

LMS STANDARD TENDER - 3,500 GALLONS FLUSH RIVETED TANKS

THE PROTOTYPE

This kit enables the builder to construct a model of the standard LMS 3,500 gallon tender, the design of which is attributed to the Fowler regime. This version includes parts for the beaded flush-riveted tank, and covers the two major design variants.

CONSTRUCTIONAL VARIATIONS

TOOLBOXES

The initial design featured a row of toolboxes across the front fender, with a small access hole to the coal space (referred to in the instructions as low-fronted). Difficulties in pulling the coal forward from the rear of the tender while the train was in motion led to the development of high coal doors with toolboxes either side (described officially as a coal hood), and most 3,500 gallon tenders built thereafter were so fitted (referred to as high-fronted). Coal hoods were also fitted to Stanier and BR designs.

COAL RAILS AND AIR VENTS

Initially, flush-riveted tenders were built without coal rails. However, the requirement for increased coal capacity for longer runs and larger locomotives such as the "Crabs" and "Royal Scots" led to new tenders being built with coal rails, and the addition of coal rails to tenders already in service. They should only have been fitted to high fronted tenders, but there may have been exceptions.

In theory, tenders built with coal rails had the air vents fitted aft of the rear fender, while those modified had them moved, to protect against damage through mechanical coaling. However, in many cases this was not so, and as usual, the only way to be sure is to refer to photographs of the particular locomotive and tender being modelled, in the period to be depicted.

WATER SCOOPS

Some tenders were built without water pick-up gear, while many tenders have had scoops and various parts of the operating gear removed in preservation. Tenders without scoops were generally used with older goods locomotives, such as classes 4F 0-6-0, 7F 0-8-0. If a scoop was not fitted, nor was any of the operating gear, or standard, although the dome appears always to have been fitted to the top of all tanks.

LIFTING LUGS

Initially, flush-riveted tenders were built with lifting lugs fixed to the top of the tank and coal chute. During the 1930s (it is believed) this design was modified, and instead the front and rear fenders were pierced with 2.5" holes, surrounded by reinforcement pads on each side. It is believed that tenders were not modified, and did not appear with both types.

REPAIRS AND REPLACEMENTS

VENT BASE REINFORCEMENT

Because of damage, probably from corrosion and mechanical coaling, the air vents and surrounding tank top seem to have suffered as with the later Stanier designed tenders. Rectangular plates were often welded over the damaged plate-work, and new or repaired vents fixed on top.

TANK FILLERS

These seem to have ranged from second-hand dustbin lids to BR standard design. The only consistent feature was the size; otherwise, the most common type appears to have been the one enclosed, although variously mounted with the hinge towards the front or the rear. Some were un-hinged, having a centrally mounted handle. Again, photographs should be referred to.

THE MODEL

RIVETS

Some of the detailing strips feature very small rivets, and because we are working at the limits of etching technology, some of these may all but disappear during the etching process. While this may at first seem to be a problem, research on the prototype has shown initially surprising variations in rivet size, especially in and around the coal space. This is most probably explained by the corrosive effects of wet coal dust, not to mention impact damage brought about by mechanical coaling - dropping up to five and a half tons from twenty to thirty feet is hardly the best way to treat any sort of machinery...

COAL RAILS

If coal rails are to be fitted, the beading atop the tender sides will require trimming to clear supports. The best way to do this is to use the edge of a thin rectangular ("slotting") file, preferably fine cut ("second cut"). In the instructions, although it may seem awkward, we suggest that these slots are cut after most of the assembly is completed, to ensure an accurate fit. Additionally, the coal rails are very susceptible to damage, and fitting them at the end of construction would help to avoid accidents. Construction of several prototypes has shown this to be the case, but should the modeller may choose to fit the rails earlier in the assembly sequence, it is recommended that the front and rear rails are fitted first to ensure accurate alignment at the corners.

CAB DOORS

Some tenders were fitted with cab doors. These were generally tailored to the locomotive and tender concerned, and varied in height and length. We have included two options, the larger pair being suited to models where the coupling gap between loco and tender is wider. Doors can be assembled to pivot if desired.

FRONT PLATFORM (FOOTPLATE)

We have included parts to enable construction of two different heights of front platform. As a general rule, the higher will match the Jubilee, Royal Scot, Baby Scot (Patriot) 4-6-0, 8F 2-8-0 and 4F 0-6-0 classes. The lower matches the Midland 4-4-0 classes.

