

BR 9F Crib Sheet

These notes are to cover the construction process for the new Accucraft / Aster BR 9F and to help builders complete a successful model. Information is based on the successful test builds completed in the UK by David Stick and Phillip Taylor. I also thank Joel Taylor & Jim McDavid from the USA for their input. Further input from builders will be gratefully received and these notes amended as appropriate. Items highlighted yellow are supplied separately. Decals for cabside number and tender crests are also supplied.

General

If you are familiar with building Aster kits, then you will probably know that a few tools (additional to those mentioned on Page 4 of the Instruction Manual) are useful. Builders have found that 2.0mm, 1.7mm & 1.4mm taper taps will come in handy for cleaning threads. Aster Hobbies (UK) will advise on sources.

Section 1

Part 1-1 Drain Valve Pistons can be usefully worked back and forth in the cylinder block 1-3 with plenty of oil to ensure a free-running fit. It has been found that the Drain Valve Handle 1-21 can slip on Drain Valve Shaft 1-22 due to the load of moving the valves back and forth in the cylinder under steam. Also, careful work on the drain cock operating linkages to ensure smooth action will be repaid later by not having to remove the boiler to correct the situation!

Part 1-17 Actuation Rod should be gently bent downwards (not upwards) at the firebox end to avoid fouling.

Part 1-19 Crosstie requires some work. The alignment of the Bearing 4-23 for the Reverser Shaft 4-14 is not in alignment with the holes in the frame. This is a precise alignment. Gentle bending of 1-19 is permissible but the better solution is to open the holes in the frame with a needle file so that reverser rod passes through without binding.

Section 4.

Careful work with needle files to get a good finish on 4-5 Die Block to run freely in the Expansion Link 4-4 will be repaid later. Please observe carefully the drawing Top LH on Page 4.

Part 4-1 Radius Rod (and similar Fork Ended parts). This is one area that will need careful attention. Similar situations with Fork Ends follow elsewhere, so take a moment to ensure this is understood and then done correctly.

1. Examine Forked End of component 4-1 Radius Rod and ensure forks are parallel. If not carefully work a needle file gently on the inside faces of the forks and of the mating component until a smooth finish is achieved.
2. Present the mating component to the forks and check for fit. If tight, continue to file the faces of the mating component until a smooth fit is achieved.
3. Now check the Forked component to ensure both holes are exactly in line. If necessary, relieve the non-threaded hole with a round needle file.
4. Clean the threads of the forked component by careful use of a taper tap which should be introduced through the non-threaded hole and maintained square to the face of the fork.
5. After running the tap right through remove any dirt from the tap before withdrawal.
6. Check that the forks remain parallel and that the component is still a smooth fit.
7. If so proceed to assemble the joint with a spot of thread locker such as Loctite 222 introduced from the outside of the threaded hole.
8. Check that the pin is now secure and that the joint moves freely

Expansion Link

Having ensured free movement of die block Part 4-5 in the expansion link Part 4-4, assemble the Expansion Link Unit shown in Fig. 11 using C M1.4-7 screws provided in the kit.

Should the screws protrude insufficiently to fully engage with the threaded portion of Expansion Link Pivot Inside 4-2, then consider the two options below.

Option A

Disassemble the parts and carefully countersink the holes in Expansion Link Outside, Part 4-7. Care should be taken to remove only sufficient material to allow the C M1.4-7 screws provided to sit deeper in the prepared holes. On assembly, there should now be sufficient thread into Part 4-2 to secure the unit.

Option B

Supplied separately to the kit are **4 x M1.4-8 screws**. Complete the Expansion Link Unit with these screws and trial assemble the complete Expansion Link Unit into position with Expansion Link Support 4-12 in place.

Check for free movement of the Expansion Link Unit ensuring that the upper M1.4-8 screws in particular do not foul the inside portion of Expansion Link Support 4-12. Should they do so, clearance can be achieved by disassembly and careful filing of the tip of the offending screws. During reassembly check for free movement of the Expansion Link Unit.

Either Option - a spot of Loctite 222 or similar is essential on the threads.

Builders may choose to brighten-up the coupling rods, connecting rods and other valve gear parts to match usual Aster practice. Use a fibreglass pen to gently burnish the parts.

