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72-3010-250

no. 612-3010-000: left
no. 612-3011-000: right
nonderailing
remote control

LIONEL O GAUGE SWITCHES OPERATING INSTRUCTIONS

Congratulations on your purchase of the Lionel nonderailing O gauge switch. No matter what your layout design, the nos. 3010 (left) and 3011 (right) switches are the best remote-control turnouts for the job.

We designed the switches to be smaller and more versatile, so you'll have more flexibility when designing your railroad. Remove the lantern housing and create a smaller switch that's perfect for yard applications. Your new turnout even duplicates the "footprint" of the classic Lionel 022 switch when you use the track extension sections (included).

Like its predecessors, your Lionel O gauge switch is remote-controlled. The controller indicates the direction the switch has been thrown with colored lights. It's also "nonderailing"; trains approaching an "open" switch (one thrown in the opposite direction) won't derail while passing through—special wiring ensures the switch automatically throws itself to the correct direction.

Your Lionel O gauge switch is the best turnout made. Whether you're replacing an older switch or creating new pathways for your trains, the new Lionel O gauge remote-control switch is ready for service on your railroad.

COMPONENTS

- one Lionel O gauge remote-control switch (right or left)
- one Lionel switch controller
- one curved track extension
- one straight track extension
- Lionel metal track pins (10)
- operating instructions

BASIC INSTALLATION

Your switch has two plastic insulating pins installed on the "inside" rails. The pins insulate the switch rails as part of the nonderailing feature. *Never* replace the insulating pins with metal pins—this will override the nonderailing feature and could harm the switch. More on the insulating pins in a moment.

Before installing your new switch, decide if you'll be using the track extensions. When installed, the extensions increase the track length of the switch to that of Lionel O gauge straight and curved track sections.

Extensions may be necessary if you're installing the switch on an existing railroad. When installed, they give your switch the same overall dimensions as that of the classic Lionel 022 switch. If your track plan requires a

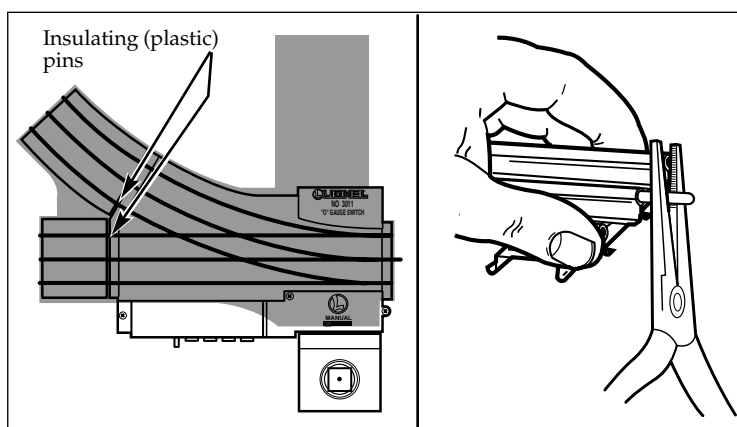
duplicate 022 "footprint," or if you've designed a track plan that relies on O gauge track section lengths, use the track extensions.

Experiment and see which format works best. See page 5 for more ideas.

To use the extensions, insert two Lionel metal track pins (included) into the non-insulated switch rails. Next, connect the extensions to the switch. Push together firmly. Install metal pins in the extensions as necessary.

If you aren't using extensions, install metal pins in the switch as dictated by the sectional track connecting to it. You may need to remove one of the section's metal pins to accommodate the switch's

plastic insulating pin. Using pliers, gently pry the metal pin free, using the rail's end as a leverage point. See the illustration.



The track extensions increase switch track length to that of Lionel straight and curved sections, as well as duplicating the "footprint" of the classic Lionel 022 switch. Remove metal track pins with pliers; install metal pins by tapping them in gently.

CONNECTING THE CONTROLLER AND OPERATING THE SWITCH

Activate your Lionel O gauge remote-control switch with the Lionel switch controller. The controller's red and green lamps indicate the direction the switch has been thrown. If the green lamp is illuminated, the switch is straight (or "through"); red indicates the switch has been thrown to the curved or "out" direction.

