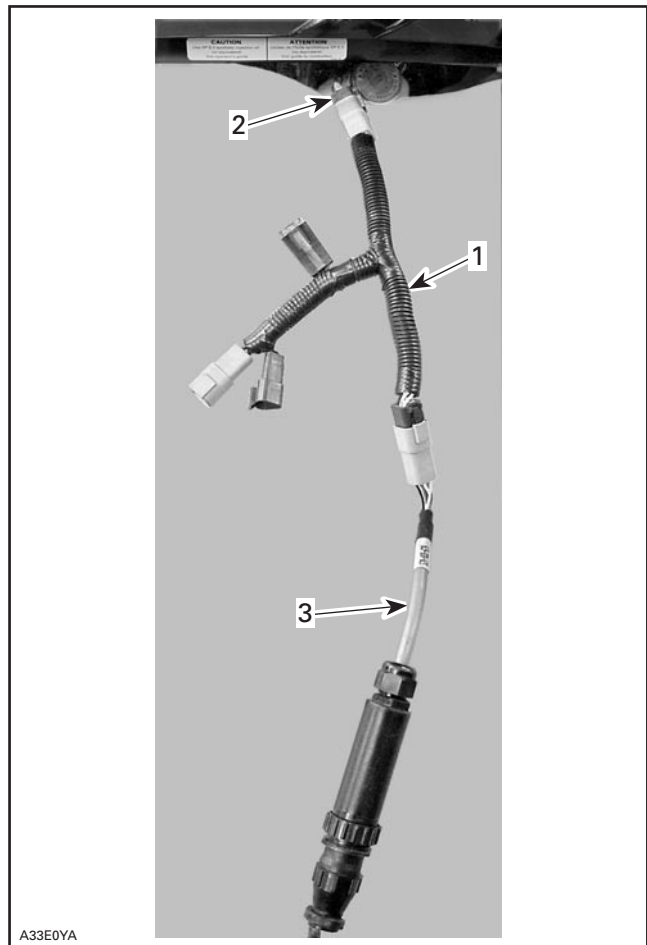
**NOTE:** Before processing, make sure to have the latest version of B.U.D.S. (G2.2.7 or latest) installed on your shop computer. This latest version is available on BOSSWeb\ComCenter\B.U.D.S. & MPEM\B.U.D.S.

Refer to *Service Bulletin 2005-3 Rev.1*, for proper installation procedure of B.U.D.S. G2.2.7 version.

- Remove the 6-pin connector from the protector cap located on the right side of the vehicle.



- Connect power supply harness [1], (P/N 529 035 869), to the 6-pin connector [2] and connect the 6-pin diagnostic cable [3] to power harness [1].



**CAUTION:** Always use power supply harness. Do not update ECM with the engine running, as this may lead to ECM failure. A failed module related to a wrong connection setup is not covered by warranty.



- Click on MPI® menu, choose speed 115200.
- Connect the power supply harness to a 12V battery, using supply harness (P/N 529 035 997). This will *wake-up* the ECM.

**NOTE:** *If there is a problem during information transfer, refer to page 5 of this document.*

- Select the vehicle protocol in “Choose Protocol” from the MPI menu. The protocol is KW 2000.

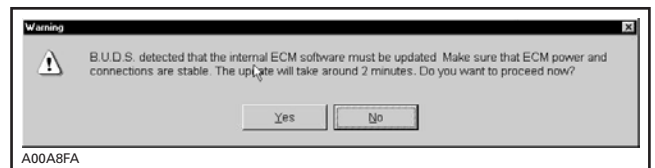
**NOTE:** On power T.E.K. vehicles, it is not necessary to install a DESS key on.

- Read the data from ECM.

**NOTE:** Not all vehicles need to be updated. If the vehicle does not need to be updated, no messages will be displayed and you will access B.U.D.S. normally but, when connecting a vehicle to B.U.D.S., if an update needs to be done, a dialog box is displayed stating that the calibration must be completed.

- Click the “Yes” box and B.U.D.S. will update the calibration.

**NOTE:** The buzzer will go OFF during the complete transfer process.



---

*If the following error message appears: "The MPI protocol software was lost during the transfer",*

- click on "Cancel" until all error messages disappear,
- close all open applications except BUDS.
- click on "Read Data" icon.

— If the error message appears again during the transfer,

- click on the "MPI" menu and select "Choose speed > 57600".

— If the error message continues to appear,

- reduce the speed again by clicking on the "MPI" menu and select "Choose speed >...".

*If error message does not appear, continue with the following.*

- Wait for the message "Update has been successfully transferred into ECM" and click on "OK".
- Click on the "Module" menu and select "ECM".
- Select "Information".
- Check that the software part number is S00861C04 and click on "Close".
- Go to the "Vehicle" page of B.U.D.S.
- Click on "Reset Service" button.
- Click on the "WRITE DATA" icon.
- Click "YES" to confirm.
- Disconnect the power supply harness from the diagnostic port on vehicle.
- Start the engine and make sure it operates normally through its full RPM range.

## If there is a Problem during Information Transfer

If there is a problem during the information transfer from B.U.D.S. to the vehicle ECM, if the 12V power is lost, or if the 6 pin connector is unplugged; the following message will be displayed:

- Select "Cancel"

- Click "OK".

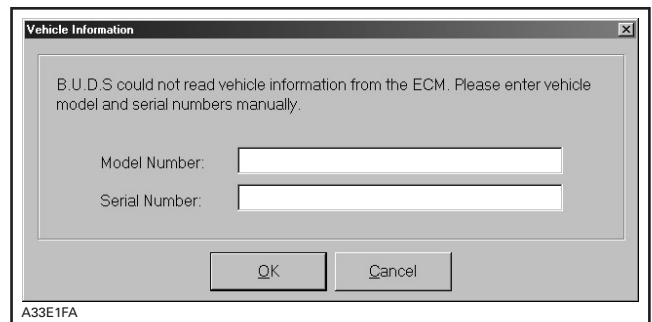
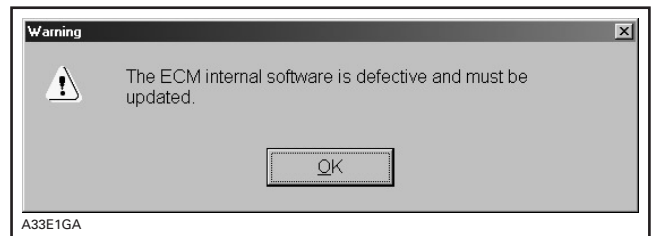
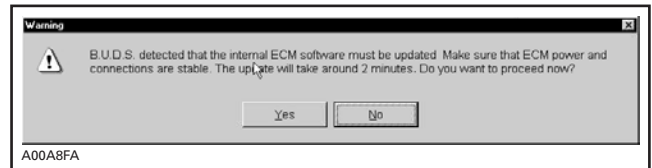
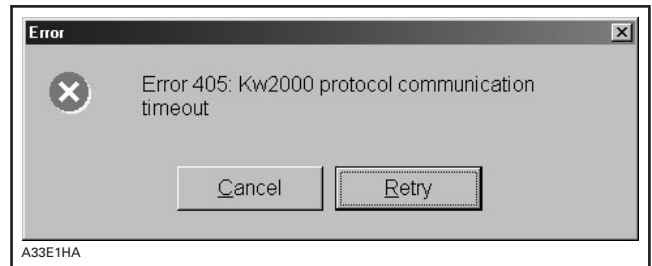
- Restart B.U.D.S.

- Ensure all connections are correct.
- Select "Read data"; the following message will be displayed:

- Click "OK"; the following message will be displayed:

- You must write the complete vehicle model number, using 9 digits; example: 000XXXX00.
- You must also write the complete vehicle serial number.

You will now be back to the normal procedure.



---

# WARRANTY

Warranty only applies to:

- vehicles that were programmed and delivered before this *Bulletin* was issued.
- vehicles that went through the predelivery inspection and that were programmed before this *Bulletin* was issued.

For those vehicles, submit a warranty claim, using the following information:

Job Code	10-06
Claim Type	01
Flat Rate Time	0.3 hour

For claiming procedure, refer to the *Dealer/Distributor Warranty Guide*.

Please route to :

Init.

Service

Sales

Parts



**CAUTION: All involved customers must be notified, all involved units must be corrected as per instructions herein.**

Campaign no.: 2005-0004

Date: **January 20, 2005**

Subject: **Hood Retainer Cable Support**

No. **2005-5**

YEAR	MODEL	MODEL NUMBER	SERIAL NUMBER
2005	Expedition TUV	000FB5A00 and 000FB5B00	All

### Problem

When the hood is in its opened position, the retainer cable support may detach from the hood rib if there is extra stress such as wind or other.

### Solution

Replace the retainer cable support reinforcing plate on the hood rib.

### Parts Required

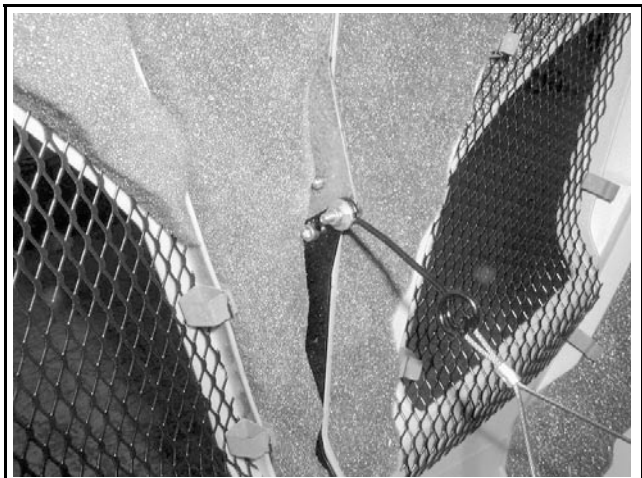
DESCRIPTION	P/N	QTY
M4 x 16 Allen Screw	207 141 644	3
M4 Elastic Nut	232 541 414	3
M4 Flat Washer	234 042 600	3
Reinforcing Plate	605 453 278	1

### Procedure

- Open hood and secure it in its open position with another cable.
- Drill the reinforcing plate rivets.

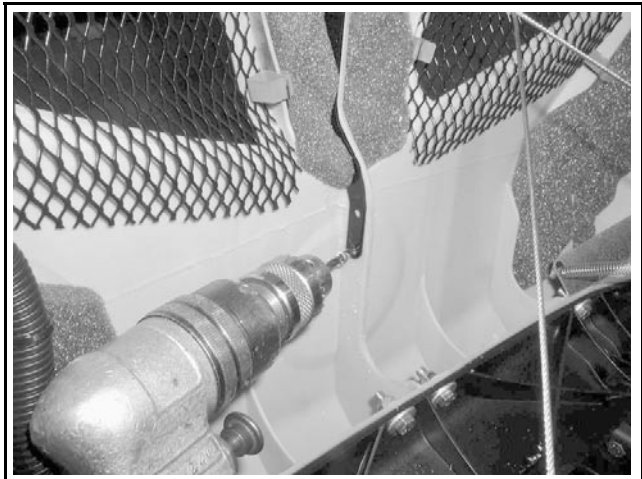


- Drill a 4.2 mm (0.165 in) hole through the hood rib. Use existing bracket hole as a guide.
- You may want to use a steel plate to protect the foam.



- Drill a 4.2 mm (0.165 in) hole in at the lower end of the hood rib, using the new reinforcing plate as a guide.

- Drill the hole from both sides to ease assembly.



- Secure the new reinforcing plate to the hood rib using the supplied screw on one side, a flat washer and an elastic nut on the other side.
- The hood retaining cable can now be secured in place using the supplied screw, a flat washer and an elastic nut.

- Secure the reinforcing plate in place with the supplied screw on one side, a flat washer and an elastic nut on the other side.
- Remove the extra cable.

## Warranty

Submit a warranty claim using the following information.

Campaign Number	2005-0004
Claim Type	Warranty Claim
Flat Rate Time	0.3 hour
Expiration Date	2006-01-21



Please route to:

	Init.
<input type="checkbox"/> Service	<input type="checkbox"/>
<input type="checkbox"/> Sales	<input type="checkbox"/>
<input type="checkbox"/> Parts	<input type="checkbox"/>



**CAUTION: All involved customers must be notified, all involved units must be corrected as per instructions herein.**

Campaign no.: 2005-0006

Date: **January 21, 2005**

Subject: **A: Wrong Alternator Harness Routing**  
**B: Coolant Hose Damage**  
**C: Rear Suspension Screws Torque Too Low**

No. **2005-6**

YEAR	MODEL	MODEL NUMBER	SERIAL NUMBER
2005	Expedition TUV	000FA5A00 and 000FA5B00	All

# A: WRONG ALTERNATOR HARNESS ROUTING

## Problem

The alternator harness routing may be incorrect. The wires may be too close to the heat shield.



mbg05-008-002

If the wires position looks like this, do the following procedure.

## Solution

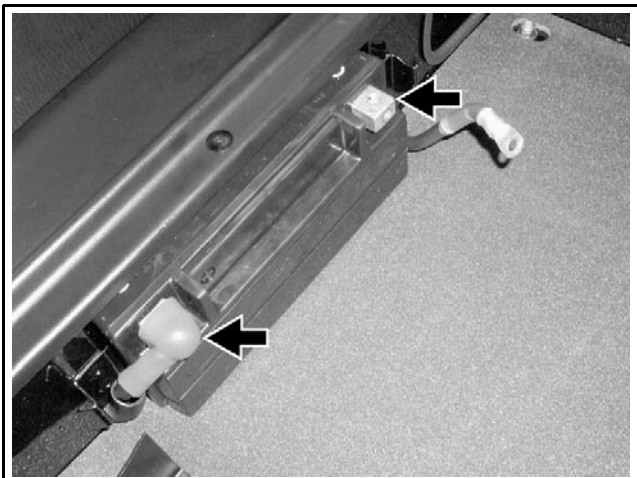
Reroute the alternator harness and add one tie rap to fasten the small cable to the positive larger cable.

## Parts Required

DESCRIPTION	P/N	QTY
Tie Rap	414 115 200	1

## Procedure

- Disconnect the battery cables:
  - Black (negative) first
  - Red (positive) last



MBG05-008-01A

- On the alternator, loosen the red cable retaining nut.
- Turn all wires clockwise (toward engine).
- Secure the wires together with a tie rap to get the correct alternator harness routing: the wires are more toward the engine.



mbg05-008-003

**NOTE:** There is no need to remove muffler and exhaust pipes.

- Reconnect battery cables:
  - Red (positive) first
  - Black (negative) last
- Install the battery cover and retaining strap.

## B: COOLANT HOSE DAMAGE

### Problem

The water hose from the coolant reservoir to engine thermostat housing may get damaged when routing through the heat shield opening.

### Parts Required

DESCRIPTION	P/N	QTY
Edge Protector	605 453 298	1

### Solution / Procedure

Install edge protector as shown.



mbg05-008-004

## C: REAR SUSPENSION SCREWS TORQUE TOO LOW

### Problem

The torque may not be correct on the screws securing the slide rails to the rear axle and the center shock support axle.

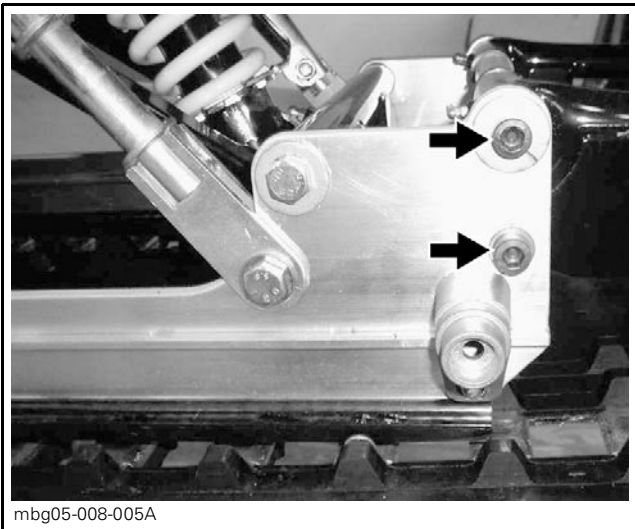
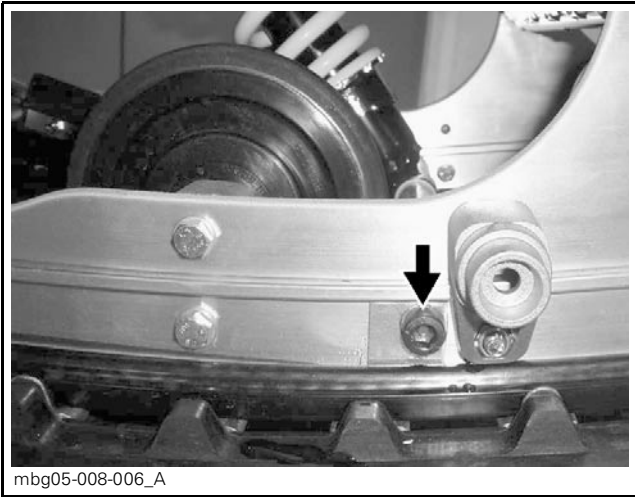
### Solution

Check tightening torque. Add threadlocker and re-torque if out of spec.

### Procedure

- Remove support wheels on both sides.
- Check rear axle and center shock support axle retaining screws. Using a torque wrench,

look for any screw that would turn before reaching 80 N•m (59 lbf•ft).



- One at a time, out of spec screws must be loosened to 25 mm (1 in) out from the surface of the slide rail (do not remove).
- Apply Loctite 271 (red) (P/N 290 800 005) on threads.
- Torque to 80 N•m (59 lbf•ft).
- Install support wheels and tighten screws to 24 N•m (18 lbf•ft).

## WARRANTY

Submit a warranty claims using the following information.

A: Wrong Alternator Routing	
Campaign Number	2005-0006
Claim Type	Campaign Claim
Flat Rate Time	0.7 hour
Expiration Date	2006-01-21

Please route to :

<input type="checkbox"/> Service	<input type="checkbox"/> Init.
<input type="checkbox"/> Sales	<input type="checkbox"/>
<input type="checkbox"/> Parts	<input type="checkbox"/>



**CAUTION: All involved customers must be notified, all involved units must be corrected as per instructions herein.**

Campaign no.: 2005-0005

Date: **January 27, 2005**

Subject: **Rear Console Cracking**

No. **2005-7**

YEAR	MODEL	MODEL NUMBER	SERIAL NUMBER
2005	Skandic LT	FH5A, FH5B, FH5C, FH5D, FH5G	All

**Problem**

On some vehicle, the rear console may be cracked, because of a wrong tether cut-out switch installation.

**Solution**

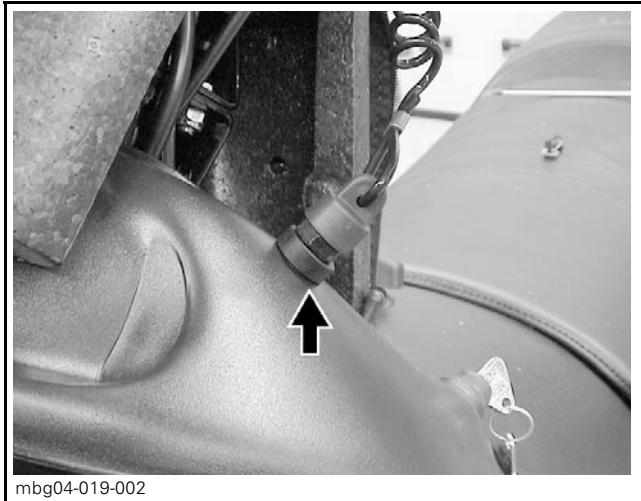
- Add a sleeve to the tether cut-out switch.
- Replace the rear console if it is damaged.

**Parts Needed**

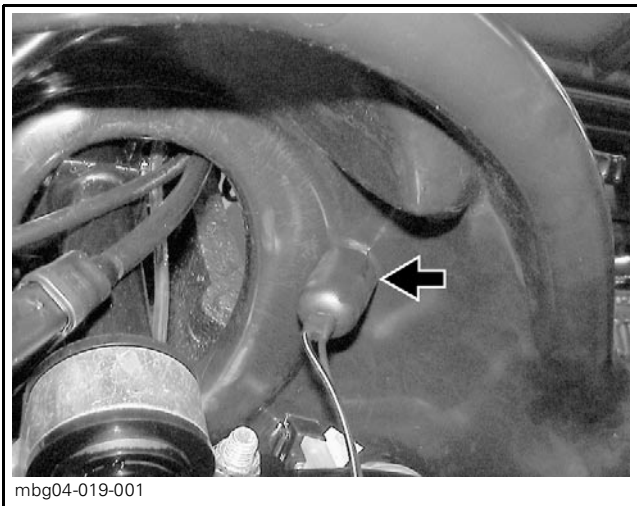
DESCRIPTION	P/N	QTY
Sleeve	605 352 540	1
Rear Console (only if damage)	605 350 277	1

**Procedure**

- Disconnect the battery if so equipped: black negative first, red positive last.
- Remove the tether cut-out switch.



- Replace the rear console only if it is cracked.



## Warranty

Submit a warranty claim using the following info.

Campaign Number	2005-0005
Claim Type	Campaign Claim
Flat Rate Time	0.3 hour
Expiration Date	2006-01-21

- Add the supplied sleeve and reinstall the tether cut-out switch.
- Reconnect the battery if so equipped: red positive first, black negative last.

Please route to :

<input type="checkbox"/> Service	<input type="checkbox"/> Init.
<input type="checkbox"/> Sales	<input type="checkbox"/>
<input type="checkbox"/> Parts	<input type="checkbox"/>



**CAUTION: All involved customers must be notified, all involved units must be corrected as per instructions herein.**

Campaign no.: 2005-0007

Date: **January 28, 2005**

Subject: **Summit 995 Update**

No. **2005-8**  
**REVISION 1** ◀

YEAR	MODEL	MODEL NUMBER	SERIAL NUMBER
2005	Summit HI-MARK 1000 SDI	000CA5A00, 000CA5B00, 000CA5C00, 000CA5D00, 000CD5A00, 000CD5B00 and 000CD5C00	All

## PROBLEM

- A) Units may starve for fuel before the tank is empty.
- B) Under certain riding conditions it may be possible to feel a bog during repetitive acceleration.
- It is also possible that a rich running is observed specially when engine is cold.

## SOLUTION

- A) Replace pulse fitting on crankcase & clean fuel pump.
- B) Update ECU calibration, reset the TPS, verify the throttle body maximum opening at wide open throttle and adjust the oil pump.

### Autoship:

\* All dealers/distributors will receive an amount of "fuel pump pulse nipple (420 924 980)" corresponding to 100% of their invoiced vehicles involved. These parts will be autoshipped in a few increments in order to allow all dealers to start to update their units. First shipments will be starting today, next day air, and within a week, all orders will be completed.

Do not place an order in the system for the fuel pump pulse nipple (420 924 980) as all will be autoshipped according to your fleet.

Parts will be released in priority for autoshipments. Once completed, regular orders will be processed.

## REQUIRED PARTS

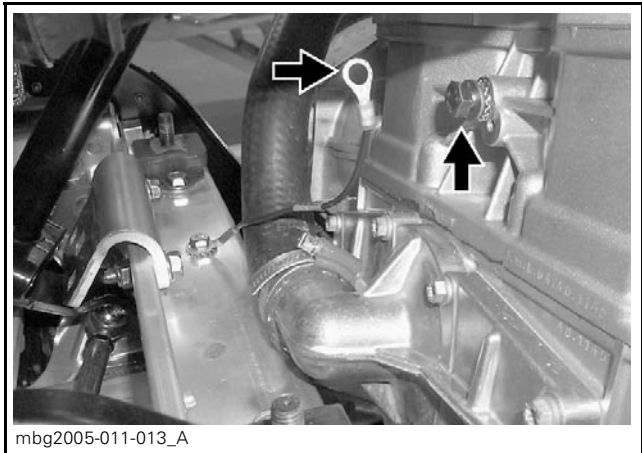
Description	P/N	QTY
*Fuel pump pulse nipple	420 924 980	1
Black hose 6.5 mm (0.256 in) sold in 3 m (10 ft) length	415 079 800	340 mm (13-3/8 in)
Protective sheaths 10 mm (0.394 in) sold in 1m (3 ft) length	415 079 900	290 mm (11-3/8 in)
Spark plugs BR8ECS sold in box of 10	512 060 029	2
Elastic nut M10	233 601 416	4
Bolts M8 x 25	207 582 544	4

## A) REPLACE PULSE FITTING ON CRANKCASE

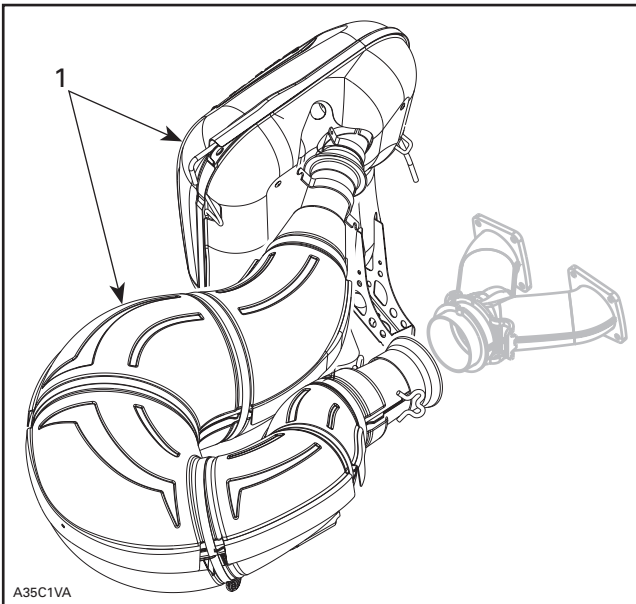
- Remove the windshield.
- Remove the RH side panel.
- Remove the LH side panel, unplugging the APS (Air Pressure Sensor).
- Disconnect BLACK (-) cable from battery, then the RED (+) cable.

### **⚠ WARNING**

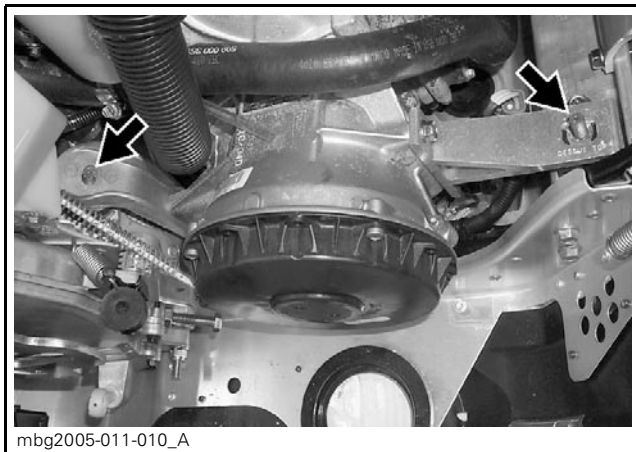
Always disconnect battery or starter cables exactly in the specified order, BLACK (-) cable first. It is recommended to disconnect electrical connections prior to disconnecting fuel lines.



- Remove the engine ground wire, located in front of the engine.
- Remove the belt guard.
- Remove the drive belt.
- Remove the drive pulley.
- Remove the driven pulley.
- Remove the air intake silencer.

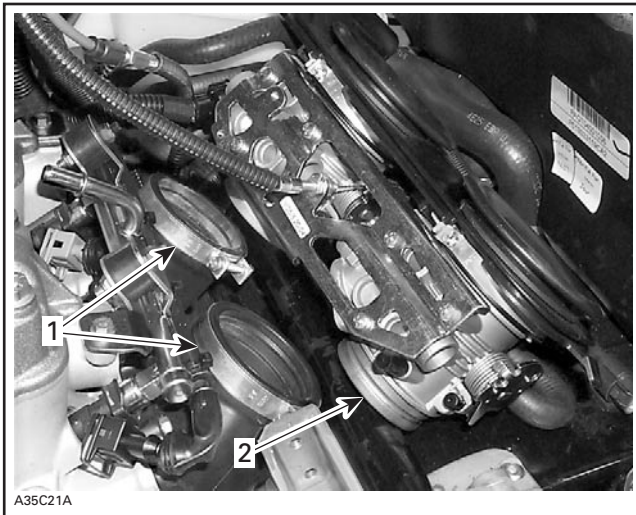


- Remove tuned pipe and muffler [1].

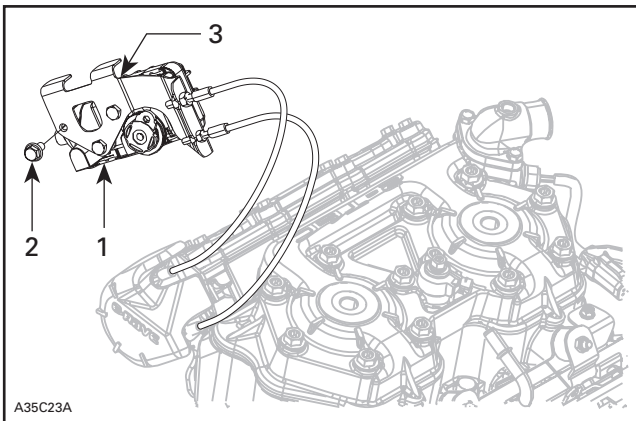


- Remove bolts [2] to remove the LH handlebar support [1].

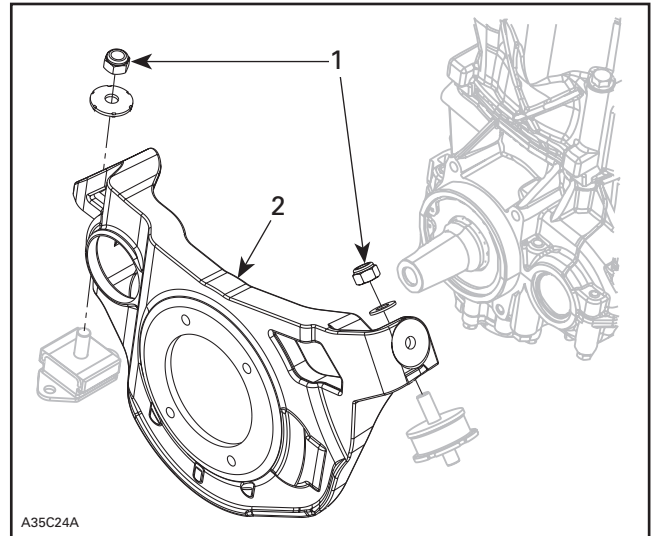
- Remove the MAG side motor mounts nuts.



- Unscrew throttle body clamps [1].
- Move away throttle bodies [2] from intake adapters.
- To make room for moving the engine upward, temporarily secure throttle bodies away, using locking tie.



- To make room for moving the engine upward, remove the E-RAVE actuator [1].



- Remove PTO side engine support [2] nuts [1].

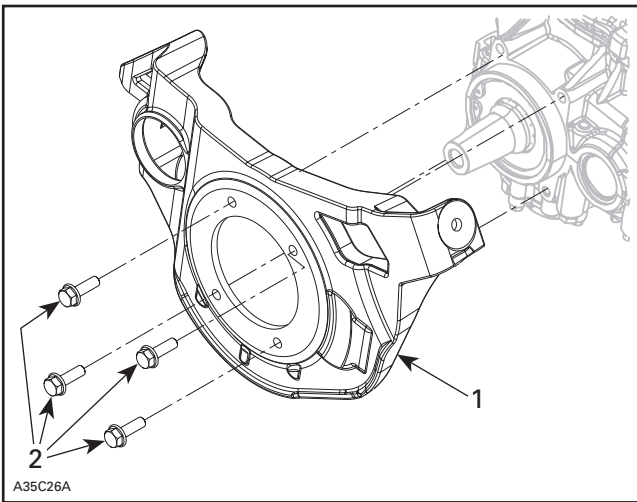


- Remove both spark plugs. Install the spark plug lift ring (P/N 529 035 830 ◀) in the PTO side spark plug hole.

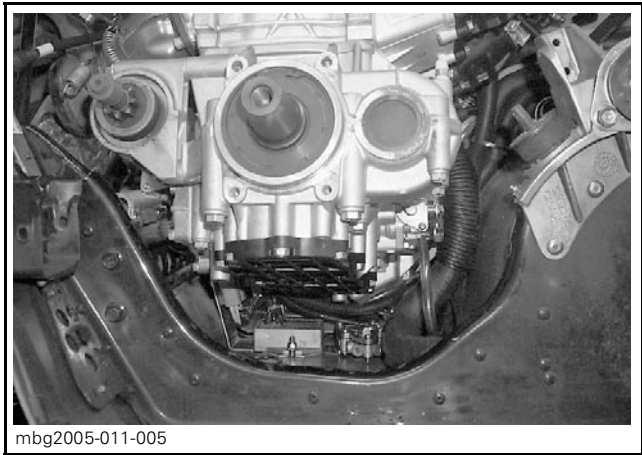


- Using the engine removal hook 529 035 829, slightly lift the engine.

