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Technical Bulletin

**Subject: Runs Rough On Initial Start at Temperatures Below
-7°C (20°F)**

Group: 23

Number: 05-02

**Model(s): Golf, Jetta, Jetta Wagon, New Beetle
with 1.9L 2V TDI PD (Eng. Code BEW)**

2004, 2005

Date: Feb. 23, 2005

Supersedes T.B. Group 23 number 05-01 dated Feb. 3, 2005 due to Injector Labor Operation Update.

Condition

Vehicle runs rough on initial start at cold temperatures (below -7°C (20°F)).

Service

Workflow Overview for Service Procedures incorporated into this Technical Bulletin.

- Verify that Work procedures in the following Technical bulletin (depending on model) have been performed:

2005 Models

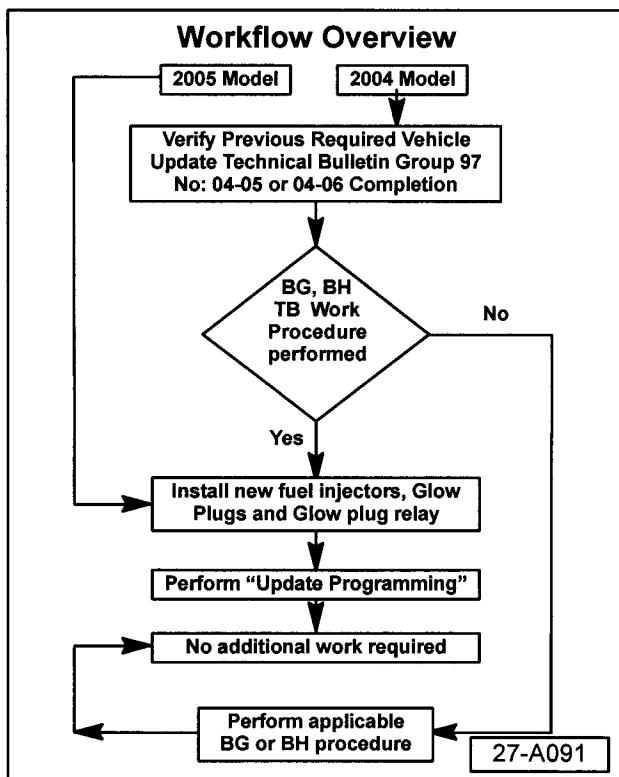
- If condition exists, install kit and Update ECM programming (flash) as follows.

2004 Models

Golf, Jetta, Jetta Wagon - Group 97 No: 04-05 (BG) (2004 only)

New Beetle - Group 97 No: 04-06 (BH) (2004 only).

If condition still exists, install Kit Part No: 038 198 073B* and update ECM programming (flash) as follows:



Kit Part No: 038 198 073B* includes		
Part No:	Qty.	Description
038 130 073 AG**	4	Fuel injectors
N 105 916 04	4	Glow Plugs
038 907 281C	1	Glow Plug Control Module

*) At a later date, Kit will supersede to individual Part Nos. as listed in table.

**) To install injectors also requires bolts, (not included in kit) Part Nos: 038 103 714A (qty 8) and 038 103 385A (qty 4).



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Tip:

Part numbers listed in this T.B. are for reference only. Always check with your Parts Dept. for the latest parts information.



Note:

Ignition key must remain OFF until all parts have been replaced.

- Install new fuel injectors (see Repair Manual Group 23 - *Mixture preparation, Injection, Unit injector*, removing and installing)
- Install new engine Glow plugs -Q6-.
- ◆ Golf Jetta (see Repair Manual Group 28 – *Glow plug system, Glow plug system, checking*).
- ◆ New Beetle (see Repair Manual Group 28 – *Glow plug system, Glow plugs, servicing*).
- Install new Glow activation control module -J370- (for location see Repair Manual *Component locations*).

With Parts replaced as necessary:

- Update ECM software using Flash CD W42TDISWU7000.



