

# ***Renegade Tech Works***

## **Quick Start Instructions For TechWorks 3000gt/Stealth ECS Controller Using Factory Console & ECS Switch [For TechWorks ECS Models Running Firmware 1.9/1.8/1.7]**

**Note:** The complete PDF manual can be found at <http://www.renegadetechworks.com> under the Installation menu.

### **Normal Operation**

- Sport & Tour Light Indicators
  - In Normal Operation the Sport / Tour Light indicators will show what setting the struts are currently in as follows:
    - **SPORT Light ON** = Struts in **HARD mode**
    - **SPORT & TOUR Light ON** = Struts in **MEDIUM mode**
    - **TOUR Light ON** = Struts in **SOFT Mode**
  - **Sport & Tour Light Blinking together every 30 secs = Command Mode Failure**  
Indicates the controller was not able to command one or more of the struts into the desired mode.
  - **Alternating Blinking Sport & Tour Lights every 30 secs = Signal Wire Failure**  
Indicates controller detected what is very likely either a broken signal or ground wire to the strut cap harness.
- ECS Switch Operation
  - In Normal Operation the ECS pushbutton switch when pressed and released will send the request to cycle the struts to the next hardness setting:  
**Hard -> Medium -> Soft -> Hard -> Medium -> Soft -> ..... -> .....**
  - The Sport/Tour lights will light appropriately (as shown above) to indicate the requested mode.

### **Startup**

- Step 1 -On a power up condition - Both the SPORT & TOUR Lights will be turned on at the same time for approximately 3 secs as a test of the lights so you can see that the lights are not burned out .  
  
The Lights will turn off after this step and stay off for a minimum of 10 seconds and up to 30 seconds or longer (if a problem is detected during startup) as the startup sequence completes with step 2 & 3
- Step 2 - Next, the controller will interrogate all four struts to see what mode they were previously left in. If all struts in same mode - Sport/Tour lights will light up accordingly (as described above).
- Step 3 - If the controller does detect a problem and cannot determine that all the struts are in the same state - it will attempt to set all struts to HARD mode. If successful the SPORT light will turn on and there will be no blinking lights. If unsuccessful the SPORT light will turn on and approximately every 30 seconds blinking lights will occur.

## Diagnostic Mode

- The TechWorks ECS Controller starting with firmware version 1.7 , 1.8, 1.9 or greater has two different diagnostic modes:
  - 1<sup>st</sup> Diagnostic Mode: READ FAULT DIAGNOSTICS mode - this mode allows you to retrieve any current fault conditions that the controller has detected & stored while the car has been running. This test does not actively operate the struts like #2 does.
  - 2<sup>nd</sup> Diagnostic Mode: RUN DIAGNOSTICS mode - this mode allows you to execute the diagnostic routine that will test each of the four ECS struts in order and display results.
  - **NOTE:** execution of the RUN DIAGNOSTICS mode will reset and clear any fault codes that the READ FAULT DIAGNOSTICS mode may have stored while the car was in operation.

