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# **RAGSTONE MODELS**

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## **BR1/1a/1g/1h Tender Kit**

Version no: 0.1

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## Scope

This range of kits cover the main variants of the BR1 tender suitable for BR standard classes 4 (2-6-0), 5, 6, 7 and 9. This kit covers tenders for the following locos:

BR1 70000-24, 70030-44, 72000-9, 7300-49

BR1a 70025-30

BR1g 73050-2, 92000-9, 92203-50

BR1h 73053-64

## General notes

The parts list gives fret numbers for each component, items are identified on the fret by these numbers and cast parts are bagged according to the assembly section they apply to

Etched lines are on the inside of bends except in the case of parts folded back on themselves, where the instructions will state this.

Form any rivet detail on parts before folding/shaping, some parts have rivets on BOTH sides, so check carefully

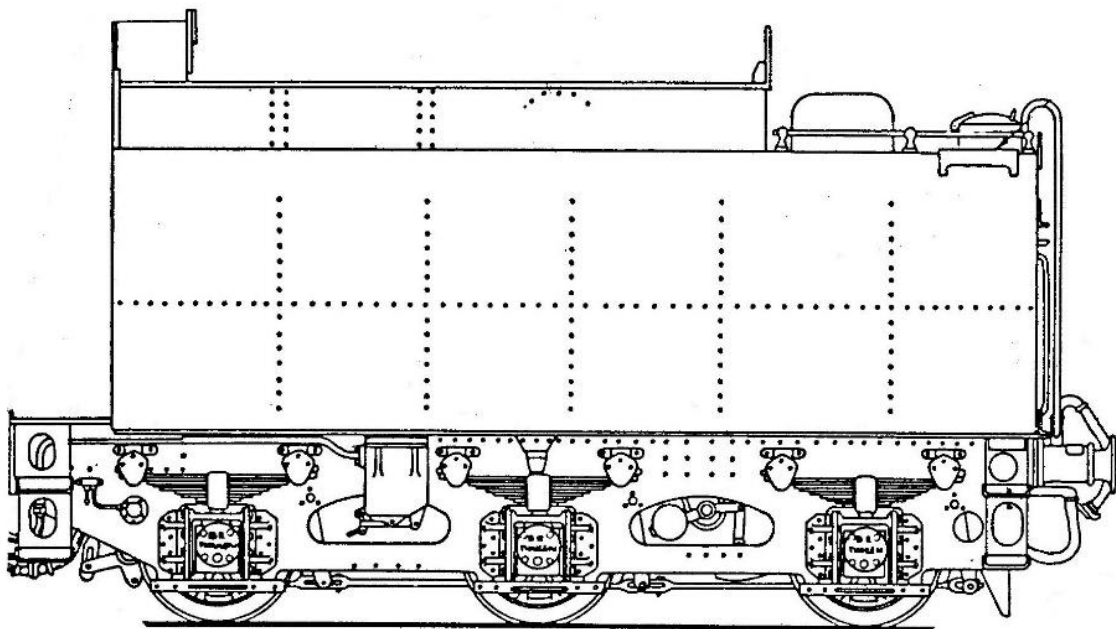
I cannot over-emphasise the importance of keeping the assembly square and true during construction. You won't be able to twist it back to shape afterwards.

Please take great care to avoid injury caused by sharp edges on the brass fret, particularly where components have been removed.

Cut parts from frets with sharp craft knife or similar and file cusp off all parts before assembly.

