General Instructions for Gilmaur Kits

SAFETY

BE CAREFUL when handling the etched parts, and in particular with the "frets" (etched sheets), as you can get a nasty cut from the corners of the fret or from the little tags which hold the parts in the fret.

TARNISH

The sheet brass is very clean when it emerges from the etching process but over time will tarnish from contact with the air. Always wash the etched parts after handling them as the acids on your hands will produce 'etched' finger marks after a while.

After a soldering session wash the sub-assemblies in hot water and detergent to get rid of the soldering flux.

To clean very dirty or tarnished parts a limescale remover such as "Viakal" has been found to be effective. "Coke" style drinks have also been reported to work well!

Spray with grey auto primer as soon as you have finished the model or sub-assembly.

SEQUENCE

Identify the parts and figure out how the various sub-assemblies go together.

SUB-ASSEMBLIES *Follow this process for each sub-assembly.*

Identify the parts that make up the assembly.

Cut them out of the fret, cut off the retaining tags and file the edges until smooth.

Bend the parts as required- the bend line is always on the INSIDE of the bend. Check all right angles are 90°. Run a little solder into the bend line if desired to maintain the 90° angle. Take care- it is hard to undo this.

Now solder the parts together in the sequence given in the sub-assembly instructions.

Solder from the back or inside where possible for best appearance.

IMPORTANT

There is one CRITICAL action that must not be forgotten- soldering on the retaining nuts for attaching

Superstructure/Deck to the Underframe,
Couplers to Coupler Mounts
(and sometimes Trucks to Truck Bolsters).

Don't forget to do this when specified in the construction sequence- you may not be able to do it later.

Another action which has to be done before assembly is impressing rivets. Examine the parts and identify where rivets have to be pushed through from the back/inside. This can be done with a punch and a light tap with a hammer, or with a purpose-built riveter. Practice on a scrap piece of brass to get the right amount of force.

For the S-2: the Battery Boxes on Deck Sides (11) have rivets to be pushed though- do this as early as possible.

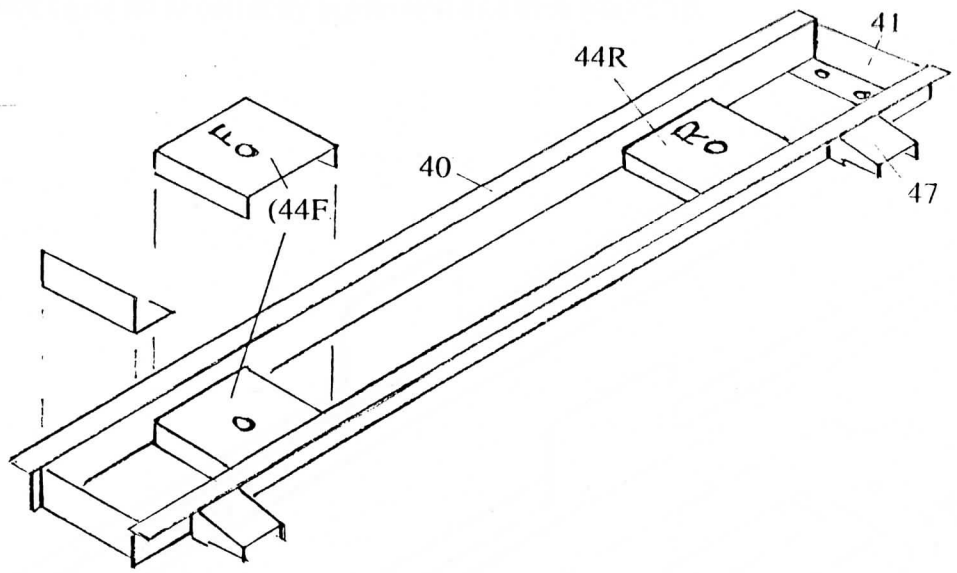
Assembly Instructions for Gilmaur S-2

1 UNDERFRAME

1.1 Assemble Underframe

Parts 40 x 2, 41 x 2, 44F, 44R, and 47 x 4.

