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## RELS PRESSURE SWITCH INSTALLATION

Prevost vehicles

### DESCRIPTION

This procedure shows how to install a pressure switch into the front service compartment on the A5 pressure resistor module to send a faster signal to the Allison transmission to switch to neutral at stop. That allows a faster removing of the engine load at stop (RELS).

### MODEL YEARS AND VEHICLES INVOLVED

| <b>NOTICE TO SERVICE CENTERS</b><br><i>Verify vehicle eligibility by checking warranty bulletin status with <b>SAP</b> or via <b>ONLINE WARRANTY SYSTEM</b> available on Service / Warranty tab of Prevost website.</i> |                                                                                                                                                                                                                                                                         |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Model                                                                                                                                                                                                                   | VIN                                                                                                                                                                                                                                                                     | Fleet Number                |
| Model Year : 2014 - 2016                                                                                                                                                                                                | <p>The following individual vehicles:<br/>                     2PCG33495<u>EC735590</u>, 2PCG33498<u>EC735602</u><br/>                     and<br/>                     From 4RKG33497<u>F9737001</u> up to<br/>                     4RKG33491<u>G9737299</u> incl.</p> | From 2490 up to 2789, incl. |

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## MATERIAL NEEDED

Order kit SP18-302 that contains the following parts:

| Part No. | Description                                    | Qty |                                                                                       |
|----------|------------------------------------------------|-----|---------------------------------------------------------------------------------------|
| 070010   | PRESSURE SWITCH ASSEMBLY WITH 20-10 PSI SWITCH | 1   |    |
| 501332   | ELBOW A 90 1/4PMX1/4PF                         | 1   |    |
| 561565   | CABLE SEAL, PED CONN. - GREEN (20-18GA)        | 2   |    |
| 561566   | CONNECTOR                                      | 1   |    |
| 561567   | TERMINAL PIN (PRESSURE SWITCH CONNECTOR)       | 2   |    |
| 562286   | TERMINAL PIN (C21 CONNECTOR)                   | 1   |    |
| 562482   | TERMINAL SOCKET DEUTSCH (C21 CONNECTOR)        | 1   |   |
| 562593   | Wire, 18 AWG, TXL, YLW, 125 deg (FT)           | 15  |                                                                                       |
| 562228   | BUTT SPLICE 16-14                              | 3   |  |
| 563983   | TERMINAL SOCKET 20-18 (A1 CONNECTOR)           | 1   |  |

Other parts that may be required:

| Part No. | Description                                   | Qty         |
|----------|-----------------------------------------------|-------------|
| 680098   | LOCTITE 567 TEFLON                            | AS REQUIRED |
| 560784   | SHRINK TUBING DOUBLE WALL 0.25"-0.08"         | AS REQUIRED |
| 504637   | CABLE TIE (MIDDLE SIZE)                       | AS REQUIRED |
| 562387   | CONVOLUTED TUBING / SLIT / BLACK / .250" (FT) | AS REQUIRED |
| 680320   | SOLDERING WIRE                                | AS REQUIRED |

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**NOTE**

*Material can be obtained through regular channels.*

**REQUIRED TOOLS**

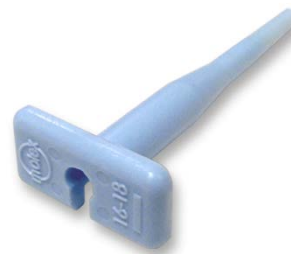
|                                                                                                                 |                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>EXTRACTOR #682486</b>       | <b>ALLEN KEY SET - METRIC</b>           |
| <b>PHILLIPS SCREWDRIVER</b>    | <b>RATCHET AND SOCKET SET - METRIC</b>  |
| <b>SOLDERING GUN</b>         | <b>HEAT GUN</b>                       |
| <b>WIRE CUTTER-STRIPPER</b>  | <b>CRIMPING TOOL</b>                  |

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## MULTIMETER



## EXTRACTOR "DEUTSCH"



## CRIMPING TOOL "DEUTSCH" 682447



## BUTANE MICRO TORCH



## LABEL PRINTER MACHINE



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## PROCEDURE



### DANGER

Park vehicle safely, apply parking brake, stop the engine. Prior to working on the vehicle, set the ignition switch to the OFF position and trip the main circuit breakers equipped with a trip button. On Commuter type vehicles, set the battery master switch (master cut-out) to the OFF position.

