The effects generator

Your parts

Effects generator
Self-tapping screws (2.6 × 8mm) × 5

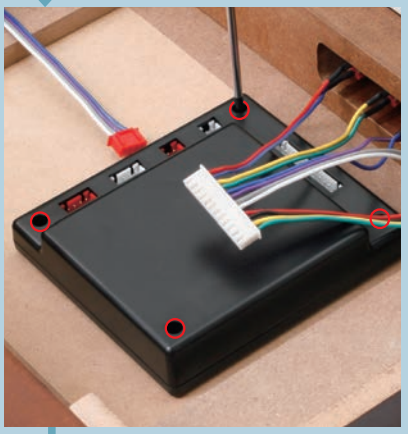
Required tools

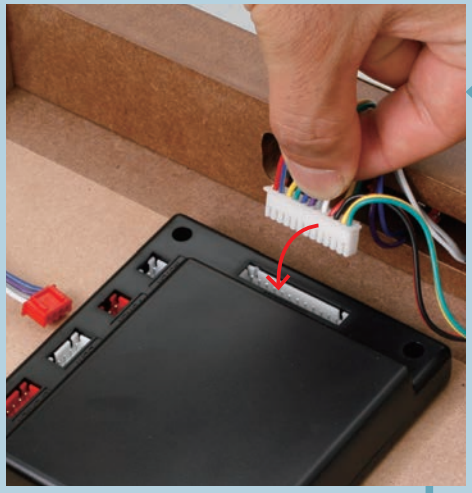
Phillips screwdriver

1 Fitting the effects generator

Turn the base over and place the effects generator onto the underside of the top plate, aligning the holes in the corners with those circled.

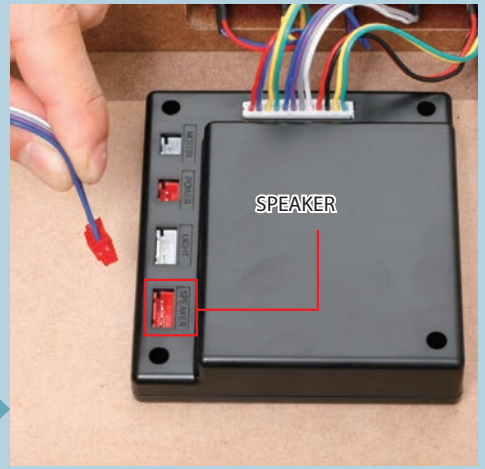
Tighten a self-tapping screw into each of the four holes, securing the generator to the base.



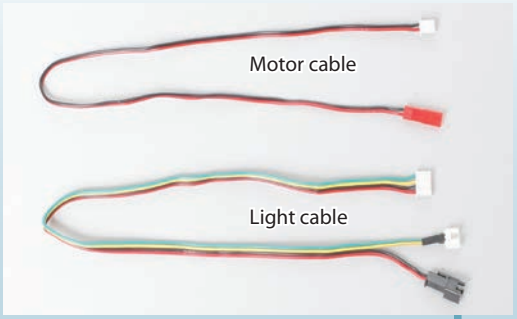


Plug the switchboard wires into the large socket at the side of the generator.

Plug the speaker wire into the socket marked 'SPEAKER'.

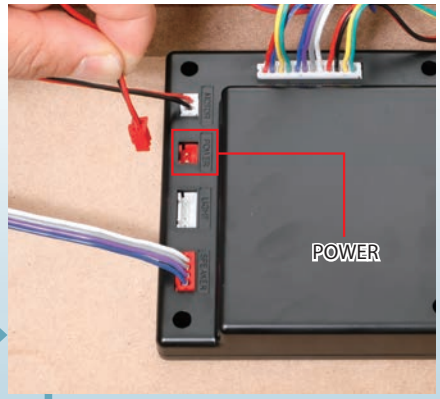


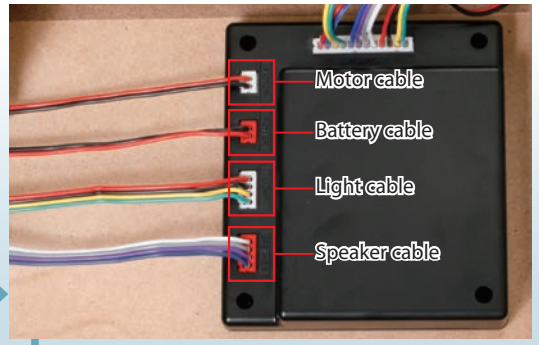
2 Wiring the generator



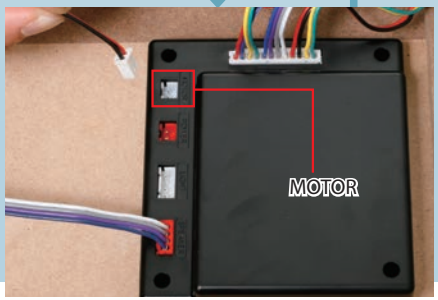
Have the two cables from Stage 88 ready.