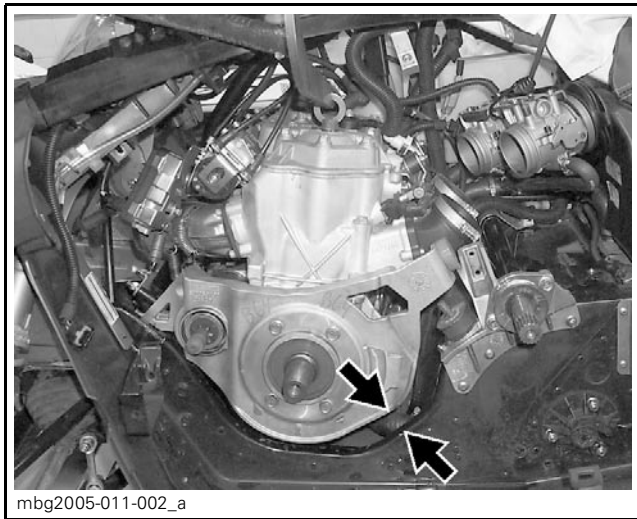




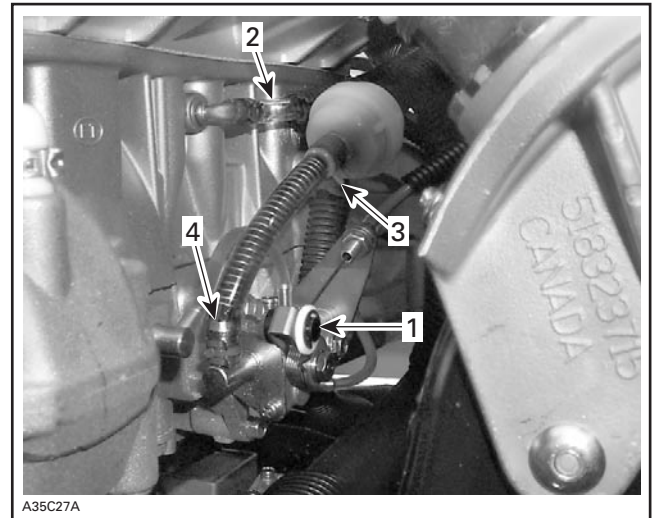
- Remove bolts [2] and the PTO engine support [1].



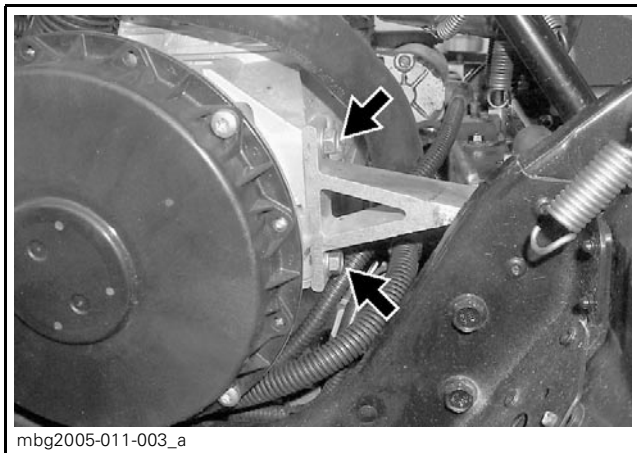
- Lift the engine some more and push it to the front to make room to reach the oil pump, the fuel pump and the crankcase pulse nipple.



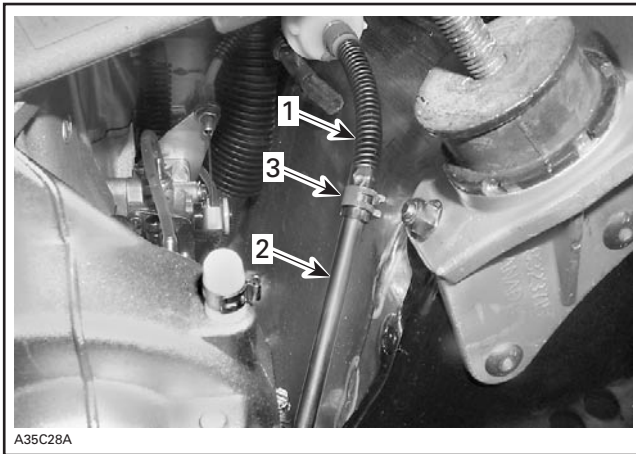
- Keep the engine at approximately this height.



- Loosen the oil cable retaining nut.
- Remove the oil cable c-clip [1].
- Detach oil pump cable from oil pump.



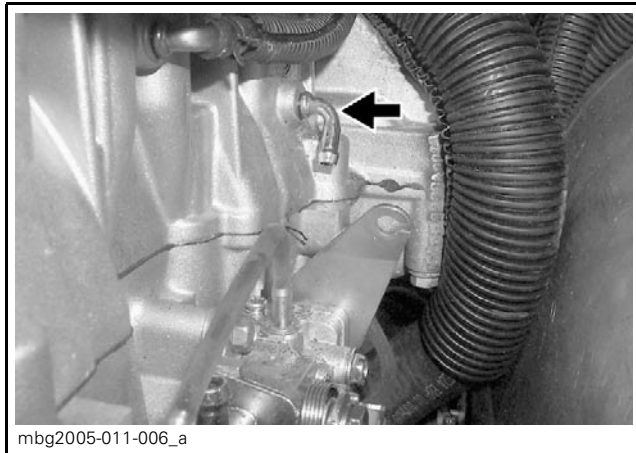
- Remove these bolts to remove the MAG side front motor mount.



A35C28A

- Unplug oil inlet hose [1].
- Use a standard 1/4 inch ratchet extension [2] to block up oil inlet hose.
- Temporarily attach the ratchet extension [2] with the spring clamp [3].

**Replacing the fuel pump pulse nipple:**



mbg2005-011-006\_a

- Unplug fuel pump pulse hose.



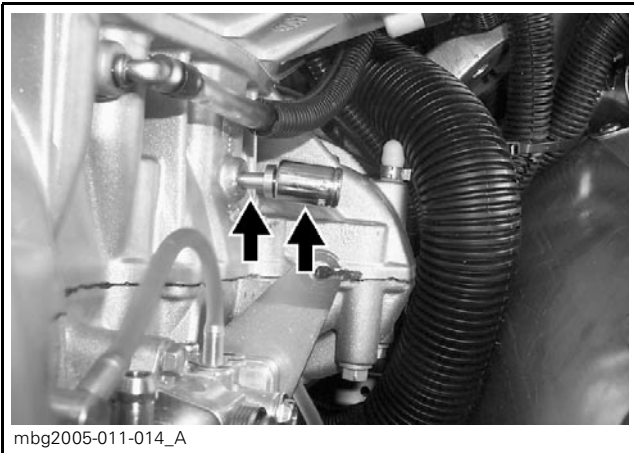
mbg2005-011-007

- Remove this nipple by turning and pulling with vise-grip tool. Be careful not to enlarge the hole. Make sure to clamp the elbow of the nipple.
- Clean the hole with general purpose solvent, to remove oil.
- Remove any aluminum chips.

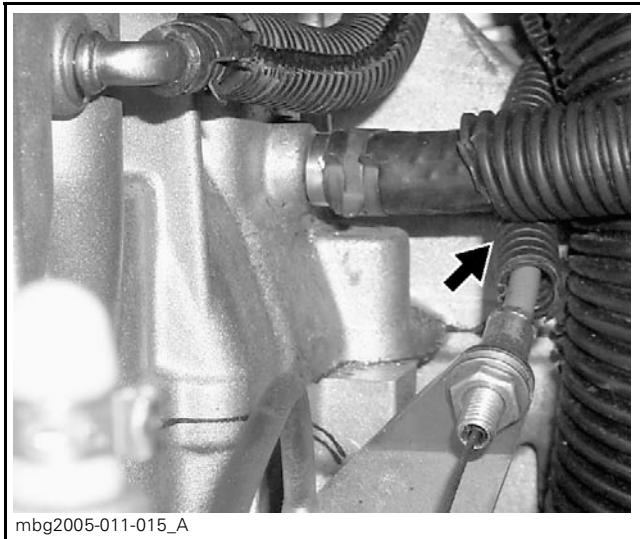


mbg2005-011-011\_A

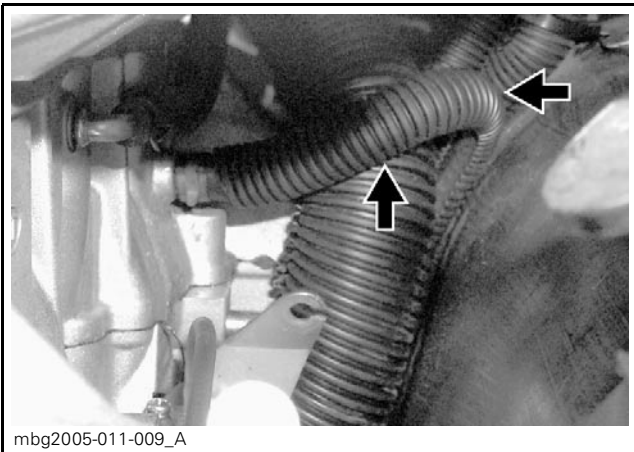
- Apply green Loctite 609 (P/N 413 703 100), to permanently attach the nipple to the crankcase. Refer to the arrows for the exact application location.



- Tap gently on the nipple with a nylon hammer and a 9 mm socket to bring the nipple stopper to the engine crankcase surface.



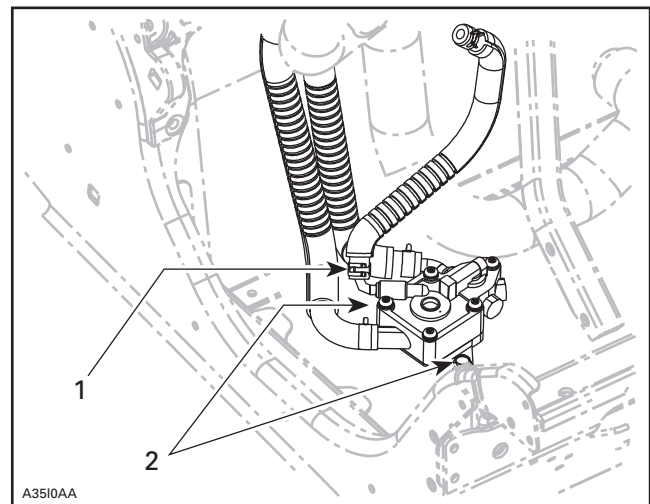
- Reassemble the oil pump cable and oil inlet hose. The fuel pump pulse hose must be over the oil pump cable.



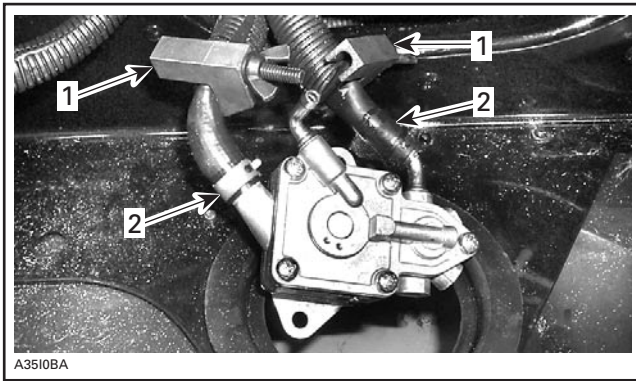
- Replacing and rerouting the fuel pump pulse hose and its protective sheath, make sure it has a slight upward angle.
- Secure the pulse hose to the nipple with a spring clip.

**Fuel pump removal and cleaning:**

- Cut locking tie holding fuel pump inlet and outlet hoses.



- Unplug engine pulse hose from pump [1].
- Remove screws [2] retaining fuel pump to frame.
- Remove fuel pump.



- Install hose pinchers [1 ](P/N 295 000 076) on fuel inlet and outlet hoses [2].
- Unplug inlet and outlet hoses then remove fuel pump.
- The exterior of the pump must be cleaned with general purpose solvent before disassembly.
- Disassemble fuel pump.
- Clean components in general purpose solvent and dry with compressed air.

**⚠ WARNING**

Solvent with low flash point such as gasoline, naphtha, benzol, etc, should not be used as each is flammable and explosive.

- Inspect diaphragm. The pumping area should be free of holes, tears or imperfections. Replace pump if needed.
- Before assembling back in the vehicle, check the fuel pump proper operation. Refer to the Shop Manual for the procedure.
- For fuel pump installation, reverse the removal process.

Use the following tightening torque:

Description	Tightening Torque
Pump retaining screws	5 N•m (44 lbf•in)

**⚠ WARNING**

Pressure test to ensure there is no leak in fuel system.

- For engine installation, reverse the removal process.

**NOTE:** Loctite 243 (blue) could be used on the PTO side engine support retaining bolts during reassembly, if these bolts were not available.



- Install new Spark plugs.

Description	P/N
Spark plug BR8ECS Gapped at 0.8 mm (10 per box)	512 060 029

## B) UPDATE ECU CALIBRATION

### Download ECU calibration update file via BOSSWeb

Always use the latest BUDS version on your shop computer. It is available from BOSSWeb\ComCenter\B.U.D.S. & MPEM\B.U.D.S.

**At time of printing, the latest BUDS version is: G.2.2.7**

- From BOSSWeb, download the ECU calibration update file. It is available from BOSSWeb\ComCenter\B.U.D.S. & MPEM\B.U.D.S.

**ECU calibration update file: 129044.fc**

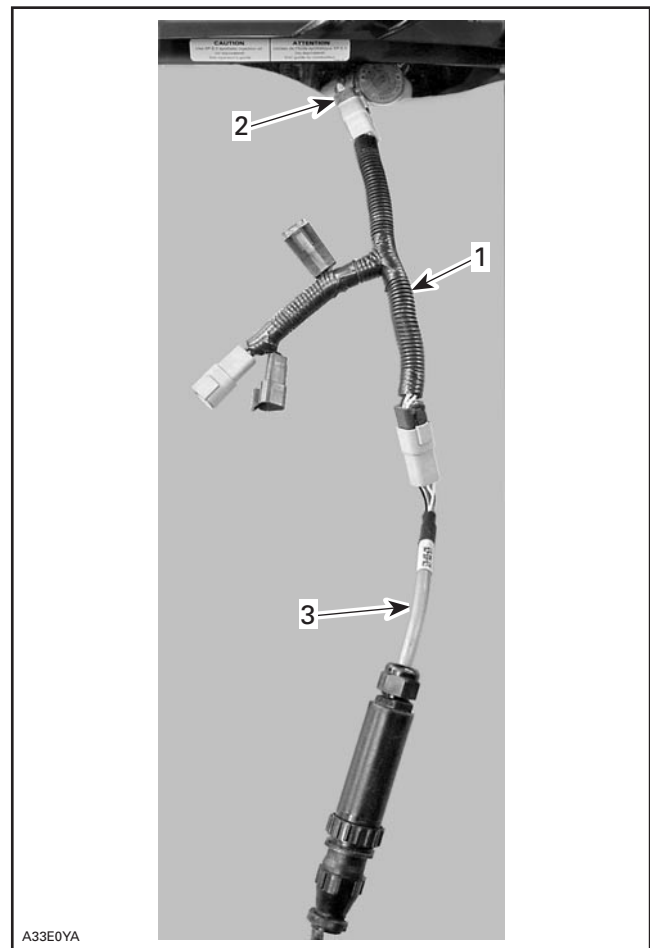
**NOTE:** Remember where you save the file, because you will browse for it. If your internet connection is on another PC, you will want to download the file to a floppy disc, CD ROM or other method of transfer, to update your shop computer.

## Open BUDS on shop computer and read saved file

- With the new ECU calibration file and the latest BUDS version installed in your shop computer, start BUDS.
- Click on the "MPI®" menu (upper left hand side of the BUDS screen) and select "Choose protocol".
- Select KW2000.
- Click on the "MPI" menu again and select "Choose speed".
- Select 115200.
- Click on the "Tools" menu (upper left hand side of the BUDS screen) and select "Update Database...".
- Click on "Add update".
- Locate the previously downloaded ECU calibration update file and click on "Open".
- Click "OK" when the confirmation message appears.
- Click "Close" in the "Update Database" window.
- At this point, it is mandatory to exit BUDS software and completely close the program. Restarting BUDS program will update the software internal files.

## Update vehicles

Before updating the ECU calibration file in a vehicle, it is mandatory to erase any ECU error code or faults. If repairs are needed, carry them out, then erase faults again. Refer to the Shop Manual if needed.



- Connect supply harness [1], (P/N 529 035 869), to diagnostic connector [2] located on right side of vehicle, then connect the diagnostic cable [3] to supply harness.

**CAUTION:** If supply harness (P/N 529 035 869) is not used, it will lead to module failure.

**NOTE:** Failed module related to wrong connection set-up will not be covered by warranty.



- Install the vehicle DESS key.
- In BUDS, click on the "READ DATA" icon.
- Click "YES" in the "Warning, you are about to update the internal ECM software..."

*If the following error message appears: "The MPI protocol software was lost during the transfer",*  
 click on "Cancel" until all error messages disappear,  
 close all open applications except BUDS.  
 —If the error message appears again during the transfer,  
 click on the "MPI" menu and select "Choose speed > 57600".  
 —If the error message continues to appear,  
 reduce the speed again by clicking on the "MPI" menu and select "Choose speed >..."

*If error message does not appear, continue with the following.*

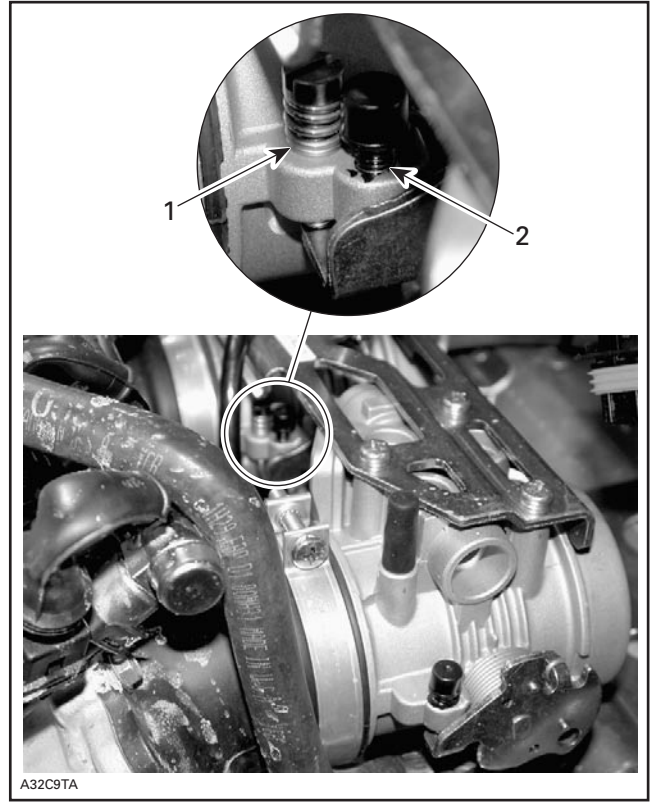
- Wait for the message "Update has been successfully transferred into ECM" and click on "OK".
- Click on the "Module" menu and select "ECM".
- Select "Information".

<b>Check that the part number is:</b>	<b>420 664 617</b>
---------------------------------------	--------------------

- Click on "Close".
- Go to the "Vehicle" page of BUDS.

- Click on "Reset Service Info".
- Click on the WRITE DATA" icon.
- Click "YES" to confirm.
- Remove DESS cap when instructed.

## Throttle Positioning Sensor (TPS) Adjustment



**CAUTION:** Never attempt to adjust the zero position stopper screw [2] (the capped one) or the idle speed adjustment would be impaired. Besides, no adjustment could be performed by the dealer nor the factory to correct the zero position stopper screw. The throttle body would need to be replaced.

- Unscrew idle speed screw [1] until the throttle body plate stop lever rest against its zero position stopper screw [2] (capped screw). If necessary, loosen the throttle cable. Open throttle approximately one quarter then quickly release. Repeat 2 - 3 times to settle throttle plate.
- Push the Reset button in the Setting section of B.U.D.S.
- Click "OK" on the message box.

- Remove the DESS key when the message box says to do so.
- Reinstall the DESS key when the message is gone.
- The throttle opening displayed in B.U.D.S. should be 0.00 (0.1 maximum).
- If TPS is not within the allowed range while resetting the **Closed Throttle**, the ECM will generate a fault code and will not accept the setting.
- Adjust the idle speed screw until B.U.D.S. throttle opening displays the proper TPS value.

<b>TPS value:</b>	<b>4.9 to 5.0°</b>
-------------------	--------------------

- Adjust throttle cable.
- Make sure the wide open throttle is at least 84 %.
- Disconnect the power adapter harness from the diagnostic port on vehicle.

## New Oil Pump Specifications

- There are new oil pump adjustment specifications available; perform oil pump adjustment as per latest revised Service Bulletin.

<b>Oil Pump Service Bulletin number: Revision at time of printing is:</b>	<b>2005-8 REV 1</b>
---	-------------------------

- Start engine and make sure it operates normally through its full RPM range.

Engine maximum rpm:	7850 +/- 50 rpm
---------------------	-----------------

## WARRANTY

Submit a warranty claim using the following information.

<b>Warranty Information</b>	
Campaign Number	2005-0007
Claim Type	Campaign Claim
Flat Rate Time	2.0 hours
Expiration Date	2006-01-28

For claiming procedure, refer to the *Dealer/Distributor Warranty Guide*.

# SAFETY RECALL NOTICE



**Bombardier Recreational Products Inc.**

565 de la Montagne Street  
Valcourt, Québec, Canada J0E 2L0  
T 450.532.2211 F 450.532.5133

[www.brp.com](http://www.brp.com)

Date: February 1, 2005

Dear Ski-Doo® snowmobile Dealer,

**This notice is sent to you in accordance with the requirements of the Consumer Product Safety Act, the Canada Motor Vehicle Safety Act and other applicable laws.**

### **What is the reason for this notice?**

In cooperation with Transport Canada and the U.S. Consumer Product Safety Commission, Bombardier Recreational Products Inc. and BRP US Inc. ("BRP") are conducting a voluntary safety recall of certain 2005 Mach Z® 995 and Summit® 995 Ski-Doo snowmobile models, not equipped with functional electric starter; as specified in the attached Safety Campaign Bulletin.

### **What is the problem?**

An inappropriate clutch ring gear may have been mistakenly installed on a very limited quantity of vehicles. This may cause ring gear fragmentation at high speeds and debris may act as projectiles. This situation can potentially cause serious injuries or even death to rider or bystander. Note that any vehicle equipped with a functional electric starter is not subject to this safety recall.

### **What will BRP do?**

BRP has already sent a Safety Recall letter to all known registered owners of these vehicles. This letter urges that the owners immediately stop using their snowmobiles and contact their authorized BRP Ski-Doo dealer in order to have the vehicle inspected and repaired if needed. Also, BRP posted this notice and attached Safety Campaign Bulletin on its BOSSWeb dealer website ([www.bossweb.com](http://www.bossweb.com)) and on its public web site ([www.ski-doo.com](http://www.ski-doo.com)).

### **What should you do?**

Contact all of your customers who have purchased this product (Note that any vehicle equipped with a functional electric starter is excluded, therefore you can confirm to these customers that they do not need to have their vehicle inspected).

- 1) You must inform them about the foregoing and must request that they immediately stop using their snowmobiles and that they take an appointment to get their vehicle inspected and repaired if needed.
- 2) Do not deliver any involved vehicle before doing the inspection and repair if needed.
- 3) Follow all instructions provided in the attached Safety Campaign Bulletin.

### **If you have questions.**

If you have questions about this notice, please call 1-800-366-6992 (USA) or 1-800-361-9980 (Canada).

We apologize for any inconvenience this may cause you. Thank you for your immediate attention to this matter.

Sincerely,

After Sales Service Department  
Bombardier Recreational Products Inc.

Ski-Doo  
Lynx  
Sea-Doo  
Evinrude  
Johnson  
Rotax  
Bombardier ATV



Please route to:

<input type="checkbox"/> Service	<input type="checkbox"/> Init.
<input type="checkbox"/> Sales	<input type="checkbox"/>
<input type="checkbox"/> Parts	<input type="checkbox"/>



**⚠ WARNING: All involved customers must be notified, all involved units must be corrected as per instructions herein.**

Campaign no.: 2005-0008

Date: **February 1, 2005**

Subject: **Ring Gear Inspection**

No. **2005-9**

YEAR	MODEL	PACKAGE	MODEL NUMBER	SERIAL NUMBER
2005	Mach Z®	Adrenaline™	AB5A	Refer to serial number listing of involved units "Schedule A"
	Summit®	Highmark	CA5A / CA5B	
		Highmark X	CD5A / CD5B / CD5C	

## PROBLEM

An inappropriate clutch ring gear may have been mistakenly installed on a very limited quantity of vehicles. This may cause ring gear fragmentation at high speeds and debris may act as projectiles. This situation can potentially cause serious injuries or even death to rider or bystander. Note that any vehicle equipped with a functional electric starter is not subject to this safety campaign.

## SOLUTION

### Inspection

Inspect by measuring ring gear.

**NOTE:** Any vehicle equipped with a functional electric starter is excluded.

### Replacement

Replace any ring gear that would be inappropriate.

**NOTE:** Do not replace the ring gear of any vehicle equipped with a functional electric starter.

## PARTS REQUIRED

DESCRIPTION	P/N	QTY
Ring Gear (1)	417 222 704	1
Conical Spring Washer 14 mm	250 200 006	1
M8 x 16 Torx† Head Screw	250 000 240	6

† Torx is a trademark of Camcar-TeXtron.

(1) We are confident that we have an adequate supply of replacement ring gears available immediately, however, supplies are indeed limited. To ensure adequate supply for everyone, you must first verify the affected units, then, phone a PAC analyst to order the replacement ring gears. You will be asked to supply the Vehicle Identification Number for each ring gear ordered, so be sure to have this information available.

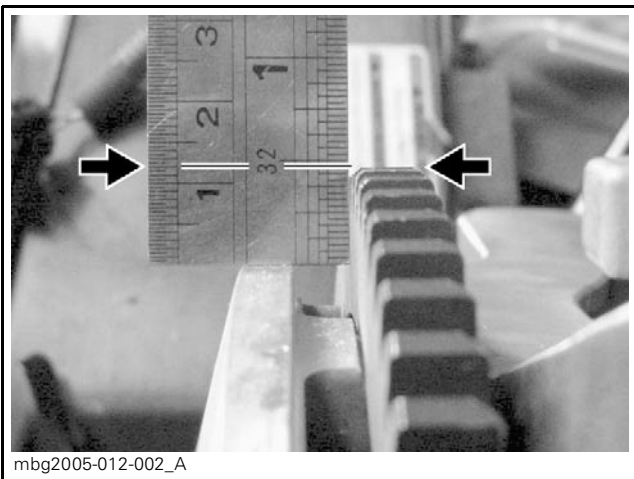
## PROCEDURE



mbg2005-012-03

- Measure ring gear height from fixed half to tip of teeth.

### Appropriate Ring Gear



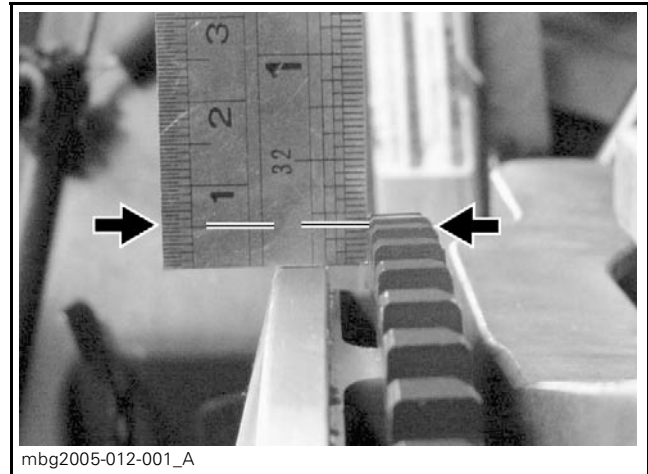
mbg2005-012-002\_A

Appropriate Ring Gear  
Measurement:

Approx. 12.0 mm  
(0.5 in)

- Do not replace an appropriate ring gear.
- Do a warranty claim for "Inspection Only".

### Inappropriate Ring Gear



mbg2005-012-001\_A

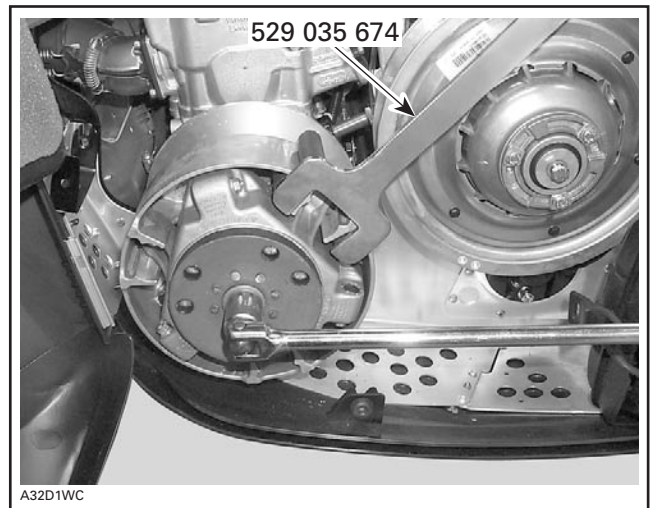
Inappropriate Ring Gear  
Measurement:

Approx. 5.0 mms  
(0.211 in)

- An inappropriate ring gear needs replacement.
- Do a warranty claim for "Inspection" and "Replacement".

### Ring Gear Replacement

- Remove the drive belt.



A32D1WC

- Remove the drive pulley retaining bolt, using the drive pulley holder (P/N 529 035 674).



- Remove the drive pulley from the engine using the screw puller (P/N 529 022 400) along with the pulley holder.



- Secure the pulley holder in a vise to hold the drive pulley.



- To break the Loctite, use a propane heating torch.
- Apply the blue tip of the flame on the screw for approximately 2 minutes.

**CAUTION:** Not following the procedure will lead to broken screws.

- Make sure to point the flame toward the exterior, to avoid heating up and damaging the aluminum central part of the drive pulley.

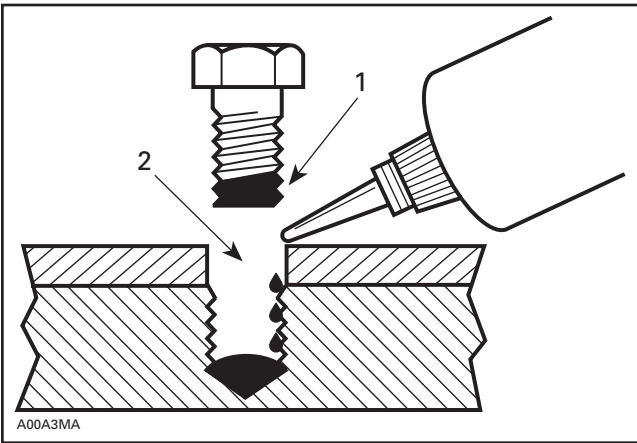
**⚠ WARNING**

Ring gear and other surfaces may be hot.

- Unscrew pulley screws with a high quality Torx bit.

**CAUTION:** Using a damaged or worn Torx bit will damage the screws making them impossible to remove.

- Let components cool down before completing the next steps.
- Clean pulley hole threads with pulley flange cleaner (P/N 413 711 809).
- Blow compressed air in hole threads to properly dry out surfaces.
- Secure ring gear on inner half with new ring gear screws (P/N 250 000 240).



- Apply Loctite<sup>†</sup> 271 (red) (P/N 293 800 005) on screw threads [1], on hole threads and at the bottom of holes [2].

**⚠ WARNING**  
 Failing to use Loctite 271 on screw threads may cause damage that could lead to injury or death.

- Torque screws in a criss-cross sequence to 53 N•m (39 lbf•ft).
- Clean inner conical part of the drive pulley with pulley flange cleaner.
- Clean the conical part of the crankshaft extension with pulley flange cleaner.
- Install drive pulley on the crankshaft extension.
- Install a new spring washer, with its concave side toward the drive pulley.
- Install the drive pulley bolt. Torque as recommended.

Drive Pulley Bolt Torque Specification	120 N•m (88 lbf•ft)
--	---------------------

- Install the belt.
- Raise and block the rear of the vehicle and support it with a mechanical stand.

**⚠ WARNING**  
 Ensure that the track is free of particles which could be thrown out while track is rotating. Keep hands, tools, feet and clothing clear of track. Ensure nobody is standing near the vehicle.

- Start engine.
- Accelerate the track to a low speed; maximum 30 km/h (20 MPH).
- Repeat 5 times.
- Torque again to recommended spec.