ETCHED CRANKS

We have included brass castings for brake and scoop crank shafts, but in case the modeller should prefer to assemble their own, we have included etched cranks and levers. Parts are described in the parts list, but are not referred to in the instructions.

NOTES BEFORE STARTING

We have included in this kit almost all the parts visible on the prototype tender - from above and below. However, you may choose to omit some of the details, such as strengthening angles or rivets in the coal space. While most of the smaller parts may be so omitted, please note that the internal parts (e.g. division plates) of the tank are structural, and if omitted will result in an inferior model.

Where the information has been available, we have included all known variations, but fortunately most components did not vary from the initial design.

The model may be built without alteration for EM and 18.83mm Gauges, while provision is made for 00 Gauge. The instructions refer to the alterations required.

ASSEMBLY INSTRUCTIONS

FRAMES

Push through rivets on mainframe [A1], and for 00 remove the narrow strips from the inside edge of each wheel cut-out.

Drill through the frame on one side (a small circle is etched on the inside, near the brake shaft hole) for the water scoop shaft, noting that it is normally fitted on the driver's side of the tender. Additionally, some types of sprung buffer may require the removal of the small rectangles marked at the rear of the mainframes. Fold the frame to shape, starting with strips adjacent to the front cut-out, then the drawbeam, bufferbeam, sideframes, and tank support brackets. The folds adjoining the centre wheel slots may be strengthened with a fillet of solder, although the other folds should be left for the moment.

Fix in place brake shaft bearing plates [A43] and scoop shaft bearing plate [A44].

Fold up front drag-box [A2], noting that some fold lines have been slotted to make folding easier; these can be formed last.

Fix the front coupling nut in place, noting that the flange sits in the half-etched rebate. For 00 gauge, remove 1.5mm from the edges of the plumbing plate [A3]. Fold it up, and fix to the rear of the dragbox. Make sure the orientation is correct! Fold up brake shaft frame [A4], and fix to drag-box assembly. Clear the holes for front buffer tails if necessary, using a 0.5mm drill. Check the fit in the mainframes, and fix in place.

Fold up guard-iron frame [A5]. For 00, remove edges of drag-box upper [A6] and lower [A7], where marked by half etched lines. Fold up drag-box upper [A6], assemble with [A5] and [A7], and fix together. Check the fit in the mainframes, and fix in place.

Fix in place drawbeam [A8] and bufferbeam [A9] overlays. Fit turned buffer stocks to bufferbeam.

Fold up left [A10] and right [A11] strengthening angles, and fix to frames. Please note again that the rear ends may require trimming to clear sprung buffers. Clean up axlebox castings (1), and fix in place. Fix brake cylinder (2) and brake shaft (3) in place.

STEPS

Fold up two front step brackets [A12], reinforce the folds with a little solder, and fix to frames assembly. Push through rivets, and fold up front [A13] and rear [A14] step plates. Check the fit on frames assembly, trimming as and where necessary.

Push through rivets on front upper [A15], rear upper [A16] and lower [A17] step treads, fold up, and fix to step plates. Fix short pieces of 0.45mm wire to the tender frames at the rear, bend to shape to form rear step bracing, and trim the ends.

Fit the front and rear step assemblies to the mainframes, and if desired fix in place. Alternatively, the steps can be left loose to facilitate painting (and lining) of the frames etc.

INSIDE FRAMES

For 00 gauge remove the marked strip from the inside frame unit [A18], fold up and reassemble. Otherwise, fold up inside frames [A18], and spring wire plates. Form and fix in place six "L"-shaped brake support pins using 0.45mm wire. Ensure that they do not project far enough inside the frames to interfere with spring wires yet to be fitted. Check the fit of axles in their slots, cleaning with a small round file if necessary. Note that axles should be free to move vertically (along the slot), but not horizontally (across it).

Fold up spring wire tabs on bearing plates [A19], and fit to inside frame unit, locating temporarily with wheels and axles.

Bend the half-etched tabs around the sides of axle guides, and check that bearing plates still move freely. Remove the wheels and axles.

Cut two 60mm pieces of 0.33mm spring steel wire, and bend 2mm at one end of each to 90 degrees. Slide the wire into position from the front, passing through the wire tabs on bearing plates, and the centre holes in the spring wire plates folded down from the floor of the inside frame unit. (Note that if tender is to be heavily weighted, the lower holes may be used.)

