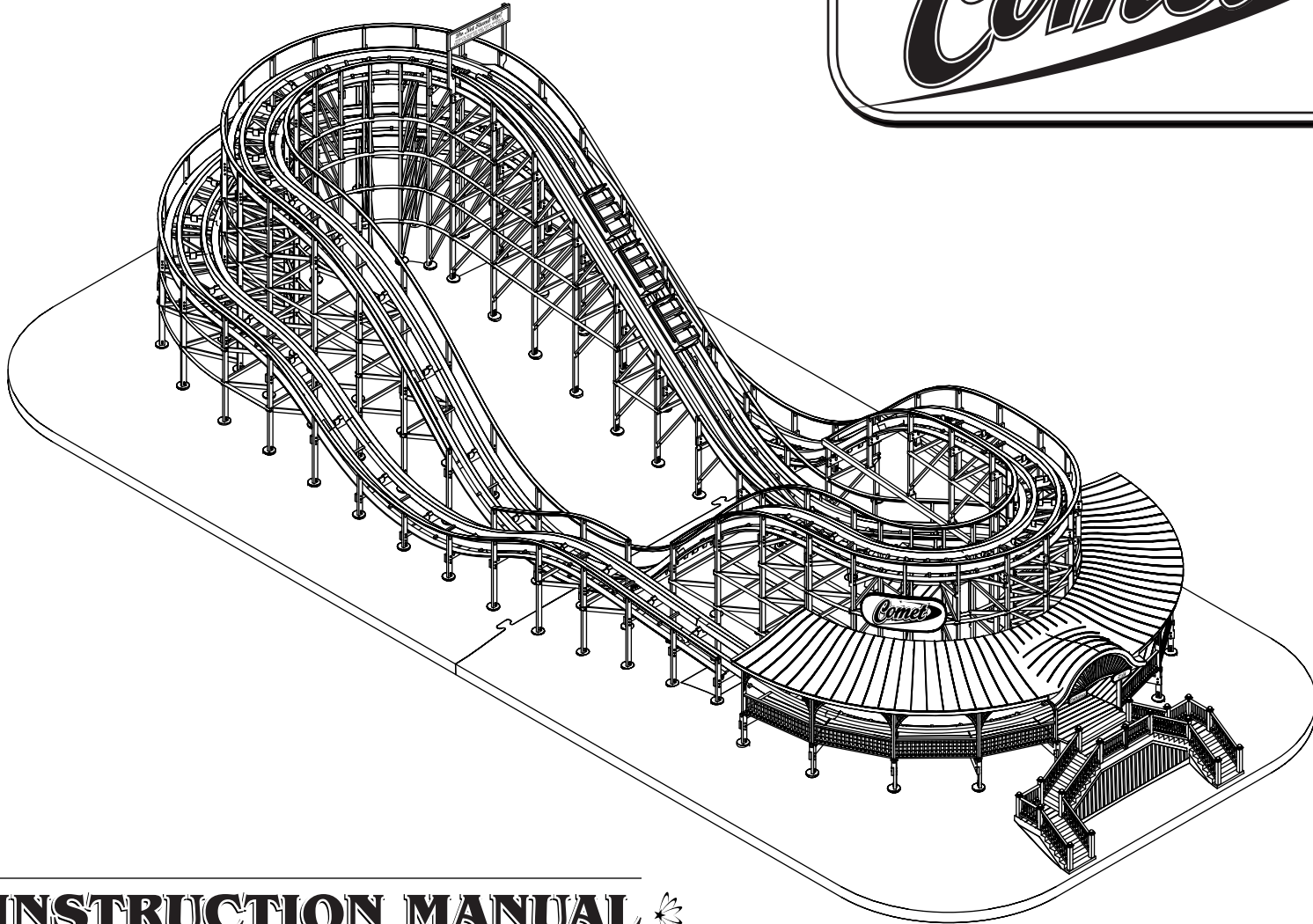


Comet



INSTRUCTION MANUAL

INTRODUCTION



The Comet by CoasterDynamix is an operational HO scale model of a classic wooden roller coaster. The design and function of this kit closely resembles that of a full size roller coaster. An electric motor carries the train to the top of the first hill, then the train traverses the circuit powered only by gravity.

The Comet model was designed by Michael Graham, one of the partners in CoasterDynamix and real-life roller coaster engineer. By utilizing the same design principles used to engineer real roller coasters, CoasterDynamix was able to develop a realistic model that is both easy to assemble and reliable in operation.

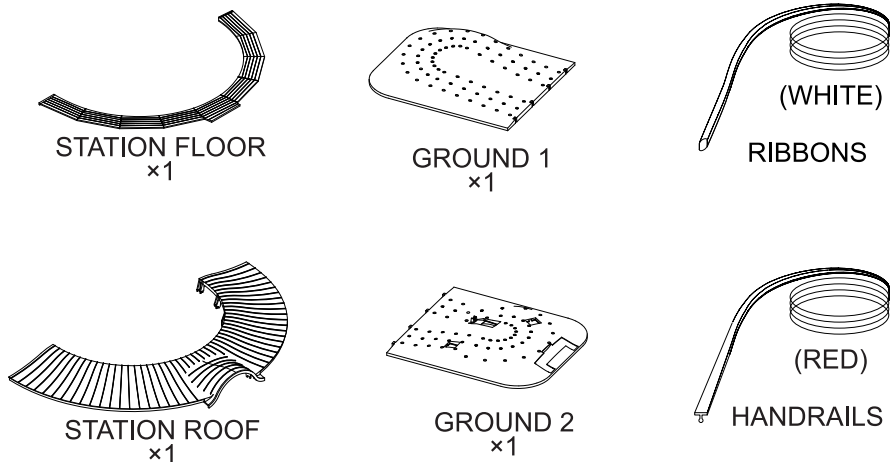
As with all models that require assembly, it is strongly recommended that you read over the instructions thoroughly to become familiar with the construction process. To ensure proper operation of the model, the directions must be followed carefully and in the correct order. We hope you enjoy building and operating your Comet roller coaster kit.

RECOMMENDED TOOLS

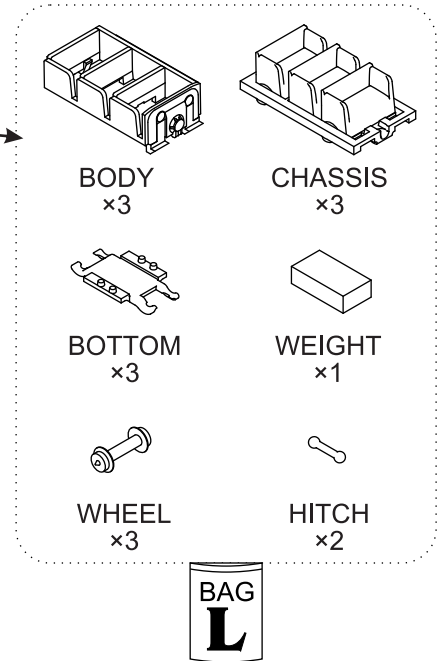
- MODELING GLUE
- PHILLIPS SCREWDRIVER
- FINGERNAIL CLIPPERS
- MEDIUM SANDPAPER
- FINE SANDPAPER
- HOBBY KNIFE

WHAT'S IN THE BOX?

Some of the parts are in labeled bags. For example, to the right you can see the car parts are in Bag L.



DECALS

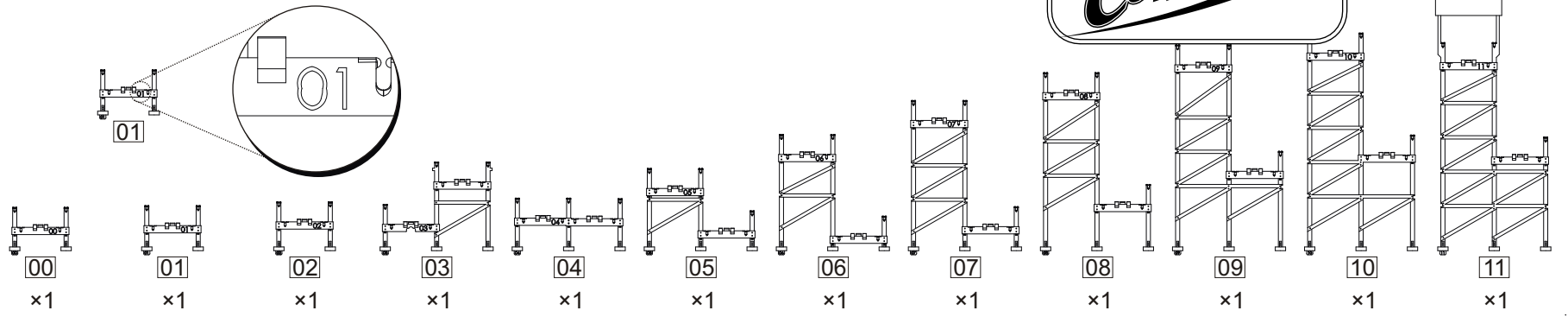


— MORE —

WHAT'S IN THE BOX?

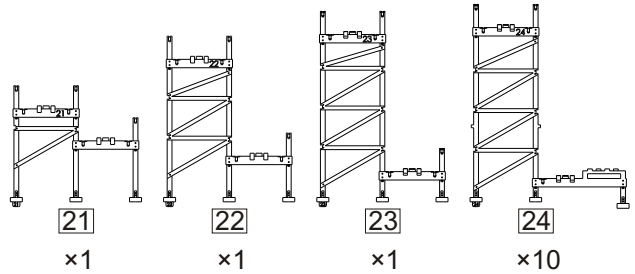


BENTS



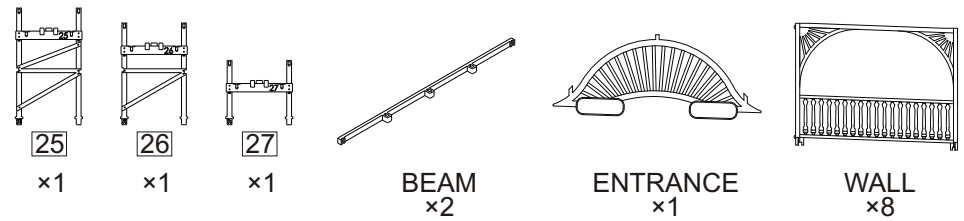
BAG B

BENTS



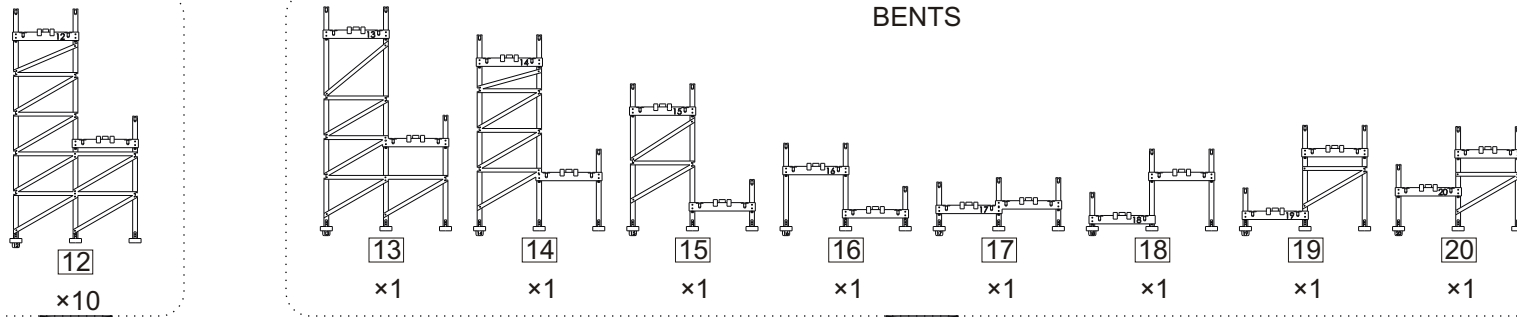
BAG F

BENTS



BAG G

BENTS






BAG H

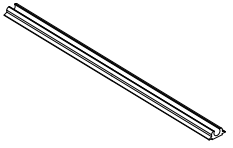

BAG I

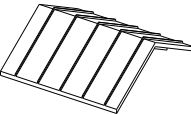
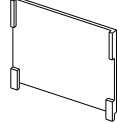
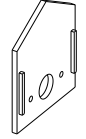
— MORE —

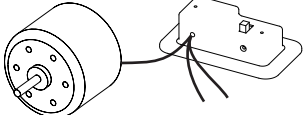

WHAT'S IN THE BOX?

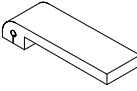


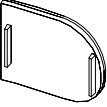

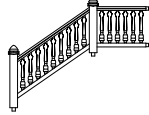
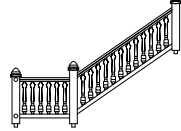
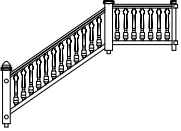
 STAIRS x1
 HATCH 1 #1 x1
 HATCH 2 #2 x1
BAG A

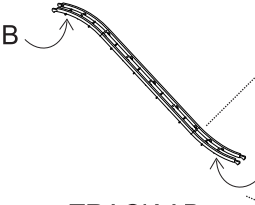
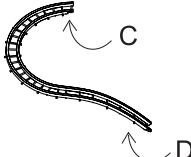

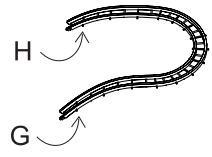

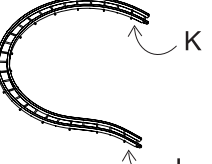

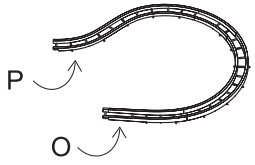
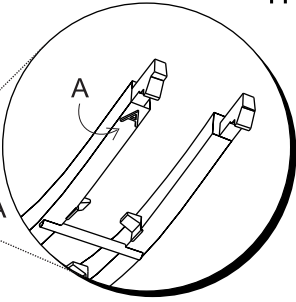
 LIFT CHANNEL x1
 SPRING x1
BAG C


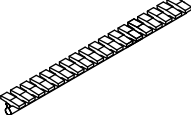
MOTOR HOUSE PARTS
 ROOF x1
 SIDE WALL x2
 END WALL x2
BAG D

 MOTOR & CONTROL BOX x1
 SCREW x2
BAG E

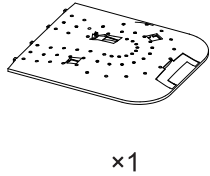
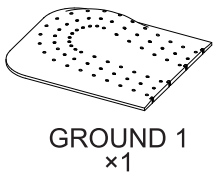
 BRAKE x3
BAG M