Offer Bolsters (44F, 44R) to Underframes, insert tabs in slots, check square and solder up.
Solder End Spacers (41) to ends of Underframes.



Underframe Side Locators (optional)

Offer Underframe Side Locators (47) to Underframes, insert tabs in slots, and place scrap brass under ends to maintain correct gap, and solder up.

2 *DECK/FLOOR*

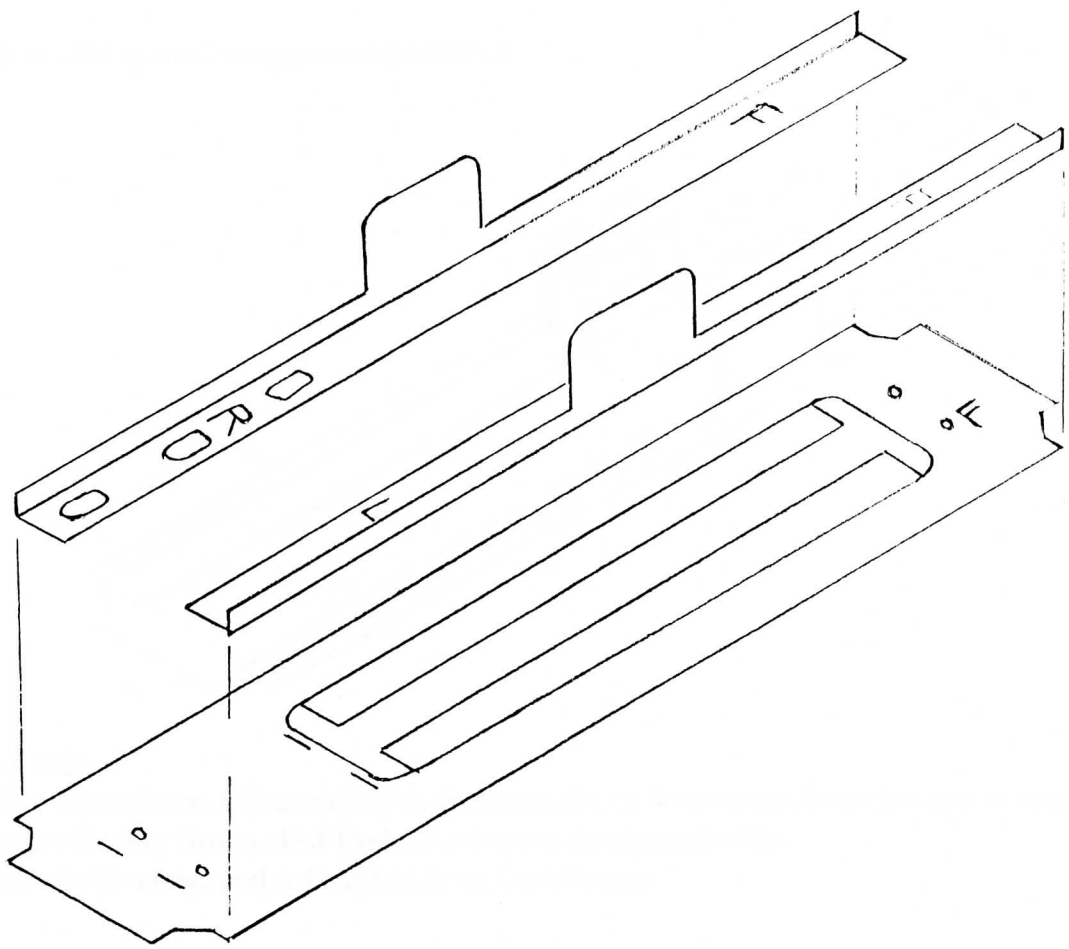
Do not fold up deck soldering brackets yet- keep top surface of deck as smooth flat piece.

2.1 Deck and Sides

Parts 10, 11 x 2
Check rivets are impressed from back of Battery Boxes on (11).

Place Floor/Deck (10) upside down on worktop so that "F" is visible.

