

The 2mm Scale Association  
**Part Ref 2-353C**  
**BR 8-Shoe Vac Fitted Underframe For 16 Ton Mineral Wagon**

Order of assembly – Eight shoe vac fitted 16T underframe

1. Detach and clean up main underframe etch.
2. Remove buffer beams if not required.
3. Ream bearing holes and holes in V hangers.
4. Bend up inner solebars/axleguards.
5. Solder in bearings.
6. Bend up inner buffer beams, if required.
7. Bend up and solder coupling plates, if required.
8. Detach, clean up, solder together cosmetic solebars.
9. Detach and assemble axlebox etches.
10. Attach axlebox etches to cosmetic solebars.
11. Attach cosmetic solebars to main underframe using brake cross shaft as an additional aid to alignment.
12. Bend door bangers away from solebar.
13. Attach full width buffer beams, if required.
14. Detach, clean up, bend up brake unit.
15. Attach brake cylinders.
16. Attach brake unit to main underframe.
17. Prepare vacuum cylinders to cross shaft operating links.
18. Put cross shaft through both V hangers and operating links.
19. Solder operating link to cylinders.
20. Using cross shaft to help alignment, solder central V hangers to brake unit.
21. Bend up and attach brake push/pull frames.
22. Detach brake tumbler and operating rods from etch.
23. Reinsert brake shaft, passing through tumbler.
24. Attach ends of brake operating rods to brake frames.
25. Remove cross shaft and cut to length.
26. Reinsert cross shaft, ensuring that it passes through V hangers, vac cylinder links and brake tumbler.
27. Solder cross shaft in place.
28. Solder brake safety loops in place.
29. Remove central portion of safety loops to enable wheels to be inserted/removed.
30. Bend up and assemble brake lever/lever guard assembly.
31. Attach lever/lever guard assembly.
32. Insert and solder wire stubs in remaining holes in brake levers.
33. Bend door bangers to final shape.

Additional points – not in any particular order

Attach axleboxes to cosmetic solebars before whole assembly is attached to main underframe – otherwise a difficult balancing act will ensue !

Door bangers can be bent temporarily up and away from the solebars as it is easier to solder in wire stubs to the vacant holes in the brake levers.

I had to file a little of the end of the inner solebars to make the inner buffer beams stand vertical – this may not be necessary in every case.

I held the full width buffer beam in alignment with a 0.9mm drill through each buffer hole.

Suggest test underframe with wheels

- a) after bearings put in
- b) after brake units put in
- c) After brake push/pull frames are in place
- d) after centre section is cut from brake safety loops

All parts can be soldered using both multicore and cream, where appropriate.

I found that I scrubbed this underframe more frequently than the other types as there are more nooks and crannies for flux to lodge in.

Cleaning has to be extra careful after the safety loops are cut in order to avoid excessive distortion and damage. Small movements are fairly easy to correct as the safety loops are flexible enough.

*Etch Artwork and Diagram By Bob Jones 2003. Assembly notes by David Long 2003.*

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## INSTRUCTIONS

### 9' WHEELBASE 8 SHOE VAC FITTED CHASSIS - PART - 2-353 C

