KATO
PRECISION RAILROAD MODELS
UNITRACK

KATO N-scale railroad Starter Guide

Kato would like to thank you very much for purchasing this product. As N-scale railroad models can require very precise set-up and assembly guidelines, this guide has been provided to aide you in every way possible. For further expansion of a track layout plan, please refer to the plan variation guide book.

Order of assembly

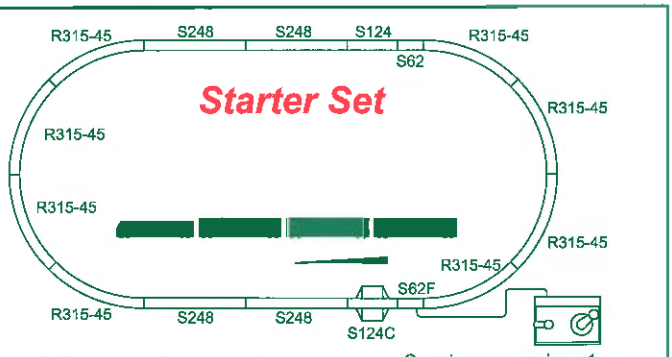
1. Connect feeder cable
2. Assemble the crossing track
3. Join track sections
4. Connect the power pack and controller
5. Connect turnout switches
6. Set turnout switches
7. Place your train cars on the track
8. Operate the train
9. Put them back in storage

N-scale railroad models

N-scale railroad models are operated on two-rail tracks via a DC (Direct Current) system. The power pack converts the AC voltage from any house outlet into DC 0~12V to provide power for the track, charging the rails with positive (+) and negative (-) current.

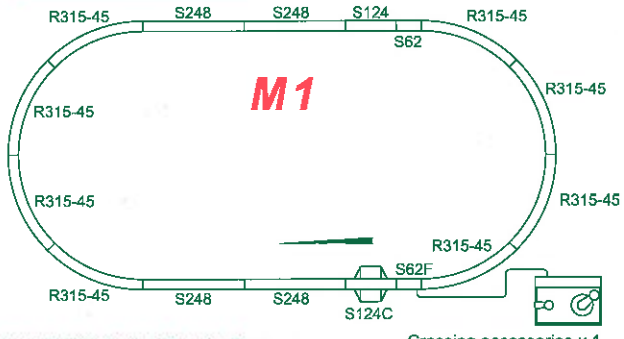
Driving Power	Current is collected through the wheels of a motorized locomotive which turns the motor and provides rotary power via the drive shafts, moving the locomotive.
Speed Control	In order to control the speed of the train, use the knob on the power pack to regulate the voltage sent through the rails (0~12V).
Running Direction	In order to switch the running direction of the train, utilize the reverse lever to switch the direction of current in the tracks.

Contents of track set with KATO Powerpack



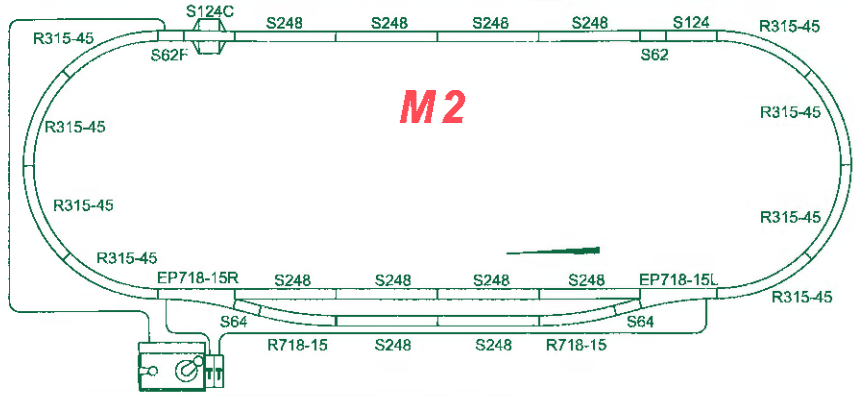
248mm (9 3/4") Straight Track····S248 x 4
124mm (4 7/8") Straight Track····S124 x 1
124mm (4 7/8") Road Crossing····S124C x 1
62mm (2 7/16") Straight Track····S62 x 1
62mm (2 7/16") Feeder Track····S62F x 1
315mm (12 3/8") Radius 45° Curve Track····R315-45° x 8

Crossing accessories x 1
Power Pack x 1
Rerailer/UniJoiner Remover x 1
Locomotive x 1
Train car x 3



248mm (9 3/4") Straight Track····S248 x 4
124mm (4 7/8") Straight Track····S124 x 1
124mm (4 7/8") Road Crossing····S124C x 1
62mm (2 7/16") Straight Track····S62 x 1
62mm (2 7/16") Feeder Track····S62F x 1
315mm (12 3/8") Radius 45° Curve Track····R315-45° x 8

Crossing accessories x 1
Power Pack x 1
Rerailer/UniJoiner Remover x 1



248mm (9 3/4") Straight Track····S248 x 10
124mm (4 7/8") Straight Track····S124 x 1
124mm (4 7/8") Road Crossing····S124C x 1
64mm (2 1/2") Straight Track····S64 x 2
62mm (2 7/16") Straight Track····S62 x 1
62mm (2 7/16") Feeder Track····S62F x 1
315mm (12 3/8") Radius 45° Curve Track····R315-45° x 8
718mm (28 1/4") Radius 15° Curve Track····R718-15° x 2
#6 Left Turnout with 718mm (28 1/4") Radius Curve ····EP718-15°L x 1
#6 Right Turnout with 718mm (28 1/4") Radius Curve ····EP718-15°R x 1

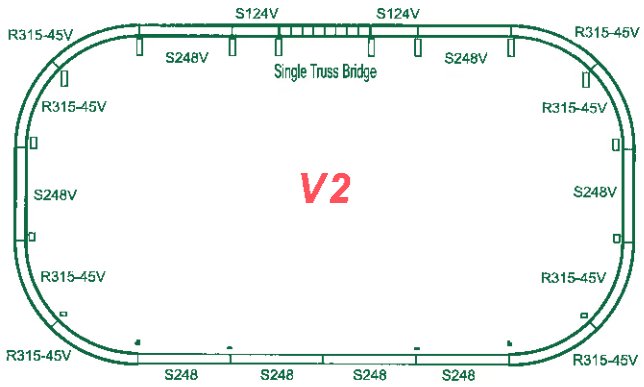
Crossing accessories x 1
Power Pack x 1
Turnout Control Switch x 2
Rerailer/UniJoiner Remover x 1

Contents of each track set

V1

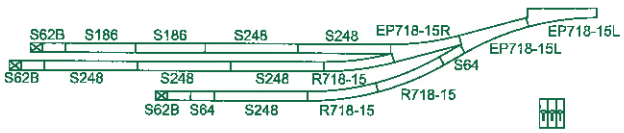
248mm (9 3/4") Straight Track····S248 x 6
64mm (2 1/2") Straight Track····S64 x 2
718mm (28 1/4") Radius 15° Curve Track····R718-15° x 2
#6 Left Turnout with 718mm (28 1/4") Radius Curve····EP718-15°L x 1
#6 Right Turnout with 718mm (28 1/4") Radius Curve····EP718-15°R x 1
Turnout Control Switch x 2

V2



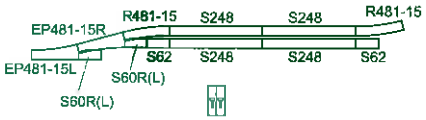
248mm (9 3/4") Straight Track····S248 x 4
248mm (9 3/4") Truss Bridge x 1
248mm (9 3/4") Straight Viaduct Track S248V x 4
124mm (4 7/8") Straight Viaduct Track S124V x 2
315mm (12 3/8") Radius 45° Viaduct Curve Track····R315-45°V x 8
Spacer x 2 Step x 2
Pier No.1 x 2 Pier No.2 x 2 Pier No.3 x 2 Pier No.4 x 2 Pier No.5 x 6