Drive Pulley Bolt Torque Specification	120 N•m (88 lbf•ft)
--	---------------------

## WARRANTY

### Inspection Only

If ONLY an inspection was performed, submit a warranty claim using the following information:

Ring Gear Inspection Only	
Campaign Number	2005-0008
Claim Type	Campaign Claim
Flat Rate Time	0.3 hour
Expiration Date	2006-02-02

Click only in the Inspection box while completing your claim on BOSSWeb.

Inspection	X
------------	---

- This will pay the “Inspection” flat rate.

<sup>†</sup> Loctite is a registered trademark of Loctite Corporation.

---

## Inspection and Replacement

If inspection and replacement were performed, submit a warranty claim using the following information:

Ring Gear Inspection and Replacement	
Campaign Number	2005-0008
Claim Type	Campaign Claim
Flat Rate Time	0.8 hour
Expiration Date	2006-02-02
Mandatory Parts to be Returned	417 222 704

Click in the "Inspection" box and "Repair" box while completing your claim on BOSSWeb.

Inspection	X
------------	---

- This will pay the "Inspection" flat rate.

Repair	X
--------	---

- This will pay the "Repair" flat rate and parts.

For claiming procedure, refer to the Dealer/Distributor Warranty Guide.

---

# SERIAL NUMBER LISTING OF INVOLVED UNITS

## Model: AB5A

2BPSAB5A05V000006	2BPSAB5A15V000774	2BPSAB5A25V001223	2BPSAB5A45V000526	2BPSAB5A55V000602
2BPSAB5A05V000264	2BPSAB5A15V000788	2BPSAB5A25V001237	2BPSAB5A45V000543	2BPSAB5A55V000616
2BPSAB5A05V000538	2BPSAB5A15V000791	2BPSAB5A25V001240	2BPSAB5A45V000557	2BPSAB5A55V000647
2BPSAB5A05V000541	2BPSAB5A15V000824	2BPSAB5A25V001254	2BPSAB5A45V000560	2BPSAB5A55V000650
2BPSAB5A05V000555	2BPSAB5A15V000841	2BPSAB5A25V001268	2BPSAB5A45V000574	2BPSAB5A55V000664
2BPSAB5A05V000569	2BPSAB5A15V000855	2BPSAB5A25V001271	2BPSAB5A45V000588	2BPSAB5A55V000776
2BPSAB5A05V000572	2BPSAB5A15V000869	2BPSAB5A25V001285	2BPSAB5A45V000591	2BPSAB5A55V000826
2BPSAB5A05V000586	2BPSAB5A15V000872	2BPSAB5A25V001299	2BPSAB5A45V000607	2BPSAB5A55V000843
2BPSAB5A05V000605	2BPSAB5A15V000886	2BPSAB5A25V001304	2BPSAB5A45V000610	2BPSAB5A55V000857
2BPSAB5A05V000619	2BPSAB5A15V000905	2BPSAB5A25V001318	2BPSAB5A45V000624	2BPSAB5A55V000860
2BPSAB5A05V000622	2BPSAB5A15V000919	2BPSAB5A25V001321	2BPSAB5A45V000638	2BPSAB5A55V000874
2BPSAB5A05V000636	2BPSAB5A15V000922	2BPSAB5A25V001335	2BPSAB5A45V000641	2BPSAB5A55V000888
2BPSAB5A05V000667	2BPSAB5A15V000936	2BPSAB5A25V001349	2BPSAB5A45V000655	2BPSAB5A55V000891
2BPSAB5A05V000782	2BPSAB5A15V001178	2BPSAB5A25V001352	2BPSAB5A45V000669	2BPSAB5A55V000907
2BPSAB5A05V000796	2BPSAB5A15V001195	2BPSAB5A35V000128	2BPSAB5A45V000784	2BPSAB5A55V000910
2BPSAB5A05V000815	2BPSAB5A15V001200	2BPSAB5A35V000131	2BPSAB5A45V000803	2BPSAB5A55V000924
2BPSAB5A05V000832	2BPSAB5A15V001214	2BPSAB5A35V000453	2BPSAB5A45V000817	2BPSAB5A55V000938
2BPSAB5A05V000846	2BPSAB5A15V001228	2BPSAB5A35V000503	2BPSAB5A45V000820	2BPSAB5A55V000941
2BPSAB5A05V000863	2BPSAB5A15V001231	2BPSAB5A35V000548	2BPSAB5A45V000848	2BPSAB5A55V001197
2BPSAB5A05V000877	2BPSAB5A15V001245	2BPSAB5A35V000565	2BPSAB5A45V000851	2BPSAB5A55V001202
2BPSAB5A05V000880	2BPSAB5A15V001259	2BPSAB5A35V000579	2BPSAB5A45V000865	2BPSAB5A55V001216
2BPSAB5A05V000913	2BPSAB5A15V001262	2BPSAB5A35V000596	2BPSAB5A45V000879	2BPSAB5A55V001233
2BPSAB5A05V000958	2BPSAB5A15V001276	2BPSAB5A35V000601	2BPSAB5A45V000882	2BPSAB5A55V001247
2BPSAB5A05V001074	2BPSAB5A15V001293	2BPSAB5A35V000615	2BPSAB5A45V000901	2BPSAB5A55V001250
2BPSAB5A05V001107	2BPSAB5A15V001309	2BPSAB5A35V000632	2BPSAB5A45V000915	2BPSAB5A55V001264
2BPSAB5A05V001169	2BPSAB5A15V001312	2BPSAB5A35V000646	2BPSAB5A45V000929	2BPSAB5A55V001278
2BPSAB5A05V001172	2BPSAB5A15V001326	2BPSAB5A35V000663	2BPSAB5A45V000932	2BPSAB5A55V001281
2BPSAB5A05V001205	2BPSAB5A15V001343	2BPSAB5A35V000680	2BPSAB5A45V000946	2BPSAB5A55V001295
2BPSAB5A05V001219	2BPSAB5A25V000007	2BPSAB5A35V000789	2BPSAB5A45V001000	2BPSAB5A55V001300
2BPSAB5A05V001222	2BPSAB5A25V000105	2BPSAB5A35V000792	2BPSAB5A45V001028	2BPSAB5A55V001314
2BPSAB5A05V001236	2BPSAB5A25V000122	2BPSAB5A35V000808	2BPSAB5A45V001174	2BPSAB5A55V001328
2BPSAB5A05V001253	2BPSAB5A25V000265	2BPSAB5A35V000811	2BPSAB5A45V001191	2BPSAB5A55V001331
2BPSAB5A05V001267	2BPSAB5A25V000315	2BPSAB5A35V000839	2BPSAB5A45V001207	2BPSAB5A55V001345
2BPSAB5A05V001270	2BPSAB5A25V000539	2BPSAB5A35V000842	2BPSAB5A45V001210	2BPSAB5A65V000009
2BPSAB5A05V001284	2BPSAB5A25V000542	2BPSAB5A35V000873	2BPSAB5A45V001224	2BPSAB5A65V000124
2BPSAB5A05V001298	2BPSAB5A25V000556	2BPSAB5A35V000887	2BPSAB5A45V001238	2BPSAB5A65V000172
2BPSAB5A05V001303	2BPSAB5A25V000573	2BPSAB5A35V000890	2BPSAB5A45V001241	2BPSAB5A65V000320
2BPSAB5A05V001317	2BPSAB5A25V000587	2BPSAB5A35V000906	2BPSAB5A45V001255	2BPSAB5A65V000480
2BPSAB5A05V001320	2BPSAB5A25V000590	2BPSAB5A35V000923	2BPSAB5A45V001269	2BPSAB5A65V000527
2BPSAB5A05V001334	2BPSAB5A25V000606	2BPSAB5A35V000940	2BPSAB5A45V001272	2BPSAB5A65V000530
2BPSAB5A05V001348	2BPSAB5A25V000640	2BPSAB5A35V000985	2BPSAB5A45V001286	2BPSAB5A65V000544
2BPSAB5A05V001351	2BPSAB5A25V000797	2BPSAB5A35V001098	2BPSAB5A45V001305	2BPSAB5A65V000558
2BPSAB5A15V000001	2BPSAB5A25V000802	2BPSAB5A35V001182	2BPSAB5A45V001319	2BPSAB5A65V000561
2BPSAB5A15V000127	2BPSAB5A25V000816	2BPSAB5A35V001196	2BPSAB5A45V001322	2BPSAB5A65V000575
2BPSAB5A15V000130	2BPSAB5A25V000833	2BPSAB5A35V001201	2BPSAB5A45V001336	2BPSAB5A65V000592
2BPSAB5A15V000242	2BPSAB5A25V000847	2BPSAB5A35V001215	2BPSAB5A45V001353	2BPSAB5A65V000608
2BPSAB5A15V000256	2BPSAB5A25V000850	2BPSAB5A35V001229	2BPSAB5A55V000003	2BPSAB5A65V000611
2BPSAB5A15V000290	2BPSAB5A25V000864	2BPSAB5A35V001232	2BPSAB5A55V000051	2BPSAB5A65V000639
2BPSAB5A15V000306	2BPSAB5A25V000878	2BPSAB5A35V001246	2BPSAB5A55V000129	2BPSAB5A65V000656
2BPSAB5A15V000533	2BPSAB5A25V000881	2BPSAB5A35V001263	2BPSAB5A55V000132	2BPSAB5A65V000771
2BPSAB5A15V000547	2BPSAB5A25V000895	2BPSAB5A35V001277	2BPSAB5A55V000275	2BPSAB5A65V000785
2BPSAB5A15V000564	2BPSAB5A25V000900	2BPSAB5A35V001280	2BPSAB5A55V000373	2BPSAB5A65V000818
2BPSAB5A15V000578	2BPSAB5A25V000914	2BPSAB5A35V001294	2BPSAB5A55V000468	2BPSAB5A65V000835
2BPSAB5A15V000581	2BPSAB5A25V000928	2BPSAB5A35V001313	2BPSAB5A55V000518	2BPSAB5A65V000849
2BPSAB5A15V000595	2BPSAB5A25V000931	2BPSAB5A35V001327	2BPSAB5A55V000535	2BPSAB5A65V000866
2BPSAB5A15V000600	2BPSAB5A25V000945	2BPSAB5A35V001330	2BPSAB5A55V000549	2BPSAB5A65V000883
2BPSAB5A15V000628	2BPSAB5A25V000959	2BPSAB5A35V001344	2BPSAB5A55V000552	2BPSAB5A65V000897
2BPSAB5A15V000631	2BPSAB5A25V001044	2BPSAB5A45V000008	2BPSAB5A55V000566	2BPSAB5A65V000902
2BPSAB5A15V000645	2BPSAB5A25V001187	2BPSAB5A45V000123	2BPSAB5A55V000583	2BPSAB5A65V000933
2BPSAB5A15V000662	2BPSAB5A25V001206	2BPSAB5A45V000476	2BPSAB5A55V000597	2BPSAB5A65V000947

**Model: AB5A (cont'd)**

2BPSAB5A65V000950	2BPSAB5A75V000889	2BPSAB5A85V000819	2BPSAB5A95V000618	2BPSAB5AX5V000529
2BPSAB5A65V001094	2BPSAB5A75V000908	2BPSAB5A85V000822	2BPSAB5A95V000635	2BPSAB5AX5V000532
2BPSAB5A65V001192	2BPSAB5A75V000911	2BPSAB5A85V000853	2BPSAB5A95V000649	2BPSAB5AX5V000563
2BPSAB5A65V001208	2BPSAB5A75V000925	2BPSAB5A85V000867	2BPSAB5A95V000652	2BPSAB5AX5V000577
2BPSAB5A65V001211	2BPSAB5A75V000942	2BPSAB5A85V000884	2BPSAB5A95V000666	2BPSAB5AX5V000580
2BPSAB5A65V001225	2BPSAB5A75V001167	2BPSAB5A85V000898	2BPSAB5A95V000778	2BPSAB5AX5V000594
2BPSAB5A65V001239	2BPSAB5A75V001170	2BPSAB5A85V000903	2BPSAB5A95V000781	2BPSAB5AX5V000613
2BPSAB5A65V001242	2BPSAB5A75V001198	2BPSAB5A85V000917	2BPSAB5A95V000795	2BPSAB5AX5V000627
2BPSAB5A65V001256	2BPSAB5A75V001203	2BPSAB5A85V000934	2BPSAB5A95V000800	2BPSAB5AX5V000630
2BPSAB5A65V001273	2BPSAB5A75V001217	2BPSAB5A85V000948	2BPSAB5A95V000814	2BPSAB5AX5V000644
2BPSAB5A65V001287	2BPSAB5A75V001220	2BPSAB5A85V001193	2BPSAB5A95V000828	2BPSAB5AX5V000661
2BPSAB5A65V001290	2BPSAB5A75V001234	2BPSAB5A85V001212	2BPSAB5A95V000831	2BPSAB5AX5V000756
2BPSAB5A65V001306	2BPSAB5A75V001248	2BPSAB5A85V001226	2BPSAB5A95V000859	2BPSAB5AX5V000787
2BPSAB5A65V001323	2BPSAB5A75V001251	2BPSAB5A85V001243	2BPSAB5A95V000862	2BPSAB5AX5V000790
2BPSAB5A65V001337	2BPSAB5A75V001265	2BPSAB5A85V001257	2BPSAB5A95V000876	2BPSAB5AX5V000823
2BPSAB5A65V001340	2BPSAB5A75V001279	2BPSAB5A85V001260	2BPSAB5A95V000893	2BPSAB5AX5V000854
2BPSAB5A65V001354	2BPSAB5A75V001282	2BPSAB5A85V001274	2BPSAB5A95V000909	2BPSAB5AX5V000871
2BPSAB5A75V000357	2BPSAB5A75V001296	2BPSAB5A85V001288	2BPSAB5A95V000912	2BPSAB5AX5V000885
2BPSAB5A75V000469	2BPSAB5A75V001301	2BPSAB5A85V001291	2BPSAB5A95V001168	2BPSAB5AX5V000899
2BPSAB5A75V000553	2BPSAB5A75V001315	2BPSAB5A85V001307	2BPSAB5A95V001171	2BPSAB5AX5V000904
2BPSAB5A75V000567	2BPSAB5A75V001329	2BPSAB5A85V001310	2BPSAB5A95V001199	2BPSAB5AX5V000997
2BPSAB5A75V000570	2BPSAB5A75V001346	2BPSAB5A85V001324	2BPSAB5A95V001204	2BPSAB5AX5V001020
2BPSAB5A75V000584	2BPSAB5A85V000125	2BPSAB5A85V001338	2BPSAB5A95V001218	2BPSAB5AX5V001194
2BPSAB5A75V000598	2BPSAB5A85V000304	2BPSAB5A85V001341	2BPSAB5A95V001221	2BPSAB5AX5V001213
2BPSAB5A75V000603	2BPSAB5A85V000478	2BPSAB5A85V001355	2BPSAB5A95V001235	2BPSAB5AX5V001227
2BPSAB5A75V000617	2BPSAB5A85V000528	2BPSAB5A95V000005	2BPSAB5A95V001249	2BPSAB5AX5V001230
2BPSAB5A75V000620	2BPSAB5A85V000531	2BPSAB5A95V000098	2BPSAB5A95V001252	2BPSAB5AX5V001244
2BPSAB5A75V000648	2BPSAB5A85V000545	2BPSAB5A95V000358	2BPSAB5A95V001266	2BPSAB5AX5V001258
2BPSAB5A75V000651	2BPSAB5A85V000559	2BPSAB5A95V000487	2BPSAB5A95V001283	2BPSAB5AX5V001261
2BPSAB5A75V000701	2BPSAB5A85V000562	2BPSAB5A95V000537	2BPSAB5A95V001297	2BPSAB5AX5V001275
2BPSAB5A75V000777	2BPSAB5A85V000576	2BPSAB5A95V000540	2BPSAB5A95V001302	2BPSAB5AX5V001289
2BPSAB5A75V000813	2BPSAB5A85V000593	2BPSAB5A95V000554	2BPSAB5A95V001316	2BPSAB5AX5V001292
2BPSAB5A75V000830	2BPSAB5A85V000612	2BPSAB5A95V000568	2BPSAB5A95V001333	2BPSAB5AX5V001308
2BPSAB5A75V000844	2BPSAB5A85V000643	2BPSAB5A95V000571	2BPSAB5A95V001347	2BPSAB5AX5V001311
2BPSAB5A75V000858	2BPSAB5A85V000657	2BPSAB5A95V000585	2BPSAB5A95V001350	2BPSAB5AX5V001325
2BPSAB5A75V000861	2BPSAB5A85V000786	2BPSAB5A95V000599	2BPSAB5AX5V000126	2BPSAB5AX5V001339
2BPSAB5A75V000875	2BPSAB5A85V000805	2BPSAB5A95V000604	2BPSAB5AX5V000515	2BPSAB5AX5V001342

**Model: CA5A**

2BPSCA5A05V000009	2BPSCA5A05V000270	2BPSCA5A05V000530	2BPSCA5A15V000181	2BPSCA5A15V000441
2BPSCA5A05V000012	2BPSCA5A05V000284	2BPSCA5A05V000544	2BPSCA5A15V000195	2BPSCA5A15V000469
2BPSCA5A05V000026	2BPSCA5A05V000298	2BPSCA5A05V000558	2BPSCA5A15V000200	2BPSCA5A15V000472
2BPSCA5A05V000043	2BPSCA5A05V000303	2BPSCA5A05V000561	2BPSCA5A15V000214	2BPSCA5A15V000486
2BPSCA5A05V000057	2BPSCA5A05V000317	2BPSCA5A05V000575	2BPSCA5A15V000228	2BPSCA5A15V000505
2BPSCA5A05V000060	2BPSCA5A05V000320	2BPSCA5A05V000589	2BPSCA5A15V000231	2BPSCA5A15V000519
2BPSCA5A05V000074	2BPSCA5A05V000334	2BPSCA5A05V000592	2BPSCA5A15V000245	2BPSCA5A15V000522
2BPSCA5A05V000088	2BPSCA5A05V000348	2BPSCA5A05V000608	2BPSCA5A15V000259	2BPSCA5A15V000553
2BPSCA5A05V000091	2BPSCA5A05V000351	2BPSCA5A05V000611	2BPSCA5A15V000262	2BPSCA5A15V000567
2BPSCA5A05V000107	2BPSCA5A05V000365	2BPSCA5A15V000004	2BPSCA5A15V000276	2BPSCA5A15V000570
2BPSCA5A05V000110	2BPSCA5A05V000379	2BPSCA5A15V000018	2BPSCA5A15V000293	2BPSCA5A15V000584
2BPSCA5A05V000124	2BPSCA5A05V000382	2BPSCA5A15V000021	2BPSCA5A15V000309	2BPSCA5A15V000598
2BPSCA5A05V000138	2BPSCA5A05V000396	2BPSCA5A15V000035	2BPSCA5A15V000312	2BPSCA5A15V000603
2BPSCA5A05V000141	2BPSCA5A05V000401	2BPSCA5A15V000049	2BPSCA5A15V000326	2BPSCA5A15V000617
2BPSCA5A05V000155	2BPSCA5A05V000415	2BPSCA5A15V000052	2BPSCA5A15V000343	2BPSCA5A25V000013
2BPSCA5A05V000169	2BPSCA5A05V000429	2BPSCA5A15V000066	2BPSCA5A15V000357	2BPSCA5A25V000027
2BPSCA5A05V000172	2BPSCA5A05V000432	2BPSCA5A15V000083	2BPSCA5A15V000360	2BPSCA5A25V000030
2BPSCA5A05V000186	2BPSCA5A05V000446	2BPSCA5A15V000102	2BPSCA5A15V000374	2BPSCA5A25V000044
2BPSCA5A05V000205	2BPSCA5A05V000463	2BPSCA5A15V000116	2BPSCA5A15V000388	2BPSCA5A25V000058
2BPSCA5A05V000219	2BPSCA5A05V000477	2BPSCA5A15V000133	2BPSCA5A15V000391	2BPSCA5A25V000061
2BPSCA5A05V000222	2BPSCA5A05V000480	2BPSCA5A15V000147	2BPSCA5A15V000407	2BPSCA5A25V000075
2BPSCA5A05V000236	2BPSCA5A05V000494	2BPSCA5A15V000150	2BPSCA5A15V000410	2BPSCA5A25V000089
2BPSCA5A05V000253	2BPSCA5A05V000513	2BPSCA5A15V000164	2BPSCA5A15V000424	2BPSCA5A25V000092
2BPSCA5A05V000267	2BPSCA5A05V000527	2BPSCA5A15V000178	2BPSCA5A15V000438	2BPSCA5A25V000108





**Model: CA5A (cont'd)**

2BPSCA5A85V000131	2BPSCA5A85V000498	2BPSCA5A95V000221	2BPSCA5A95V000591	2BPSCA5AX5V000325
2BPSCA5A85V000145	2BPSCA5A85V000503	2BPSCA5A95V000235	2BPSCA5A95V000607	2BPSCA5AX5V000339
2BPSCA5A85V000159	2BPSCA5A85V000517	2BPSCA5A95V000249	2BPSCA5A95V000610	2BPSCA5AX5V000342
2BPSCA5A85V000162	2BPSCA5A85V000520	2BPSCA5A95V000252	2BPSCA5AX5V000003	2BPSCA5AX5V000356
2BPSCA5A85V000176	2BPSCA5A85V000534	2BPSCA5A95V000266	2BPSCA5AX5V000017	2BPSCA5AX5V000373
2BPSCA5A85V000193	2BPSCA5A85V000548	2BPSCA5A95V000283	2BPSCA5AX5V000020	2BPSCA5AX5V000387
2BPSCA5A85V000209	2BPSCA5A85V000551	2BPSCA5A95V000297	2BPSCA5AX5V000034	2BPSCA5AX5V000390
2BPSCA5A85V000212	2BPSCA5A85V000565	2BPSCA5A95V000302	2BPSCA5AX5V000048	2BPSCA5AX5V000406
2BPSCA5A85V000226	2BPSCA5A85V000579	2BPSCA5A95V000316	2BPSCA5AX5V000051	2BPSCA5AX5V000423
2BPSCA5A85V000243	2BPSCA5A85V000582	2BPSCA5A95V000333	2BPSCA5AX5V000065	2BPSCA5AX5V000437
2BPSCA5A85V000257	2BPSCA5A85V000596	2BPSCA5A95V000350	2BPSCA5AX5V000079	2BPSCA5AX5V000440
2BPSCA5A85V000274	2BPSCA5A85V000601	2BPSCA5A95V000364	2BPSCA5AX5V000082	2BPSCA5AX5V000454
2BPSCA5A85V000288	2BPSCA5A85V000615	2BPSCA5A95V000378	2BPSCA5AX5V000096	2BPSCA5AX5V000468
2BPSCA5A85V000291	2BPSCA5A95V000008	2BPSCA5A95V000381	2BPSCA5AX5V000101	2BPSCA5AX5V000471
2BPSCA5A85V000307	2BPSCA5A95V000011	2BPSCA5A95V000395	2BPSCA5AX5V000129	2BPSCA5AX5V000485
2BPSCA5A85V000310	2BPSCA5A95V000025	2BPSCA5A95V000400	2BPSCA5AX5V000132	2BPSCA5AX5V000499
2BPSCA5A85V000324	2BPSCA5A95V000039	2BPSCA5A95V000414	2BPSCA5AX5V000146	2BPSCA5AX5V000504
2BPSCA5A85V000338	2BPSCA5A95V000042	2BPSCA5A95V000428	2BPSCA5AX5V000163	2BPSCA5AX5V000518
2BPSCA5A85V000341	2BPSCA5A95V000056	2BPSCA5A95V000431	2BPSCA5AX5V000177	2BPSCA5AX5V000521
2BPSCA5A85V000355	2BPSCA5A95V000073	2BPSCA5A95V000445	2BPSCA5AX5V000180	2BPSCA5AX5V000535
2BPSCA5A85V000369	2BPSCA5A95V000087	2BPSCA5A95V000459	2BPSCA5AX5V000213	2BPSCA5AX5V000549
2BPSCA5A85V000372	2BPSCA5A95V000090	2BPSCA5A95V000462	2BPSCA5AX5V000227	2BPSCA5AX5V000552
2BPSCA5A85V000386	2BPSCA5A95V000137	2BPSCA5A95V000476	2BPSCA5AX5V000230	2BPSCA5AX5V000566
2BPSCA5A85V000405	2BPSCA5A95V000140	2BPSCA5A95V000493	2BPSCA5AX5V000244	2BPSCA5AX5V000583
2BPSCA5A85V000419	2BPSCA5A95V000154	2BPSCA5A95V000509	2BPSCA5AX5V000258	2BPSCA5AX5V000597
2BPSCA5A85V000422	2BPSCA5A95V000168	2BPSCA5A95V000526	2BPSCA5AX5V000261	2BPSCA5AX5V000602
2BPSCA5A85V000436	2BPSCA5A95V000171	2BPSCA5A95V000543	2BPSCA5AX5V000275	2BPSCA5AX5V000616
2BPSCA5A85V000453	2BPSCA5A95V000185	2BPSCA5A95V000557	2BPSCA5AX5V000289	
2BPSCA5A85V000467	2BPSCA5A95V000199	2BPSCA5A95V000560	2BPSCA5AX5V000292	
2BPSCA5A85V000470	2BPSCA5A95V000204	2BPSCA5A95V000574	2BPSCA5AX5V000308	
2BPSCA5A85V000484	2BPSCA5A95V000218	2BPSCA5A95V000588	2BPSCA5AX5V000311	

**Model: CA5B**

2BPSCA5B05V000004	2BPSCA5B15V000111	2BPSCA5B25V000229	2BPSCA5B45V000104	2BPSCA5B55V000225
2BPSCA5B05V000018	2BPSCA5B15V000125	2BPSCA5B25V000232	2BPSCA5B45V000118	2BPSCA5B65V000007
2BPSCA5B05V000021	2BPSCA5B15V000139	2BPSCA5B35V000014	2BPSCA5B45V000121	2BPSCA5B65V000010
2BPSCA5B05V000035	2BPSCA5B15V000142	2BPSCA5B35V000028	2BPSCA5B45V000135	2BPSCA5B65V000024
2BPSCA5B05V000049	2BPSCA5B15V000156	2BPSCA5B35V000031	2BPSCA5B45V000149	2BPSCA5B65V000038
2BPSCA5B05V000052	2BPSCA5B15V000173	2BPSCA5B35V000045	2BPSCA5B45V000152	2BPSCA5B65V000041
2BPSCA5B05V000066	2BPSCA5B15V000187	2BPSCA5B35V000059	2BPSCA5B45V000166	2BPSCA5B65V000055
2BPSCA5B05V000083	2BPSCA5B15V000190	2BPSCA5B35V000062	2BPSCA5B45V000183	2BPSCA5B65V000069
2BPSCA5B05V000097	2BPSCA5B15V000206	2BPSCA5B35V000076	2BPSCA5B45V000197	2BPSCA5B65V000072
2BPSCA5B05V000102	2BPSCA5B15V000223	2BPSCA5B35V000093	2BPSCA5B45V000202	2BPSCA5B65V000086
2BPSCA5B05V000133	2BPSCA5B25V000005	2BPSCA5B35V000109	2BPSCA5B45V000216	2BPSCA5B65V000105
2BPSCA5B05V000147	2BPSCA5B25V000019	2BPSCA5B35V000112	2BPSCA5B45V000233	2BPSCA5B65V000119
2BPSCA5B05V000150	2BPSCA5B25V000022	2BPSCA5B35V000126	2BPSCA5B55V000001	2BPSCA5B65V000122
2BPSCA5B05V000164	2BPSCA5B25V000036	2BPSCA5B35V000143	2BPSCA5B55V000015	2BPSCA5B65V000136
2BPSCA5B05V000178	2BPSCA5B25V000053	2BPSCA5B35V000157	2BPSCA5B55V000029	2BPSCA5B65V000153
2BPSCA5B05V000181	2BPSCA5B25V000067	2BPSCA5B35V000160	2BPSCA5B55V000032	2BPSCA5B65V000167
2BPSCA5B05V000195	2BPSCA5B25V000070	2BPSCA5B35V000174	2BPSCA5B55V000046	2BPSCA5B65V000170
2BPSCA5B05V000200	2BPSCA5B25V000084	2BPSCA5B35V000188	2BPSCA5B55V000063	2BPSCA5B65V000184
2BPSCA5B05V000214	2BPSCA5B25V000098	2BPSCA5B35V000191	2BPSCA5B55V000077	2BPSCA5B65V000198
2BPSCA5B05V000228	2BPSCA5B25V000103	2BPSCA5B35V000207	2BPSCA5B55V000080	2BPSCA5B65V000203
2BPSCA5B05V000231	2BPSCA5B25V000117	2BPSCA5B35V000210	2BPSCA5B55V000094	2BPSCA5B65V000217
2BPSCA5B15V000013	2BPSCA5B25V000120	2BPSCA5B35V000224	2BPSCA5B55V000113	2BPSCA5B65V000220
2BPSCA5B15V000027	2BPSCA5B25V000134	2BPSCA5B45V000006	2BPSCA5B55V000127	2BPSCA5B65V000234
2BPSCA5B15V000030	2BPSCA5B25V000148	2BPSCA5B45V000023	2BPSCA5B55V000130	2BPSCA5B75V000002
2BPSCA5B15V000044	2BPSCA5B25V000151	2BPSCA5B45V000037	2BPSCA5B55V000144	2BPSCA5B75V000016
2BPSCA5B15V000058	2BPSCA5B25V000165	2BPSCA5B45V000040	2BPSCA5B55V000158	2BPSCA5B75V000033
2BPSCA5B15V000061	2BPSCA5B25V000179	2BPSCA5B45V000054	2BPSCA5B55V000161	2BPSCA5B75V000047
2BPSCA5B15V000075	2BPSCA5B25V000182	2BPSCA5B45V000068	2BPSCA5B55V000175	2BPSCA5B75V000050
2BPSCA5B15V000089	2BPSCA5B25V000196	2BPSCA5B45V000071	2BPSCA5B55V000189	2BPSCA5B75V000064
2BPSCA5B15V000092	2BPSCA5B25V000201	2BPSCA5B45V000085	2BPSCA5B55V000208	2BPSCA5B75V000078
2BPSCA5B15V000108	2BPSCA5B25V000215	2BPSCA5B45V000099	2BPSCA5B55V000211	2BPSCA5B75V000081

**Model: CA5B (cont'd)**

2BPSCA5B75V000095	2BPSCA5B85V000042	2BPSCA5B85V000235	2BPSCA5B95V000146	2BPSCA5BX5V000107
2BPSCA5B75V000100	2BPSCA5B85V000056	2BPSCA5B95V000003	2BPSCA5B95V000163	2BPSCA5BX5V000110
2BPSCA5B75V000114	2BPSCA5B85V000073	2BPSCA5B95V000017	2BPSCA5B95V000180	2BPSCA5BX5V000124
2BPSCA5B75V000128	2BPSCA5B85V000090	2BPSCA5B95V000020	2BPSCA5B95V000194	2BPSCA5BX5V000138
2BPSCA5B75V000131	2BPSCA5B85V000123	2BPSCA5B95V000034	2BPSCA5B95V000213	2BPSCA5BX5V000141
2BPSCA5B75V000145	2BPSCA5B85V000137	2BPSCA5B95V000048	2BPSCA5B95V000227	2BPSCA5BX5V000155
2BPSCA5B75V000159	2BPSCA5B85V000140	2BPSCA5B95V000051	2BPSCA5B95V000230	2BPSCA5BX5V000169
2BPSCA5B75V000176	2BPSCA5B85V000154	2BPSCA5B95V000065	2BPSCA5BX5V000009	2BPSCA5BX5V000172
2BPSCA5B75V000193	2BPSCA5B85V000168	2BPSCA5B95V000079	2BPSCA5BX5V000026	2BPSCA5BX5V000186
2BPSCA5B75V000212	2BPSCA5B85V000171	2BPSCA5B95V000082	2BPSCA5BX5V000043	2BPSCA5BX5V000205
2BPSCA5B75V000226	2BPSCA5B85V000185	2BPSCA5B95V000096	2BPSCA5BX5V000057	2BPSCA5BX5V000219
2BPSCA5B85V000008	2BPSCA5B85V000199	2BPSCA5B95V000101	2BPSCA5BX5V000060	2BPSCA5BX5V000222
2BPSCA5B85V000011	2BPSCA5B85V000204	2BPSCA5B95V000115	2BPSCA5BX5V000074	
2BPSCA5B85V000025	2BPSCA5B85V000218	2BPSCA5B95V000129	2BPSCA5BX5V000088	
2BPSCA5B85V000039	2BPSCA5B85V000221	2BPSCA5B95V000132	2BPSCA5BX5V000091	