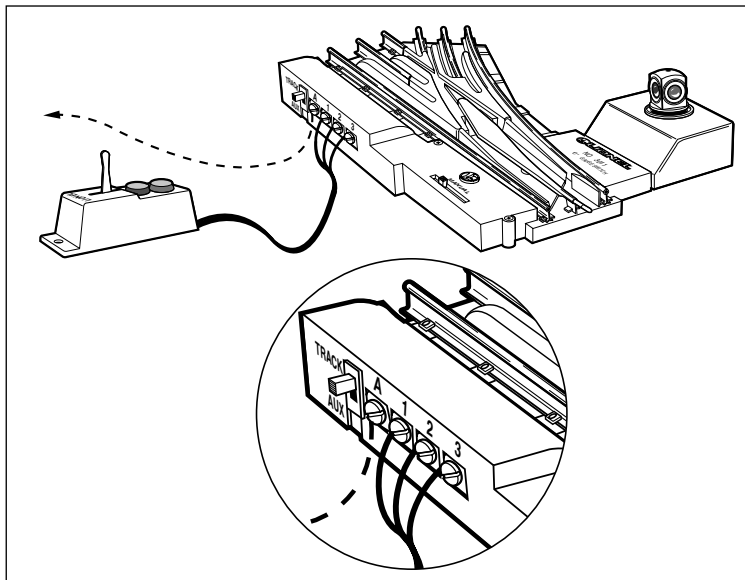
The three-wire cable leading from the controller connects to the screw terminals on the switch's side. The terminals are marked 1, 2, and 3. Connect the "outer" wires to terminals 1 and 3; connect the middle wire to terminal 2. Power up your track; make sure the TRACK/AUX switch located next to the terminals is on TRACK; this setting uses track power to electrify the switch. For optimum performance, apply at least 9 volts and no more than 14 volts to your track. Make certain your power

supply has a circuit breaker rated at 8 amps or less. For best performance or if you regularly operate trains at low or high voltage, power your switch with the auxiliary voltage terminal. Read on.

To change the direction of your Lionel O gauge switch using the controller, momentarily push the controller's metal lever one direction or the other. Once the switch throws in the selected direction, release the lever. It spring-returns to the middle position.

To manually change the direction of your switch, slide the lever marked "MANUAL" located to the side of the switch entrance. *Do*

not turn the lantern by hand; unlike the classic Lionel 022 switch, your turnout is not designed to throw in this manner.



Connect the outer switch controller wires to terminals 1 and 3; connect the middle wire to terminal 2. When the TRACK/AUX switch is set to TRACK, track voltage powers the switch. For more consistent performance, use the AUX (fixed voltage) setting. Connect a "hot" (positive) lead from your transformer to the switch's "A" (auxiliary power) terminal. Use 12 volts alternating or direct current; set TRACK/AUX on AUX.

When your switch is in the through direction, the controller's green light will illuminate. If the red light is on, reverse the wires connected to terminals 1 and 3. If *both* lights are on, the switch is "between" directions. Push the controller in either direction to fully throw the switch.

Your Lionel O gauge remote-control switch is designed for optimum performance at 12 volts alternating or direct current. For many railroads, track voltage is sufficient to power the switch, as long as you operate between 9 and 14 volts. If you routinely apply voltage higher than 14 volts to your track—such as the Train-Master Command operating environment—you must power the switch through the auxil-

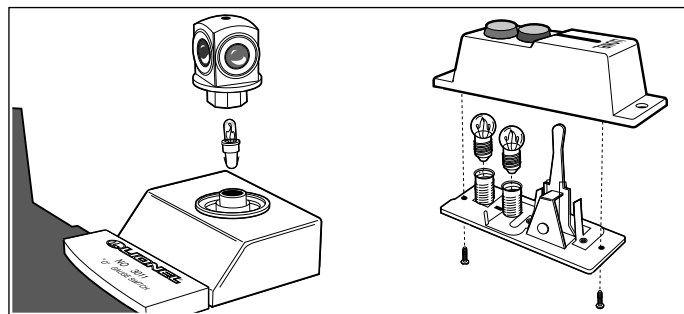
iliary power terminal with 12 volts alternating or direct current.

