EMCS OWNERS MANUAL

APR's Enhanced Modular Chipping System™ (EMCS™) is an industry leading technology that brings many new features to the automotive enthusiast. EMCS technology was developed exclusively by APR, LLC and demonstrates APR's continued commitment to lead the industry with the most technologically advanced products available. EMCS consists of three important parts that work together as a cohesive unit: the EMCS on-board software (the software that is on either an EMCS module or stock chip), the support software that is used to program and reprogram the APR software, and if equipped, the EMCS module (which is soldered to the engine computer board). APR's EMCS is a truly modular system that allows for future enhancements and features to be added as they are developed without the need for additional hardware.

EMCS makes the following advanced optional features possible: (Please note that some features may only be available for certain vehicles. For more information, please consult an APR sales representative.)

Flip Switch: Using the cruise control buttons, you are able to switch between up to four separate ECU programs of your choice. Examples of possible chip programs include stock, 91 octane program, 93 octane program, 100 octane program, valet, etc.

Unique Access Code: A unique access code is used for the security lockout feature and anti-theft system. The user may select any 1 to 4 digit number to be used as their access code. The access code is entered using the cruise control buttons.

Security Lockout Feature: Prevents unauthorized personnel from accessing EMCS functions and changing the current EMCS configuration. The Security Lockout feature is available as a stand-alone option or bundled with the Anti-Theft system.

Anti-Theft System: This theft deterrent system prevents the engine from being started by unauthorized personnel. The engine will crank but not fire. The Anti-Theft option includes the Security Lockout feature option. Do not confuse the Anti-Theft System with the Security Lockout Feature.

Fault-code Erase: Allows you to erase and reset engine related trouble codes without having to use a specialty tool.

Throttle-body Realignment: Allows you to manually perform throttle-body adaptation.

V-Tune: Allows you to make changes to different parameters of your engine's tuning. For advanced users.

VERY IMPORTANT! Precautionary Measures!

Please read the following carefully after installing APR EMCS™ in your vehicle.

In the case of cars that are equipped with EMCS modules, never attempt to change chip modes while the vehicle is in motion. (It is possible to change modes while driving or with the car idling but it is not recommended.) This is dangerous due to the fact that one must look at the dash to locate what mode they are in. Program switching should always be done with the car off and the key in the on position or with the car stopped and the engine idling.

DO NOT attempt to use anything less than certified 100-octane unleaded fuel with programs intended for 100-octane fuel. *Lower octane gases are NEVER to be used with race-gas programs regardless of how much octane booster or other additive is used. OCTANE BOOSTER AND A LOWER OCTANE FUEL IS NOT THE EQUIVALENT OF 100-OCTANE RACE FUEL. Failure to comply with this guideline could result in expensive damage to your vehicle. APR will not be responsible for any damage resulting from racing fuel programs.

EMCS features are not intended to be used to deceive dealerships or any other party with regards to warranty work. The EMCS system is intended to function in a manner closely resembling that of the stock ECU programming so that car diagnosis and repair is unimpaired.

Certain engine software programs may not meet state or federal requirements regarding emissions or other such regulations. These programs are intended for off-road use only.

EMCS features are accessed on all Bosch ME7 and ME9 equipped vehicles using the car's cruise control buttons. From here on, these buttons will be referred to as they are labeled: SET, RESUME, ON, CANCEL, OFF and, in addition for some newer chassis vehicles, SPEED+ and SPEED-. EMCS will not interfere with normal operation of the cruise control.

Instructions for Different Vehicles

Depending upon what type of car and car options you have, the directions for changing the APR programming through the cruise control switch vary. Please refer to the section listed for your vehicle.

I. Audi/VW - B5 A4/Passat Non-DBW (1997-1999.5)
II. Audi/VW – ALL except B5 A4/Passat Non-DBW (1997-1999.5)

I. Audi/VW - B5 A4/Passat Non-DBW (1997-1999.5)

Flip Switch (optional)

The Flip Switch option allows you to switch between two or more ECU programs of your choice. Program selection is facilitated by using the supplied APR EMCS Button.

WARNING! DO NOT ATTEMPT TO SWITCH PROGRAMS WHILE THE CAR IS IN MOTION! ALTHOUGH A CAR WITH A SOLDERED EMCS SYSTEM WILL ALLOW PROGRAM SWITCHING WHENEVER THE IGNITION IS ON, IT IS NOT RECOMMENDED TO SWITCH PROGRAMS UNLESS THE ENGINE IS OFF AND/OR THE CAR IS MOTIONLESS. ATTEMPTING TO SWITCH PROGRAMS WHILE DRIVING COULD BE DISTRACTING FOR THE DRIVER AND COULD RESULT IN AN ACCIDENT.

