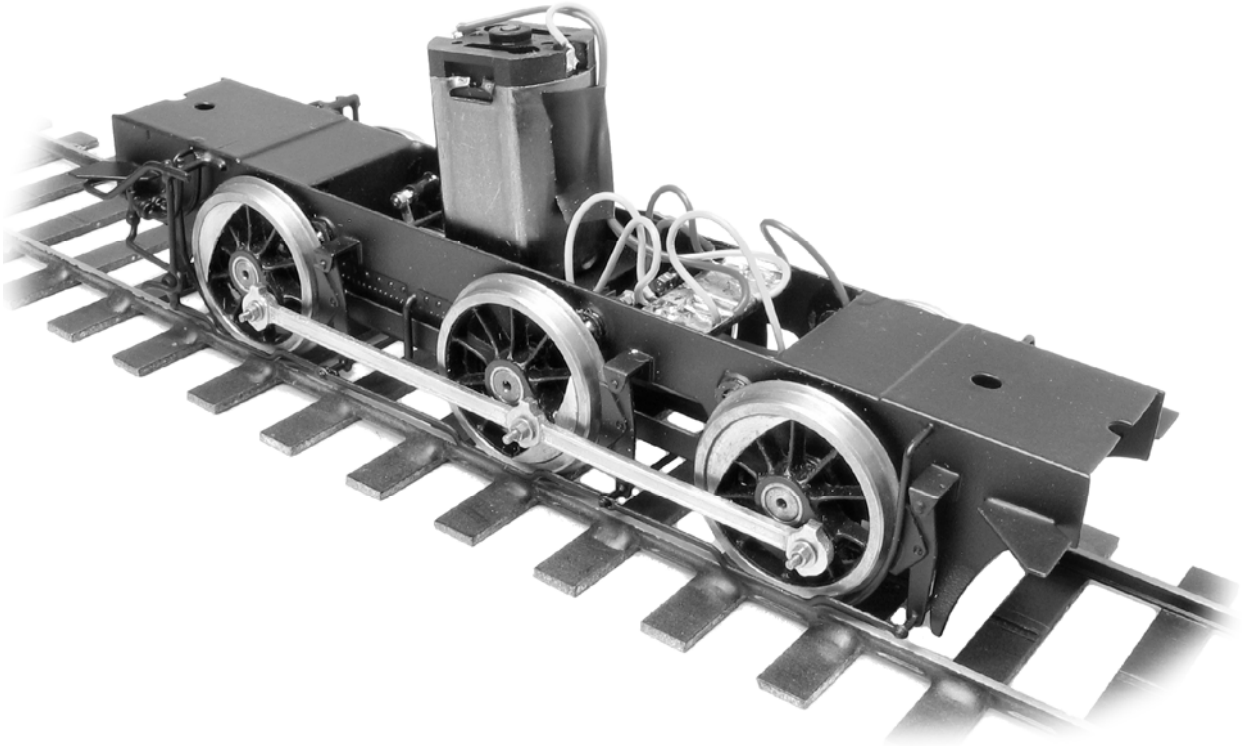
LEGACY KITS & COMPONENTS

- 0 Gauge -

LNER Class J69/1 "Buckjumper" Legacy Kit
Parts Identification &
Chassis Assembly Instructions



This kit was first produced in 1991. It was an honest, best effort at the time and much appreciated by many satisfied modellers, many were newcomers to 0 Gauge..

Time passed and modellers expectations became more sophisticated along with the range of kits available. This legacy kit was retired from production for many years.

But now its back with a level of extra casting detail that modellers now expect for locos on their layouts. Instructions detail how legacy issues can be addressed with simple hand tools to get the best from the etched components.

We Are Confident Modellers Will Be Delighted With The Results

Parts Required To Complete
3 Sets 4', 10 Spoke Driving Wheels (Slater's Catalogue Numbers 7848NE)
Plunger Pickups if desired (Slater's Catalogue Number 7157)
Available From Slater's Plastikard, Old Road, Darley Dale, Matlock
Derbyshire, DE4 2ER, Telephone 01629 734053.
1833 Motor and 40/1 Gear set, *available from Connoisseur Models.*

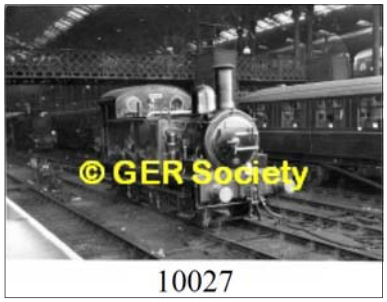
Produced by Family McGeown, 1 Newton Cottages,
Nr Weobley, Herefordshire, HR4 8QX, Telephone 01544 318263

LNER Class J69/1 “Buckjumper”
Find a Photograph of Your Chosen Prototype Locomotive

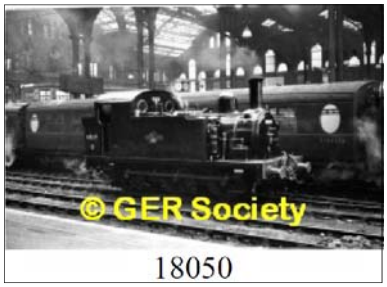
You are looking for photos of the twenty locos built to GER designation S56. These were LNER (1924) numbers 7051 - 7090, BR numbers 68617 - 68636. Particularly useful would be some colour photos so you can work out what livery and lettering you require.

Fortunately the Great Eastern Railway Society have an easy solution to enable you to order digital downloads, at 25p each, from their collection of thousands of images. So you need to visit: https://www.gersociety.org.uk/sales/photograph-sales
Everything is fully explained but briefly you need to download: “all photos by loco class” and you want J69, this is an index of which photo album you can view a thumbnail of the photo and if its what you want, you can note the reference number and fill in the online order form.

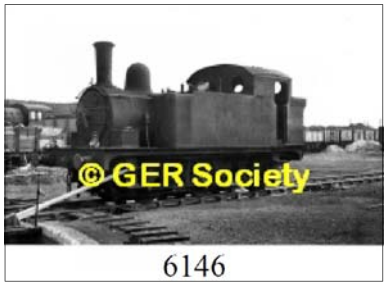
Examples of GER Society Photo Album Thumbnails



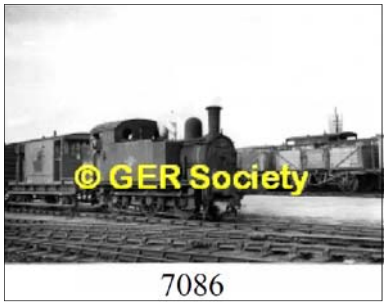
J69/1 68619
at Liverpool St



J69/1 68619
at Liverpool St



J69/1 68632
at Stratford Loco



J69/1 68626
at New England

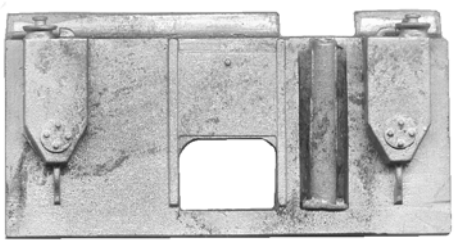
Two Excellent Colour Photos Available on open source Internet

Colour photo: https://www.gersociety.org.uk/images/2023/10/11/68619-liverpool-street-g.png

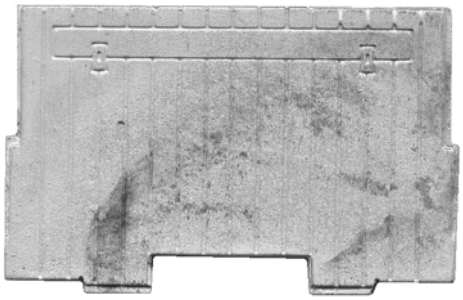
Colour photo: https://www.steve-banks.org/images/historical/CCQ_slides/j69_e8619_1951_4_n_woolwich_1500_1000_72u.jpg

Another very useful reference resource is Steve Rowes YouTube build of a J69:
https://www.youtube.com/@Steven_Rowe