RAILINGS
 SIGN x2
 INSIDE x2
 OUTSIDE x2
 BACK x2
 FRONT x2
BAG K

TRACKS
 TRACK AB x1
 TRACK CD x1
 TRACK EF x1
 TRACK GH x1
 TRACK IJ x1
 TRACK KL x1
 TRACK MN x1
 TRACK OP x1


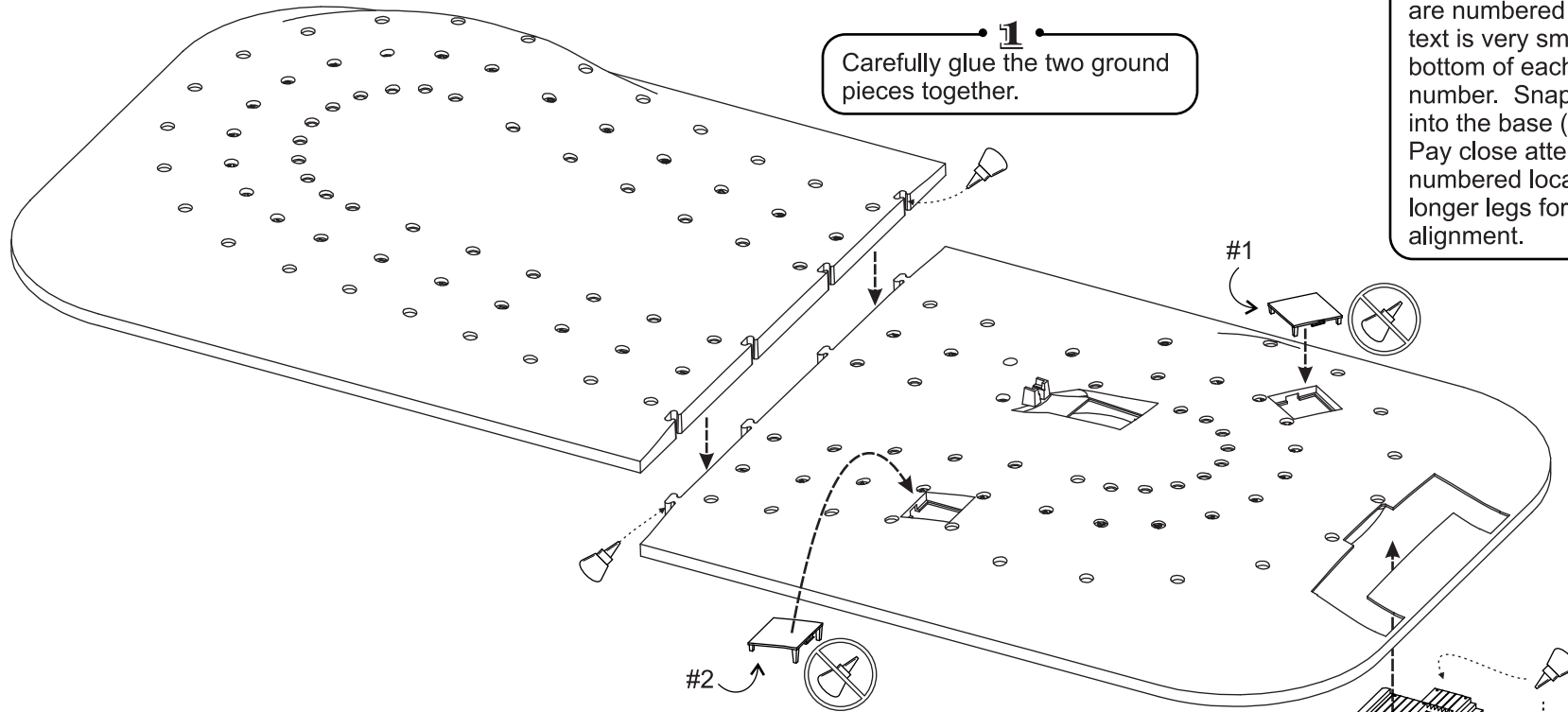
 SPLICE x24
 WALKBOARD x24
BAG J

PARTS NEEDED FOR THIS STEP:

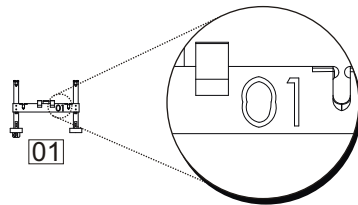


2
Open Bag A and remove the two green HATCHES. They are numbered #1 and #2 (the text is very small). See bottom of each HATCH for number. Snap the HATCHES into the base (do not glue). Pay close attention to their numbered location. Notice longer legs for proper alignment.

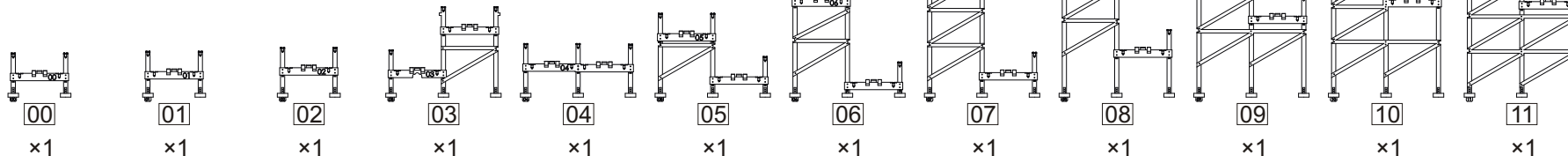
1
Carefully glue the two ground pieces together.



3
If you wish to landscape the ground, do so at this time. Remove the STAIRS from Bag A, apply glue to the tabs of the STAIRS and slide up through the bottom of the GROUND into position.

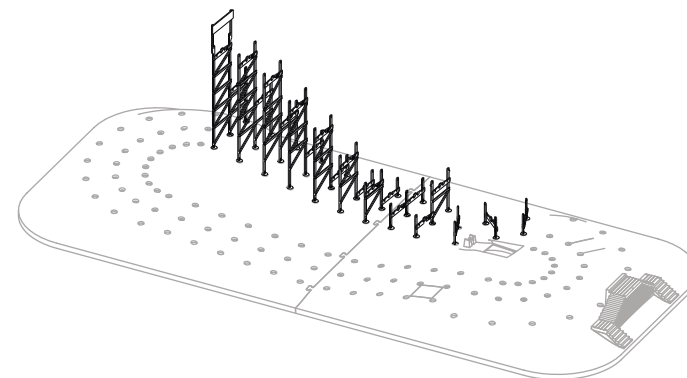
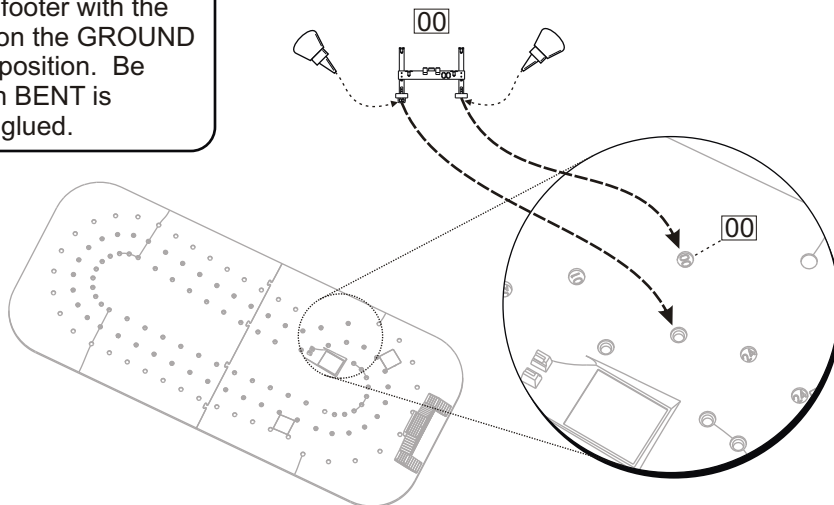


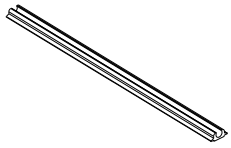
BENTS



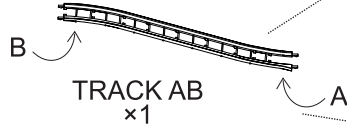
**BAG
B**

Open Bag B and remove the lift hill structural BENTS 00-11. Match the numbered BENT (see above image of BENT 01) with the corresponding numbered hole (see image on the right) in the ground. Align the tab on the bottom of the footer with the locating hole on the GROUND and glue into position. Be sure that each BENT is vertical when glued.

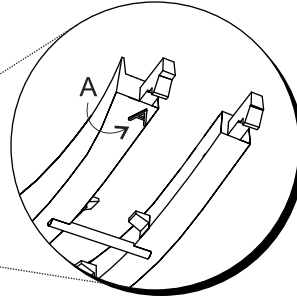




LIFT CHANNEL
x1



TRACK AB
x1



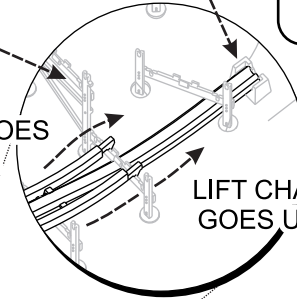
NOTE LIFT CHANNEL END POSITION

3
Pass the LIFT CHANNEL under the slot in BENT 03, and rest it between the two small supports sticking up from the GROUND.

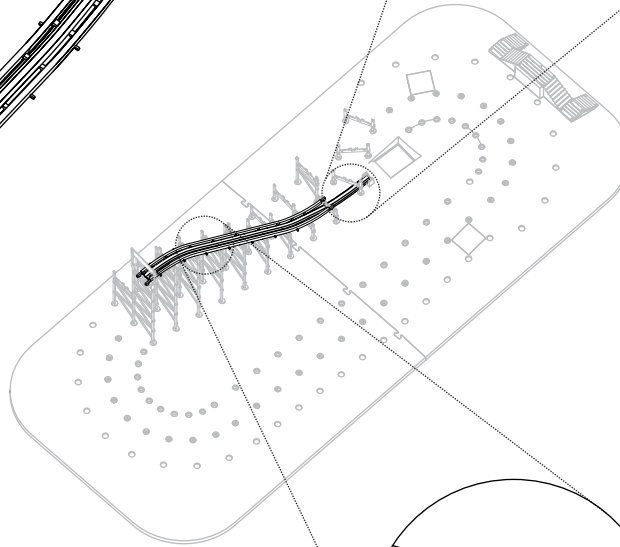
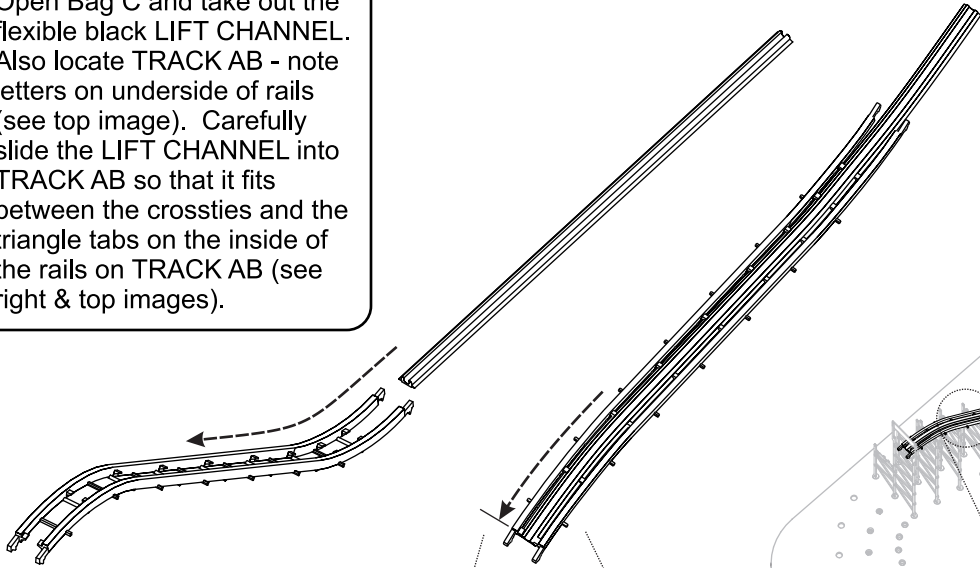
BENT 03

TRACK GOES OVER

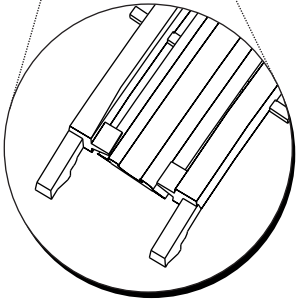
LIFT CHANNEL GOES UNDER



1
Open Bag C and take out the flexible black LIFT CHANNEL. Also locate TRACK AB - note letters on underside of rails (see top image). Carefully slide the LIFT CHANNEL into TRACK AB so that it fits between the crossies and the triangle tabs on the inside of the rails on TRACK AB (see right & top images).

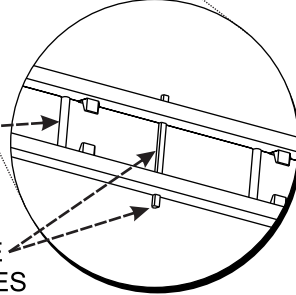


2
Push the LIFT CHANNEL all the way into TRACK AB until it is flush with the edge of TRACK AB as shown in the image on the right.



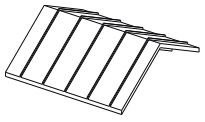
BENTS SNAP ONTO THESE ROUND CROSSIES

BENTS DO NOT SNAP ONTO THESE SQUARE CROSSIES

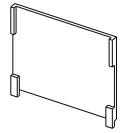


4
Snap completed assembly onto BENT 03 through BENT 11. On each section of track there are two types of crossies: the long, thin "square" crossies that extend beyond the rails on both sides and the short, thicker "round" crossies that fit between the rails. When attaching the track to the structure, only snap the "round" crossies to the bents.

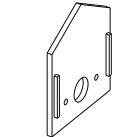
MOTOR HOUSE PARTS



ROOF
x1

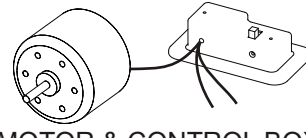


SIDE WALL
x2



END WALL
x2

BAG
D

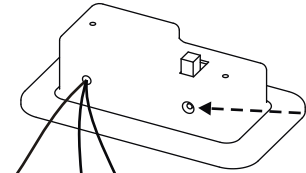


MOTOR & CONTROL BOX
x1

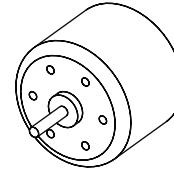


SCREW
x2

BAG
E

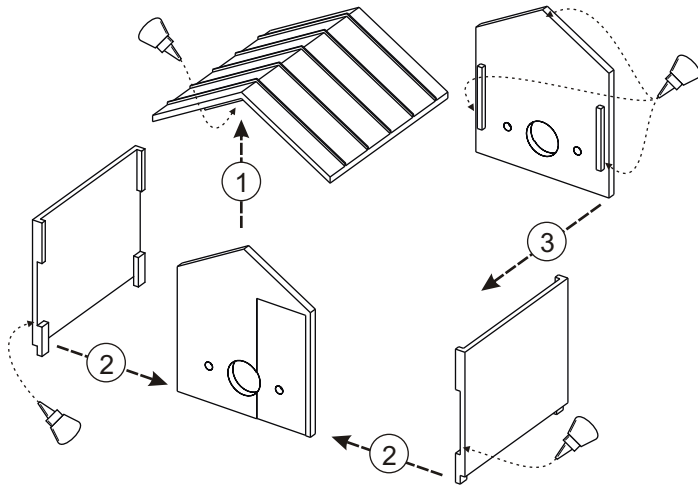


12VDC
(POWER SUPPLY
AVAILABLE FROM
COASTERDYNAMIX)

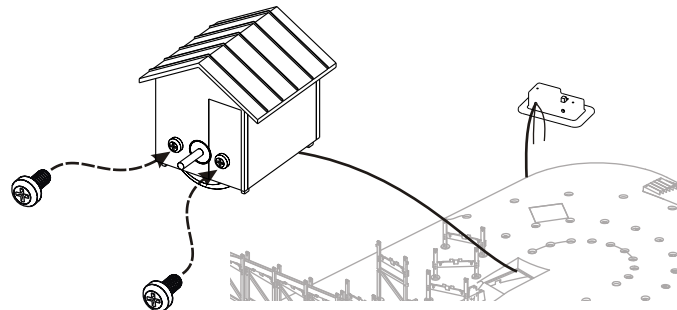
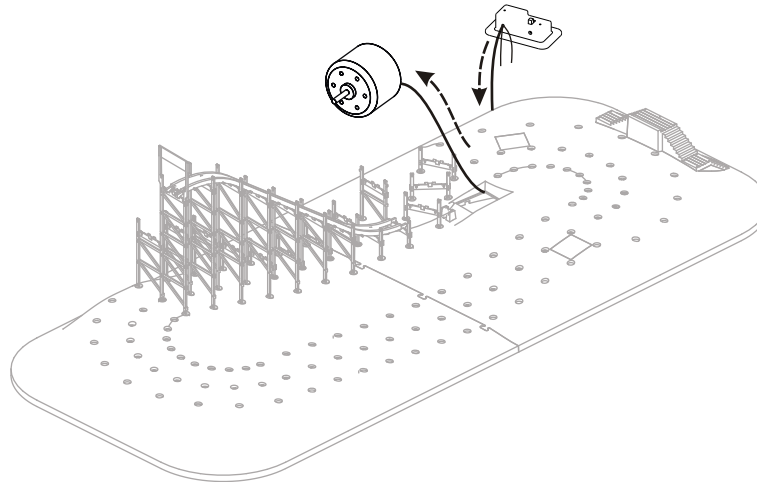


16-20VAC

Power is supplied to the CONTROL BOX by either the 16-20 volt AC "accessory" outlet on a model train transformer or a 12 volt DC power supply. There is a switch on the top of the CONTROL BOX that allows the user to select between modes. A 12 volt DC power supply is available from CoasterDynamix.