**Model: CD5A**

2BPSCD5A05V000013	2BPSCD5A15V000036	2BPSCD5A25V000143	2BPSCD5A35V000197	2BPSCD5A45V000256
2BPSCD5A05V000027	2BPSCD5A15V000053	2BPSCD5A25V000157	2BPSCD5A35V000202	2BPSCD5A45V000273
2BPSCD5A05V000030	2BPSCD5A15V000067	2BPSCD5A25V000160	2BPSCD5A35V000216	2BPSCD5A45V000287
2BPSCD5A05V000044	2BPSCD5A15V000084	2BPSCD5A25V000174	2BPSCD5A35V000233	2BPSCD5A45V000290
2BPSCD5A05V000058	2BPSCD5A15V000098	2BPSCD5A25V000188	2BPSCD5A35V000250	2BPSCD5A45V000306
2BPSCD5A05V000061	2BPSCD5A15V000103	2BPSCD5A25V000191	2BPSCD5A35V000264	2BPSCD5A45V000323
2BPSCD5A05V000075	2BPSCD5A15V000120	2BPSCD5A25V000207	2BPSCD5A35V000278	2BPSCD5A45V000337
2BPSCD5A05V000089	2BPSCD5A15V000134	2BPSCD5A25V000210	2BPSCD5A35V000281	2BPSCD5A45V000340
2BPSCD5A05V000092	2BPSCD5A15V000148	2BPSCD5A25V000224	2BPSCD5A35V000295	2BPSCD5A45V000354
2BPSCD5A05V000108	2BPSCD5A15V000151	2BPSCD5A25V000238	2BPSCD5A35V000300	2BPSCD5A45V000368
2BPSCD5A05V000111	2BPSCD5A15V000165	2BPSCD5A25V000241	2BPSCD5A35V000314	2BPSCD5A45V000371
2BPSCD5A05V000125	2BPSCD5A15V000179	2BPSCD5A25V000255	2BPSCD5A35V000328	2BPSCD5A45V000385
2BPSCD5A05V000139	2BPSCD5A15V000182	2BPSCD5A25V000269	2BPSCD5A35V000331	2BPSCD5A45V000399
2BPSCD5A05V000142	2BPSCD5A15V000196	2BPSCD5A25V000272	2BPSCD5A35V000345	2BPSCD5A45V000404
2BPSCD5A05V000156	2BPSCD5A15V000201	2BPSCD5A25V000286	2BPSCD5A35V000359	2BPSCD5A45V000418
2BPSCD5A05V000173	2BPSCD5A15V000215	2BPSCD5A25V000305	2BPSCD5A35V000362	2BPSCD5A45V000421
2BPSCD5A05V000187	2BPSCD5A15V000229	2BPSCD5A25V000319	2BPSCD5A35V000376	2BPSCD5A45V000435
2BPSCD5A05V000190	2BPSCD5A15V000232	2BPSCD5A25V000322	2BPSCD5A35V000393	2BPSCD5A45V000449
2BPSCD5A05V000206	2BPSCD5A15V000246	2BPSCD5A25V000336	2BPSCD5A35V000409	2BPSCD5A45V000452
2BPSCD5A05V000223	2BPSCD5A15V000263	2BPSCD5A25V000353	2BPSCD5A35V000412	2BPSCD5A45V000466
2BPSCD5A05V000237	2BPSCD5A15V000277	2BPSCD5A25V000367	2BPSCD5A35V000426	2BPSCD5A55V000007
2BPSCD5A05V000240	2BPSCD5A15V000280	2BPSCD5A25V000370	2BPSCD5A35V000443	2BPSCD5A55V000010
2BPSCD5A05V000254	2BPSCD5A15V000294	2BPSCD5A25V000384	2BPSCD5A35V000457	2BPSCD5A55V000024
2BPSCD5A05V000268	2BPSCD5A15V000313	2BPSCD5A25V000398	2BPSCD5A35V000460	2BPSCD5A55V000038
2BPSCD5A05V000271	2BPSCD5A15V000327	2BPSCD5A25V000403	2BPSCD5A35V000474	2BPSCD5A55V000041
2BPSCD5A05V000285	2BPSCD5A15V000330	2BPSCD5A25V000420	2BPSCD5A45V000001	2BPSCD5A55V000055
2BPSCD5A05V000299	2BPSCD5A15V000344	2BPSCD5A25V000434	2BPSCD5A45V000015	2BPSCD5A55V000069
2BPSCD5A05V000304	2BPSCD5A15V000358	2BPSCD5A25V000448	2BPSCD5A45V000029	2BPSCD5A55V000072
2BPSCD5A05V000318	2BPSCD5A15V000361	2BPSCD5A25V000451	2BPSCD5A45V000032	2BPSCD5A55V000086
2BPSCD5A05V000321	2BPSCD5A15V000375	2BPSCD5A25V000465	2BPSCD5A45V000046	2BPSCD5A55V000105
2BPSCD5A05V000335	2BPSCD5A15V000389	2BPSCD5A25V000479	2BPSCD5A45V000063	2BPSCD5A55V000119
2BPSCD5A05V000349	2BPSCD5A15V000392	2BPSCD5A35V000006	2BPSCD5A45V000077	2BPSCD5A55V000122
2BPSCD5A05V000352	2BPSCD5A15V000408	2BPSCD5A35V000023	2BPSCD5A45V000080	2BPSCD5A55V000136
2BPSCD5A05V000366	2BPSCD5A15V000411	2BPSCD5A35V000037	2BPSCD5A45V000094	2BPSCD5A55V000153
2BPSCD5A05V000383	2BPSCD5A15V000425	2BPSCD5A35V000040	2BPSCD5A45V000127	2BPSCD5A55V000167
2BPSCD5A05V000397	2BPSCD5A15V000442	2BPSCD5A35V000054	2BPSCD5A45V000130	2BPSCD5A55V000170
2BPSCD5A05V000402	2BPSCD5A15V000456	2BPSCD5A35V000068	2BPSCD5A45V000144	2BPSCD5A55V000184
2BPSCD5A05V000416	2BPSCD5A15V000473	2BPSCD5A35V000071	2BPSCD5A45V000158	2BPSCD5A55V000198
2BPSCD5A05V000433	2BPSCD5A25V000028	2BPSCD5A35V000085	2BPSCD5A45V000161	2BPSCD5A55V000203
2BPSCD5A05V000447	2BPSCD5A25V000031	2BPSCD5A35V000099	2BPSCD5A45V000175	2BPSCD5A55V000217
2BPSCD5A05V000450	2BPSCD5A25V000045	2BPSCD5A35V000104	2BPSCD5A45V000189	2BPSCD5A55V000220
2BPSCD5A05V000464	2BPSCD5A25V000059	2BPSCD5A35V000121	2BPSCD5A45V000192	2BPSCD5A55V000234
2BPSCD5A05V000478	2BPSCD5A25V000076	2BPSCD5A35V000135	2BPSCD5A45V000208	2BPSCD5A55V000248
2BPSCD5A05V000481	2BPSCD5A25V000093	2BPSCD5A35V000149	2BPSCD5A45V000211	2BPSCD5A55V000251
2BPSCD5A15V000005	2BPSCD5A25V000109	2BPSCD5A35V000152	2BPSCD5A45V000225	2BPSCD5A55V000265
2BPSCD5A15V000019	2BPSCD5A25V000112	2BPSCD5A35V000166	2BPSCD5A45V000239	2BPSCD5A55V000279
2BPSCD5A15V000022	2BPSCD5A25V000126	2BPSCD5A35V000183	2BPSCD5A45V000242	2BPSCD5A55V000282

**Model: CD5A (cont'd)**

2BPSCD5A55V000296	2BPSCD5A65V000324	2BPSCD5A75V000381	2BPSCD5A85V000423	2BPSCD5A95V000446
2BPSCD5A55V000301	2BPSCD5A65V000338	2BPSCD5A75V000395	2BPSCD5A85V000437	2BPSCD5A95V000463
2BPSCD5A55V000315	2BPSCD5A65V000341	2BPSCD5A75V000400	2BPSCD5A85V000440	2BPSCD5A95V000477
2BPSCD5A55V000329	2BPSCD5A65V000355	2BPSCD5A75V000414	2BPSCD5A85V000454	2BPSCD5A95V000480
2BPSCD5A55V000332	2BPSCD5A65V000369	2BPSCD5A75V000428	2BPSCD5A85V000468	2BPSCD5AX5V000004
2BPSCD5A55V000346	2BPSCD5A65V000372	2BPSCD5A75V000431	2BPSCD5A85V000471	2BPSCD5AX5V000018
2BPSCD5A55V000363	2BPSCD5A65V000386	2BPSCD5A75V000445	2BPSCD5A95V000009	2BPSCD5AX5V000021
2BPSCD5A55V000377	2BPSCD5A65V000419	2BPSCD5A75V000459	2BPSCD5A95V000012	2BPSCD5AX5V000035
2BPSCD5A55V000380	2BPSCD5A65V000422	2BPSCD5A75V000462	2BPSCD5A95V000026	2BPSCD5AX5V000049
2BPSCD5A55V000394	2BPSCD5A65V000436	2BPSCD5A75V000476	2BPSCD5A95V000043	2BPSCD5AX5V000052
2BPSCD5A55V000413	2BPSCD5A65V000453	2BPSCD5A85V000003	2BPSCD5A95V000057	2BPSCD5AX5V000066
2BPSCD5A55V000427	2BPSCD5A65V000467	2BPSCD5A85V000017	2BPSCD5A95V000060	2BPSCD5AX5V000083
2BPSCD5A55V000430	2BPSCD5A65V000470	2BPSCD5A85V000020	2BPSCD5A95V000074	2BPSCD5AX5V000097
2BPSCD5A55V000444	2BPSCD5A75V000008	2BPSCD5A85V000034	2BPSCD5A95V000088	2BPSCD5AX5V000102
2BPSCD5A55V000458	2BPSCD5A75V000011	2BPSCD5A85V000048	2BPSCD5A95V000091	2BPSCD5AX5V000133
2BPSCD5A55V000461	2BPSCD5A75V000025	2BPSCD5A85V000051	2BPSCD5A95V000107	2BPSCD5AX5V000147
2BPSCD5A55V000475	2BPSCD5A75V000039	2BPSCD5A85V000065	2BPSCD5A95V000110	2BPSCD5AX5V000150
2BPSCD5A65V000002	2BPSCD5A75V000042	2BPSCD5A85V000079	2BPSCD5A95V000124	2BPSCD5AX5V000164
2BPSCD5A65V000016	2BPSCD5A75V000056	2BPSCD5A85V000082	2BPSCD5A95V000138	2BPSCD5AX5V000178
2BPSCD5A65V000033	2BPSCD5A75V000087	2BPSCD5A85V000096	2BPSCD5A95V000141	2BPSCD5AX5V000181
2BPSCD5A65V000047	2BPSCD5A75V000090	2BPSCD5A85V000101	2BPSCD5A95V000169	2BPSCD5AX5V000195
2BPSCD5A65V000050	2BPSCD5A75V000106	2BPSCD5A85V000115	2BPSCD5A95V000172	2BPSCD5AX5V000214
2BPSCD5A65V000064	2BPSCD5A75V000123	2BPSCD5A85V000132	2BPSCD5A95V000186	2BPSCD5AX5V000228
2BPSCD5A65V000078	2BPSCD5A75V000137	2BPSCD5A85V000146	2BPSCD5A95V000205	2BPSCD5AX5V000231
2BPSCD5A65V000081	2BPSCD5A75V000140	2BPSCD5A85V000163	2BPSCD5A95V000219	2BPSCD5AX5V000245
2BPSCD5A65V000095	2BPSCD5A75V000154	2BPSCD5A85V000177	2BPSCD5A95V000222	2BPSCD5AX5V000259
2BPSCD5A65V000100	2BPSCD5A75V000168	2BPSCD5A85V000180	2BPSCD5A95V000236	2BPSCD5AX5V000262
2BPSCD5A65V000114	2BPSCD5A75V000171	2BPSCD5A85V000194	2BPSCD5A95V000253	2BPSCD5AX5V000276
2BPSCD5A65V000128	2BPSCD5A75V000185	2BPSCD5A85V000213	2BPSCD5A95V000267	2BPSCD5AX5V000293
2BPSCD5A65V000131	2BPSCD5A75V000199	2BPSCD5A85V000227	2BPSCD5A95V000270	2BPSCD5AX5V000309
2BPSCD5A65V000145	2BPSCD5A75V000204	2BPSCD5A85V000230	2BPSCD5A95V000284	2BPSCD5AX5V000326
2BPSCD5A65V000159	2BPSCD5A75V000218	2BPSCD5A85V000244	2BPSCD5A95V000298	2BPSCD5AX5V000343
2BPSCD5A65V000162	2BPSCD5A75V000221	2BPSCD5A85V000258	2BPSCD5A95V000303	2BPSCD5AX5V000357
2BPSCD5A65V000176	2BPSCD5A75V000235	2BPSCD5A85V000261	2BPSCD5A95V000317	2BPSCD5AX5V000360
2BPSCD5A65V000193	2BPSCD5A75V000249	2BPSCD5A85V000275	2BPSCD5A95V000320	2BPSCD5AX5V000374
2BPSCD5A65V000209	2BPSCD5A75V000252	2BPSCD5A85V000289	2BPSCD5A95V000334	2BPSCD5AX5V000388
2BPSCD5A65V000212	2BPSCD5A75V000266	2BPSCD5A85V000292	2BPSCD5A95V000348	2BPSCD5AX5V000391
2BPSCD5A65V000226	2BPSCD5A75V000283	2BPSCD5A85V000308	2BPSCD5A95V000351	2BPSCD5AX5V000407
2BPSCD5A65V000243	2BPSCD5A75V000297	2BPSCD5A85V000311	2BPSCD5A95V000365	2BPSCD5AX5V000410
2BPSCD5A65V000257	2BPSCD5A75V000302	2BPSCD5A85V000325	2BPSCD5A95V000379	2BPSCD5AX5V000424
2BPSCD5A65V000260	2BPSCD5A75V000316	2BPSCD5A85V000339	2BPSCD5A95V000382	2BPSCD5AX5V000438
2BPSCD5A65V000274	2BPSCD5A75V000333	2BPSCD5A85V000342	2BPSCD5A95V000396	2BPSCD5AX5V000441
2BPSCD5A65V000288	2BPSCD5A75V000347	2BPSCD5A85V000356	2BPSCD5A95V000401	2BPSCD5AX5V000455
2BPSCD5A65V000291	2BPSCD5A75V000350	2BPSCD5A85V000373	2BPSCD5A95V000415	
2BPSCD5A65V000307	2BPSCD5A75V000364	2BPSCD5A85V000387	2BPSCD5A95V000429	
2BPSCD5A65V000310	2BPSCD5A75V000378	2BPSCD5A85V000390	2BPSCD5A95V000432	

**Model: CD5B**

2BPSCD5B05V000005	2BPSCD5B05V000182	2BPSCD5B15V000076	2BPSCD5B15V000272	2BPSCD5B25V000166
2BPSCD5B05V000019	2BPSCD5B05V000196	2BPSCD5B15V000093	2BPSCD5B15V000286	2BPSCD5B25V000183
2BPSCD5B05V000022	2BPSCD5B05V000201	2BPSCD5B15V000112	2BPSCD5B25V000006	2BPSCD5B25V000197
2BPSCD5B05V000036	2BPSCD5B05V000215	2BPSCD5B15V000126	2BPSCD5B25V000023	2BPSCD5B25V000202
2BPSCD5B05V000053	2BPSCD5B05V000229	2BPSCD5B15V000157	2BPSCD5B25V000037	2BPSCD5B25V000216
2BPSCD5B05V000067	2BPSCD5B05V000232	2BPSCD5B15V000160	2BPSCD5B25V000040	2BPSCD5B25V000233
2BPSCD5B05V000070	2BPSCD5B05V000246	2BPSCD5B15V000174	2BPSCD5B25V000054	2BPSCD5B25V000247
2BPSCD5B05V000084	2BPSCD5B05V000263	2BPSCD5B15V000188	2BPSCD5B25V000068	2BPSCD5B25V000250
2BPSCD5B05V000098	2BPSCD5B05V000277	2BPSCD5B15V000191	2BPSCD5B25V000071	2BPSCD5B25V000264
2BPSCD5B05V000117	2BPSCD5B05V000280	2BPSCD5B15V000207	2BPSCD5B25V000085	2BPSCD5B25V000278
2BPSCD5B05V000120	2BPSCD5B15V000014	2BPSCD5B15V000210	2BPSCD5B25V000099	2BPSCD5B25V000281
2BPSCD5B05V000134	2BPSCD5B15V000028	2BPSCD5B15V000224	2BPSCD5B25V000104	2BPSCD5B35V000001
2BPSCD5B05V000148	2BPSCD5B15V000031	2BPSCD5B15V000238	2BPSCD5B25V000118	2BPSCD5B35V000015
2BPSCD5B05V000151	2BPSCD5B15V000045	2BPSCD5B15V000241	2BPSCD5B25V000121	2BPSCD5B35V000029
2BPSCD5B05V000165	2BPSCD5B15V000059	2BPSCD5B15V000255	2BPSCD5B25V000149	2BPSCD5B35V000032
2BPSCD5B05V000179	2BPSCD5B15V000062	2BPSCD5B15V000269	2BPSCD5B25V000152	2BPSCD5B35V000046

**Model: CD5B (cont'd)**

2BPSCD5B35V000063	2BPSCD5B45V000234	2BPSCD5B65V000087	2BPSCD5B75V000258	2BPSCD5B95V000116
2BPSCD5B35V000077	2BPSCD5B45V000248	2BPSCD5B65V000090	2BPSCD5B75V000261	2BPSCD5B95V000133
2BPSCD5B35V000094	2BPSCD5B45V000251	2BPSCD5B65V000123	2BPSCD5B75V000275	2BPSCD5B95V000150
2BPSCD5B35V000127	2BPSCD5B45V000265	2BPSCD5B65V000154	2BPSCD5B75V000289	2BPSCD5B95V000164
2BPSCD5B35V000130	2BPSCD5B45V000279	2BPSCD5B65V000168	2BPSCD5B75V000292	2BPSCD5B95V000178
2BPSCD5B35V000144	2BPSCD5B45V000282	2BPSCD5B65V000171	2BPSCD5B85V000009	2BPSCD5B95V000181
2BPSCD5B35V000158	2BPSCD5B55V000002	2BPSCD5B65V000185	2BPSCD5B85V000012	2BPSCD5B95V000195
2BPSCD5B35V000161	2BPSCD5B55V000016	2BPSCD5B65V000199	2BPSCD5B85V000026	2BPSCD5B95V000200
2BPSCD5B35V000175	2BPSCD5B55V000033	2BPSCD5B65V000204	2BPSCD5B85V000043	2BPSCD5B95V000214
2BPSCD5B35V000189	2BPSCD5B55V000047	2BPSCD5B65V000218	2BPSCD5B85V000057	2BPSCD5B95V000231
2BPSCD5B35V000192	2BPSCD5B55V000064	2BPSCD5B65V000221	2BPSCD5B85V000060	2BPSCD5B95V000245
2BPSCD5B35V000208	2BPSCD5B55V000078	2BPSCD5B65V000235	2BPSCD5B85V000074	2BPSCD5B95V000259
2BPSCD5B35V000211	2BPSCD5B55V000081	2BPSCD5B65V000249	2BPSCD5B85V000088	2BPSCD5B95V000262
2BPSCD5B35V000225	2BPSCD5B55V000095	2BPSCD5B65V000252	2BPSCD5B85V000091	2BPSCD5B95V000276
2BPSCD5B35V000239	2BPSCD5B55V000100	2BPSCD5B65V000266	2BPSCD5B85V000107	2BPSCD5B95V000293
2BPSCD5B35V000242	2BPSCD5B55V000114	2BPSCD5B65V000283	2BPSCD5B85V000110	2BPSCD5BX5V000013
2BPSCD5B35V000256	2BPSCD5B55V000128	2BPSCD5B75V000003	2BPSCD5B85V000124	2BPSCD5BX5V000027
2BPSCD5B35V000287	2BPSCD5B55V000131	2BPSCD5B75V000017	2BPSCD5B85V000141	2BPSCD5BX5V000030
2BPSCD5B35V000290	2BPSCD5B55V000145	2BPSCD5B75V000020	2BPSCD5B85V000155	2BPSCD5BX5V000044
2BPSCD5B45V000007	2BPSCD5B55V000159	2BPSCD5B75V000034	2BPSCD5B85V000169	2BPSCD5BX5V000058
2BPSCD5B45V000024	2BPSCD5B55V000162	2BPSCD5B75V000048	2BPSCD5B85V000172	2BPSCD5BX5V000061
2BPSCD5B45V000038	2BPSCD5B55V000176	2BPSCD5B75V000051	2BPSCD5B85V000186	2BPSCD5BX5V000075
2BPSCD5B45V000041	2BPSCD5B55V000193	2BPSCD5B75V000065	2BPSCD5B85V000205	2BPSCD5BX5V000089
2BPSCD5B45V000055	2BPSCD5B55V000209	2BPSCD5B75V000079	2BPSCD5B85V000219	2BPSCD5BX5V000092
2BPSCD5B45V000069	2BPSCD5B55V000212	2BPSCD5B75V000082	2BPSCD5B85V000222	2BPSCD5BX5V000108
2BPSCD5B45V000072	2BPSCD5B55V000226	2BPSCD5B75V000096	2BPSCD5B85V000236	2BPSCD5BX5V000111
2BPSCD5B45V000086	2BPSCD5B55V000243	2BPSCD5B75V000101	2BPSCD5B85V000253	2BPSCD5BX5V000125
2BPSCD5B45V000105	2BPSCD5B55V000257	2BPSCD5B75V000115	2BPSCD5B85V000267	2BPSCD5BX5V000139
2BPSCD5B45V000119	2BPSCD5B55V000260	2BPSCD5B75V000129	2BPSCD5B85V000284	2BPSCD5BX5V000156
2BPSCD5B45V000122	2BPSCD5B55V000274	2BPSCD5B75V000132	2BPSCD5B95V000004	2BPSCD5BX5V000173
2BPSCD5B45V000136	2BPSCD5B55V000288	2BPSCD5B75V000146	2BPSCD5B95V000018	2BPSCD5BX5V000187
2BPSCD5B45V000153	2BPSCD5B55V000291	2BPSCD5B75V000163	2BPSCD5B95V000021	2BPSCD5BX5V000190
2BPSCD5B45V000167	2BPSCD5B65V000008	2BPSCD5B75V000177	2BPSCD5B95V000035	2BPSCD5BX5V000206
2BPSCD5B45V000170	2BPSCD5B65V000011	2BPSCD5B75V000180	2BPSCD5B95V000049	2BPSCD5BX5V000223
2BPSCD5B45V000184	2BPSCD5B65V000025	2BPSCD5B75V000194	2BPSCD5B95V000052	2BPSCD5BX5V000237
2BPSCD5B45V000198	2BPSCD5B65V000039	2BPSCD5B75V000213	2BPSCD5B95V000066	2BPSCD5BX5V000240
2BPSCD5B45V000203	2BPSCD5B65V000042	2BPSCD5B75V000227	2BPSCD5B95V000083	2BPSCD5BX5V000254
2BPSCD5B45V000217	2BPSCD5B65V000056	2BPSCD5B75V000230	2BPSCD5B95V000097	2BPSCD5BX5V000268
2BPSCD5B45V000220	2BPSCD5B65V000073	2BPSCD5B75V000244	2BPSCD5B95V000102	2BPSCD5BX5V000285

**Model: CD5C**

2BPSCD5C05V000014	2BPSCD5C15V000121	2BPSCD5C35V000119	2BPSCD5C55V000090	2BPSCD5C75V000060
2BPSCD5C05V000028	2BPSCD5C25V000001	2BPSCD5C35V000122	2BPSCD5C55V000106	2BPSCD5C75V000074
2BPSCD5C05V000031	2BPSCD5C25V000015	2BPSCD5C45V000002	2BPSCD5C55V000123	2BPSCD5C75V000088
2BPSCD5C05V000045	2BPSCD5C25V000029	2BPSCD5C45V000016	2BPSCD5C65V000003	2BPSCD5C75V000091
2BPSCD5C05V000059	2BPSCD5C25V000032	2BPSCD5C45V000033	2BPSCD5C65V000017	2BPSCD5C75V000107
2BPSCD5C05V000062	2BPSCD5C25V000046	2BPSCD5C45V000047	2BPSCD5C65V000020	2BPSCD5C75V000110
2BPSCD5C05V000076	2BPSCD5C25V000063	2BPSCD5C45V000064	2BPSCD5C65V000034	2BPSCD5C75V000124
2BPSCD5C05V000093	2BPSCD5C25V000077	2BPSCD5C45V000078	2BPSCD5C65V000048	2BPSCD5C85V000004
2BPSCD5C05V000109	2BPSCD5C25V000080	2BPSCD5C45V000081	2BPSCD5C65V000051	2BPSCD5C85V000018
2BPSCD5C05V000112	2BPSCD5C25V000094	2BPSCD5C45V000095	2BPSCD5C65V000065	2BPSCD5C85V000021
2BPSCD5C05V000126	2BPSCD5C25V000113	2BPSCD5C45V000100	2BPSCD5C65V000079	2BPSCD5C85V000035
2BPSCD5C15V000006	2BPSCD5C25V000127	2BPSCD5C45V000114	2BPSCD5C65V000082	2BPSCD5C85V000049
2BPSCD5C15V000023	2BPSCD5C25V000130	2BPSCD5C45V000128	2BPSCD5C65V000096	2BPSCD5C85V000052
2BPSCD5C15V000037	2BPSCD5C35V000007	2BPSCD5C45V000131	2BPSCD5C65V000101	2BPSCD5C85V000066
2BPSCD5C15V000040	2BPSCD5C35V000010	2BPSCD5C55V000008	2BPSCD5C65V000115	2BPSCD5C85V000083
2BPSCD5C15V000054	2BPSCD5C35V000038	2BPSCD5C55V000011	2BPSCD5C65V000129	2BPSCD5C85V000097
2BPSCD5C15V000068	2BPSCD5C35V000041	2BPSCD5C55V000025	2BPSCD5C65V000132	2BPSCD5C85V000102
2BPSCD5C15V000071	2BPSCD5C35V000055	2BPSCD5C55V000039	2BPSCD5C75V000009	2BPSCD5C85V000116
2BPSCD5C15V000085	2BPSCD5C35V000069	2BPSCD5C55V000042	2BPSCD5C75V000012	2BPSCD5C85V000133
2BPSCD5C15V000099	2BPSCD5C35V000072	2BPSCD5C55V000056	2BPSCD5C75V000026	2BPSCD5C95V000013
2BPSCD5C15V000104	2BPSCD5C35V000086	2BPSCD5C55V000073	2BPSCD5C75V000043	2BPSCD5C95V000027
2BPSCD5C15V000118	2BPSCD5C35V000105	2BPSCD5C55V000087	2BPSCD5C75V000057	2BPSCD5C95V000030

---

**Model: CD5C (cont'd)**

2BPSCD5C95V000044  
2BPSCD5C95V000058  
2BPSCD5C95V000061  
2BPSCD5C95V000075  
2BPSCD5C95V000089  
2BPSCD5C95V000092  
2BPSCD5C95V000108  
2BPSCD5C95V000111  
2BPSCD5C95V000125  
2BPSCD5CX5V000005  
2BPSCD5CX5V000019  
2BPSCD5CX5V000022  
2BPSCD5CX5V000036  
2BPSCD5CX5V000053  
2BPSCD5CX5V000067  
2BPSCD5CX5V000070  
2BPSCD5CX5V000084  
2BPSCD5CX5V000103  
2BPSCD5CX5V000117  
2BPSCD5CX5V000120  
2BPSCD5CX5V000134

# SAFETY RECALL NOTICE



**Bombardier Recreational Products Inc.**

565 de la Montagne Street  
Valcourt, Québec, Canada J0E 2L0  
T 450.532.2211 F 450.532.5133

www.brp.com

Date: February 1, 2005

Dear Ski-Doo® Owner,

**This notice is sent to you in accordance with the requirements of the Consumer Product Safety Act, the Canada Motor Vehicle Safety Act and other applicable laws.**

#### **What is the reason for this notice?**

In cooperation with Transport Canada and the U.S. Consumer Product Safety Commission, Bombardier Recreational Products Inc. and BRP US Inc. ("BRP") are conducting a voluntary safety recall of certain 2005 Mach Z® 995 and Summit® 995 Ski-Doo snowmobile models, not equipped with functional electric starter. **Our records indicate that you are the owner of a potentially affected vehicle.**

#### **What is the potential problem?**

An inappropriate clutch ring gear may have been mistakenly installed on some vehicles. This may cause ring gear fragmentation at high speeds and debris may act as projectiles. This situation can potentially cause serious injuries or even death to rider or bystander.

#### **What should you do?**

Immediately stop using your snowmobile and call an authorized BRP dealer and make an appointment to have your vehicle inspected. *This work will be performed at no charge to you.* The dealer will inspect the vehicle and if necessary repair it. (Note that vehicles equipped with a functional electric starter are not subject to this safety recall, therefore, do not need to be inspected.)

**To contact your nearest authorized Ski-Doo dealer, visit [www.ski-doo.com](http://www.ski-doo.com), or contact us by phone at the numbers below.**

#### **What to do if you feel this notice is an error?**

This notice was mailed to you according to the most current information we have available. If you no longer own this vehicle or some information in this notice is incorrect, please contact BRP at your earliest convenience.

#### **If you have questions.**

If you have questions about this notice, please call:

**In the US and Canada: 1 (888) 864-2002, 8:00 to 18:00 eastern time.**

We apologize for any inconvenience this may cause you. Thank you for your immediate attention to this matter.

Sincerely, After-Sales Service Department  
Bombardier Recreational Products Inc.

Ski-Doo  
Lynx  
Sea-Doo  
Evinrude  
Johnson  
Rotax  
Bombardier ATV

Please route to:

	Init.
<input type="checkbox"/> Service	<input type="checkbox"/>
<input type="checkbox"/> Sales	<input type="checkbox"/>
<input type="checkbox"/> Parts	<input type="checkbox"/>



**CAUTION: All involved customers must be notified, all involved units must be corrected as per instructions herein.**

Campaign no.: 2005-0009  
 Date: **August 26, 2005** Subject: **Summit 1000 SDI Updates:** No. **2005-10**  
**REVISION 1**

- A) ECU Calibration Update**
- B) Fuel Pick-up Update**
- C) Fuel Pump Update**
- D) E-RAVE Cable Update**
- E) Pyramidal Frame Bolt Update**

YEAR	MODEL	PACKAGE	MODEL NUMBER	SERIAL NUMBER
2005	Summit 1000 SDI (RT)	All	All	All, except vehicle listed at the end of this bulletin.

Note: - This bulletin supersedes Warranty Bulletin 2005-8  
 - Parts will be available August 26, 2005

Parts to order for subjects: A, B, C, D and E

SUBJECT	DESCRIPTION	P/N	Qty
A	None	None	—
B	Fuel Pick-up Kit	590 177 100	1
C	Electric Fuel Pump Kit	590 177 000	1
D	Locking Tie	293 750 001	4
D	Cable Kit	420 997 023	1
E	Nylon Patch Bolt	250 000 253	6

## A) ECU CALIBRATION UPDATE

### Download the latest B.U.D.S. version via BOSSWeb

Always use the latest BUDS version on your shop computer. It is available

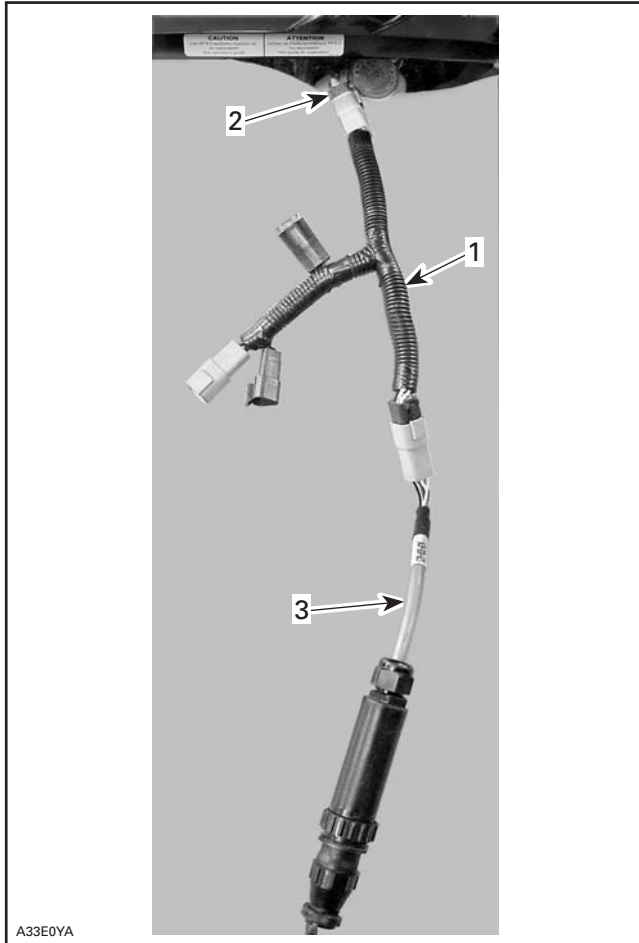
from BOSSWeb\ComCenter\B.U.D.S. & MPEM\B.U.D.S.