LNER Class J69 Parts Identification and check list

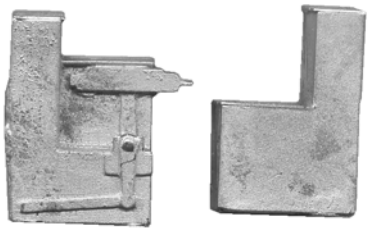


1 X Bunker Front



1 X Cab Floor

LNER Class J69 Parts
Identification and check list



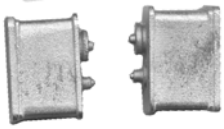
R/H & L/H Cab Inner Tanks

1 X Backhead

2 X Large & Small Cab Gauges

2 X Cab Roof Formers

1 X Cab Reversing Wheel



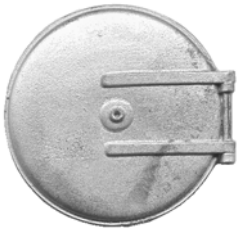
2 X Sandboxes L/H & R/H

1 X Handbrake Column Handle

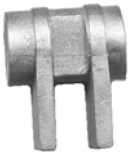
1 X Brake Ejector

1 X Air Brake Cylinder
1 X Cylinder Support
1 X Cross Shaft Crank

1 X Driver 1 X Fireman



1 X Smokebox Door



1 X Air Reservoir

1 X LNER Chimney

1 X Dome

1 X Ejector Elbow

1 X Condenser Gear Cross Shaft & End U Pipe

2 X Tank Fillers

1 X Cab Back Handbrake Cover

4 X Buffers

4 X Buffer Packing Rings

2 X Brake Cross Shaft Spacers

1 X Smokebox Door Handle

2 X Clack Pipes

1 X Whistle

1 X Westinghouse Air Pump

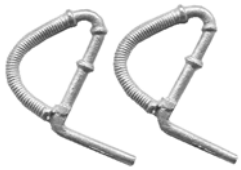
2 X Ross Pop Safety Valves

4 X Tank Lifting Lugs

2 X Tank Vents

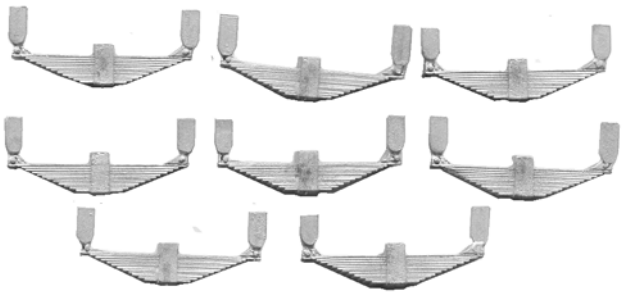
2 X Coupling Centres

2 X Air Brake Pipes



2 X Vacuum Pipes

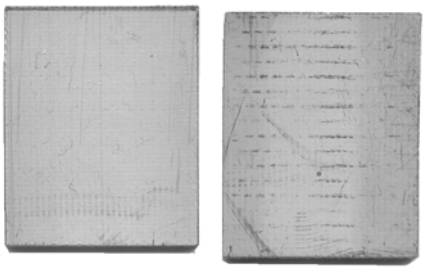
2 X Injectors L/H & R/H



6 X Springs Plus 2 Spares

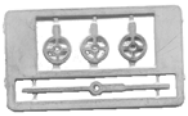
6BA Brass Screws X 2
6BA Brass Nuts X 2

LNER Class J69
Parts Identification
and check list



Printed Circuit Board For Use With Wire Wiper Pickups

6 X Turned Axle Bearings



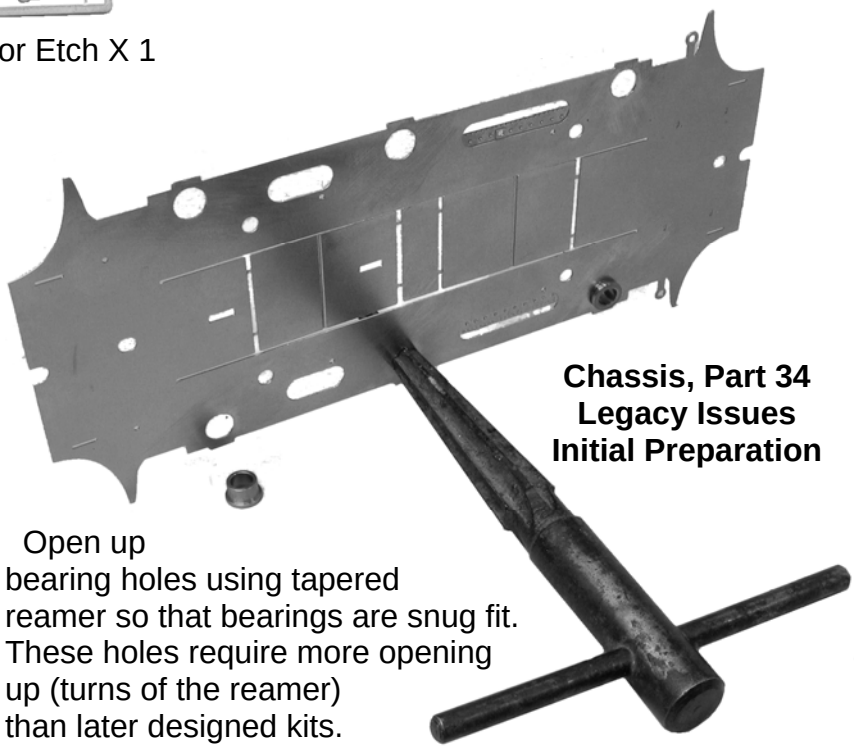
Handrail Knobs X 5

Regulator Etch X 1

Electrical Wire
For Pickups.
2 X 18” Different colours

Wire & Rod check list

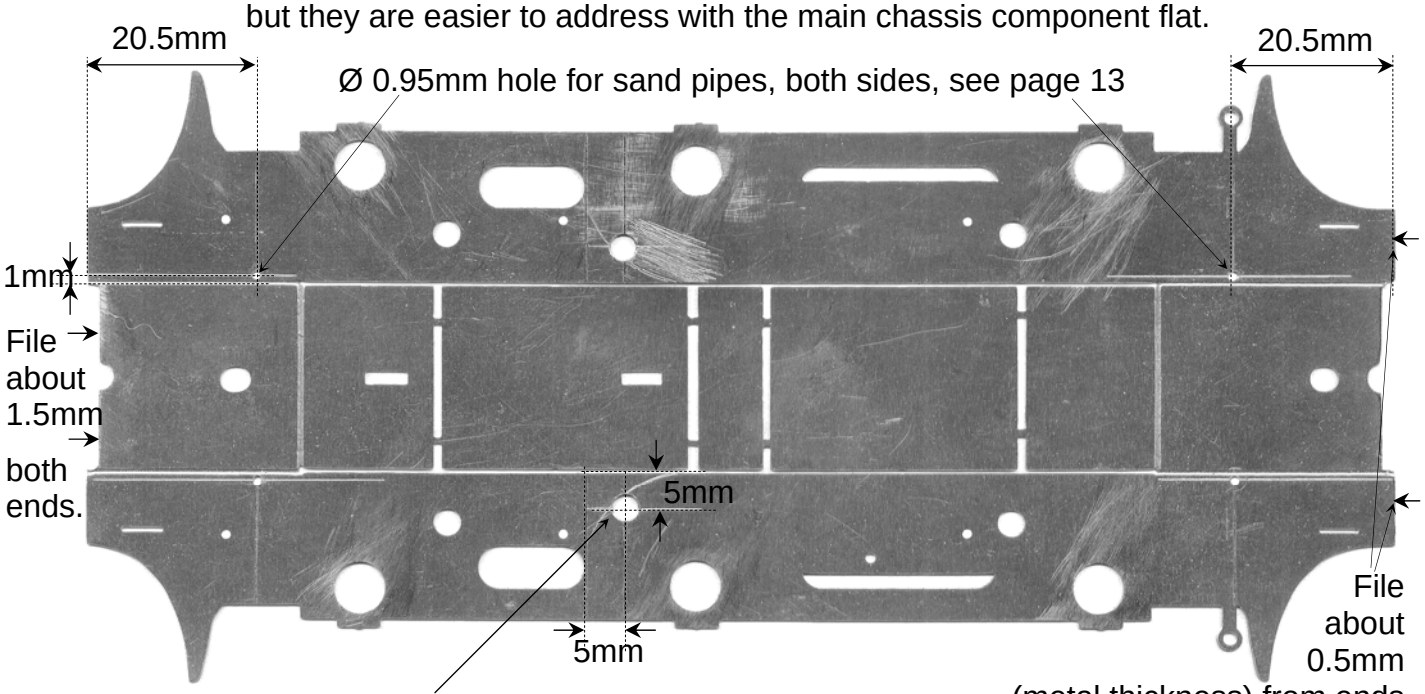
3 X 10” length 0.45mm hard brass wire for wiper pickups & coal Bars.
3 X 10” length 0.7mm brass wire.
3 X 10” length 0.9mm brass wire.
2 X turns 22 swg soft tinned wire.
8” X 1.6mm brass rod.
8” X 2mm copper rod.
3 X 8” length 1.3mm copper rod.
12” X 1.1mm copper rod.
1 X 5” length half round wire

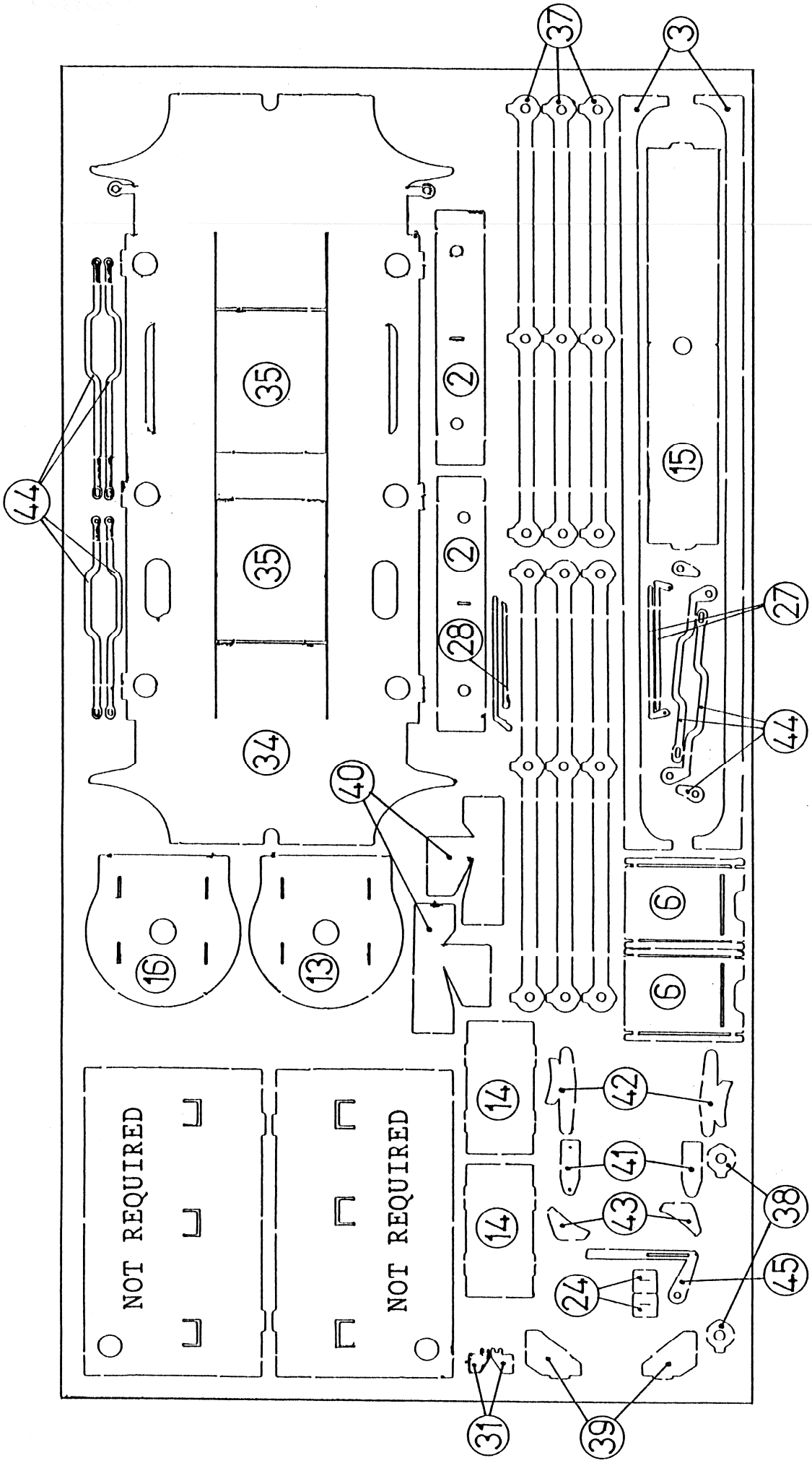


Chassis, Part 34
Legacy Issues
Initial Preparation

Open up bearing holes using tapered reamer so that bearings are snug fit. These holes require more opening up (turns of the reamer) than later designed kits.

