
RAGSTONE MODELS

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LMS 4000 gallon Stanier Tender Kit

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Scope

These kits cover the two main types of Stanier 4000 gallon tenders of 10 ton and 9 ton coal capacity respectively

The 10 Ton kit constructs de-streamlined welded tender attached to Princess Coronation class Pacific's attached to 6220-6229, 6235-6252.

It is possible to modify it to cover the other types:

- non-streamline welded tender attached to 6230-34 - requires modifications to front edge of sides
- part riveted tenders attached to locos 6253-5 - requires rivets adding to the sides etc.
- part riveted tenders attached to locos 6256-7 - requires modifications to front edge of sides and rivets adding to the sides etc., plus roller bearing axleboxes

The 9 ton kit will build a fully riveted, welded or part welded tender, as fitted to many Stanier design locos

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.

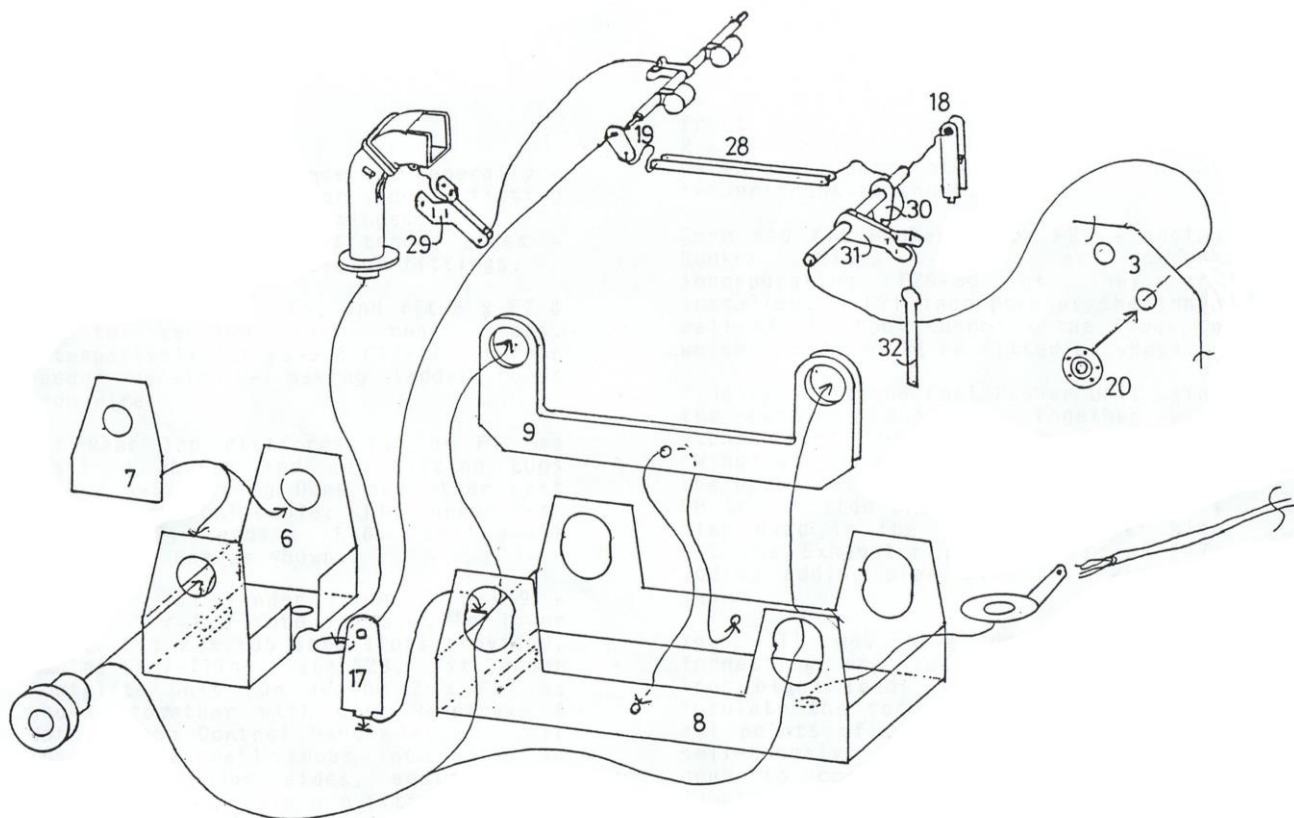
Cut parts from frets with sharp craft knife of similar and file cusp off all parts before assembly.