<b>Latest B.U.D.S. version at time of printing:</b>	<b>P.2.3.3</b>
---	----------------

**NOTE:** You may also refer to the instruction sheet that came with your VCK kit (P/N 259 035 981).

## Open B.U.D.S. on shop computer and update vehicles

Before updating the ECU calibration file in a vehicle, it is mandatory to erase any ECU error code or faults. If repairs are needed, carry them out, then erase faults again. Refer to the Shop Manual if needed.



- Connect supply harness [1], (P/N 529 035 869), to diagnostic connector [2] located on right side of vehicle, then connect the diagnostic cable [3] to supply harness.

**CAUTION:** If supply harness (P/N 529 035 869) is not used, it will lead to module failure.

**NOTE:** Failed module related to wrong connection set-up will not be covered by warranty.



- Install the vehicle DESS key.
- With the latest B.U.D.S. version installed in your shop computer, start B.U.D.S.
- Click on the "MPI®" menu (upper left hand side of the B.U.D.S. screen) and select "Choose protocol".
- Select KW2000.
- Click on the "MPI" menu again and select "Choose speed".
- Select 115200.
- In BUDS, click on the "READ DATA" icon.
- You may see: "Warning, you are about to update the internal ECM software... "Click "YES" and go to [\*REF-1] a few lines bellow.
- If you do not see this message, click on the "Module" menu and select "ECM".
- Select "Information".

There are two possibilities:

Possibility 1	
Calibration: 420664611	Sea level ECU calibration file: does not need to be updated.

If vehicle has been calibrated to be used at sea level, DO NOT proceed with the ECU calibration update: release fuel pressure, exit B.U.D.S., and go to item B.



Possibility 2	
Calibration: 420664617	High altitude ECU calibration file: needs to be updated.

- Click on the Module menu
- Select ECM and select Update.
- Select file 420664619, click OK.
- Click "YES" in the "Warning, you are about to update the internal ECM software..."

**[\*REF-1]** *If the following error message appears: "The MPI protocol software was lost during the transfer",*

- click on "Cancel" until all error messages disappear,
- close all open applications except BUDS.
- If the error message appears again during the transfer,
- click on the "MPI" menu and select "Choose speed > 57600".
- If the error message continues to appear,
- reduce the speed again by clicking on the "MPI" menu and select "Choose speed >..."

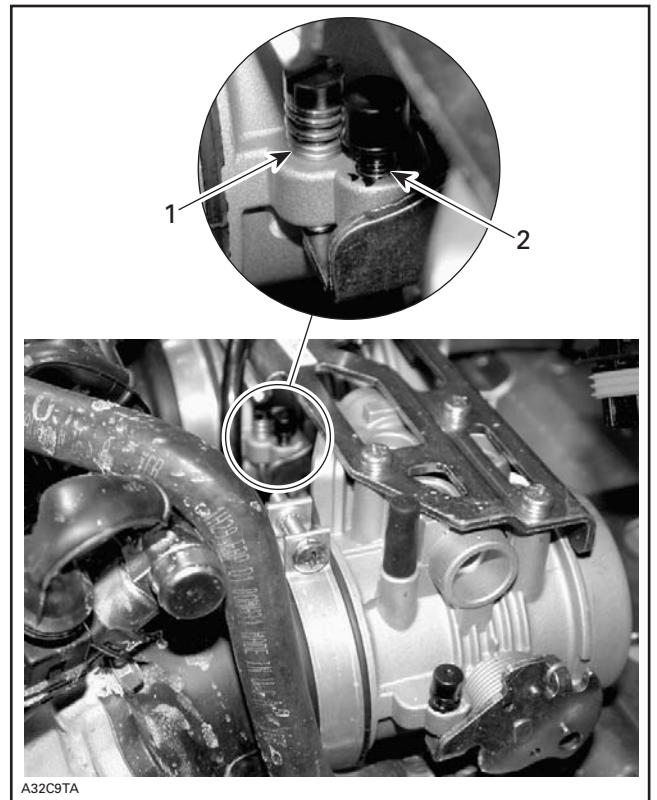
*If error message does not appear, continue with the following.*

- Wait for the message "Update has been successfully transferred into ECM" and click on "OK".
- Click on the "Module" menu and select "ECM".
- Select "Information".

<b>Check that the part number is</b>	
ECU calibration update:	420664619

- Click on "Close".
- Go to the "Vehicle" page of BUDS.
- Click on "Reset Service Info".
- Click on the WRITE DATA" icon.
- Click "YES" to confirm.
- Remove DESS cap when instructed.

## Throttle Positioning Sensor (TPS) Adjustment



**CAUTION:** Never attempt to adjust the zero position stopper screw [2] (the capped one) or the idle speed adjustment would be impaired. Besides, no adjustment could be performed by the dealer nor the factory to correct the zero position stopper screw. The throttle body would need to be replaced.

- Unscrew idle speed screw [1] until the throttle body plate stop lever rest against its zero position stopper screw [2] (capped screw). If necessary, loosen the throttle cable. Open throttle approximately one quarter then quickly release. Repeat 2 - 3 times to settle throttle plate.
- Push the **Reset** button in the **Setting** section of B.U.D.S.
- Click "OK" on the message box.
- Remove the DESS key when the message box says to do so.
- Reinstall the DESS key when the message is gone.
- The throttle opening displayed in B.U.D.S. should be 0.00 (0.1 maximum).
- If TPS is not within the allowed range while resetting the **Closed Throttle**, the

ECM will generate a fault code and will not accept the setting.

- Adjust the idle speed screw until B.U.D.S. throttle opening displays the proper TPS value.

<b>TPS value:</b>	<b>4.9 to 5.0°</b>
-------------------	--------------------

- Adjust throttle cable.
- Make sure the wide open throttle is at least 84 %.
- Release fuel pressure using B.U.D.S.
- Disconnect the power adapter harness from the diagnostic port on vehicle.

## New Oil Pump Specifications

- There are new oil pump adjustment specifications available; perform oil pump adjustment as per latest revised Service Bulletin.

<b>Oil Pump Service Bulletin number:</b>	<b>2005-8</b>
<b>Revision at time of printing is:</b>	<b>REV 1</b>

## B) FUEL PICK-UP UPDATE

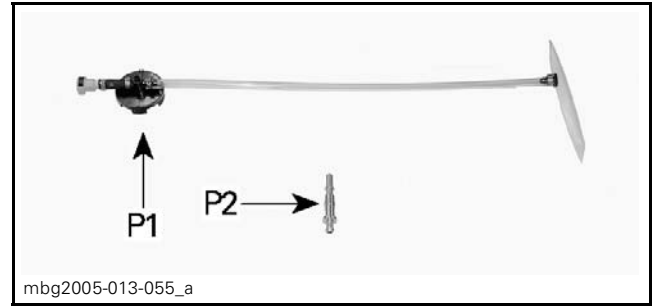
### Problem

Unit may starve for fuel before fuel tank is empty.

### Solution

Install a new fuel pick-up design in fuel tank.

## Parts required



Fuel Pick-up Kit: 590 177 100			
ITEM	P/N	DESCRIPTION	QTY
P1	415 129 110	In tank assembly	1
P2	415 129 111	Quick connect fitting	1

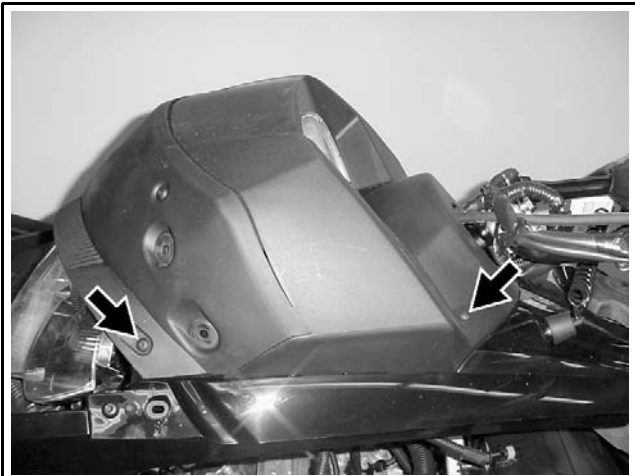
## Procedure

- Remove the windshield.
- Remove the RH side panel.
- Remove the LH side panel, unplugging the APS (Air Pressure Sensor).
- Make sure fuel pressure was released using B.U.D.S.
- Disconnect BLACK (-) cable from battery, then the RED (+) cable.

### **⚠ WARNING**

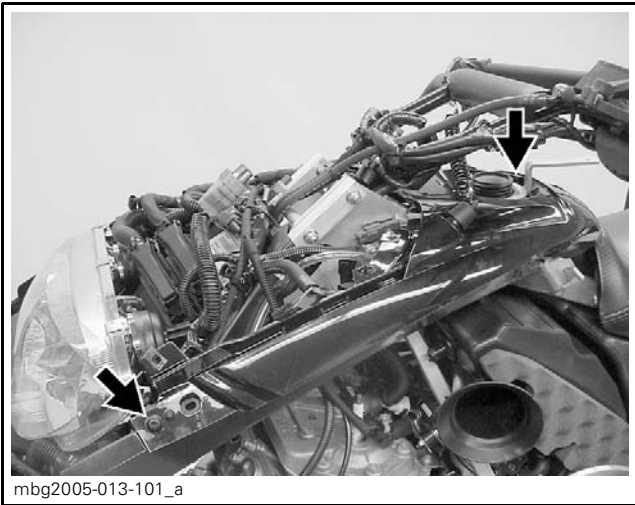
Always disconnect battery or starter cables exactly in the specified order, BLACK (-) cable first. It is recommended to disconnect electrical connections prior to disconnecting fuel lines.

- Remove seat
- Drain fuel tank
- Remove dash



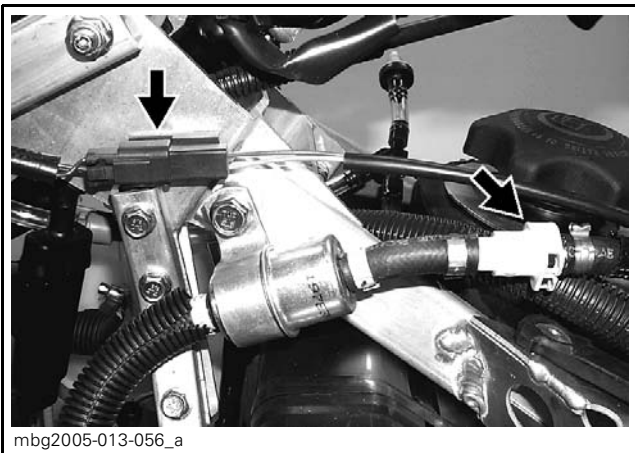
mbg2005-013-100\_a

- Remove console



mbg2005-013-101\_a

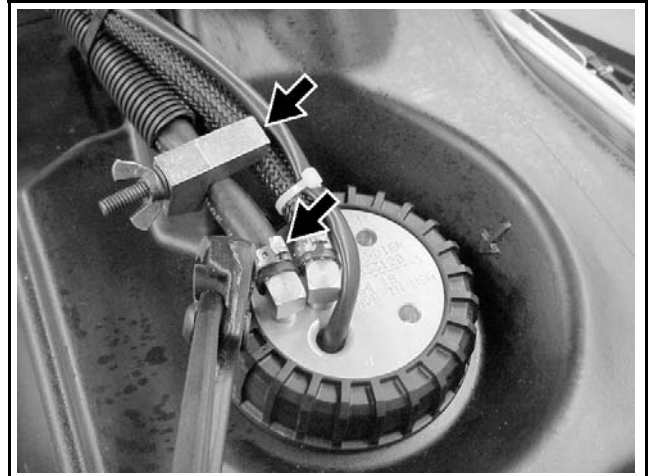
- Disconnect electric fuel pump
- Disconnect fuel hose.



mbg2005-013-056\_a

- Pinch inlet fuel hose using tool (P/N 295 000 076).
- Remove Oetiker clamp.

- Remove inlet fuel hose line from electric pump.



mbg2005-013-103\_a

**CAUTION:** Do not to spill fuel.

- Remove electric fuel pump nut using fuel pump nut wrench (P/N 529 035 899).



A32111A

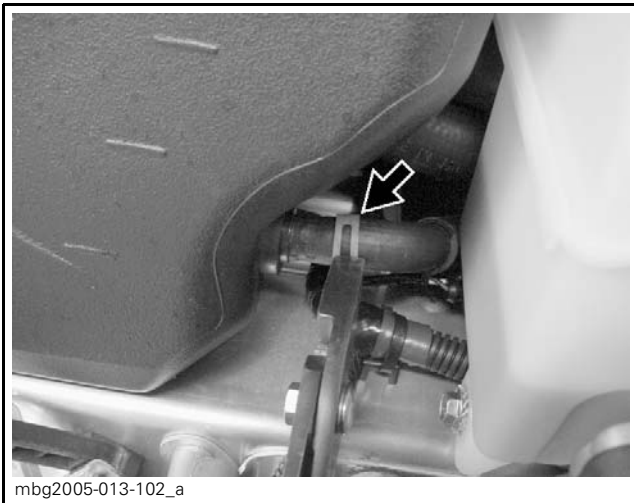
- Remove electric fuel pump assembly.



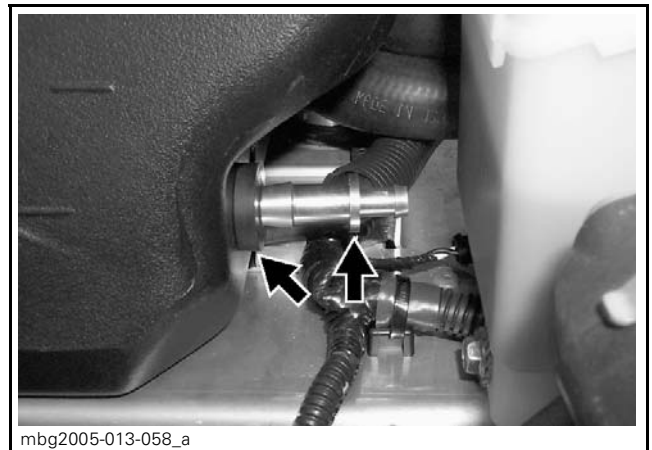
- Pull out existing fuel pick up assembly from fuel tank.
- Keep grommet.
- Discard fuel pick up assembly.



- Disconnect fuel tank outlet hose.



- Reinstall grommet
- Insert quick connect fitting [P2] in grommet.



### Special tool

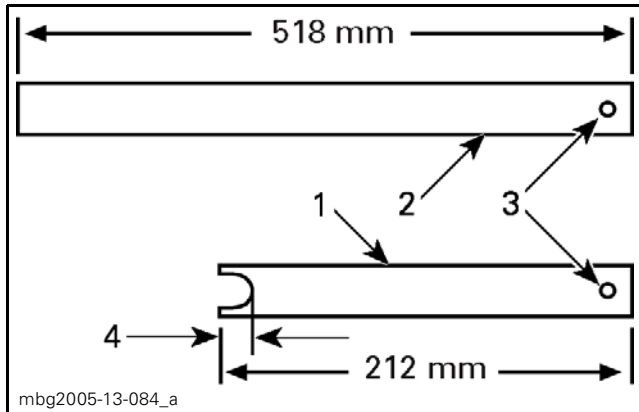
- If needed, you may build a tool to connect new fuel pickup assembly to quick connect fitting.

1) Steel plate 212 mm (8.346 in) x 25 mm (1 in) x 3 mm (0.125 in) thick.

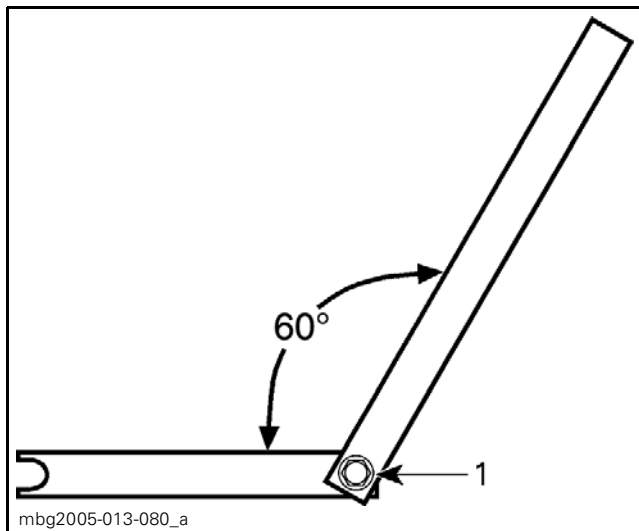
2) Steel plate 518 mm (20.394 in) x 25 mm (1 in) x 3 mm (0.125 in) thick.

3) Hole : 6 mm (0.25) .

4) Using a 15 mm (0.591 in) drill bit to create opening.



- Assemble both plates with a screw and nut.
- Tighten to keep a 60° angle.



- Insert fuel pickup assembly [P1] through the fuel pump opening.

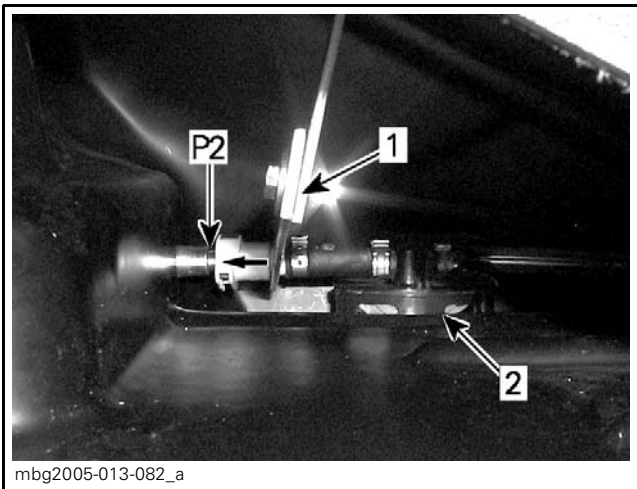


- Place special tool [1] on quick connect fitting.

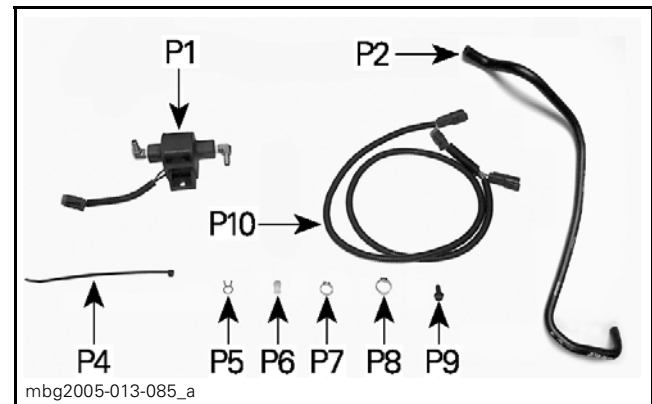


- Attach hose quick connect to quick connect fitting [P2], using special tool [1] .

**CAUTION:** Multi pick up screen [2] must face bottom of fuel tank.

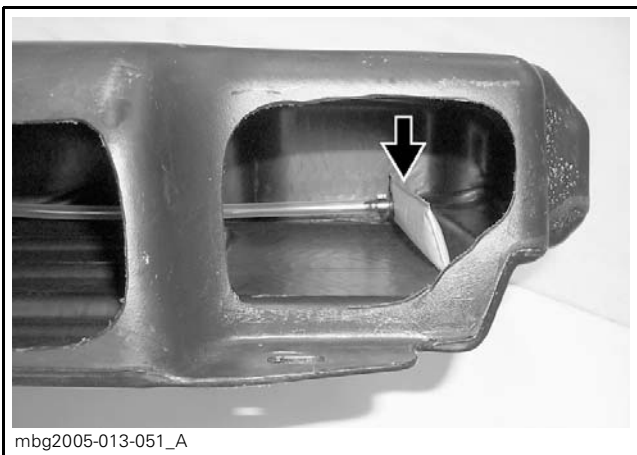


## Parts required



**CAUTION:** Be sure to hear a “click” when connecting the quick connect fittings. Push pull on the quick connect fitting to ensure connection is well secured in place.

**CAUTION:** Filter sock must rest flat at the bottom of fuel tank.



Electric Fuel Pump Kit: 590 177 000			
ITEM	P/N	DESCRIPTION	QTY
P1	403 901 818	Electric Fuel Pump	1
P2	513 033 156	Preformed fuel hose	1
P3	415 080 000	Corrugated hose ( cut at 645 mm ) not shown	1
P4	414 115 200	Tie wrap (180 mm)	7
P5	420 853 653	Clamp	1
P6	420 960 770	Cap	1
P7	293 650 047	Oetiker clamp (15)	2
P8	293 650 053	Oetiker clamp (17)	2
P9	210 261 680	Self-tapping hex screws	2
P10	415 129 117	T-wiring harness	1
P11	293 150 104	Rivet 3/16 not shown	1

## C) FUEL PUMP UPDATE

### Problem

Unit may starve for fuel before fuel tank is empty.

### Solution

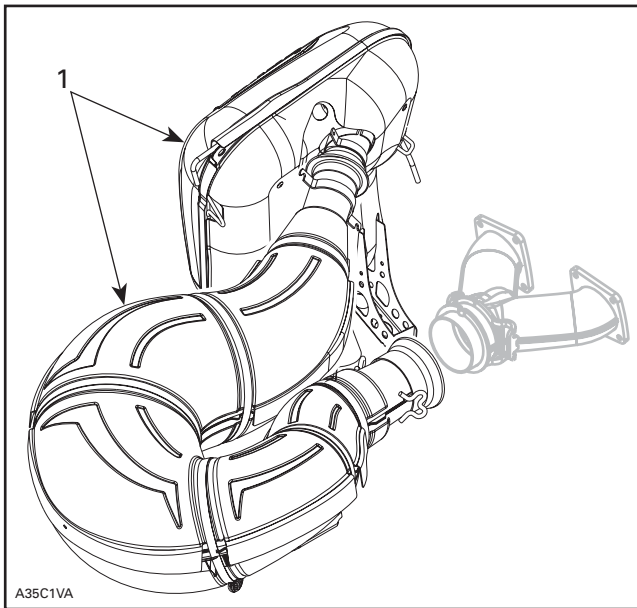
Replace existing mechanical fuel pump by new electrical fuel pump.

## Procedure

**NOTE:** USE TIE RAPS WHERE NEEDED TO AVOID CONTACT OF HOSES WITH ANY MOVING PARTS such as COUNTER SHAFT, OIL filter and to avoid kinking of hoses.

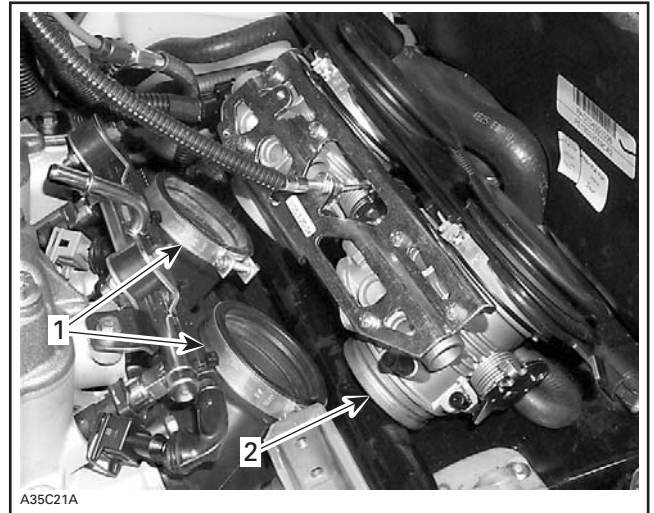
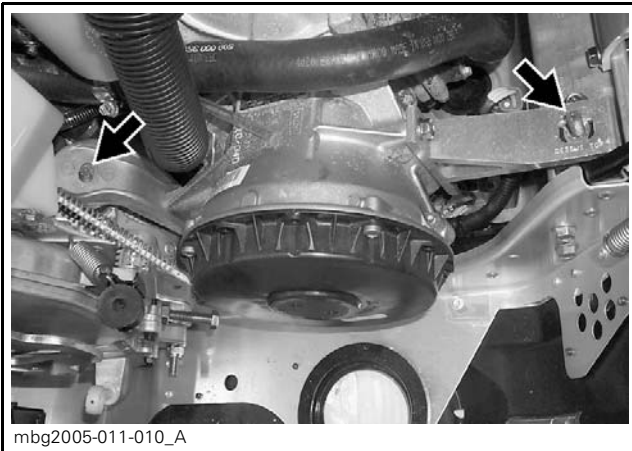
### Fuel Pump Removal

- Remove tuned pipe and muffler [1].



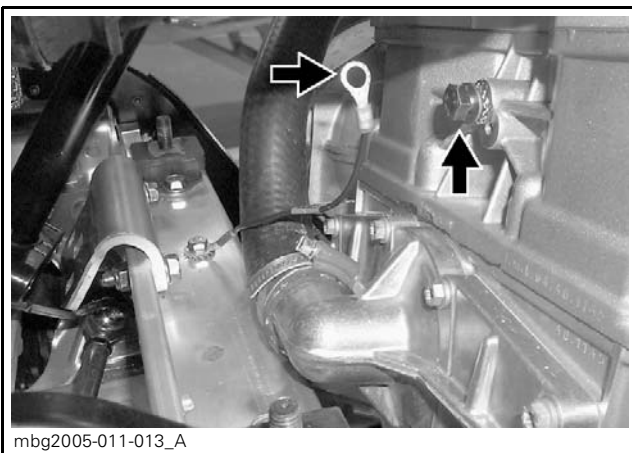
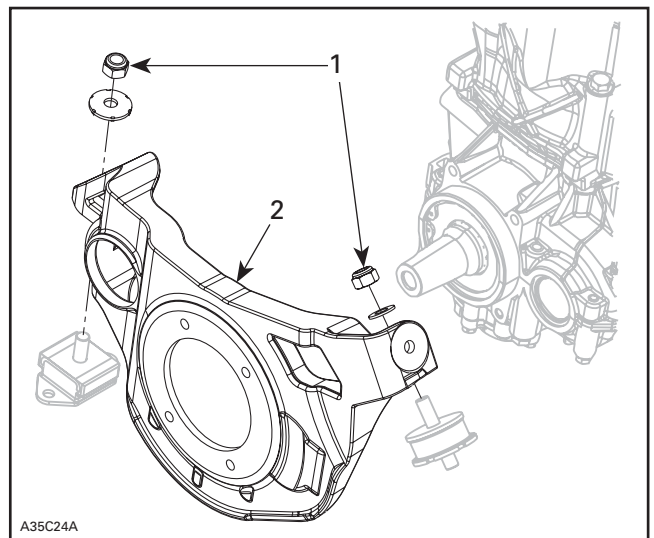
- Remove the drive belt.
- Remove the driven pulley.
- Remove the air intake silencer.
- Unscrew throttle body clamps [1].
- Move throttle bodies [2] away from intake adapters.
- To make room for moving the engine upward, temporarily secure throttle bodies away, using locking tie.

- Remove the MAG side motor mounts nuts.



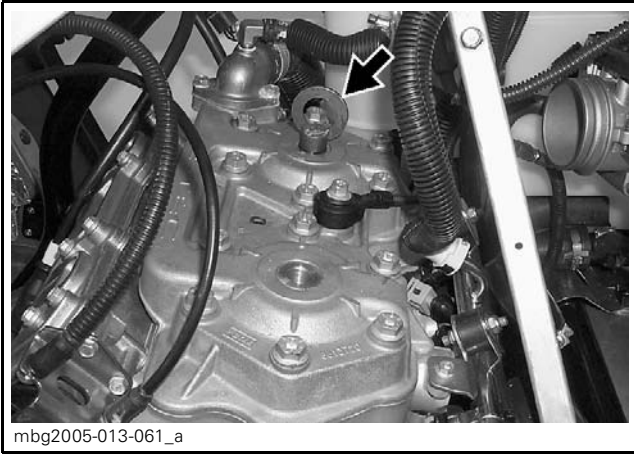
- Remove PTO side engine support nuts [1].

- Remove the engine ground wire, located in front of the engine.



- Remove the belt guard.

- Remove both spark plugs. Install the spark plug lift ring (P/N 529 035 830 ) in the MAG side spark plug hole.



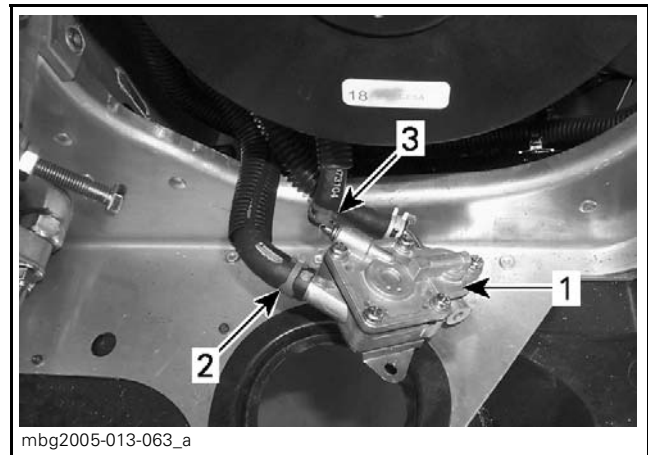
- Using the engine removal hook, slightly lift the engine.



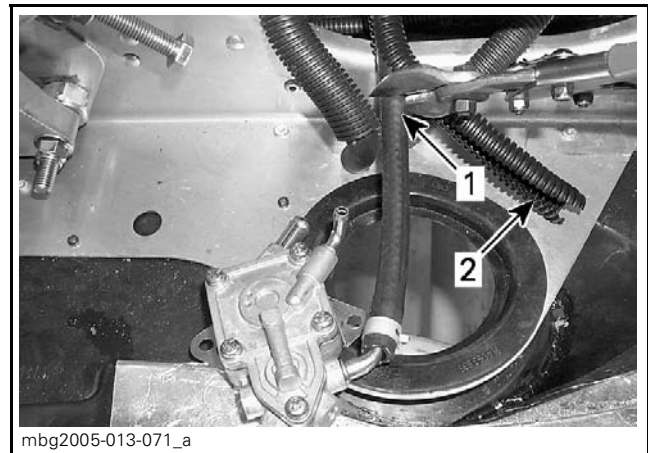
- Lift the engine to make room to reach the fuel pump. You may use a "2 x 4" piece of wood to maintain the engine.



- Unscrew fuel pump [1] .
- Disconnect and remove fuel pump inlet hose [2].
- Disconnect and remove fuel pump pulse hose [3] .

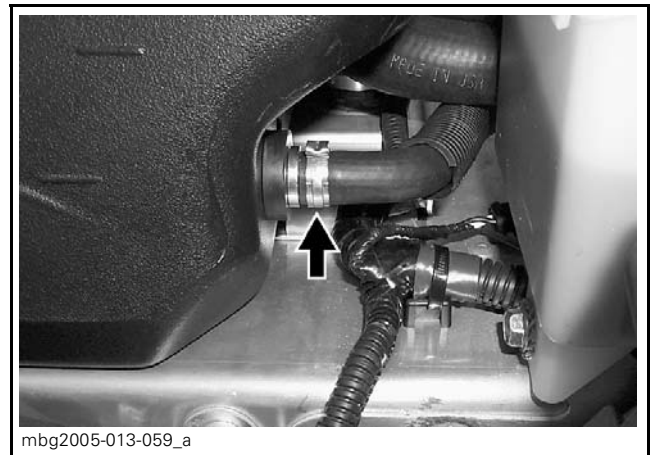
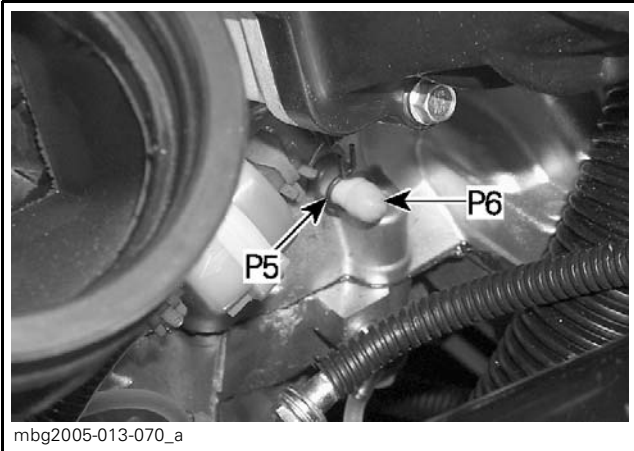


- Cut fuel pump outlet hose [1] at 100 mm (4 in) from fuel pump.
- Discard fuel pump.
- Cut corrugated [2] at 25 mm (1 in) from end of fuel pump outlet hose [1].