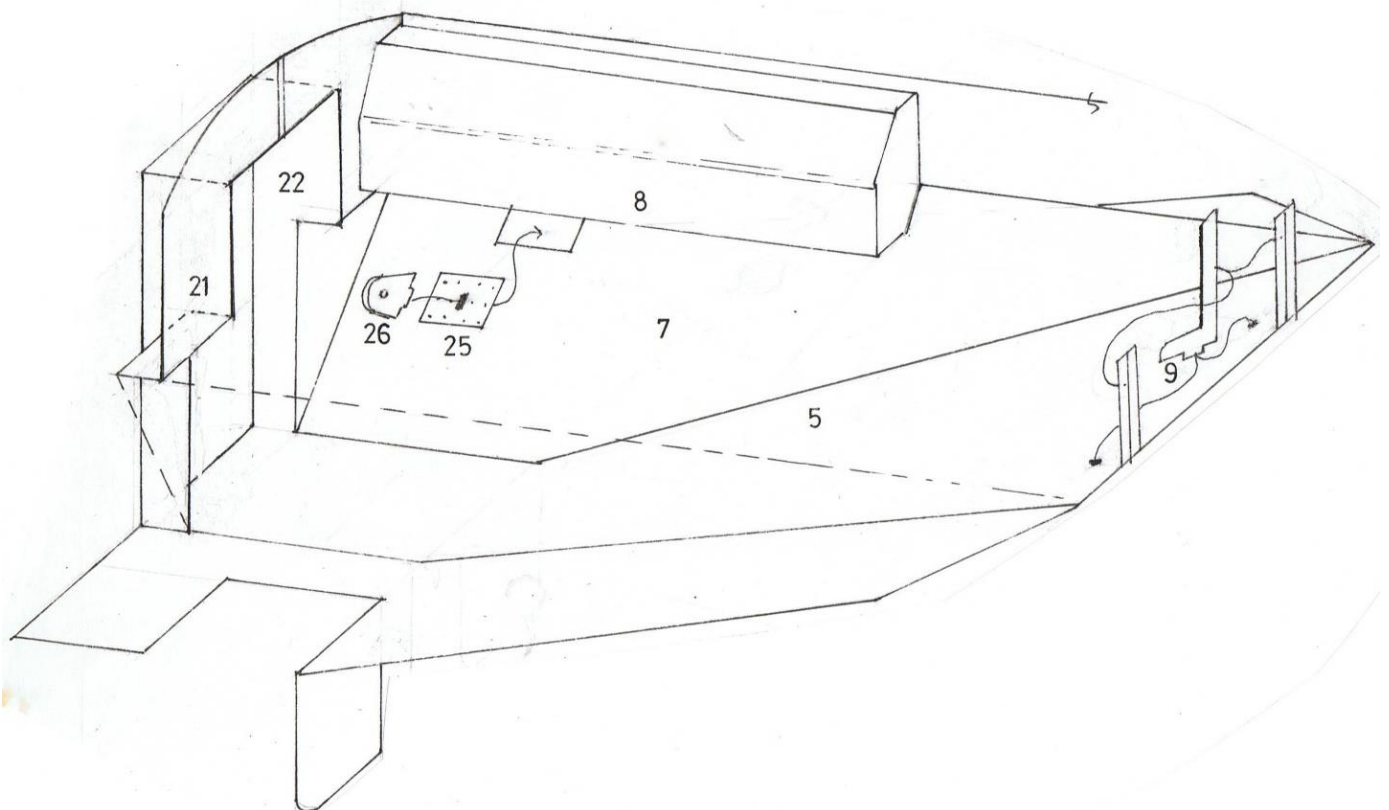
Our website has more info and a basic guide to kit building:

<http://www.ragstonemodels.co.uk/loco-kits.html>



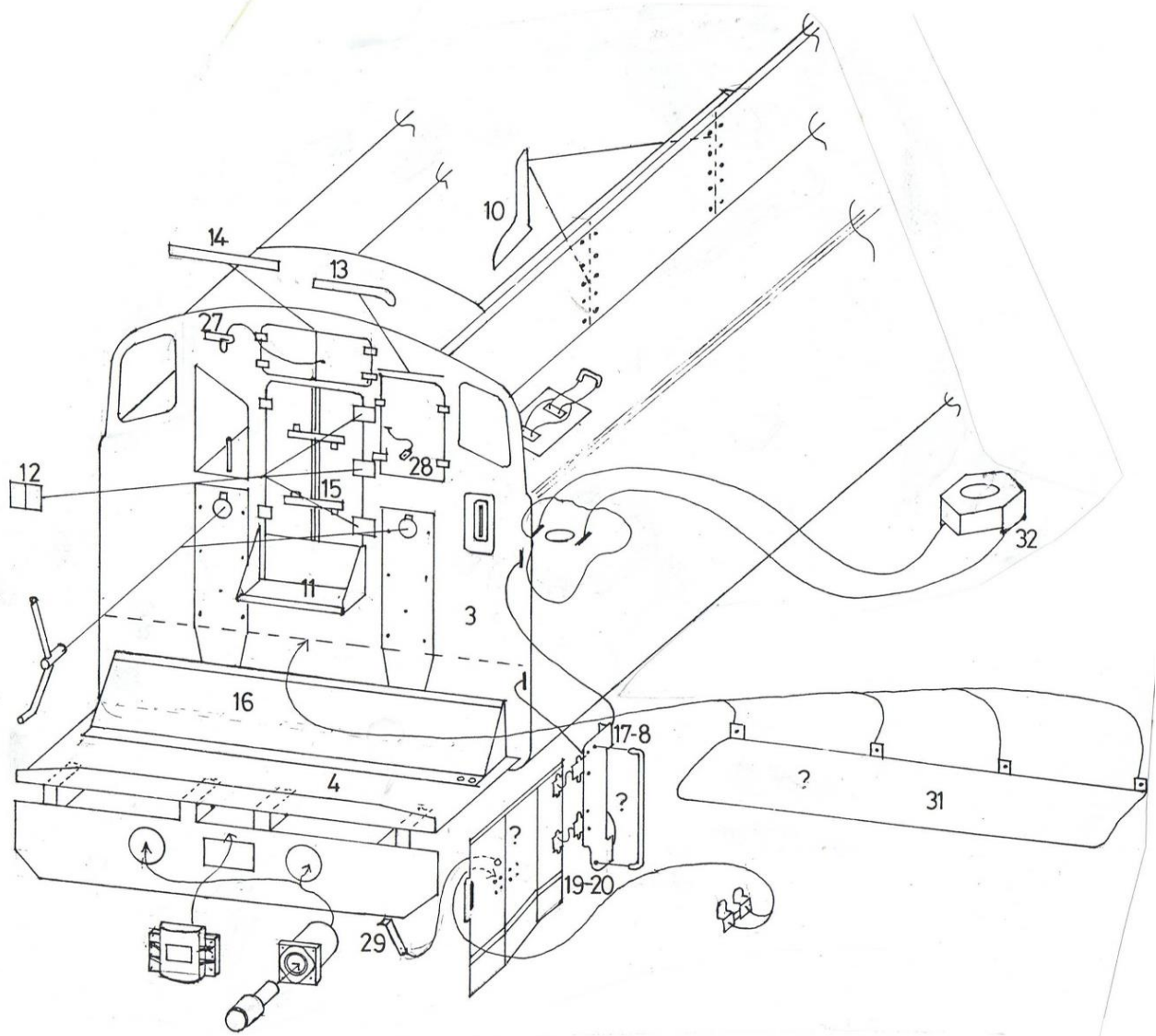
## Section E – Tender body

1. Form up main body unit (E1) and solder 2x 6ba nuts over the chassis mounting holes or, (if desired) solder 2x E32 nut retainers into slots provided – housing a 6ba nut in each unit. Note that tender rear E2 and tender front E3 locate in slots and the sides fit between them, these parts should be used to ensure the sides are formed to the correct shape
2. Form tender rear (E2) and add ladder bracket (E36) into the slots provided. Fit this assembly to the body so that the half etch areas on the rear top overlap. Note that the lower one should be trimmed if required to make a neat joint
3. Construct tender front unit from front plate (E3), side (E21 & E22) and rear (E23), do not fix to body yet as the bunker needs to be constructed first
4. Fold bunker floor (E5) and add side units (E6 & E7), sliding the assembly in to the body from the front and placing front unit in position to check alignment, E5 is approx. 0.5mm to long, so this amount should be removed from the front edge before assembly. I also found it easier to remove the rear support strips and add them later, having first attached E9