Position Floor Side/Battery Boxes (11) on underside of deck to give an overhang of 0.5-1.0 mm. (Check drawings and photos and use what looks right to you).
Ensure that the Floor Sides are parallel with the Deck edge, and that the ends of Floor Side are in line with ends of deck. Tack solder.
Check again all is correctly positioned and then solder up.

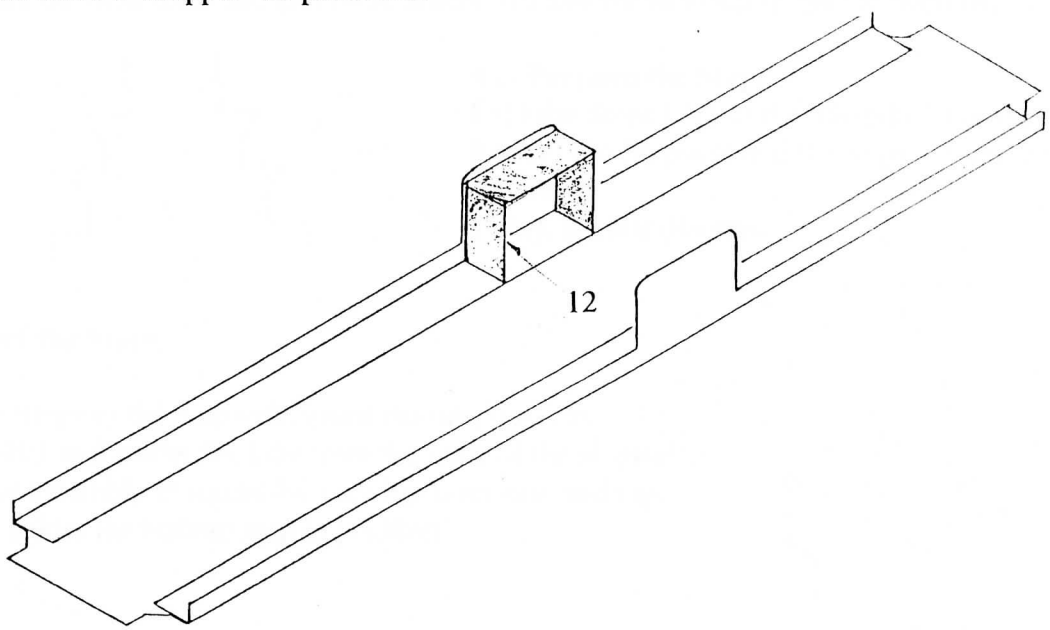


2.2 Battery Box Wrapper
Parts: 12 x 2
Fold Battery Box Wrapper (see Notes below) and solder behind Battery Boxes (11)
Ensure that the Battery Boxes are at right angles to the Deck.

Notes
In the "Extras" bag is another, narrower version of the Battery Box Wrapper (12).
Note: the wider version in the main etch is correct i.e. prototype width.

Test fit the narrow Wrapper behind the Battery Box. When you offer the Underframe Assembly to the Deck, all should be well.
Now test fit the wider Wrapper (12) and offer the Underframe Assembly as before.
The Wrapper fouls the Underframe Flange.

You now have a choice:
(a) use the wider Wrapper (correct as for prototype) and cut away the underframe flange. This now fits OK but weakens the underframe- reinforce it with scrap brass.
or
(b) use the narrow wrapper- no problems.

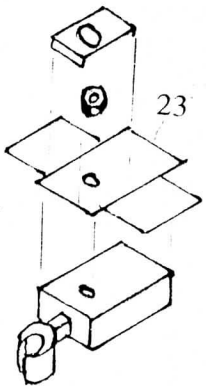


Test Fit
Offer Underframe sub-assembly to deck and test fit 4-40 screws/nuts through fixing holes in deck.
Ensure Battery Boxes clear Underframe parts during assembly.
Undo 4-40 screws and nuts and remove Underframe

3 COUPLERS

(The kit is designed to use Kadee or Weaver couplers.)
Note: the Coupler Mount (23) has fold lines, but assembly is simpler if these are NOT folded. Keep it straight.