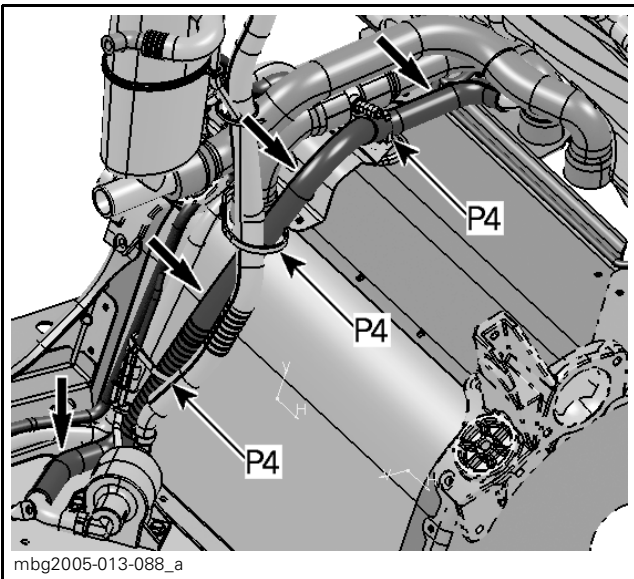
- Disconnect pulse hose from engine; discard.
- Install cap [P6] on pulse fitting and secure it in place using clamp [P5] .



### Electric Fuel Pump Installation

- Drill rivet to remove the MAG side chassis protector .

- Install new corrugated [P3] on new fuel hose [P2].
- Install fuel hose.
- Secure fuel hose with 3 tie wraps [P4].

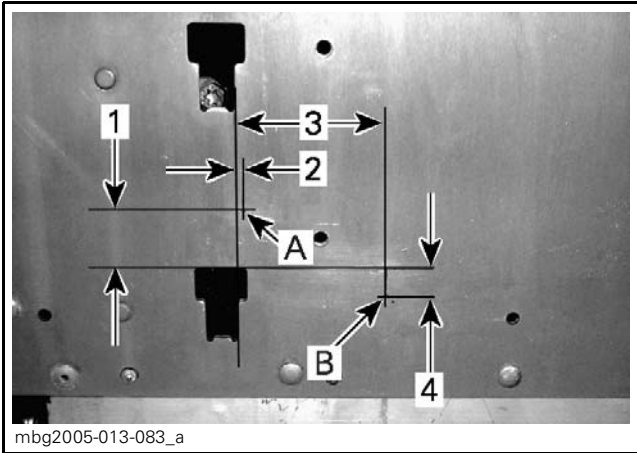


- Connect fuel hose to fuel tank using new Oetiker (17) clamp [P8].

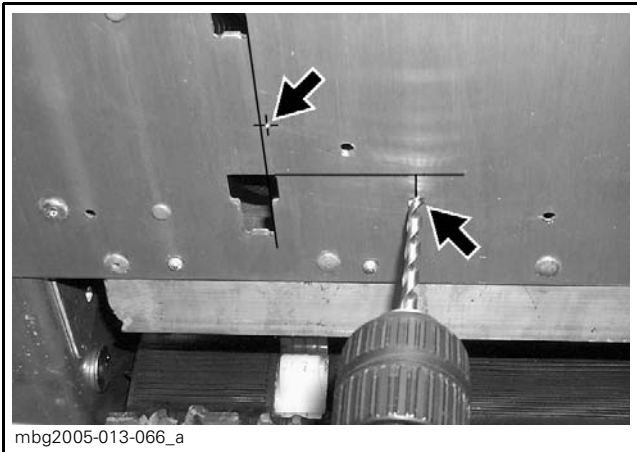
- Mark holes locations:

Hole A 23.2 mm (0.913 in) [1] and 2.0 mm (0.079 in) [2] .

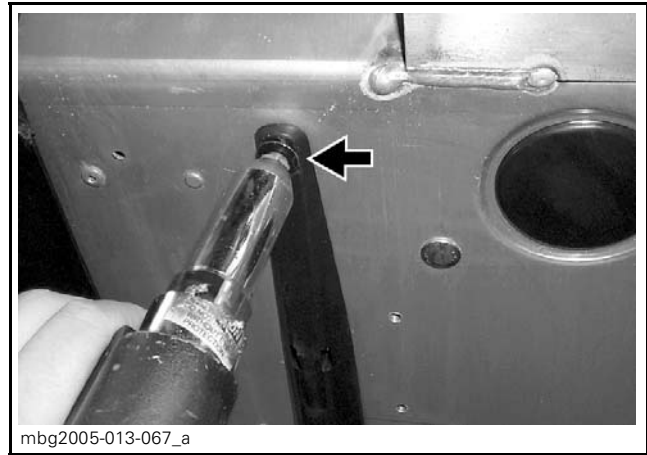
Hole B 53.8 mm (2.118 in) [3] and 14.3 mm (0.563 in) [4] .



- Drill two 5.5 mm holes.

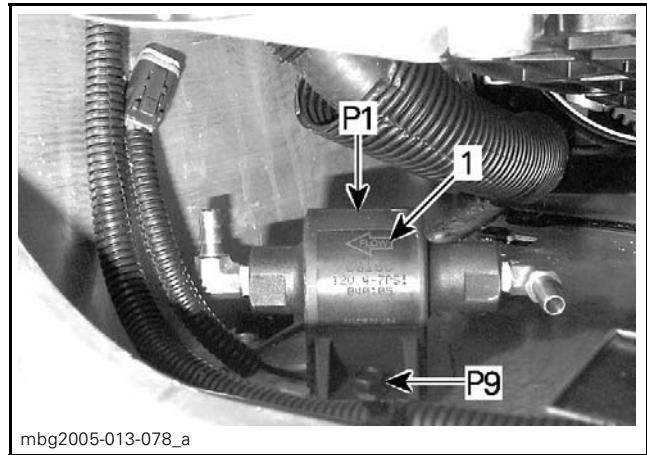


- Put back in place the protector using rivet [P11] .



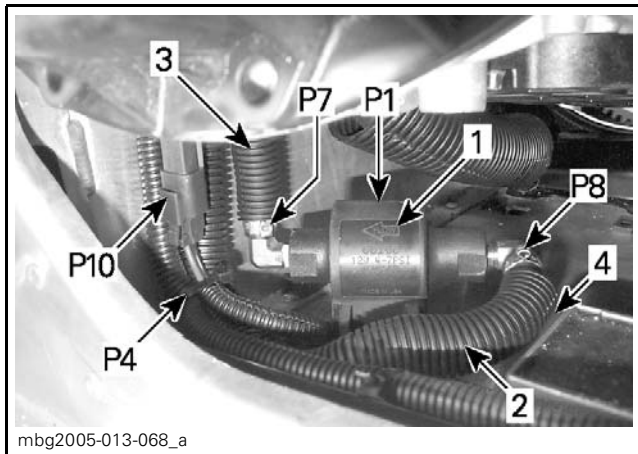
- Install electric fuel pump [P1] and secure with self-tapping screws [P9] .

**CAUTION:** The arrow must point toward the rear [1] of the vehicle.

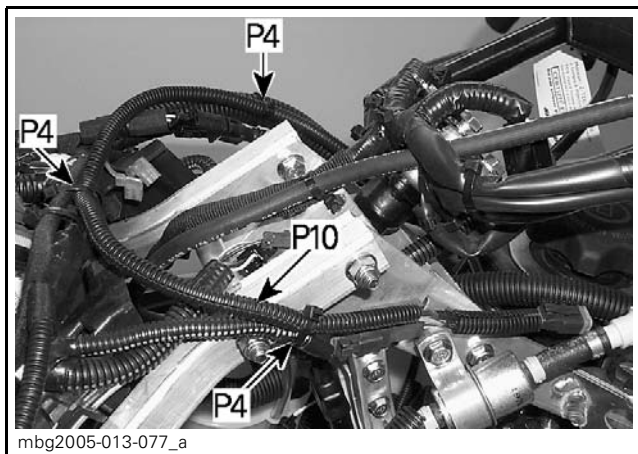


Description	Tightening Torque
Pump retaining screws	5 N•m (44 lbf•in)

- Connect T-harness [P10] to electric fuel pump [P1] .
- Route T-harness from electric fuel pump to the connector located on top. Follow voltage regulator/rectifier harness of pyramid frame, near fuel filter.
- Secure the inlet fuel hose [2] to the fuel pump with Oetiker clamp (17) [P8] .
- Secure the outlet fuel hose [3] to the fuel pump with Oetiker clamp (15) [P7] .
- Keep fuel pump hoses [4] away from the voltage regulator/rectifier. Secure fuel hose and harness with tie wrap [P4] .

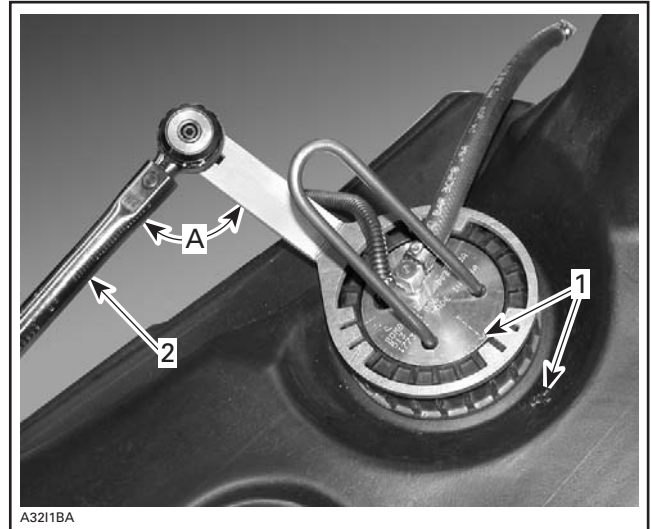


- Connect T-harness [P10] to electric fuel pump connector.
- Secure with three tie wraps [P4] .
- Connect fuel pump outlet hose to electric fuel pump IN fitting using Oetiker (15) clamp [P8].



#### Fuel tank pump installation procedure

- Align the arrow [1] on fuel pump assembly with the one on fuel tank. Keep arrows aligned when tightening fuel pump assembly.
- Install a torque wrench [2] perpendicularly (90°) [A] to fuel pump nut wrench (P/N 529 035 899) .



Fuel Pump Nut Torque

27 - 30 N•m  
(20 - 22 lbf•ft)

- Leak test fuel tank.
- Perform fuel system pressure test

#### **⚠ WARNING**

Pressure test to ensure there is no leak in fuel system.

#### Finalizing the procedure

- Reinstall all removed parts.
- Replace any bolts previously removed that contain Scotchgrip or Loctite.

## D) E-RAVE CABLE UPDATE

### Problem

Inside lining of E-RAVE cable may come out and restrict E-RAVE movement.

### Solution

Install a new E-RAVE cable with protective cap.

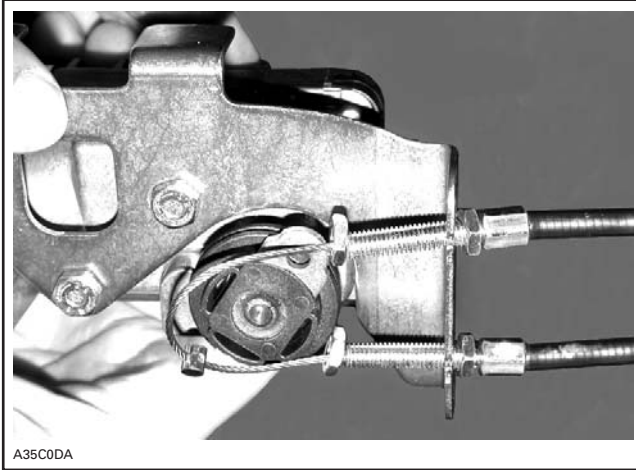
## Parts required

Description	P/N	Qty
Locking Tie	293 750 001	4
Cable Kit	420 997 023	1

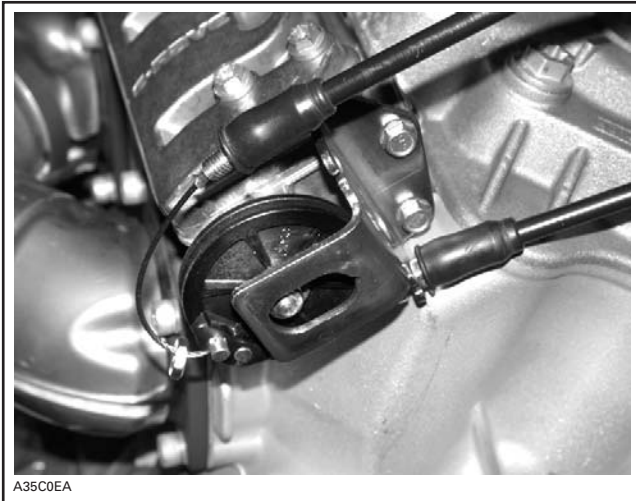
## Procedure

### E-RAVE Cables Removal

- Completely unscrew adjuster nuts from E-RAVE actuator bracket.



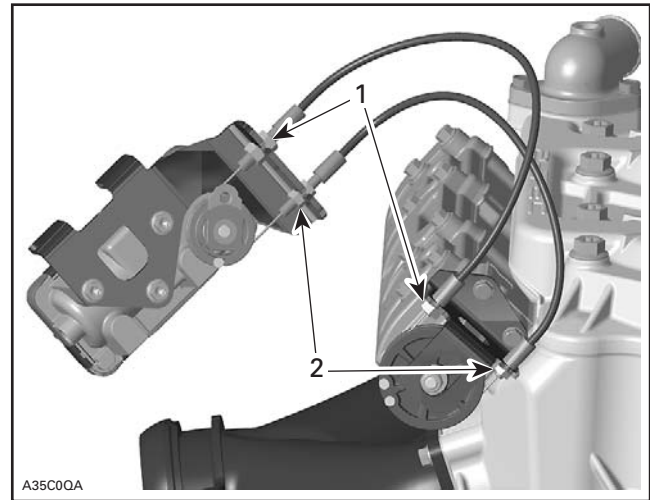
- Detach cables from E-RAVE shaft pulley.



- Discard existing cables.

### E-RAVE Installation

- Reverse removal steps. However, pay attention to the following.
- Connect E-RAVE cables:
  - 1) Cable ends in top holes
  - 2) Cable ends in bottom holes



- Tighten nut of each cable to E-RAVE shaft pulley bracket.
- Ensure cables are parallel to each other.

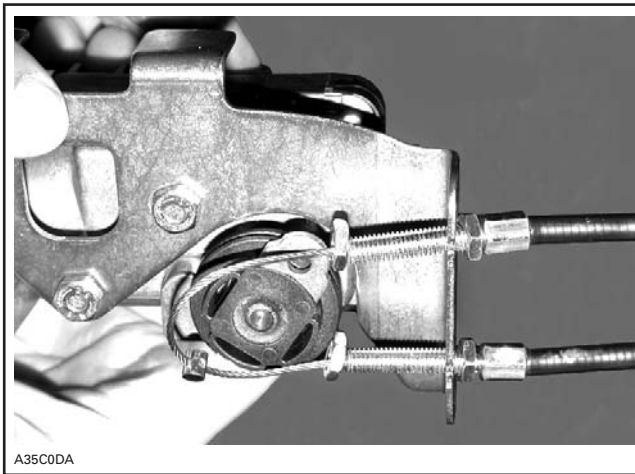
This is the correct position:



Example of wrong position:



- Insert cables in E-RAVE actuator pulley.



- Loosely install adjuster nuts. Do not tighten adjusters yet.

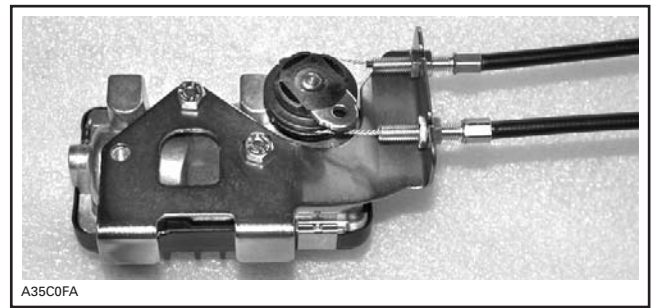
#### E-RAVE Cable Adjustment

**CAUTION:** Ensure all components are properly installed to their operating position and that proper routing of cable is achieved. Otherwise, improper E-RAVE operation will result leading to poor engine performance.

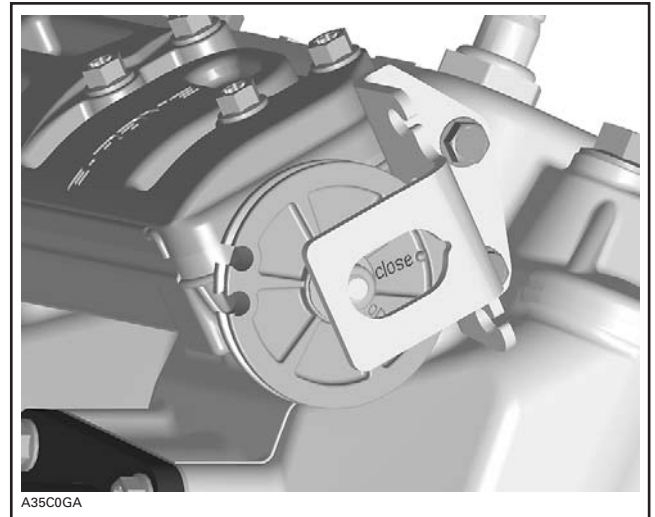
- Remove DESS key and wait until lights of speedometer turn off. ECM must be off.

**NOTE:** Ensure B.U.D.S. is not connected to the EMS.

- Ensure cable adjusters and cable ends on E-RAVE actuator pulley are loose.

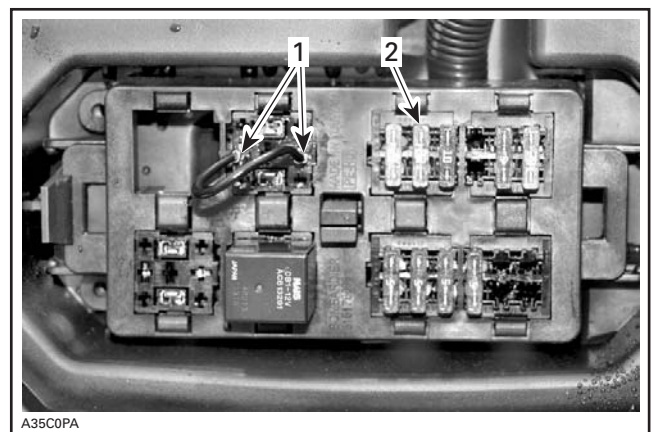


- Turn E-RAVE shaft pulley clockwise to the **Close** position.



- Remove the headlight relay (R2).
- Bypass relay with a jumper [1].

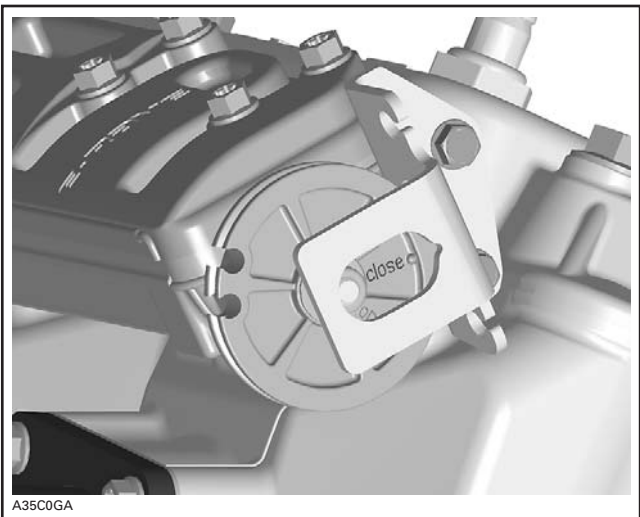
**NOTE:** To prevent battery discharge, headlight fuse (F2) can be removed.



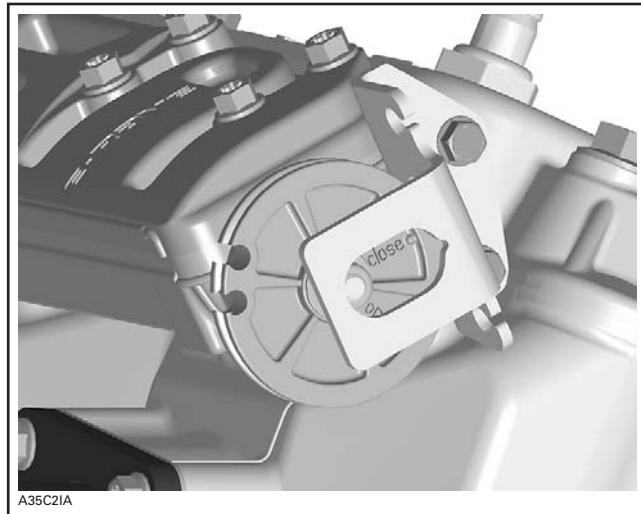
- This will turn the E-RAVE shaft pulley to the adjustment position.

**NOTE:** If pulley does not turn, E-RAVE actuator was already in right position.

**CAUTION:** The installation and adjustment of the E-RAVE cables is critical. If the cables are installed when the actuator is at its mechanical stop position. (As when the engine is started with no cables installed). The E-RAVEs will not function, the ECM will revert to the open fuel map (richer), the check engine light will NOT illuminate, NO code will be set and the engine will not reach top operating RPM.

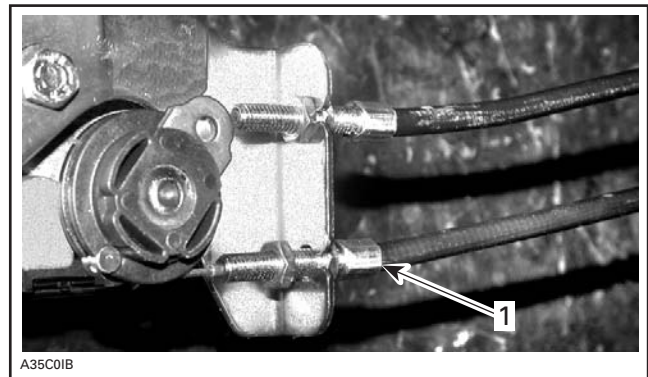


A35C0GA



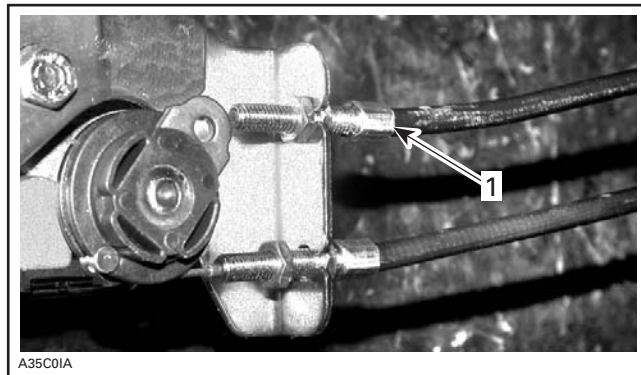
A35C2IA

- Readjust top (closing) cable as necessary.
- Remove relay jumper.
- Tighten bottom cable adjuster [1] (opening cable) to remove play in cable.



A35C0IB

- Tighten top cable adjuster [1] (closing cable) with just enough force to remove play in cable.



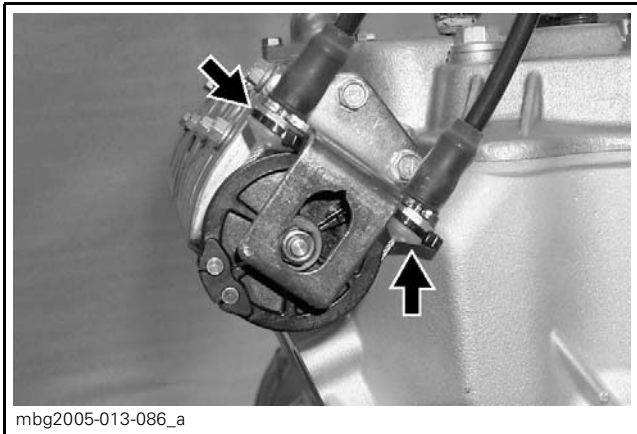
A35C0IA

**NOTE:** A cable that is too tight will make the system too stiff to operate smoothly.

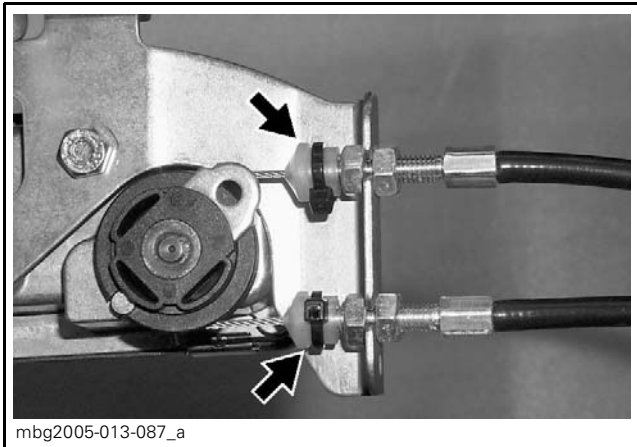
- Repeat the E-RAVE DYNAMIC TEST above 2-3 times then recheck the cables free-play. Readjust as necessary. Check with B.U.D.S. for fault codes.

- Install DESS key and set engine cut-out switch to OFF.
- Press START/RER button. E-RAVE shaft pulley should turn to the **Close** position.

- On E-RAVE shaft pulley cables, install large nylon caps with hexagonal internal shape, and secure in place with tie wraps.

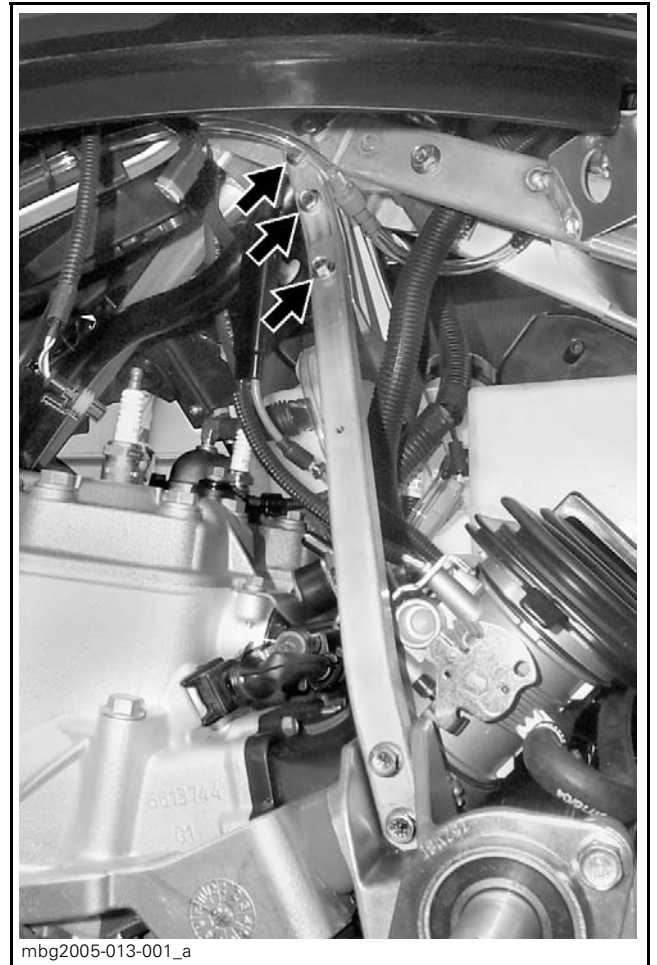


- On E-RAVE actuator pulley cables, install small nylon caps, and secure in place with tie wraps.



## Procedure

To maintain hole alignment while replacing the six bolts on top of the pyramidal frame member; remove and replace existing bolts one at a time.



## E) PYRAMIDAL FRAME BOLT UPDATE

### Problem

Pyramidal frame bolts may become loose.

### Solution

Replace existing bolts with new bolts with nylon patch

### Required parts

Description	P/N	Qty
Nylon Patch Bolt	250 000 253	6

Nylon Patch Bolt Torque	18 N•m (13 lbf•ft)
-------------------------	--------------------

- Start engine and make sure it operates normally through its full RPM range.

**NOTE:** Dealer needs to advise vehicle riders that after these updates, TRA clutch adjustment screws (clickers) may need to be readjusted to reach engine maximum RPM.

Engine maximum RPM:	7850 +/- 50 RPM
---------------------	-----------------

---

## **WARRANTY**

Refer to the following vehicle list for and submit a warranty claim using the following information:

Campaign Number	2005-0009
Claim Type	Campaign Claim
Flat Rate Time	3.0 hour
Expiration Date	2006-08-12

For claiming procedure, refer to the  
*DEALER/DISTRIBUTOR WARRANTY GUIDE.*



---

# SERIAL NUMBERS EXCLUDED FROM THIS CAMPAIGN

**Model: 000CA5A00**

2BPSCA5A55V000006

**Model: 000CA5B00**

2BPSCA5B85V000087

**Model: 000CA5C00**

2BPSCA5C95V000012    2BPSCA5C35V000071    2BPSCA5C35V000121    2BPSCA5C55V000167  
2BPSCA5C15V000019    2BPSCA5CX5V000097    2BPSCA5C55V000136    2BPSCA5C65V000212  
2BPSCA5C25V000045    2BPSCA5C55V000119    2BPSCA5C05V000142

**Model: 000CA5D00**

2BPSCA5D55V000078  
2BPSCA5D15V000109

**Model: 000CD5A00**

2BPSCD5AX5V000312  
2BPSCD5A85V000406  
2BPSCD5AX5V000472

**Model: 000CD5B00**

2BPSCD5B05V000103    2BPSCD5BX5V000271  
2BPSCD5B65V000140    2BPSCD5B35V000273

**Model: 000CE5A00**

2BPSC5A75V000001    2BPSC5A65V000085    2BPSC5A55V000174    2BPSC5A85V000220    2BPSC5A95V000260  
2BPSC5A25V000004    2BPSC5AX5V000087    2BPSC5A75V000175    2BPSC5AX5V000221    2BPSC5A05V000261  
2BPSC5A65V000006    2BPSC5A35V000089    2BPSC5A95V000176    2BPSC5A15V000222    2BPSC5A25V000262  
2BPSC5AX5V000008    2BPSC5A35V000092    2BPSC5A05V000177    2BPSC5A35V000223    2BPSC5A45V000263  
2BPSC5A85V000010    2BPSC5A95V000095    2BPSC5A05V000180    2BPSC5A55V000224    2BPSC5A85V000265  
2BPSC5A15V000012    2BPSC5A45V000098    2BPSC5A45V000182    2BPSC5A75V000225    2BPSC5AX5V000266  
2BPSC5A55V000014    2BPSC5AX5V000106    2BPSC5A65V000183    2BPSC5A95V000226    2BPSC5A15V000267  
2BPSC5A25V000018    2BPSC5A15V000107    2BPSC5A85V000184    2BPSC5A25V000228    2BPSC5A35V000268  
2BPSC5A25V000021    2BPSC5A45V000117    2BPSC5AX5V000185    2BPSC5A45V000229    2BPSC5A55V000269  
2BPSC5A85V000024    2BPSC5A85V000119    2BPSC5A15V000186    2BPSC5A05V000230    2BPSC5A15V000270  
2BPSC5AX5V000025    2BPSC5A45V000120    2BPSC5A35V000187    2BPSC5A25V000231    2BPSC5A35V000271  
2BPSC5A55V000031    2BPSC5A65V000121    2BPSC5A55V000188    2BPSC5A45V000232    2BPSC5A55V000272  
2BPSC5A15V000034    2BPSC5A15V000124    2BPSC5A35V000190    2BPSC5A65V000233    2BPSC5A75V000273  
2BPSC5A25V000035    2BPSC5A35V000125    2BPSC5A55V000191    2BPSC5A85V000234    2BPSC5A95V000274  
2BPSC5A35V000044    2BPSC5A45V000134    2BPSC5A95V000193    2BPSC5AX5V000235    2BPSC5A05V000275  
2BPSC5A25V000049    2BPSC5A35V000139    2BPSC5A25V000195    2BPSC5A35V000237    2BPSC5A45V000277  
2BPSC5A95V000050    2BPSC5A55V000143    2BPSC5A45V000196    2BPSC5A55V000238    2BPSC5A65V000278  
2BPSC5A05V000051    2BPSC5A75V000144    2BPSC5A65V000197    2BPSC5A75V000239    2BPSC5A85V000279  
2BPSC5A25V000052    2BPSC5A95V000145    2BPSC5A85V000198    2BPSC5A35V000240    2BPSC5A45V000280  
2BPSC5A45V000053    2BPSC5A25V000147    2BPSC5AX5V000199    2BPSC5A55V000241    2BPSC5A65V000281  
2BPSC5A85V000055    2BPSC5A45V000148    2BPSC5A25V000200    2BPSC5A75V000242    2BPSC5A85V000282  
2BPSC5AX5V000056    2BPSC5A65V000149    2BPSC5A65V000202    2BPSC5A95V000243    2BPSC5AX5V000283  
2BPSC5A35V000058    2BPSC5A65V000152    2BPSC5A85V000203    2BPSC5A05V000244    2BPSC5A15V000284  
2BPSC5A15V000060    2BPSC5AX5V000154    2BPSC5AX5V000204    2BPSC5A25V000245    2BPSC5A55V000286  
2BPSC5A35V000061    2BPSC5A15V000155    2BPSC5A15V000205    2BPSC5A45V000246    2BPSC5A75V000287  
2BPSC5A75V000063    2BPSC5A35V000156    2BPSC5A35V000206    2BPSC5A65V000247    2BPSC5A95V000288  
2BPSC5A05V000065    2BPSC5A55V000157    2BPSC5A55V000207    2BPSC5A85V000248    2BPSC5A05V000289  
2BPSC5A65V000068    2BPSC5A95V000162    2BPSC5A95V000209    2BPSC5AX5V000249    2BPSC5A75V000290  
2BPSC5A45V000070    2BPSC5A05V000163    2BPSC5A55V000210    2BPSC5A65V000250    2BPSC5A95V000291  
2BPSC5A85V000072    2BPSC5A25V000164    2BPSC5A75V000211    2BPSC5A85V000251    2BPSC5A05V000292  
2BPSC5A15V000074    2BPSC5A65V000166    2BPSC5A95V000212    2BPSC5AX5V000252    2BPSC5A25V000293  
2BPSC5A35V000075    2BPSC5A85V000167    2BPSC5A25V000214    2BPSC5A15V000253    2BPSC5A45V000294  
2BPSC5A75V000077    2BPSC5A15V000169    2BPSC5A45V000215    2BPSC5A35V000254    2BPSC5A65V000295  
2BPSC5A95V000078    2BPSC5A85V000170    2BPSC5A65V000216    2BPSC5A55V000255    2BPSC5A85V000296  
2BPSC5A75V000080    2BPSC5AX5V000171    2BPSC5A85V000217    2BPSC5A75V000256    2BPSC5AX5V000297  
2BPSC5A05V000082    2BPSC5A15V000172    2BPSC5AX5V000218    2BPSC5A95V000257    2BPSC5A15V000298  
2BPSC5A45V000084    2BPSC5A35V000173    2BPSC5A15V000219    2BPSC5A05V000258    2BPSC5A35V000299

---

**Model: 000CE5A00 (cont'd)**

2BPSCE5A65V000300  
2BPSCE5AX5V000302  
2BPSCE5A15V000303  
2BPSCE5A35V000304  
2BPSCE5A55V000305  
2BPSCE5A75V000306  
2BPSCE5A95V000307  
2BPSCE5A25V000309  
2BPSCE5A95V000310  
2BPSCE5A05V000311  
2BPSCE5A45V000313  
2BPSCE5A65V000314  
2BPSCE5A85V000315  
2BPSCE5AX5V000316  
2BPSCE5A15V000317  
2BPSCE5A35V000318  
2BPSCE5A55V000319  
2BPSCE5A15V000320  
2BPSCE5A55V000322  
2BPSCE5A75V000323  
2BPSCE5A95V000324  
2BPSCE5A25V000326  
2BPSCE5A45V000327  
2BPSCE5A65V000328  
2BPSCE5A45V000330  
2BPSCE5A65V000331  
2BPSCE5A85V000332  
2BPSCE5A15V000334  
2BPSCE5A35V000335  
2BPSCE5A55V000336  
2BPSCE5A75V000337  
2BPSCE5A95V000338  
2BPSCE5A05V000339  
2BPSCE5A75V000340  
2BPSCE5A95V000341  
2BPSCE5A25V000343  
2BPSCE5A45V000344  
2BPSCE5A65V000345  
2BPSCE5A85V000346  
2BPSCE5AX5V000347  
2BPSCE5A15V000348  
2BPSCE5A35V000349  
2BPSCE5AX5V000350

Please route to :

Init.