V3



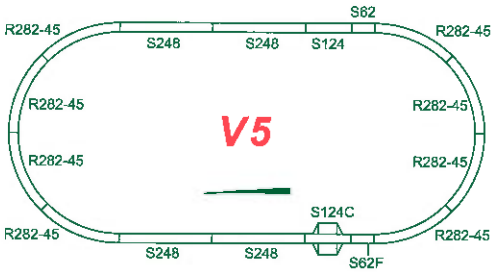
248mm (9 3/4") Straight Track····S248 x 6
186mm (7 5/16") Straight Track····S186 x 2
64mm (2 1/2") Straight Track····S64 x 2
62mm (2 7/16") Bumper Type A····S62B x 3
718mm (28 1/4") Radius 15° Curve Track····R718-15° x 3
#6 Left Turnout with 718mm (28 1/4") Radius Curve····EP718-15°L x 2
#6 Right Turnout with 718mm (28 1/4") Radius Curve····EP718-15°R x 1
Turnout Control Switch x 3

V4



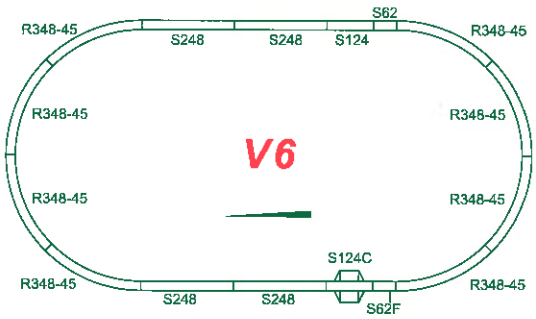
248mm (9 3/4") Straight Track····S248 x 4
62mm (2 7/16") Straight Track····S62 x 2
60mm (2 3/8") Straight Beveled Track(L)····S60L x 2
60mm (2 3/8") Straight Beveled Track(R)····S60R x 2
481mm (19") Radius 15° Curve Track····R481-15° x 2
#4 Left Turnout with 481mm (19") Radius Curve····EP481-15°L x 1
#4 Right Turnout with 481mm (19") Radius Curve····EP481-15°R x 1
Turnout Control Switch x 2

V5



248mm (9 3/4") Straight Track····S248 x 4
124mm (4 7/8") Straight Track····S124 x 1
124mm (4 7/8") Road Crossing····S124C x 1
62mm (2 7/16") Straight Track····S62 x 1
62mm (2 7/16") Feeder Track····S62F x 1
282mm (11") Radius 45° Curve Track····R282-45° x 8
Crossing accessories x 1
Rerailer/UniJoiner Remover x 1

V6

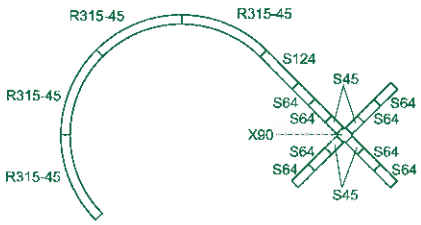


248mm (9 3/4") Straight Track····S248 x 4
124mm (4 7/8") Straight Track····S124 x 1
124mm (4 7/8") Road Crossing····S124C x 1
62mm (2 7/16") Straight Track····S62 x 1
62mm (2 7/16") Feeder Track····S62F x 1
348mm (13 3/4") Radius 45° Curve Track····R348-45° x 8
Crossing accessories x 1
Rerailer/UniJoiner Remover x 1

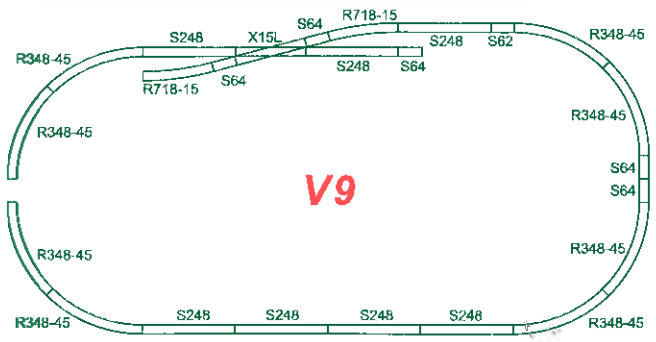
V7

248mm (9 3/4") Straight Track····S248 x 2
62mm (2 7/16") Straight Track····S62 x 2
310mm (12 3/16") Double Crossover Turnout····S310DC x 1
Turnout Control Switch x 1

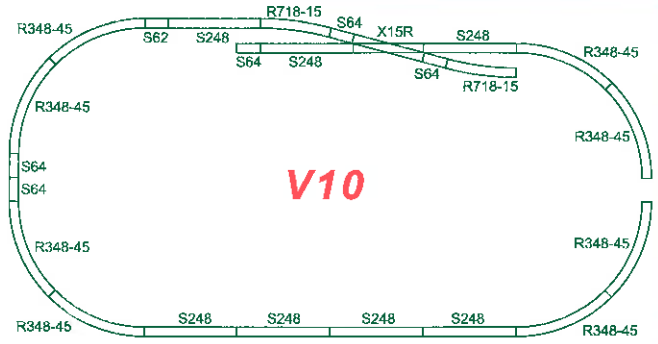
V8



124mm (4 7/8") Straight Track····S124 x 1
64mm (2 1/2") Straight Track····S64 x 8
45.5mm (1 3/4") Straight Track····S45 x 4
315mm (12 3/8") Radius 45° Curve Track····R315-45° x 4
124mm (4 7/8") 90° Crossing····X90 x 1



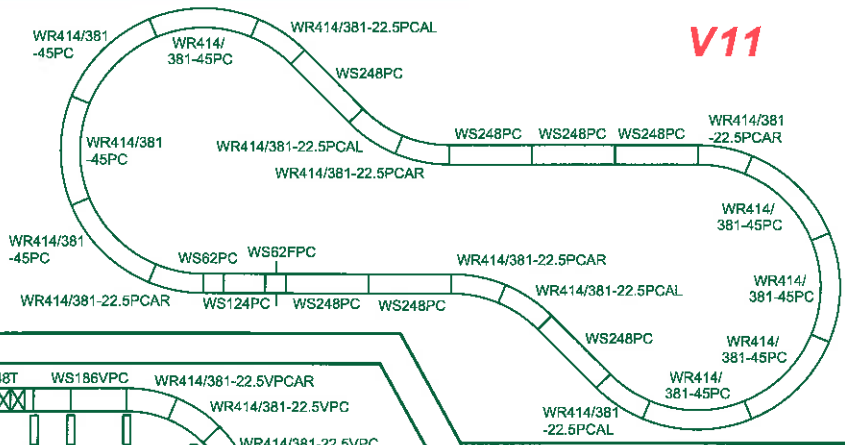
248mm (9 3/4") Straight Track····S248 x 7
64mm (2 1/2") Straight Track····S64 x 5
62mm (2 7/16") Straight Track····S62 x 1
348mm (13 3/4") Radius 45° Curve Track····R348-45° x 8
718mm (28 1/4") Radius 15° Curve Track····R718-15° x 2
186mm (7 5/16") Left Hand 15° Crossing····X15L x 1

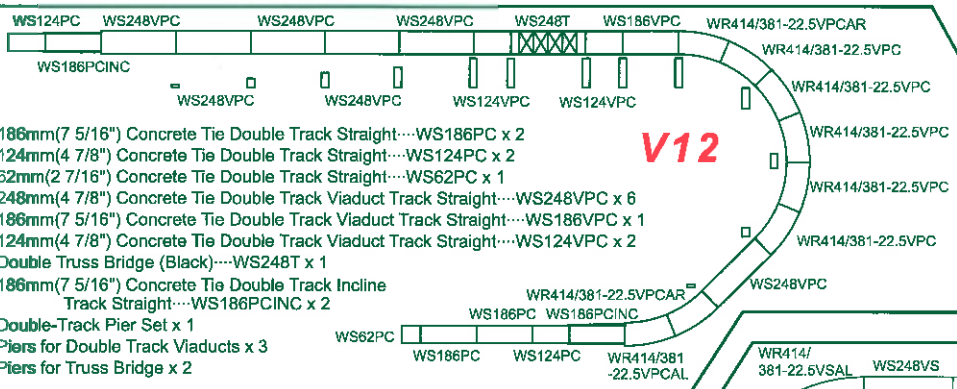


248mm (9 3/4") Straight Track····S248 x 7
64mm (2 1/2") Straight Track····S64 x 5
62mm (2 7/16") Straight Track····S62 x 1
348mm (13 3/4") Radius 45° Curve Track····R348-45° x 8
718mm (28 1/4") Radius 15° Curve Track····R718-15° x 2
186mm (7 5/16") Right Hand 15° Crossing····X15R x 1