Insert the free end of the battery cable into the 'POWER' socket on the generator.



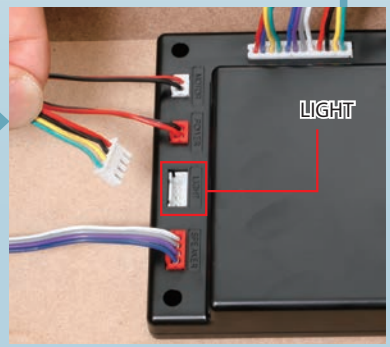


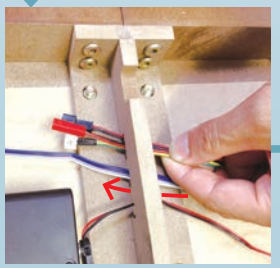
The four sockets in the generator should now all be taken up by their corresponding cables.



Plug the white end of the motor cable into the 'MOTOR' socket on the generator.

Insert the light cable into the 'LIGHT' socket.





Pass the free ends of the cables through the hole in the frame joint.

Push the three cables out through the hole in the top plate.

3 Testing the sound

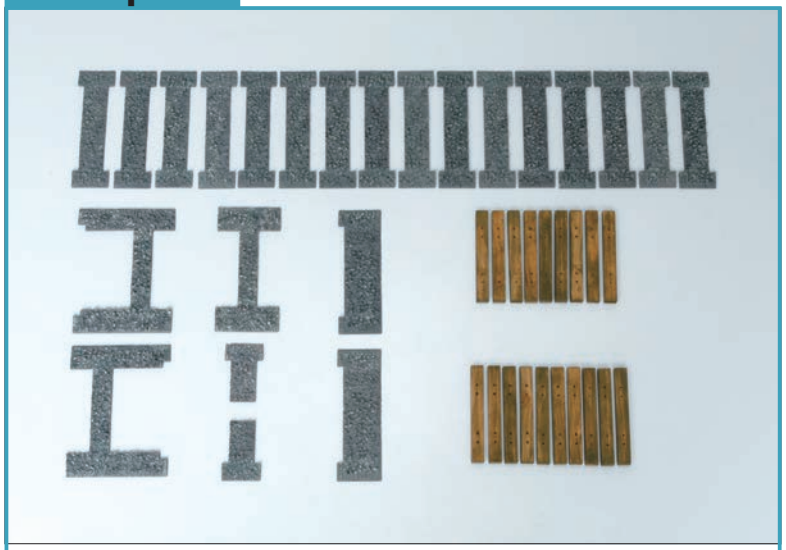
Flip the 'SOUND' switch to test the running sound.

At this point, with the parts you have installed, you should be able to test the sound. Fit the necessary batteries into the battery box, then turn on the 'MAIN' switch to begin testing.

Now, press the 'WHISTLE' switch down to test this as well.

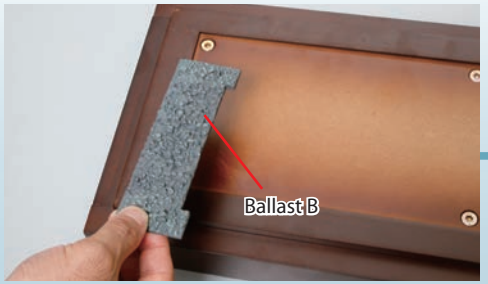
The track

Your parts



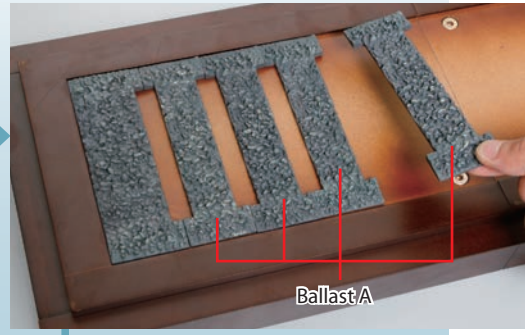
Sleepers × 19
Ballast A × 16
Ballast B × 2
Ballast C
Ballast D × 2
Ballast E × 2