Fold up choice of well tank, EM/18.83 [A24] or 00 [A25], and fix in place.

SCOOP GEAR (IF REQUIRED)

Fold up front scoop shaft bracket [A31], and retaining in place front scoop shaft (4), fix to bottom of front drag-box [A2].

Front scoop shaft is over-length, and should not be trimmed until position of pull-rod is determined on assembly of inner and outer frame units.

Fix together scoop pull-rods [A34, A35]. For authenticity, the rods can be twisted through 90 degrees, 4mm from each end.

Fold up left [A32] and right [A33] rear scoop shaft brackets, and fix in place, retaining but not yet fixing scoop weigh-shaft casting (5) and assembled pull-rods, which should be on the same side as front scoop shaft - i.e. the drivers side. Fix water scoop upper (6) to well tank, and form and fix two bracing wires from 0.45mm wire. Fix scoop lower (7) to scoop upper, and to the link on weigh-shaft casting. So that scoop pull-rod can be left free to pivot, to ease alignment of the front when inside and outside frames are assembled, it is suggested that the weigh-shaft is fixed to the brackets only at one end.

Form half-etched end of deflector plate [A37] around the piece of 1.2mm wire supplied. Fold up restraining straps [A38], fix to deflector plate, and form curved sections around a piece of 0.45mm wire.

Fit wheels and axles to inside frame assembly, using washers [A20] and half-washers [A21] to restrict side-play. For optimum running, it is suggested that side-play is only allowed on the centre axle, to reduce the risk of wheels shorting on brakes etc. Note that although the assembly may not run very freely, when the weight of tender superstructure is added and the springs are compressed a little the running will improve markedly.

BRAKE GEAR

Fix together pull-rod halves [A29, A30]. Fold brake shoes [A23] around hangers [A22] and fix. Short pieces of 0.45mm wire may be added, and trimmed short, to simulate the pins which fixed the shoes to the hangers on the prototype.

Fix two brake hanger assemblies to the rear support pins (fixed to inside frames), aligning with wheels, and allowing for movement due to springing.

Cut three 25mm pieces of 0.45mm wire to form brake cross-ties. Pass one through the holes at the bottom of the rear brake hangers, retaining the rear ends of the brake pull rods, noting the angle at the front of the pull-rods. Fix the wire to the hangers, leaving the pull-rods free for the moment.

Fit another two brake hanger assemblies to the front pins, and fit a cross tie, again retaining the pull-rods. Align the brake shoes with the wheels, and fix the ends of the hangers to the pins and the cross-ties. Repeat for the centre axle, and check the assembly for clearances. Trim mounting pins and cross-ties flush outside brake hangers

Fix water deflector plate [A37] and straps [A38] to scoop weigh-shaft and centre brake cross-tie.

FINAL ASSEMBLY

Fit inside frame assembly to outside frame assembly, checking for clearances. Note that small tabs on top of the inside frames locate in slots. These tabs should be trimmed if necessary, to avoid distortion of the front step plate [A13] or footplate (which is attached to the tank).

Locate the brake pull-rods on brake shaft, align the rods parallel with the frames, and fix them to the cross-ties. Locate the scoop pull-rod on the front scoop shaft, and trim the shaft to length. Fix the pull-rod at the rear end.

Fix vacuum pipe (8) and - if required - steam pipe (9).

NOTE; the following steps may be completed after painting, preferably with the inside and outside frames separated.

Clean up front buffer castings (10), fit springs and fit to frame assembly. Bend over the tails to retain. Repeat for rear buffers. Fit rear coupling and spring, and use a short piece of 0.45mm wire to retain the spring.

Push through rivets, fold up and fix in place front [A41] and rear [A42] frame stretchers

Fold up front coupling washer [A40], and fit to coupling [A39]. Check approximate length of coupling required, trim, and bend up the open end to retain washer. Fit to front of tender with steel screw and spacer, and check on the track with its locomotive. The washer can slide until the required coupling length is obtained, when the screw can be removed from the front of the tender, the coupling extracted, and the washer soldered in place.

TANK / RUNNING PLATE

Remove loose components from the cut-outs in tank frame [B1], and fold up. For a low-fronted tender, do not fold out front step plates, and remove shovelling plate fillets from dummy tank front. Fix shovelling plate supports to the inside of the tank front with a little solder. Spring into position front cross-stay [B2] and division plates [B3, B4, B5], but do not fix yet.