### READ FAULT DIAGNOSTICS Mode

- To execute the READ FAULT DIAGNOSTICS mode:
    - Press and hold the ECS pushbutton switch for approximately 4 secs
    - As soon as you see the Sport & Tour lights both flash OFF & ON quickly
    - Release the switch
  - The Read Fault Diagnostic Routine will then start and report the current status of each of the struts (1,2,3,4) in order. The order of the reporting is:
    - Strut 1: Front Left Strut
    - Strut 2: Front Right Strut
    - Strut 3: Rear Left Strut
    - Strut 4: Rear Right Strut
  - **The Reporting Sequence & Tour/Sport lights display for a given strut is as follows:**
    - Step (1) Strut Number Being Reported:** Just the **Sport Light** will blink a number of times with a pause in between equal to the strut number being reported. For example if just the Sport light blinks 3 times quickly, pauses, blinks 3 times quickly, pauses, blinks 3 times quickly - then strut 3: Rear Left is about to be reported.
    - Step (5) Strut Fault Conditions Report Results (what the lights will do):**
      - (5a) **STRUT TESTS OK:** If the strut being reported has no fault conditions and has been operating normally , then the SPORT & TOUR lights will light up SOLID for several seconds.
      - (5b) **STRUT COMMAND FAILURE:** If the strut being reported experienced a command failure fault condition since the time the car was turned on then the SPORT & TOUR lights will both blink 3 times quickly with a long pause between and then will blink 3 times quickly again with a long pause between and will then blink 3 times quickly for the last time.
      - (5c) **SIGNAL WIRE FAILURE:** If the strut being reported experienced a signal wire failure fault condition since the time the car was turned on then the SPORT & TOUR lights will alternately blink on and off (Sport light ON/ Tour Light OFF then Sport Light OFF / Tour Light ON ) 8 times - this is indicating that while the car was running the controller detected what is very likely either a broken signal wire or ground wire to the strut cap harness
- At the end of step (5) All lights will be turned off. .
- **Step (6) Next Strut:** testing will now proceed to the next strut and start over with Step(1)
- To Exit Diagnostic Mode - press and hold the ECS switch until you see the SPORT & TOUR lights both flash twice very quickly. Then let go to exit the testing cycle. You can also turn the ignition off & back on.

## RUN DIAGNOSTICS Mode

- To execute the RUN DIAGNOSTICS mode
  - press and hold the ECS pushbutton switch for approximately 4 secs until you see Sport & Tour lights both flash OFF & ON twice quickly & then turn off. Keep holding the switch - do not let go when they turn off.
  - While continuing to press the ECS pushbutton switch for approximately 3 more seconds - wait until you see Sport & Tour lights both start to flash OFF & ON again quickly. Now Release the switch and the diagnostic test will begin.
- The RUN Diagnostic Routine will then start and will test each of the struts (1,2,3,4) in order performing the same test sequence for each strut.

The order of the test is:

- Strut 1: Front Left Strut
  - Strut 2: Front Right Strut
  - Strut 3: Rear Left Strut
  - Strut 4: Rear Right Strut
- **The Test Sequence & Tour/Sport lights display for a given strut is as follows:**  
**Step (1) Strut Number Being Tested:** Just the **Sport Light** will blink a number of times with a pause in between equal to the strut number being tested.

For example if just the Sport light blinks 3 times quickly, pauses, blinks 3 times quickly, pauses, blinks 3 times quickly - then strut 3: Rear Left is about to be tested. NOTE: During STEPS (2) , (3) & (4) The Sport & Tour Lights will be OFF.

**Step (2) HARD Mode Test:** controller attempts to put the strut into HARD Mode and the controller logs if the test was successful. No lights are displayed - the sequence proceeds to the next step.

**Step (3) MEDIUM Mode Test:** controller attempts to put the strut into MEDIUM Mode and the controller logs if the test was successful. No lights are displayed - the sequence proceeds to the next step.

**Step (4) SOFT Mode Test:** controller attempts to put the strut into Soft Mode and the controller logs if the test was successful. No lights are displayed - the sequence proceeds to the next step.

### **Step (5) Strut Test Results:**

(5a) **STRUT TESTS OK:** If the strut just tested, tested OK and was able to be put into all three modes without any errors, then both the SPORT & TOUR lights will light up SOLID at the same time for several seconds.

(5b) **STRUT COMMAND FAILURE:** If the strut was not able to be commanded into hard, medium & soft mode, then the SPORT & TOUR lights will both blink 3 times quickly with a long pause between and then will blink 3 times quickly again with a long pause between and will then blink 3 times quickly for the last time.

(5c) **SIGNAL WIRE FAILURE:** If during the test a strut signal wire failure was detected, the SPORT & TOUR lights will alternately blink on and off (Sport light ON/ Tour Light OFF then Sport Light OFF / Tour Light ON ) 8 times - this is indicating that the controller detected what is very likely either a broken signal or ground wire to the strut cap harness

At the end of step (5) All lights will be turned off. .

**Step (6) Next Strut:** testing will now proceed to the next strut and start over with Step(1)

- To Exit Diagnostic Mode - press and hold the ECS switch until you see the SPORT & TOUR lights both flash twice very quickly. Then let go to exit the testing cycle. You can also turn the ignition off & back on.