SOUNDTRAXX®

Application Note

Kato P42

Tsunami Digital Sound Decoder Installation Notes

Overview

This application note describes the procedure for installing a TSU-KT1000 Digital Sound Decoder into a Kato HO P42 locomotive.

Skill Level 2: This installation can be completed in 1 to 2 hours with minimal modification required to the model.

Bill of Materials

P.N.	Description
828068	TSU-KT1000 for HO Kato P42
810053	Two 20.5mm Round Speakers
810109	Two 20.5mm Speaker Baffles
810118	20.5mm Speaker Gasket Kit
810037	Shrink Tube Assortment

Tools You Will Need

- 25W Soldering Iron
- Rosin Core Solder
- Flux for Electrical Work
- Wire Cutters
- Wire Strippers
- Hobby Knife with #11 Blade
- Metal Straight Edge/Ruler
- Miniature Screwdriver Set
- Electric Drill
- 1/8" Drill Bit
- Small Pliers
- Heat Gun or Blow Dryer
- Liquid Plastic Cement (TENAX-7R™ or equivalent)
- Double-sided Foam Tape

Installation

1. Gently spread bottom of shell and lift from frame. (Photo 1)

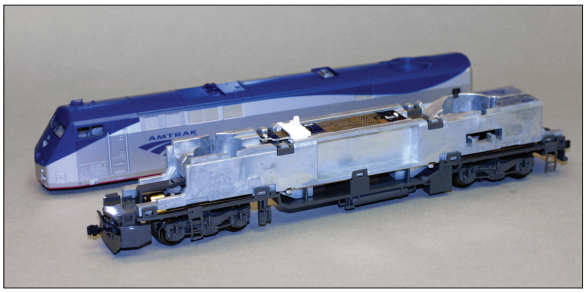

Photo 1

2. On the factory light board, there is a screw on each end holding the board in place. These screws double as rail pickups. Remove both screws and set aside, then remove the light board. (Photos 2 and 3)

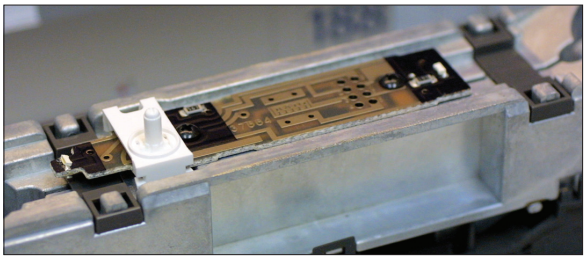

Photo 2

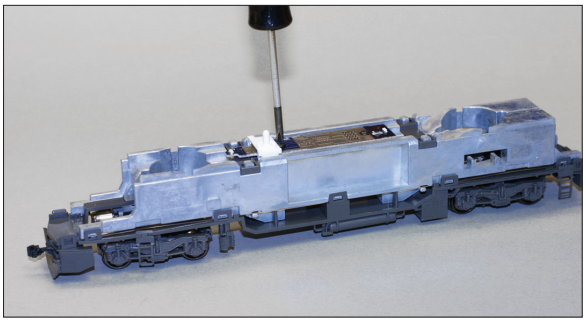

Photo 3

3. Remove the white plastic clip and GPS dome from the front of the factory installed light board and place the GPS dome in the corresponding hole on the TSU-KT1000 P42 decoder. Set the decoder aside. Note: The white clip situated over the GPS dome on the factory board will not be used with the decoder, so it can either be saved with the factory board or discarded. (Photos 4 and 5)

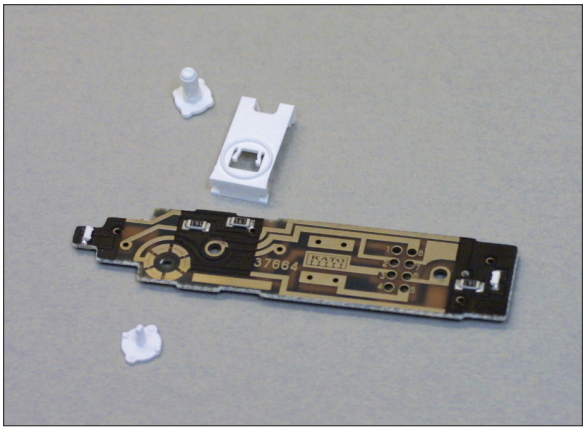

Photo 4

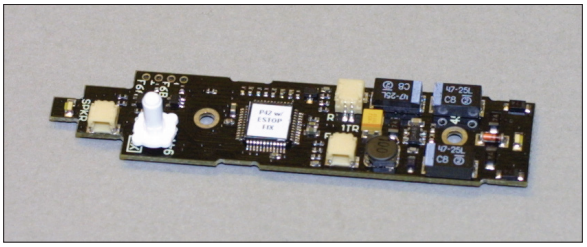

Photo 5

4. Firmly grab the truck assemblies and pull down to separate them from the frame. Be sure to note which is the front and which is the rear truck; they are labeled on the bottom with F (front) and R (rear) and an arrow pointing in the direction of the adjacent coupler. (Photo 6)