If coal rails are to be fitted, push through rivets on tank [A6], and (again after removing loose components from the cut-outs) fold up the sides. Fix a 10BA nut over each hole in the floor, taking care not to block the threads with solder. Push through rivets on platform [B7], and fix in place joint lapping plates [B8]. Leaving the rear loose for the moment, fix tank to platform, and fix to the tank sides the beading overlays [F5], and tidy with a fine file along the front and rear edges. Fold up edges of tank rear, fold rear into position between sides, and fix in place.

Slide tank frame assembly into position in tank, noting that the edges of the dummy front bulkhead fit in slots in the tank sides. Fix tabs in the slots in the tank base, starting with the rear, then front of the tank frame, then the cross-stay and division plates, which may also now be fixed to the tank frame.

COAL CHUTE / TANK TOP

Push through rivets on coal chute / tank top [B9], and drill for choice of tank vent position (marked by a 1.2mm circle with a dot in the centre). Also remove small strips for early lifting lugs if required, and remove corners of shovelling plate for a low-fronted tender. Fold chute to shape, locate the front in position against dummy tank front, and spring the rear edge into position in the groove in the tank rear. Fix to the top edges of division plates, using the hole at the bottom of the tank for access.

If required, fix left [B13, B14], right [B15, B16] and rear [B17] angle strips along the edges of the coal chute/tank top, noting that [B13] and [B15] need to be gently bent to follow slope of chute.

COAL SPACE

If required, fit left [B10], right [B11] and rear [B12] riveted beading strips to top edges of tender.

LOW FRONT TENDER ONLY

Fix front plate [F1] to dummy front bulkhead. Shape rearward front fender half [F3], and check the fit in tank assembly.

Shape forward half [F2] to match, noting that the end of the fender should slightly over-hang the front plate, and fix together.

Drill through fender for water gauge (fitted on driver's side of tender). Fix capping strip [F11] to top and trim to length. Again, check the fit in tank assembly.

HIGH FRONT TENDER ONLY

Push through rivets on step supports and around shovelling plate cut-out on front plate [A18], and fix to dummy tank front.

Remove bar across cut-out in dummy tank front (shaded on drawing).

Shape rearward front fender half [B20], and check the fit in tank assembly. Shape forward half [B19] to match, noting that the end of the fender should slightly over-hang the front plate, and fix together. Drill through fender for water gauge (fitted on driver's side of tender), and if required, where marked on rearward half for lifting holes. Fix capping strip [F11] to top and trim to length. If required, fix lifting hole pads [B25]. Again, check the fit in tank assembly.

EITHER TYPE

Fit tank to frames using the two 10BA screws provided. Take care that the front screw does not foul and distort the bottom of the coal chute, trimming off the end if necessary.

Push through rivets, fold up and fix together rear fender halves [B21, B22], and if required, drill lifting holes where marked on forward half. Fix capping strip [F11] to top and trim to length. If required, fix lifting hole pads [B25]. Check the fit in tank assembly, noting that there is a small gap between bottom of fender and top of tank, and when satisfied fix in place.

Assemble rear fender brackets [B23, B24], and file off excess strip to produce "L" shaped brackets per the drawing. Check the fit, and fix in place.

If fitting earlier pattern of lifting lugs, fix bases [B26] and lugs [B27] to front of coal chute and rear corners of tank top.

If desired, fix left [B28] and right [B29] riveted strips to flanges [B30] to form front reinforcing brackets. Note that strips are not at right angles to flanges, in order to follow the slope of coal chute. When satisfied with fit and appearance, fix in place.

Similarly, fix together rear riveted strips [B31] and flanges [B32] and fix in place.

Fix in place filler base [B33] and cast filler (11). Fix air vents (12) in chosen position, using reinforcement bases [B34] if required. Fix dome base [B35] and dome (13).

DETAILS

Fit steps [B36] to tank rear, together with upper [B38] and three lower [B39] lamp brackets. Fix beading strip [F11] to top edges of tender, starting with curved sections, then upper edge of sides, then tender rear.

Fix in place front fender assembly. Check the fit of toolboxes (14) or coal hood (15), and fix in place. For high-fronted tender only, fold over padlock hasps (please note that scale padlocks have not been provided !), fix coal doors [B40] and locking bars [B41] over cut-out in front plate. Pass water gauge (16) through hole in front fender and fix to coal chute

If a low front platform is required (e.g. for 4-4-0s etc.), trim the top from front platform support [B42]. Fold up, together with choice of inner support [B43/B44] and fix together. Locate tabs in slots in front plate, and fix in position.