Procedure to Swap Program Modes
1. Locate your EMCS configuration on the back of this manual.
2. Turn the ignition key to the ON position.
3. Make sure the car is not in motion.
4. Press the APR EMCS Button the number of times appropriate for the desired EMCS program. The number of times you press the EMCS button corresponds to the program number on the back of this manual. For example, to switch to your third EMCS program, press the EMCS Button three times. Once the button has been pressed three times, the check engine light will blink three times indicating the third program.

    Program 1 = 1 blink
    Program 2 = 2 blinks
    Program 3 = 3 blinks*
    Program 4 = 4 blinks*
    (* if equipped)

Note: If your EMCS system is equipped with two programs, then you will not be able to change to the third or fourth programs. Remember: If your EMCS system is equipped with special software for particular hardware and/or fuel DO NOT attempt to run those programs without the correct matching hardware and/or fuel. This could result in serious damage to your car.

Fault Code Erase/Throttle-Body Alignment (Optional)

The EMCS fault code erase feature can be used to erase all fault codes present on the engine computer. This feature is activated using the cruise control APR EMCS Button.

Erasing Fault Codes
1. Turn the ignition key to the ON position.
2. Press the EMCS button five times. The check engine light will blink five times, indicating the fault codes have been cleared.

II. Audi/VW – ALL except B5 A4/Passat Non-DBW (1997-1999.5)

Flip Switch (optional)

The Flip Switch option allows you to switch between two or more ECU programs of your choice. Program selection is facilitated by using the cruise control SET button.

WARNING! DO NOT ATTEMPT TO SWITCH PROGRAMS WHILE THE CAR IS IN MOTION! ALTHOUGH A CAR WITH A SOLDERED EMCS SYSTEM WILL ALLOW PROGRAM SWITCHING WHENEVER THE IGNITION IS ON, IT IS NOT RECOMMENDED TO SWITCH PROGRAMS UNLESS THE ENGINE IS OFF AND/OR THE CAR IS MOTIONLESS. ATTEMPTING TO SWITCH PROGRAMS WHILE DRIVING COULD BE DISTRACTING FOR THE DRIVER AND COULD RESULT IN AN ACCIDENT.

Procedure to Swap Program Modes
1. Locate your EMCS configuration on the back of this manual.
2. Turn the ignition key to the ON position. (for DirectPort Programmed cars, the engine MUST be off)
3. Be sure that your EMCS features are in the UNLOCKED state (if equipped with the security feature). Unlock the security feature if necessary. Remember that you will not be able to unlock the security feature if the engine is running.
4. Make sure the car is not in motion.
5. Make sure the cruise control is in the on position.
6. Hold down the cruise control SET button to select the appropriate engine program. After five seconds, the check engine light will begin blinking once per second. This will continue for five seconds. Next, the check engine light will begin blinking two times per second for five seconds. This pattern will continue with three blinks (depending on the number of programs that are configured) and will end with four blinks per second. The number of blinks per second corresponds to the program number on the back of this manual:

      Program 1 = 1 blink per second
      Program 2 = 2 blinks per second

Program 3 = 3 blinks per second*
Program 4 = 4 blinks per second*
(* if equipped)

7. Release the cruise control SET button when the indicated blinks per second corresponds with the program that you wish to run. Example: To run the program in slot 2, hold down the cruise control SET button until the check engine light blinks twice per second and then release the SET button. You will now be running program number 2.

8. *(DirectPort Programmed Cars only)* After changing programs, turn the ignition key to the OFF position for a minimum of 10 seconds. Turn the ignition to the ON position and wait until the check engine and EPC lights illuminate on the dash before starting the engine. FAILURE TO DO THIS, ESPECIALLY ON AUTOMATIC CARS, WILL MOST LIKELY RESULT IN A FAULT CODE AND POOR PERFORMANCE. FOR NORMALLY ASPIRATED CARS, YOU MUST CYCLE THE KEY OFF AND BACK ON A SECOND TIME IN ORDER TO CORRECTLY CHANGE PROGRAMS. (On ME9 (2.0T, FSI, etc) cars, the check engine light and EPC light will flash back and forth.)

9. *(DirectPort Programmed Cars only)* After the check engine light stays on solid from the above step, cycle the ignition key off and back on one more time before attempting to start the car.