1 Fitting the ballast 1

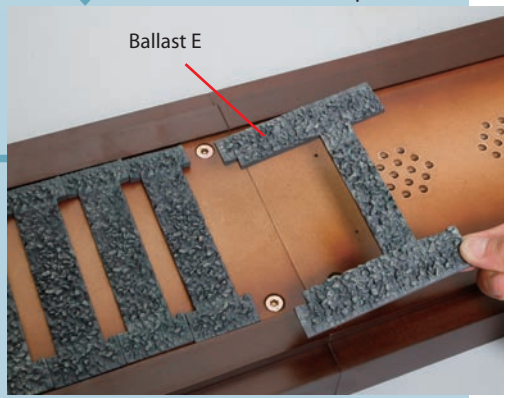


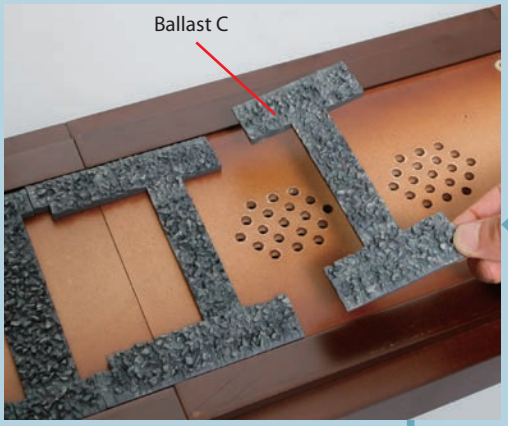
Place the first piece of ballast B in the top plate, at the opposite end to the switchboard.

Place four pieces of ballast A side by side next to the ballast B.

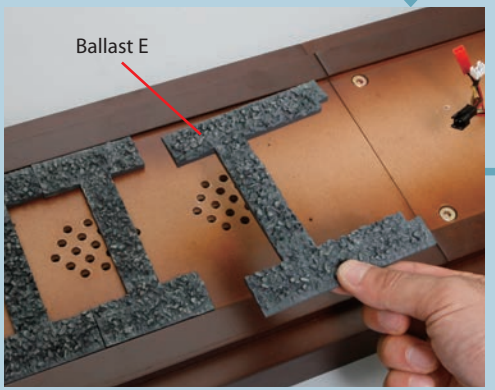


Place the first ballast E up against the last of the ballast A pieces.

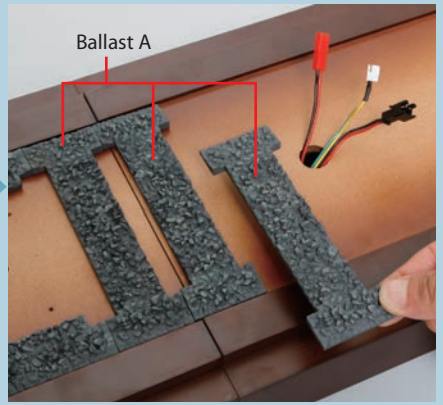




Place ballast C up against the ballast E.

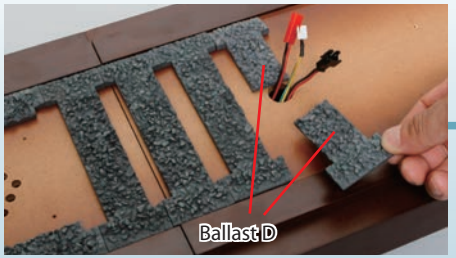


Place the second ballast E piece as shown.

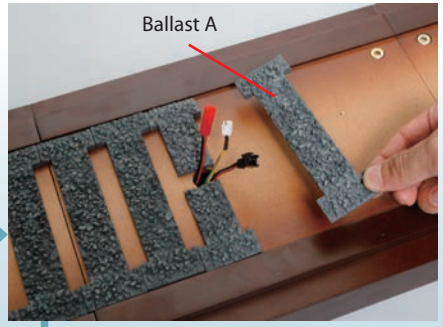


Now add a further three Ballast A pieces.