1. Locate the electrical front service compartment (Figure 1).

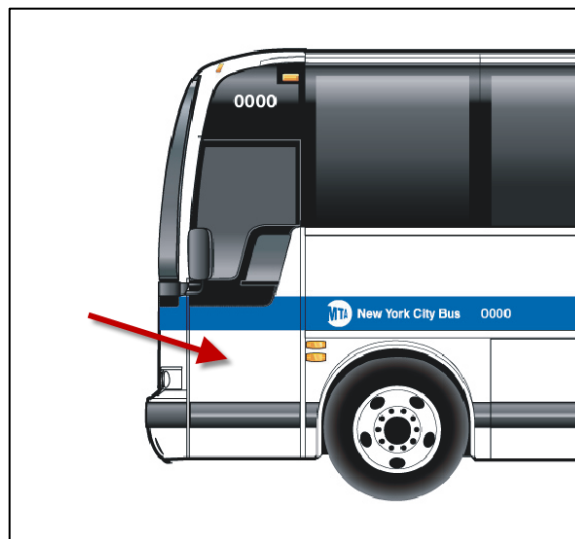


Figure 1

2. Locate the pressure switch manifold under the front junction box support (Figure 2).
3. Dismount the manifold from the support (2 screws) and move to the next step before to unplug pressure switch electrical wiring. Retain fastener.

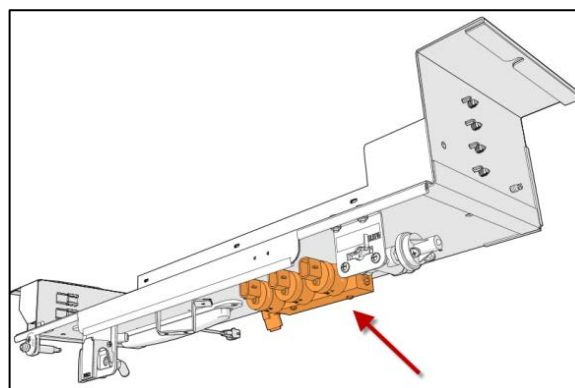


Figure 2

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- Before to unplug the electrical wiring of the pressure switches, use a permanent marker and mark the position of each specific connector on the manifold (Figure 3). It will be useful when reconnect the wiring. Refer to the label on the wire for the specific name of the pressure switches.



Figure 3

- Install the manifold into a vice (Figure 4).
- Remove the existing plug on the manifold (Figure 4) and discard.

**NOTE**

*Be careful when removing the plug to avoid breaking it.*



Figure 4

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7. Apply Loctite 567 (Teflon) all around the threads of the new elbow #501332 (Figure 5).

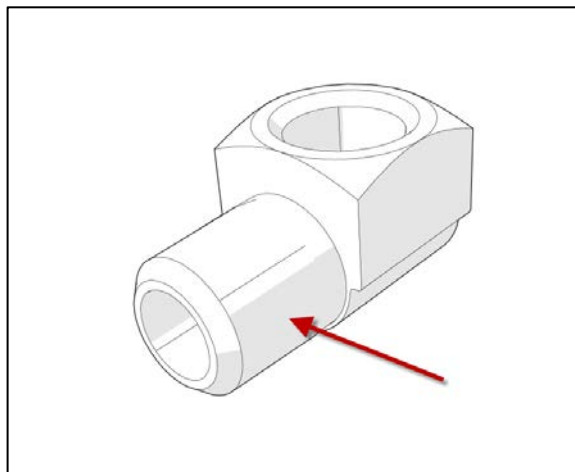


**Figure 5**

8. Install the new elbow on the manifold. Align the new elbow with the existing elbow on the opposite side (Figure 6).

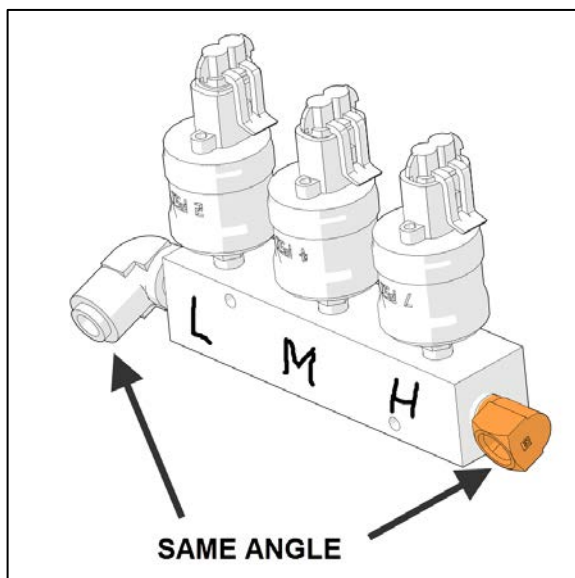


**Figure 6**

9. Apply Loctite 567 (Teflon) all around the threads of the pressure switch (Figure 7).

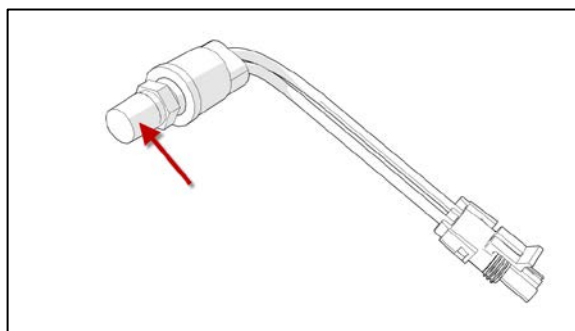


**Figure 7**

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10. Install the new pressure switch on the new elbow (Figure 8).