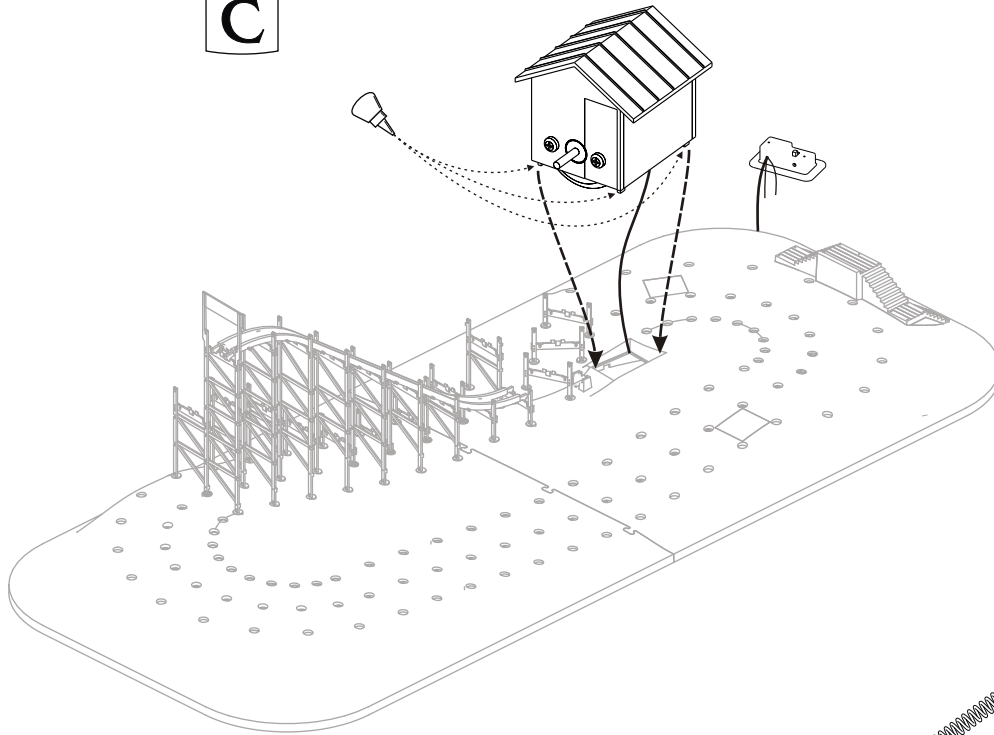
1
Remove MOTOR HOUSE ROOF & MOTOR HOUSE WALLS from Bag D and carefully glue together as shown. Allow glue to dry.



2
Bag E contains the MOTOR, CONTROL BOX, and SCREWS. **Very important:** feed the MOTOR through the hole in the GROUND (see image on the left). Place the MOTOR in the MOTOR HOUSE with the motor shaft protruding through the wall facing the lift hill. Secure the MOTOR using the two small Phillips head SCREWS as seen below.

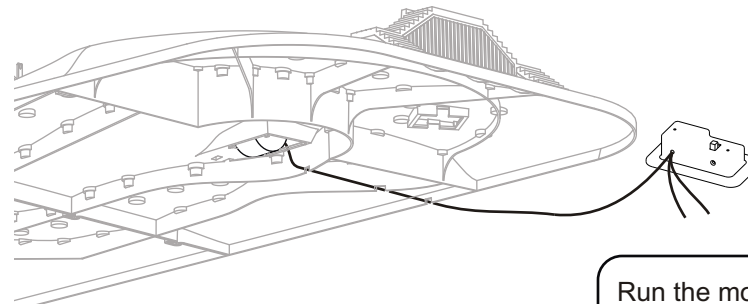
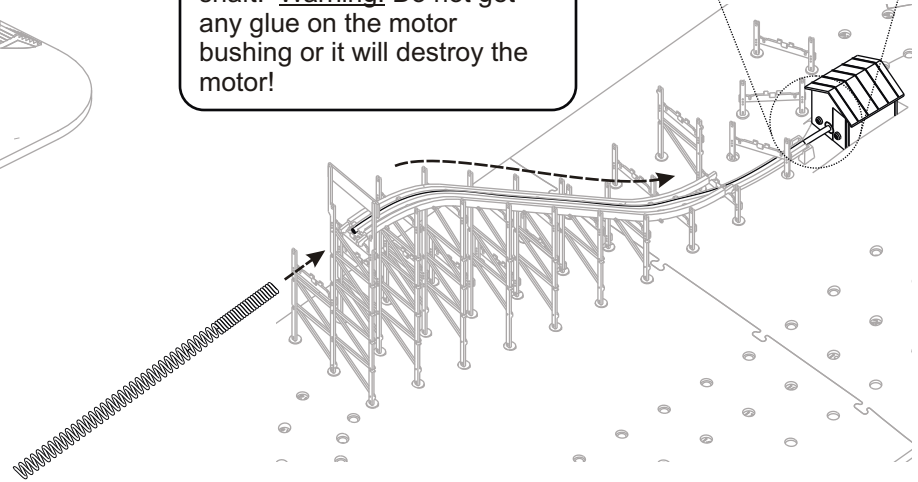
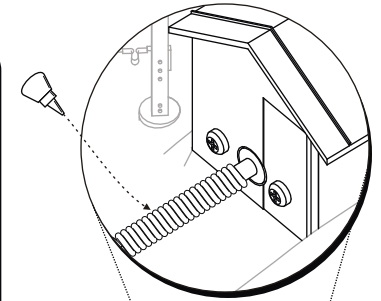
SPRING
x1

BAG
C



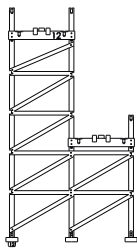
1
Glue the MOTOR HOUSE to the GROUND using the small alignment tabs to locate it into position.

2
Remove the SPRING from Bag C and slide it (tightly coiled end first) down the lift hill from the top. Apply a small drop of glue to the end of the motor shaft, and slide the tightly coiled end of the spring about halfway onto the shaft. Warning! Do not get any glue on the motor bushing or it will destroy the motor!



3
Run the motor wires through the slots under the GROUND and out the side.

BENT



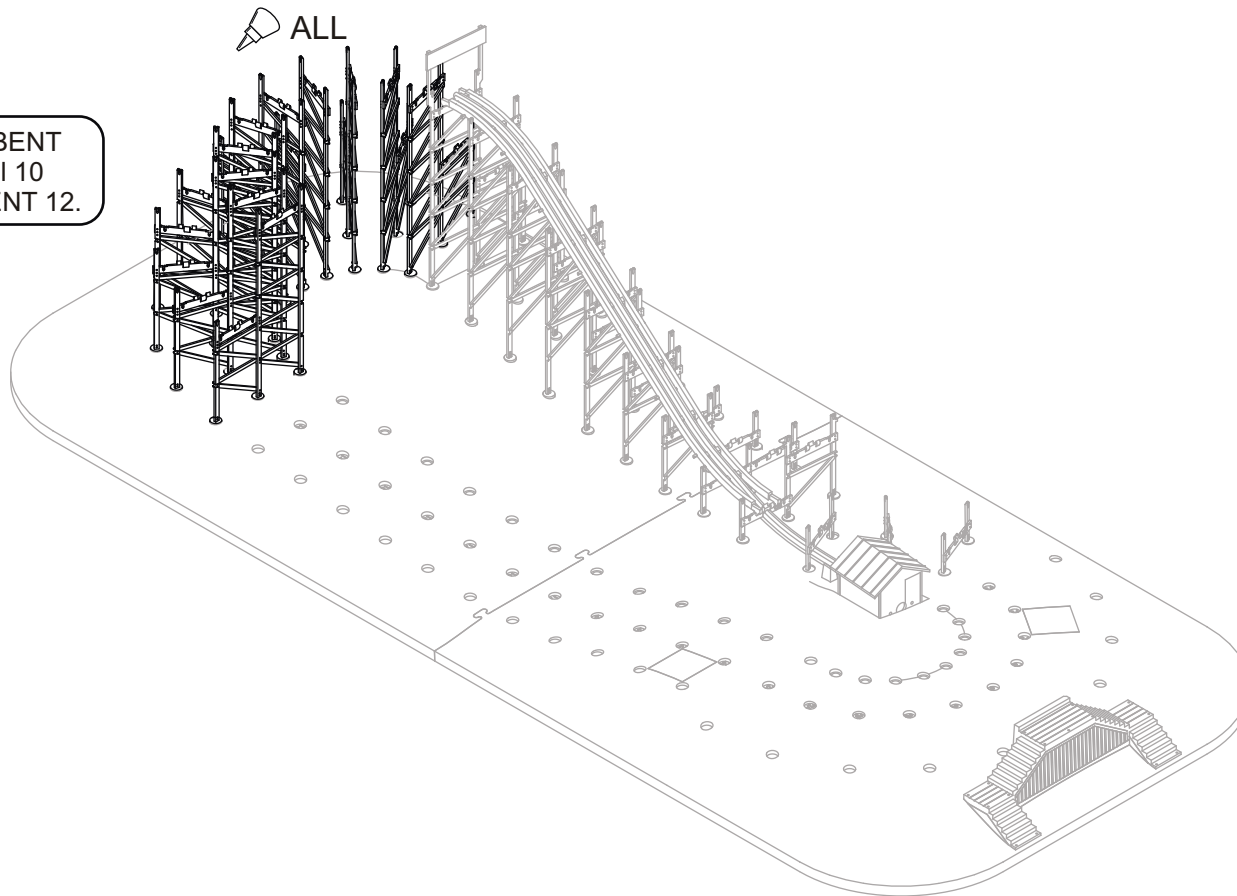
12

×10

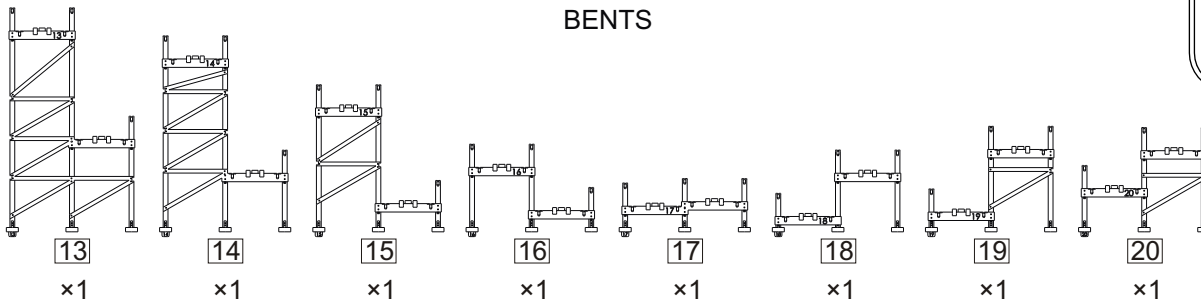
BAG
H

Open Bag H and glue BENT 12 to the GROUND. All 10 pieces in Bag H are BENT 12.

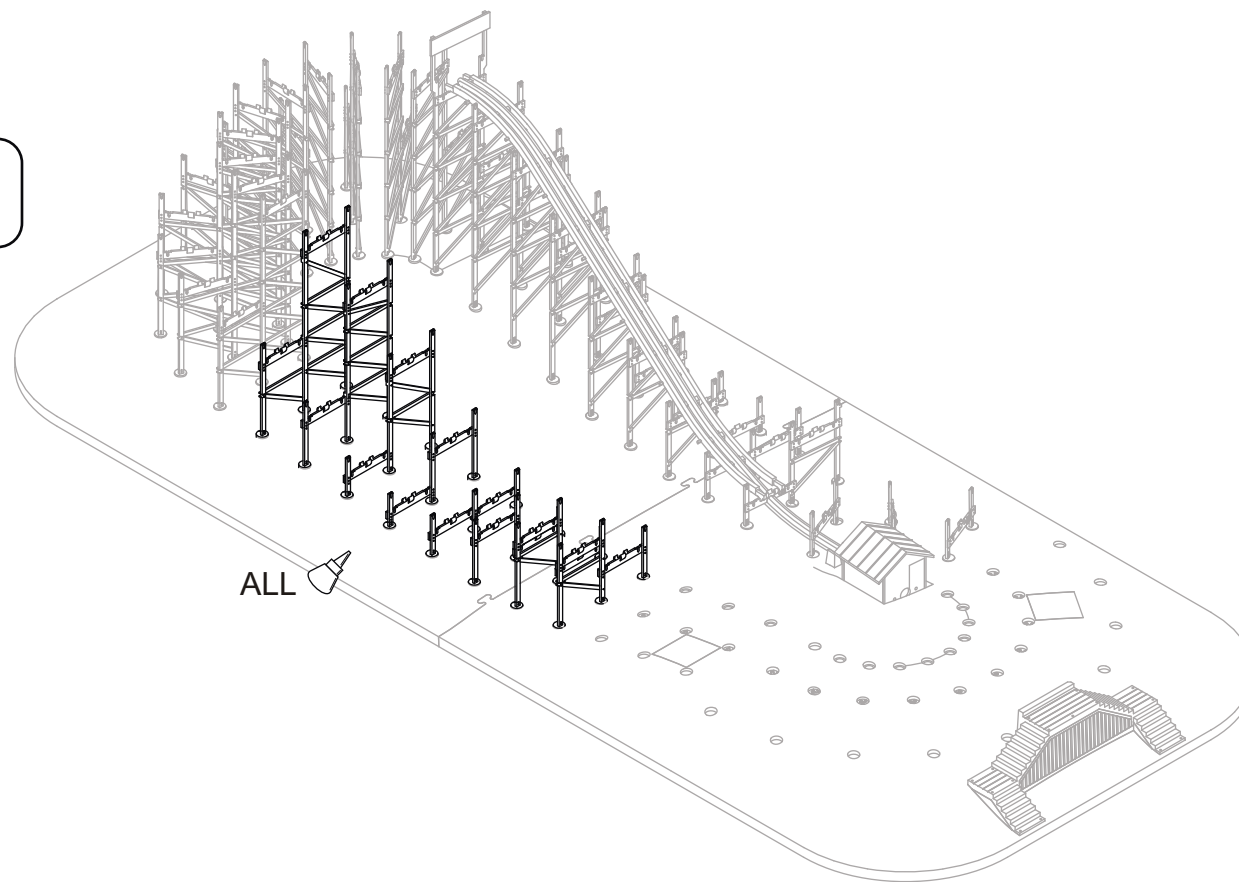
ALL



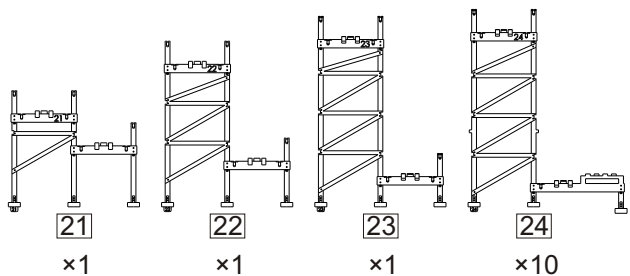
BENTS



Open Bag I and glue BENTS 13 through BENTS 20 to the GROUND.