Note:

- ◆ **DO NOT** install this software update if injectors, glow plugs and glow plug relay as listed on page 1 have not been installed. *Damage to glow plugs will occur.*



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Procedure:

Update - Programming (Flashing)



Tip:

- ◆ *When performing the reflash procedure, ALL DTCs for all systems are erased.*
- ◆ *DTCs linked to Guided Fault Finding function tests will be lost. Therefore, always address stored DTCs for Customer concerns unrelated to the reflash procedure first.*



Tip:

- ◆ *The following "Update - Programming" (flashing) process may overwrite any "TUNED" ECM programming.*
- ◆ *A "TUNED" ECM is described as any ECM altered so as to perform outside the normal parameters and specifications approved by Volkswagen of America, Inc..*

If you encounter a vehicle with a "Tuned" ECM, prior to performing the "Update - Programming" (flashing) procedure:

- Your Dealership should place the vehicle owner on notice in writing, that their ECM was found to have been tuned, and that any damage caused by the tuning of the ECM (including any adverse emissions consequences) will not be covered by Volkswagen of America, Inc. warranties.
- For any repair requested by the owner under warranty or outside warranty that requires flashing, which will automatically wipe out the "Tuning" program, your Dealership should advise the owner of the above and get Owner's written consent (see attached Control Module Tuning form) to the flashing procedure.



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Tool requirements

- ◆ VAS 5051 or 5052 (with Basis CD V.07.55 and the Brand CD V.07.00 or higher) with old diagnosis logs erased prior to start.
- ◆ "Update - Programming" (flashing) CD W42TDISWU7000.
- ◆ Approved battery charger.



Tip:

Additional copies of the "Update - Programming" CD (Literature Number W42TDISWU7000) may be ordered from the Volkswagen Technical Literature Ordering Center at www.vw.dds1td.com, or by calling 1-800-544-8021 from 8:00 a.m. to 8:00 p.m. EST Monday through Friday. This number can be dialed in both the United States and Canada.

Vehicle requirements

- ◆ **Battery MUST have minimum no-load charge of 12.5V** (failure to maintain voltage during update process can lead to ECM failure) (use an approved battery charger to maintain battery voltage).
- ◆ VAS 5051: connected to vehicle and to 110V AC Power supply at all times during procedure.
- ◆ VAS 5052: connected to vehicle with battery voltage requirements met.
- ◆ Any appliances with high electromagnetic radiation (i.e. mobile phones) switched OFF.
- ◆ No Stored DTC's, erase any stored DTCs (see Tip on page 7).



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Note:

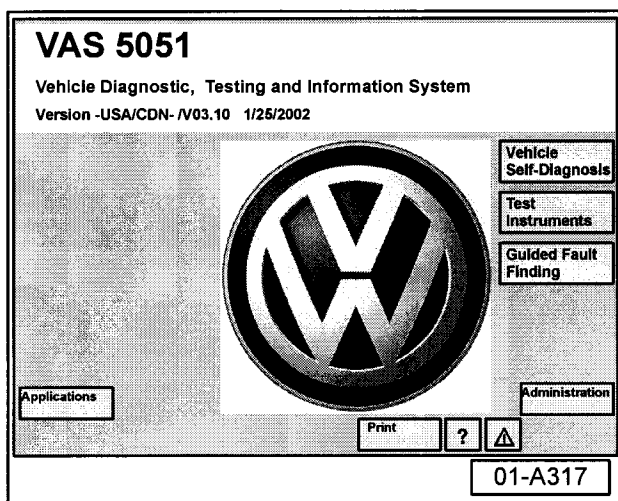
- ◆ *Non-observance of the following points may lead to ECM failure!*
- ◆ *VAS 5051 or 5052 must always be connected to the approved power supply at the approved voltages. Under no circumstances should the power supply be interrupted or the diagnostic connector unplugged during the flash procedure.*
- ◆ *Any appliances with high electromagnetic radiation (i.e. mobile phones) must be switched OFF.*



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“Update - Programming” (flashing) procedure, checking for update match

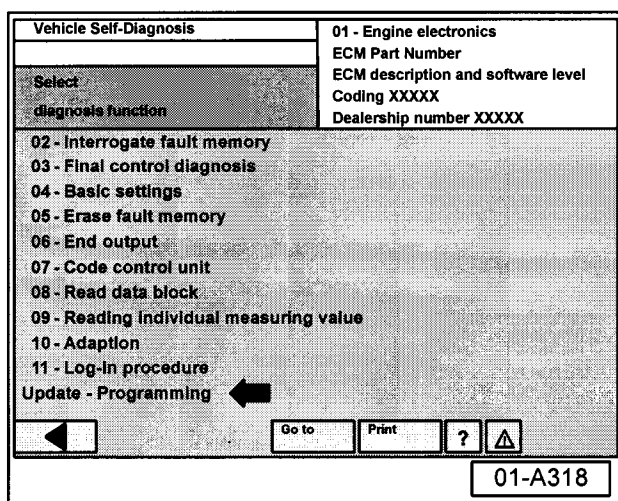
- Switch ignition ON.
- Switch VAS 5051/5052 ON and insert flash CD into CD drive as soon as start screen appears.