Service

Sales

Parts



**CAUTION: All involved customers must be notified, all involved units must be corrected as per instructions herein.**

Campaign no.: 2005-0010

Date: **September 7, 2005**

Subject: **Mach Z 1000 SDI Updates:**

No. **2005-11**

- A) ECU Calibration Update**
- B) Fuel Pump Update**
- C) EGT Sensor Update**
- D) E-RAVE Cable Update**
- E) Pyramidal Frame Bolt Update**

YEAR	MODEL	PACKAGE	MODEL NUMBER	SERIAL NUMBER
2005	Mach Z 1000 SDI (RT)	All	All	All

Parts to order for subjects: A, B, C, D and E

SUBJECT	DESCRIPTION	P/N	Qty
A	None	None	—
B	Electric Fuel Pump Kit	590 177 000	1
C	EGT Sensor	515 176 132	1
C	Corrugated hose, sold in 3 M (10 ft)	515 175 442	1
D	Locking Tie (sold in pack of 50)	293 750 001	4
D	Cable Kit	420 997 023	1
E	Nylon Patch Bolt (pack of 5)	250 000 253	6

## A) ECU CALIBRATION UPDATE

### Problem

Knock system may be erratic, which may lead to engine detonation and vehicle may be hard to start.

### Solution

Update ECU calibration with improved knock sensor parameters to ensure engine reliability and improve startability.

## Download the latest B.U.D.S. version via BOSSWeb

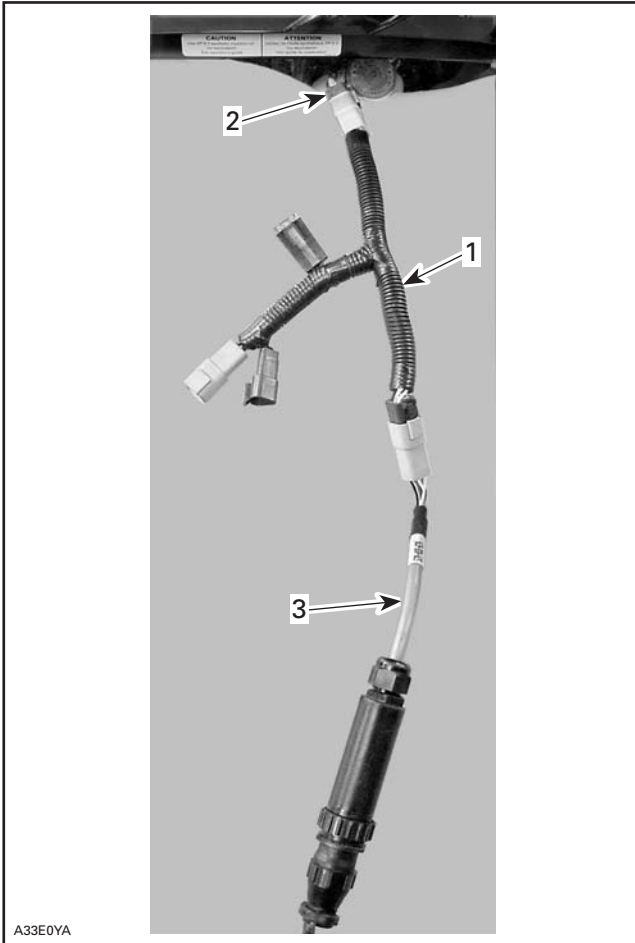
Always use the latest BUDS version on your shop computer. It is available from BOSSWeb\ComCenter\B.U.D.S. & MPEM\B.U.D.S.

<b>Latest B.U.D.S. version at time of printing:</b>	<b>P.2.3.3</b>
---	----------------

**NOTE:** You may also refer to the instruction sheet that came with your VCK kit (P/N 259 035 981).

## Open B.U.D.S. on shop computer and update vehicles

Before updating the ECU calibration file in a vehicle, it is mandatory to erase any ECU error code or faults. If repairs are needed, carry them out, then erase faults again. Refer to the Shop Manual if needed.



- Connect supply harness [1], (P/N 529 035 869), to diagnostic connector [2] located on right side of vehicle, then connect the diagnostic cable [3] to supply harness.

**CAUTION:** If supply harness (P/N 529 035 869) is not used, it will lead to module failure.

**NOTE:** Failed module related to wrong connection set-up will not be covered by warranty.



- Install the vehicle DESS key.
- With the latest B.U.D.S. version installed in your shop computer, start B.U.D.S.
- Click on the "MPI®" menu (upper left hand side of the B.U.D.S. screen) and select "Choose protocol".
- Select KW2000.
- Click on the "MPI" menu again and select "Choose speed".
- Select 115200.
- In BUDS, click on the "READ DATA" icon.
- Click on the Module menu
- Select ECM and select Update.
- Select file 420664613, click OK.
- Click "YES" in the "Warning, you are about to update the internal ECM software..."

*If the following error message appears: "The MPI protocol software was lost during the transfer".*

- Click on "Cancel" until all error messages disappear
- Close all open applications except BUDS

If the error message appears again during the transfer

- Click on the "MPI" menu and select "Choose speed > 57600"

If the error message continues to appear

- Reduce the speed again by clicking on the "MPI" menu and select "Choose speed >"

*If error message does not appear, continue with the following.*

- Wait for the message "Update has been successfully transferred into ECM" and click on "OK".
- Remove DESS cap when instructed
- Temporarily connect EGT sensor (P/N 515 176 132) to the vehicle harness.



- Go to B.U.D.S. Monitoring page.
- Check exhaust temperature.
  - A temperature of -40°F means the ECM update procedure did not work properly. The original file must be written back into the ECM and the ECM update must be done again: proceed with the "SPECIAL PROCEDURE".
  - Any other temperature means the ECM update was done with success. Do not do the "SPECIAL PROCEDURE"

#### "SEPCIAL PROCEDURE"

- Click on the Module menu
- Select ECM and select Update.
- Select file 420664611, click OK.
- Click "YES" in the "Warning, you are about to update the internal ECM software..."
- Wait for the message "Update has been successfully transferred into ECM" and click on "OK".
- Click on the Module menu
- Select ECM and select Update.
- Select file 420664613, click OK.

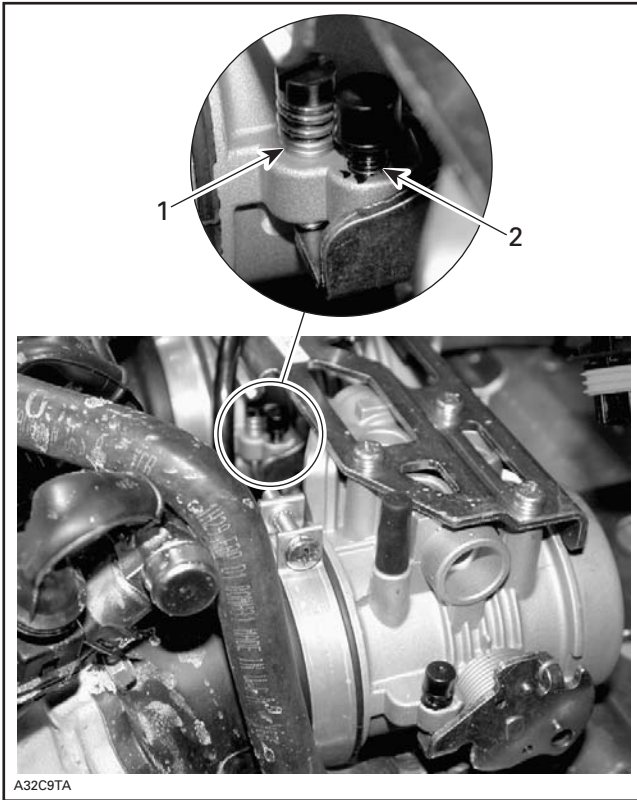
- Click "YES" in the "Warning, you are about to update the internal ECM software..."
- Wait for the message "Update has been successfully transferred into ECM" and click on "OK".
- Remove DESS when instructed.
- Go to B.U.D.S. Monitoring page.
- Re-check exhaust temperature.
- Special Procedure ends here.

- Click on the "Module" menu and select "ECM".
- Select "Information".

<b>Check that the calibration update part number is</b>	
BRP Part Number:	420664613

- Click on "Close".
- Go to the "Vehicle" page of BUDS.
- Click on "Reset Service Info".
- Click on the WRITE DATA" icon.
- Click "YES" to confirm.
- Remove DESS cap when instructed.

# Throttle Positioning Sensor (TPS) Adjustment

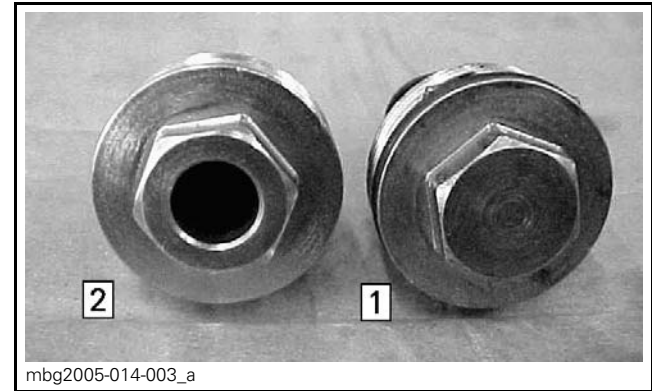


**CAUTION:** Never attempt to adjust the zero position stopper screw [2] (the capped one) or the idle speed adjustment would be impaired. Besides, no adjustment could be performed by the dealer nor the factory to correct the zero position stopper screw. The throttle body would need to be replaced.

- Unscrew idle speed screw [1] until the throttle body plate stop lever rest against its zero position stopper screw [2] (capped screw). If necessary, loosen the throttle cable. Open throttle approximately one quarter then quickly release. Repeat 2 - 3 times to settle throttle plate.
- Push the **Reset** button in the **Setting** section of B.U.D.S.
- Click "OK" on the message box.
- Remove the DESS key when the message box says to do so.
- Reinstall the DESS key when the message is gone.
- The throttle opening displayed in B.U.D.S. should be 0.00 (0.1 maximum).

- If TPS is not within the allowed range while resetting the **Closed Throttle**, the ECM will generate a fault code and will not accept the setting.
- Adjust the idle speed screw until B.U.D.S. throttle opening displays the proper TPS value.

1: TPS value with active decompressor (std):	4.9 to 5.0°
2: TPS value with plugged decompressor (opt):	4.6 to 4.7°



- Adjust throttle cable.
- Make sure the wide open throttle is at least 84 %.
- Release fuel pressure using B.U.D.S.
- Disconnect the power adapter harness from the diagnostic port on vehicle.

## New Oil Pump Specifications

- There are new oil pump adjustment specifications available; perform oil pump adjustment as per latest revised Service Bulletin.

<b>Oil Pump Service Bulletin number:</b> <b>Revision at time of printing is:</b>	<b>2005-8</b> <b>REV 1</b>
---	-------------------------------

## B) FUEL PUMP UPDATE

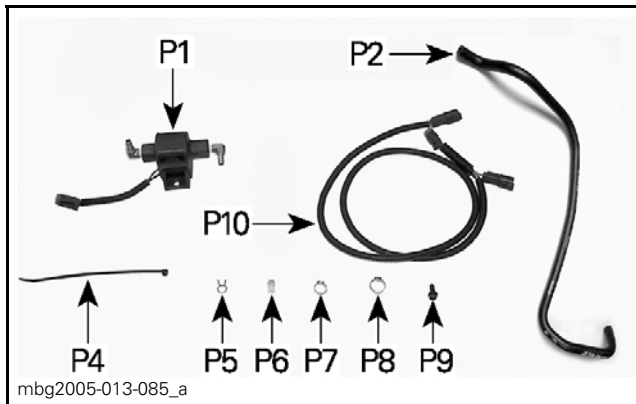
### Problem

Unit may starve for fuel before fuel tank is empty.

### Solution

Replace existing mechanical fuel pump by new electrical fuel pump.

## Parts required



Electric Fuel Pump Kit: 590 177 000			
ITEM	P/N	DESCRIPTION	QTY
P1	403 901 818	Electric Fuel Pump	1
P2	513 033 156	Preformed fuel hose	1
P3	415 080 000	Corrugated hose ( cut at 645 mm ) not shown	1
P4	414 115 200	Tie wrap (180 mm)	7
P5	420 853 653	Oetiker clamp (10)	1
P6	420 960 770	Cap	1
P7	293 650 047	Oetiker clamp (15)	2
P8	293 650 053	Oetiker clamp (17)	2
P9	210 261 680	Self-tapping hex screws	2
P10	415 129 117	T-wiring harness	1
P11	293 150 104	Rivet 3/16 not shown	1

**NOTE:** Use locking ties where needed to avoid contact of hose, electric wires, etc. with moving parts, and to avoid kinking or pinching.

## Procedure

- Remove the windshield.
- Remove the RH side panel.
- Remove the LH side panel, unplugging the APS (Air Pressure Sensor).
- Disconnect BLACK (-) cable from battery, then the RED (+) cable.

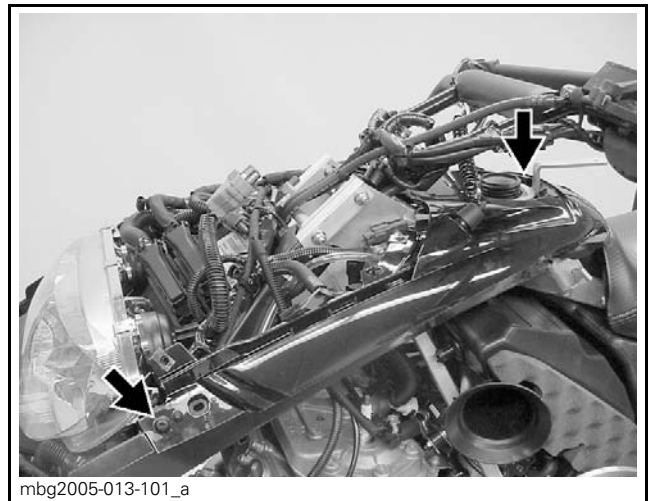
## ⚠ WARNING

Always disconnect battery or starter cables exactly in the specified order, BLACK (-) cable first. It is recommended to disconnect electrical connections prior to disconnecting fuel lines.

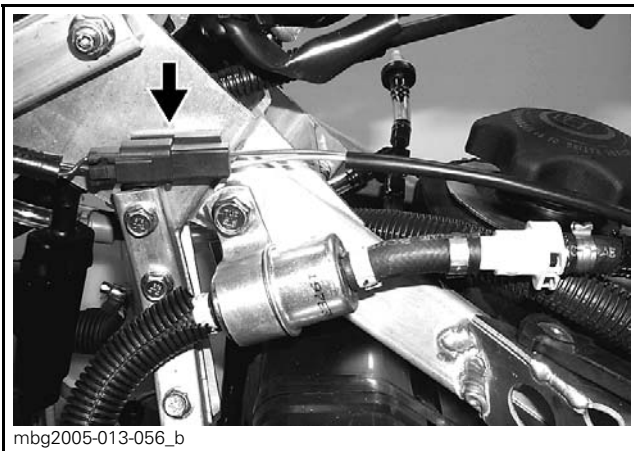
- Remove dash
- Drain fuel tank.



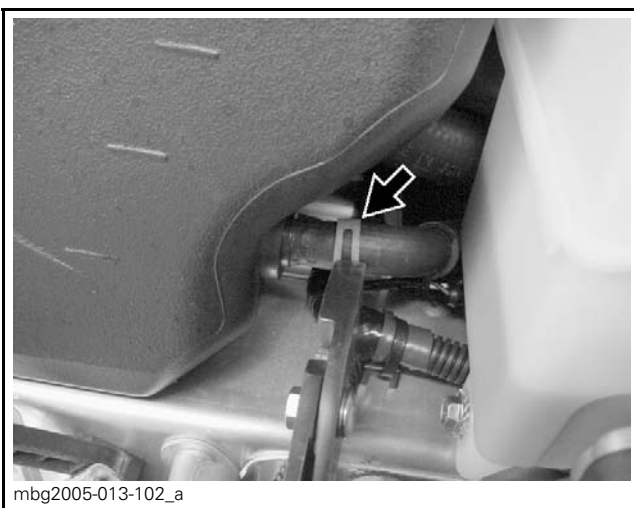
- Remove console



- Disconnect electric fuel pump

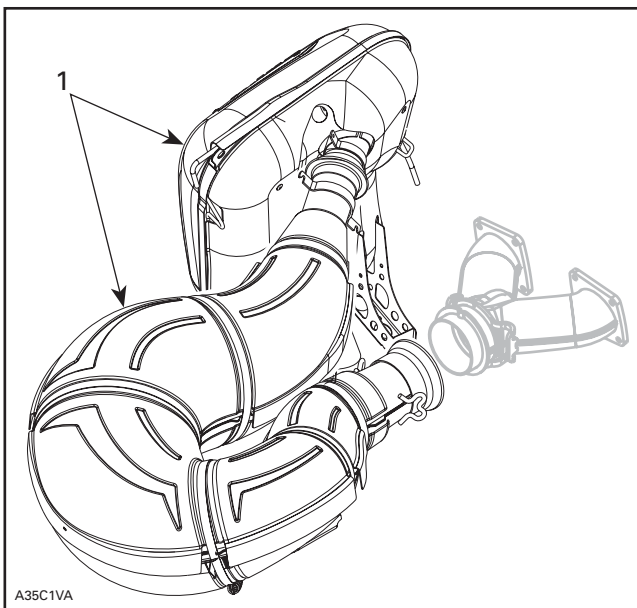


- Disconnect fuel tank outlet hose.

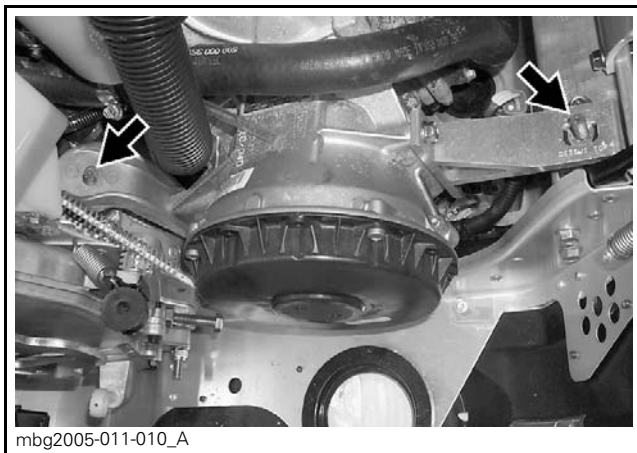


### Fuel Pump Removal

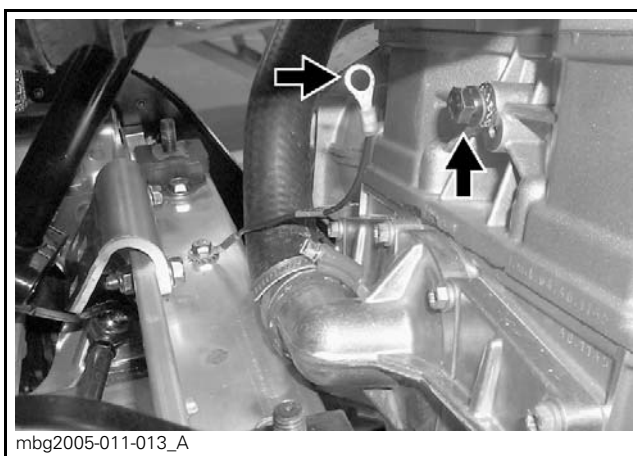
- Remove tuned pipe and muffler [1].



- Remove the MAG side motor mounts nuts.



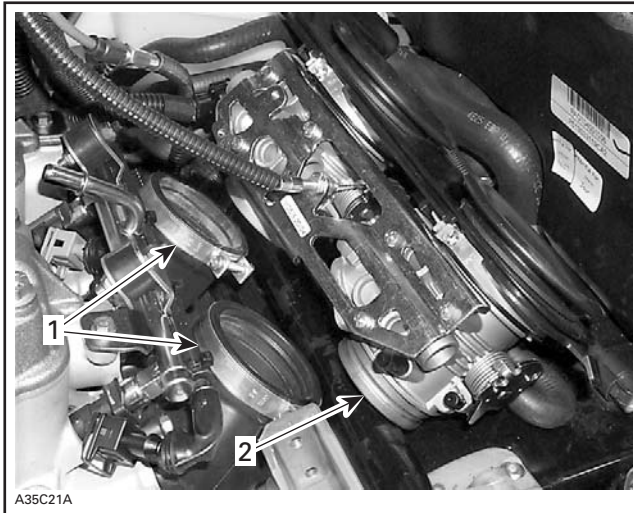
- Remove the engine ground wire, located in front of the engine.



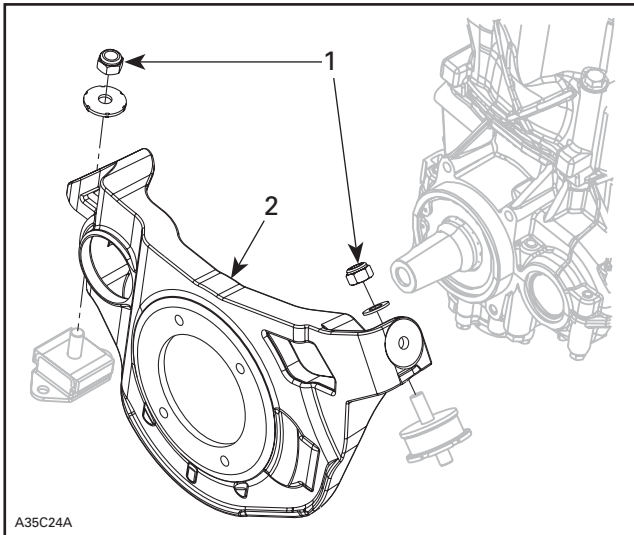
- Remove the belt guard.



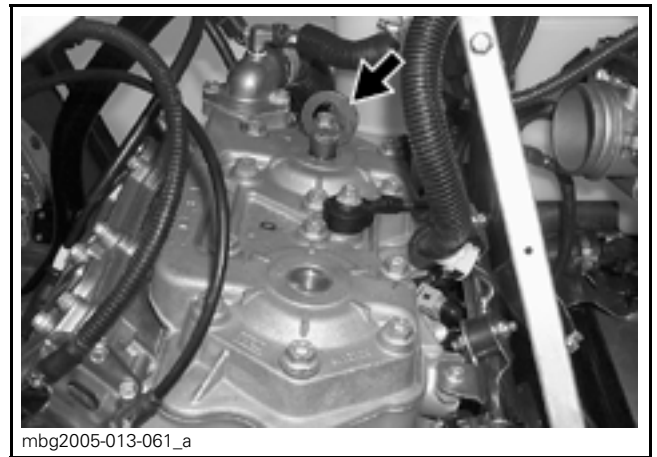
- Remove the drive belt.
- Remove the driven pulley.
- Remove the air intake silencer.
- Unscrew throttle body clamps [1].
- Move throttle bodies [2] away from intake adapters.
- To make room for moving the engine upward, temporarily secure throttle bodies away, using locking tie.



- Remove PTO side engine support nuts [1].



- Remove both spark plugs. Install the spark plug lift ring (P/N 529 035 830 ) in the MAG side spark plug hole.



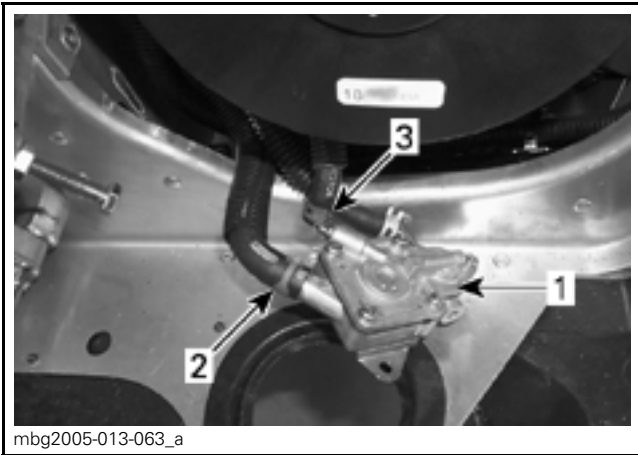
- Using the engine removal hook, slightly lift the engine.



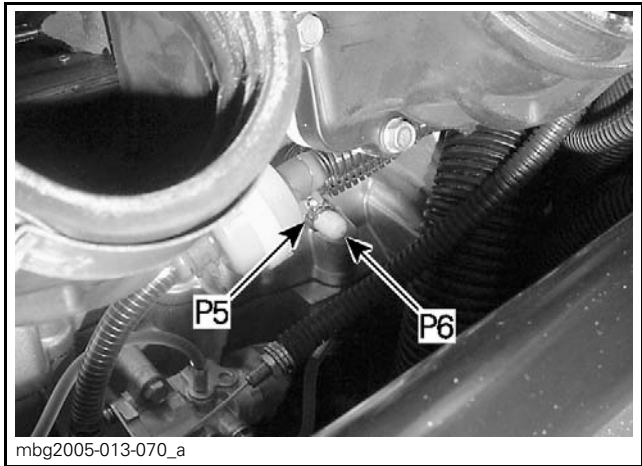
- Lift the engine to make room to reach the fuel pump. You may use a "2 x 4" piece of wood to maintain the engine.



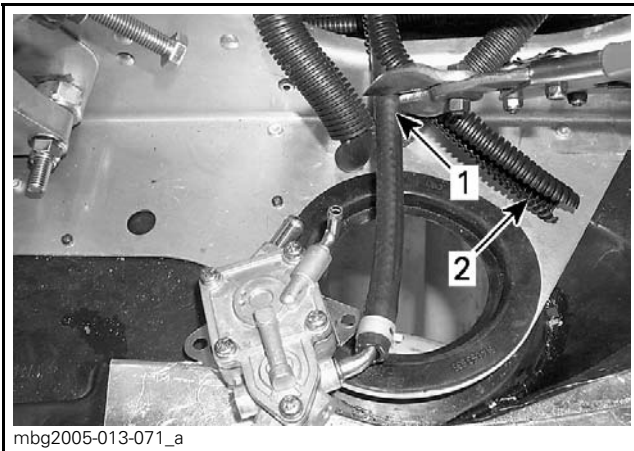
- Unscrew fuel pump [1] .
- Disconnect and remove fuel pump inlet hose [2].
- Disconnect and remove fuel pump pulse hose [3] .



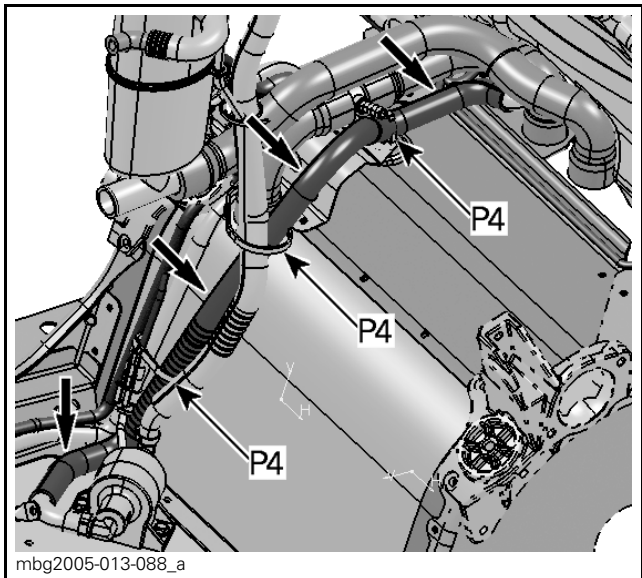
- Cut fuel pump outlet hose [1] at 100 mm (4 in) from fuel pump.
- Discard fuel pump.
- Cut corrugated [2] at 25 mm (1 in) from end of fuel pump outlet hose [1].



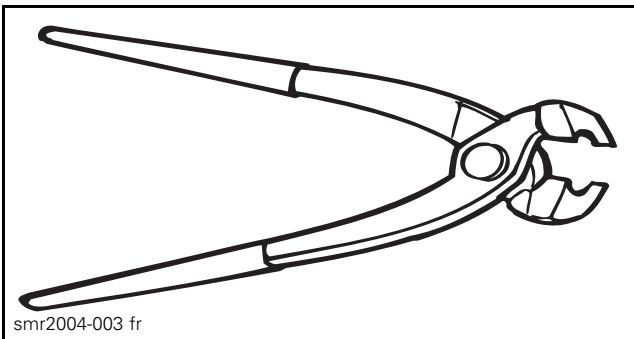
- Install new corrugated [P3] on new fuel hose [P2].
- Install fuel hose.
- Secure fuel hose with 3 tie wraps [P4].