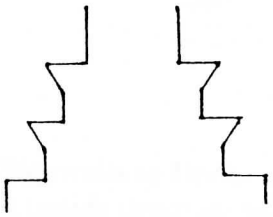
Cut off the "ears" at the side of the couplers
(so that it fits into the Coupler Striker Plate casting.)
Test fit selected couplers by inserting 2-56 bolt from underside and securing coupler to the Coupler Mount (23) with a 2-56 nut ("2-56 nut this side").
Solder 2-56 nuts to the TOP of the Coupler Mounts (23) using Nut Retainer (15).



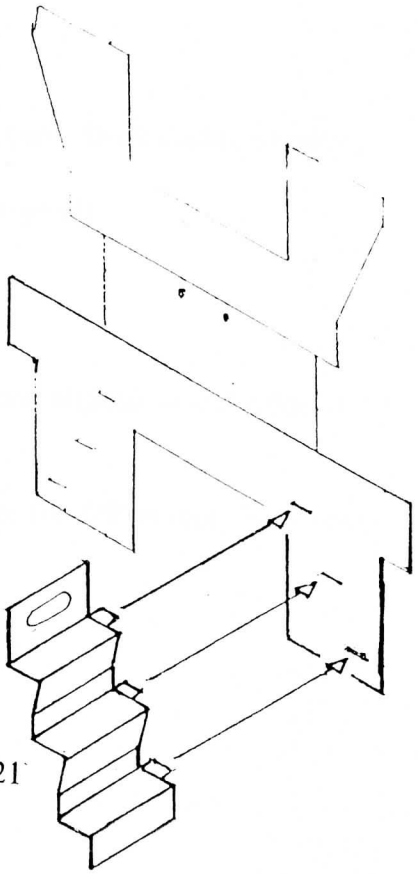
The Nut Retainer is designed to grip the nut and provide mechanical strength to reinforce the solder joints.
Assemble as shown.
Solder the nut retainer to the coupler mount.
Then solder the nut to the Nut Retainer to prevent the nut from falling out.

4 PILOT-STEPWELL

4.1 Prepare the Pilot Beam/Stepwell (20). Make the bend for the Front (Pilot Beam) first, check that it is exactly square, and tack solder. Check again!
Then make the next fold- and DO NOT solder (otherwise you cannot get the steps in).

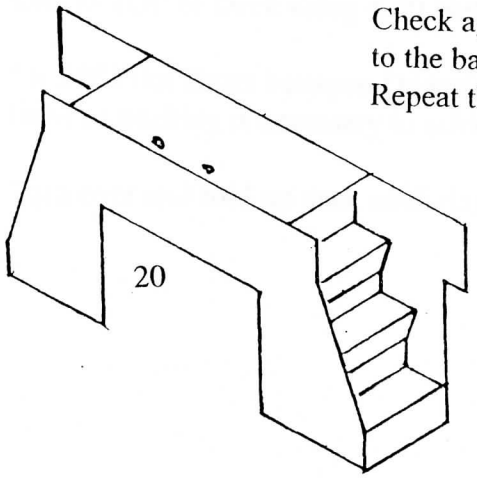


4.2 Prepare the Steps
Fold the Steps (21) so that the tabs fit in the slots at the back of the Stepwell and the steps are regular and square.
Check against diagram.



4.3 Insert the Steps

Offer the Steps to the Stepwell, insert the tabs into the slots in (20), and solder the tabs from the back of the stepwell.
Check the assembly is square by viewing from side and top, and then solder the bottom step in position.



Check again and solder the steps to the back of the pilot beam.
Repeat the other side.

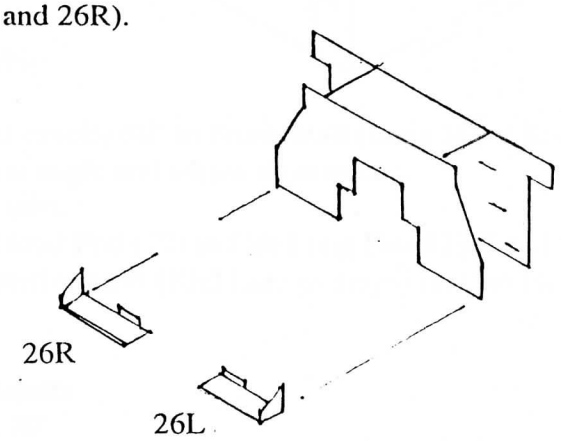
4 PILOT-STEPWELL (continued)

4.3 Completion of Stepwells

Parts: 20, 26L x 2 and 26R x 2,
Improved versions of 26L and 26R are in the Extras bag

Fit the Coupler Mount (23) into the Stepwell (20),
ensure that it is centered, tack solder.
Repeat the test fit of the coupler.
If all is square, solder up.

