3G shifter install into EXPO/SUMMIT/VISTA/RVR using the Forced Four SMART 100

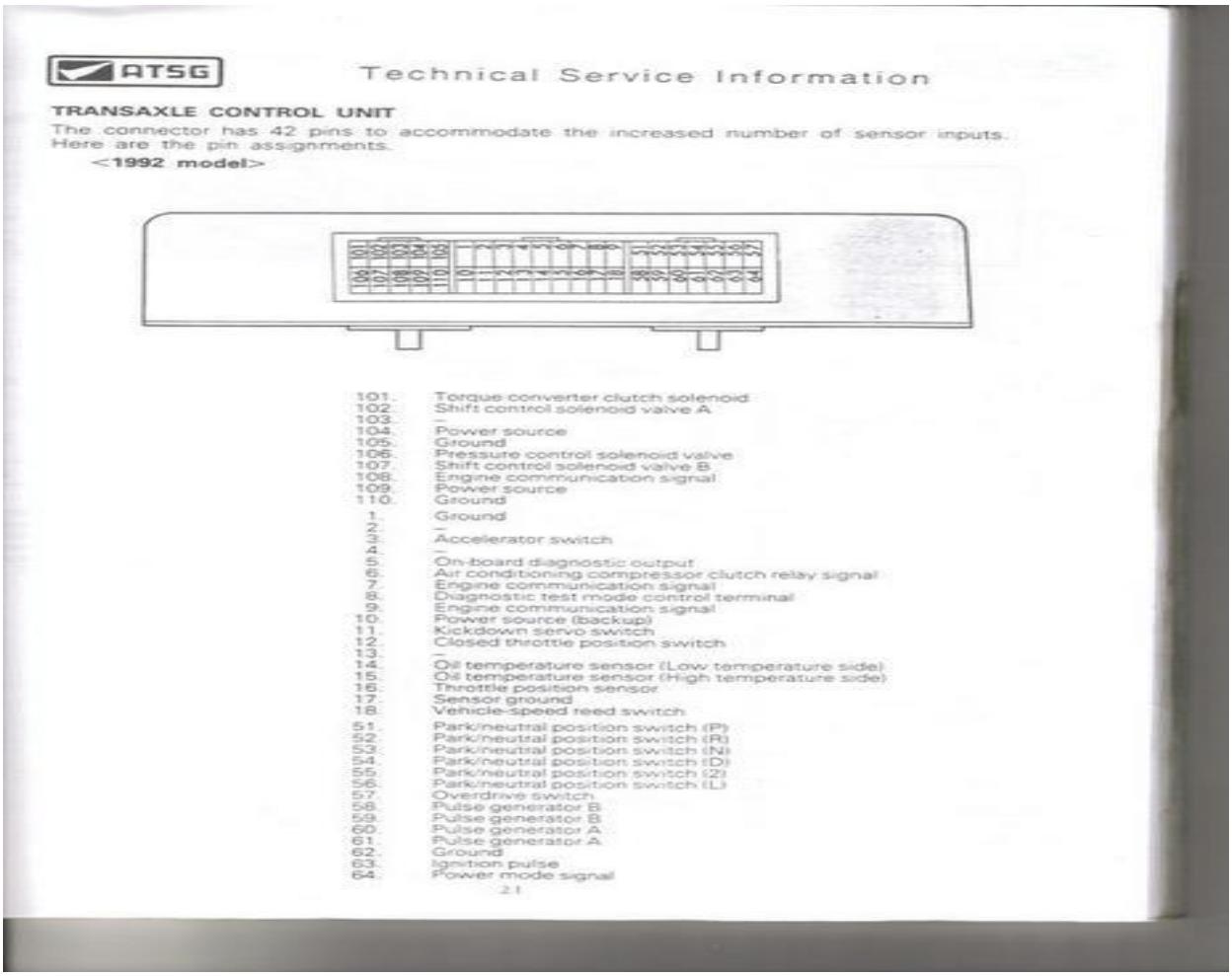
(this will work for all w4aXX and f4aXX transmissions, with some mounting differences)

1. Obtain (from a junkyard) a shifter from a 2000-2005 Mitsubishi Eclipse GT (only the GT models, with the V6, have the tiptronic/slap-shift style shifter, wire colors are different from 00'-01' and 02'-05'). Make sure you get as much of the wiring as possible and the rubber grommet that the shift cable goes on.
2. Order the Shift Box, found that here http://www.forcedfour.com/.
3. Remove your old shifter.
4. Install the shift cable and set the shifter to your desired location with your console laid in place.
5. Mark and drill new holes (the factory holes will not line up at all). The stock shifter has two safety devices. One that releases the push button on the side of the shifter activated by turning the ignition key and one that keeps you from shifting out of park until you depress the brake pedal. The 3G shifter has these as well but on the opposite side of the shifter mounts (see pic below).