Figure 8

11. Reconnect the wiring on the existing pressure switch according to the specific position and the airline (Figure 9).



Figure 9

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12. Reinstall the manifold on the support with the fastener retained in step 3 (Figure 10).

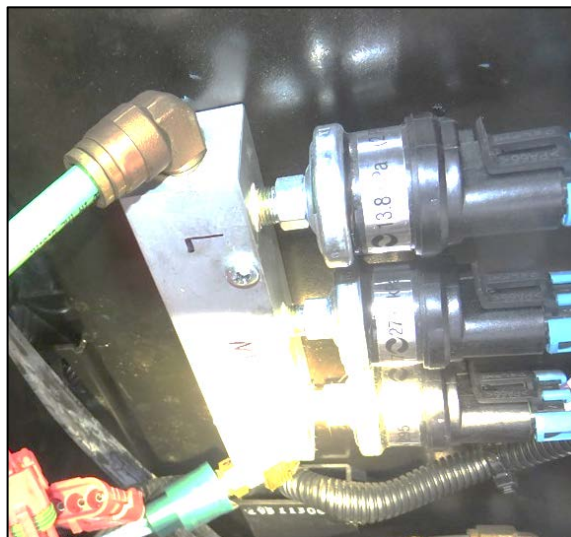
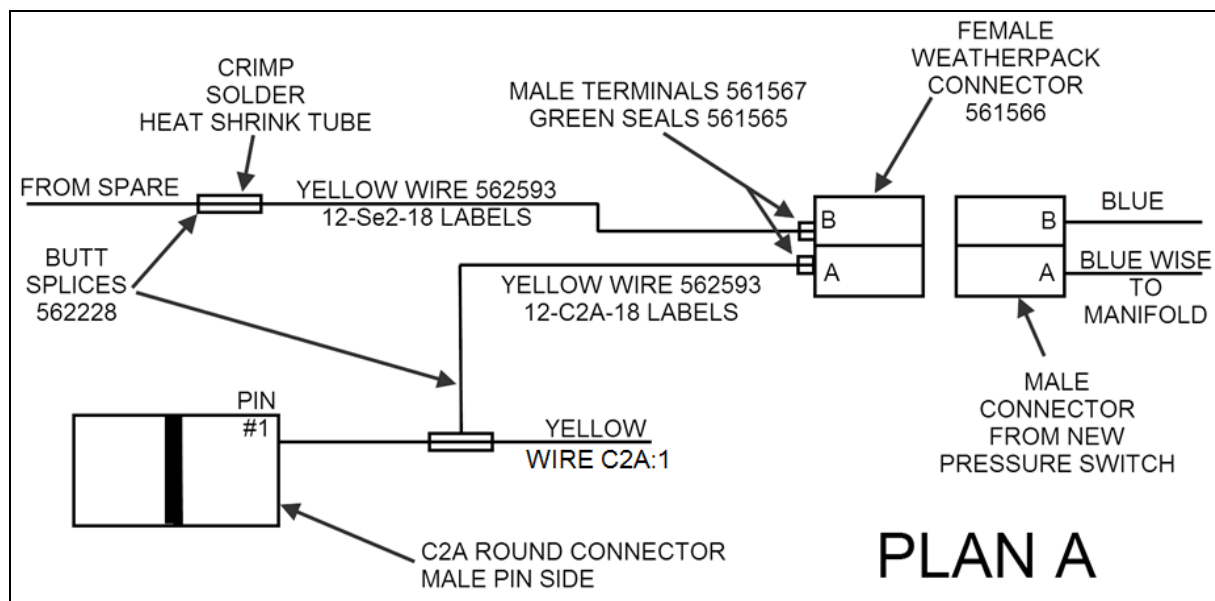


Figure 10

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13. Follow the next steps to make the connections as shown in the plan "A".



14. Into the front service compartment, locate round connector C2A (Figure 11).

15. Disconnect the C2A and access male pin side of the connector.



Figure 11

16. Locate the yellow wire pin #1 on the round male connector (Figure 12).



Figure 12

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17. Remove approximately 8 inches of the electrical black tape from the male C2A connector (Figure 13).
18. To splice with the new wiring, cut the yellow wire of pin #1, six inches away from the male pin connector of C2A (Figure 13).