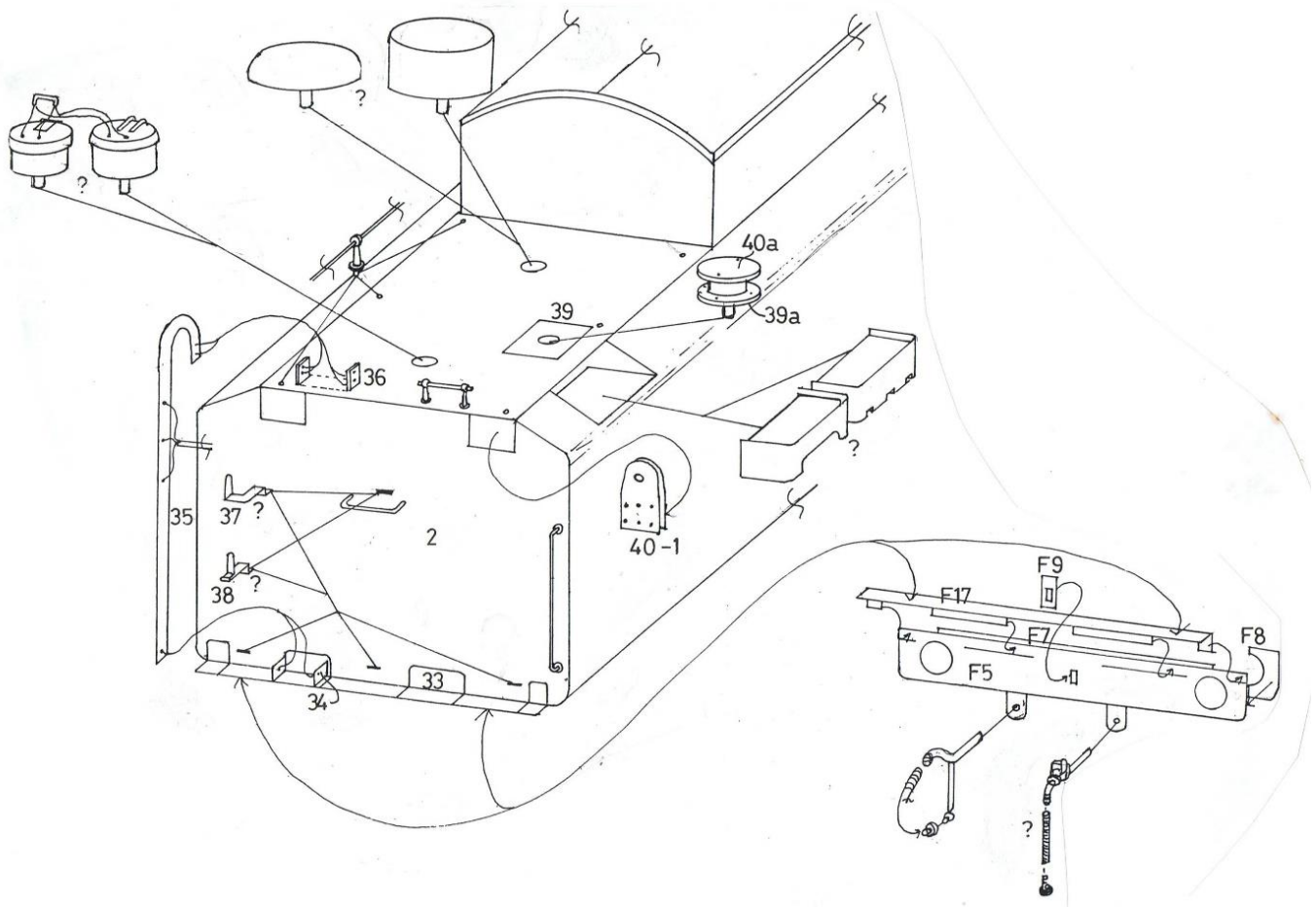
5. Form tool tunnel (E8) and fit to front plate locker assembly, checking alignment in bunker as you go. Again I found 0.5mm had to be removed from the front edge to ensure a snug fit. Fix a short length of 0.7mm wire to the hole at the front of E8 as shown in the diagram. Add internal supports (E9 & E10) to the inside of the bunker

6. Fold & fit shovel plate (E11), hinges (E12), to recesses in E3. The smaller hinges can be represented by microstrip fitted into the other recesses if desired. Add rain strips (E13 & E14) above the lockers and catches (E15, E27 & E28) to doors. Fit brake and scoop handles to holes



7. Assemble bunker lifting lugs (E25 & E26) and fix in recesses in bunker side. Assemble rear lift lugs (E40 & E41) and fit to tender rear
8. Fit 2 small lift handles (0.5mm wire) to the holes in the inspection cover on the LH side before fitting front plate assembly in place. Locker roof (E24) on the etch is not quite long enough so a strip of brass is included in the castings bag to enable a replacement to be fabricated
9. Fold and fit front plate (E4) to lugs on E1 and to slots on E3. Fold and add deflector plate (E16)
10. BR1g/1h tenders only – Add wing plates (E17 & E18) to slots in E3, fit fall plate (E31) using your loco to gauge the height. Add catches (E29 & E30) to doors (E19 & E20) and fix doors to wing plates