Add Footboards (26L and 26R).



4.4 Add Stepwells to Deck

Place Deck upside down on workbench (so that "F" is visible)
Place Pilot Beam/Stepwell assembly on top.
Ensure holes for End Stanchions in both Stepwell and Deck are aligned. Deck should overhang slightly at each end.
Check square and solder to underside of deck at front and rear of stepwell.
Repeat other end.

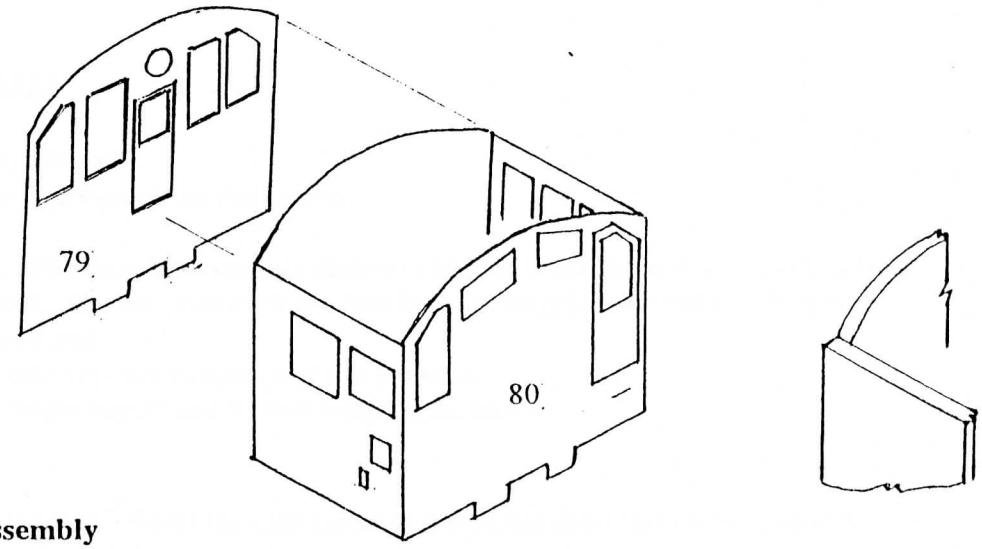
4.5 Fix Underframe to Deck

Parts: 14 x 4, 24F and 24R.
Re attach Underframe to Deck with 4-40 nuts and bolts. Check fit and alignment and solder 4-40 nuts to TOP of Deck using 4-40 Nut Retainer (14)

Fit 24F Pilot Brace between Underframe and Stepwell at front, same for 24R at rear, using scrap brass as packing if necessary to achieve a light push fit.

Turn over and fold up deck soldering brackets.

5 CAB



5.1 Main cab Assembly

Parts: 79, 80, 81, 82

Bend Cab (80) sides at exactly 90° to Front Wall (Long Hood End) and run solder into fold line to hold the angle. Measure angle and adjust if necessary.

Push in floor locating tabs.

Assemble Cab Short Hood End (79) to Cab Long Hood End and Sides (80).

Optional- Place cab interior parts (Kiel Line castings) on Cab Floor (82).

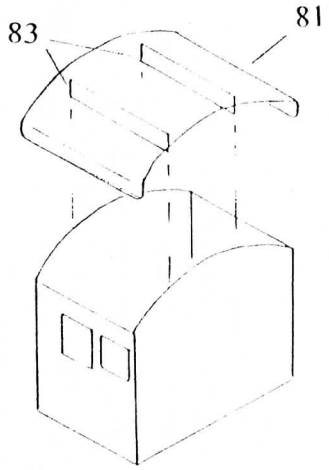
Add Cab Floor (82)

5.2 Cab Roof and Details

Parts: 78, 81, 83 x 2, 89

(Optional- add Cab Interior Strips (83)
to underside of roof to hold in place.)