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

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

Section E - Chassis

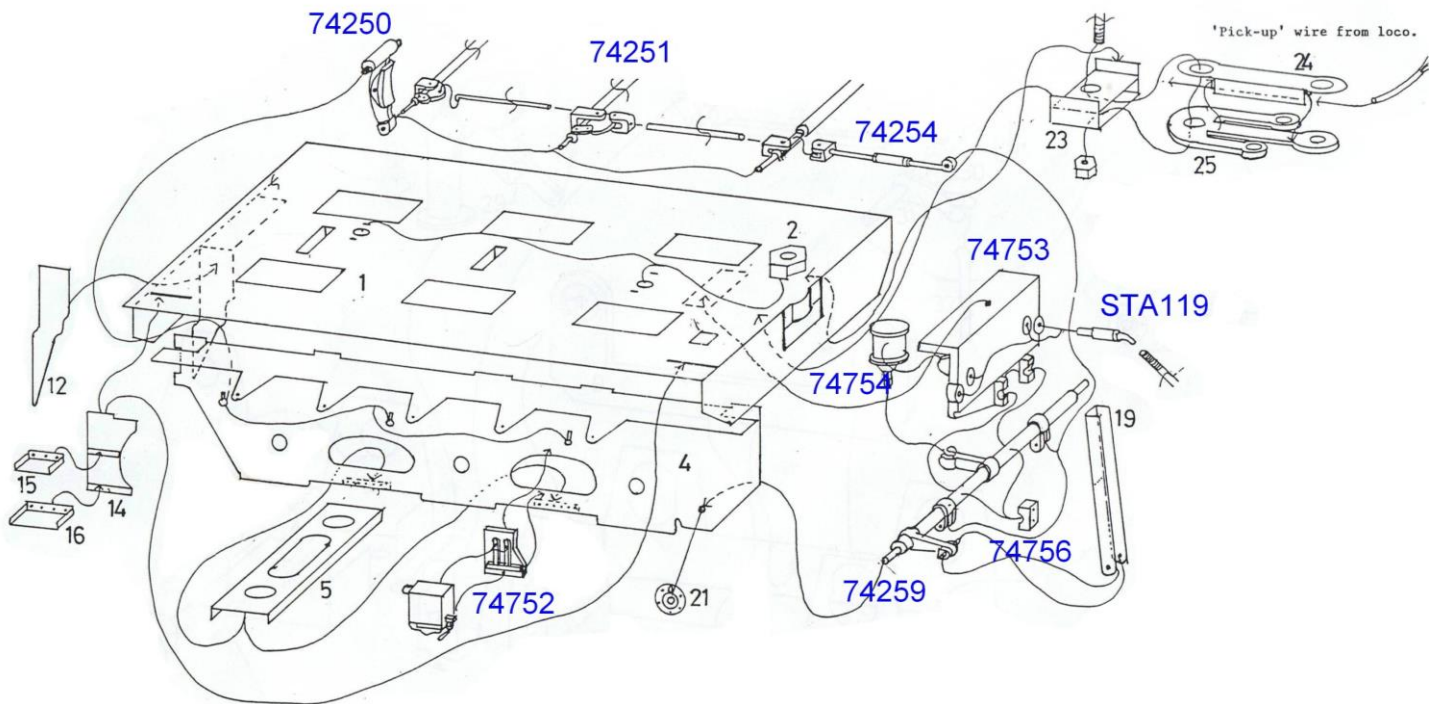
1. Solder 2x 6ba nuts over the chassis mounting holes on main footplate E1 or, (if desired) solder 2x E2 nut retainers into slots provided – housing a 6ba nut in each unit. Form and fit side frames (E3 & E4) into slots on the footplate
2. Form rear inner frame section (E6) adding inner frames (E7) and 2x frame bushes. The assembly locates on the rear tab folded down from the floor and is secured with a 6ba screw
3. Form front frame unit (E8), laminate 2 pairs of compensation beams (E9) 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