Double track set

248mm(9 3/4") Concrete Tie Double Track Straight····WS248PC x 7
124mm(4 7/8") Concrete Tie Double Track Straight····WS124PC x 1
62mm(2 7/16") Concrete Tie Double Track Straight····WS62PC x 1
62mm(2 7/16") Concrete Tie Double Track Dual Straight····WS62FPC x 1
R414/381mm-45°(19" / 15") Concrete Tie Double Track Superelevated Curve····WR414/381-45PC x 8
Left 414/381mm(19" / 15") Concrete Tie Double Track Superelevated Easement Curve····WR414/381-22.5PCAL x 4
Right 414/381mm(19" / 15") Concrete Tie Double Track Superelevated Easement Curve····WR414/381-22.5PCAR x 4
Rerailer/UniJoiner Remover x 1

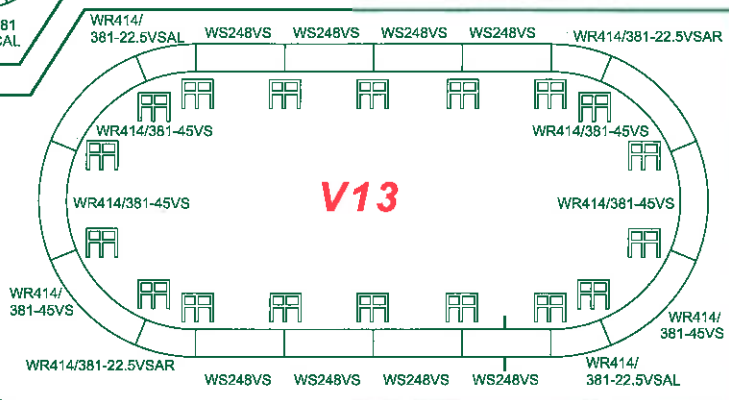


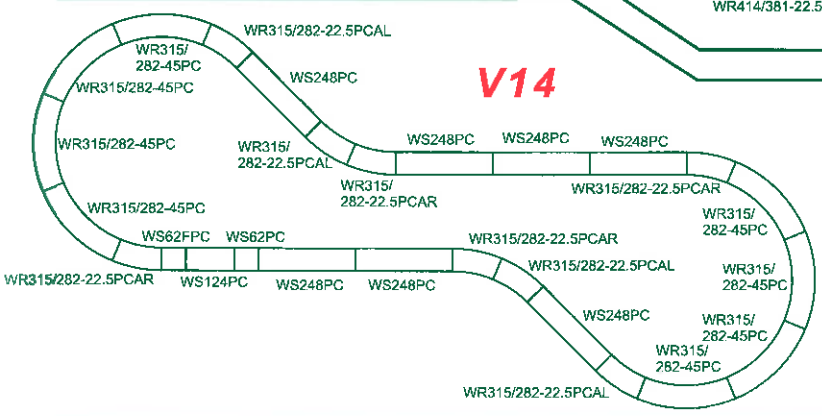


186mm(7 5/16") Concrete Tie Double Track Straight····WS186PC x 2
124mm(4 7/8") Concrete Tie Double Track Straight····WS124PC x 2
62mm(2 7/16") Concrete Tie Double Track Straight····WS62PC x 1
248mm(4 7/8") Concrete Tie Double Track Viaduct Track Straight····WS248VPC x 6
186mm(7 5/16") Concrete Tie Double Track Viaduct Track Straight····WS186VPC x 1
124mm(4 7/8") Concrete Tie Double Track Viaduct Track Straight····WS124VPC x 2
Double Truss Bridge (Black)····WS248T x 1
186mm(7 5/16") Concrete Tie Double Track Incline Track Straight····WS186PCINC x 2
Double-Track Pier Set x 1
Piers for Double Track Viaducts x 3
Piers for Truss Bridge x 2

R414/381mm-22.5°(19" / 15") Concrete Tie Double Track Viaduct Superelevated Curve ····WR414/381-22.5VPC x 4
Concrete Tie Double Track Viaduct Superelevated Easement Curve-Left ····WR414/381-22.5VPCAL x 2
Concrete Tie Double Track Viaduct Superelevated Easement Curve-Right ····WR414/381-22.5VPCAR x 2

248mm(9 3/4")Concrete Slab Double Viaduct Track Straight····WS248VS x 8
R414/381mm-45°(16 3/8"/ 15") Concrete Slab Double Viaduct Track Superelevated Curve····WR414/381-45VS x 6
Left 414/381mm-22.5°(16 3/8"/ 15") Concrete Slab Double Viaduct Track Superelevated Easement Curve····WR414/381-22.5VSAL x 2
Right 414/381mm-22.5°(16 3/8"/ 15") Concrete Slab Double Viaduct Track Superelevated Easement Curve····WR414/382-22.5VSAR x 2
Double Track Pier x 18
Double Track Viaduct Power Code x 2
Rerailer/Unijoiner Remover x 1



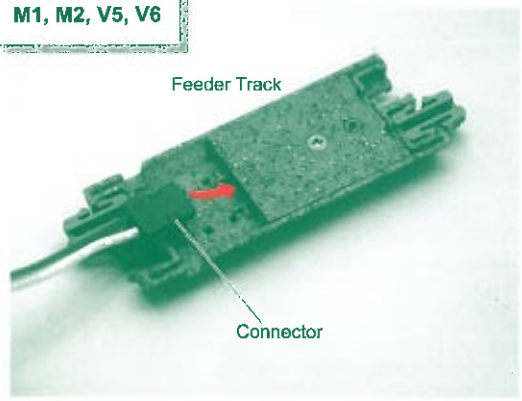


248mm (9 3/4") Concrete Tie Double Track Straight····WS248PC x 7
124mm (4 7/8") Concrete Tie Double Track Straight····WS124PC x 1
62mm (2 7/16") Concrete Tie Double Track Straight····WS62PC x 1
62mm (2 7/16") Concrete Tie Double Track Dual Feeder Straight····WS62FPC x 1
R315/282mm-45°(12 3/8"/11") Concrete Tie Double Track Superelevated Curve····WR315/282-45PC x 8
Left 315/282mm (12 3/8"/11") Concrete Tie Double Track Superelevated Easement Curve····WR315/282-22.5PCAL x 4
Right 315/282mm (12 3/8"/11") Concrete Tie Double Track Superelevated Easement Curve····WR315/282-22.5PCAR x 4
Rerailer/Unijoiner Remover x 1

Contents of each track set

Feeder Cable Connection

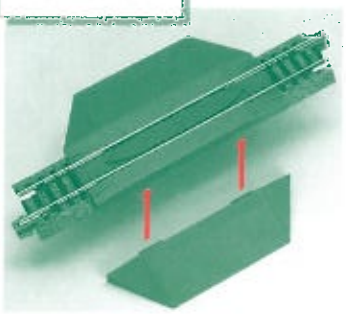
Starter sets
M1, M2, V5, V6



The Feeder Track is the connecting point between the power pack and the track and can be connected with the included, dedicated, cable (the white connector runs to the power pack, the grey connector to the track).