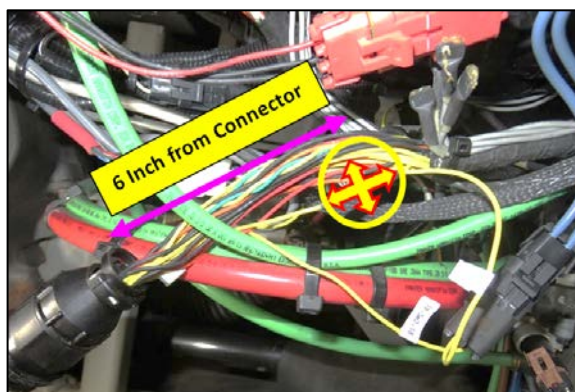
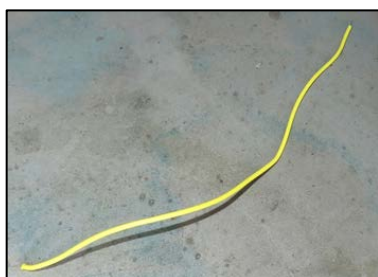


Figure 13

19. Use wire #562593 and cut a length of 8-12 inches depending on the harness layout to run from existing yellow wire C2A (pin #1) up to the new pressure switch connector pin A (Figure 14).



20. Use a P-Touch printer and make two labels 12-C2A-18. Install these labels on both ends of this length of wire.

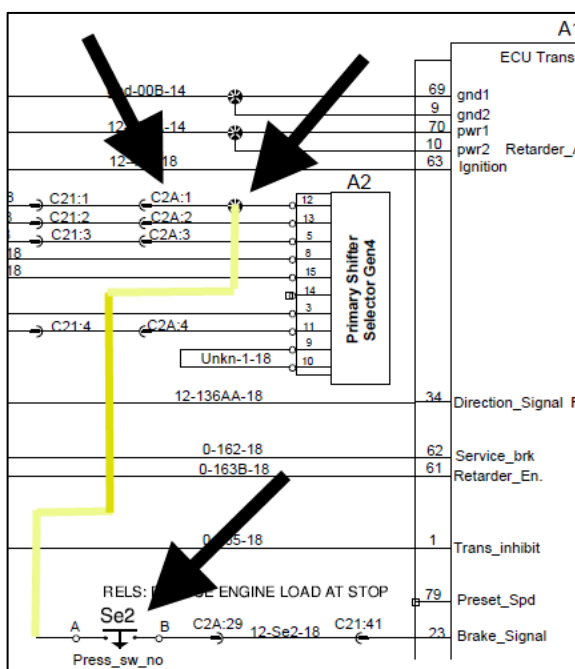


Figure 14

21. Insert a 2" long shrink tubing on wires.
22. On one end, use butt splice #562228 and splice the existing yellow wire C2A with the new wire (Figure 15). Crimp and solder it.
23. Heat the shrink tubing as shown in Figure 15.

## NOTE

*All splice must be crimped, soldered and sealed with a shrink tubing.*

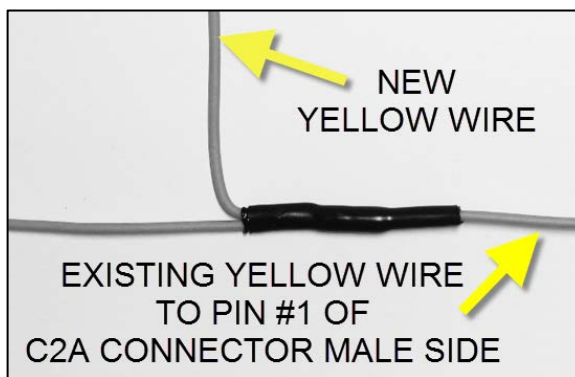


Figure 15

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24. In the front service compartment, locate wire SPARE17. The wire is gray and has a shrink tube at the end to seal it. A shrink tube means it is available (Figure 16). It should be on the right of the manifold.

**NOTE**

If the wire SPARE17 is already used, select SPARE18 and then SPARE19 if necessary.



Figure 16

25. Cut the existing shrink tube on the spare wire (Figure 17).
26. Use wire #562593 and cut a length to run from the spare wire to the pressure switch connector pin B.
27. Use a P-Touch printer and make two labels 12-Se2-18.
28. Install these labels on both ends of this length of wire.



Figure 17

29. Insert a 2" long shrink tubing on the spare wire.
30. With the butt splice #562228, connect the spare wire with the length of wire made in step 26 (Figure 18). Crimp and solder it.
31. Heat the shrink tubing as shown in Figure 18.



Figure 18

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32. Install green seals #561565 on one end of each new wire (Figure 19).
33. Install terminals #561567 on one end of each new wire (Figure 19).
34. Install terminals with wire (2) into the female connector #561566 (Figure 19).