IMPORTANT: *Do not continuously apply more than 14 volts alternating or direct current to the switch (either via track power or through the auxiliary power terminal) or your switch may be damaged. Your power supply must have a circuit breaker rated at 8 amps or less.*

For external power, connect a "hot" (positive) lead from your power supply to the "A" (auxiliary power) terminal. Ground is provided by the track connection. Set the TRACK/AUX switch to AUX. Voltage should not exceed 14 volts. See page 6.

LAMP REPLACEMENT

Replace the lamp in your Lionel O gauge switch by removing the lantern and pulling directly up on the bulb. Replace it with Lionel lamp no. 612-3011-311. Note the bulb fits into a rectangular socket; make sure the replacement bulb is positioned correctly before press-fitting it. Reinstall the lantern by gently pressing it down until it snaps into place.



Change the switch's bulb: remove the lantern and pull directly up on the light. Replace with Lionel bulb no. 612-3011-311. Change the controller bulbs: remove the housing, unscrew the lamps, and replace with Lionel lamp no. 600-1447-300.

To replace the lamps inside the switch controller, remove the two screws underneath the component and lift the controller housing away. Unscrew the old bulb(s) and replace with Lionel lamp no. 600-1447-300. Reinstall the controller housing.

Replacement Lionel lamps are available from authorized Lionel Service Stations or direct from Lionel Consumer Services.

REVERSING OR REMOVING THE LANTERN HOUSING

Your Lionel O gauge remote-control switch is designed to resemble its predecessor, the classic Lionel 022 switch. As a result, you'll find one of the 022's most prominent features—the lantern housing—at the entry point of the new O gauge switch. On the old 022, this housing contained the switch motor as well as the lantern. On your new Lionel switch, however, this housing holds the lantern assembly only.

Depending on where you plan to install your Lionel O gauge switch, you may want to reverse the lantern housing's orientation—from one side of the turnout to the other. Here's how to do it.

Turn the switch over. Remove the four screws located directly underneath the track. The housing will lift away from the switch.

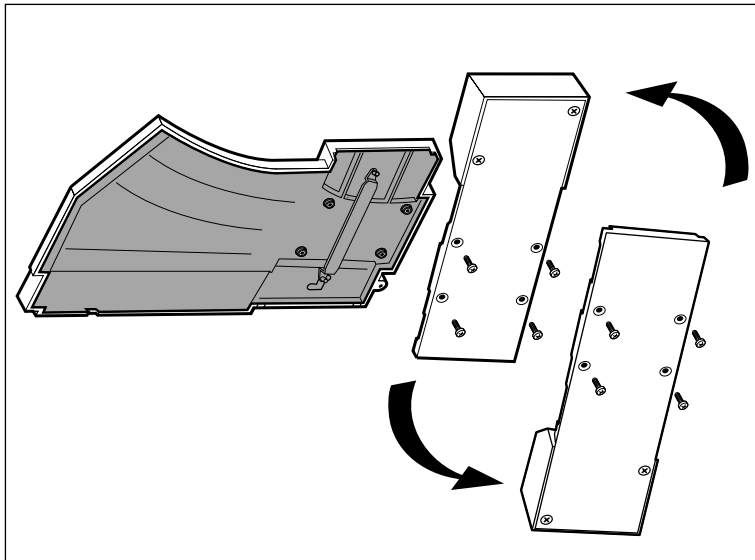
Note the electrical contact strips located on both the switch body and the lantern housing. These conduct electricity to the lamp inside the lantern housing. There are two sets of contacts, allowing you to reverse the lantern housing and still enjoy illumination from

the switch lantern. Next, place the lantern housing in its new orientation. Make sure the lantern drawbar *aligns and mates* with the switch rail's throwbar. You'll know they're mated when you can slide the "manual" lever and throw the switch *easily* while holding the housing and switch base together firmly. Reinstall the four screws.