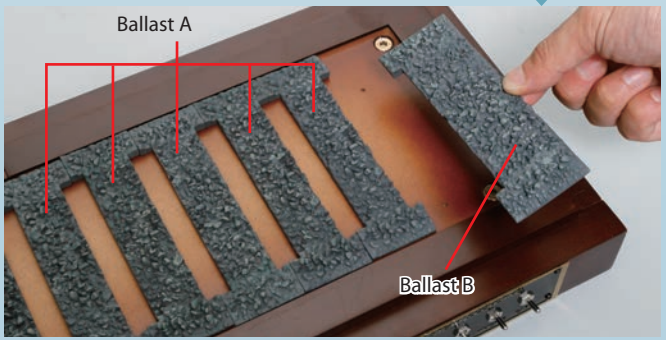
2 Fitting the ballast 2



Place the two ballast D pieces either side of the hole from which the wires are projecting.



Place a ballast A piece after the two D pieces.

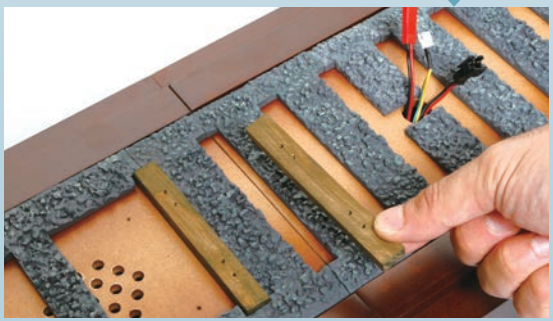


Add another five ballast A pieces and finally the remaining ballast B piece.

3 Fitting the sleepers

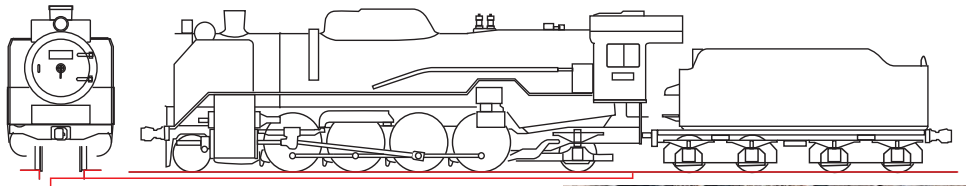
The sleepers fit into the gaps between the ballast pieces. The holes should face upwards.

Begin fitting sleepers into the gaps between ballast pieces, as shown above. The larger gaps in the ballast are where the rollers will fit.

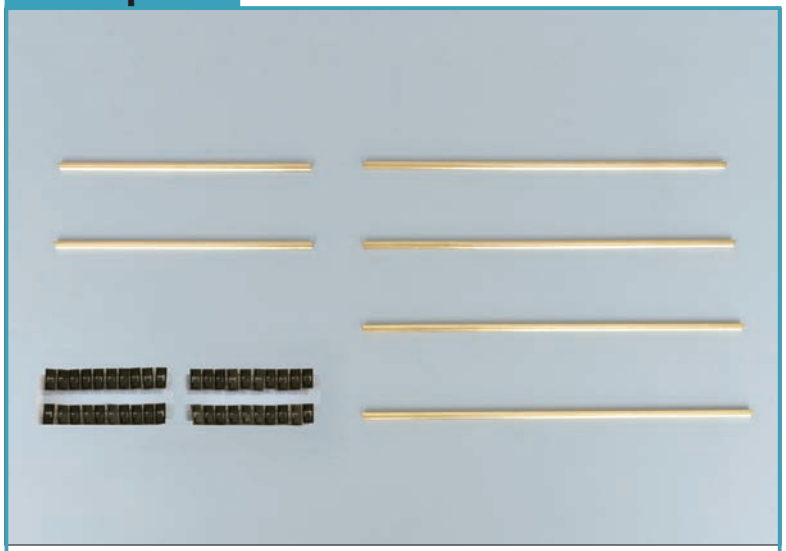


Continue along the base, fitting all the sleepers in place.