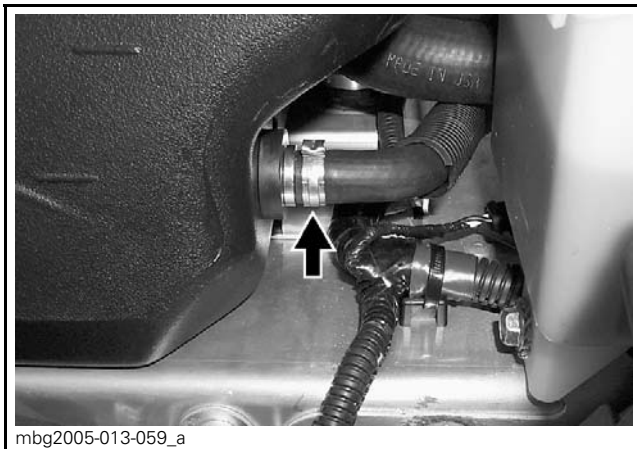
- Disconnect pulse hose from engine; discard.
- Use Oetiker pliers (P/N 295 000 070) to install Oetiker clamp.



- Connect fuel hose to fuel tank using new Oetiker (17) clamp [P8].



- Install cap [P6] on pulse fitting and secure it in place using Oetiker (10) [P5].

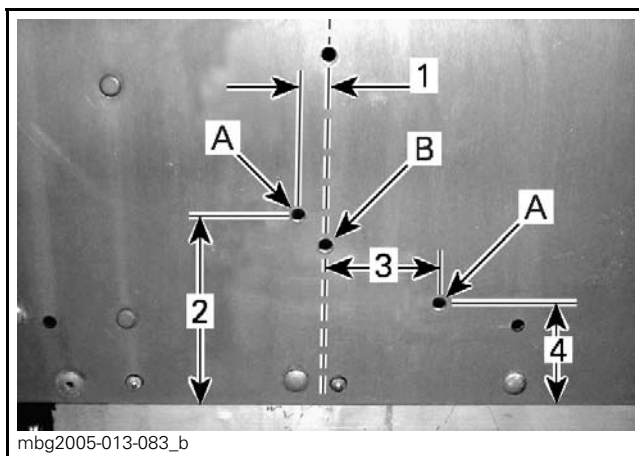


mbg2005-013-059\_a

### Electric Fuel Pump Installation

Draw a line between the two existing mechanical fuel pump holes [B].

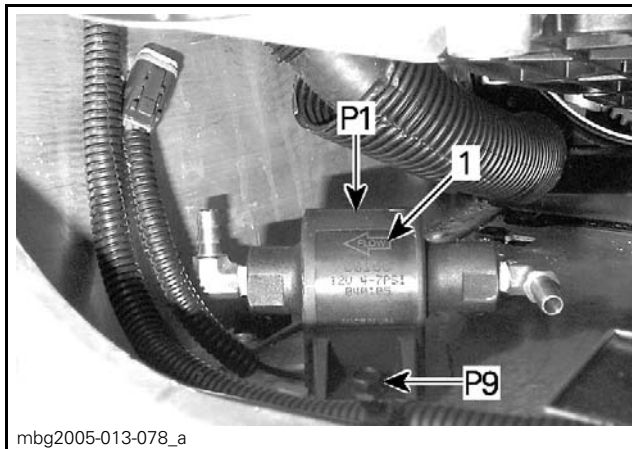
Mark and drill two holes 5.5 mm [A]:



mbg2005-013-083\_b

- [1] = 29 mm (1.14 in)
- [2] = 79 mm (3.11 in)
- [3] = 23 mm (0.9 in)
- [4] = 41 mm (1.61 in)
- Install electric fuel pump [P1] and secure with self-tapping screws [P9] .

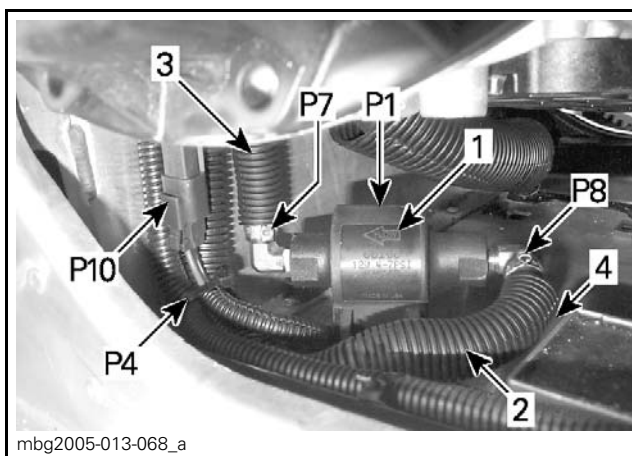
**CAUTION:** The arrow must point toward the rear [1] of the vehicle.



mbg2005-013-078\_a

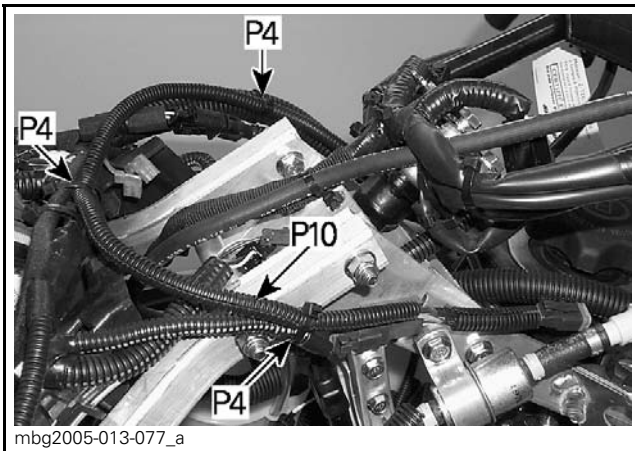
Description	Tightening Torque
Pump retaining screws	5 N•m (44 lbf•in)

- Connect T-harness [P10] to electric fuel pump .
- Route T-harness from electric fuel pump to the connector located on top. Follow voltage regulator/rectifier harness of pyramid frame, near fuel filter.
- Secure the inlet fuel hose [2] to the fuel pump with Oetiker clamp (17) [P8] .
- Secure the outlet fuel hose [3] to the fuel pump with Oetiker clamp (15) [P7] .
- Keep fuel pump hoses [4] away from the voltage regulator/rectifier. Secure fuel hose and harness with locking tie [P4] .



mbg2005-013-068\_a

- Connect T-harness [P10] to electric fuel pump connector.
- Secure with three locking tie [P4] .



- Perform fuel system pressure test

**⚠ WARNING**

Pressure test to ensure there is no leak in fuel system.

## C) EGT SENSOR UPDATE

### Problem

New ECU calibration requires the use of a EGT sensor. Engine performances will be reduced if a vehicle is used with an re-calibration ECU without using a EGT sensor.

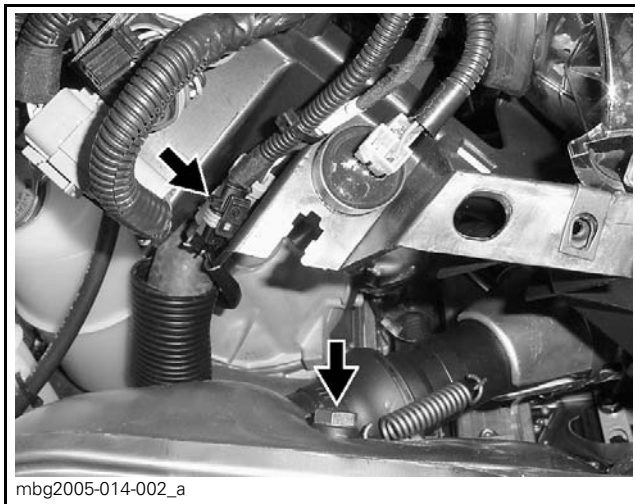
### Solution

Install a new EGT sensor in the muffler.

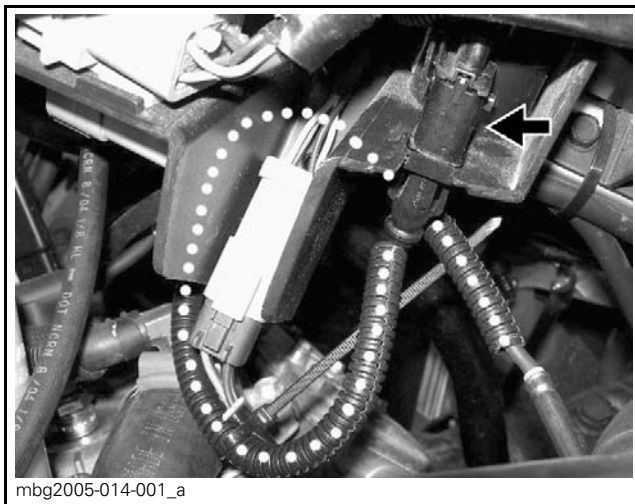
### Parts required

Description	P/N	Qty
EGT sensor	515 176 132	1
Corrugated (cut to 350 mm)	515 175 442	1

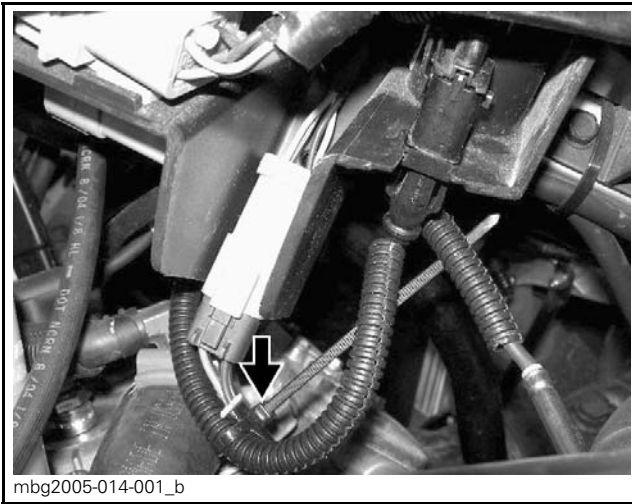
- Remove existing plug from muffler.
- Cut locking tie holding the existing connector.
- Install 350 mm of corrugated sleeve on the EGT wires.
- Install EGT sensor with anti-seize (P/N 293 800 070) on the sensors threads.



- Route EGT sensor wire as shown.
- Connect the EGT sensor connector to the vehicle's harness.
- Clip the connector into the bracket slot.



- Attach using a locking tie.



### Finalizing the procedure

- Reinstall all removed parts.
- Replace any bolts previously removed that contain Scotchgrip or Loctite.

## D) E-RAVE CABLE UPDATE

### Problem

Inside lining of E-RAVE cable may come out and restrict E-RAVE movement.

### Solution

Install a new E-RAVE cable with protective cap.

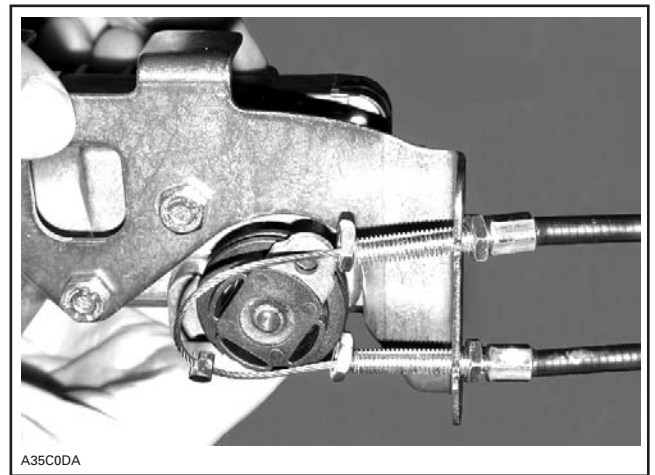
### Parts required

Description	P/N	Qty
Locking Tie	293 750 001	4
Cable Kit	420 997 023	1

### Procedure

#### E-RAVE Cables Removal

- Completely unscrew adjuster nuts from E-RAVE actuator bracket.



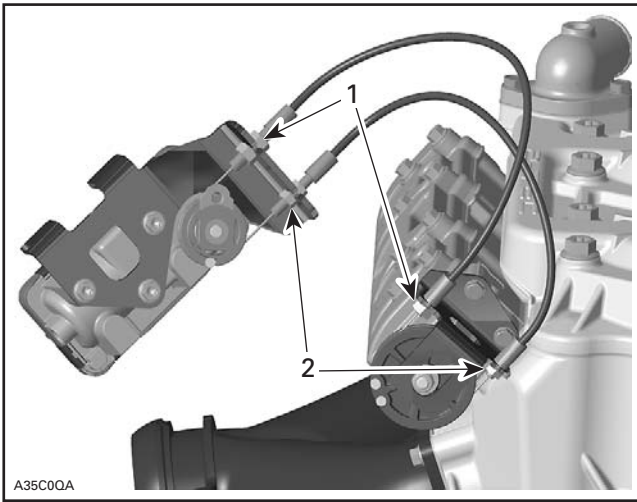
- Detach cables from E-RAVE shaft pulley.



- Discard existing cables.

#### E-RAVE Installation

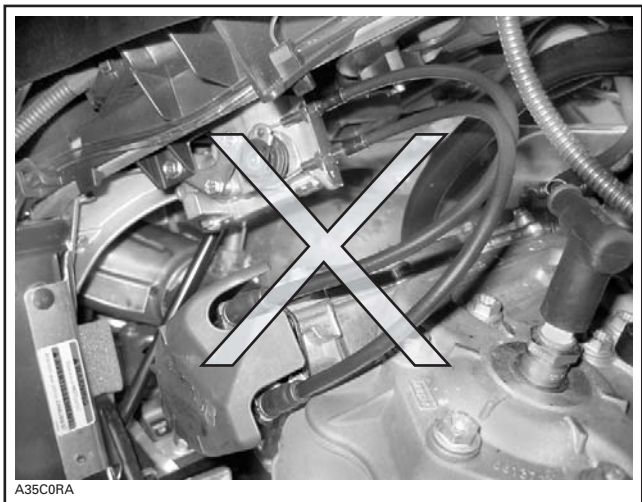
- Reverse removal steps. However, pay attention to the following.
- Connect E-RAVE cables:
  - 1) Cable ends in top holes
  - 2) Cable ends in bottom holes



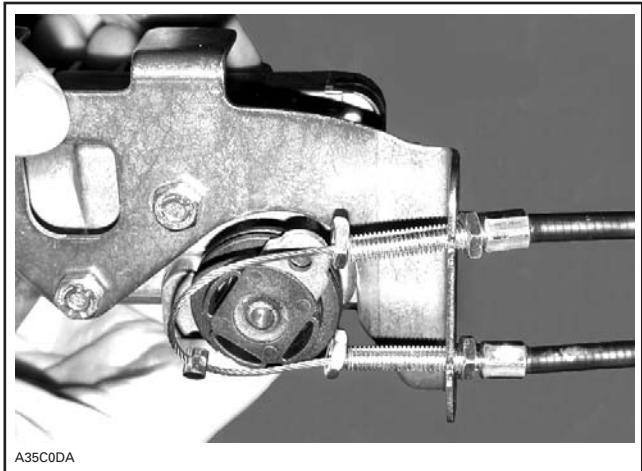
- Tighten nut of each cable to E-RAVE shaft pulley bracket.
  - Ensure cables are parallel to each other.
- This is the correct position:



Example of wrong position:



- Insert cables in E-RAVE actuator pulley.



- Loosely install adjuster nuts. Do not tighten adjusters yet.

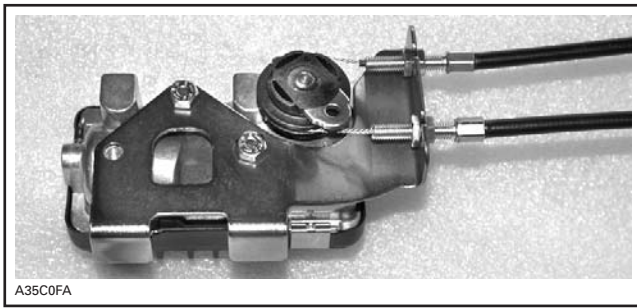
#### E-RAVE Cable Adjustment

**CAUTION:** Ensure all components are properly installed to their operating position and that proper routing of cable is achieved. Otherwise, improper E-RAVE operation will result leading to poor engine performance.

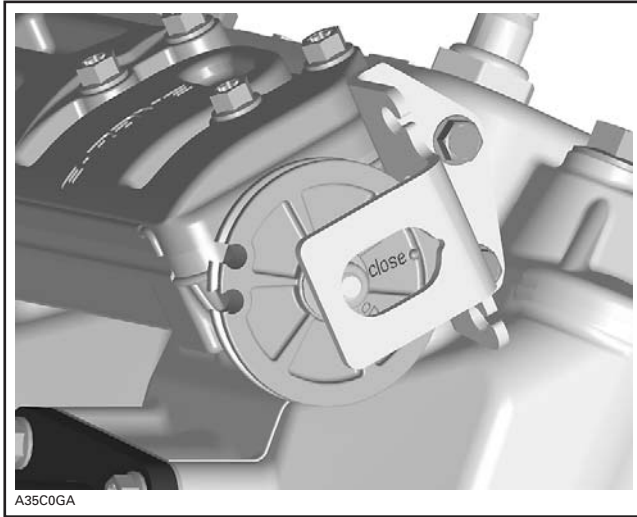
- Remove DESS key and wait until lights of speedometer turn off. ECM must be off.

**NOTE:** Ensure B.U.D.S. is not connected to the EMS.

- Ensure cable adjusters and cable ends on E-RAVE actuator pulley are loose.

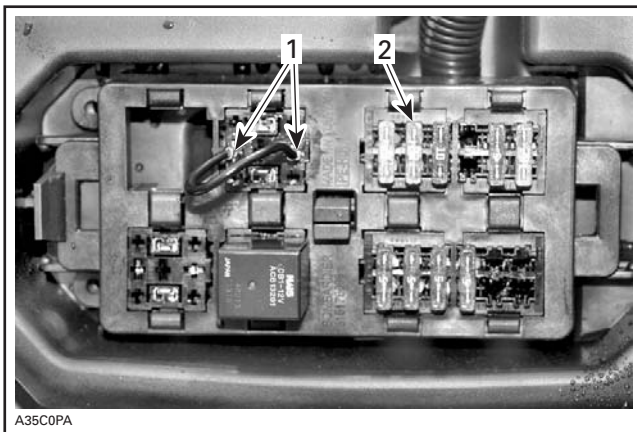


- Turn E-RAVE shaft pulley clockwise to the **Close** position.



- Remove the headlight relay (R2).
- Bypass relay with a jumper [1].

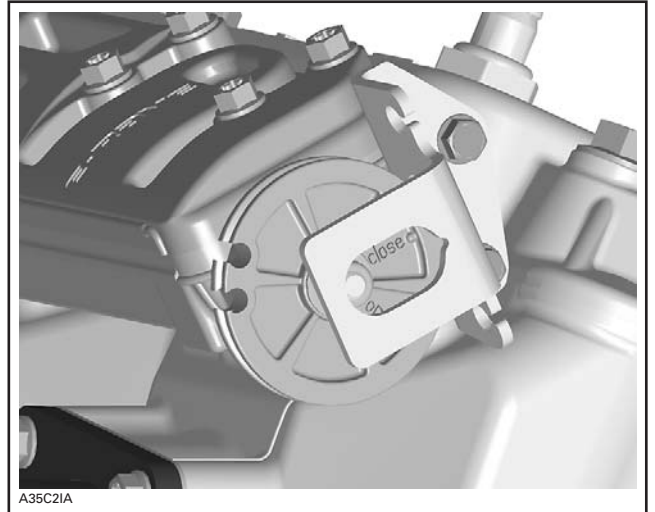
**NOTE:** To prevent battery discharge, headlight fuse (F2) can be removed.



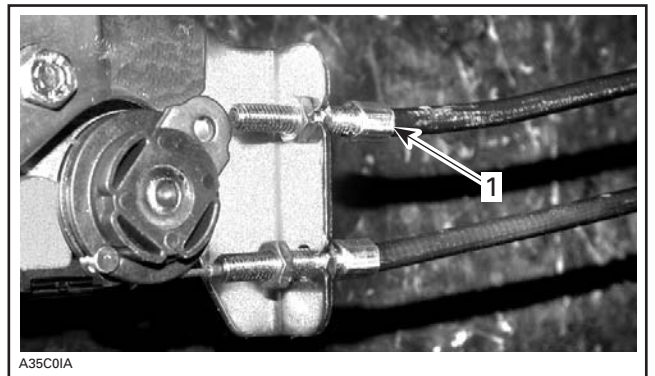
- This will turn the E-RAVE shaft pulley to the adjustment position.

**NOTE:** If pulley does not turn, E-RAVE actuator was already in right position.

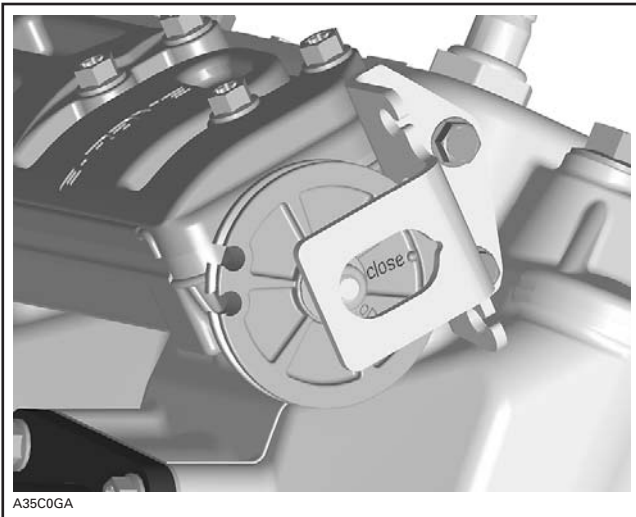
**CAUTION:** The installation and adjustment of the E-RAVE cables is critical. If the cables are installed when the actuator is at its mechanical stop position. (As when the engine is started with no cables installed). The E-RAVES will not function, the ECM will revert to the open fuel map (richer), the check engine light will NOT illuminate, NO code will be set and the engine will not reach top operating RPM.



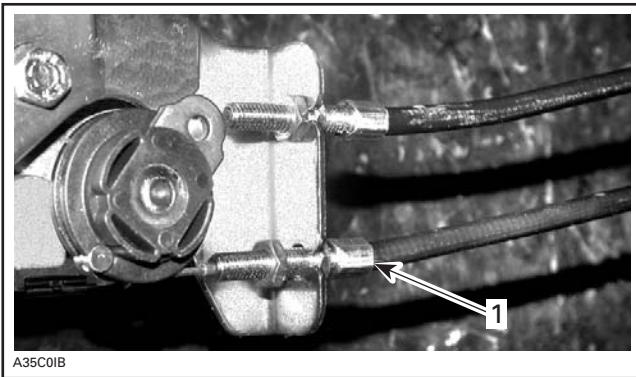
- Tighten top cable adjuster [1] (closing cable) with just enough force to remove play in cable.



- Install DESS key and set engine cut-out switch to OFF.
- Press START/RER button. E-RAVE shaft pulley should turn to the **Close** position.

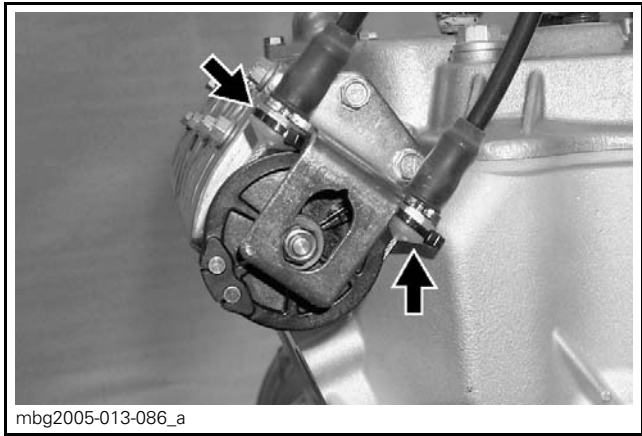


- Readjust top (closing) cable as necessary.
- Remove relay jumper.
- Tighten bottom cable adjuster [1] (opening cable) to remove play in cable.

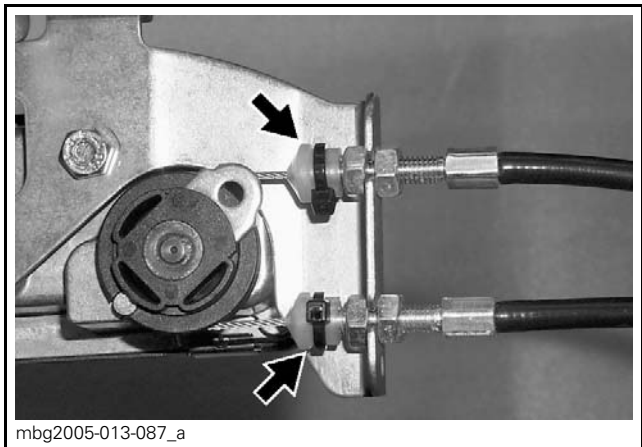


**NOTE:** A cable that is too tight will make the system too stiff to operate smoothly.

- Repeat the E-RAVE DYNAMIC TEST above 2-3 times then recheck the cables free-play. Readjust as necessary. Check with B.U.D.S. for fault codes.
- On E-RAVE shaft pulley cables, install large nylon caps with hexagonal internal shape, and secure in place with tie wraps.



- On E-RAVE actuator pulley cables, install small nylon caps, and secure in place with tie wraps.



## E) PYRAMIDAL FRAME BOLT UPDATE

### Problem

Pyramidal frame bolts may become loose.

### Solution

Replace existing bolts with new bolts with nylon patch

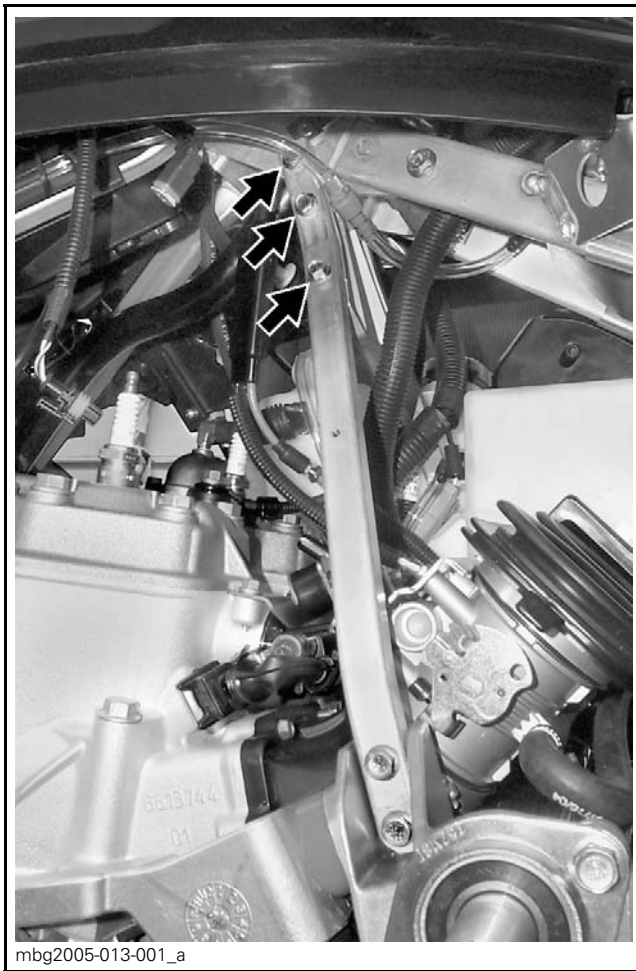
### Required parts

Description	P/N	Qty
Nylon Patch Bolt	250 000 253	6

### Procedure

To maintain hole alignment while replacing the six bolts on top of the pyramidal frame member; remove and replace existing bolts one at a time.





For claiming procedure, refer to the *DEALER/DISTRIBUTOR WARRANTY GUIDE*.

Nylon Patch Bolt Torque	18 N•m (13 lbf•ft)
-------------------------	--------------------

- Start engine and make sure it operates normally through its full RPM range.

**NOTE:** Dealer needs to advise vehicle riders that after these updates, TRA clutch adjustment screws (clickers) may need to be readjusted to reach engine maximum RPM.

Engine maximum RPM:	7850 +/- 50 RPM
---------------------	-----------------

## WARRANTY

Refer to the following vehicle list for and submit a warranty claim using the following information:

Campaign Number	2005-0010
Claim Type	Campaign Claim
Flat Rate Time	2.4 hour
Expiration Date	2006-08-12

Please route to:

<input type="checkbox"/> Service	<input type="checkbox"/> Init.
<input type="checkbox"/> Sales	<input type="checkbox"/>
<input type="checkbox"/> Parts	<input type="checkbox"/>



**NOTE: Repair only if described symptoms exist or are noticed.**

Campaign no.: 2005-0011

Date: **October 05, 2005**

Subject: **Passenger Heated Grips Replacement**

No. **2005-12**

YEAR	MODEL	MODEL NUMBER	SERIAL NUMBER
2005	GTX SPORT 500 SS	000ED5A00, 000ED5B00, 000ED5C00	All
	GTX SPORT 600 HO	000EC5A00, 000EC5B00	
	GTX SPORT 600 HO SDI	000EJ5A00, 000EJ5B00, 000EJ5C00	
	GTX LTD 600 HO SDI	000EH5A00, 000EH5B00	
	GTX LTD 800 HO	000EA5A00, 000EA5B00, 000EA5C00	

## PROBLEM

Heated grip element may fail and stop working.

## SOLUTION

Replace 15W element with new 20W and add reinforcement.

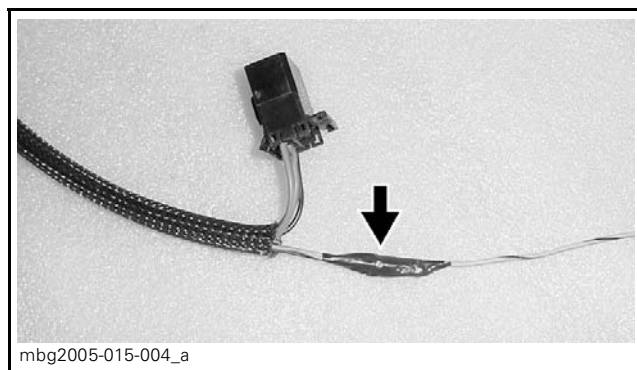
## PARTS REQUIRED

Description	P/N	Qty
Heated Element	515 176 393	2
Rubber Grip Sleeve	510 004 449	2
Reinforcing Sleeve	510 004 709	2

## PROCEDURE

- Remove rear seat.
- Remove passenger's hand hold protectors.
- Remove passenger's hand hold rear bottom retaining screw.
- Cut and remove rubber grip sleeve.
- Remove heated element.
- Disconnect the heated element wires underneath seat.

- Cut wires retaining locking tie.
- Remove terminals from connector. Make sure to note the terminals' location to ease installation.
- Tape a 508 mm (20 in) long piece of wire on the terminals. This wire will be used later to pull the new heated element wire back through the protective sleeve.



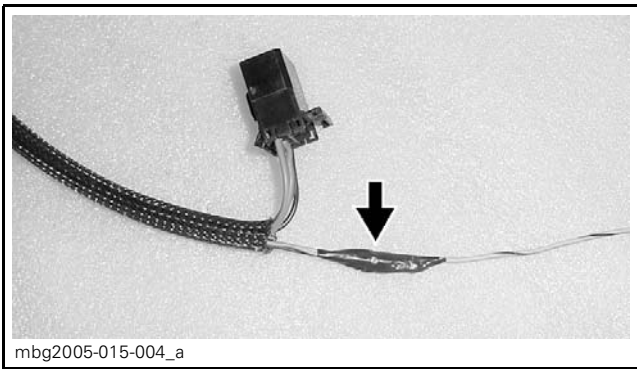
- Pull heated element wires and added wire from protective sleeve. The added wire must remain in the protective sleeve.
- Discard heated elements.

- Slide the aluminum reinforcing sleeve over the hand holds. The joint must be oriented toward the inside.



mbg2005-015-003

- Tape the heated element terminals on the piece of wire still in the protecting sleeve.
- Pull wire and heated element through protective sleeve.



mbg2005-015-004\_a

- Insert terminals in the proper location in the connector.
- Connect connector.
- Secure in place using a locking tie (P/N 414 115 200).
- Fix the new heated element to the aluminum reinforcing sleeve. Start from the bottom part of the joint. Make sure to center the heated element.



mbg2005-015-002\_a

- Install new rubber grip sleeve by inserting the thinner side first. The use of any lubricant is not recommended, as it could affect materials integrity.
- Secure in place using removed screws.
- Install passenger's hand hold protectors.
- Install rear seat.

## WARRANTY

Submit a warranty claim using the following information:

Campaign Number	2005-0011
Claim Type	Campaign Claim
Flat Rate Time	0.9 hour
Expiration Date	2008-10-03

For claiming procedure, refer to the Dealer/Distributor Warranty Guide.