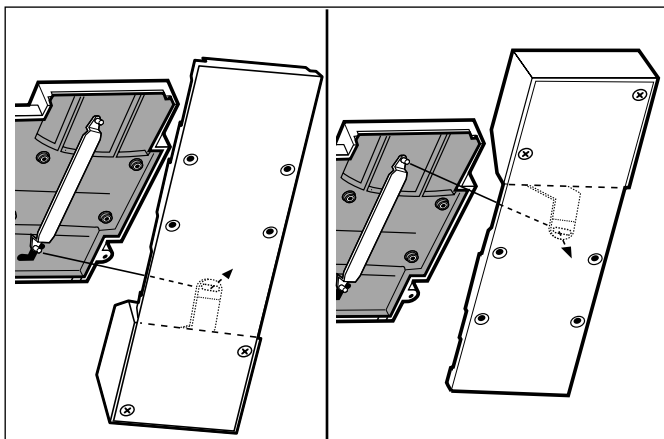
If you're installing your Lionel O gauge switch in a yard—or if you don't want the look of the lantern housing on your switch—you can remove the lantern housing completely. **Note: removing the lantern housing will permanently alter your switch and cannot be reversed.**

With the housing in your hand, turn it over and remove the baseplate by undoing the final two screws. Cut the lamp wires at the metal contact strips so that no wire remains connected

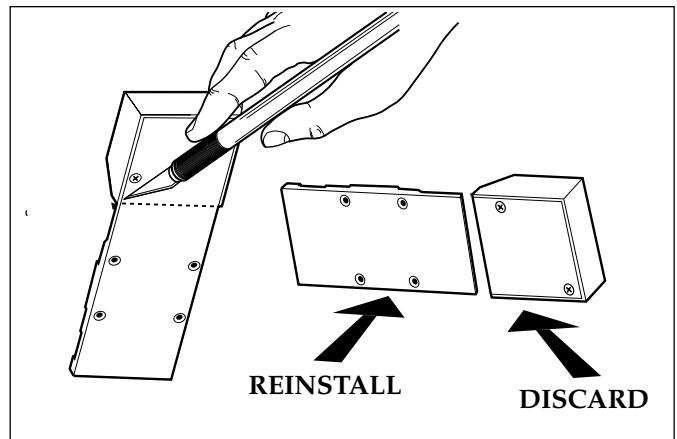
to the contacts. Note the score lines on the baseplate. Using a hobby or craft saw, carefully score and cut the line until the baseplate breaks in two. Reinstall the long baseplate section with the screws. Discard the housing and short baseplate section. Install the modified switch on your railroad.



To reverse or remove the lantern housing, undo the four screws underneath the switch. If you're reversing the housing's physical orientation, turn the housing and refer to the illustration below left. For housing removal, see the illustration below right.



When reversing the housing orientation, align the lantern drawbar and switch rail throwbar so that the throwbar's pin aligns and mates with the lantern drawbar's opening. Test by throwing the switch with the MANUAL lever. When the switch throws smoothly and the lantern rotates, reinstall the screws.



To remove the lantern housing permanently, remove the baseplate from the lantern housing by undoing the final two screws. Cut the lamp wires at the contact strips. Score and cut the line until the baseplate separates in two. Reattach the long section with the four screws. Discard the remainder.

CONNECTING THE SWITCH TO ACCESSORIES

Your Lionel O gauge remote-control switch is more than just a way to route trains around your railroad. It's also a great way to operate Lionel accessories—even interact with other switches installed on your layout.

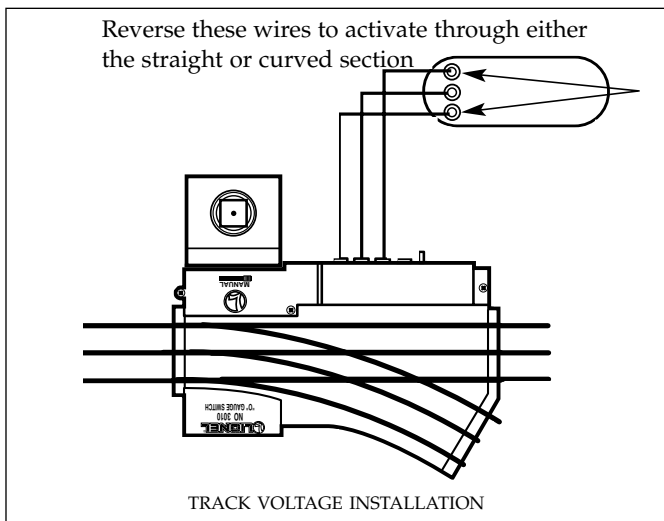
The following diagrams show you how to connect two popular Lionel accessories—the automatic block signal and automatic gateman—to your remote-control switch. We've also included plans to show you how to interconnect two switches, so that throwing one automatically throws the other—perfect for automatic passing sidings and two-train operation.