The baseplates and rails

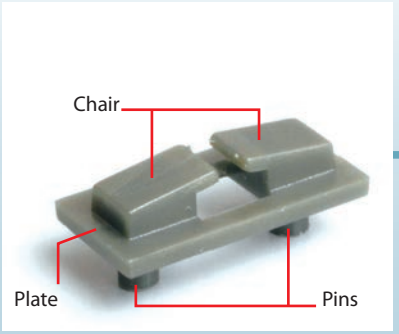


Your parts



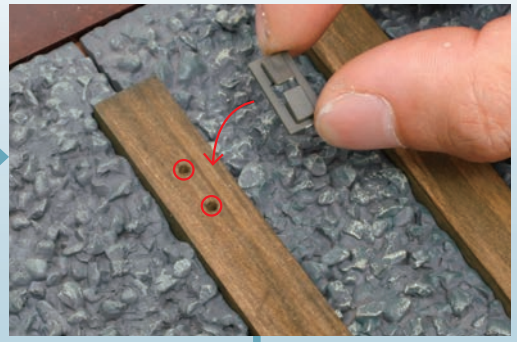
Rails A × 4
Rails B × 2
Baseplates × 40

1 Fitting the baseplates

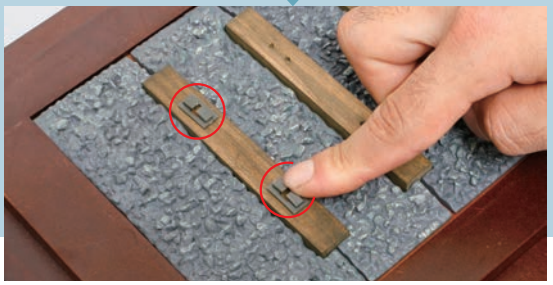


The baseplates fit into the sets of holes in the sleepers. This illustration shows the different parts of the baseplate: the pins, plate and chair.

Place the first baseplate into the circled holes in the first sleeper.



Place a second baseplate into the first sleeper, as shown. Then continue along the base, placing two baseplates into each sleeper.

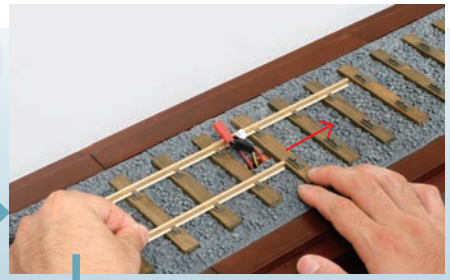


2 Fitting the rails 1

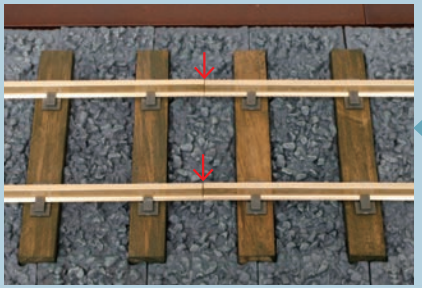
Position the rails next to the base, as shown.

3 Fitting the rails 2

Slide the first A rail through the chairs of the sleepers positioned after the spaces for the rollers.

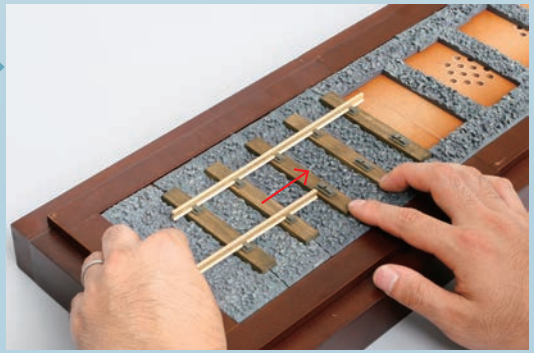


Pass the second A rail through the chairs adjacent to the first.



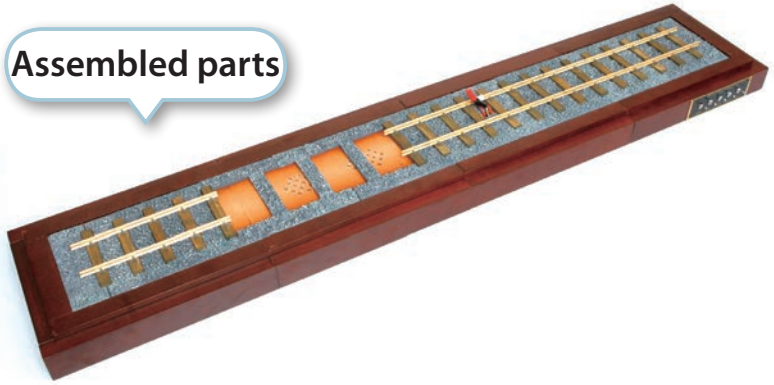
Push the ends of the A rails up against each other (arrows).

Pass the third and fourth A rails through the chairs from the other end of the base.