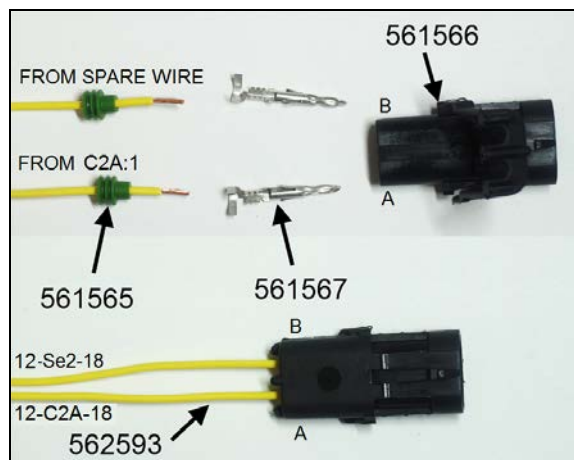


Figure 19

35. Connect female connector #561566 with the new pressure switch male connector (Figure 20).
36. Connect C2A round connector.

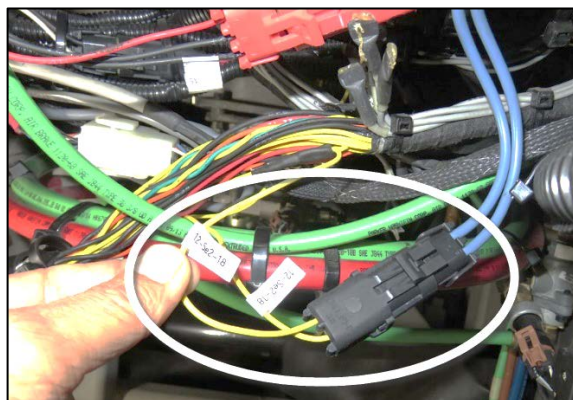


Figure 20

37. Use cable ties to secure the C2A round connector and all new wires and connectors with existing wiring (Figure 21).

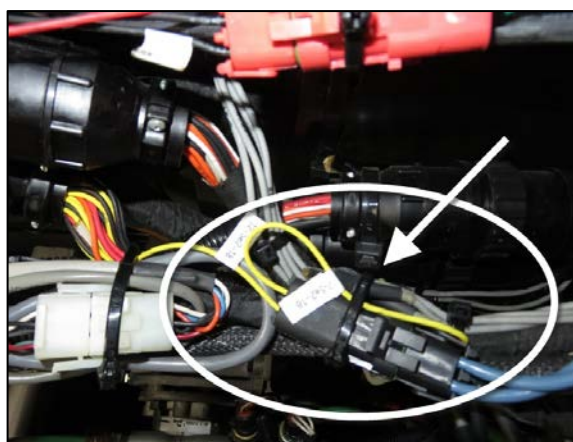


Figure 21

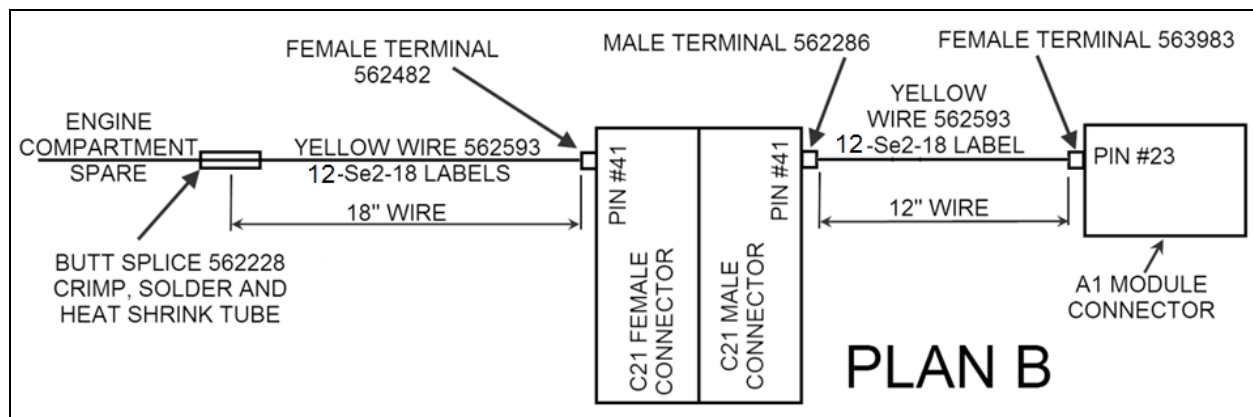
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38. Locate the rear junction box in the engine curbside compartment (Figure 22). The next steps will be performed into this compartment.
39. Remove the rear junction box cover.



Figure 22

40. Follow the next steps to make the connections as shown in the plan "B".



41. Into the engine curb side compartment, locate the same spare wire as the one selected in step 24.
42. Cut the shrink tube on the spare wire.



Figure 23

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43. Locate the connector C21 on the plan inside the rear junction box cover (Figure 24).