Accessories connected to your Lionel switch are activated by the switch's nonderailing feature. When a locomotive or car touches the switch's insulated rail (the one with the plastic insu-

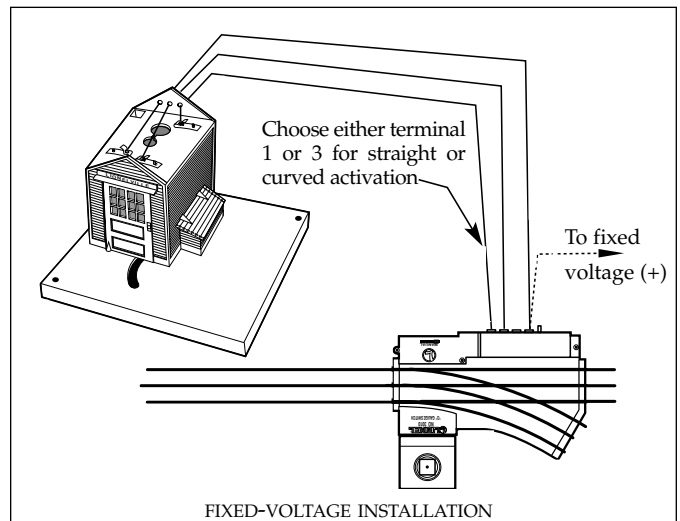
lating pin), the switch automatically throws to the correct direction. The switch also routes power to the accessory, activating it as long as your train's wheels touch the insulated rail.

To increase the time your accessory is activated, you'll need to increase the length of the insulated rail connected to your switch. It's easy—just install one or more sections of Lionel insulated track (no. 6-12840), available at your authorized Lionel dealer.

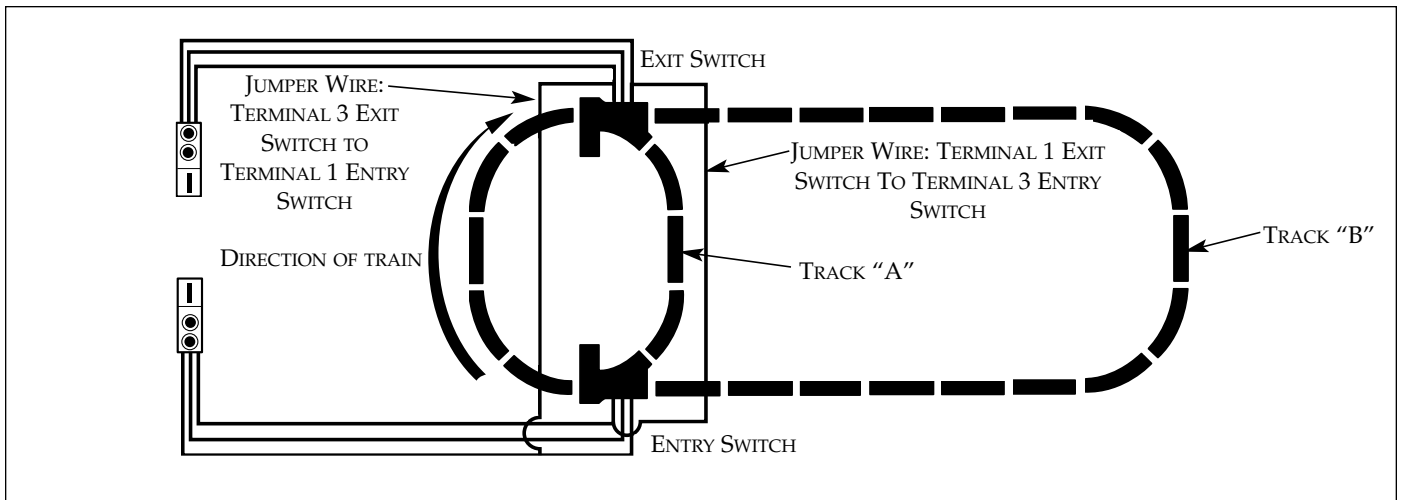
Carefully remove the plastic insulating pins from the inside rails of your switch; pliers with tape-lined jaws work best. Install metal pins in their place, as necessary. Next, connect insulated track section(s) to both switch tracks. At the end of your insulated section(s), reinstall the plastic insulating pins *on the same inside rail*. The length of your switch's insulated rail is now increased.