4. Fit water scoop shaft brackets (E17 & E18) to slots provided in footplate E1. Assemble and fit water scoop from castings and linkage (E19b & E28x2) Parts E29-32 are replaced by castings. Fit bearing overlay (E20) to the 'odd' hole in the LH frames (compare the frames to confirm which)
5. Form guard iron/buffer beam (E11) and fit rear buffer beam (E10). Overlays (E12) can be added to the guard irons if required. Form lower tank securing bracket (E13) and fit to recesses in E11. Fit buffers, couplings, vacuum and steam heat pipes
6. Fit buffering plate (E22) and reinforcing plates (E26 & E27) to front buffer beam. Fold up dragbox (E23) and solder a 6ba nut to the top (opposite to that shown on the diagram), then fix behind buffer beam. Assemble drawbar (E24 & E25) and fit to dragbox with a

short 6ba screw. This should be long enough to engage the nut, but not so long it distorts the bottom of the footplate

- Fit brake shaft bearing overlays (E21) over holes in the front of the frames, assemble cast brake cylinder and mounting plate unit and fit this in place, adding the cross shaft to the frames first to aid location. Fit bearing covers on the shaft, in line with the bearing pads on the mounting plate. Brake pull rod (E19a) fits to the brake shaft as shown in the diagram

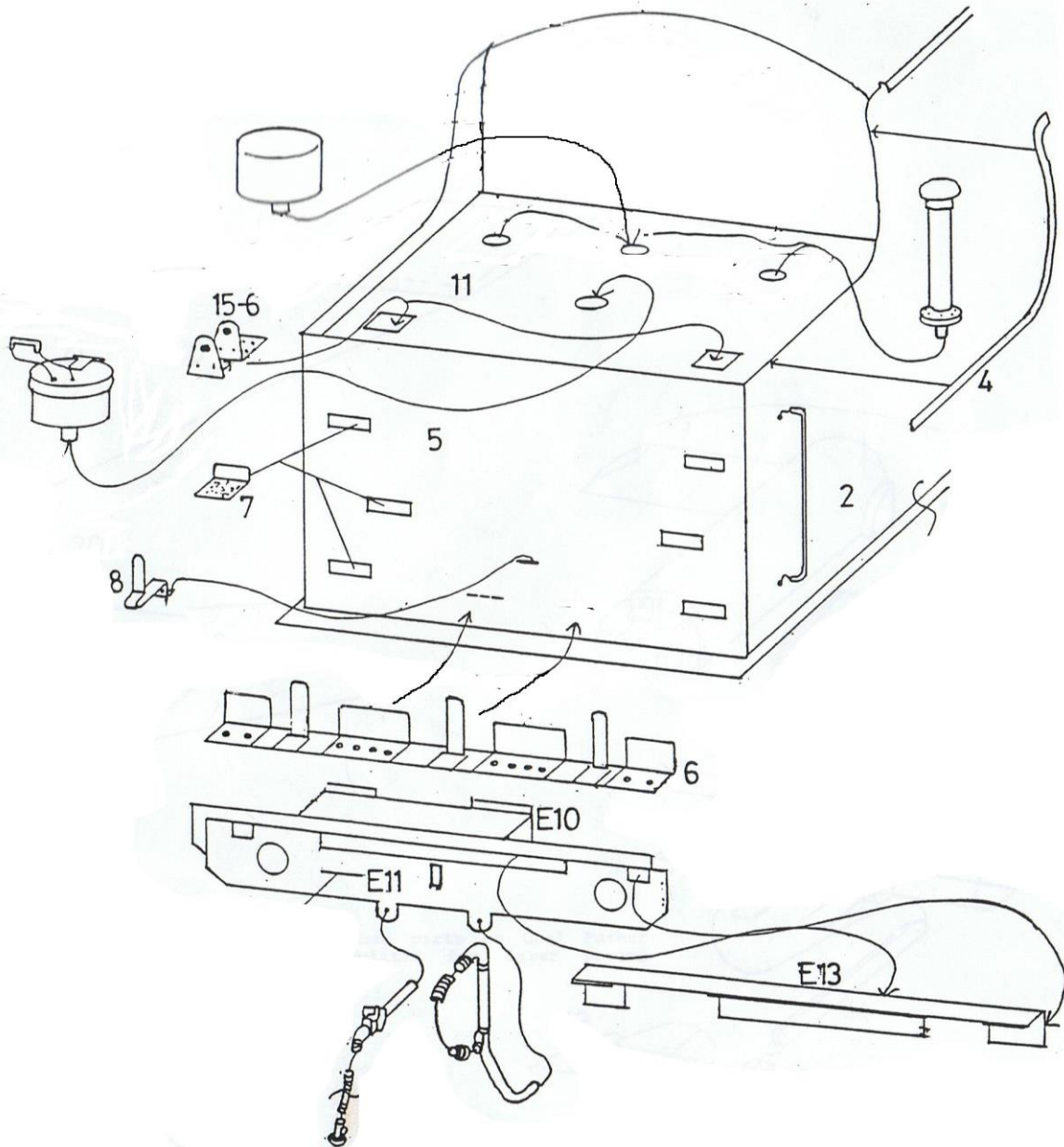


- Assemble step units (E14-16) and fit to slots in the footplate (note, ex streamlined 10 ton tenders have a ladder at the rear, and only 2 steps - at the footplate end).
- Fit cast water delivery boxes if required (applicable to part welded tenders constructed after 1947 only), note that the mounting brackets are handed. Fit axlebox/spring casting to holes in frames
- Fit brake shoe/hanger castings to holes in the frames, the 3 cross beams fit in these, but should not be fixed as they need to be removable. Prior to placing in the hangers, they should be drilled 0.7 mm for the pull rods (made from 0.7mm wire). The front pull rod (casting) should be left loose in the crossshaft, but fixed to the cross beam
- Cross braces (E5) – the rear one can be fixed in place, but the front one left until after painting/assembly when it should be glued in place
- 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

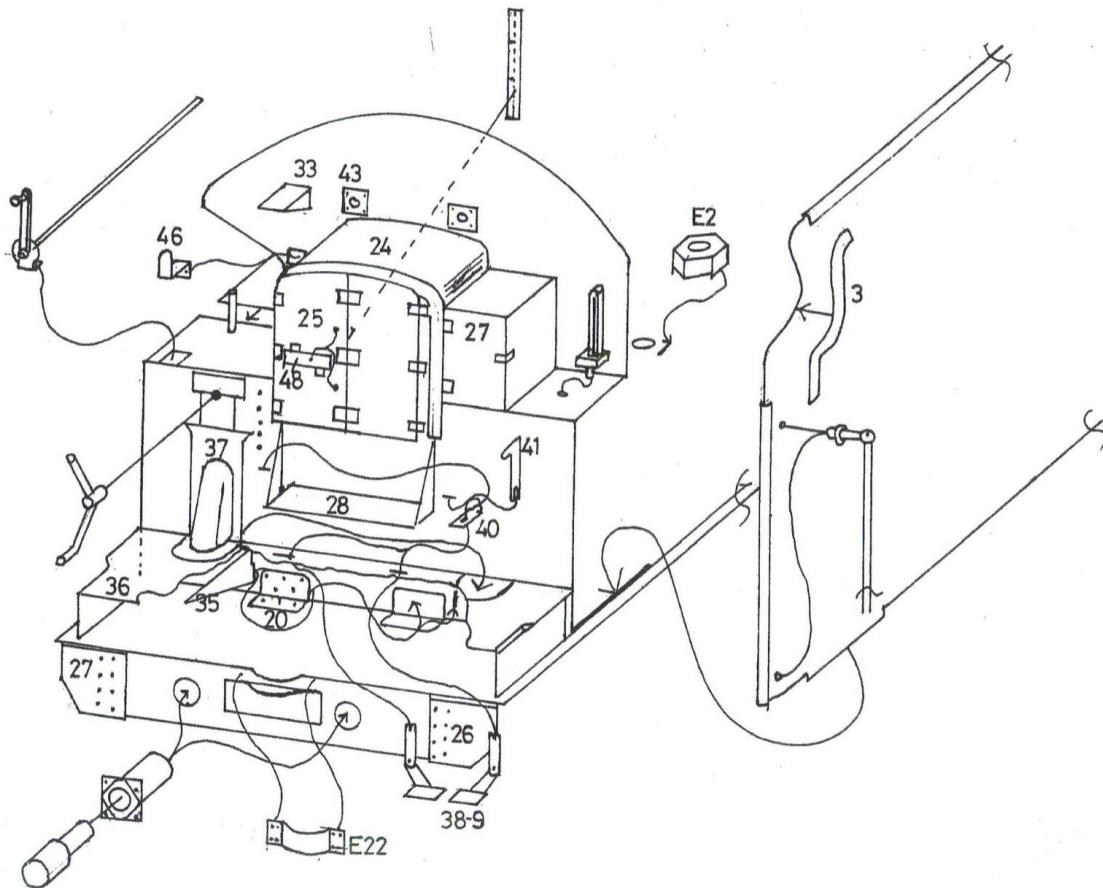
Section F (Tank)