Tip:

You must return to the start screen before starting a new (flashing) session, otherwise the flashing CD will not be recognized by the tester.

- Select “Vehicle Self Diagnosis” mode.



- Select vehicle system “01-Engine electronics”.

◆ Program checks software level.

If software level of ECM MATCHES level indicated by Flashing CD:

- ◆ “Update - Programming” (arrow) will not appear.



Tip:

The “Update - Programming” function is only available when the inserted flashing CD level and current vehicle ECM level are different.

If “Update - Programming” does not appear:

- Programming (flashing ECM) cannot be performed, continue to diagnose condition.

If software level DOES NOT match the level indicated on Flashing CD:

- ◆ “Update - Programming” (arrow) appears.



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Vehicle Self-Diagnosis	01 - Engine electronics ECM Part Number ECM description & software level Coding XXXXX Dealership number XXXXX
Select diagnosis function	
02 - Interrogate fault memory	
03 - Final control diagnosis	
04 - Basic settings	
05 - Erase fault memory	
06 - End output ←	
07 - Code control unit	
08 - Read data block	
09 - Reading individual measuring value	
10 - Adaption	
11 - Log-In procedure	
Update - Programming	
Go to	Print
?	⚠
01-A319	

**PRIOR to performing procedure to
“Update - Programming” (flash) the ECM:**

- ◆ ALL fault memories must be interrogated and erased.



Tip:

*Failure to erase ALL fault memories may cause
“Update - Programming” (flashing) procedure to fail!*

- ← Select Diagnosis function 06 “End output”.
- Select Diagnosis function 00 “Collection services”.
- Select “Check DTC memory - complete system”. which will interrogate all fault memories.



Tip:

- ◆ When performing the reflash procedure, ALL DTCs for all systems are erased.
- ◆ DTCs linked to Guided Fault Finding function tests will be lost. Therefore, always address stored DTCs for Customer concerns unrelated to the reflash procedure first.
- Erase ALL fault memories.

Vehicle Self-Diagnosis	01 - Engine electronics ECM Part Number ECM description & software level Coding XXXXX Dealership number XXXXX
Select diagnosis function	
02 - Interrogate fault memory	
03 - Final control diagnosis	
04 - Basic settings	
05 - Erase fault memory	
06 - End output	
07 - Code control unit	
08 - Read data block	
09 - Reading individual measuring value	
10 - Adaption	
11 - Log-In procedure	
Update - Programming ←	
Go to	Print
?	⚠
01-A320	

Once ALL fault memories have been erased:

- Select vehicle system “01-Engine electronics”.
- ← Select “Update - Programming” option at bottom of screen (arrow).



Note:

Once “Update - Programming” function has been started, switching ignition OFF or disconnecting the diagnostic connector may completely destroy the ECM.



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Vehicle Self-Diagnosis	01 - Engine electronics
Update - Programming	ECM Part Number
Programming can be carried out.	ECM description & software level
	Coding XXXXX
	Dealership number XXXXX

WARNING!
The programme version stored in the control unit will be erased. It will be programmed with the new version 000X.
The erasing programming process will last roughly XX minutes.
The part number in the control unit identification may change.
Vehicle specific data (coding, adaptation etc.) might be lost. It must be checked after successful programming.
After the continue button has been pressed the process cannot be cancelled.

IMPORTANT -- PLEASE NOTE:
Switching ignition off or disconnecting the diagnostic connector during programming may completely destroy the control module!

Test Instruments Go to Print ? ⚠ ▶

01-A321

“Update - Programming” (flashing), performing

◀ After selecting “Update - Programming” function, new program version as listed below will install:

- ◆ 7000 for ECM Part No: 038 997 016 C. (Golf, Jetta, Jetta Wagon)
- ◆ 7000 for ECM Part No: 038 997 016 D. (New Beetle)
- ◆ Approximate timing for update is shown on the VAS 5051/5052 screen.