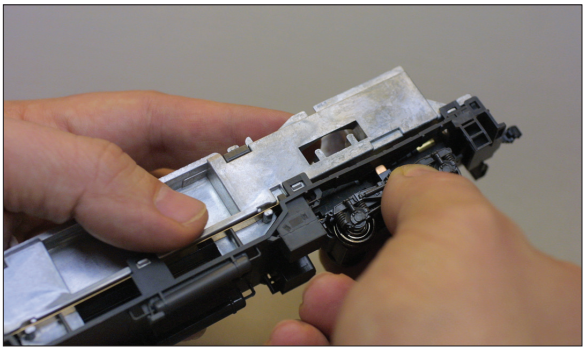

Photo 6

5. Using pliers, gently pull free the brass strips attached to the inside of each truck; this will separate the motors from the rail pickups. Clip the wires and discard the brass strips. (Photos 7 and 8)

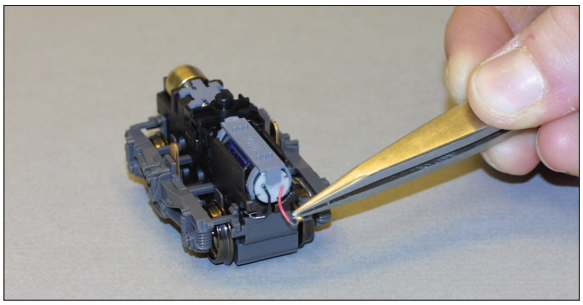

Photo 7

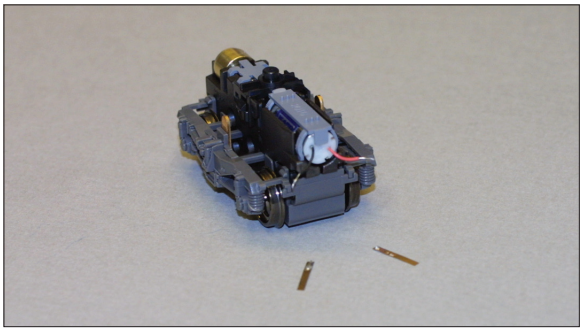

Photo 8

6. From under the chassis, there is an indentation at each end corresponding to the inner edge of the speaker mounting location on that end. Using a 1/8" drill bit, drill out each indentation to allow the motor harness wires to be routed through. (Photo 9)

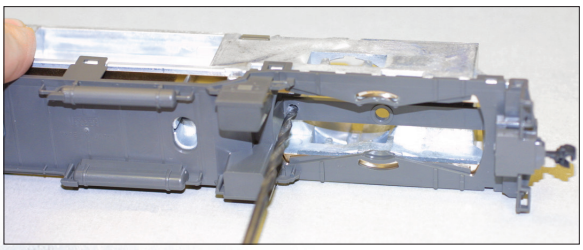

Photo 9

7. Thread one set of orange and gray motor harness wires through each of the holes drilled out in Step 6. The motor harnesses should be situated so that the ends of the wires are routed down through the holes out of the bottom of the chassis. (Photo 10)

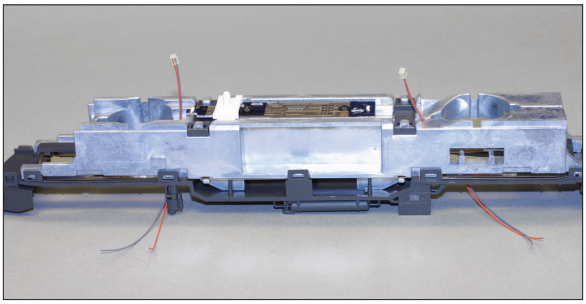

Photo 10

8. Connect the motor harness wires to the motors as follows. First, slide a 1/8" to 1/2" piece of heat-shrink tubing over each orange and gray motor harness wire. Then, solder the harness wires to the existing truck wires. For the front truck, solder the orange motor harness wire to the red wire and the gray motor harness wire to the black wire. The polarity of the rear truck is opposite that of the front truck. Thus, reverse the procedure for the rear truck and solder the gray harness wire to the red wire and the orange harness wire to the black wire. Slide the heat-shrink tubing in place over the solder joints and heat to insulate the connections. Reattach both trucks. (Photos 11 and 12)