A number of legacy issues are highlighted in the instruction sequence but they are easier to address with the main chassis component flat.

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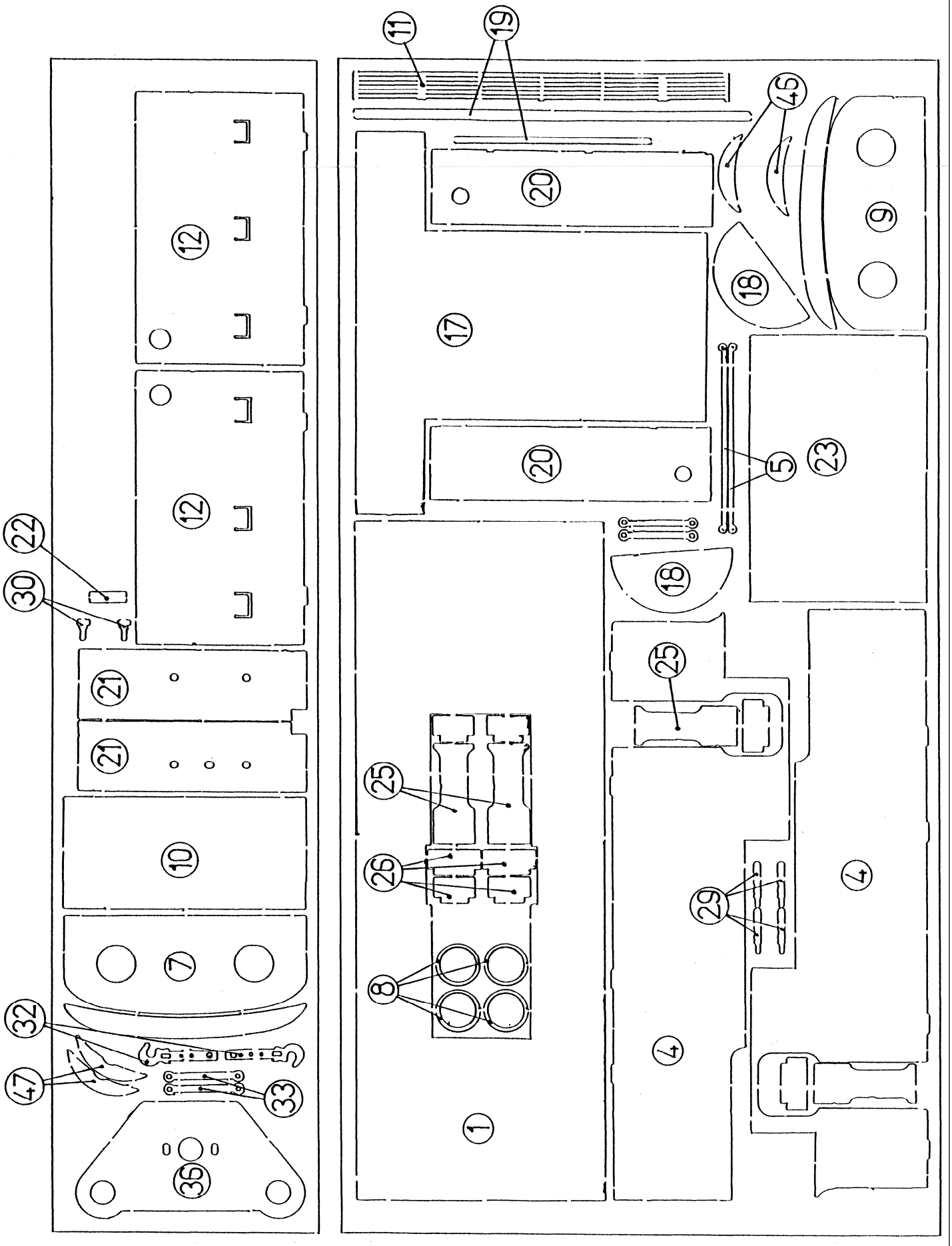
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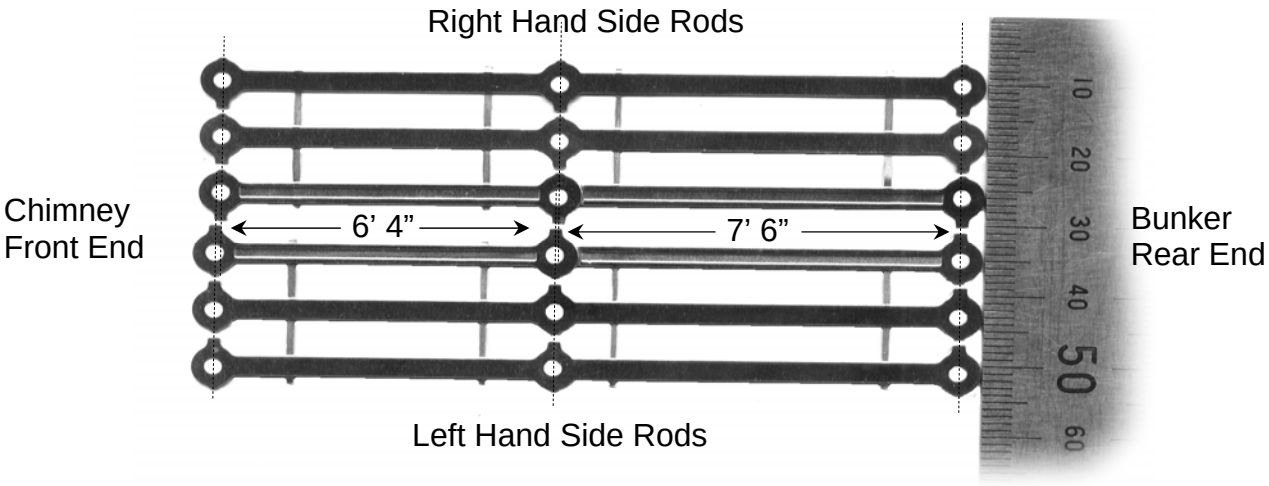
I would suggest that the first legacy issue to address is that the L/H & R/H coupling rods are two different lengths and the crankpin hole centres and chassis wheel centres don't quite match up.

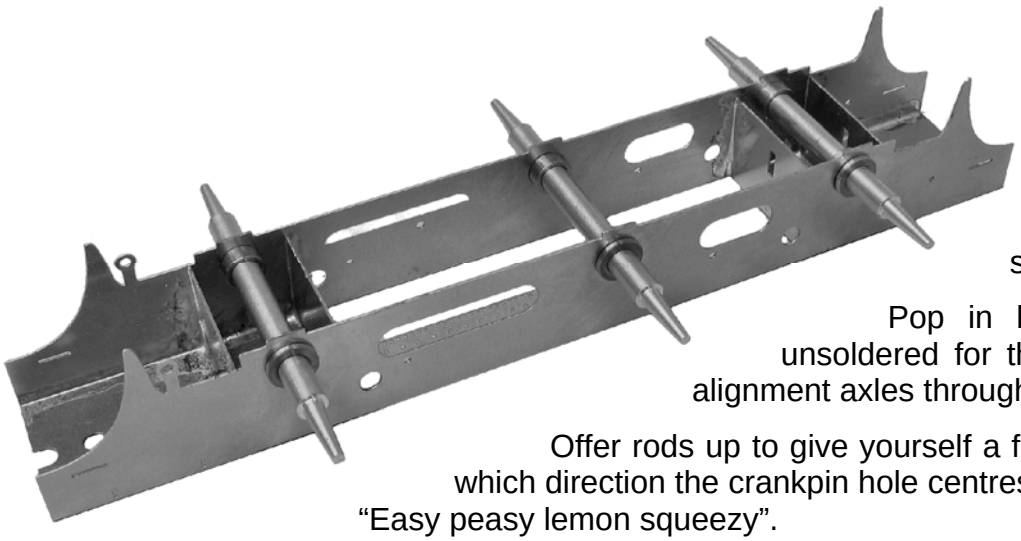
This is because I did not understand the distortions produced by the lenses of the colour printer used to produce the artwork and the copy camera that produced the Photo Etching Tools *(the photographic film printing plates used to print the acid resist mask for etching, hence Photo Etch).* I think this is described as Parallax error. Remember that in 1991 Computer Digital Design and Plotting did not exist. Back then my discrepancies were considered hardly noticeable compared to many of the problems on other producers kits that needed correcting. So making good is easily done.