Add Cab Roof (81)



Add details to Cab

- Armrest, Horn Bracket (89) and Horn casting
- Cab Window Surround (78) if required
- Cab Step (86)

Insert tabs in Cab to slots in Deck, and solder Cab to Deck

6 HOODS

6.1 Positioning hood

Parts: 56

Position Long Hood (56) on Deck and solder on inside to deck soldering brackets

Attach Hood End casting each end

6.2 Add Hood Details

to top of Hood:

- Hatches (63 and 2 x 64)
- Stack (61) or casting
- Radiator outlet casting and Circular Grill (65)
- Sand Filler castings x 2 each end

to Hood Ends

- Make handgrabs and attach to hood end

to side of Hood

- Number Boards (67)
- Sander Control castings with pipe (L and R)
- Radiator inlet castings x 2

to Deck

- Jacking pad castings
- Poling pockets (29)

7 *HANDRAILS*

Side handrails (16 castings)
(There may be some spare parts on the sprues)

On both sides of the side stanchion casting there are bolted brackets to attach the handrail to the side of the Deck.. On the prototype the brackets are only on one side- pointing towards the long hood end.
Cut off the bracket which is not needed and file smooth.
You should have 8 "right hand" and 8 "left hand" stanchions.

Thread handrail wire (3/32" diam) through holes at top of handrail stanchions, bend to shape and cut to length
Insert lugs on back of handrail stanchions into slots on Deck side (11).
Check all is square and solder up.

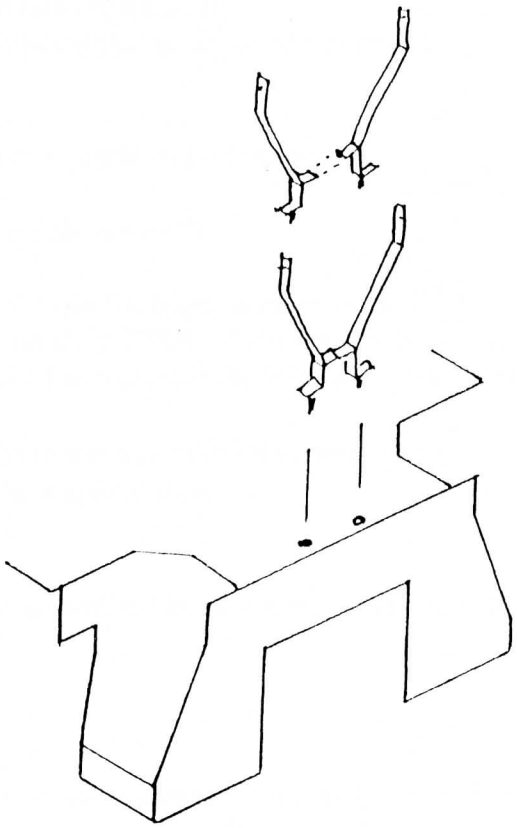
End handrails (4 castings)

Drill out holes in Deck and Pilot Beam
if necessary to accept End Handrail Supports.

Solder two end (angled) stanchions together
Insert lugs on bottom into holes in deck
and solder.
Thread handrail wire through holes at top
of handrail stanchions, bend to shape and
cut to length.
Repeat for handrail through lower holes on
stanchions
Check all is square and solder up.

Add Coupler striker plate casting to each end

If desired, make Coupler Lift Bars from 1/32"
Wire.