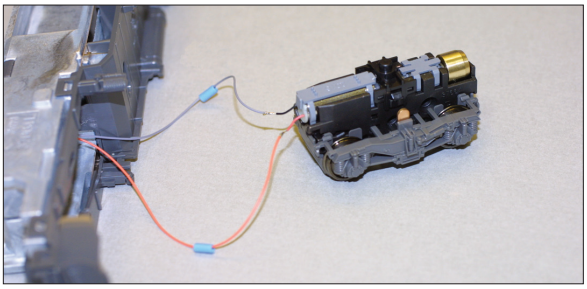

Photo 11

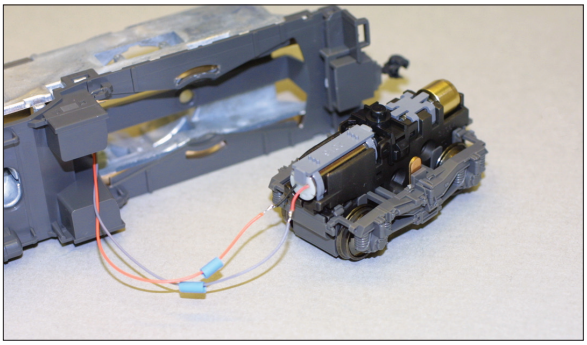

Photo 12

9. Assemble the speaker baffles using liquid plastic cement to secure components. Use one enclosure ring for the front speaker and two for the rear speaker. Wire the speakers in series as described in Step 10 prior to placing the speakers in the baffles.

10. Wire the speakers in series as follows. First, trim 6.5" from the left purple speaker wire and thread one end of the trimmed piece through the backside of each speaker baffle end plate. Next, thread the wires that remain attached to the speaker harness through the backsides of the baffle end plates: thread the short segment through the end plate for the front speaker and the untrimmed segment through the end plate for the rear speaker. Solder one end of the trimmed 6.5" wire segment to the inner terminal of each speaker. Finally, solder the short harness wire to the outer terminal of the front speaker and the untrimmed harness wire to the outer terminal of the rear speaker. (Figure 1)

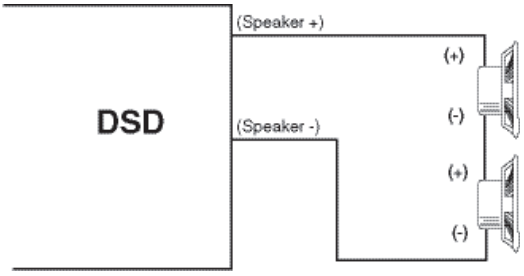

Figure 1

11. Finish the speaker assemblies by pressing the speakers up into the baffles and securing the mounting flanges in place. Place the finished speaker assemblies face down in the predetermined mounting locations. If the speaker fit seems loose, affix a gasket or small amount of double-sided foam tape to the edges of the mounting flanges and press securely into place; ensure that no adhesive is applied to or covers any part of the speaker diaphragm.

12. Attach the TSU-KT1000 P42 decoder to the locomotive using the screws removed from the factory light board in Step 2. (Photo 13)

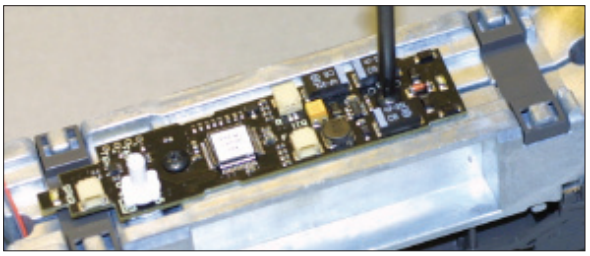

Photo 13

13. Plug each wire harness into the appropriate 2-pin connector. The motor harness connectors are located in the middle of the decoder and labeled F (front) and R (rear) for reference. The speaker harness connector is located at the front of the decoder and labeled SPKR. (Photo 14)

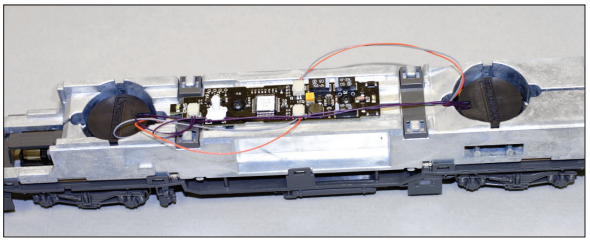

Photo 14

14. Your installation is now complete! Place the model on the mainline, select Address 3 and test to ensure proper operation.

15. Tuck any loose wires into the space between the decoder and the frame and replace the shell, making sure to line the light pipes up with the LEDs on the board.

Programming Notes:
Due to the unique features of the Kato P42 locomotive, the following CV optimizations have been made from the traditional Tsunami default values.

CV 3 = 25
CV 4 = 25
CV 63 = 40
CV 209 = 40
CV 210 = 55
CV 212 = 192
CV 213 = 31
CV 214 = 12

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