For this job I would recommend using a set of alignment axles (sometimes referred to as dummy or witness axles). You can do the job by eye without a set but they are modestly priced (around £10, Jan 2024) and will be a useful tool on any chassis build, if only to confirm everything is correct. Different versions are available from a number of sources. The following two are correct Jan 2024:

AAT0/3 Set of 3 dummy axles, springs & washers: http://www.metalsmith.co.uk/loco_buildingtesting_7mm_scale.htm

7MA042 Hornblock Alignment Jig 7mm scale (3 Axle): https://www.roxeymouldings.co.uk/product/960/7ma042-hornblock-alignment-jig-7mm-scale-3-axle/



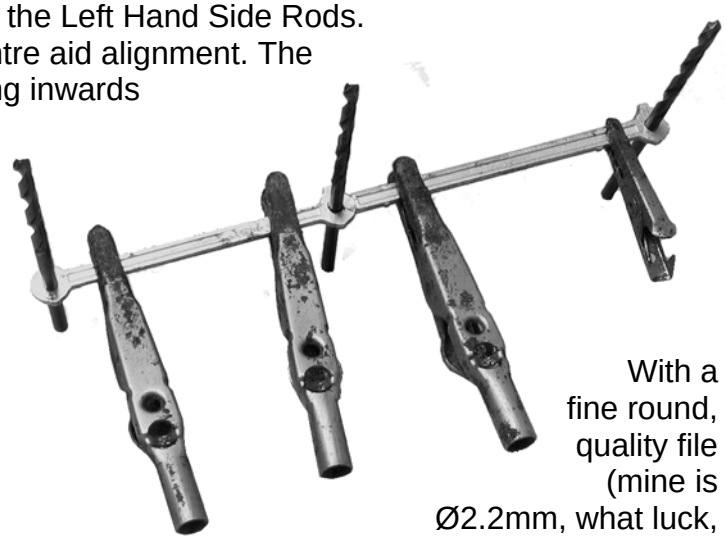
Form up chassis and spacers. Solder spacers and fold lines solid.

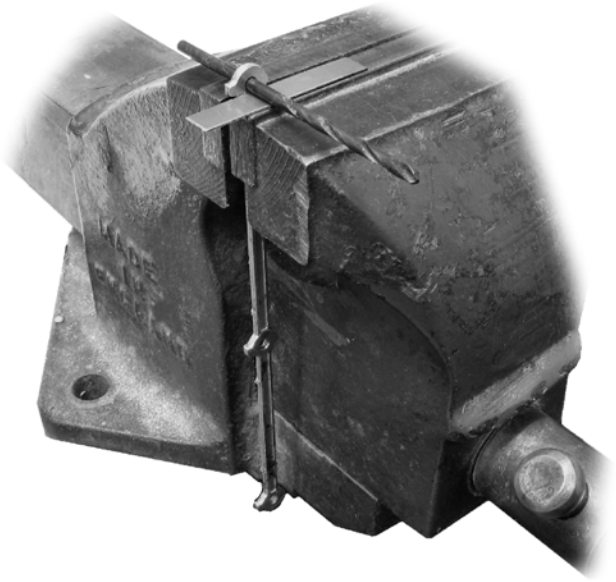
Pop in bearings, these remain unsoldered for the time being and pass alignment axles through.

Offer rods up to give yourself a feel for how much and in which direction the crankpin hole centres need moving.

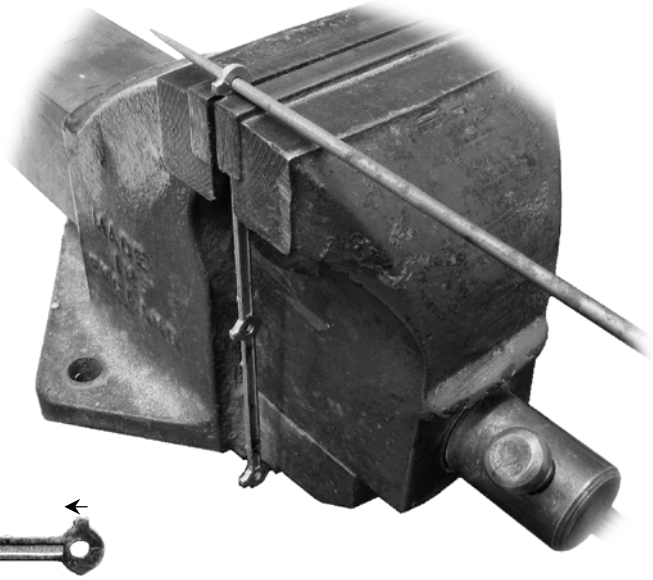
"Easy peasy lemon squeezy".

First laminate together the three sections of the Left Hand Side Rods. The drill shanks, 2.2mm on ends, 2.3mm centre aid alignment. The two outer hole centres will now require moving inwards by about $^1/_3$ mm. So place a packing piece of scrap brass etch on top of vice jaw, position drill shank firmly on top and clamp side rod in vice. Remove drill and packing and edge of crankpin hole will be about $^1/_3$ mm above vice jaw.

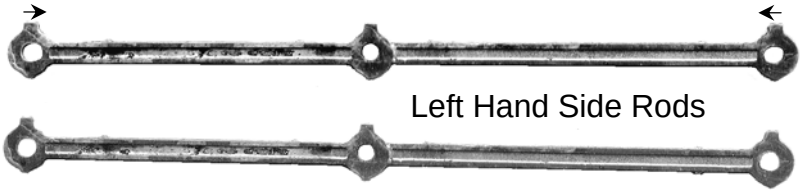




With a fine round, quality file (mine is Ø2.2mm, what luck, try:https://www.hswalsh.com/jewellery-tools), slot crankpin hole down to vice jaw.

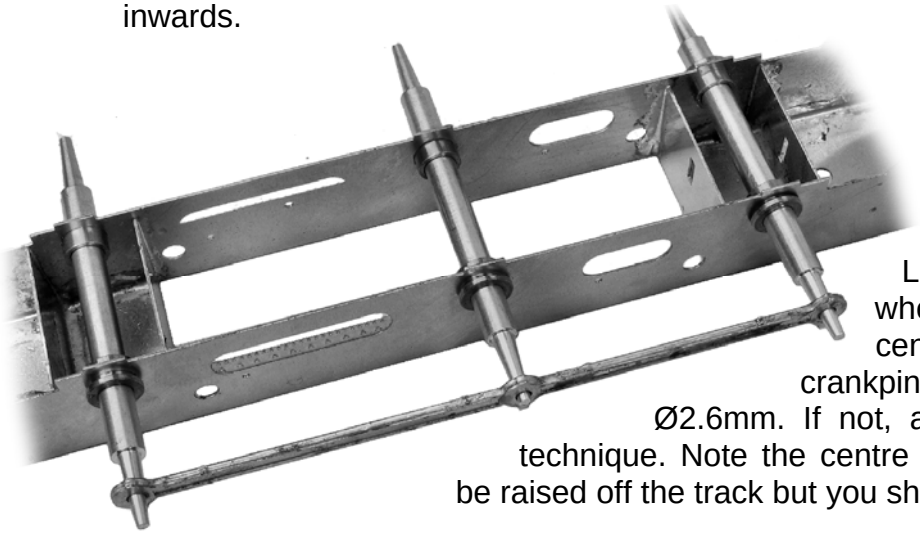


Repeat for other end to produce two oval holes about 2.5mm wide. Leave centre hole as it is for the time being



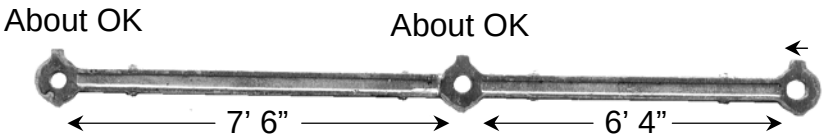
Left Hand Side Rods

Then using a tapered reamer or clockmakers broach gently open up into a round hole about Ø2.6mm, just larger than the Ø2.5mm Slater's crankpin bush. You will have moved the hole centres inwards.



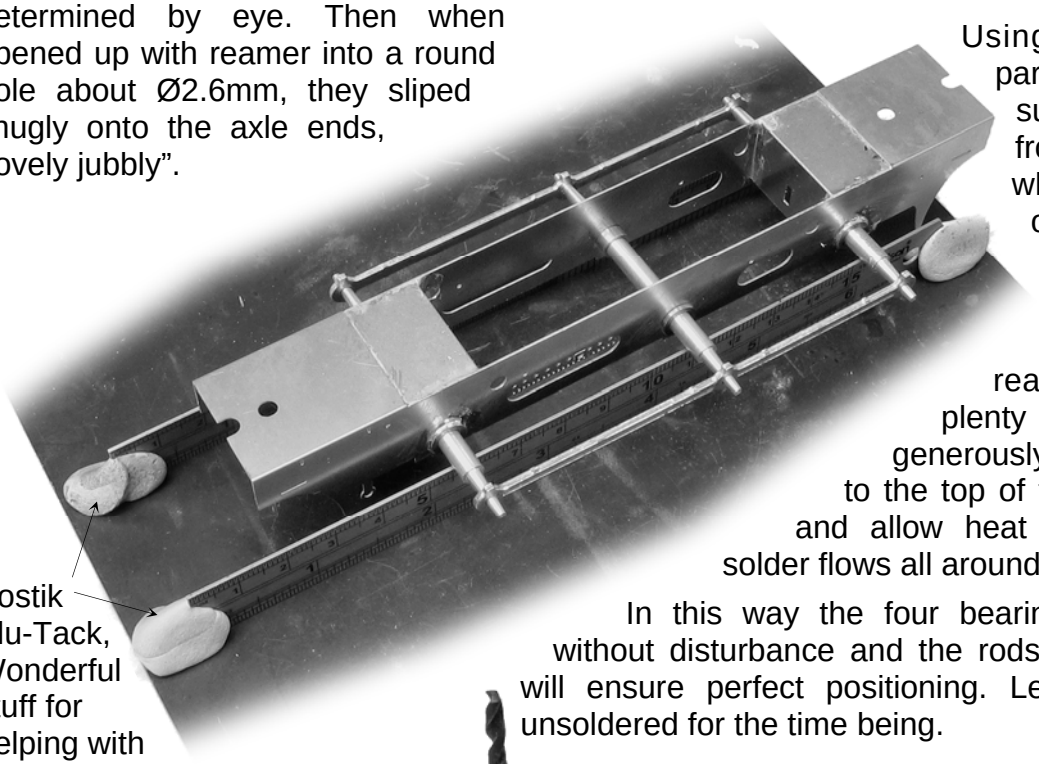
You should now find that the Left Hand Side Rods match the wheel centres. Hopefully the centre axle also matches and this crankpin hole can also be opened Ø2.6mm. If not, adjust slightly using the same technique. Note the centre axle is deliberatly designed to be raised off the track but you should not have noticed this yet.