If modelling a non-scoop fitted engine, fit blanking plate [B47] below chosen hole in front platform [B45], and tidy up. Fix front platform in place on supports. Fix brass standard(s) (17), and fix filler plate(s) [B46] in position to cover any gaps. Fix left (18) and right (19) water valves to front plate.

Using the handrail knobs provided, and 0.45mm brass wire, fit front handrails, and trim the tails of the upper knobs flush inside the tender. Fit other handrails using only 0.45mm wire.

CAB DOORS

A choice of cab doors is offered, depending on the gap between locomotive and tender. If doors are to be free to swing, fold up hinge plates [B48], and fix pieces of 0.45mm brass wire to form hinge pins. Tin the hinge plates where they are to be fixed inside tender sides, and trim wire flush at the ends. Using scale [B49, B50] or extended [B51, B52] doors, tin the half-etched straps, wrap them around the wire, apply a little oil to the wire, and solder straps to the doors to secure. Fix door and hinge assemblies to the front of the tender sides, at a height to suit locomotive.

COAL RAILS

Push through rivets, and fold up front coal rails [B53]. Fit left [B54] and right [B55] uprights, and angles [B56]. File beading on inner (rear) face of front fender, and fix assembly in place, taking care that lip on uprights rests on top edge of beading.

Push through rivets, and fold up rear coal rails [B57], and again add angles [B56]. File beading on inner (front) face of rear fender, and fix rear coal rail assembly in place.

Similarly, push through rivets, and fold up left [B58] and right [B59] coal rails, noting that support strips are curved. Add angles [B60]. File beading inside tender sides, and fix in place, noting that the side coal rails fix outside the ends of the front and rear rails

FIRE-IRON RACK

Fix fire-iron pins [B61] to the inside of front fender, or coal rails if fitted. To facilitate this, the semi-circular section at the top may be used as a jig to hold the pins parallel, being removed after they are fixed.

If coal rails are NOT fitted, remove the section of rack (20) from the bottom edge of the cross-brace upwards (refer to drawing). Gently check the fit of rack between the sides, trimming locating plates if necessary, and springing into the half etched cut-outs in tender sides. Fix in place.

The completed model may now be painted, lined, coaled, and coupled to its locomotive.

"A" PARTS - FRAMES

1		MAINFRAMES
2		FRONT DRAGBOX
3		FRONT BULKHEAD
4		BRAKE SHAFT BRACKETS
5		REAR DRAGBOX FRAME / GUARD IRONS
6		REAR DRAGBOX UPPER
7		REAR DRAGBOX LOWER
8		FRONT BUFFER-BEAM OVERLAY
9		REAR BUFFER-BEAM OVERLAY
10		REINFORCING ANGLE - LEFT
11		REINFORCING ANGLE - RIGHT
12	x2 +2	STEP BRACE - FRONT
13		FRONT STEP FRAME
14		REAR STEP FRAME
15	X2	UPPER TREAD - FRONT
16	X2	UPPER TREAD - REAR
17	X4	LOWER TREAD
18		INSIDE FRAMES
19	X6 +1	SPRUNG AXLE FRAME
20	X14	AXLE WASHERS
21	X6	AXLE WASHERS - THIN
22	X6 +1	BRAKE HANGER
23	X6 +1	BRAKE SHOES
24		WELL TANK - WIDE
25		WELL TANK - NARROW
26	X2 +1	BRAKE CYLINDER ARM HALF
27	X1 +1	BRAKE STANDARD ARM
28	X2 +1	BRAKE PULL-ROD ARM
29	X2	BRAKE PULL-ROD HALF
30	X2	BRAKE PULL-ROD HALF
31		FRONT SCOOP SHAFT BRACKET
32		REAR SCOOP SHAFT BRACKET - LEFT
33		REAR SCOOP SHAFT BRACKET - RIGHT
34		SCOOP PULL-ROD HALF
35		SCOOP PULL-ROD HALF
36	X1 +1	SCOOP STANDARD ARM
37		WATER DEFLECTOR
38	X2 +2	DEFLECTOR STRAP
39		FRONT COUPLING
40		FRONT COUPLING WASHER
41		CROSSBRACE - FRONT
42		CROSSBRACE - REAR
43	X2	BRAKE SHAFT BEARING PLATE
44		SCOOP SHAFT BEARING PLATE
45		COUPLING HOOK