Note: If your EMCS system is equipped with two programs, then you will never see 3 blinks or 4 blinks per second. The pattern will end with two blinks per second. Similarly, if your EMCS system is equipped with 3 programs, you will never see 4 blinks per second. Remember: If your EMCS system is equipped with special software for particular hardware and/or fuel DO NOT attempt to run those programs without the correct matching hardware and/or fuel. This could result in serious damage to your car.

Unique Access Code (Optional)

The unique access code allows you to unlock the security lockout feature and/or the AntiTheft system (if equipped). The code is composed of 1 to 4 digits and is user-defined at the time of purchase. If you had DirectPort Programming trial software, and you purchase the trial, once the trial is expired you will enter a separate trial unlock code using these same steps.

There are different procedures for entering your unique access code, depending upon your type of car and the options on it. Please refer to the sections below:

I.   B5 A4/S4/Passat(2000-2002), B5.5 Passat (2001-2005), C5 A6/RS6/Allroad (2000-2004), MkIV GTI/Jetta/Beetle (2000-2005), A3 MkI TT (2000-2005)

II.   B6/B7 A4/S4 (2002-2008), 8P A3 (2006+ with Separate Cruise Stalk), MkV GTI/Jetta/EOS (2006+ with Separate Cruise Stalk), B6 Passat (2006+ with Separate Cruise Stalk)

III.   MkV GTI/Jetta/EOS (2006+ with Integrated Cruise/Headlight/Turn Signal Stalk), B6 Passat (2006+ with Integrated Cruise/Headlight/Turn Signal Stalk), 8J MkII TT (2007+ with Integrated Cruise/Headlight/Turn Signal Stalk), 8P A3 (2006+ with Integrated Cruise/Headlight/Turn Signal Stalk)

I. Entering your Unique Access Code *(Audi/VW - B5 A4/S4/Passat(2000-2002), B5.5 Passat (2001-2005), C5 A6/RS6/Allroad (2000-2004), MkIV GTI/Jetta/ Beetle (2000-2005), A3 MkI TT (2000-2005))*

1. Locate your unique access code.
2. Turn ignition key to the ON position. DO NOT START THE ENGINE. The check engine and EPC lights should stay illuminated unless anti-theft is active, in which case the check engine light will blink continuously.
3. Ensure that the cruise control slider button (this is the inner cruise control button) is in the ON position. If the cruise control button is OFF, turn it ON. Press the CANCEL button once before proceeding to the next step.
4. Enter the first digit of your unique access code by pressing the SET button on the cruise control stalk the same number of times corresponding with the first digit of your security code (ex. for a 9, press the SET button nine times). You do not have to hold the set button for any specific period of time, just press the button and release it.
5. Use the slider button on the cruise control stalk to register each digit of your unique access code. To do this, slide the cruise control button from the ON position to the CANCEL position. (If you go past the CANCEL position to the OFF position it is OK, just turn the cruise control back to the ON position and proceed with the next digit).
6. Enter subsequent digits in your access code by following the same procedure you used above, pressing the SET button the number of times corresponding with each digit. Do not forget to register each digit by sliding the inner cruise control button to at least the CANCEL position. Also, ensure that the cruise control slider button is in the ON position before proceeding with the next digit. If you make a mistake entering your access code, press CANCEL and then start over with the first digit. It is not necessary to turn the ignition off and back on if you make a mistake.
7. After you have correctly entered your unique access code and the cancel button is pressed after the last digit, the check engine and EPC lights will start blinking alternately to signify that the code was entered correctly. If unlocking DirectPort trial software, wait 10 seconds after the lights stop flashing before performing any other EMCS functions.

II. Entering your Unique Access Code *(Audi/VW - B6/B7 A4/S4 (2002-2008), 8P A3 (2006+ with Separate Cruise Stalk), MkV GTI/Jetta/EOS (2006+ with Separate Cruise Stalk), B6 Passat (2006+ with Separate Cruise Stalk))*

1. Locate your unique access code.
2. Turn ignition key to the ON position. DO NOT START THE ENGINE. The check engine and EPC lights should stay permanently illuminated unless anti-theft is active, in which case the check engine light will blink continuously.
3. Ensure that the cruise control stalk is set to the ON position. Press the SPEED - button once before proceeding to the next step.
4. Enter the first digit of your unique access code by pressing the SPEED + button on the cruise control stalk the same number of times corresponding with the first digit of your security code (ex. for a 9, press the SPEED + button nine times). You do not have to hold the SPEED + button for any specific period of time, just press the button and release it.
5. Press the SPEED – button on the cruise control stalk to register each digit of your unique access code.