Offer R/H rod up. I found that only the front hole centre required moving inwards by about $^{1}/_{3}$ mm. The other two only required a few strokes of the file in the right direction, as determined by eye. Then when opened up with reamer into a round hole about Ø2.6mm, they sliped snugly onto the axle ends, "lovely jubbly".



Right Hand Side Rods

Using something like parallel rules on a flat surface, to ensure the front and rear axles/ wheelsets will sit flat on the track without rocking corner to corner.

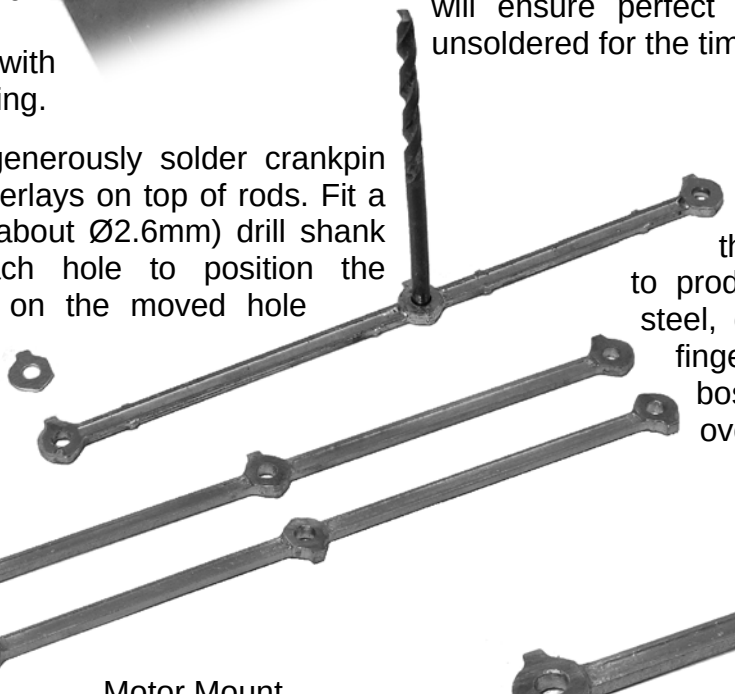


Solder front and rear bearings, using plenty of flux, touch your generously loaded, largest bit, to the top of the bearing/sideframe and allow heat to build up so that solder flows all around the bearing.

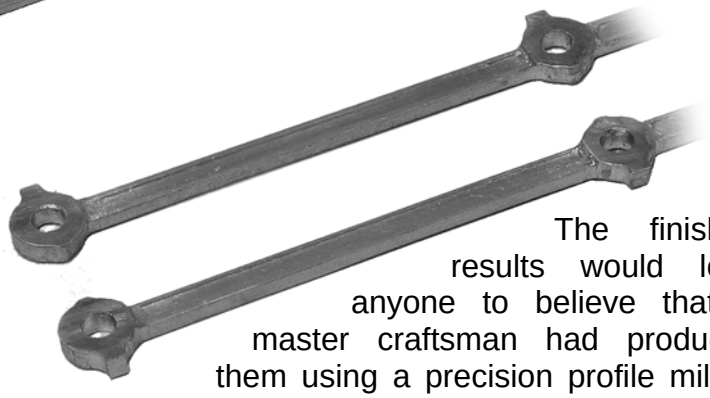
Bostik Blu-Tack, Wonderful stuff for helping with kit building.

In this way the four bearings can be soldered without disturbance and the rods and alignment axles will ensure perfect positioning. Leave centre bearings unsoldered for the time being.

Now generously solder crankpin boss overlays on top of rods. Fit a snug (about Ø2.6mm) drill shank into each hole to position the overlay on the moved hole centre.



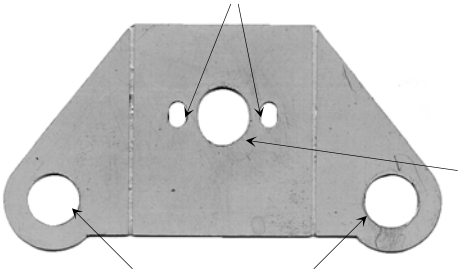
Now holding rods in vice, draw file down the top and bottom so that all the solder and etched layers blend in to produce the look of a solid, machined steel, component. Then holding rods with fingers, profile and blend in the crankpin bosses, re-profiling to match the top overlay centred on the moved holes.



The finished results would lead anyone to believe that a master craftsman had produced them using a precision profile milling machine.

Motor Mount

With your fine round, quality file, gently dress inside of slotted holes to match fixing holes in motor case front.



Enlarge so worm gear is easy fit through.

Open out to clear bearings

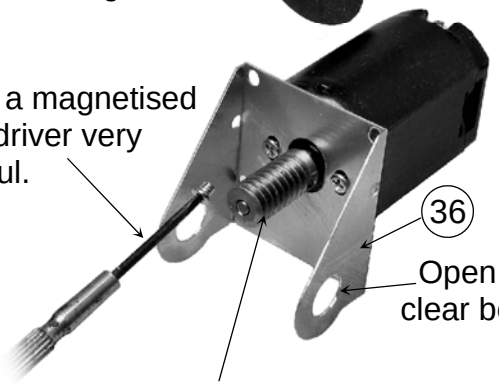
Cut off back motor shaft using carbide cutting disc& mini drill.

Countersink crank pin screw head and encapsulate with Araldite.

Fit balance weights using Araldite.

Temporarily fit motor into mounting cradle

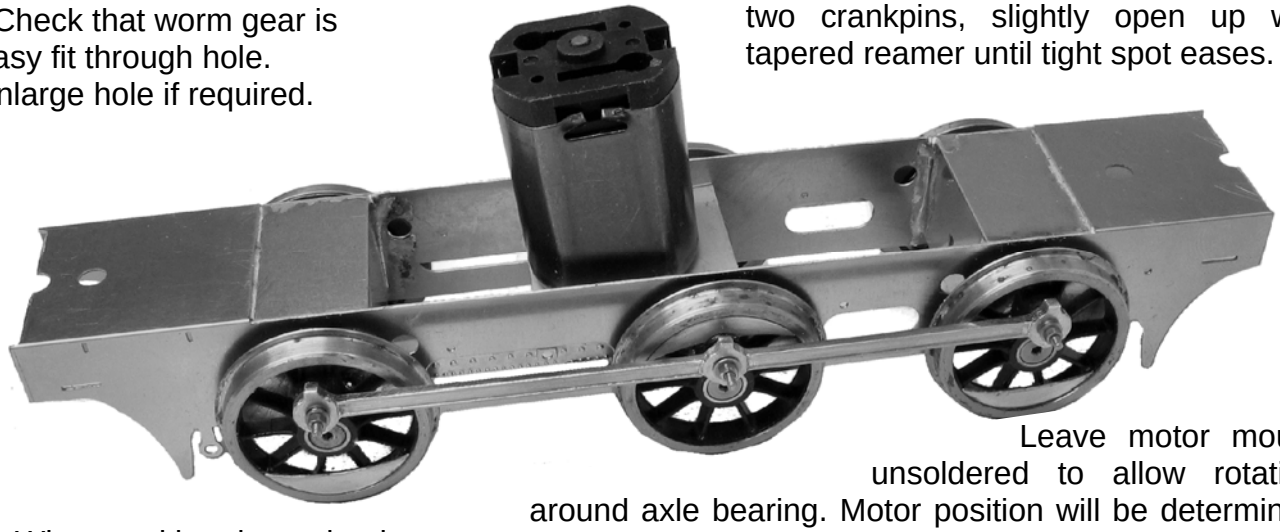
I find a magnetised screwdriver very useful.



Open out to clear bearings.

Check that worm gear is easy fit through hole. Enlarge hole if required.

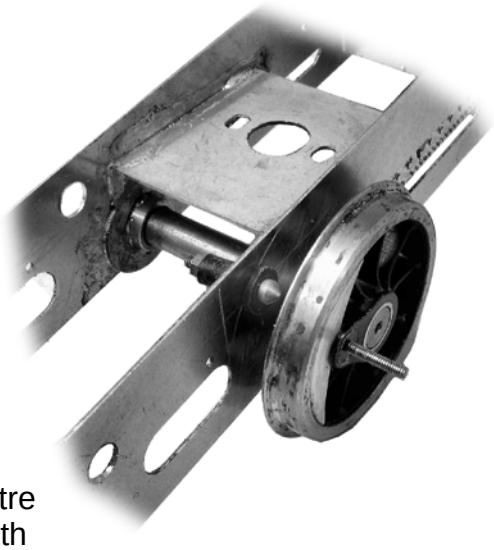
Fit wheels and rods and check for free running. If any tight spots appear on a wheel revolution, these can normally be identified by the rod becoming tight on two crankpins, slightly open up with tapered reamer until tight spot eases.