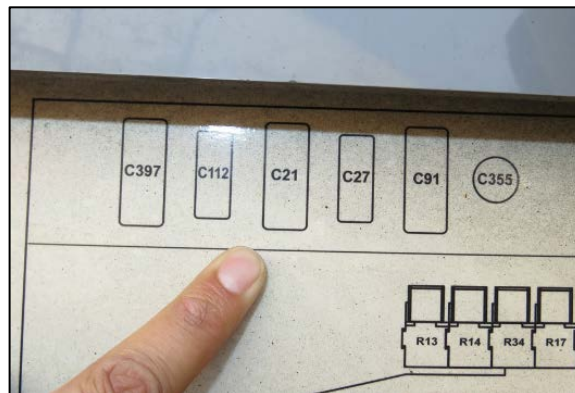


Figure 24

44. Locate the connector C21 on the top the rear junction box (Figure 25).
45. Use wire #562593 and cut a length of 18 inches to run from the spare wire to connector C21.

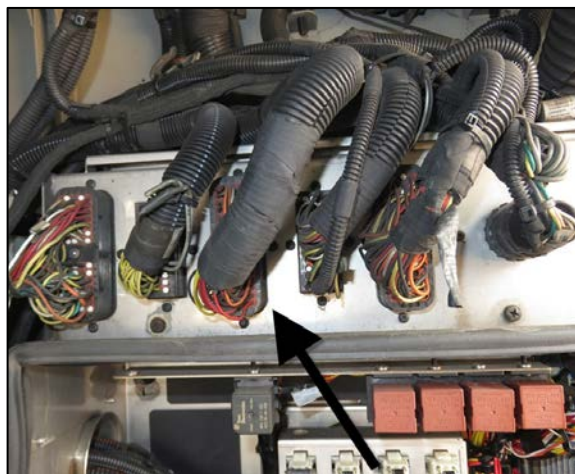


Figure 25

46. Insert a 2" long shrink tubing on the spare wire.
47. With the butt splice #562228, connect the spare wire with the new wire. Crimp and solder it.
48. Heat the shrink tubing.
49. Install socket female terminal #562482 at the other end of the new wire. Use Deutsch crimper.
50. Add a label 12-Se2-18 at the end of the new wire.

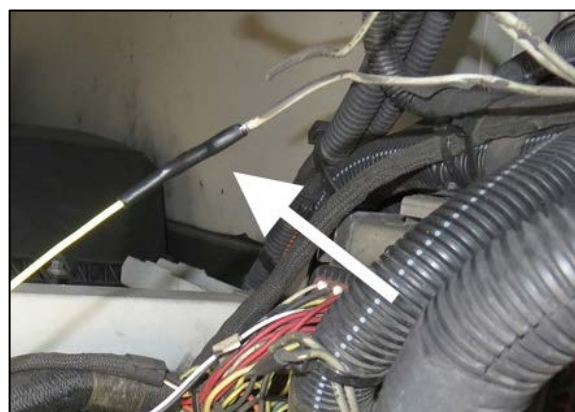


Figure 26

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51. Disconnect the female connector C21 by loosening the center screw with a 4 mm Allen key wrench or socket (Figure 27).

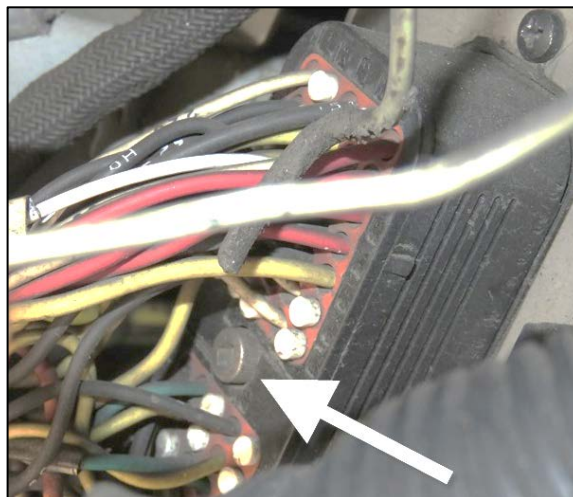


Figure 27

52. Locate position 41 on the female connector C21 (Figure 28).
53. Remove the cap.



Figure 28

54. Install the extended spare wire to female connector C21 (Figure 29).

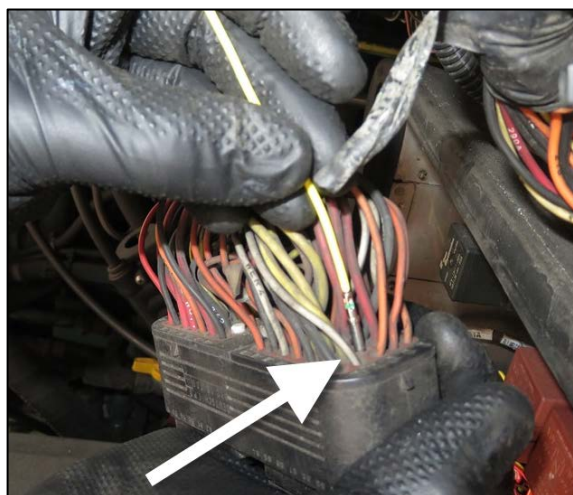


Figure 29

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55. Install convoluted tube #562387 on the wire that is exposed in the engine compartment going from SPARE 17 to the female connector C21 (Figure 30).