"B" PARTS - SUPERSTRUCTURE

1		TANK FRAME
2		FRONT VERTICAL CROSS-STAY
3		DIVISION PLATE - FRONT
4		DIVISION PLATE - MIDDLE
5		DIVISION PLATE - HIND
6		TANK SIDES/REAR
7		PLATFORM
8	X2 +1	PLATFORM JOINT LAPPING PLATES
9		COAL CHUTE
10		RIVETTED BEADING FLANGE - LEFT
11		RIVETTED BEADING FLANGE - RIGHT
12		RIVETTED BEADING FLANGE - REAR
13		RIVETTED STRIP - LEFT
14		RIVETTED STRIP - LEFT
15		RIVETTED STRIP - RIGHT
16		RIVETTED STRIP - RIGHT
17		RIVETTED ANGLE - REAR
18		FRONT PLATE
19		FRONT FENDER - FORWARD HALF
20		FRONT FENDER - REARWARD HALF
21		REAR FENDER - FORWARD HALF
22		REAR FENDER - REARWARD HALF
23	X2	REAR FENDER BRACKET - RIVETTED STRIP
24	X2	REAR FENDER BRACKET - FLANGE
25	X8 +3	LIFTING HOLE PAD
26	X4	LIFTING LUG BASE
27	X4	LIFTING LUG
28		FRONT REINFORCING BRACKET - RIVETTED STRIP - LEFT
29		FRONT REINFORCING BRACKET - RIVETTED STRIP - RIGHT
30	X2	FRONT REINFORCING BRACKET - FLANGE
31	X2	REAR REINFORCING BRACKET - RIVETTED STRIP
32	X2	REAR REINFORCING BRACKET - FLANGE
33		RIVETTED FILLER BASE
34	X2	VENT BASE REINFORCING PLATE
35		RIVETTED DOME BASE
36	X2	REAR STEP - CURVED TOP
37	X2	REAR STEP - STRAIGHT TOP
38	X2 +1	UPPER LAMP BRACKET
39	X3 +1	LOWER LAMP BRACKET
40		COAL DOOR
41	X2 +2	COAL DOOR LOCKING BAR
42		FRONT PLATFORM SUPPORT
43		FRONT PLATFORM INNER SUPPORTS - LOW
44		FRONT PLATFORM INNER SUPPORTS - HIGH
45		FRONT PLATFORM
46	X2	BRAKE STANDARD FILLER PLATE
47		BLANKING-OFF PLATE
48	X2 +1	CAB DOOR HINGE
49		CAB DOOR - SCALE - LEFT
50		CAB DOOR - SCALE - RIGHT
51		CAB DOOR - LARGE - LEFT
52		CAB DOOR - LARGE - RIGHT
53		COAL RAIL - FRONT
54		COAL RAIL UPRIGHT - FRONT LEFT
55		COAL RAIL UPRIGHT - FRONT RIGHT
56	X4 +2	COAL RAIL ANGLE - FRONT/REAR
57		COAL RAIL - REAR
58		COAL RAIL - LEFT
59		COAL RAIL - RIGHT
60	X6 +2	COAL RAIL ANGLE - SIDES
61		FRONT FIRE-IRON PINS