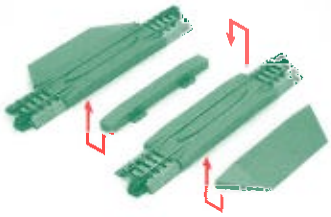
Crossing Track Assembly

Starter sets
M1, M2, V5, V6



Fit the railroad crossing boards into the grooves cut into the crossing track as shown.

In the case of a double track, assemble the pieces like this:



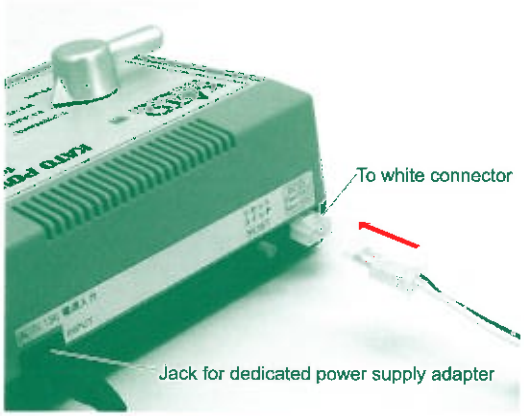
The crossing track can also function to restore derailed cars

Power Pack Connection

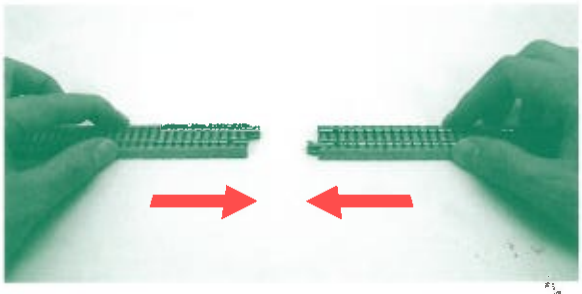
Starter sets
M1, M2

Controller Parts Description

Dedicated power Supply Adapter



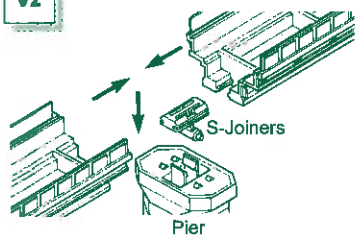
Joining Track Sections



As shown here, place the track on a flat surface and insert the rail tips into their respective UniJoiners, pressing them together firmly until they snap together. Once connected, they will retain a secure fit and will not loosen.

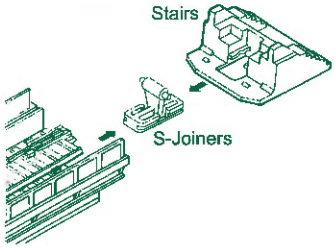
Viaduct Connection

V2



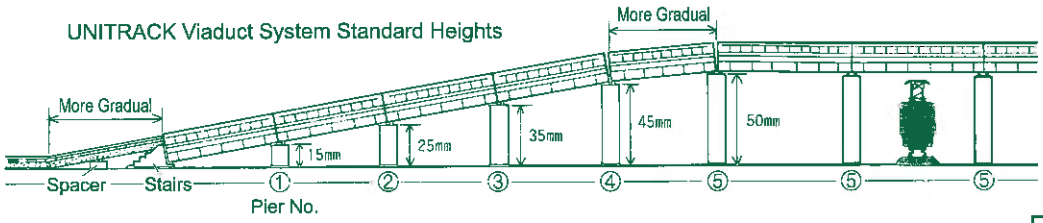
To connect, press the two tracks firmly together while holding them horizontally. To disconnect the track, gently bend the tracks at the connection point to one side or another and pull them apart. Be careful not to bend the track vertically by pulling up or pushing down or the connectors may break.

To connect stairs, please turn the S-Joiner upside down



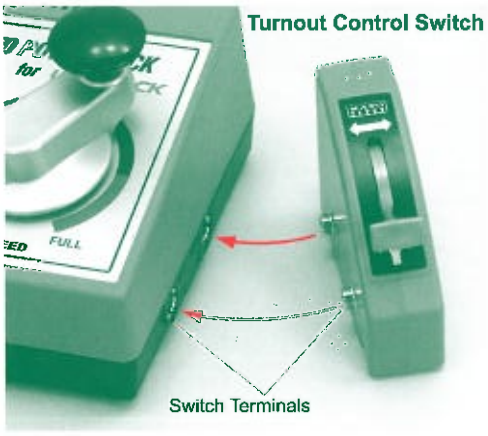
Each pier is marked with a number to indicate height.

UNITRACK Viaduct System Standard Heights

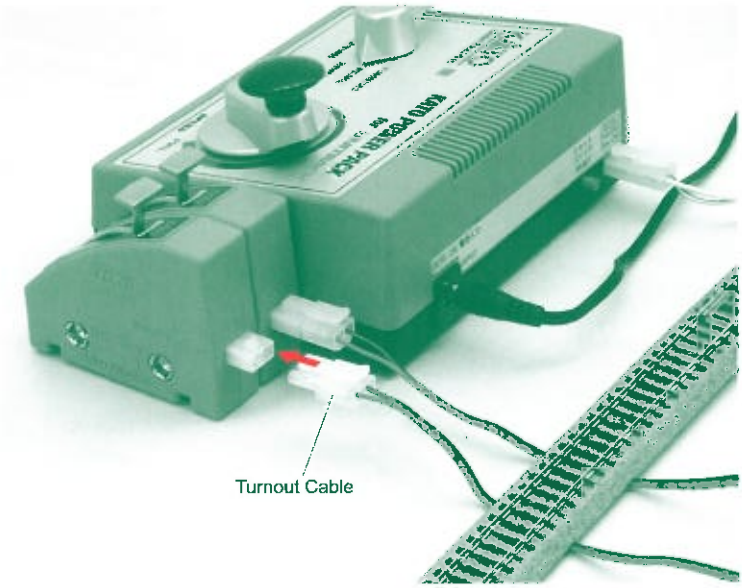


Connecting the Turnout Control Switch

M2,
V1, V3, V4, V7



Press the turnout switch terminals firmly into the snap terminals on the right side of the power pack controller.



Connect the turnout cable to the Turnout Control Switch

Contents of each track set

Using the Turnouts

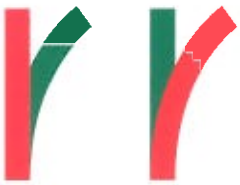
M2
V1, V3, V4, V7

To change the direction of the train, switch the turnout switching lever between the straight or curved track settings.

The switching lever should always be set to either straight or curved. If it is allowed to sit in between the two settings, the turnout may malfunction.

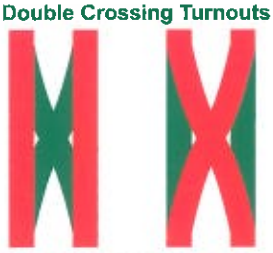
Direction of train movement (Red indicates direction of motion)

Turnout No. 4 and No. 6

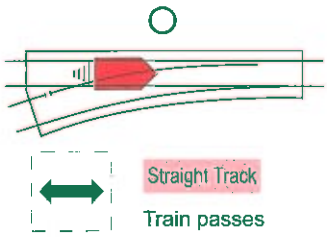


Straight Track | Curve Track

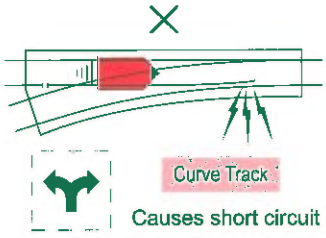
Double Crossing Turnouts



Straight Track | Curve Track



Straight Track
Train passes



Curve Track
Causes short circuit

In the case of a passing setup as indicated above, please switch the turnout in the direction of the train's travel. If it is switched in a different direction from that of the running train, a short circuit may be the result.