Figure 30

56. Locate the male connector C21 (item A, Figure 31) and the A1 module connector (item B, Figure 31). A new wire has to run from male connector C21 to A1 module connector.

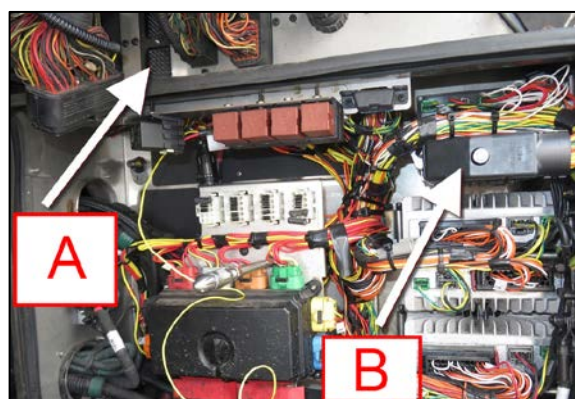


Figure 31

57. Remove Phillips screws (4) on the male connector C21 (Figure 32).
58. Drop the male connector C21 from where it is mounted.
59. Use wire #562593 and cut a length (12 inches) to run from male connector C21 to A1 module connector.
60. Install male terminal #562286 on one end of this new wire.
61. Add a label 12-Se2-18 at both ends of this new wire.



Figure 32

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62. Locate position 41 on the male connector C21 (Figure 33).
63. Remove the cap.
64. Install new wire with male terminal #562286 at position 41 on the male connector C21.
65. Reinstall male connector C21 at its location with the Phillips screws (4).
66. Reinstall female connector C21 to male connector C21. Fasten the Allen screw.
67. Run the new wire to follow the factory installed harness.
68. Install terminal #563983 at the other end of the new wire.

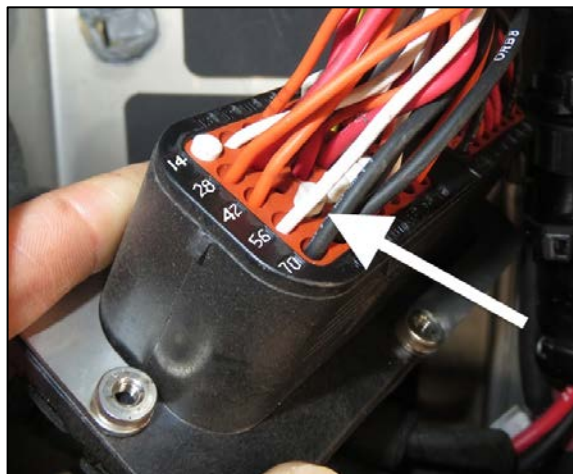


Figure 33

69. Loosen the screw on the A1 module connector using an 8 mm socket wrench and disconnect it (Figure 34).
70. Remove the A1 module connector back shell.

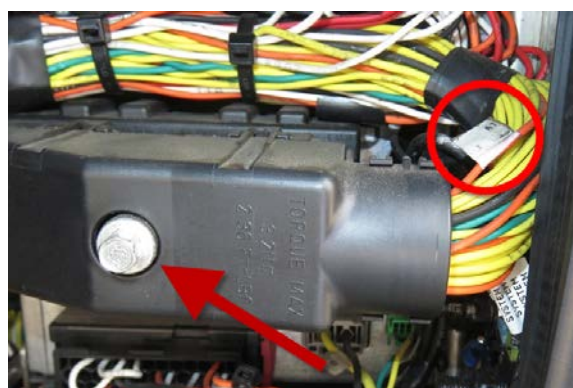


Figure 34

71. Locate position 23 on the A1 module connector (Figure 35).

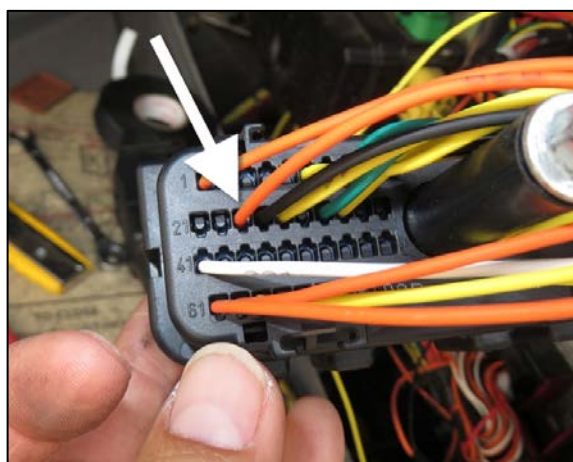


Figure 35

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72. With a small flat screwdriver, move the red lock on both sides of the connector (Figure 36).