Operate your Lionel automatic block signal by connecting wires between its three binding posts and those on your Lionel O gauge switch.



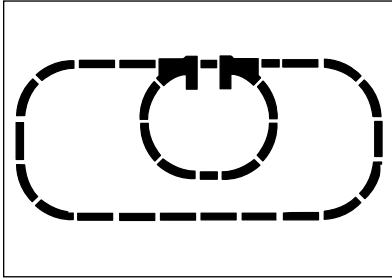
A classic like the Lionel automatic gateman is a natural for use with your O gauge switch. As your train passes through the switch, the gateman appears.



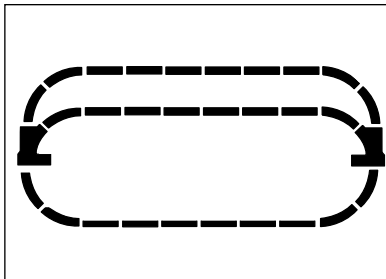
Automate your switches when you install them in pairs. This basic track plan has two switches that control each other. The train leaving track "A" energizes the nonderailing feature in the "exit" switch, throwing it to the position which allows the train to proceed onto the single track. Simultaneously, the "entry"

switch is thrown to the position that allows the train to enter track "B." As the train leaves "B," it again throws both switches, this time to the opposite direction, returning the train to track "A" next time around. Think of it as true "hands-off" Lionel operation!

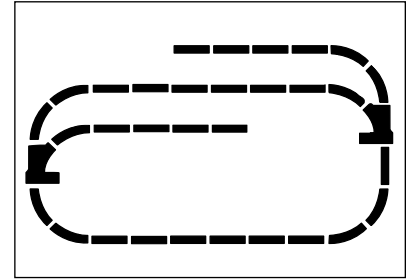
BASIC TRACK PLANS



This track plan features a basic loop that uses a pair of switches to create an inner loop. Great for chasing one train with another.

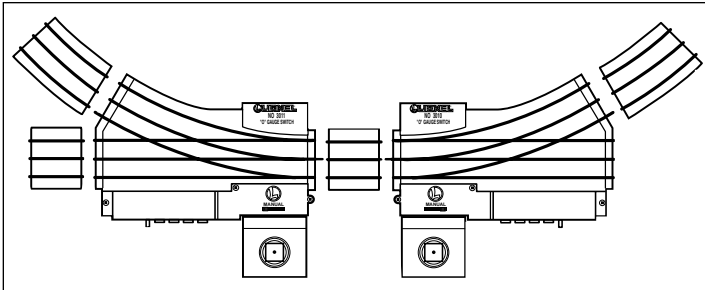


By installing switches at each end of the oval, you create a passing siding that's perfect for locomotive storage or two-train operations.

