



Z-Stuff for Trains

Making model railroading more fun

For questions please call:
Z-Stuff for Trains 585-377-0925

DZ-1000 Switch Machine with DZ-1002P Remote Controller

This switch machine is made for most O, S, and Standard Gauge switches that have about 0.3" of motion at their throw bar and operate on AC voltage. It can be easily wired for Automatic Non-derailing operation. Right or left hand turnouts or switches are readily accommodated. The switch machine may be mounted in alternate locations. (Figure 1)

Parts List:

1. DZ-1000 Switch Machine
2. DZ-1002P Remote Controller w/pigtail wires
3. One or more spring links to connect to switch throw bar
4. Two screws to mount DZ-1000 to long tie of switch (for GarGraves, Curtis, or Ross switches)

Assembly and Mounting Instructions:

1. Location of DZ-1000 – (If your switch has pre-drilled holes for DZ-1000, skip to #2) Use the manual control on the DZ-1000 to position the control arm in the center of its travel. Move the switch throw bar so that the switch's points are centered. Position the DZ-1000 next to the switch so that the hole in the control arm is in line with the hole in the throw bar. For **GarGraves** switches, the distance from the hole in the DZ-1000 control arm to the hole in the throw bar is $\frac{1}{2}$ ". Use the holes in the DZ-1000 as guides to drill two (2) $\frac{1}{16}$ " holes into the long tie. When mounting to the table, if you use roadbed under your switch, you should use it under the DZ-1000. Drill two holes, one at the lever and for the second hole use the hole in the middle of DZ-1000. (Figure 1)
2. Spring Link – Insert the hook shaped end of the spring link into the hole in the throw bar. Hold the long arm of the spring vertical while placing the DZ-1000. Insert the long arm of the spring into the hole at the end of the control arm. (Figure 2) For **Curtis or Ross** switches use the Spring Link with the flat sided u-shaped bend and for **GarGraves** switches use the Spring Link with the peak in the u-shaped bend.
3. Place the DZ-1000 into position on the long tie (or onto the table) and fasten using the two $\frac{3}{8}$ " screws. Use two $\frac{3}{4}$ " screws if mounting to table. (Figure 3) **Do not over tighten screws.**

Wiring and Setup Instructions: (Figure 4)

1. Use color-coded or marked wire to maintain orientation and correct connection of wires. If the "L" terminal of the switch machine is connected to common with the "AC" terminal connected to 9-14VAC, the control arm moves to the "L" position and similarly for the "R" terminal. With stranded wire, be sure to twist the ends before connecting them.
2. *Using DZ-1002 Remote Controller* - Connect the "L" terminal on the switch machine to the "L" terminal on the remote controller. Do the same for the "R" terminals. The "AC" terminal on the switch machine connects to 9-14VAC of the transformer. Connect the "C" or common terminal on the remote controller to the Common side of the transformer.
Using SPDT Toggle Switch – Connect the "L" and "R" terminals of the switch machine to the poles of the switch and the common pole of the toggle switch to Common of the transformer. The "AC" terminal goes to 9-14VAC.
3. The RED and GREEN LED's should indicate the switch position. If not, check the wiring connections. If the GREEN LED does not indicate the mainline (usually the straight through position) the LED's may be swapped. Remove the LED's by **gently gripping** the bottom with a pair of diagonal wire cutters and lifting out. Swap the LED's and plug them in with their flat sides aligned with the flat side of the hole in the switch machine.
4. With power on, press each button on the remote controller and note which one selects the mainline at the switch. Use the "M" label to mark the button that selects the mainline.

Automatic Non-derailing Operation:

If the DZ-1002 or other momentary switch controller is used, the switch machine maybe wired for automatic non-derailing operation. If the control arm is in the "R" position and "L" is connected to the common rail, the control arm will move to the "L" position. If a piece of outer rail is isolated (cut) so it has no power and it is wired to the correct terminal, then when a set of wheels connects the isolated rail to the opposite common rail the switch machine will automatically change the switch. If it throws the wrong way, then reverse the "L" and "R" connections to the isolated rails.