CASTINGS

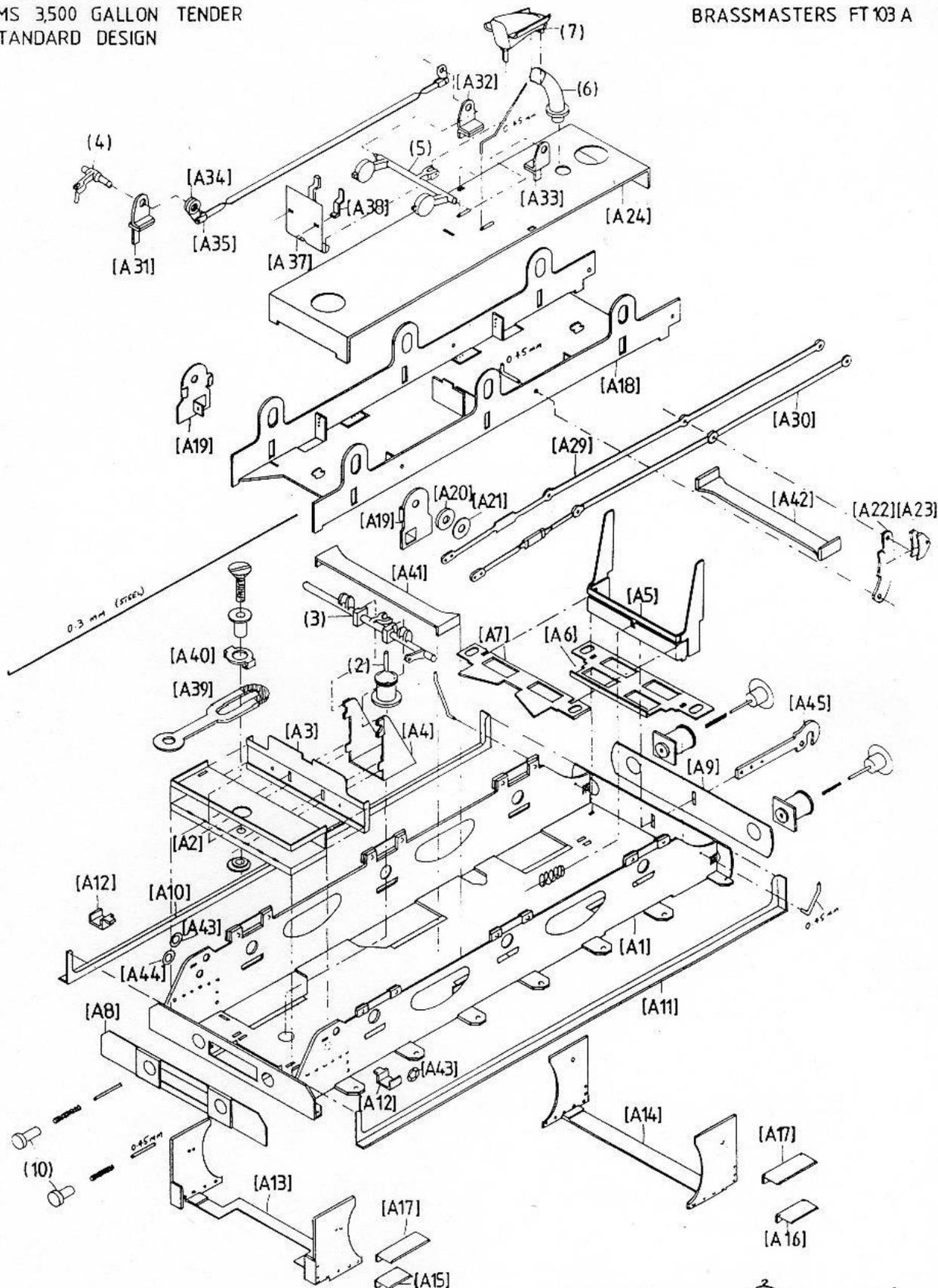
1	W/M	AXLEBOX / SPRING X6 +1
2	W/M	BRAKE CYLINDER
3	BRASS	BRAKE SHAFT
4	BRASS	FRONT SCOOP SHAFT
5	BRASS	SCOOP WEIGH-SHAFT AND LIFTING LINK
6	W/M	SCOOP UPPER
7	W/M	SCOOP LOWER
8	BRASS	VACUUM PIPE
9	BRASS	STEAM PIPE
10	BRASS	FRONT BUFFERS
11	W/M	TANK FILLER
12	W/M	TANK VENTS x 2
13	W/M	SCOOP DOME
14	W/M	TOOLBOXES - LOW-FRONTED TENDER TOOLBOXES/COAL HOOD - HIGH-FRONTED TENDER
15	W/M	FRONTED TENDER
16	W/M	WATER GAUGE
17	BRASS	BRAKE / SCOOP STANDARD x 2
18	W/M	WATER VALVE - LEFT
19	W/M	WATER VALVE - RIGHT
20	BRASS	FIRE IRON RACK
21	BRASS	BRAKE STANDARD SURROUND x 2