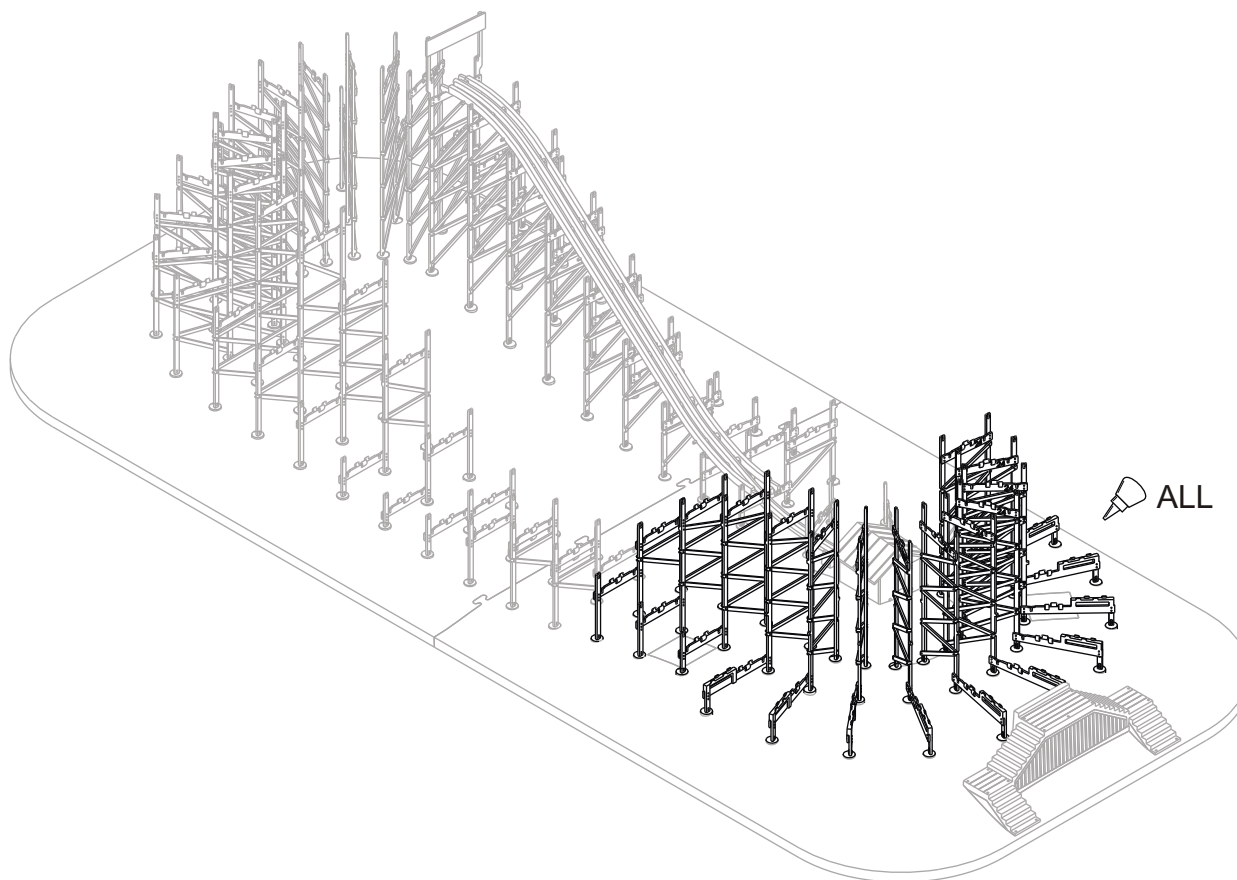


BENTS

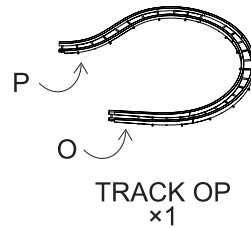
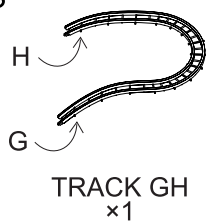
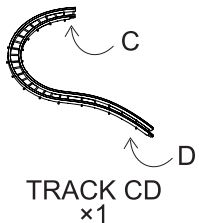


BAG
F

Open Bag F and glue BENT 21 through BENT 24 to the GROUND. There are 10 identical BENT 24 pieces.



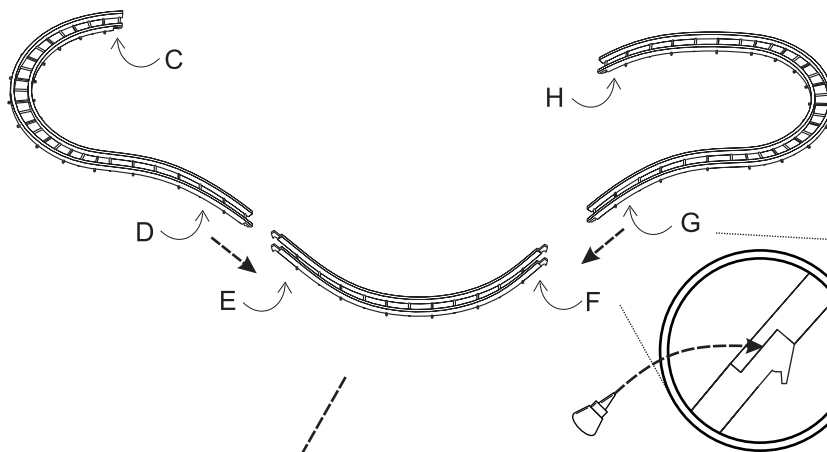
TRACKS



1

In order to ensure proper operation of your Comet model, it is important to have smooth transitions between TRACK segments. The best way to achieve this is by a combination of glueing and sanding of the TRACK joints.

The Comet kit includes 8 TRACK segments. Each segment is labeled with identification letters on the bottom of the rails. Match up the consecutive letters to the corresponding track segments (TRACK AB connects to TRACK CD connects to TRACK EF and so forth).



2

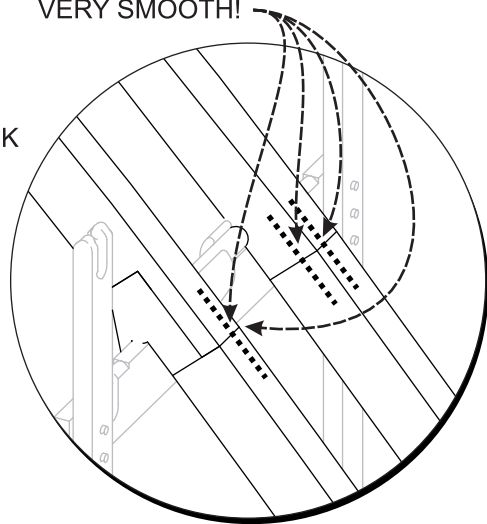
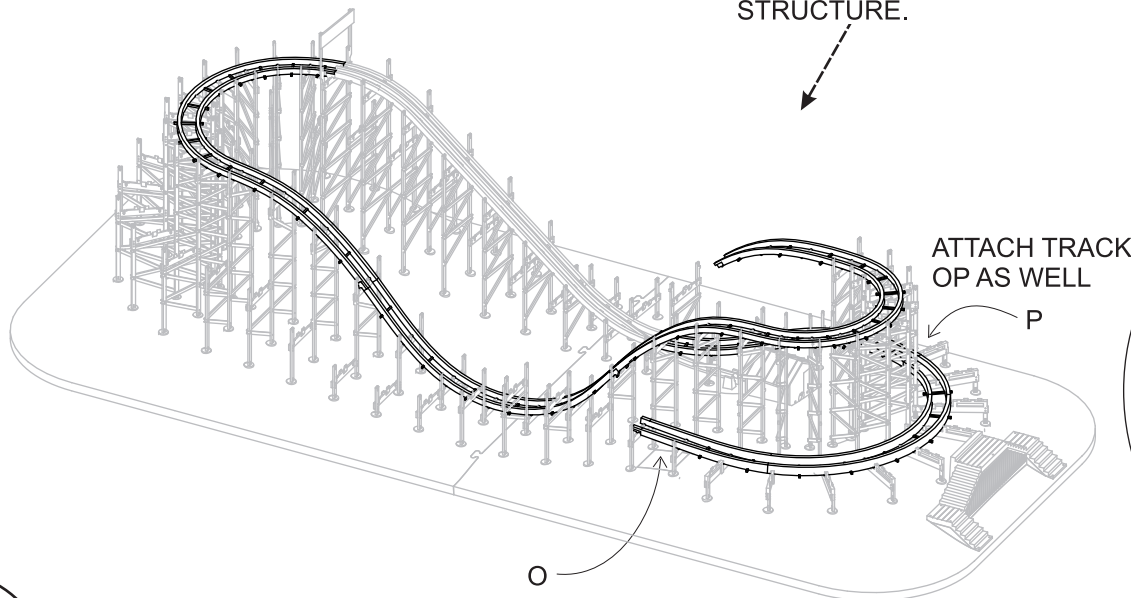
Before snapping TRACKS onto the structure, pay close attention to the following. Apply a SMALL amount of glue to the alignment tabs on the end of the rails. Hold the two track segments together so that the rails line up perfectly as the glue dries. A smooth transition between rails is imperative. Allow each glue joint to dry before moving on to the next one.

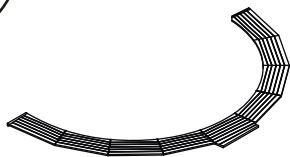
COMPLETE STEPS 1-3.
THEN ATTACH TO
STRUCTURE.

EXTREMELY IMPORTANT!
SAND BOTH TOP & INSIDE
OF TRACK JOINTS TO BE
VERY SMOOTH!

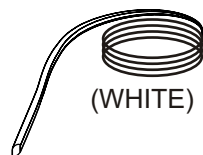
3

Once the joint has cured, carefully sand the top and inside of the track connection with medium and then fine sandpaper to remove any excess glue and provide a smooth transition between track segments. Run your finger across the joint to be sure it is smooth, then wipe with a damp cloth to remove the plastic dust.

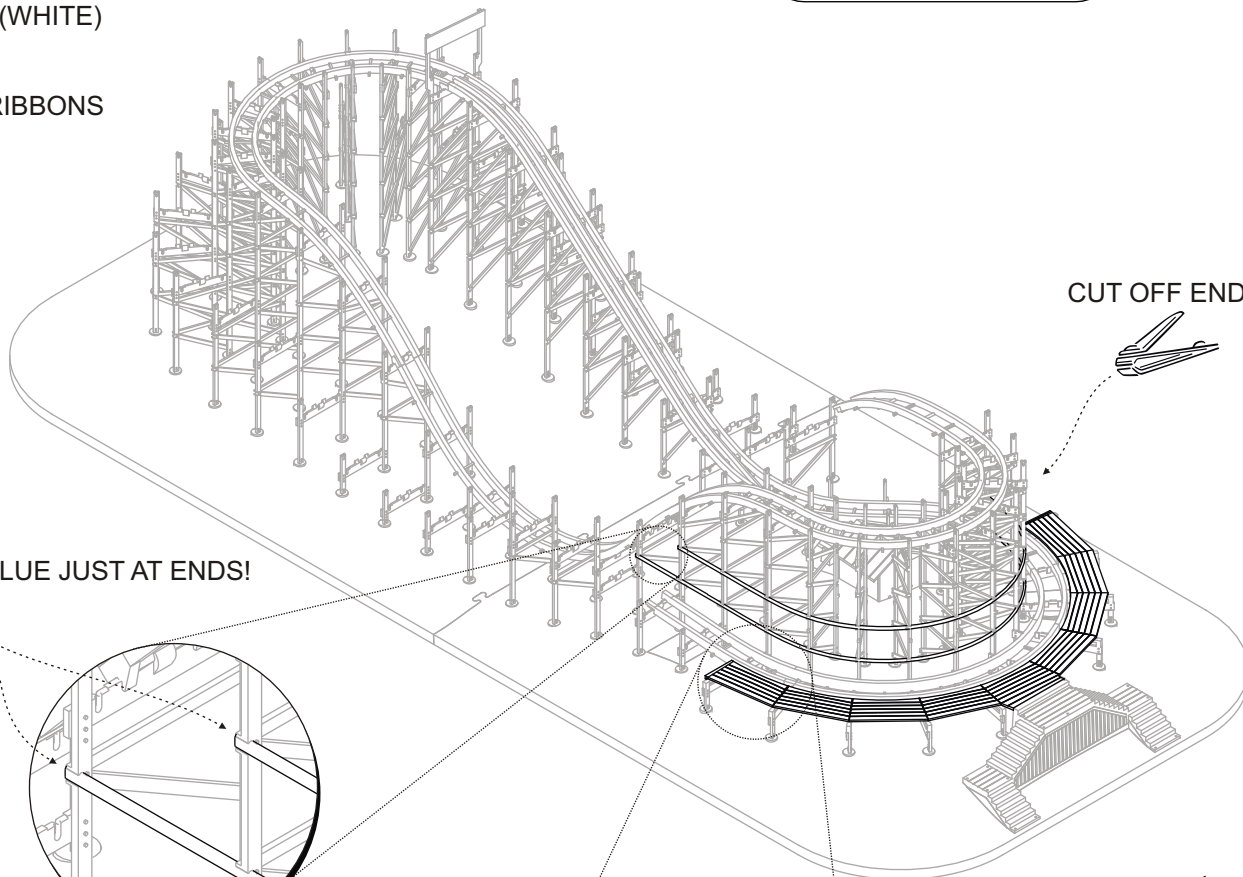




STATION FLOOR
x1



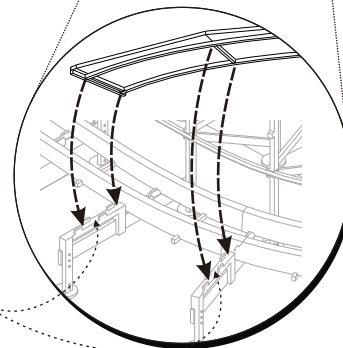
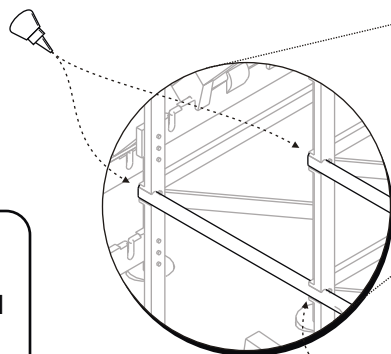
(WHITE)
RIBBONS



CUT OFF ENDS



NOTE: GLUE JUST AT ENDS!



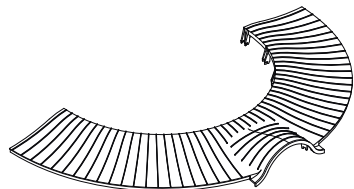
2

Remove the coil of RIBBON material from the box. Place one end of the lower RIBBON in the slot on the side of BENT 21 and glue. Wrap the RIBBON around the structure, making sure that it is placed in the slots on the side of the BENTS. Cut to length and glue the other end to the last BENT 24. Repeat with the other RIBBON starting at BENT 22 and again terminating at the last BENT 24. Only glue the ends of the RIBBONS at this time.

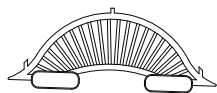
1

Take the STATION FLOOR and examine the underside closely. The small ridges should align with the slots on the BENTS. Glue the STATION FLOOR to the outside of the lower curve BENTS.