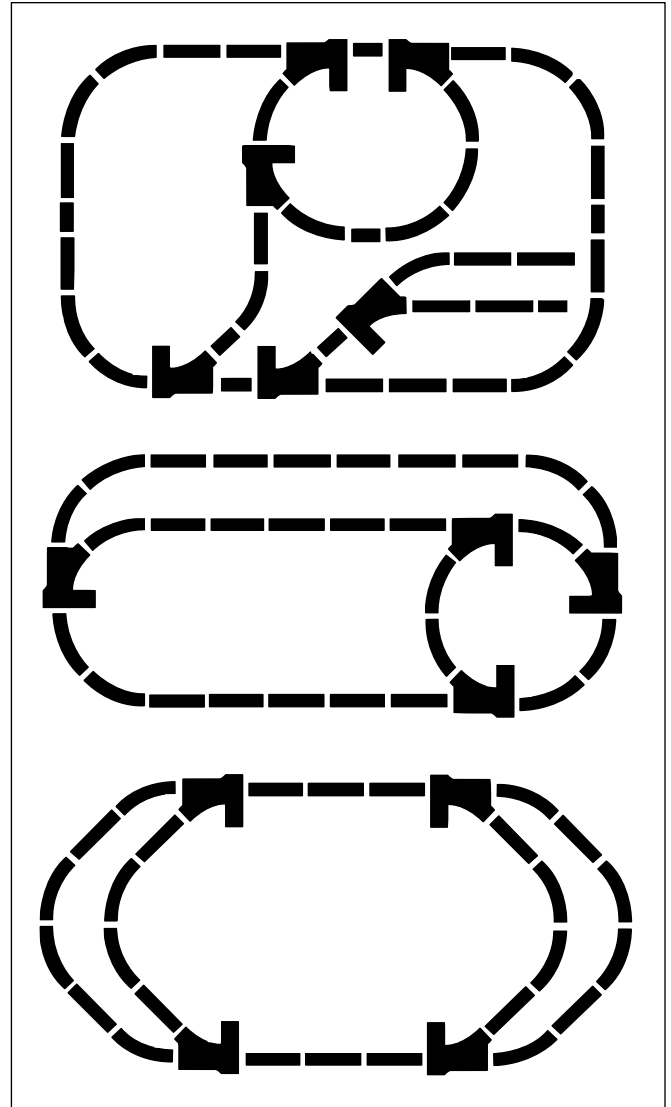
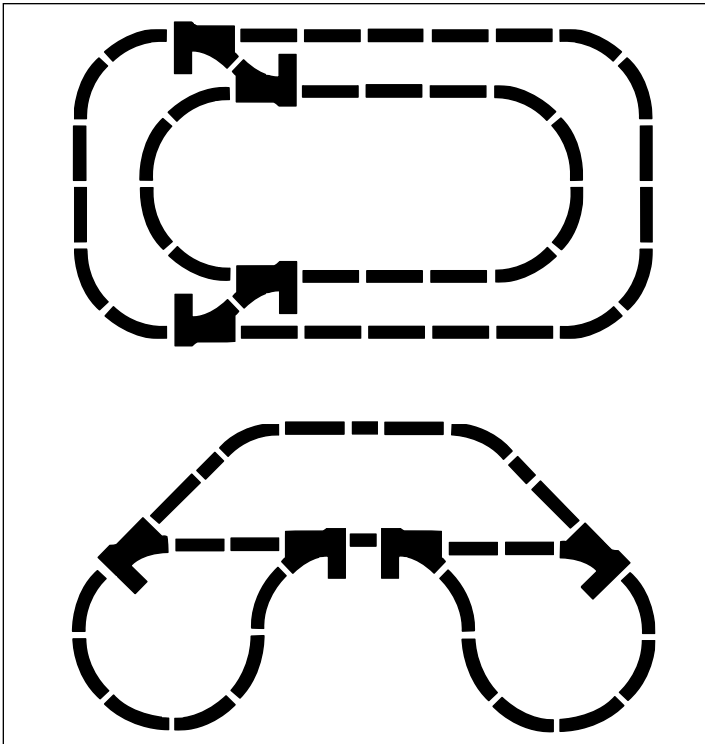


Create sidings for storing idle rolling stock. Sidings are also natural locations for many Lionel operating accessories. Use your imagination!