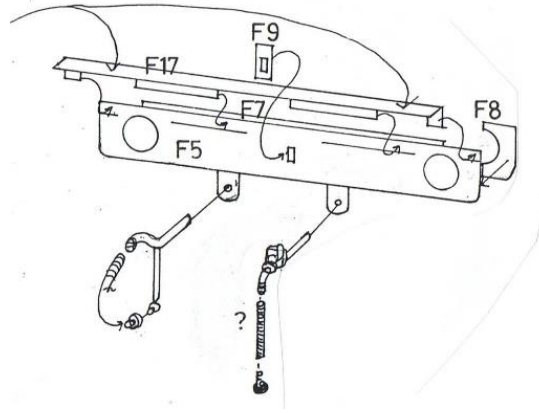
11. Fold ladder bracket and fit rear tank fixing plates (E33) to lower rear of the tank and add second ladder bracket (E34) to the slot
12. Two types of lamp iron are provided, normal (E38) and Western region (E37), fit the type applicable to your loco.
13. Add water softener base (E39), assemble softener filler from parts 39a/casting/40a and fit in place on base
14. Fit water pick up dome (Shallow for BR1 & 1h, tall for BR1a & 1g) and water filler.
15. Assemble rear ladder unit (E35) using 0.7mm wire, this fits between the brackets E33/34 & 36



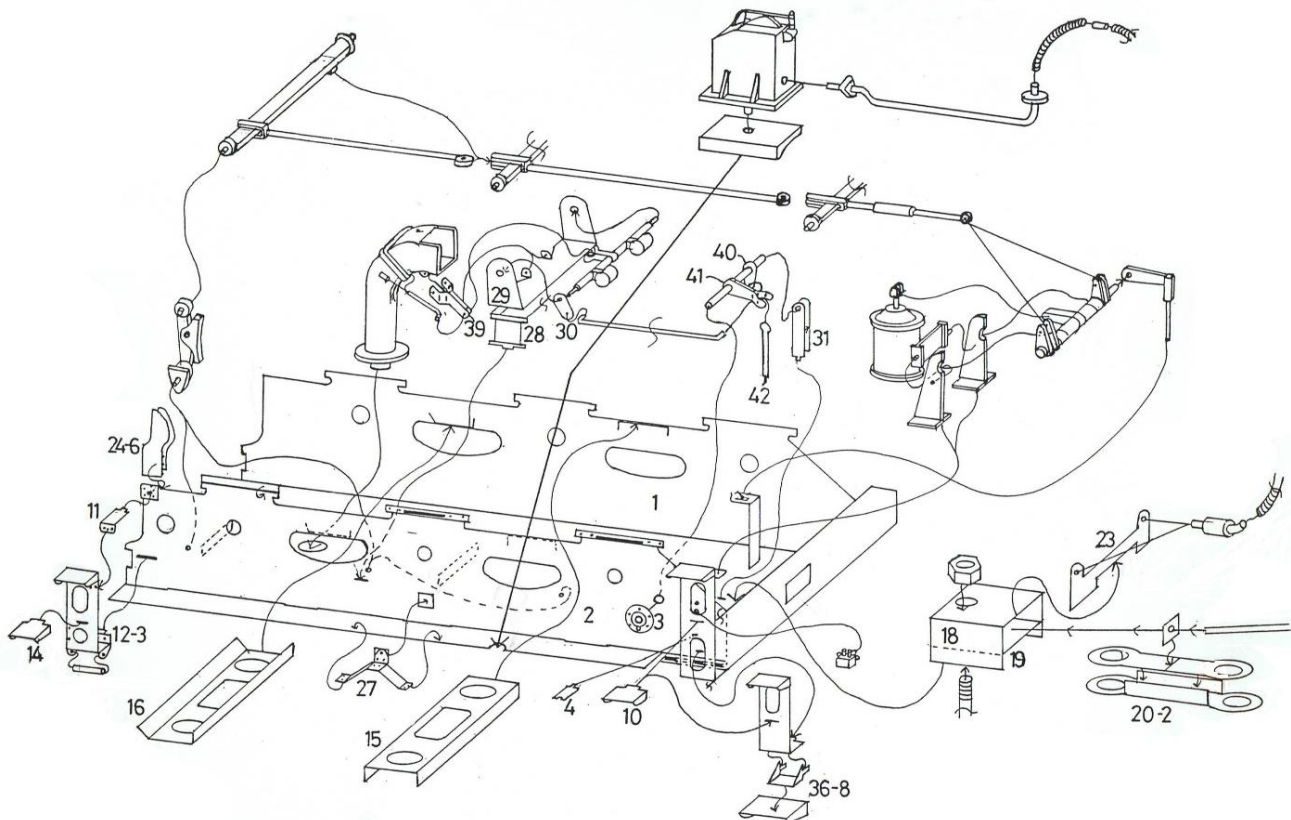
16. Fit handrails to top of tender rear using 0.7mm wire and medium handrail knobs