6. These are interchangeable. You need to enlarge the holes for the brake pedal safety switch to mount on the new shifter.

7. Once you have it mounted, it is time to start wiring it in.
8. Here is the description of the 3G shifter wiring:
    a. There are six wires that come from the harness of the shifter into a plug. There are other wires as well but they are for lighting and a cigarette lighter (you will know which these are when you remove the shifter from the donor car).
    b. The main wire is the solid black (00'-01') or solid yellow (02'-05'). This wire is the common between normal shift and tiptronic shift.
    c. With the shifter in the D position the black wire (00'-01') or yellow wire (02'-05') connects to the red/white wire (00'-01') or orange/black stripe wire (02'-05').
    d. When the shifter is in tiptronic the black wire (00'-01') or yellow wire (02'-05') connects to the blue wire (00'-01') or red/black stripe wire (02'-05').
    e. When in tiptronic mode the common wire is the red wire (00'-01') or black/red stripe wire (02'-05').
    f. Up shift connects the red wire (00'-01') or black/red stripe wire (02'-05') to the yellow wire (00'-01') or white /red stripe wire (02'-05').
    g. Down shift connects red wire (00'-01') or black/red stripe wire (02'-05') to the white wire (00'-01') or black/yellow stripe wire (02'-05').
    h. To keep the function of the factory overdrive while in "D" you will need to remove the button from the old shifter or wire in your own switch somewhere. I just plugged my switch back into the factory harness and zip tied it up out the way underneath the console in the OD "ON" position.

9. TCU Diagram for 91-93 Auto Summit Wagon/Expo LRV:



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Technical Service Information

TRANSAXLE CONTROL UNIT

The connector has 42 pins to accommodate the increased number of sensor inputs. Here are the pin assignments.

<1992 model>

101.	Torque converter clutch solenoid
102.	Shift control solenoid valve A
103.	–
104.	Power source
105.	Ground
106.	Pressure control solenoid valve
107.	Shift control solenoid valve B
108.	Engine communication signal
109.	Power source
110.	Ground
1.	Ground
2.	–
3.	Accelerator switch
4.	–
5.	On-board diagnostic output
6.	Air conditioning compressor clutch relay signal
7.	Engine communication signal
8.	Diagnostic test mode control terminal
9.	Engine communication signal
10.	Power source (backup)
11.	Kickdown servo switch
12.	Closed throttle position switch
13.	–
14.	Oil temperature sensor (Low temperature side)
15.	Oil temperature sensor (High temperature side)
16.	Throttle position sensor
17.	Sensor ground
18.	Vehicle-speed reed switch
51.	Park/neutral position switch (P)
52.	Park/neutral position switch (R)
53.	Park/neutral position switch (N)
54.	Park/neutral position switch (D)
55.	Park/neutral position switch (2)
56.	Park/neutral position switch (L)
57.	Overdrive switch
58.	Pulse generator B
59.	Pulse generator B
60.	Pulse generator A
61.	Pulse generator A
62.	Ground
63.	Ignition pulse
64.	Power mode signal

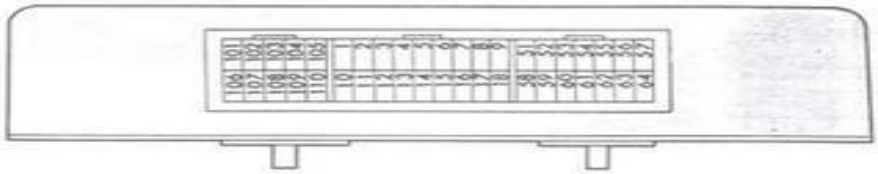
10. TCU Diagram 3 plug DSM TCU

ATSG Technical Service Information

TRANSAXLE CONTROL UNIT

The connector has 42 pins to accommodate the increased number of sensor inputs. Here are the pin assignments.

<1992 model>



101. Torque converter clutch solenoid
102. Shift control solenoid valve A
103. –
104. Power source
105. Ground
106. Pressure control solenoid valve
107. Shift control solenoid valve B
108. Engine communication signal
109. Power source
110. Ground
1. Ground
2. –
3. Accelerator switch
4. –
5. On-board diagnostic output
6. Air conditioning compressor clutch relay signal
7. Engine communication signal
8. Diagnostic test mode control terminal
9. Engine communication signal
10. Power source (backup)
11. Kickdown servo switch
12. Closed throttle position switch
13. –
14. Oil temperature sensor (Low temperature side)
15. Oil temperature sensor (High temperature side)
16. Throttle position sensor
17. Sensor ground
18. Vehicle-speed reed switch
51. Park/neutral position switch (P)
52. Park/neutral position switch (R)
53. Park/neutral position switch (N)
54. Park/neutral position switch (D)
55. Park/neutral position switch (2)
56. Park/neutral position switch (L)
57. Overdrive switch
58. Pulse generator B
59. Pulse generator B
60. Pulse generator A
61. Pulse generator A
62. Ground
63. Ignition pulse
64. Power mode signal