– By selecting the ▶ button, the programming procedure begins.

Vehicle Self-Diagnosis	01 - Engine electronics
Update - Programming	ECM Part Number
Programming in progress	ECM description & software level
	Coding XXXXX
	Dealership number XXXXX

Data Transfer in %

0 11 100

01-A137

◀ Similar screen appears:

The previous data in the ECM is erased and the new data is being transferred to the module from the flash CD.



Tip:

◀ If, during the “Update - Programming”, a fault message is displayed:

- Confirm that VAS 5051 or VAS 5052 diagnostic tool power supply is adequate and that ALL appliances with high electromagnetic radiation (i.e. mobile phones) are switched OFF.
- The “Update - Programming” (flashing) process must then be started from the beginning using the “Repeat” button (arrow). DO NOT use the “Cancel” button.

Vehicle Self-Diagnosis	01 - Engine electronics
Update - Programming	ECM Part Number
Programming in progress	ECM description & software level
	Coding XXXXX
	Dealership number XXXXX

Data Transferred in %

0 100

Diagnosis bus faulty

No voltage or voltage too low on diagnostic bus

Is the battery voltage from the vehicle too low?
Is the diagnostic connector connected to the vehicle?

Repeat Cancel

01-A138



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Tip:

On NO occasion should the "Cancel" button be selected.

Vehicle Self-Diagnosis	
Update - Programming	
Programming log	
Save result?	
Expanded Identification old XXXXXXXXXX	Expanded Identification new XXXXXXXXXX
Description and software level	000X
Coding xxxxx	Dealership number XXXXX
Dealership number xxxxx	Unit number 0
Unit number 942	Unit number 0
Importer number 444	
Programming status	No malfunction
Status	1
Counter programming status	1
Counter successful attempts	fulfilled
Programming pre-condition	
<input type="button" value="Test Instruments"/> <input type="button" value="Go to"/> <input type="button" value="Print"/> <input type="button" value="Help"/> <input type="button" value="Warning"/> <input type="button" value="Next"/>	
01-A323	

Once "Update - Programming" (flashing) is complete:

- ◆ Similar screen appears.
- ◆ ECM Part Number and old software level is still displayed at (arrows).



Tip:

New software level is not displayed until process is complete and fault memories have been erased.

- Select the "Print", then "Screen" button.
- Attach print to vehicle Repair Order.

Vehicle Self-Diagnosis	
Update - Programming	
01 - Engine electronics	
ECM Part Number	
ECM description & software level	
<div style="border: 1px solid black; padding: 10px;"> <p>To continue, the control unit requires an ignition off/on cycle</p> <p>Switch off ignition.</p> </div>	
01-A140	

Once "Update - Programming" (flashing) is complete, the control module must be re-initialized.

- Select the ► button.
- ◆ The tester requests you to switch the ignition OFF.
- Switch ignition OFF.
- ◆ The tester requests you to switch the ignition ON.
- Switch ignition ON when prompted.

After switching ignition ON, the ECM has been re-initialized, however, fault memories must now be erased.

- Select the "Continue button"



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Vehicle Self-Diagnosis	01 - Engine electronics
Update - Programming	ECM Part Number
	ECM description & software level
	Coding XXXXX
	Dealership number XXXXX
Erase fault memory	
<p>The programming causes fault records in related control units. The fault memories of all control units in the vehicle must be erased.</p> <p>Pressing the Continue button will automatically erase the fault memories.</p> <p>Pressing the Back button will not erase fault memories</p>	
◀ Test Instruments	Go to Print ? ⚠ ▶
01-A324	

Fault memories, erasing after "Update - Programming" (flashing)

Due to the CAN bus system, fault messages will be stored in various Control Modules during programming.

- ◀ To erase ALL fault memories:
 - Confirm by selecting the ▶ button.