## Section F - chassis

- Form and fit main tender side frames (F1 & F2) into slots provided on the underside of E1. If building BR1k, remove the front step from the left hand side frame and replace with the alternative step assembly (F36-38). Add middle step (F10) to slots on front steps
- Fold and fit tank fixing brackets (F17) to buffer beam (F5) and add reinforcing parts (F6-8) behind it once fitted to the body. Fit coupler reinforcing plate (F9) as shown, then add buffers, couplings, vacuum and steam heat pipes (if appropriate).

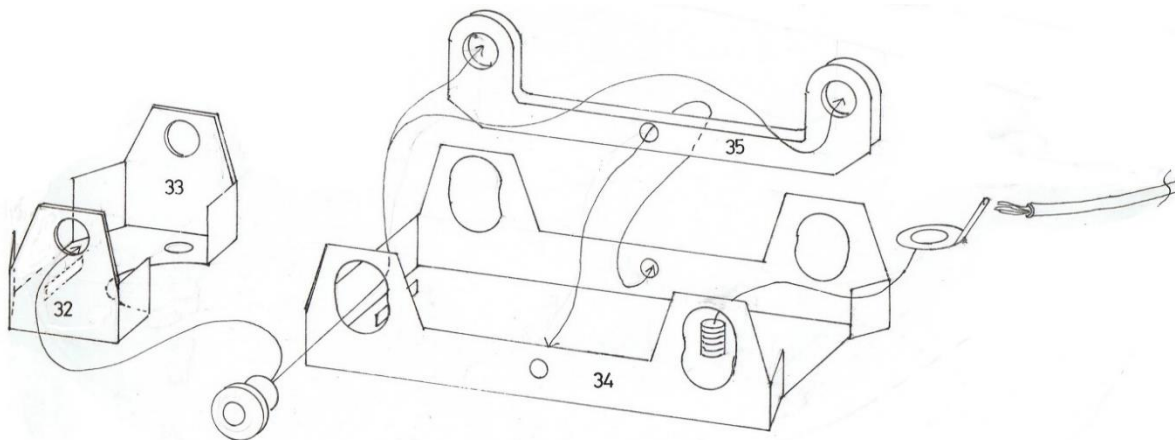


- Fit cast axlebox/springs to holes in side frames. Add 2x support brackets (F27) and two small lubricator boxes to side frames F1/F2



- Assemble water sieve units and fit 2x support struts (F4). Add delivery pipe castings

21. Assemble intermediate buffer units and fit to holes in front buffer beam, add buffing block over drawbar hole
22. Assemble and fit water scoop assembly (if applicable) using castings and parts F28-31 & F39-42 (F40/1 replaced by a casting). Add bearing detail (F3) to LH side frame
23. The rear cross stretcher (F16) can be fixed in place now, it will need trimming to accommodate the scoop/linkage. The front cross stretcher (F15) should be left until final assembly, but remember to fit this before finally fixing the brake pull rods
24. Assemble rear step units (F11-F14) note F11 need trimming slightly to leave room for the mounting bracket folded double to the frame. Guard irons (F24-26) can be laminated as double thickness, but I prefer using just the riveted layer. Fix these to side frames
25. Assemble brake cylinder/shaft assembly from castings to location marks on the underside of the tank. The cast brake shoe/hangers fit to the small holes in the side frames but to enable the inner chassis/wheels to be removed, do not fix the crossbeams in place, just leave them loose while you add the brake linkages and remove one assembled. They are finally fixed in place after painting etc.
26. Fold drag box (F18), add top plate (F19) and a 6ba nut (may require thinning) over the hole on F19 (not as shown in the diagram!) A drawbar (F20-22) is provided and once assembled if fixed in place with a short 6ba screw. This should be long enough to engage the nut, but not so long it distorts the bottom of the tank. Fit pipe bracket (F23) behind buffer beam over the dragbox
27. Form rear inner frame section (F32) adding inner frames (F33) and 2x frame bushes. The assembly locates on the rear tab folded down from the floor and is secured with a 6ba screw
28. Form front frame unit (F34), laminate 2 pairs of compensation beams (F35) and fix in place using 2.0mm brass rod, you could add a piece of tube over the rod/between the beams, but generally the flange of the bearings should keep them in place