11. TCU Diagram 2 Plug DSM TCU

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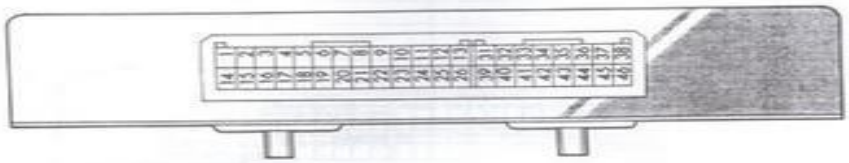
Technical Service Information

<1993 model>



1. Torque converter clutch solenoid
2. Shift control solenoid valve A (SCSV-A)
3. –
4. Engine communication signal
5. –
6. –
7. Kickdown servo switch
8. Air conditioning relay signal
9. On-board diagnostic output terminal
10. Pulse generator B (PG-B) output
11. Diagnostic test mode control terminal
12. Power source
13. Ground
14. Pressure control solenoid valve (PCSV)
15. Shift control solenoid valve B (SCSV-B)
16. –
17. Engine communication signal
18. Engine communication signal
19. –
20. Closed throttle position switch
21. Throttle position sensor (TPS)
22. –
23. Oil temperature sensor
24. Sensor ground
25. Power source
26. Ground
31. Park/neutral position switch (P)
32. Park/neutral position switch (R)
33. Park/neutral position switch (N)
34. Park/neutral position switch (D)
35. Park/neutral position switch (2)
36. Park/neutral position switch (L)
37. Overdrive switch
38. Power mode signal
39. Power source (backup)
40. Vehicle-speed reed switch
41. Pulse generator B (PG-B)
42. Pulse generator B (PG-B)
43. Pulse generator A (PG-A)
44. Pulse generator A (PG-A)
45. Ground
46. Ignition pulse

12. Wiring instructions:
    a. Connect the Black wire from the shift box to a good ground source.
    b. Connect the white wire from the shift box to the tach signal from your ECU (do not use the CAS signal).
    c. Connect the green wire to your ECU's TPS signal.
    d. Power input for TCU and Shift box. You will be using the two wires labeled "power source" on any of the TCU's. Cut the wires about three to four inches away from the end of the plug because you are going to connect to each side.
    e. With the two wires cut equally solder the TCU plug side together and the harness side together.
    f. Connect the black wire (00'-01') or yellow wire (02'-05') from the 3G shifter to the harness side.
    g. Connect the red/white wire (00'-01') or orange/black wire (02'-05') from the 3G shifter to the TCU side.
    h. Connect the blue wire (00'-01') or red/black wire (02'-05') from the 3G shifter to the shift box red wires. (shift box power).
    i. Cap off the white/green, grey, white/black (the diagram shows white/yellow), green(output), and blue wires they will not be used. They can be used for external sensors, you can read more on this here. http://www.forcedfour.com/smart100_support.htm

13. Final wiring TCU information/instructions:
    a. Solenoid A is pin 102 (3 plug TCU) or pin 2 (2 plug TCU) of the TCU.
    b. Solenoid B is pin 107 (3 plug TCU) or pin 15 (3 plug TCU) of the TCU.
    c. Connect/Splice the yellow wire from the shift box into solenoid A.
    d. Connect/Splice the brown wire form the shift box into solenoid B.

14. Tiptronic 3G shifter wiring:
    a. Connect the red wire (00'-01') or black/ red stripe wire (02'-05') from the 3G shifter to a clean chassis ground.
    b. Connect the yellow wire (00'-01') or white/red wire (02'-05') from the 3G shifter to the purple wire from the shift box.
    c. Connect the white wire (00'-01') or black/yellow wire (02'-05') from the 3G shifter to the white/purple wire form the shift box.

15. One final note. With this installation, this is how it will work:
    a. When the selector is in D, you will have TCU controlled shifts for 1st, 2nd and 3rd gears (OD will not be available in D mode as it was engaged via a switch separate from the shifter in the 3g GT) unless you retain the OD button from your original shifter. If you want to engage OD, you need to slide it over to the "slap-shift" gate and up-shift to 4th (the shift box defaults to 3rd). The box takes a second to boot up and becomes a hassle after a while I thought though in traffic.
    b. When the selector is moved over to the "slap-shift" gate, you will be in 3rd gear, FULL-LINE PRESSURE! Just down shift till you are in first and FLOOR IT!! It will NOT shift until you push the shifter forward. Just punch it and "let 'er eat".
    c. As a built in safety measure of the Force Four box, you can set it to not allow a downshift above a particular RPM (Mine is set for 4500), so there is no danger of accidentally shifting from 2nd to 1st @ 7000 rpm. Also, if the Forced Four box fails, it defaults to "limp mode" and gives 3rd gear.

ENJOY!