6. Enter subsequent digits in your access code by following the same procedure you used above, pressing the SPEED + button the number of times corresponding with each digit. Do not forget to register each digit by pressing the SPEED – button between each digit of the code. If you make a mistake entering your access code, press SPEED – and then start over with the first digit. It is not necessary to turn the ignition off and back on if you make a mistake.

7. After you have correctly entered your unique access code and the SPEED – button is pressed after the last digit, the check engine and EPC lights will start blinking alternately to signify that the code was entered correctly. If unlocking DirectPort trial software, wait 10 seconds after the lights stop flashing before performing any other EMCS functions.

III. Entering your Unique Access Code *(Audi/VW - MkV GTI/Jetta/EOS (2006+ with Integrated Cruise/Headlight/Turn Signal Stalk), B6 Passat (2006+ with Integrated Cruise/Headlight/Turn Signal Stalk), 8J MkII TT (2007+ with Integrated Cruise/Headlight/Turn Signal Stalk), 8P A3 (2006+ with Integrated Cruise/Headlight/Turn Signal Stalk))*

1. Locate your unique access code.

2. Turn ignition key to the ON position. DO NOT START THE ENGINE. The check engine and EPC lights should stay illuminated unless anti-theft is active, in which case the check engine light will blink continuously.

3. Ensure that the cruise control slider button (this is the upper cruise control button) is in the ON position. If the cruise was ON, turn it OFF and back ON again.

4. Enter the first digit of your unique access code by pressing the SET button on the cruise control stalk the same number of times corresponding with the first digit of your security code (ex. for a 9, press the SET button nine times). You do not have to hold the set button for any specific period of time, just press the button and release it.

5. Using the upper switch on the cruise control stalk, turn the cruise OFF to register each digit of your unique access code. Once the cruise is in the OFF position, turn the cruise control back to the ON position and proceed with the next digit.

6. Enter subsequent digits in your access code by following the same procedure you used above, pressing the SET button the number of times corresponding with each digit. Do not forget to register each digit by sliding the upper cruise control switch to the OFF position. Also, ensure that the cruise control slider button is turned back ON before proceeding with the next digit. If you make a mistake entering your access code, turn the cruise OFF and then start over at step two of these instructions. It is not necessary to turn the ignition off and back on if you make a mistake.

7. After you have correctly entered your unique access code and the cancel button is pressed after the last digit, the check engine and EPC lights will start blinking alternately to signify that the code was entered correctly. If unlocking DirectPort trial software, wait 10 seconds after the lights stop flashing before performing any other EMCS functions.

Security Lockout Feature (Optional)

Note: If you did not opt for the security feature, you can skip this section. Do not confuse this feature with the Anti-theft System. THESE ARE TWO SEPARATE FEATURES! The Security Lockout Feature prevents unauthorized personnel from accessing the EMCS functions. When the EMCS programming is in the LOCKED state, it will not be possible to select any other EMCS features or switch between ECU programs. Putting the EMCS programming into the locked state will lock in the current configuration. Example: You have selected the second ECU program (chipped). Next you select the LOCKED state. The ECU will continue to run the program that you selected (chipped). If you attempt to switch chip states or use any other EMCS function by pressing the cruise control buttons while in the

LOCKED state, you will receive no visual feedback and the requested function will not run. You MUST enter your unique access code correctly before you will be able to access EMCS features. The EMCS programming will always default to the LOCKED state when ECU power is interrupted and the ECU will run the first program (usually stock). The EMCS programming will not reset when the ignition key is turned OFF and back ON. You will not lose your current EMCS settings unless the ECU loses power (i.e. the ECU is unplugged or the battery is disconnected).

Procedure to put the EMCS programming into the UNLOCKED state
    1. Enter your unique access code by following the procedure outlined above under 'Entering your Unique Access Code' for your particular vehicle.
    2. After successful access code entry, you will now be able to access all other EMCS functions that your ECU is equipped with until the EMCS programming is relocked.

Procedure to put the EMCS programming into the LOCKED state
    1. Ignition key must be in the ON position. Engine can be either running or not running.
    2. Press and hold the RESUME button on the cruise control switch. Keep holding the RESUME button until the check engine light blinks three times per second and release the button. The EPC light will also be lit while the check engine light is blinking. If you have purchased the fault code erase and throttle body adaptation options then you will need to wait while the light first blinks once a second (after five seconds), then twice a second for five seconds, and finally three times a second. The check engine light and EPC light will blink alternately for three seconds indicating that the EMCS programming has been locked.