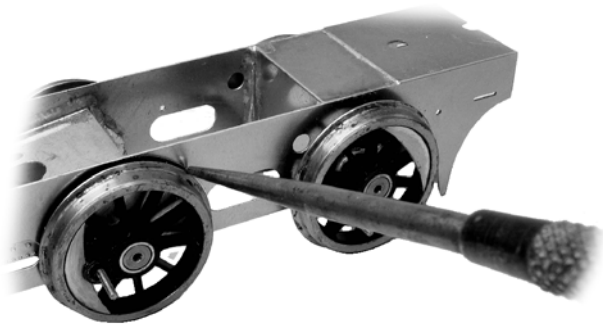


Leave motor mount unsoldered to allow rotation around axle bearing. Motor position will be determined later as body/boiler construction progresses.

When position determined tack solder mount and remove motor. Then solder mount solidly into position

Legacy issue, pilot holes for Slater's plunger pickups were only provided on outer wheelsets. If you wish to fit additional centre wheel pickups; scribe a guide line, remove wheelsets but leave a single wheel on an axle for checking, then refer to page xx for dimensions to drill extra pilot holes.





Pop assembled pickup into pilot hole, check that its position on wheel back is correct (hole centre can be moved with round file) then with a tapered reamer open hole to a snug fit. It's a good idea to check all pickup positions in this way.

FIT MOTOR MOUNT ONTO
CENTRE BEARING BUSHES

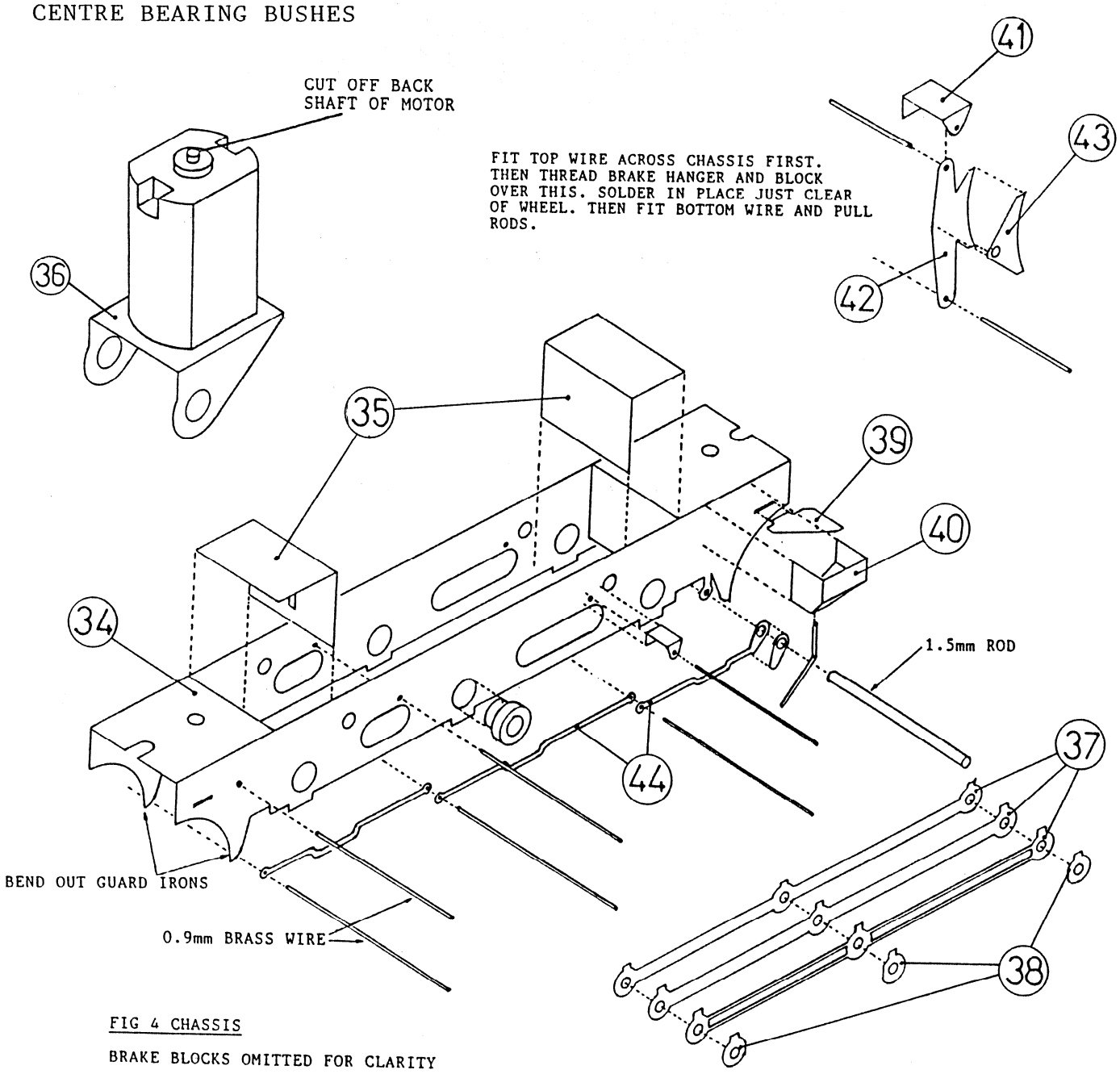
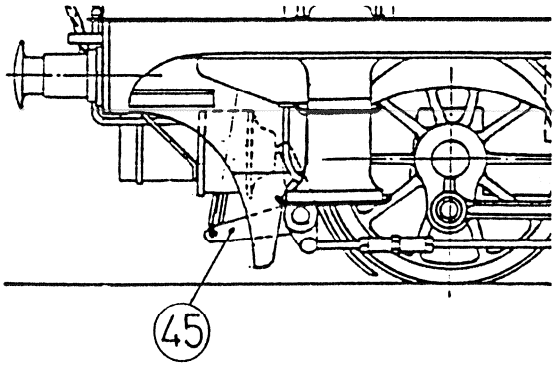
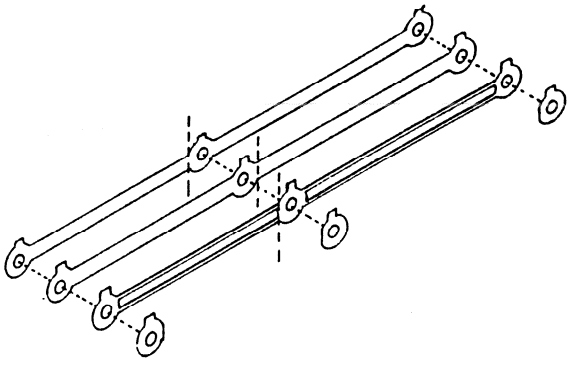


FIG 4 CHASSIS

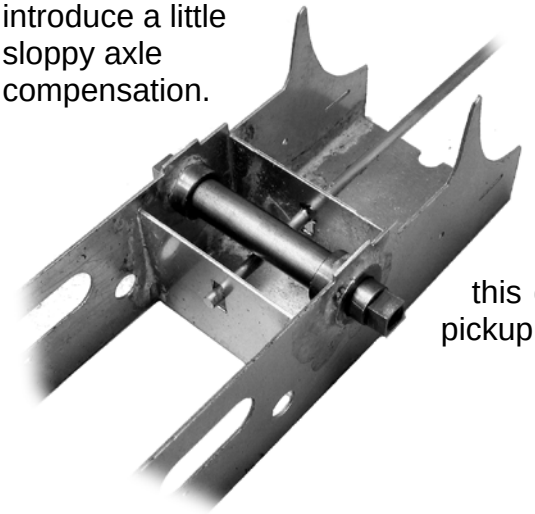
BRAKE BLOCKS OMITTED FOR CLARITY

TO MAKE A SET OF JOINTED RODS CUT AS SHOWN. FIT RODS ONTO CRANKPINS AND CHECK FOR BINDING GENTLY OVAL ANY OFFENDING HOLES WITH A FINE ROUND FILE.



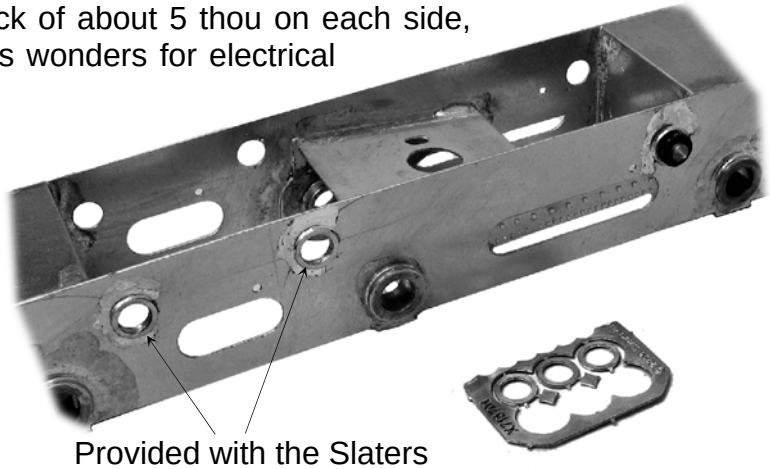


An optional refinement is to introduce a little sloppy axle compensation.



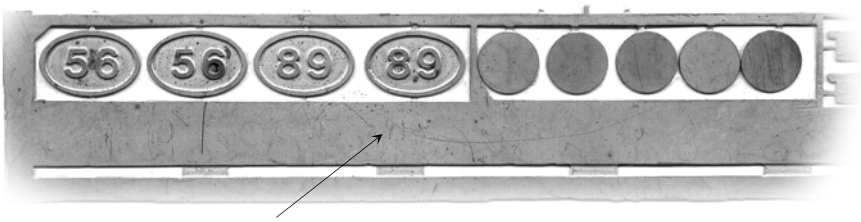
With an axle passing through bearings solder a length of 1.6mm brass rod so that it bears down on the axle. Remove the axle and ream out with a tapered broach the axle holes 10-15 thou oversize or file (use a round or 1/2 round file) the top and bottom of the bearing hole into a slight oval.