29. The diagrams show wiring for 'American' style pick up, and a solder tag is provided to attach the wire from the loco if the method is chosen

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## Parts List

### Etched

#### Body

E1	Body
E2	Rear
E3	Front
E4	Front plate
E5	Bunker floor
E6	LH bunker side
E7	RH bunker side
E8	Tool tunnel
E9	Rear stanchion
E10	Side stanchion
E11	Shovel plate
E12	Hinges
E13	Rain strip
E14	Rain strip
E15	Bunker door catches
E16	Deflector plate
E17	LH wing plate
E18	RH wing plate
E19	LH door
E20	RH door
E21	Locker side
E22	Locker side
E23	Locker rear
E24	Locker roof
E25	Lift bracket
E26	Lift lug
E27	Locker door catch
E28	Locker door catch
E29	Door drop catch
E30	Door latch
E31	Fall plate
E32	Nut retainer
E33	Tank fixing plates
E34	Lower ladder bracket
E35	Ladder
E36	Top ladder bracket
E37	WR lamp iron
E38	M & E lamp iron
E39	Water softener mount plate
E39a	Water softener base
E40	Rear lift lug
E40a	Water softener cap
E41	Rear lift lug overlay

#### Chassis

F1	RH side frame
F2	LH side frame
F3	Scoop bearing overlay
F4	Delivery pipe bracket
F5	Rear buffer beam
F6	LH buffer beam backing
F7	Center buffer beam backing
F8	RH buffer beam backing
F9	Coupler reinforcing plate
F10	Upper front step
F11	Rear step bracket
F12	RH rear step
F13	LH rear step
F14	Upper rear step
F15	Front cross stay
F16	Rear cross stay
F17	Tank fixing brackets
F18	Dragbox
F19	Dragbox insert
F20	Drawbar
F21	Drawbar lamination
F22	Drawbar insert
F23	Pipe connector bracket
F24	Guard iron overlay
F25	RH guard iron
F26	LH guard iron
F27	Support bracket
F28	Water scoop shaft bracket support
F29	Water scoop shaft bracket
F30	Crank
F31	Front scoop shaft support
F32	Rear inner frame
F33	Rear inner frame overlay
F34	Front inner frame
F35	Compensating beam
F36	Alternative step – BR1k
F37	Step support – BR1k
F38	Top step – BR1k
F39	Scoop lift link (replaced by casting)
F40	Scoop front shaft crank (replaced by casting)
F41	Scoop front shaft crank (replaced by casting)
F42	Scoop lift rod (replaced by casting)



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## Castings

### Whitemetal

77751	Water pick up dome - tall	1
77752	Shallow water pick up dome	1
77753	Filler cap – dome top	1
77754	Filler cap – flat top	1
77756	Water softener body	1
77757a	Side steps (early type)	2
77757b	Side steps (late type)	2
77760	Axleboxes/springs	6
77761	Steam brake cylinder	1
77762a	Brake shaft hangars	2
77762b	Brake shaft stretcher	1
77763a	Brake shaft	1
77763b	Brake shaft bearing	2
77764	Handbrake crank	1
77765	Pull rods	3 pr
77766	Brake shoes & hangars	3 pr
77767	Brake cross beams	3
77768/69	Water sieve box & base	2 sets
77770	Water feed pipe	2
77771	Buffing block	1
STA2b	Water scoop trunk	1
STA2d	Water scoop rear shaft	1
STA2g	Scoop pull rod	1

### Lost wax brass/nickel silver

STA3	Buffers	1 pr
STA132	Screw coupling	1
STA106	Vacuum pipe	1
STA107	Steam heat pipe	1
STA5c	Oil boxes	2
STA2c	Water scoop front	1
STA2e	Scoop front shaft	1
STA2f	Scoop lift link	1
77251	Brake & water scoop handle	2
77252	Intermediate buffers	1 pr

### Other

STA912	Handrail knobs (medium)	8
STA907	Frame bushes	6
STA931	Buffer springs	4
STA930	Coupling spring	1
STA919	Split pin	1
STA922	Solder tag	1
	0.7mm wire	
	2.0mm rod	
	6ba Screws & nuts	3

### Parts required

7839BR	Slaters wheels	3 pr
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