Figure 1

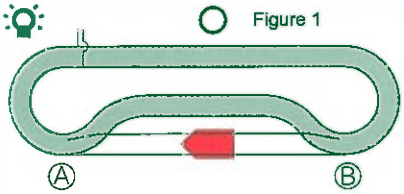
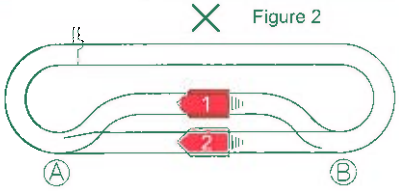


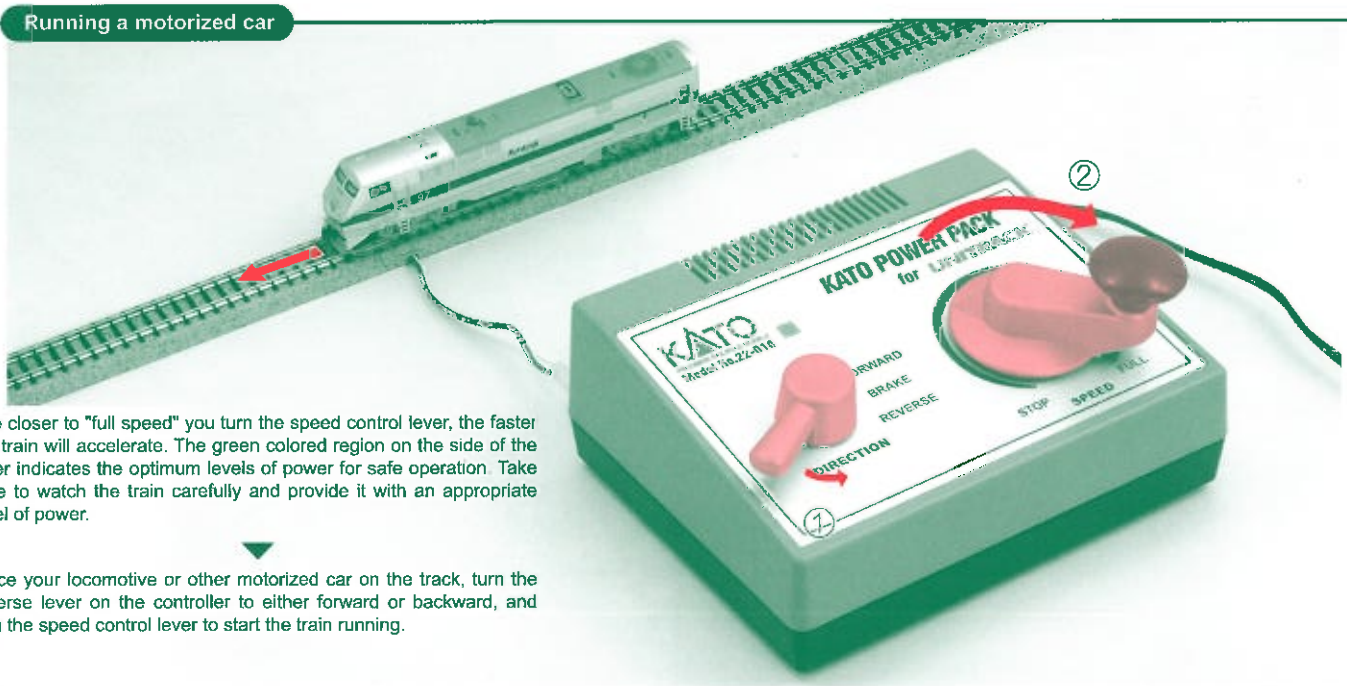
Figure 2



In Figure 1, both turnouts A and B are switched for curved track and no current is being supplied to the straight track, meaning that no power is being supplied to the train, putting it in a waiting state. By switching the turnouts to straight track, the train will begin running.

In Figure 2, both switches are set at opposite settings, running current to both the inside and outside track which could cause trains to collide.

Running a motorized car

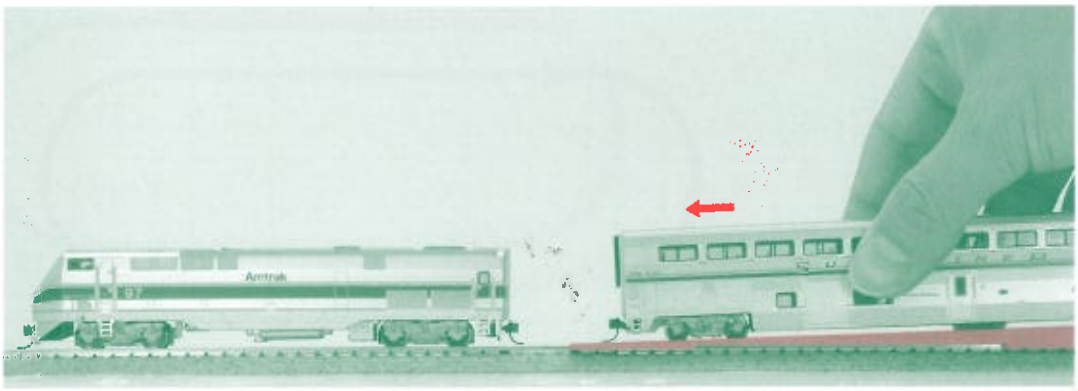


The closer to "full speed" you turn the speed control lever, the faster the train will accelerate. The green colored region on the side of the lever indicates the optimum levels of power for safe operation. Take care to watch the train carefully and provide it with an appropriate level of power.

Place your locomotive or other motorized car on the track, turn the reverse lever on the controller to either forward or backward, and turn the speed control lever to start the train running.

Derailments or overcharging the current will activate a safety device that will stop the train. The reset switch can be used to restore the running of the train after removing the cause of the problem.

Rerailing a train car

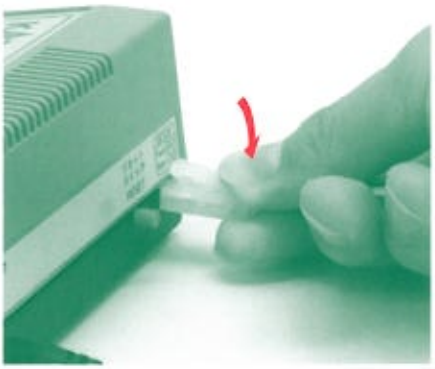


Put the rerailer on the track and place the car you wish to rerail on top of it, gently pushing it onto the track.

For the correct method of handling the train cars, please refer to their instruction sheets.

Storing

Remove all cables



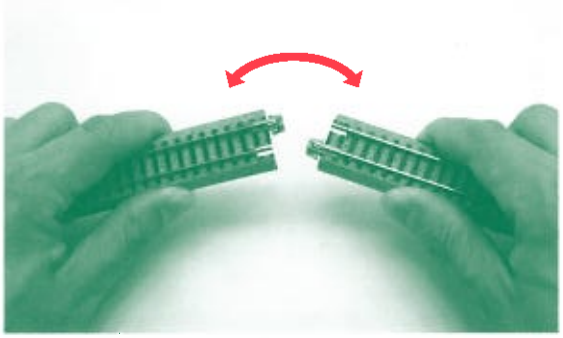
The feeder connector and turnout cable are equipped with claws that keep the connections from loosening. To remove the connectors, first release the claws before attempting to pull out the cable.

Remove the power supply adapter from the wall outlet

▼

Disconnect the track sections

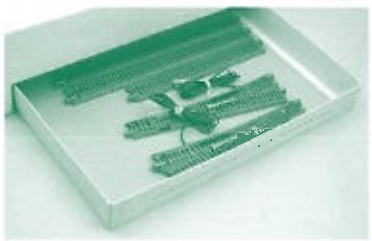
Disconnect the track sections



As indicated with the picture, hold the track sections you wish to separate tightly and bend them horizontally towards you, as if breaking the track. The track should separate.

Take care not to bend the track sections vertically, as it will break the uni-joiners.