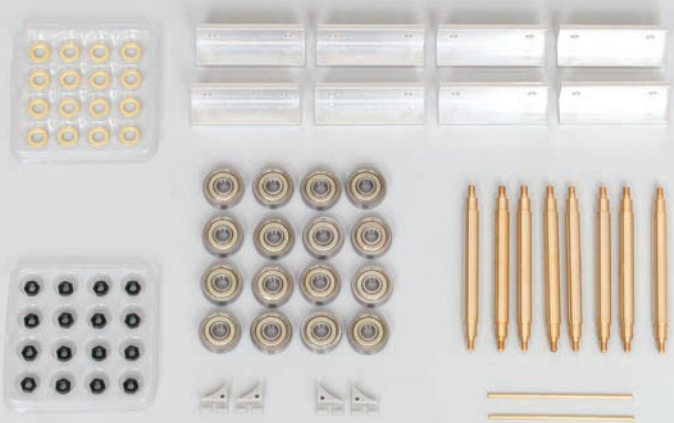
Pass the B rails through the chairs of the baseplates from the end, as indicated by the arrow.

Assembled parts



The rollers

Your parts

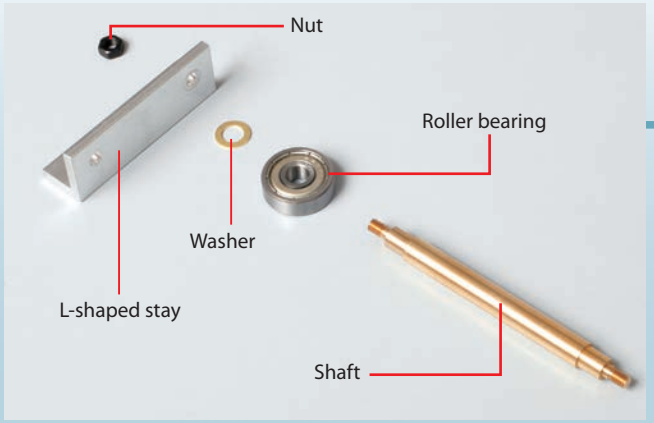


- L-shaped stays × 8
- Shafts × 8
- Brass rods × 2
- Roller bearings × 16
- Wheel chocks A × 2
- Wheel chocks B × 2
- Washers × 16
- Nuts × 16

Required tools

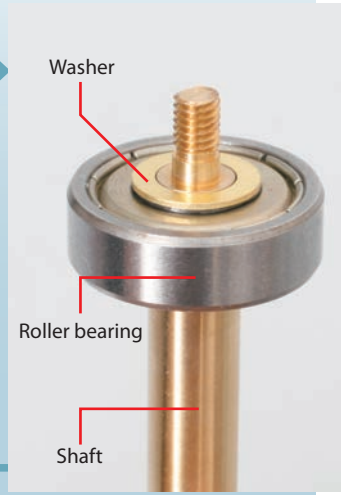
- Long-nose pliers
- Instant adhesive

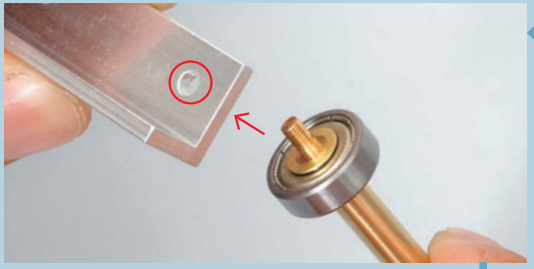
1 Assembling the rollers 1



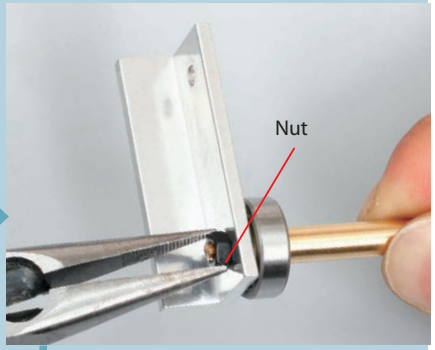
These are the five parts that you will need to begin assembling the first roller.

Place the bearing and then the washer onto the end of the shaft, as shown.





Insert the end of the shaft into the hole (circled) at one end of the L-shaped stay.



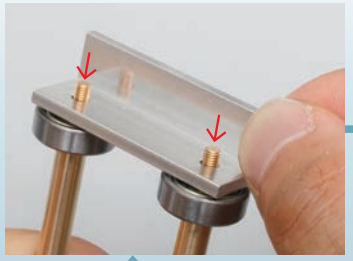
Tighten the nut onto the end of the shaft.