Comet



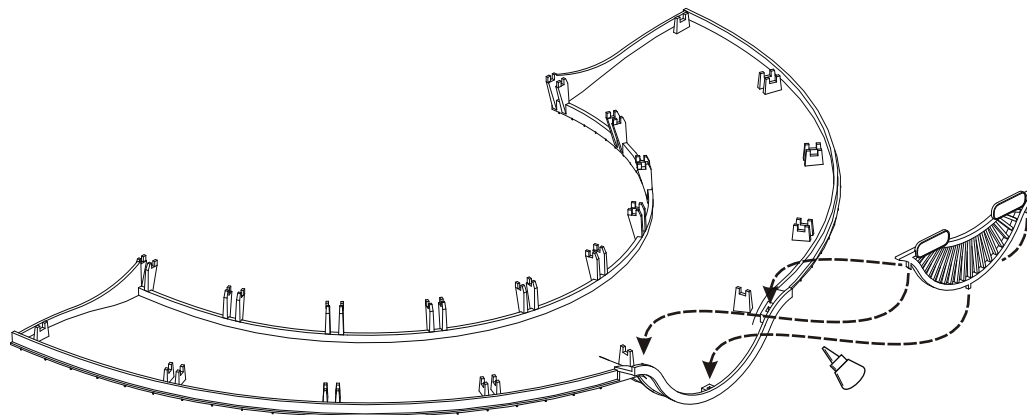
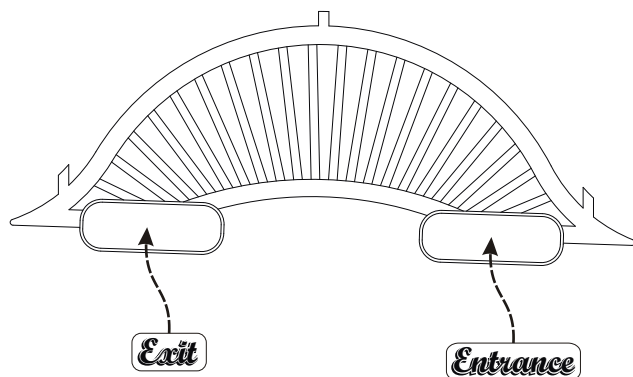
STATION ROOF
x1

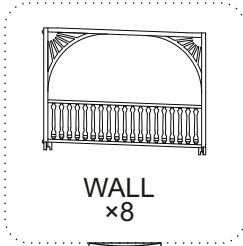


ENTRANCE
x1



DECALS

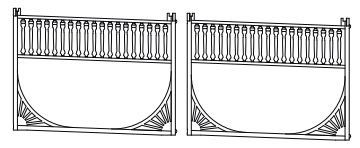




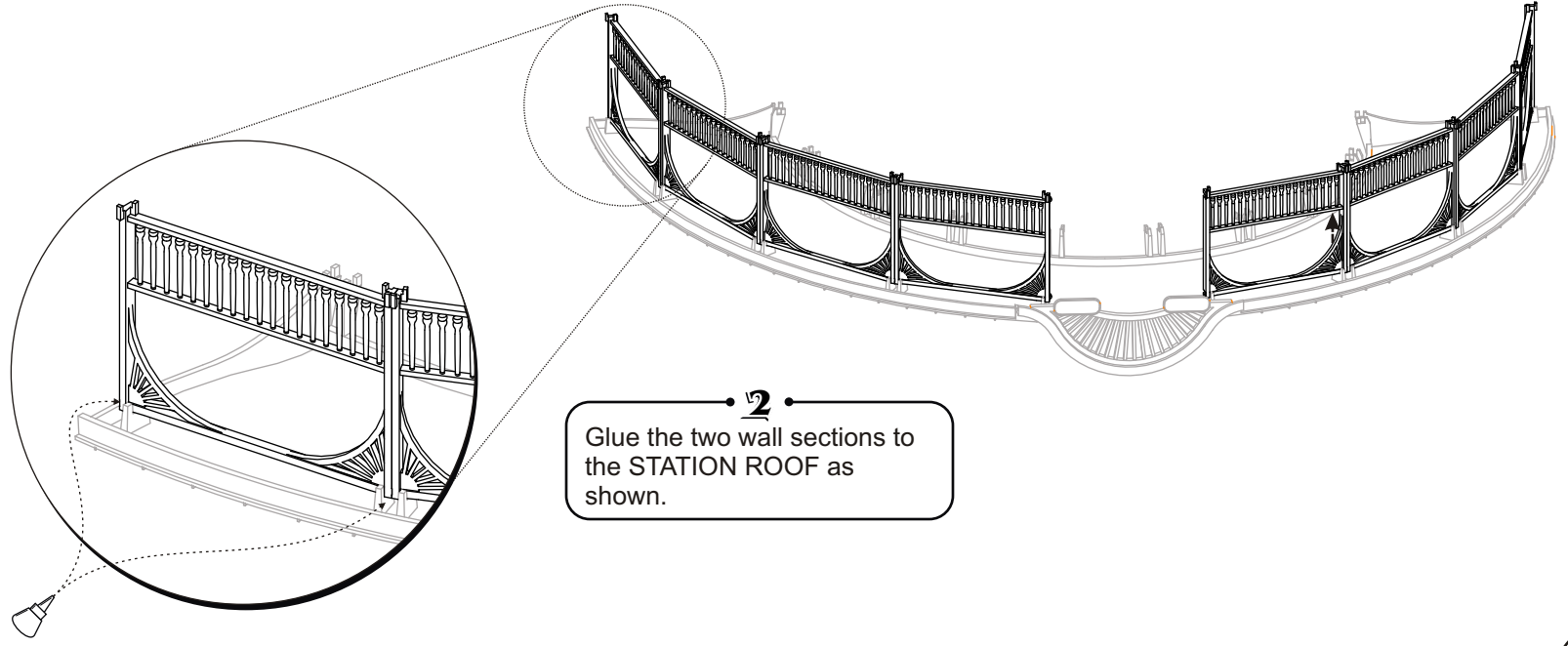
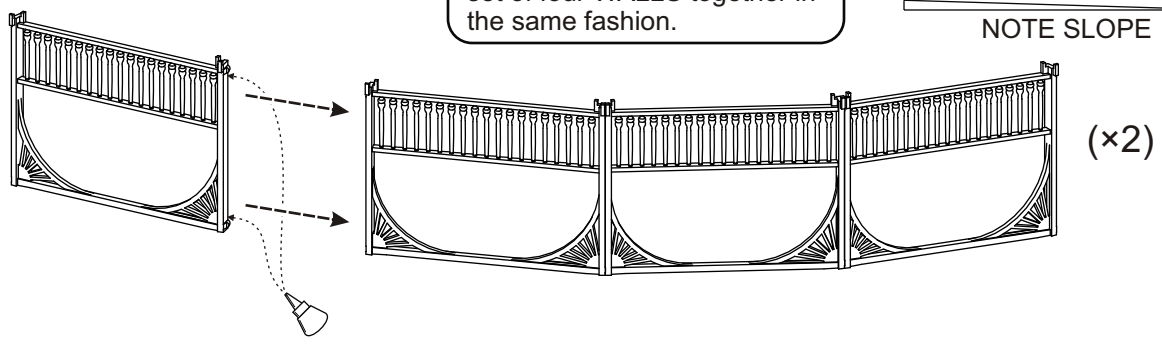
WALL
×8



1
Open Bag G and remove the eight WALLS. Note the slope of each piece for alignment. Glue four of them together making special note of the alignment tabs. The glued together wall section should curve slightly. Glue the other set of four WALLS together in the same fashion.



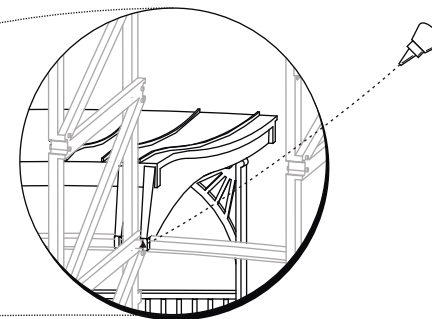
NOTE SLOPE



2
Glue the two wall sections to the STATION ROOF as shown.

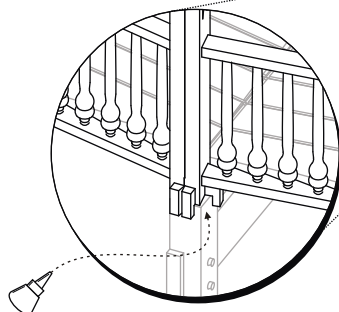
1

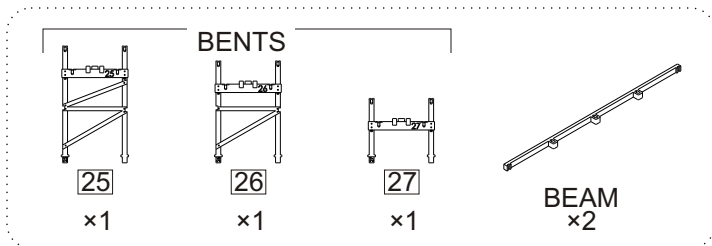
Carefully align the tabs on the STATION ROOF so that they straddle the post of BENT 24 as shown and rest on the RIBBON. Glue to the RIBBONS.



2

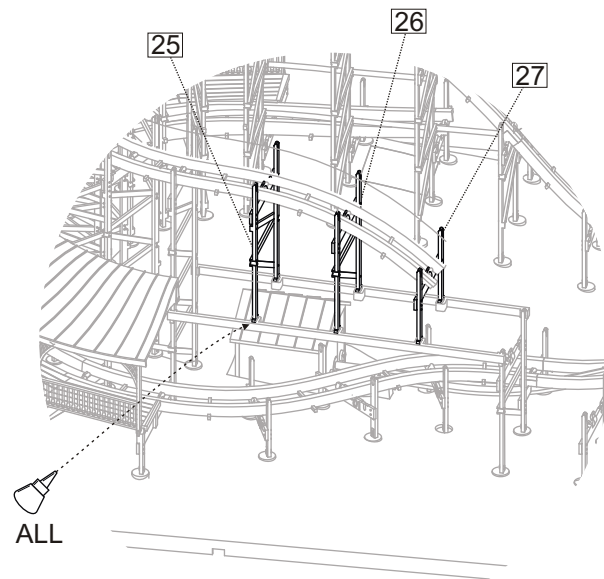
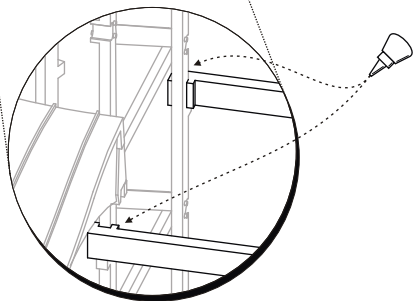
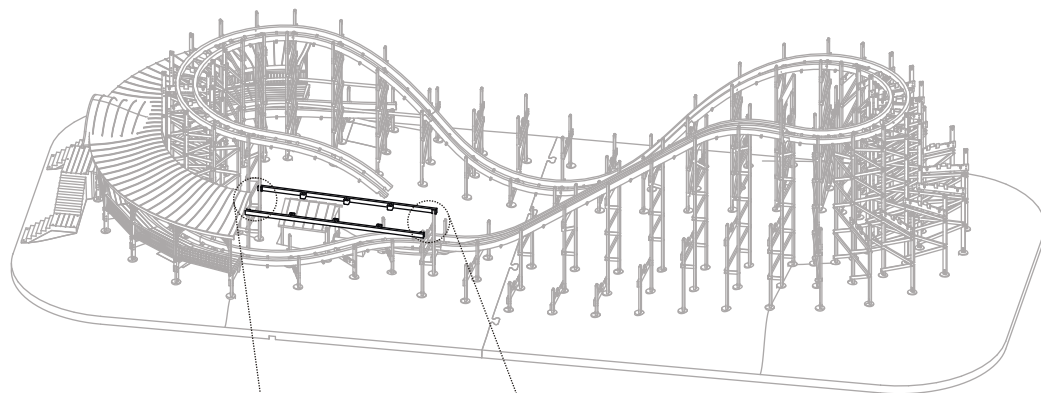
Line up the "feet" of the STATION WALLS so that they rest on the outside post of BENT 24. Glue the STATION WALLS to the BENTS.





1

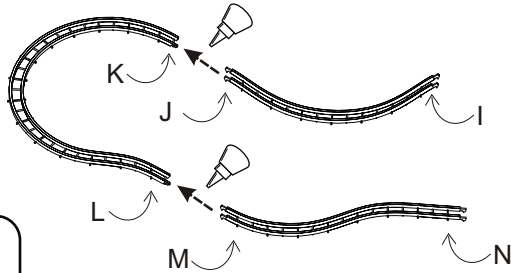
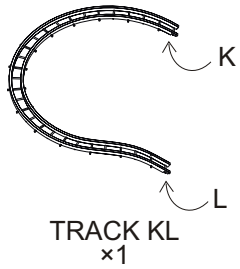
Place the BEAMS (non-directional) on top of the tabs on BENT 24 and BENT 28. Glue into position.



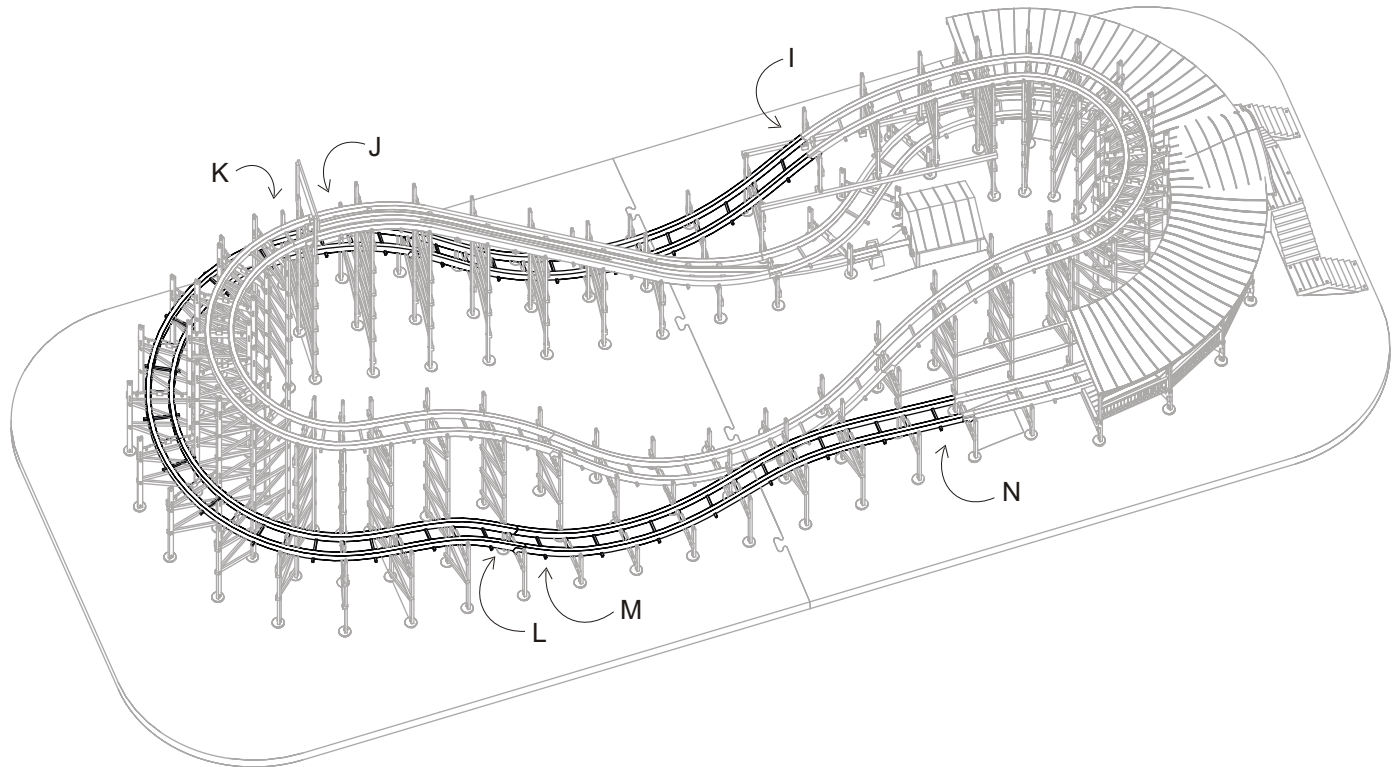
2

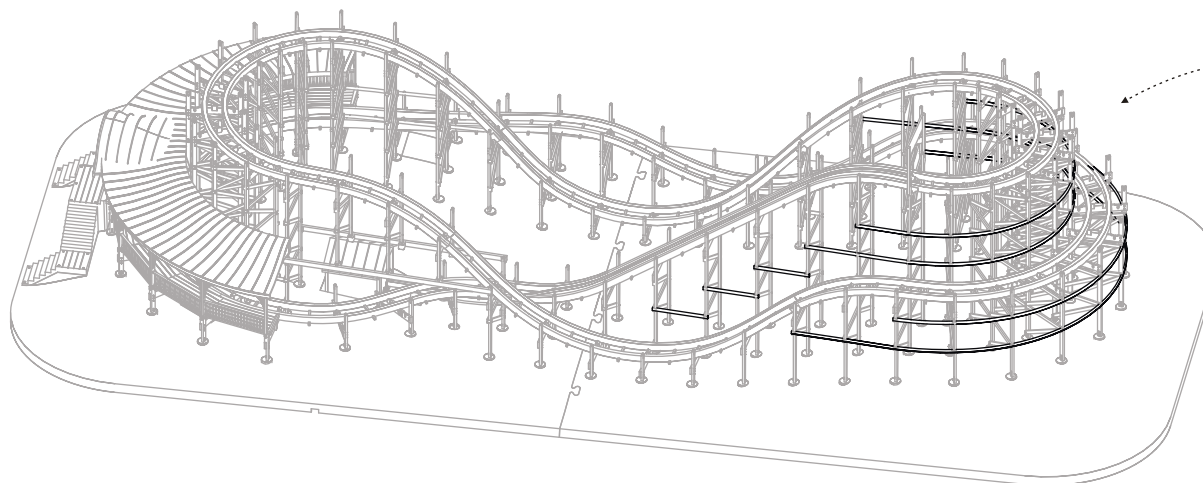
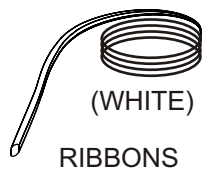
Glue BENTS 25, 26 & 27 into the slots on the BEAM and snap the BENTS onto the track.