Starter sets M1, M2

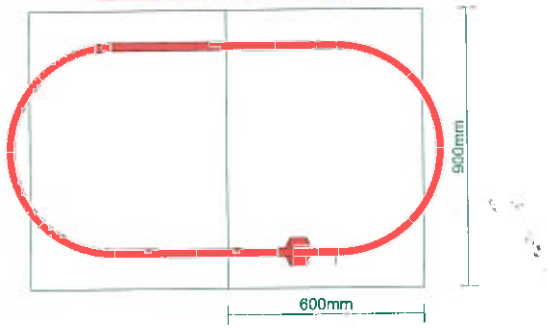


The packaging for these sets are equipped with a cardboard drawer which initially houses the instruction sheet, but it can be used to store train sets or track sections that have been bought separately.

Use our Variation sets to expand your starter layout.

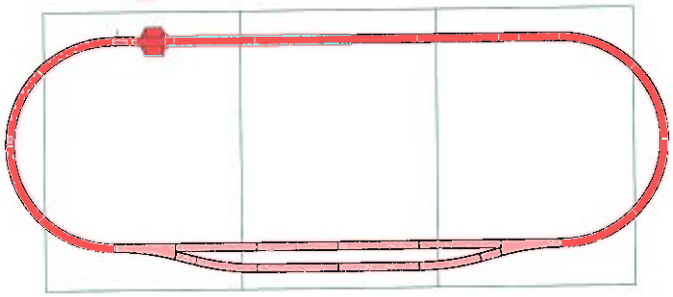
The UNITRACK Variation Series sets are designed to expand your Master Series and Starter Set Series quickly and easily.

Master1 (Starter/M1)



Basic Oval Track Set with
315mm (12 3/8") Radius Curve

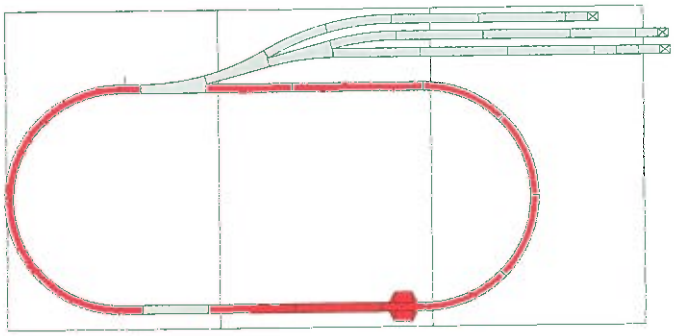
Master2 (Starter/M1 + V1 or M2)



Expanded M1 Oval Track Set with Passing Siding Tracks

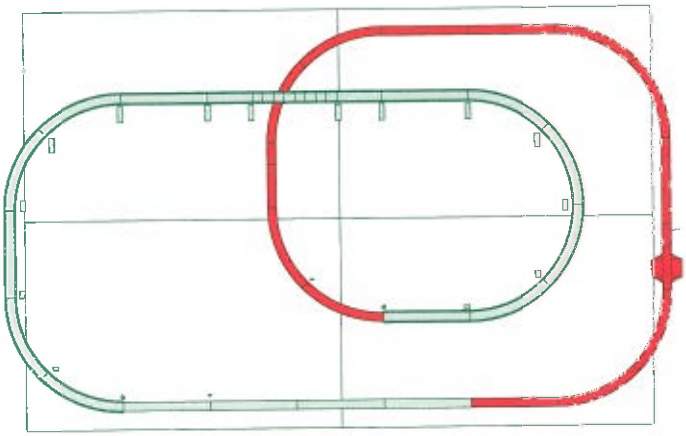
Master1 + V3

Expand your layout to simulate storage and switching of multiple trains!



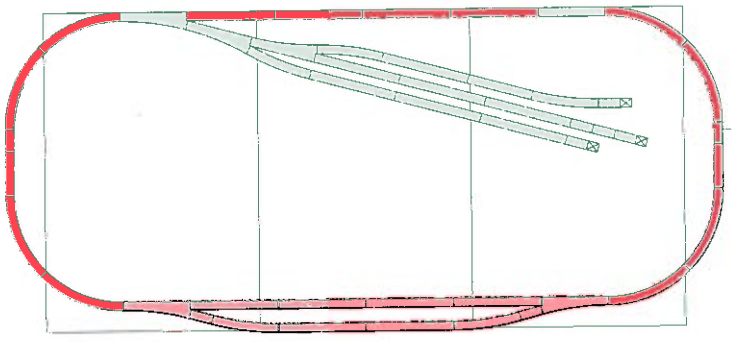
Master1 + V2

Bring depth and visual excitement with an up-and-over layout!



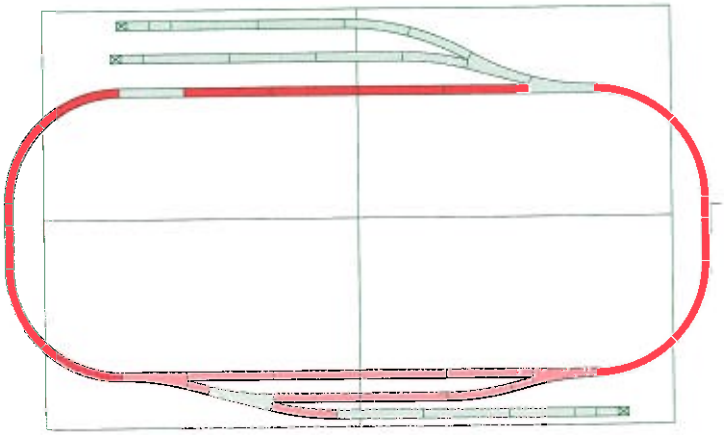
Master2 + V3

Bring passing and switching excitement to your layout!



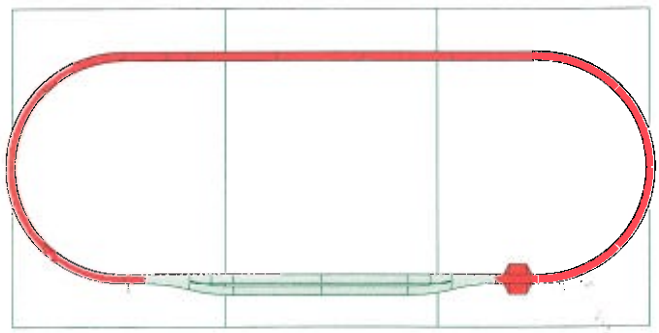
Master1 + V1 + V3

Two yards give you more destinations to drop and pick up cars.



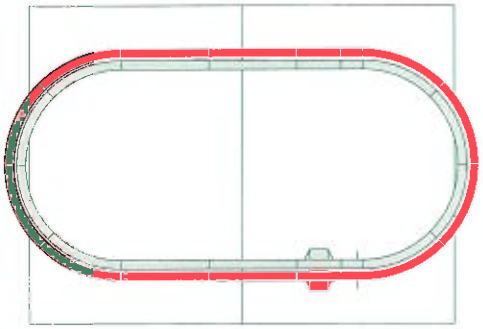
Master1 + V4

Model exhilaration with close proximity passing tracks!



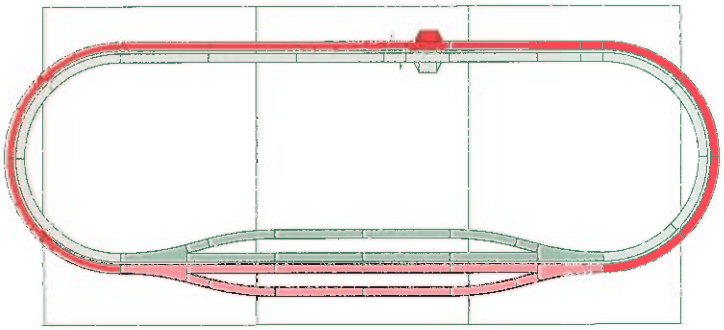
Master1 + V5

Combine tracks to run two trains at once!



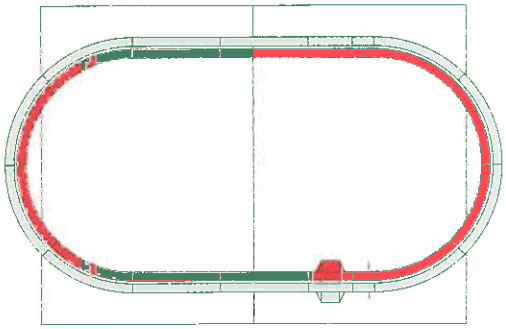
Master2 + V1 + V5

Store and run four trains on two tracks!