Section 8

Pay particular attention to ensure that the upcoming pipe from the lubricator fits correctly.

- a) ensure lubricator pipe fully engages with header.
- b) ensure the joint does not become cross threaded when GN5-2 is pulled up.

Section 12

A new **Pressure Gauge siphon** will be supplied to replace Part 12-9 and Part 12-11 which were found to be liable to leakage.

Section 14

Part 14-1 Boiler Ring has been found to be incorrectly drilled in one test build. Please check position of tapped holes and report any problem.

Section 15

A **FG-8** fibre Gasket (not shown) is require under 15-5 Plug.
Safety Valve O rings should be **PS5-1.9 x 2** and not as shown.

Section 18

Part 18-15 Conduit and associated brackets are not required for this model although mentioned in the Instructions but not in the parts list.

Section 20

Careful work with a file on 17-1 Reach Rod Guide will improve alignment of with 20-1 Reverser Cover & 20-2 Dummy Reach Rod.

Section 22

Ensure Part 22-17 Water and Fuel Tank Seat is the right way up to avoid dismantling the section later when the hole to receive the ladder is not apparent! Parts 25-2 and 25-3 front steps should be assembled in this section.

Section 26

Part 26-9 Water Tank Cover is not a good fit. Consider removing the rear flange from this part. Alternatively, the rear of the water tank 22-15 could be filed before installing into the tender body.

Templates

It has been pointed out that the template drawings are not scaled to fit the model. Scaled Templates are available on request.

The following additional points have been proposed by Malcolm Wirth for which I offer my appreciation. Further comments from builders are welcome.

Section 8: Pilot truck

Instruction 8.3 should follow, not precede, 8.4. The springs and axle boxes need to be slid into the frames, before the frames are connected together. In addition, the last instruction in 8.4 (to fasten M2-4 screws) should be the first operation, since these screws act as spring struts, holding the springs in place.

The sequence should be:

1. Screw M2-4 screws into frames to act as spring struts.
2. Slide axle boxes into frames, with springs.
3. Screw top and bottom frames together.

Instruction 8.7: mounting pilot truck. It is difficult – and may be impossible (though I didn't persevere) – to attach the pilot truck without first removing the front brake beam 2.32, together with the associated (cosmetic) brakes and sanding nozzles. This should be pointed out in Section 3.2: Assembly of dummy brake devices and sander nozzles. Either instruction 3.2.1 should be left until after the pilot truck has been mounted (after 8.7) or – and probably better to maintain consistency – the builder should be advised not to final fit these components, since they will need to be removed during Section 8.

Section 9: Cylinder cover and other components.

Instruction 9.1.1: cylinder tail covers 9.3/9.4. When fitting, after fettling to fit and cleaning out the threads, these should be fitted without threadlocker, so they can be easily removed at a later stage in this chapter (see instruction 9.3.2). (No need to deviate from the sequence, because they need dry-fitting anyway to check all is well and, once fettled, they are easy enough to slip on an off, with just the one screw).

Instruction 9.3.2: installing the smokebox saddle. Fitting the front screw on each side is greatly facilitated by removing the cylinder tail covers 9.3/9.4 and retracting the piston valve on each side respectively.

Instruction 9.3.2, last sentence - The text and drawing do not match. The instruction is redundant and so please follow the drawing.

A further point worth mentioning is that the dummy drain valves 9.11/9.12 and the dummy lubricator link assemblies are very fragile and easily damaged and should perhaps, after trial fitting, be left off the engine until the last stage of assembly in which they can still be accessed.

Section 10: Assembly of front buffer fittings.

Instruction 10.3: Attach 10.3 front deck in place on top of 10.7 front buffer beam – I found it much easier and more straightforward to screw the front buffer beam to the frames and then slide the front deck in and secure it.

Instruction 10.5, second sentence: Attach front steps 10.11 to 10.3 front deck and fasten M2-4 screws to secure 10.11 front steps. The steps are held by lugs, but it is probably better to epoxy them in place. In addition, it is probably easier to fit the steps before fitting the front deck, so my suggested sequence would be.

1. Epoxy front steps to deck.
2. Attach buffer beam to frames
3. Attach front deck, with steps to buffer beam.

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