Vehicle Self-Diagnosis	01 - Engine electronics
Update Programming	ECM Part Number
DTC memories are erased	ECM description & software level ◀
Function ended	Coding XXXXX
	Dealership number XXXXX
<p>Vehicle systems with erased fault memories:</p> <p>01 - Engine electronics</p> <p>02 - Gearbox electronics</p> <p>03 - Brake electronics</p> <p>15 - Airbag</p> <p>25 - Immobilizer</p> <p>16 - Steering wheel electronics</p> <p>46 - Convenience system central module</p> <p>56 - Radio</p> <p>17 - Dash panel insert</p> <p>Function ended!</p>	
◀ Test Instruments	Go to Print ? ⚠ ▶
01-A325	

Once fault memories have been erased:

- ◀ ♦ Similar screen appears.
- ♦ Old ECM Part No. and software level still appear at (arrow).
- ♦ Function ended appears at bottom of screen.
 - Finish update of the ECM by selecting the ◀ button.

Vehicle Self-Diagnosis	01 - Engine electronics
Select diagnosis function	ECM Part Number
	ECM description and software level ◀
	Coding XXXXX
	Dealership number XXXXX
<p>02 - Interrogate fault memory</p> <p>03 - Final control diagnosis</p> <p>04 - Basic settings</p> <p>05 - Erase fault memory</p> <p>06 - End output</p> <p>07 - Code control unit</p> <p>08 - Read data block</p> <p>09 - Reading individual measuring value</p> <p>10 - Adaption</p> <p>11 - Log-in procedure</p>	
◀	Go to Print ? ⚠ ▶
01-A326	

- ♦ Similar screen appears.
- ◀ ♦ Updated software level "7000" will appear at (arrow).
- ♦ Flash CD can now be removed from VAS 5051 or VAS 5052 Diagnostic tool.
 - Print the ECM screen to verify ECM update software level.
 - Attach print to vehicle Repair Order.
 - Select "Go to" then select "Exit".



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Tip:

It is not generally necessary to encode the ECM following the "update - Programming" (flashing procedure). However, you must set the readiness code.

- Set readiness code.
- Use VAS 5051 or VAS 5052 to set readiness code.

When procedure applies to vehicles within the New Vehicle Limited Warranty, use the following:

Claim Type:	W2
Part Identifier:	2338
*Damage Code:	2338 10 xxx 2
Labor Operation: Replace injectors	2338 2036 250 TU
Labor Operation: Replace Glow Plugs	2884 2000 70 TU
Labor Operation: Replace Control Module	2885 1900 30 TU
Labor Operation: Update programming	2338 2540 90TU
Diagnostic Time:	No Diagnostic time allowed
Claim Comment: Type "Per Technical Bulletin V230501" in comment section of Warranty claim.	

*) xxx = vendor code for part



OWNER INFORMATION ABOUT CONTROL MODULE TUNING* ACKNOWLEDGEMENT AND AUTHORIZATION FOR REPROGRAMMING (REFLASHING) OF CONTROL MODULE(S)

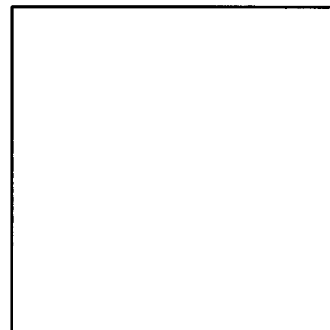
**) "TUNING" is described as the addition of or modification of any component which causes a Volkswagen vehicle to perform outside the normal parameters and specifications approved by Volkswagen of America, Inc..*

Date: _____

Dealer Number: _____

Vehicle Identification Number: _____

Repair Order Number: _____



Dealer stamp

I _____, owner or driver of the above identified Volkswagen, confirm:

☐ "Tuning" as described above (especially power increasing modifications) has NOT been performed on my vehicle.

☐ "Tuning" as described above has been performed on my vehicle and the following components were modified or installed:

TUNING was performed by (Please provide Company name and telephone number, if you wish us to contact them):

I understand that if my Control Module is determined to have been tuned, any damage caused by the tuning of the Control Module (including adverse emissions consequences) will not be covered by Volkswagen of America, Inc. warranties.

I am permitting an authorized Volkswagen Dealer to reflash (update) my Control Module, and by doing so, I understand that this process will automatically overwrite (destroy) and permanently delete any tuning program that was previously installed on the Control Module of my Volkswagen vehicle.

By signing below, I fully acknowledge and understand that the tuning program will not be restored and Volkswagen of America, Inc., will not be liable in any way for the loss of tuning data.

Signature of Customer