SWITCH INSTALLATIONS

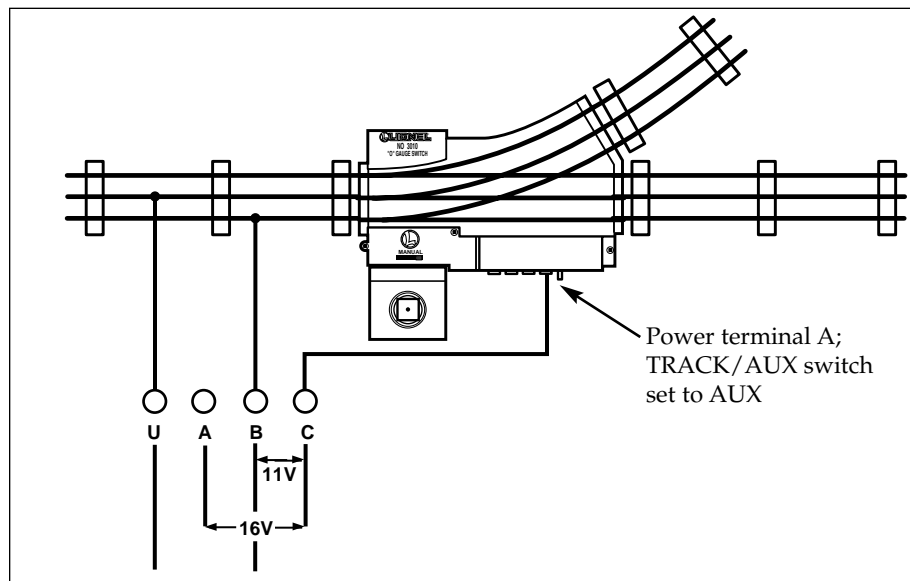


When running switches back to back, we recommend installing a straight track extension between them.

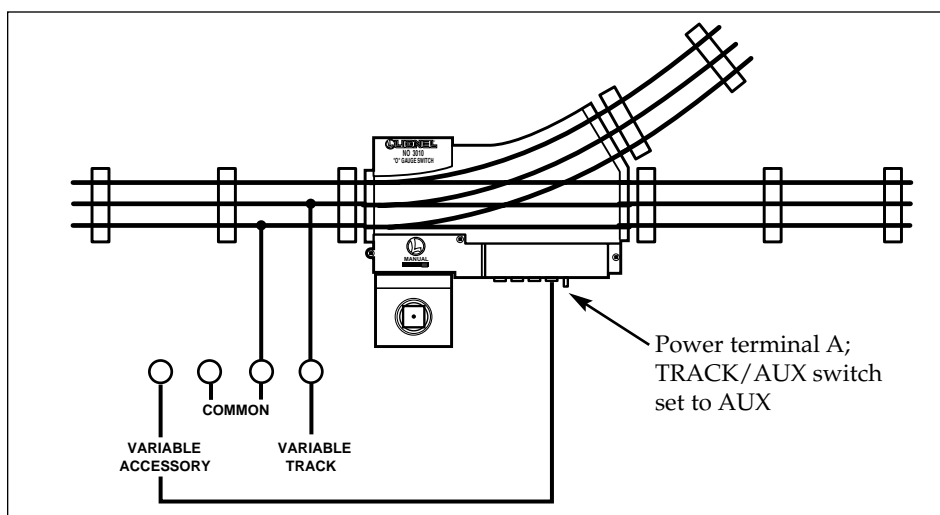


AUXILIARY/FIXED VOLTAGE INSTALLATIONS

USING A TRANSFORMER WITH FIXED-VOLTAGE OUTPUTS (example: LIONEL TYPE 4090)



USING A TRANSFORMER WITH VARIABLE-VOLTAGE OUTPUTS (example: LIONEL TYPE RS-1)



MAINTAINING AND SERVICING YOUR SWITCH

Our Lionel O gauge switch is designed to offer years of trouble-free, low-maintenance operation. Keep it clean of dirt, dust, and other grime that might effect performance and your switch will serve for years to come.

This product is offered by Lionel Trains, Inc. and it carries a warranty to support its continued reliable operation. You may choose to have the Lionel Service Department service your item even after its warranty expires. If so, a reasonable service fee will be charged. In either event, please follow the directions below.

If service is required within the warranty period, bring the item to the nearest authorized Lionel Trains Service Station along with the warranty card. If you prefer to send it

back to the factory, you must first call (810)-949-4100, Fax (810)-949-5429 or write to Customer Service, P.O. Box 748 New Baltimore, MI 48047-0748 stating what the item is, when it was purchased and what seems to be the problem. You will be sent a return authorization letter and label to assure your merchandise will be properly handled upon receipt.

CAUTION: Make sure the item is packed so as to prevent damage to the merchandise. The shipment must be prepaid and we recommend that it be insured.

Please make sure you have followed the instructions carefully before returning any merchandise for service. This warranty gives you specific legal rights and you may have others that vary from state to state.