#15 S-2 *Version 1*

Part #	Name	Qty
10	Deck	1
11	Deck side / battery boxes L&R	1
12	Battery box wrapper	2
14	4-40 Nut Retainers	4
15	2-56 Nut Retainers	4
17	Truck Mount Reinforcement	2
20	Pilot beam/stepwell	2
21	Steps L&R	2
23	Coupler mount	2
24F	Pilot brace F	2
26L	Footboard Left	2
26R	Footboard Right	2
29	Poling pockets (1)	4
40	Underframe (2)	1
41	End spacer/ body mount	2
43	Motor mount Deck	1
44F	Chassis bolster Front	1
44R	Chassis bolster Rear	1
47	Underframe side locators	4
48	Motor mount base	1
56	Long hood	1
63	Hatch & end sandbox cover	1
64	Hatch cover	2
65	Top Radiator Grill	1
67	Number boards (2)	1
68	Grid Walkway Narrow	1
69	Grid Walkway Wide	1
77	Window Frame (Moveable)	1
78	Cab window surround	1
79	Cab wall (back end)	1
80	Cab wall (long hood end) & sides	1
81	Cab roof	1
82	Cab floor	1
83	Cab Interior Strips	2
86	Cab Step and Angle Support	1
88	Sunshade (2)	1
89	Armrest (2) & horn bracket	1

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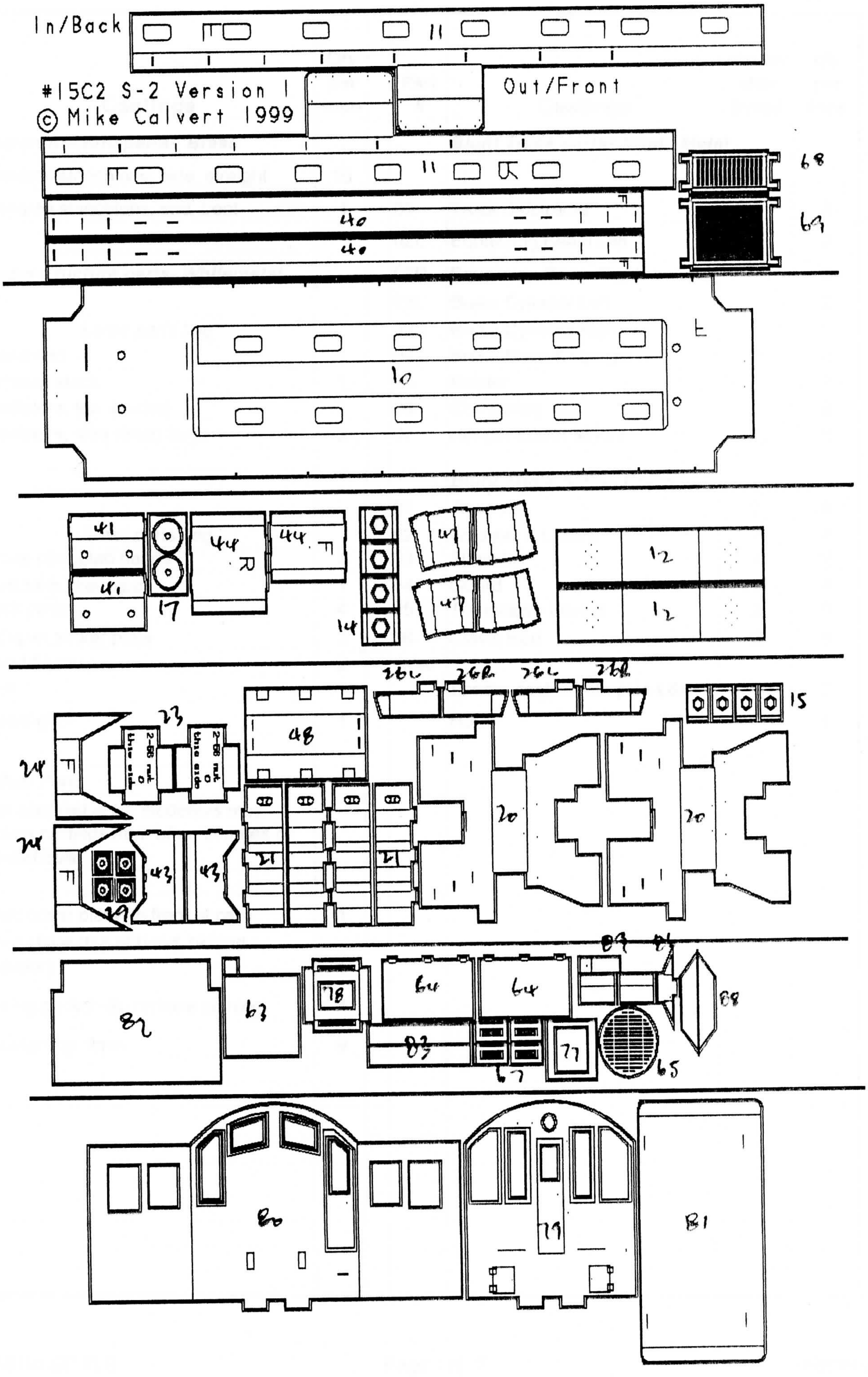
In/Back
#15C2 S-2 Version 1
© Mike Calvert 1999
Out/Front
68
69
40
40
10
41
41
17
44
44
14
47
47
12
12
26L
26R
26L
26R
15
23
2-56 nut this side
2-56 nut this side
24
24
48
43
43
21
21
20
20
82
63
78
64
64
83
83
67
77
65
88
80
79
81