Repeat this process to fit a second shaft, bearing and washer into the second hole of the stay.

2 Assembling the rollers 2

Place a bearing over the end of each shaft.

Then place a washer onto each shaft, up against the bearing.

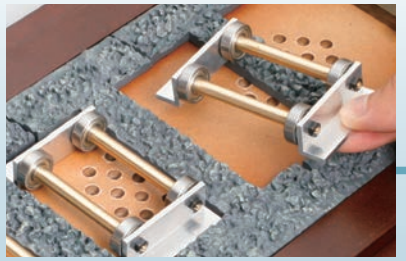


Place a stay over the ends of the shafts

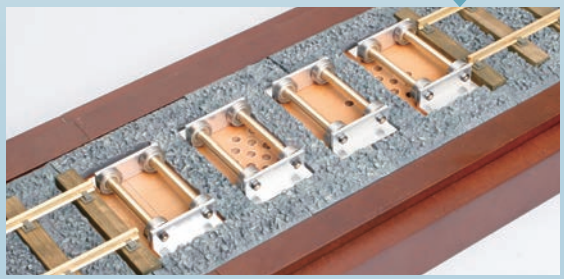
Tighten a nut onto the end of each shaft.

Repeat Steps 1 and 2 to assemble four roller sets.

3 Fitting the rollers

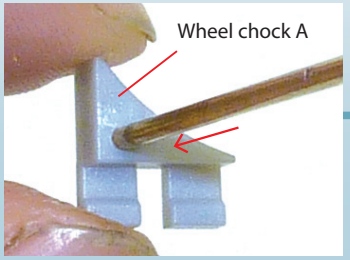


Place the rollers into the larger gaps near the middle of the display base.



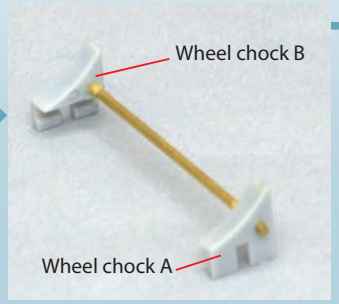
The rollers should look like this when correctly positioned.

4 Assembling the chocks

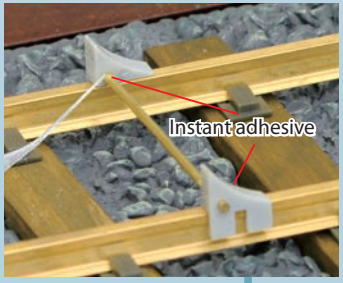


Insert one of the brass rods into the hole in a wheel chock A.

Fit a chock B onto the opposite end of the rod.

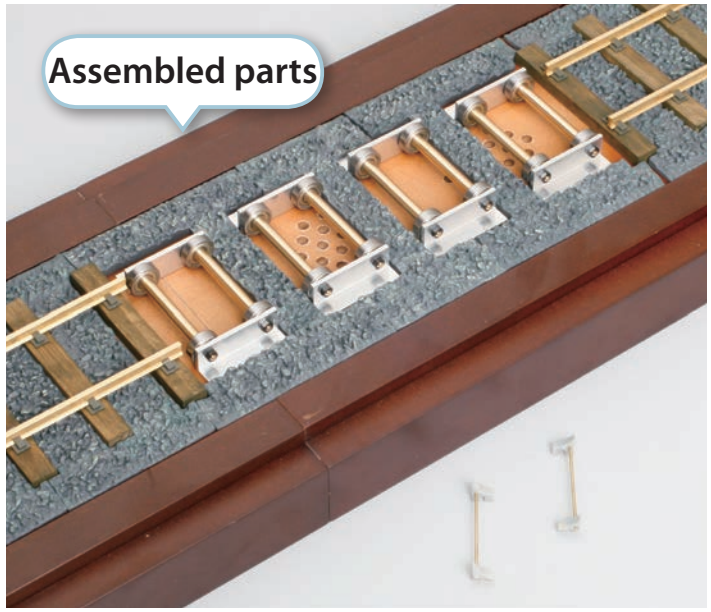


Place the chock assembly over the rails, as shown below, and adjust the position of the brass rod until both chocks are properly aligned with the rails. Then use instant adhesive to fix the chocks to the rod.



Repeat this process to assemble the second pair of chocks.