Refit the axle and you should have a slight rock of about 5 thou on each side, this does wonders for electrical pickup.

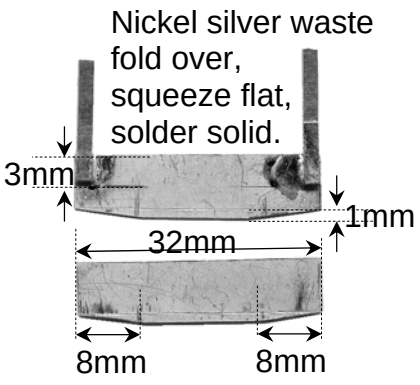


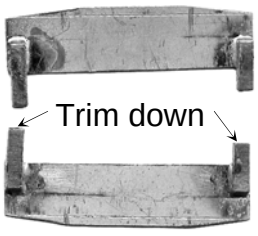
Provided with the Slaters plunger pickups are optional packing washers. I recommend fitting these (check with assembled pickup all is still well).

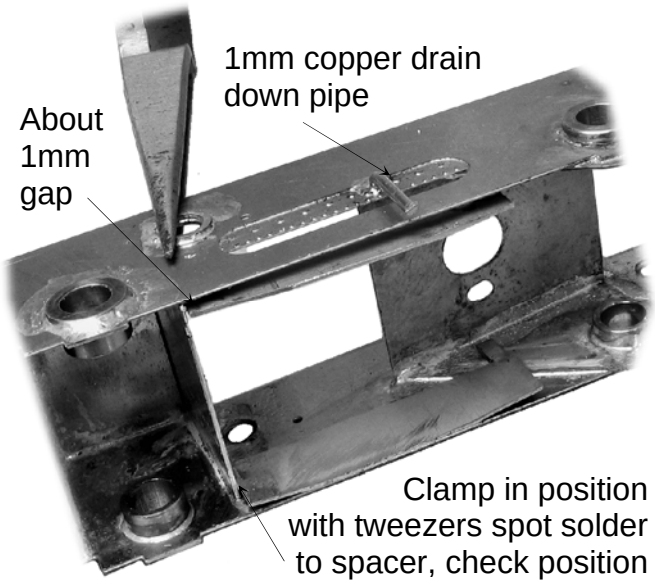
Legacy issue, I misinterpreted the drawing and provided firebox bottom detail in the oval frame cut out but assumed the drawing showed a fresh air gap below it. In reality the drawing was showing the hopper shaped ashpan that is slightly inset below the firebox.



So we need a strip of waste material to fabricate ashpan sides. The hoper shape is marked out and then with the part clamped in the vice jaws shaped with a flat file. It is only to provide a silhouette so you only need to work by eye.

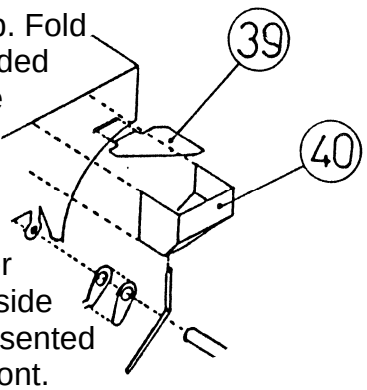






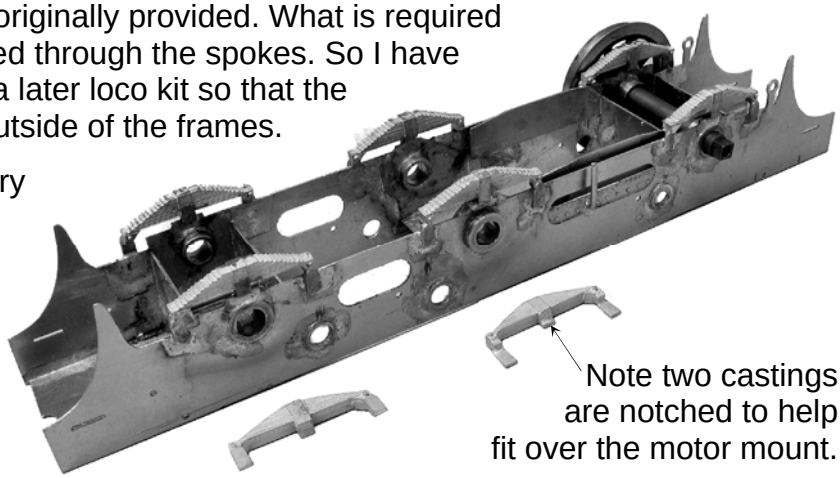
Clamp in position with tweezers spot solder to spacer, check position then solder solid at N/S strips.

As built the rear sandboxes were fitted to the frames below the cab. Fold up hoppers are provided and if required, these should be fitted now (0.9mm wire sand pipe fitted later).



Repositioned in later periods (c1943) to inside cab. These are represented on cast coal space front.

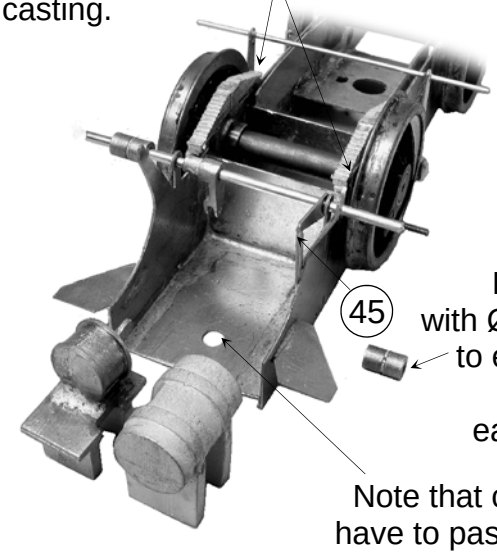
Legacy issue, no spring detail was originally provided. What is required is a solid silhouette that can be viewed through the spokes. So I have modified a suitable cast spring from a later loco kit so that the spring hangers will mount onto the outside of the frames.



Note two castings are notched to help fit over the motor mount.

As it is one casting fits (almost) every position, a little filing down may be required for a snug fit.

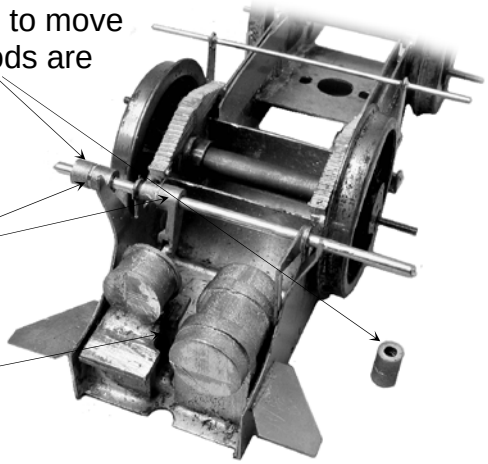
Check, taking account of side play, that wheel back clears casting.



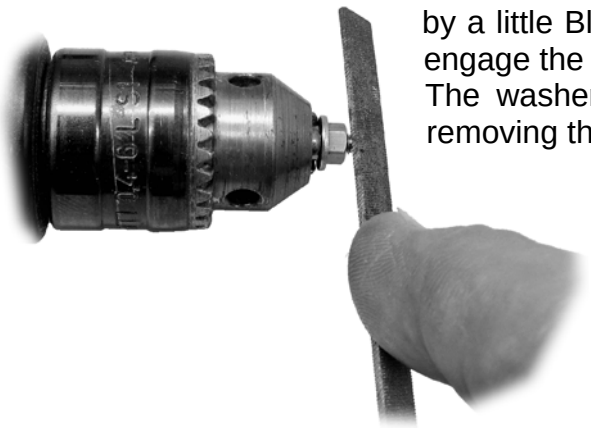
Drill out castings, first with Ø1mm from each end to establish centre, then Ø1.7mm, to be an easy fit onto brass rod.

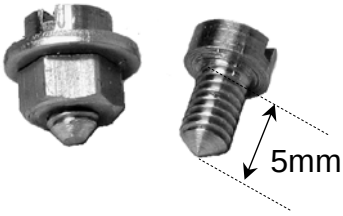
Note that chassis fixing screw will have to pass down between castings

Leave free to move until pull rods are fitted



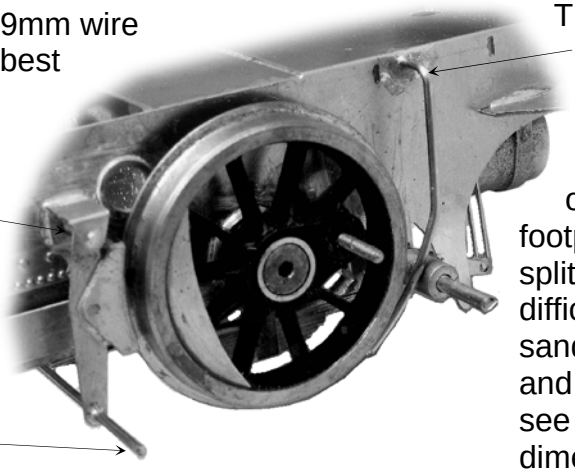
A very useful refinement is to cone the end of the chassis fixing screws. This will allow the screw, held onto the screwdriver blade by a little Blu-Tack pressed into the screw slot, to centre itself & engage the nut thread as you pass it down between the castings. The washer & nut are helpful for holding in minidrill chuck & removing the nut will clear the screw thread.





Spot solder brake hanger to 0.9mm wire inside fold up bracket. Possibly best achieved by approximately and generously soldering joint first then re-heating as you manipulate by holding the brake hanger in tweezers so that the brake block aligns with the front face of the wheel (taking account of side play.