Castings	Qty per loco		Part #	Castings	qty per side frame	qty per loco
Superstructure parts- Brass				***Blunt Truck parts- White Metal***		
Handrail stanchions, side, straight	16					
Handrail stanchions, end, bent	4		01	Truck Sideframe	1	4
			02L	Equalising Beam Left		2
Superstructure parts- Whitemetal			02R	Equalising Beam Right		2
			03L	Brake Cylinder Left		2
Large parts bag			03R	Brake Cylinder Right		2
Hood end	1		04	Brake Shoe & Hanger	2	8
Exhaust stack	1		05	Bolster		2
Radiators, top (outlet)	1		06	Coil Spring	2	8
Radiators, side (inlet) large	2		07	Hanger Lower Mount	2	8
				Blunt Truck parts- Brass		
			01	Journals	2	8
Small parts bag			02	Adjuster & Levers	1	4
Brake pipe glad hands	2		03	Shackles	4	16
Fuel tank filler pipe	1		04	Guard	1	4
Jack pads	4		05	Transverse Levers	2	8
Coupler striker plate	2		06	Clevis Rod	2	8
Sand fillers	2		also			
Bell	1			Sander control with pipe L&R		2
Headlight	1			Horn		1
Other Parts						
Not supplied in kit: modellers may obtain castings from other sources or scratchbuild						
Oval cover plate (in front of cab)	1					
Vent / filler (top of hood, behind radiator)	1					
Poling pocket (to replace etching)	4					
Handgrabs, 9mm	9					

Drive components and Hardware	Qty per loco				
Weaver Parts					
Not supplied in kit					
Gearbox / wheelsets for 4-wheel trucks, with Transfer Tower	1			Use "old-style" Weaver truck parts	
Gearbox / wheelsets for 4-wheel trucks, "plain" -without Transfer Tower	3			Use "old-style" Weaver truck parts	
RS-3 or GP38 Drive Shaft, Lower (Truck to Truck)	1			Use "old-style" Weaver truck parts	
RS-3 or GP38 Drive Shaft, Upper (Transfer Tower to Motor)	1			Use "old-style" Weaver truck parts	
Electric motor, 12V DC	1				
Coupler, pair (or Kadee if preferred)	1				
Misc hardware					
Not supplied in kit					
Piano wire 1/32 in diam for Handrails and Handgrabs	48 ins				
Cable ties (for motor mounting)	2				
OEM parts bag					
Screws 4-40 x 1/4" with Nuts	4			Underframe to Body	
2-56 x 3/8 in nut/screw sets	2			Coupler mounting	
2-56 x 1/2"screws	2			Truck mounting	
4-40 x 3/4" nut / screw sets	4			Sideframe - Bolster mounting	
Coupler					
Not supplied in kit					
Kadee Coupler # 805, acetyl, pair (or Weaver if preferred)	1				
Drawings and Prototype Information					
X2200S Issue #?					
Model Railroader Cyclopedia Vol 2 Diesel Locomotives					
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