TRACKS



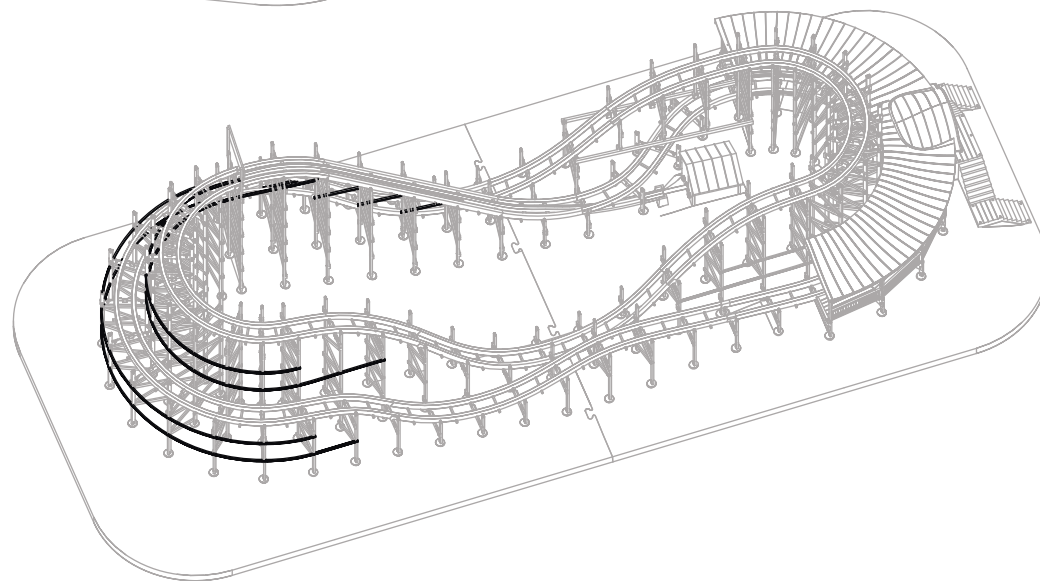
Glue together TRACK IJ, TRACK KL & TRACK MN. Be sure to carefully line up the rails and don't use too much glue. Sand the joints smooth, wipe with a damp cloth, and snap onto the bents into position.





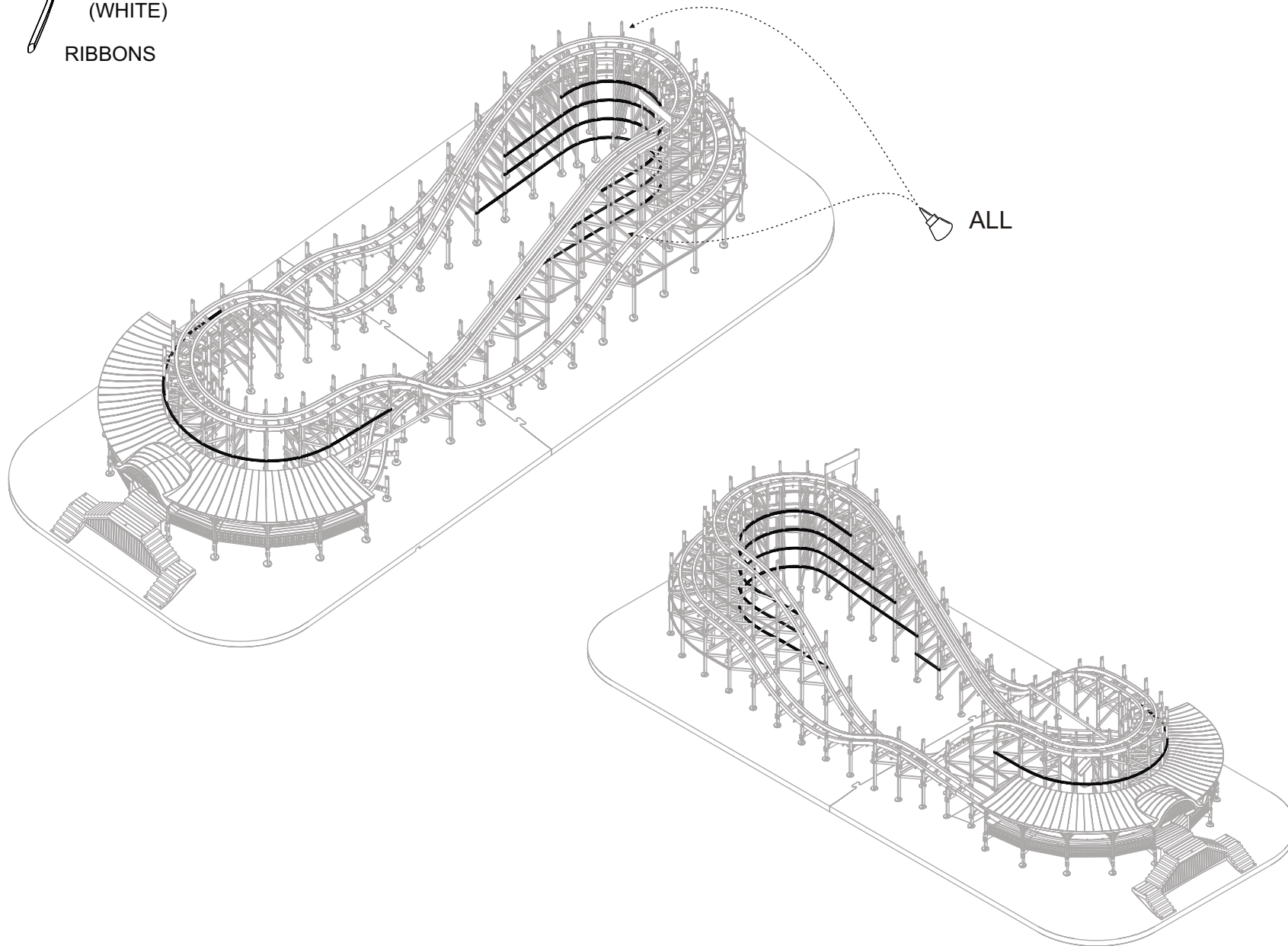
ALL

Glue the RIBBONS onto the BENTS as shown. Be sure the RIBBONS fit into the notches on the sides of the BENTS.

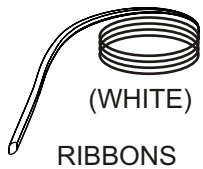


Comet

(WHITE)
RIBBONS

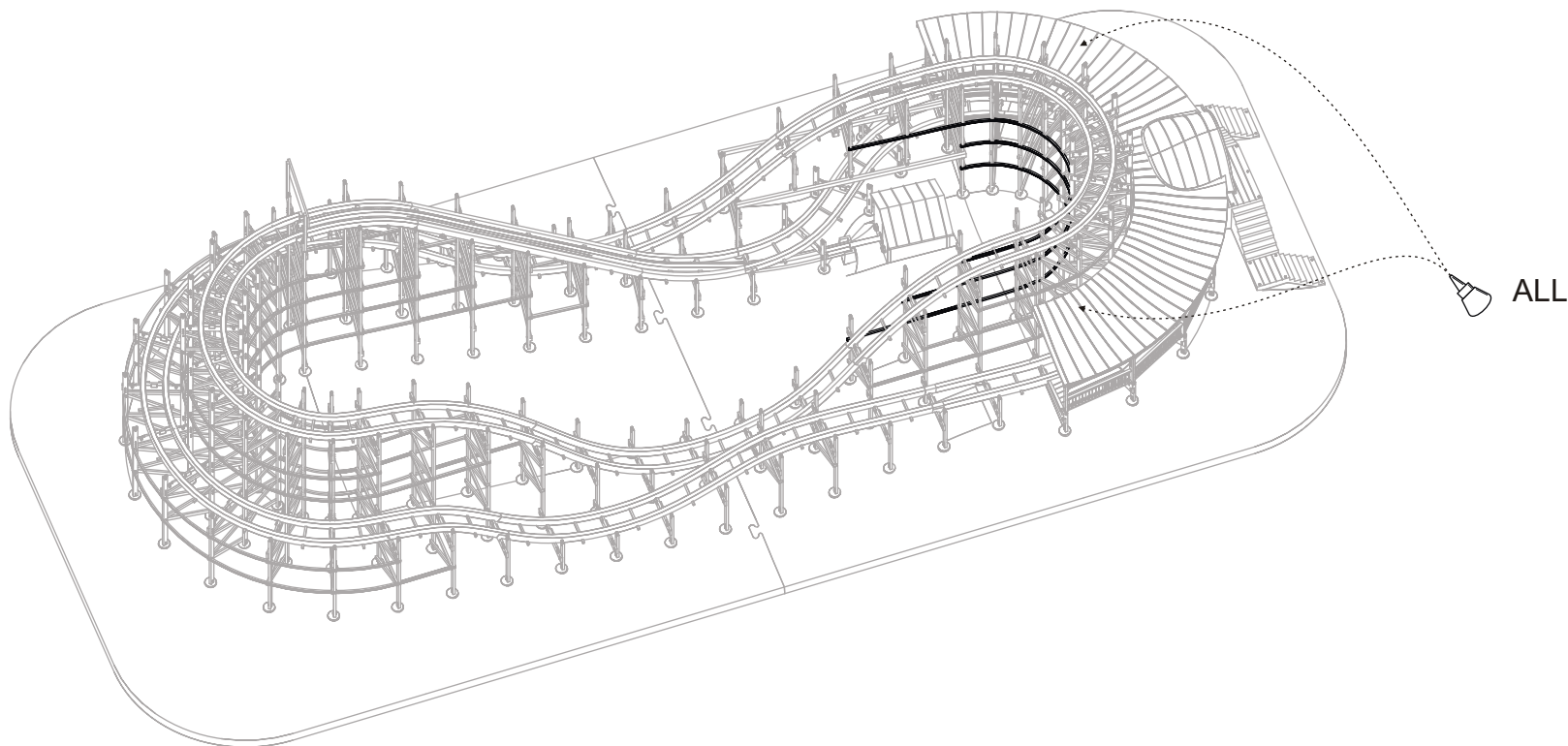


Comet



(WHITE)

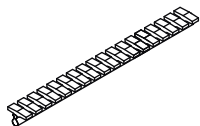
RIBBONS



ALL



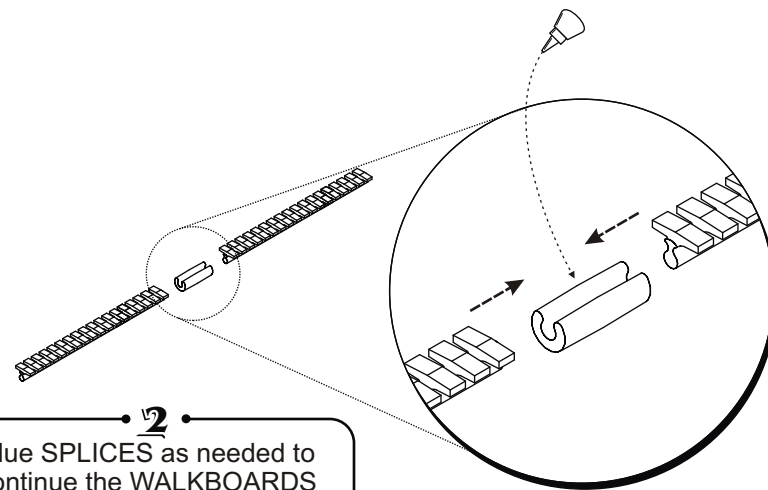
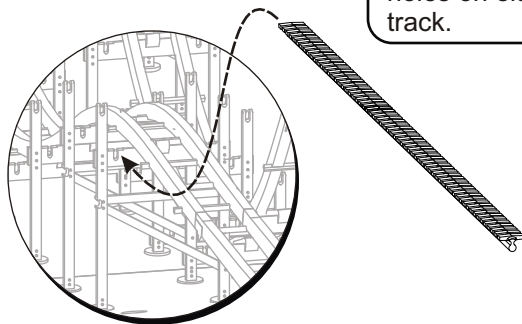
SPLICE
x23



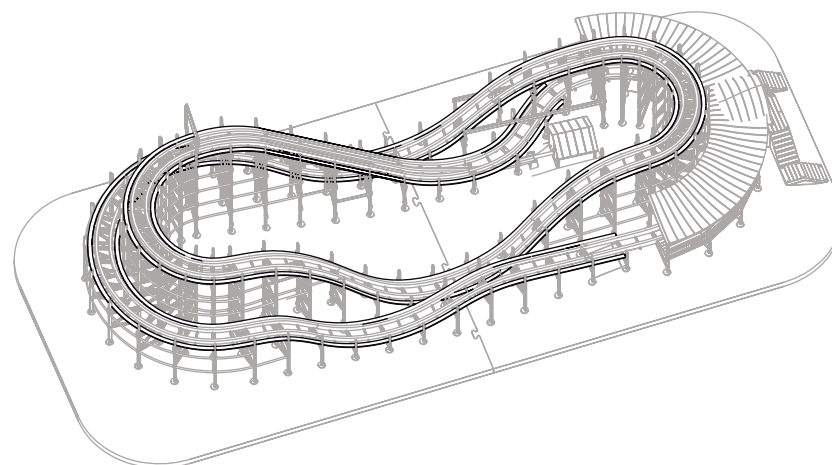
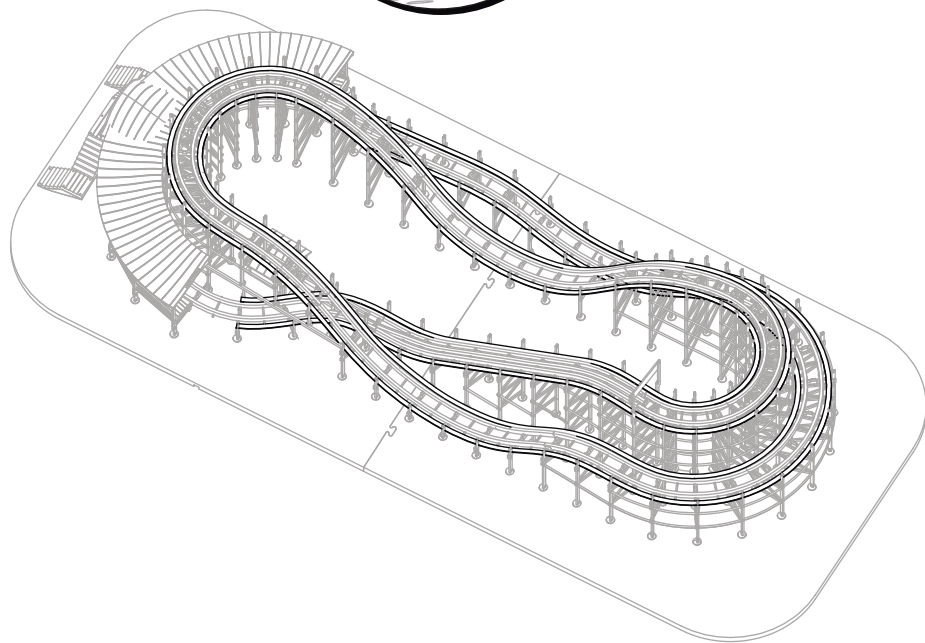
WALKBOARD
x24