Riveted tenders (obviously) have all the rivets formed, for welded tenders no rivets. Part welded tenders have the center horizontal and all vertical rows formed, except the closely spaced end ones that connect the two horizontal rows top & bottom. If in doubt, check photos

13. Form/rivet if required, and fit tender sides (F1 & F2). Rivet if required and fit tender rear panel (F5), this part may require filing slightly to be a snug fit between the sides
14. Fold and fit tank mounting brackets (F6) to F5, fit 6 steps (F7) and lamp iron (F8) to rear
15. Fold and fit rear tank top (F11)), this part may require filing slightly to be a snug fit between the sides, fit lifting lugs (F15-6), adding water pick up dome and other cast fittings as applicable. Bunker rear divider plate (F17) is incorporated into F11



16. Form and fit tender front plate (F19), this part may require filing slightly to be a snug fit between the sides - adding 2 x fixing bracket (F20) into recesses in lower front. Fit 2 x footplate supports (F35) into slots provided and fit shoveling plate (F28). Fit tender footplate (F36) adding 2 x pull rod cover plates (F37) as shown, together with cast covers, handbrake & water scoop control handle assemblies.
17. Add lamp cover (F33), and lamp bracket (F46). Add water valve controls (F38-41) to front of tender - assembling as shown. Form and fit coal access tunnel (F24 & F25) as shown, and fit to tender front, adding bunker doors (F26), 2 x catches (F48) and draught strip (F47) to the rear of F25. Fold and fit locker Unit (F27). Fit cast water gauge into hole on LH side of tender front as shown
18. Fit handrail knobs into holes in front of tender sides, adding wire. Plain wire handrails are fitted into the rear side holes

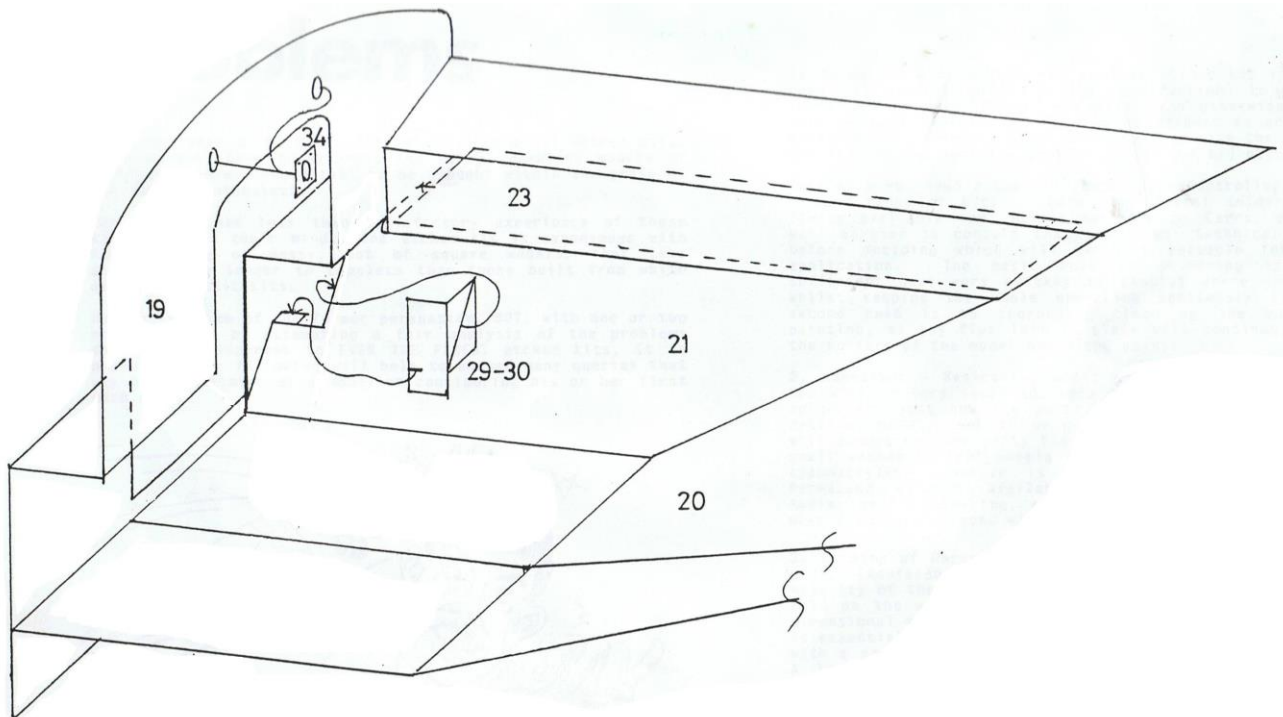


19. Add 4 x lifting ring (F34) to both front and rear of F19 as shown

20. Form and fit bunker floor (F20), this part may require filing slightly to be a snug fit between the sides - adding bunker sides (F21-2) as shown, incorporating pull rod covers (F29-30) as they are installed.