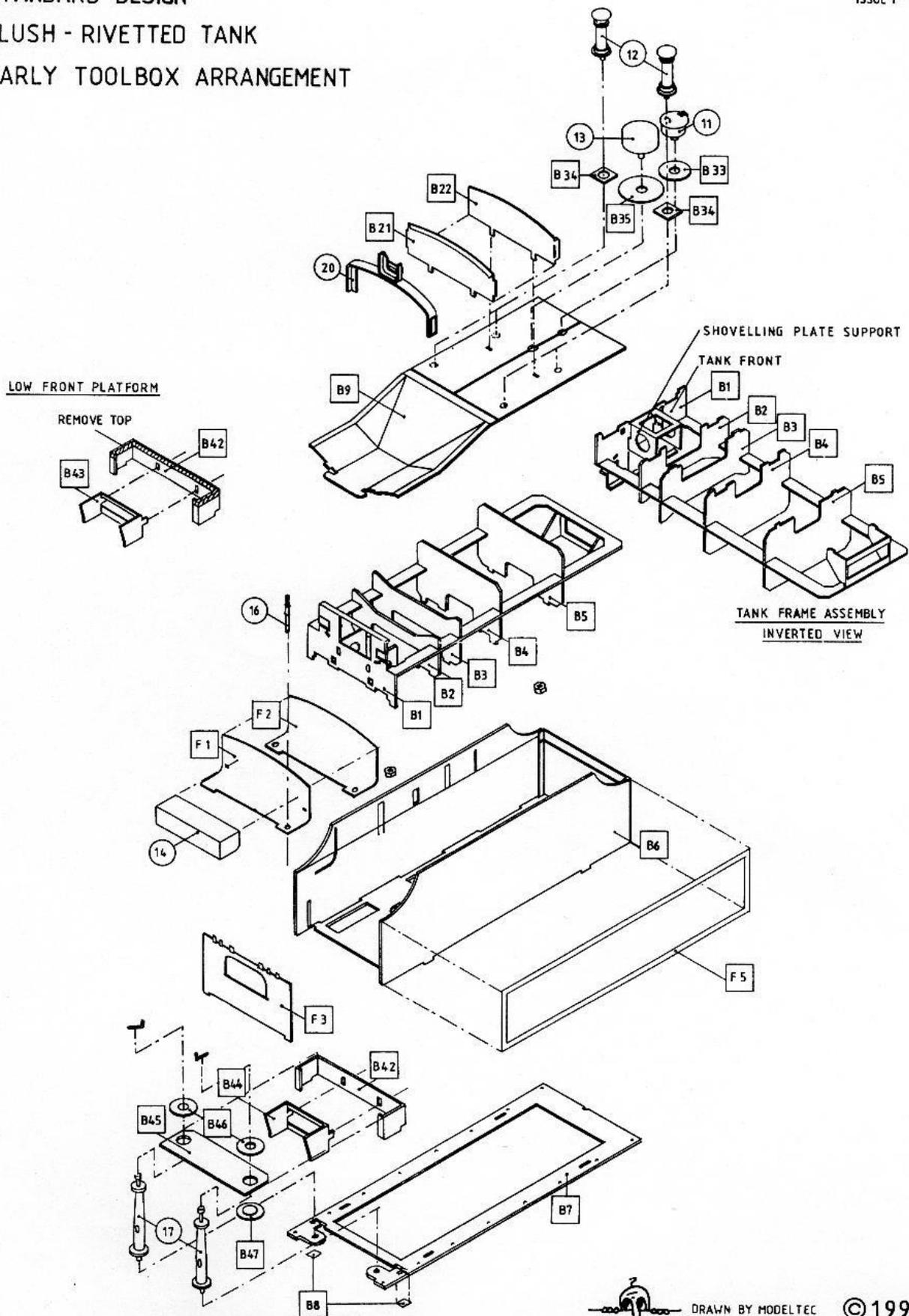
"B" PARTS - TANK OVERLAYS

4		LEFT SIDE
5		LEFT SIDE BEADING
7		RIGHT SIDE
8		RIGHT SIDE BEADING
10		REAR
11	X7	BEADING CAP

HARDWARE

X2	REAR BUFFER HEADS
X2	REAR BUFFER STOCKS
X4	BUFFER SPRINGS
	COUPLING SPRING
X2	10BA X 3/8" SCREWS
X2	10BA NUT
	STEEL CRANKPIN SLEEVE - LONG
	STEEL CRANKPIN NUT
	STEEL CRANKPIN SCREW
X4	SHORT HANDRAIL KNOB
6"	0.33mm SPRING STEEL WIRE
12"	0.45mm BRASS WIRE
1"	1.2mm BRASS WIRE





LMS 3,500 GALLON TENDER
STANDARD DESIGN

T 103 F

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