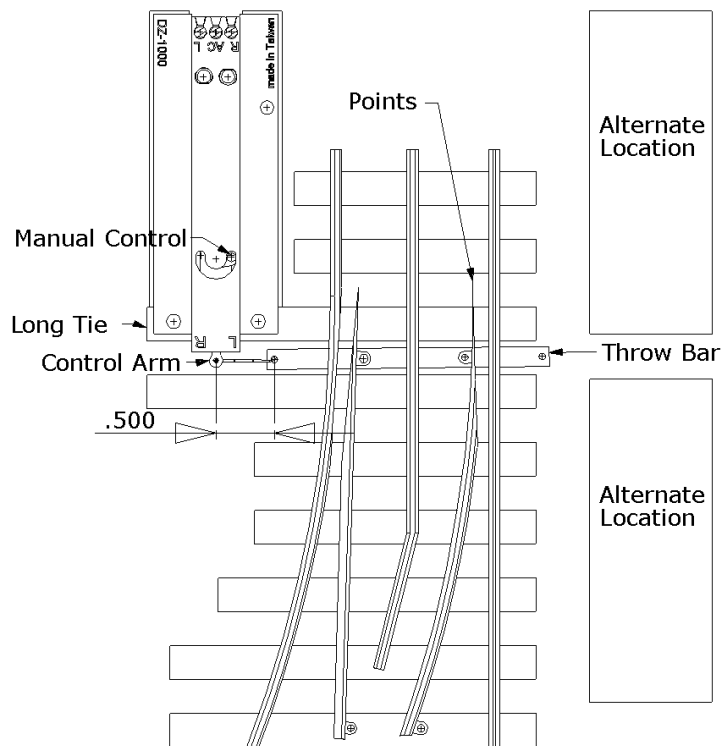


Figure 1

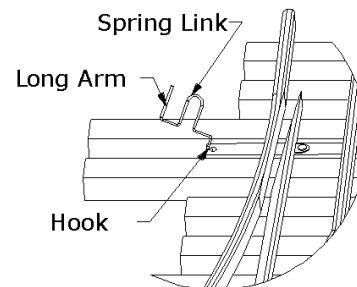


Figure 2

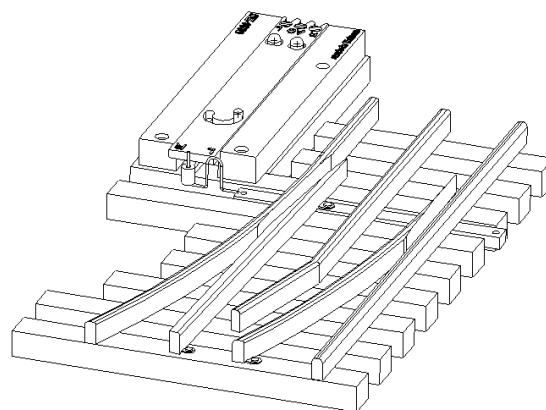


Figure 3

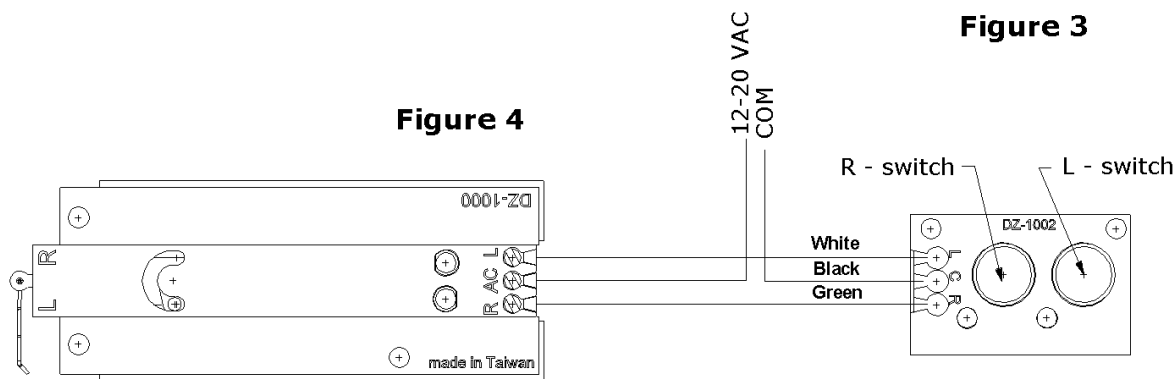


Figure 4

DZ-1000 Wiring for Automatic Non-derailing Operation

By isolating a section of rail on each direction of throw of the switch, you can wire the DZ-1000 for non-derailing operation. As the train approaches the switch it connects the L or R terminal to COMMON and causes the switch to throw in the direction to prevent a derailment of the train.