Overview of EMCS Security Feature Instructions
    - The EMCS programming will always default to the LOCKED state with the first program selected.
    - The ignition key must be in the ON position with the engine not running in order to enter your unique access code.
    - Enter your unique access code by using the procedures outlined in the "Unique Access Code" section of this manual.
    - When the unique access code is correctly entered, the check engine and EPC lights will blink alternately for three seconds to indicate that the EMCS programming has been unlocked successfully. The same blinking pattern will occur when the programming is relocked.
    - The programming can be locked with the engine running or not as long as the ignition is ON. This is accomplished by holding the RESUME button until the check engine light blinks three times a second and then releasing the RESUME button.
    - The EMCS programming will stay in the same chip mode until another mode is selected. This mode will not be affected by turning the ignition off nor will this mode change due to the EMCS module's locking state.

Anti-Theft System (optional)
The EMCS Anti-Theft system will prevent the vehicle from being driven away until the correct access code has been entered. The Anti-Theft system must be activated in order to prevent the car from being driven. On some vehicles Anti-Theft simply prevents the engine from starting, while on other vehicles the engine will start, but without any throttle control. If the Anti-Theft system is activate, the check engine light will flash steadily. If Anti-Theft is not active, the engine will start and run normally without requiring Anti-Theft deactivation. The Anti-Theft option is only available bundled together with the Security Lockout feature (however, the Security Lockout feature can be purchased as a stand-alone option).

Activating the Anti-Theft System
Each time you wish to activate the Anti-Theft System you must follow these simple steps:
    1. The engine must be running or the ignition key must be in the ON position before proceeding.
    2. Ensure that your EMCS programming is in the UNLOCKED state. If not unlocked, then unlock before proceeding. See instructions on Security Lockout Feature.
    3. To activate the Anti-theft system, press the following sequence of buttons in procession:
        SET>SET>RESUME>RESUME>SET>SET>RESUME>RESUME
This is a total of eight button presses. If more than ~1.5 seconds elapse between button presses, the sequence will restart to prevent false sequence recognition.
    4. If successfully activated the check engine light will blink continuously to signify that the Anti-Theft system is active. If the check engine light is not blinking continuously then retry steps 1-3.
    5. If the engine is already running, it will continue to do so until it is switched off. Once the engine is off, the AntiTheft system will activate, and the engine will not start again until the correct access code is entered.

Deactivating the Anti-Theft System
    1. Enter your unique access code by following the procedure outlined above under 'Entering your Unique Access Code'.
    2. Upon successful access code entry, the check engine light should no longer be blinking continuously. The engine will now start and run normally.

Fault Code Erase/Throttle-Body Alignment (Optional)
The EMCS fault code erase feature can be used to erase all fault codes present on the engine computer. The throttle body alignment feature can be used to manually run the throttle body alignment sequence. These features are only available as a pair. Both features are activated using the cruise control RESUME button.

Erasing Fault Codes / Performing Throttle-Body Alignment
    1. Turn the ignition key to the ON position.
    2. Be sure that your EMCS module is in the UNLOCKED state (if equipped with the security feature.)
    3. To erase fault codes, hold the RESUME button until the check engine light starts blinking once per second and then release the cruise control button.
The EPC light will stay illuminated while the check engine light is blinking (this is to distinguish between the program switching mode.) To run the throttle body adaptation sequence, hold the RESUME button until the check engine light blinks two times per second and then release the cruise control button.
Note: Throttle body alignment is only possible when the ignition is ON and the engine is not running. Also, only attempt to run the throttle body adaptation sequence when the engine is cold.

EMCS OPTIONS INSTALLED

Customer Name _____

Serial Number _____ Date Installed _____

MODE ___ Stock Program   ☐ Directport
MODE ___ 91 Octane ((R+M)/2) Chipped Program*
MODE ___ 93 Octane ((R+M)/2) Chipped Program*   ☐ EMCS Module
MODE ___ Valet Program
MODE ___ 100 Octane ((R+M)/2) Race Program*
MODE ___ 104 Octane ((R+M)/2) Race Program*

☐ Fault Code Erase/ Throttle Body Alignment

☐ Unique Access Code   ____   ____   ____   ____

☐ Anti-Theft**   ☐ Trial Software

☐ V-Tune

* Indicates a program designed only for use with unleaded gasoline with a minimum octane rating as specified.

** Security Lockout is required to operate this feature.