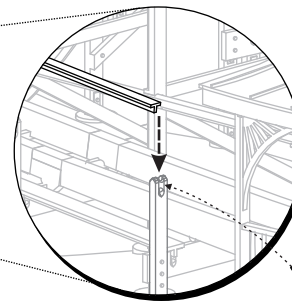
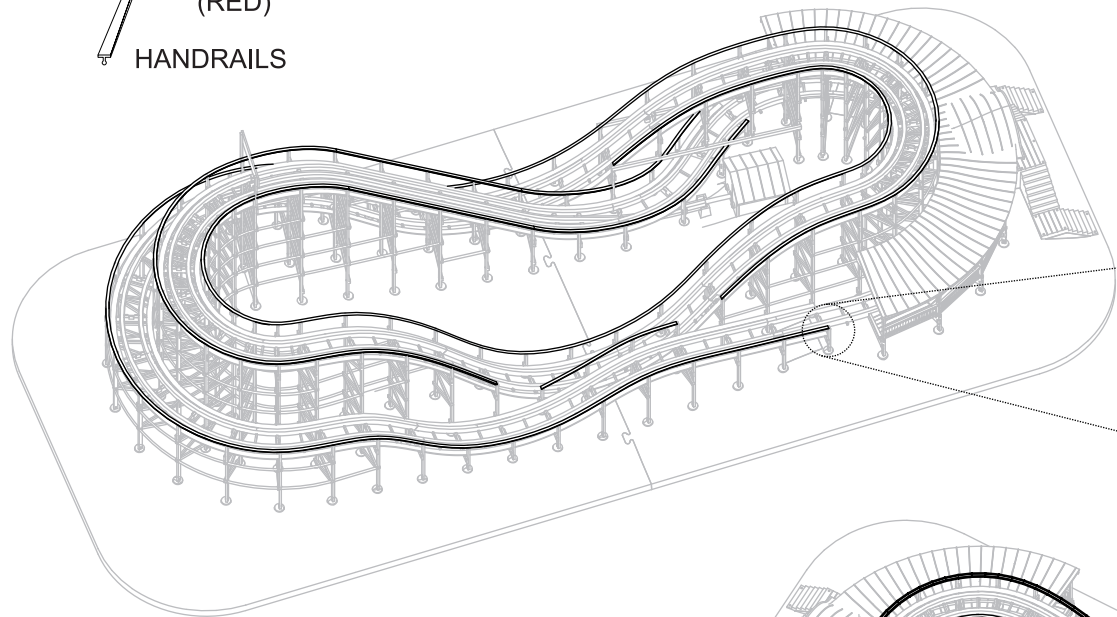
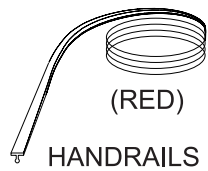
1
Remove 24 WALKBOARDS and 23 SPLICES. Attach WALKBOARDS to the structure by sliding the round "bulb" on the bottom of the WALKBOARD through the holes on either side of the track.



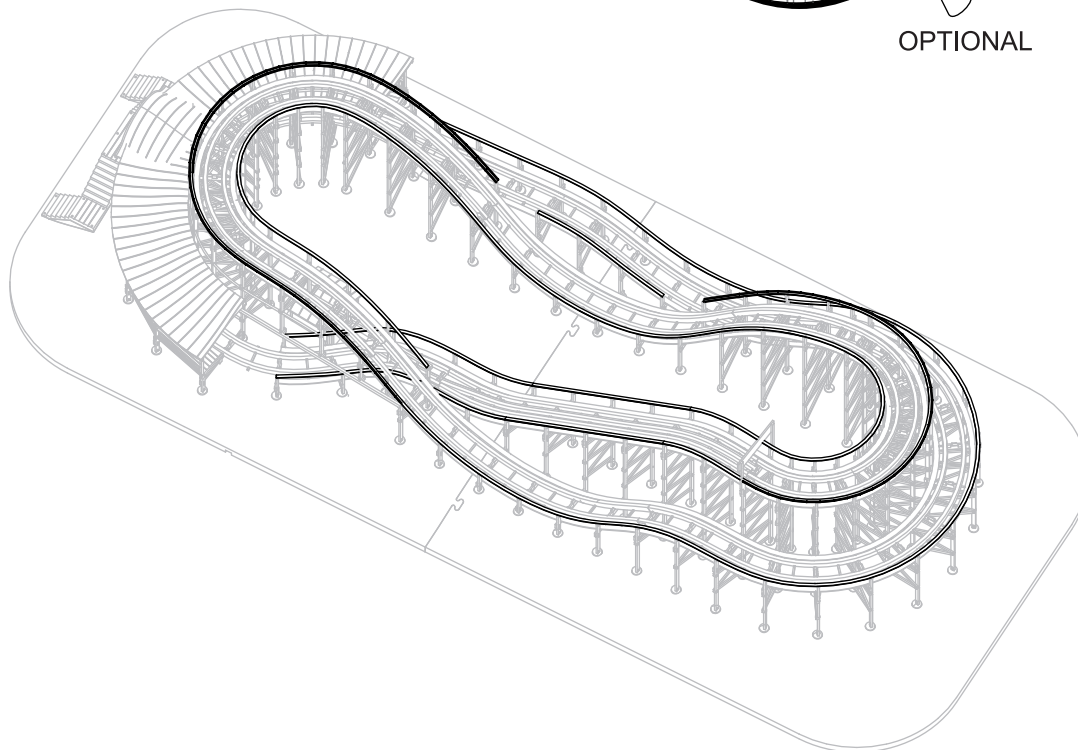
2
Glue SPLICES as needed to continue the WALKBOARDS around the structure as shown.



Comet



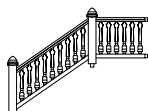
OPTIONAL



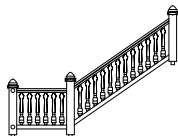
RAILINGS



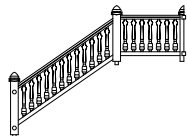
INSIDE
x2



OUTSIDE
x2



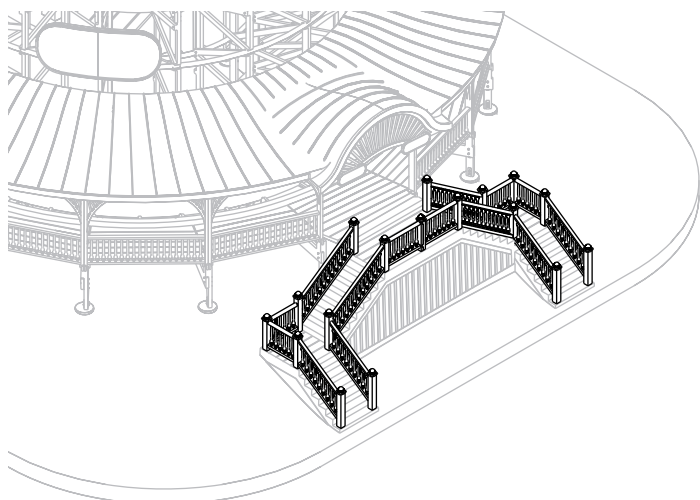
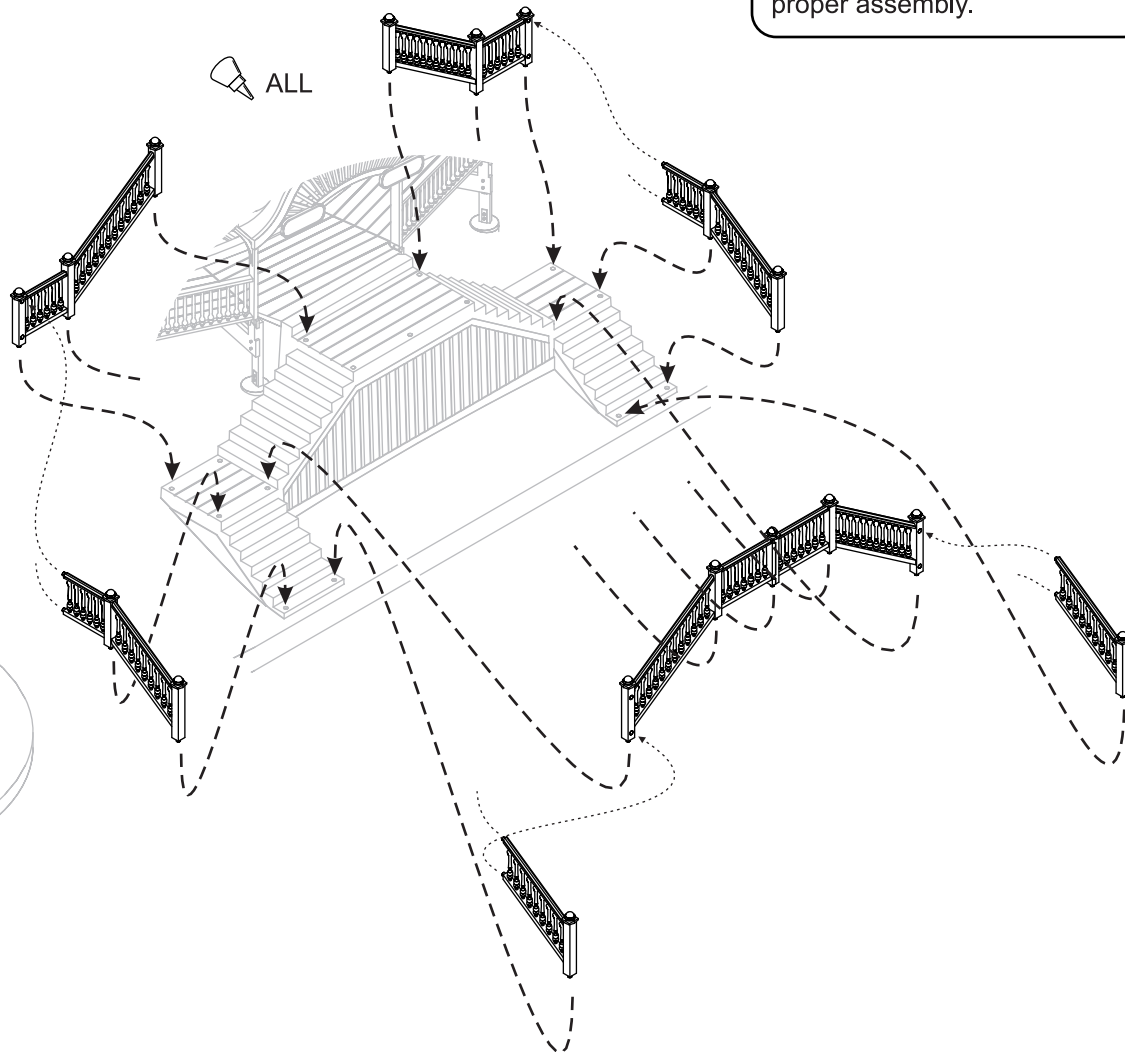
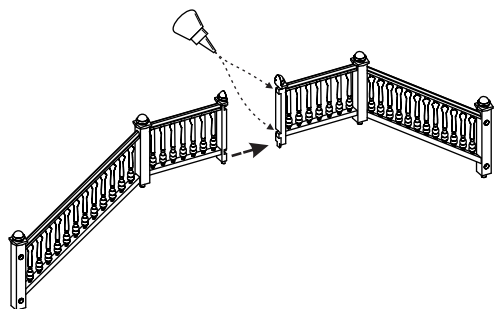
BACK
x2



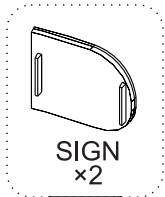
FRONT
x2

BAG
K

Glue the HANDRAILS to the STAIRS. Pay close attention to the small alignment tabs for proper assembly.



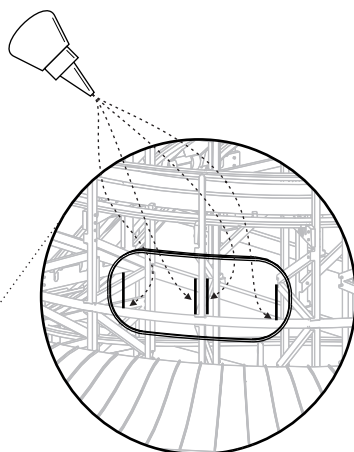
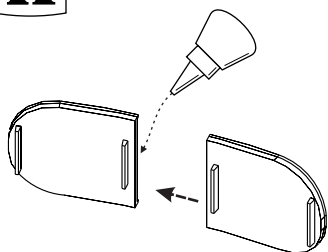
Comet



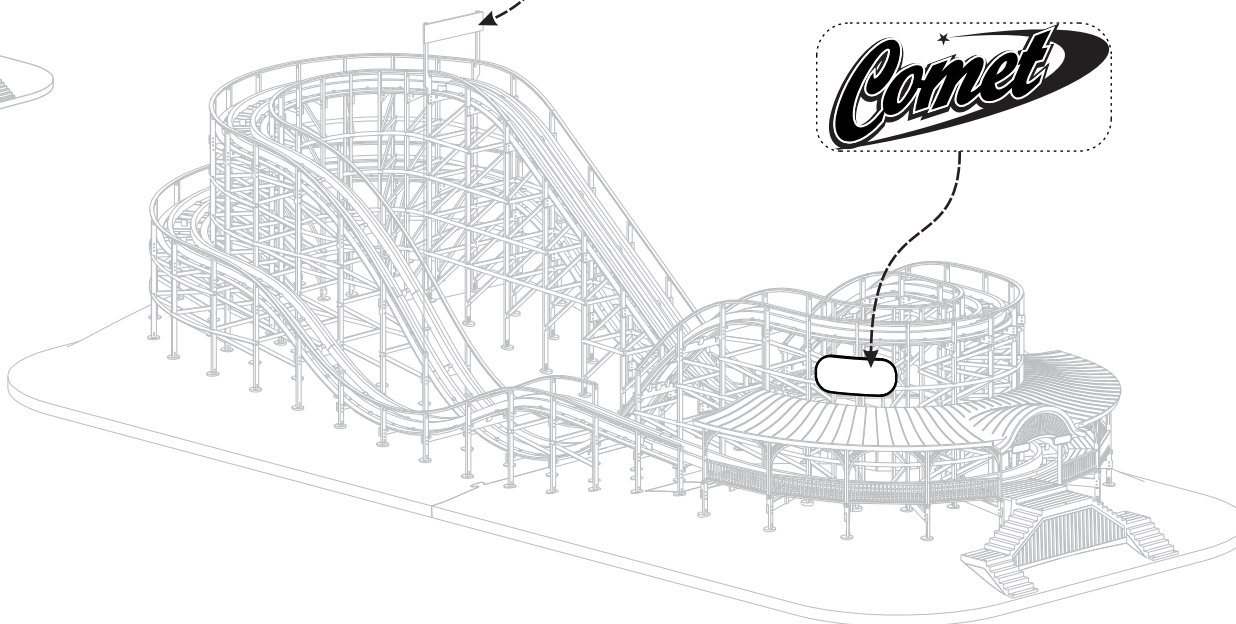
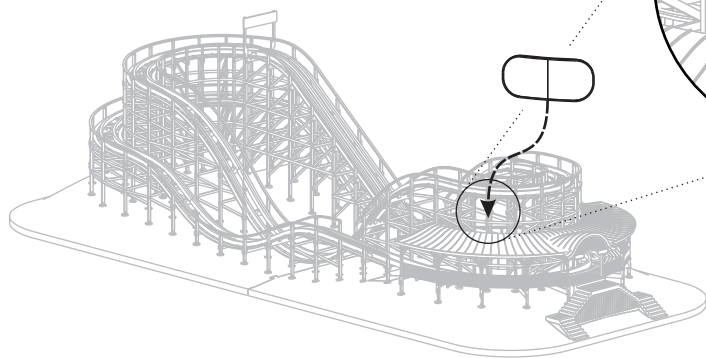
BAG
K