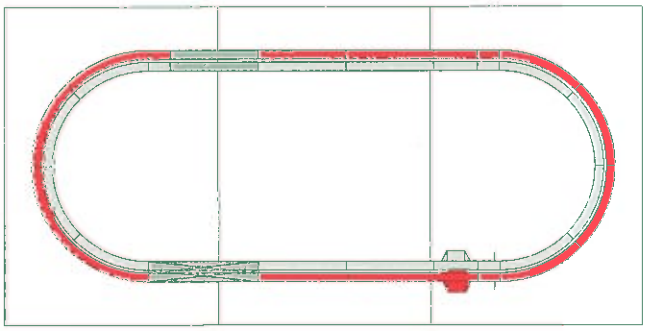
Master1 + V6

Combine tracks to enable running of two longer trains!



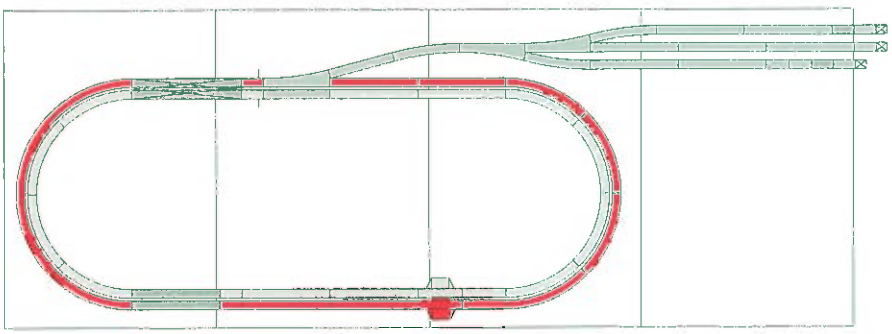
Master1 + V5 + V7

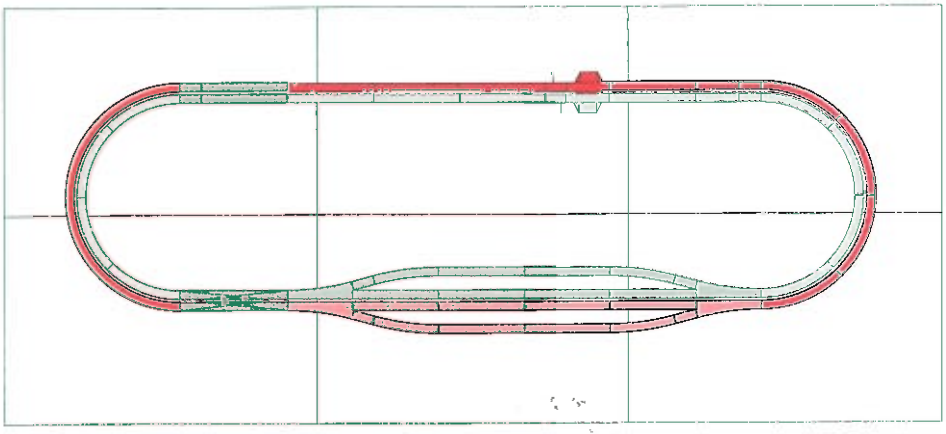
Introduce track changing with a double crossover!



Master1 + V3 + V5 + V7

Double crossovers combine with a yard for more switching excitement!



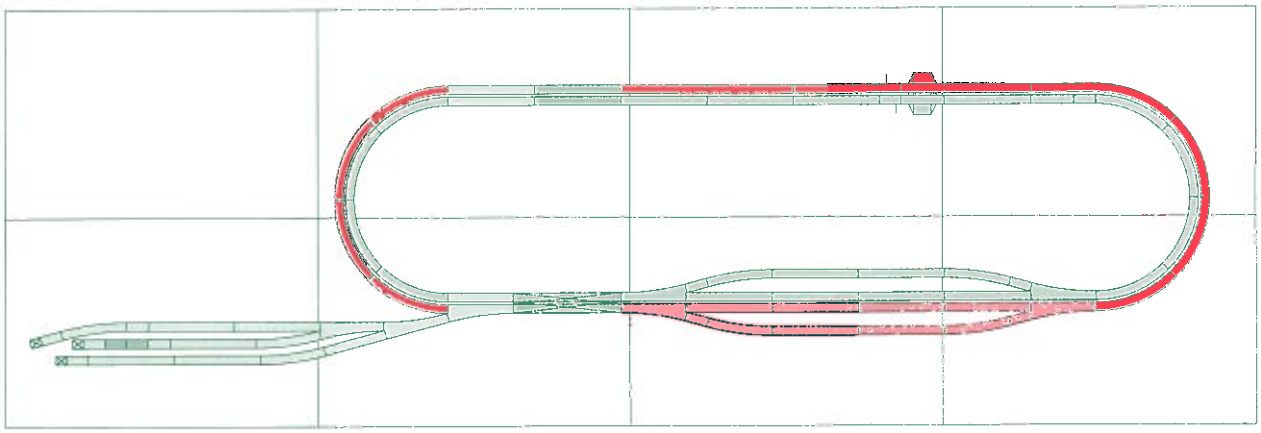


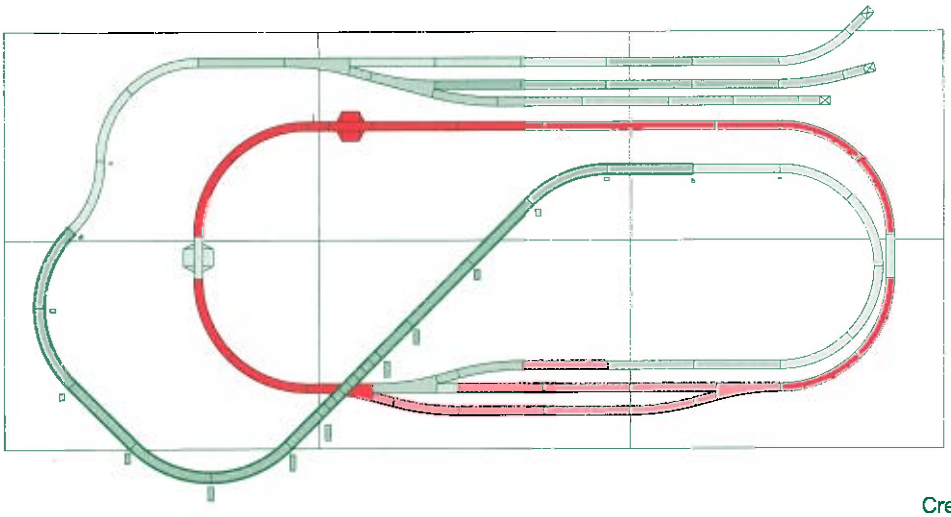
Master2 + V1 + V5 + V7

A double crossover adds to your traffic movement

Master2 + V1 + V3 + V5 + V7

Expand your traffic movement with yard spurs!



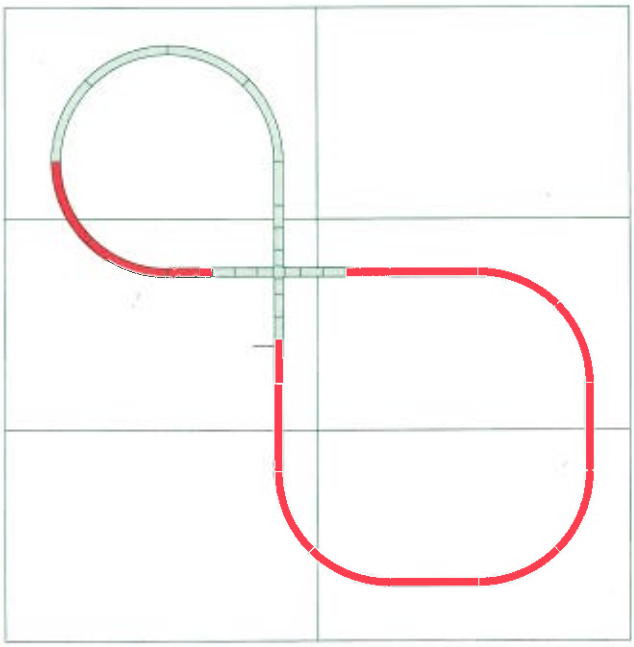


Master2 + V2 + V3 + V5

Express your imagination with a dynamic up-and-over layout!