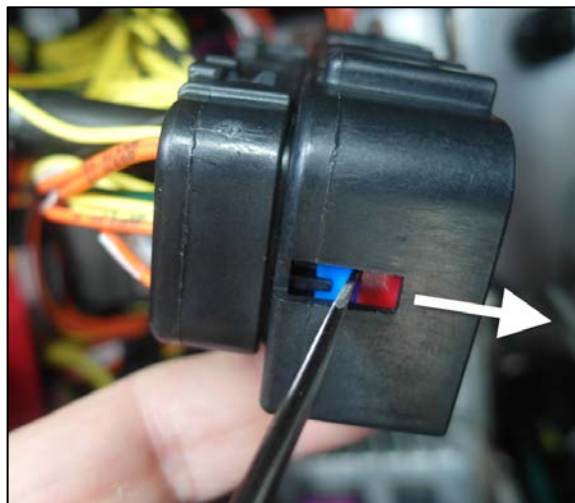


Figure 36

73. Figure 37 shows the position of red lock when unlocked.



Figure 37

74. Remove the orange wire #82A on pin #23 from the A1 module connector (Figure 38). Use extractor #682486.

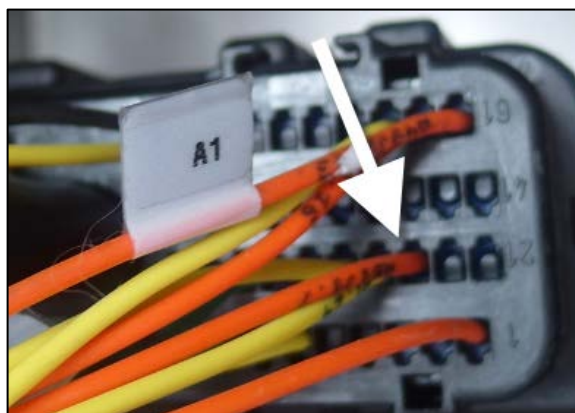


Figure 38

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75. The orange wire #82A is not being used anymore, cut the terminal and install a shrink tube as shown in Figure 39.



Figure 39

76. Install new wire with terminal #563983 at position #23 on the A1 module connector (Figure 40).



Figure 40

77. Push down the red lock on both sides of the A1 module connector (Figure 41).



Figure 41

78. Reconnect the A1 module connector (Figure 42). Do not install the back shell at this time.

79. Fasten the screw (Figure 42).

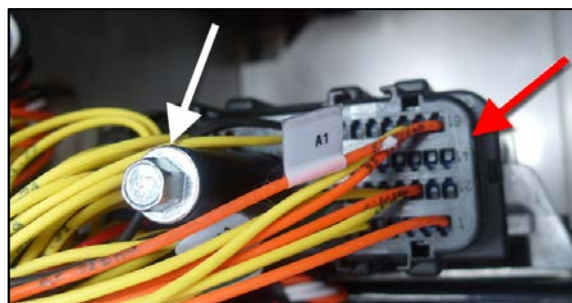


Figure 42

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80. Set the battery disconnect switch to the ON position.
81. Testing: Start the vehicle, push the brake pedal and back probe pin 23 on the A1 module connector. Voltmeter should read around 12 to 12.5 volts.
82. After seeing the correct voltage, remove the A1 module connector and install the back shell on it.
83. Reinstall the A1 module connector using an 8 mm socket wrench.
84. Use cable ties to secure all new wires with existing wiring.
85. Install the rear junction box cover.
86. Bulletin is complete.

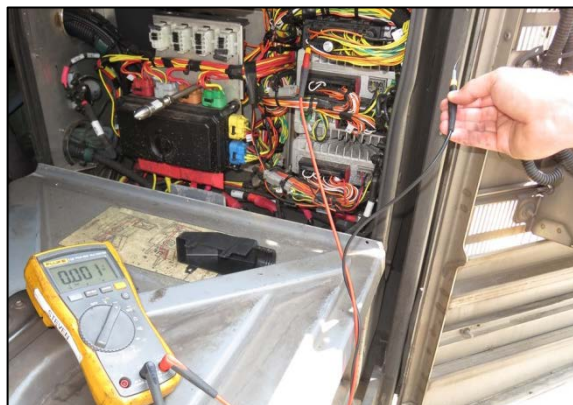


**Figure 43**

## PARTS / WASTE DISPOSAL

Discard waste according to applicable environmental regulations (Municipal/State[Prov.]/ Federal)

## ESTIMATED TIME

The time required to perform this special bulletin is approximately 1H30.

## OTHER

|              |         |
|--------------|---------|
| VBC Bulletin | N/A     |
| Fail Code    | 07.00-1 |
| Defect Code  | 09      |
| Syst. Cond   | B       |
| Causal Part  | 950165  |

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