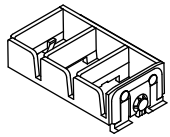


DECALS

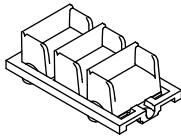


Do Not Stand Up!
REMAIN SEATED AND KEEP HANDS &
FEET INSIDE THE CAR AT ALL TIMES

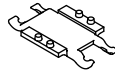




BODY
x1



CHASSIS
x1



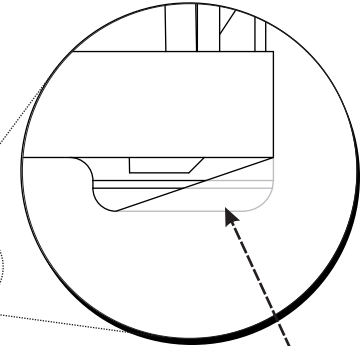
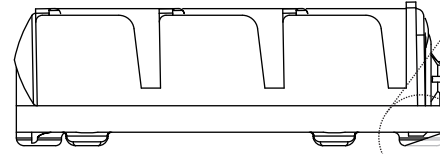
BOTTOM
x1



WEIGHT
x1

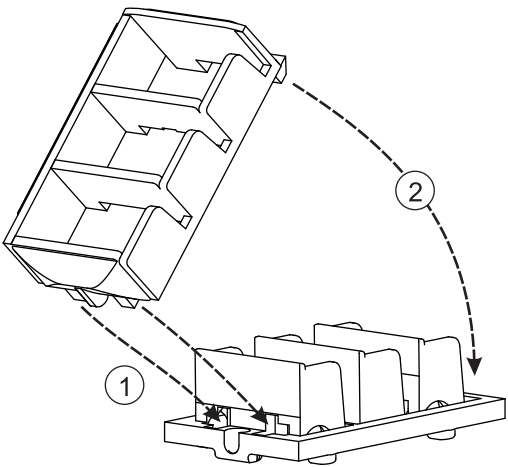


WHEEL
x2

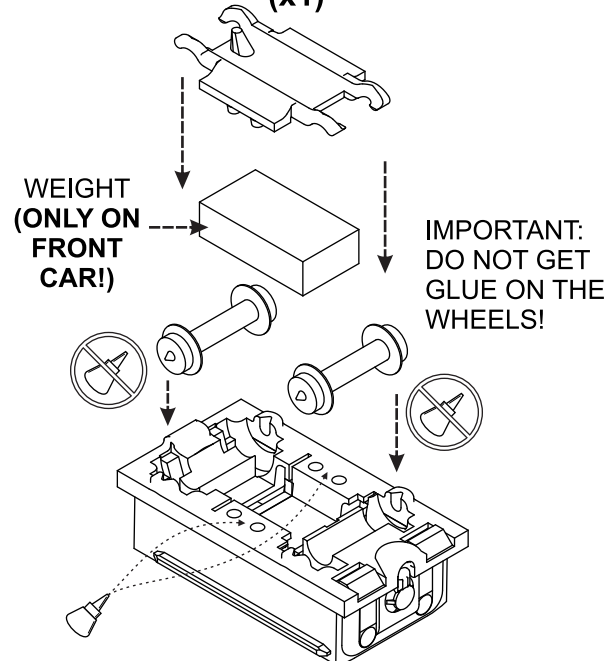


1
Insert the back tabs of the BODY into the CHASSIS. Make sure they are firmly seated and then rotate the BODY down and snap the front tabs into the CHASSIS.

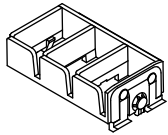
2
Sand or cut the front edge of the hitch area of the CHASSIS on an angle as shown. This ensures smooth engaging with the lift.



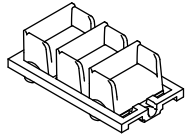
FRONT CAR (x1)



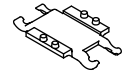
3
Drop the WHEELS and WEIGHT into the CHASSIS. ONLY the front car will have a WEIGHT. Carefully glue the BOTTOM to the CHASSIS. Note: the triangular tab on the BOTTOM is in rear of the car. (The front of the car has the headlight style decorations.) Do not get glue on or near the wheels!



BODY
x2



CHASSIS
x2



BOTTOM
x2



WHEEL
x4



HITCH
x2

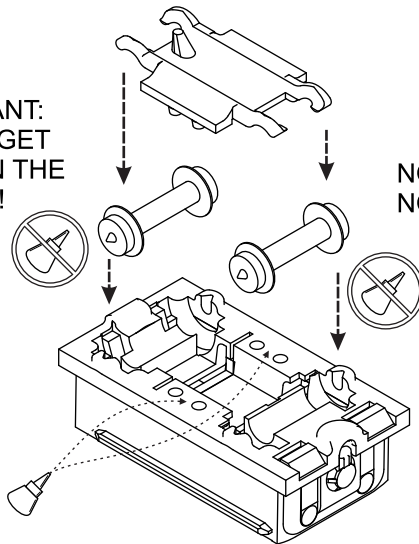


1

Drop the WHEELS into the CHASSIS. For the remaining two cars put **NO WEIGHT** into the CHASSIS. Carefully glue the BOTTOM to the CHASSIS. Note: the triangular tab on the BOTTOM is in rear of the car. (The front of the car has the headlight style decorations.) Do not get glue on or near the wheels!

**OTHER CARS
(x2)**

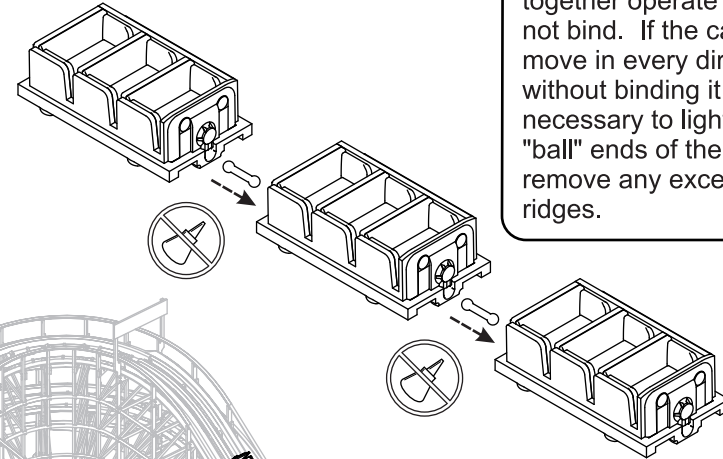
**IMPORTANT:
DO NOT GET
GLUE ON THE
WHEELS!**



**NOTE:
NO WEIGHT**

2

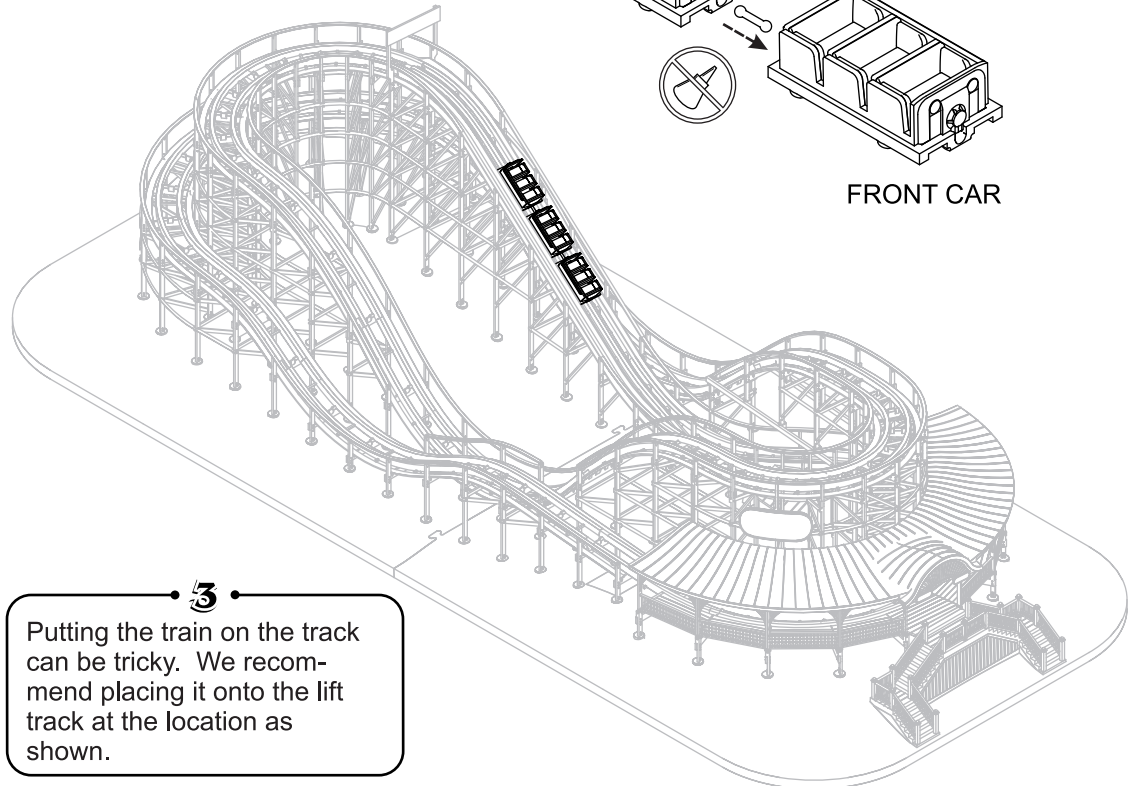
Snap the train together by snapping HITCHES into the car assemblies. It is important that the HITCHES which connect the cars together operate freely and do not bind. If the cars do not move in every direction without binding it may be necessary to lightly sand the "ball" ends of the HITCH to remove any excess plastic ridges.



FRONT CAR

3

Putting the train on the track can be tricky. We recommend placing it onto the lift track at the location as shown.



HELPFUL HINTS

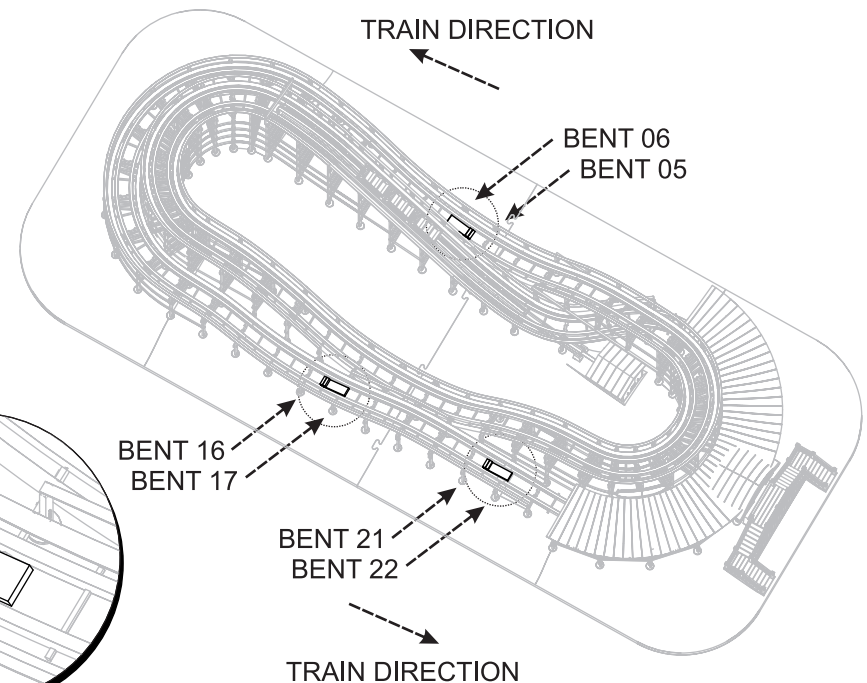
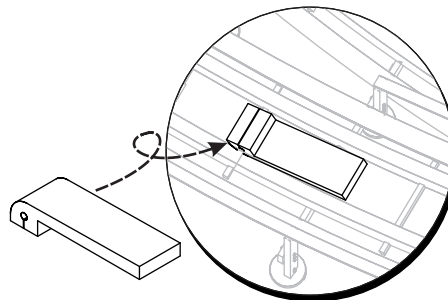
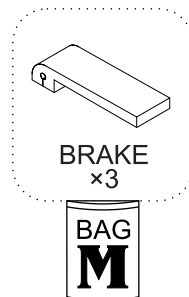
The train is very sensitive to changes in weight, elevation, and environment. It is important to follow these helpful hints in order to ensure proper operation of your Comet model.

- 1 As a general rule, the train should have a weight only in the front car. Adding weight to every car will increase the momentum and make the cars more difficult to keep on the tracks.
- 2 Make certain that the model is on a level surface, as even a slight change in elevation from one end to the other will affect the dynamics.
- 3 Always keep the model clean and free of dust and debris. Wipe the tracks periodically with a damp cloth to remove any surface dirt. If the train begins to slow down, check for any dust that may have accumulated between the wheels and chassis. Spray out the area with compressed air or electronic parts cleaner to remove any debris.
- 4 Only if you see a decrease in performance lubricate the train. Do not use any lubricant except official coaster lube. Do not get coaster lube on the track!
- 5 If you are getting inconsistent performance from a three car train, try running the model with two cars.
- 6 It is important that the hitches that connect the cars together operate freely and do not bind. If the cars do not move in every direction without binding it may be necessary to lightly sand the "ball" ends of the hitch to remove any excess plastic flash.

In order to "fine tune" the performance of your Comet model, we have included small foam rubber "BRAKES" to slow down the trains. These BRAKES snap onto the long crossties from below and between the rails and rest on the BENT (see diagram). You can alter the braking force by cutting a little bit of foam off the end to decrease the braking pressure. A good place to start would be to attach the brakes in the following locations:

- 1) Snap to the crosstie in the valley between BENTS 05 and 06 and let the BRAKE rest on BENT 06.
- 2) Snap to the crosstie in the valley between BENTS 16 and 17 and let the BRAKE rest on BENT 17.
- 3) Snap to the crosstie in the brake run between BENTS 21 and 22 and let the BRAKE rest on BENT 22.

You may want to experiment with different BRAKE locations to suit your environment or to create more realistic scale speeds.



• TROUBLESHOOTING GUIDE •

Problem - Train goes down first hill, but **does not make it up the second hill.**

Solution - Sand the inside of the TRACK CD to TRACK EF and the TRACK EF to TRACK GH connections (see page 13). The inside and tops of the rails must be perfectly smooth for the model to function correctly.

Problem - Train **does not engage the lift** properly.

Solution - Slow the train down as it enters the station with more brakes so it does not engage the lift too fast (see page 29). If you need more brake pressure, try putting a piece of tape on the bottom of the brake to shim it up a little more.

Problem - The train **jumps** the track **as it crests the hills.**

Solution - Use the brakes to slow down the train just enough to prevent it from jumping (see page 29). You may also shim the base of the model slightly on one end or the other if needed. Experiment with brake placement and brake length to fine-tune the ride.

Problem - The train **jumps** the track at the **top of the lift.**

Solution - Make certain that the LIFT CHANNEL is centered on TRACK AB. Check to be sure the transition from TRACK AB to TRACK CD is smooth.

Comet

**Items also available for your
Comet roller coaster model:**

COMET NEON SIGN



This animated sign runs on 3 AAA batteries and is programmed to flash in a chasing pattern - just like a real sign!

COASTER PEOPLE



This set of 37! HO scale (1/87) figures are designed specifically for the Comet roller coaster model. There is an assortment of seated and standing positions for those in the train, people waiting in the loading station and gawkers fascinated by the coaster's motion.

**For these accessories and also building tips visit:
www.coasterdynamix.com**