Assembled parts



Paint plan

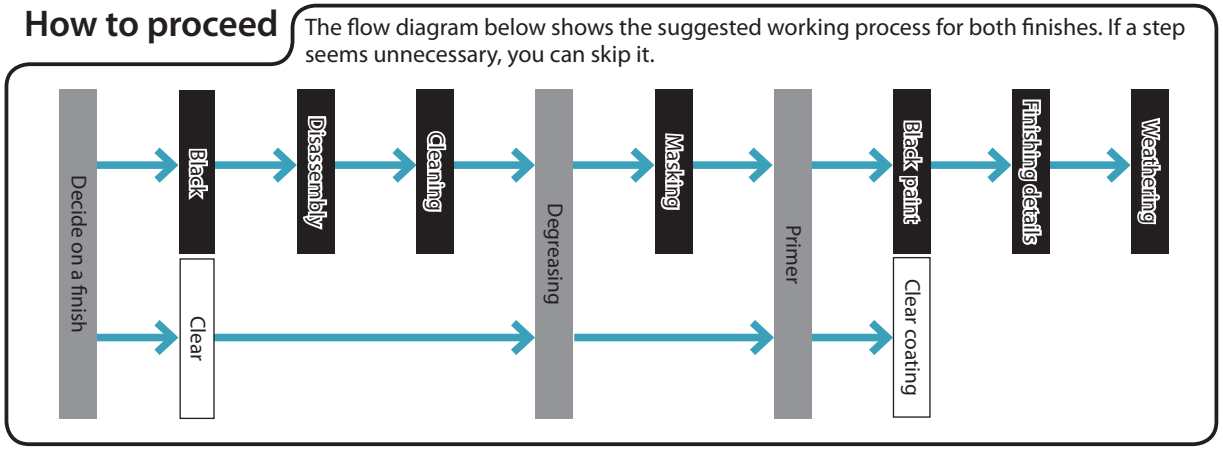
Your D51 model is now nearing completion. In Stages 24 and 59 you painted the wheels and backhead, and now you need to choose, if you haven't already, how you want to finish your model: either with matt black paint or with a clear protective coating over the unpainted metal.

Deciding on a finish

Painting the model black will involve more work, because you will have to clean the entire model and pay more attention to detail, but you will be rewarded with an authentic and highly accurate reproduction of the real D51 200 locomotive.

How to proceed

The flow diagram below shows the suggested working process for both finishes. If a step seems unnecessary, you can skip it.



There are two finishes for you to choose between, either the bare metal finish with a clear protective coating, or the black-painted version for a more authentic appearance. The bare metal version is finished with a clear protective coating that allows the high level of detail to remain clearly visible, while protecting the metal from oxidisation and deterioration over time. The black finish recreates the look of the real locomotive, and also gives you the option of weathering the model to give it an even more realistic and 'used' look. It is recommended, although not completely necessary, that if you choose the black finish for your model, that you protect it with a clear coating as well, once you have painted in all the non-black details.

Over the remaining stages, you will be shown both ways of finishing your model, so if you haven't already decided on which finish to choose, you can wait until the end of the series to see which one you prefer.

The diagram on the left sets out the key stages involved for each option.

Painting Plan 1

Matt black

To paint the model black takes more work than a clear finish, but the end result will be a more authentic and realistic-looking completed model. You will need various tools in order to paint this version; these will be shown in detail in the next stage.

Required tools

1. Matt black spray paint
2. Primer
3. Degreaser
4. Paint thinner
5. Brushes
6. Masking tape
7. Various tools
8. Various paints (details)

As shown in Stage 24, there are a variety of ways to paint the wheels. It is best to paint the wheels separately from the rest of the model.

Certain areas of the model, such as the inside of the chimney, will need to be painted by hand before spraying. This will ensure an even final coat.

Painting Plan 2

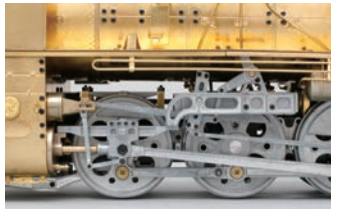
Bare metal finish

For the bare metal finish, you will need only a cleaner, to remove any dirt or grease and prepare the surface of the model; a metal primer, to undercoat the model and prepare it for spraying; and a clear spray, to add a protective coating to the model. You can also spray it with a lacquer or varnish to highlight the brass more.

Required tools

1. Clear spray
2. Clear primer
3. Degreaser

One benefit of using clear paint is that even if you spray a little too much of it over detailed areas, you will still be able to see them clearly.



Spraying the wheels and underframe with a clear coating will protect these parts, thus prolonging the life of your model.