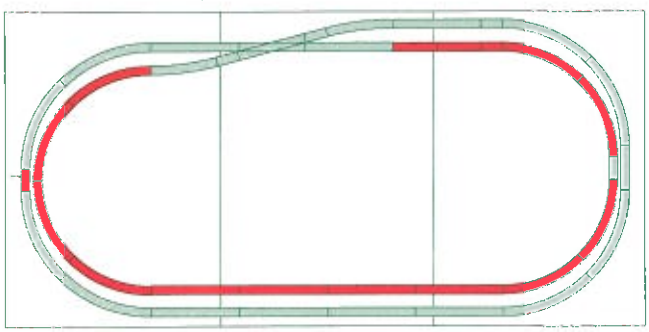
Master1 + V8

Create the enjoyment of a busy rail crossing.



Master1 + V9 / V10

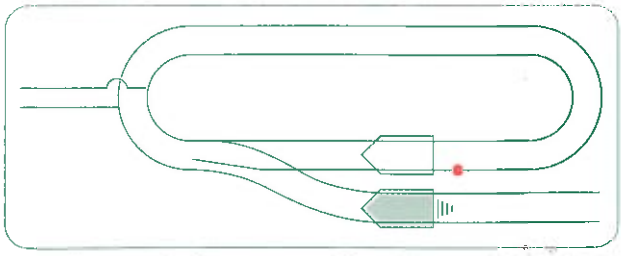
Build your excitement with a longer run.



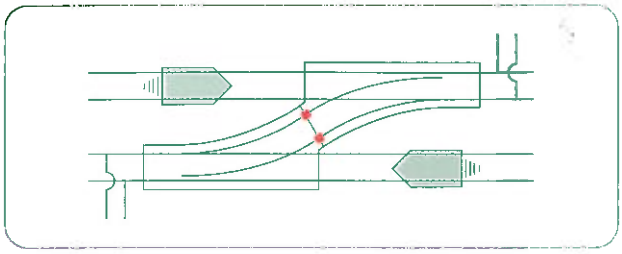
* Image shown with V9.

Using Turnouts

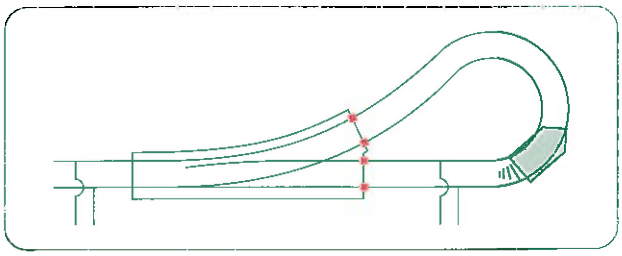
In the following cases, you will need to use 24-816 insulation joiners to insulate sections of the rail.



Operating two trains

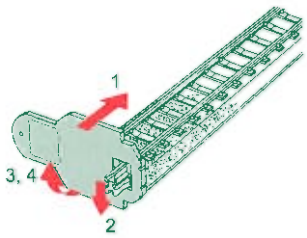


wo trains facing each other



Reverse plan

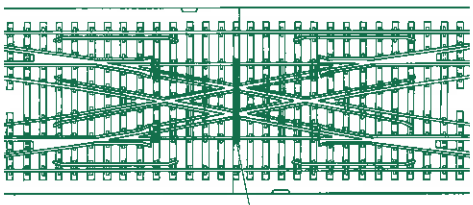
Exchange the uni-joiners for insulation joiners to create gaps in the track



For the exchange, remove the uni-joiners using the remover enclosed with the rerailer.

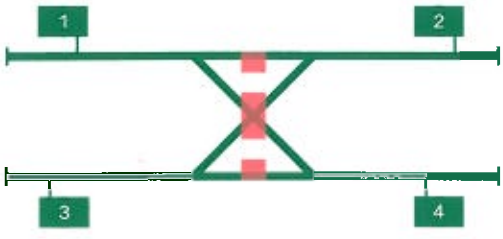
1. Push the remover onto the end of the track where you wish to remove the uni-joiners with the Kato logo facing outwards.
2. Push down the uni-joiner into the remover.
3. Pull the remover outward to disconnect the uni-joiner
4. Connect the Insulation joiner

Double Crossing Turnout

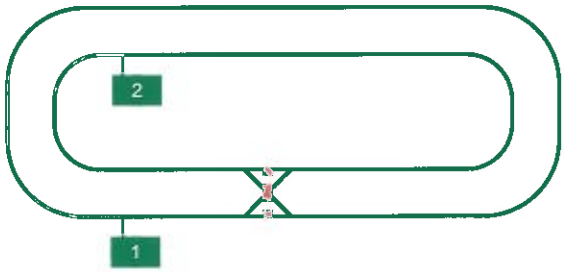


Insulated section

The double crossing turnout has a structure which resembles four combined turnouts and a crossing track. The crossing track area is insulated in the center, splitting the double crossing turnout into four electrical zones.



Since the crossing itself is insulated, the four track sections, insulated by the crossing, you'll need one feeder track for each track section.



If the double crossing turnout is used in a double track oval, you will only need two pieces of feeder track.

Troubleshooting

Is the cable from the power supply properly plugged in?	Insert the power supply cable plug into the AC outlet and into the socket on the reverse side of the power pack controller
Is the pilot lamp on the power pack controller lit?	An unlit pilot lamp on the power pack may be a sign that you have a short circuit. After determining the cause of the problem, press the Reset switch on the reverse side of the Power Pack controller.
Is the cable from the feeder track properly plugged in?	Please insert the cable correctly into the reverse side of the Power Pack controller and the connector on the reverse side of the feeder track.
Are the track sections securely connected to each other?	Please check to make sure that all of the track connections are secure.
Is the surface of the track clean?	Before and after running your trains, remove any dirt or debris from the upper rail using a cloth or toothbrush with a plastic-safe track cleaner.
Are the wheels of the locomotive clean?	Before and after running your trains, please gently remove dirt from the wheels of the locomotive using a cloth or toothbrush with a plastic-safe track cleaner

Do not switch the direction of Train movement while a train is in motion, It may cause damage to the locomotive.

Do not run your trains at high speeds for extended periods of time, as it may cause damage to your locomotive.

Please do not scrub or clean your track with water, as it is an electrical circuit and may be shorted out if allowed to get wet.

Please use only cloth or brushes to clean your track or wheels. Use of sandpaper can cause irreparable damage.

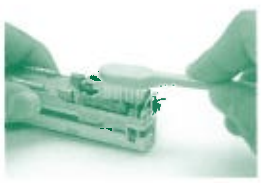
In the event that your problems persist even after the above inspection and examination steps, please return it to the retailer where you purchased it for repair.

Maintenance of Track and Train Cars - Following these directions can prevent most common problems from occurring

Track

Before and after running your trains, gently polish the upper part of the rail using a cloth or toothbrush with a plastic-safe track cleaner, followed by wiping it off with a dry cloth.

Locomotive



If the wheels of your locomotive are dirty, clean them off using a cloth or toothbrush with a plastic-safe track cleaner, followed by wiping it off with a dry cloth.

You can find more information on Kato Products and Additional Track Plans : www.katousa.com

KATO

KATO U.S.A., INC.

100 Remington Road Schaumburg, IL 60173 U.S.A.

Kato Web Site
http://www.katousa.com

＊Recommended 14 years and older.
＊Maximum DC12V

010-0391-1212