21. Form and fit tool tunnel (F23 – two parts) to bunker

22. Fit beading to top of sides & rear using half round wire, add a reinforcing strip (F50) to top of front plate F19 and bunker divider plate F17



Parts List

Etched

Chassis

E1	Tank baseplate	E17	Scoop balance shaft bearing
E2	Nut holder	E18	Scoop front shaft bearing
E3	LH side frame	E19a	Hand brake pull rod
E4	RH side frame	E19b	Scoop shaft crank
E5	Fame spacer	E20	Scoop front shaft bearing overlay
E6	Rear inner frame	E21	Brake shaft bearing overlay
E7	Rear inner frame reinforcing	E22	Rubbing plate
E8	Front inner frame	E23	Dragbox
E9	Compensation beam	E24	Loco/tender coupling
E10	Rear buffer beam/guard iron	E25	Loco/tender coupling
E11	Bufferbeam overlay	E26	Front buffer beam reinforcing plate
E12	Guard iron overlay	E27	Front buffer beam reinforcing plate
E13	Bufferbeam angle	E28	Scoop pull rod
E14	Step back plate	E29	Scoop lift link (replaced by casting)
E15	Upper step tread	E30	Scoop front shaft crank (replaced by casting)
E16	Lower step tread	E31	Scoop front shaft crank (replaced by casting)
		E32	Scoop pull rod (replaced by casting)

Body

F1	LH tank side	F26	Coal doors
F2	RH tank side	F27	Cupboard
F3		F28	Shovel plate
F4		F29	Handbrake linkage cover
F5	Tank rear	F30	Scoop linkage cover
F6	Lower angle/lamp irons	F31	
F7	Rear step	F32	
F8	Top lamp iron	F33	Lamp cover
F9		F34	Lifting hole reinforcing plate
F10		F35	Footplate bracket
F11	Tank top (with F17 bunker rear)	F36	Tender footplate
F12		F37	Handbrake/scoop cover plate
F13		F38	RH Water control rod
F14		F39	LH Water control rod
F15	Lift lug backing plate	F40	Bracket
F16	Lift lug	F41	Lift handle
F17	See F11	F42	
F18		F43	
F19	Front plate	F44	
F20	Tank front bracket	F45	
F20a	Bunker floor	F46	Lamp bracket
F21	RH bunker side	F47	Coal door cover plate
F22	LH bunker side	F48	Coal door latch
F23	Fire iron tunnel floor – 2 parts	F49	`
F24	Coal doors top cover	F50	Reinforcing strip
F25	Coal doors frame		

Note: gaps in the number series are used for extra parts in our 10 ton tender kit

Castings

Whitemetal

74751	Axlebox & spring	6
74752a	Water sieve	2
74752b/c	Water sieve base (LH & RH)	2
74753	Brake shaft /cyl. bracket	1
74754	Brake cylinder	1
74756	Brake shaft bearings	2
74757	Brake shoe & hangar	6
74758	Water pick up dome	1
74759	Vent	2
74760	Water filler	1
74763/64	Brake/scoop shaft cover	2
74766	Oblong vent (9 ton only)	2
STA2b	Water scoop trunk	1
STA2d	Water scoop rear shaft	1

Parts required

7851ST	Slaters wheels	3 pr
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Lost wax brass/nickel silver

STA141	Buffers	1 pr
STA130	Screw coupling	1
STA105	Vacuum pipe	1
STA107	Steam heat pipe	1
STA2c	Water scoop front	1
STA2e	Scoop front shaft	1
STA2f	Scoop lift link	1
STA5c	Oil box	1
74251	Brake cross shafts (3)	1 set
74254	Brake pull rods	2
74256	Water gauge	1
74258	Brake & water scoop handle	2
74259	Brake shaft	1
77252	Intermediate buffers	1 pr

Other

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