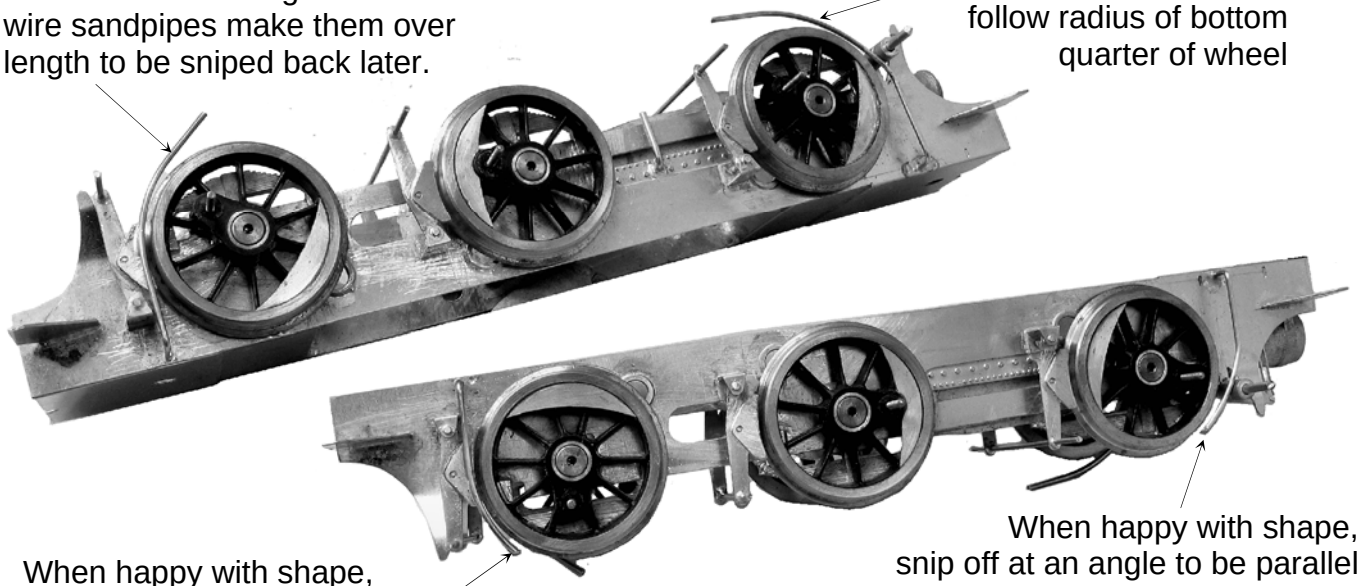
Leave bottom wire overlong until pull rods have been fitted.



Legacy issue, The original intention was that the 0.9mm wire sand pipes would project down from the body (there are holes on the underside of the footplate). This would make splitting body and chassis difficult. So turn the sandpipe tops through 90° and fix into drilled holes, see page 4 for position dimensions.

To assist in forming 0.9mm brass wire sandpipes make them over length to be sniped back later.

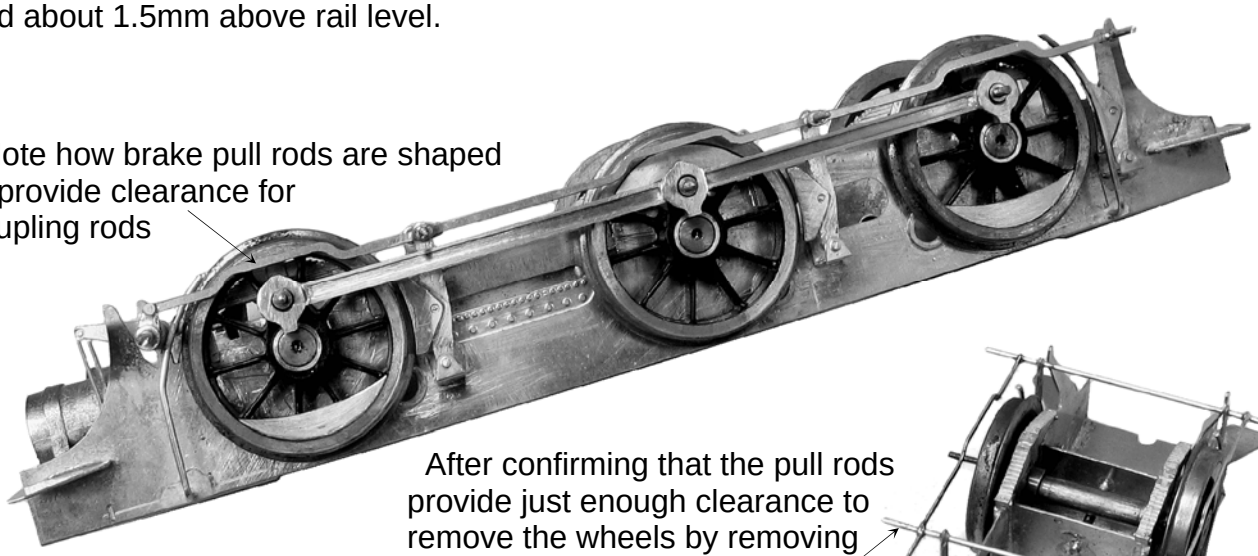
Form sandpipe to roughly follow radius of bottom quarter of wheel



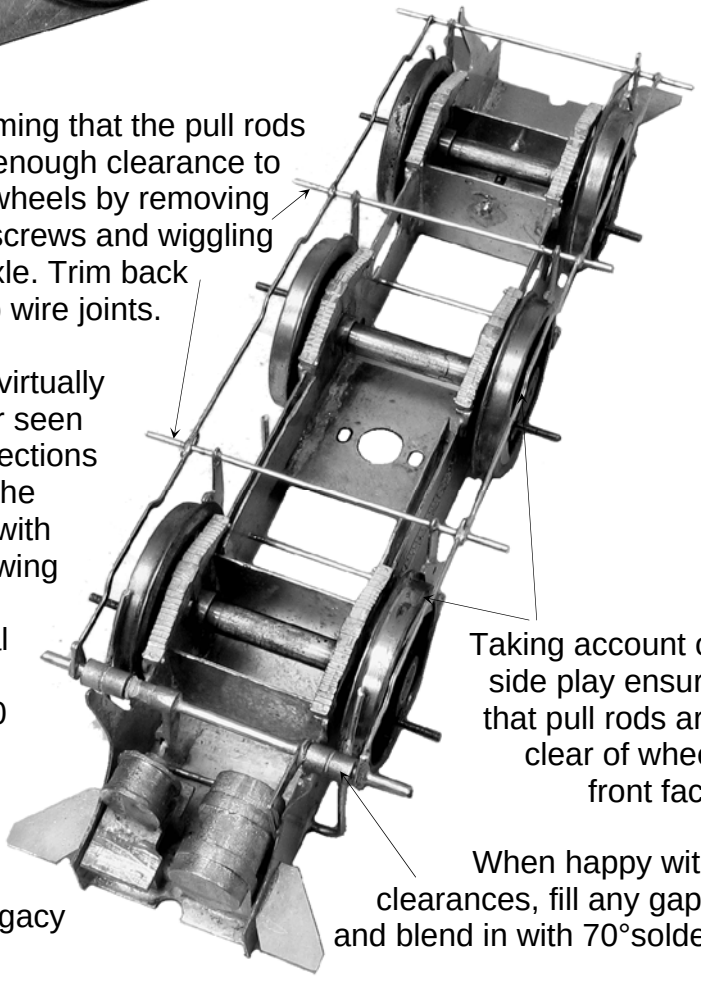
When happy with shape, snip off at an angle to be parallel and about 1.5mm above rail level

When happy with shape, snip off at an angle to be parallel and about 1.5mm above rail level.

Note how brake pull rods are shaped to provide clearance for coupling rods



After confirming that the pull rods provide just enough clearance to remove the wheels by removing both centre screws and wiggling wheels off axle. Trim back and clean up wire joints.



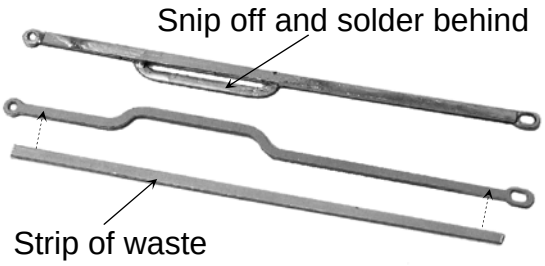
When this kit was first produced in 1991, virtually all the model “Buckjumpers” that I had ever seen had outside brake pull rods with dropped sections in the path of the crank pin throw. Most of the published drawings also showed pull rods with dropped sections (I had only seen one drawing with straight pull rods so I assumed that drawing was in error). Also with the general purpose 4 foot diameter wheels that were the only things available at the time (00 & 0 Gauge) their crank pin throw was such that pull rods with dropped sections were required to allow the wheels to rotate.

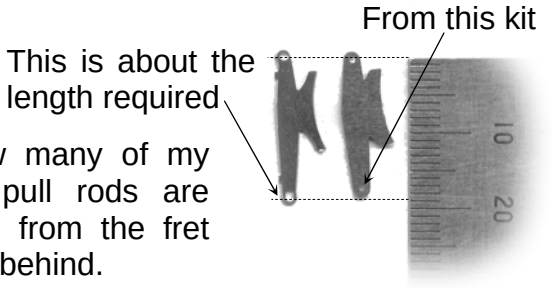
So that is what was provided but they are not correct for all “Buckjumpers”. It is a “Legacy Issue” that I have accepted but ...

Taking account of side play ensure that pull rods are clear of wheel front face

When happy with clearances, fill any gaps and blend in with 70°solder

… Legacy Issue, There was plenty of prototype “Buckjumpers” that had brake pull rods with dropped sections but these were shunters/freight locos and they were fitted with, 15 spoke, cast iron, unbalanced wheels that had a larger crank pin throw. The passenger “Buckjumpers” condenser gear, Westinghouse air brakes etc, were fitted with, 10 spoke, steel, balanced wheels with shorter crank pin throw and straight pull rods. Slater’s now produce a wheel to this specification (7848NE)



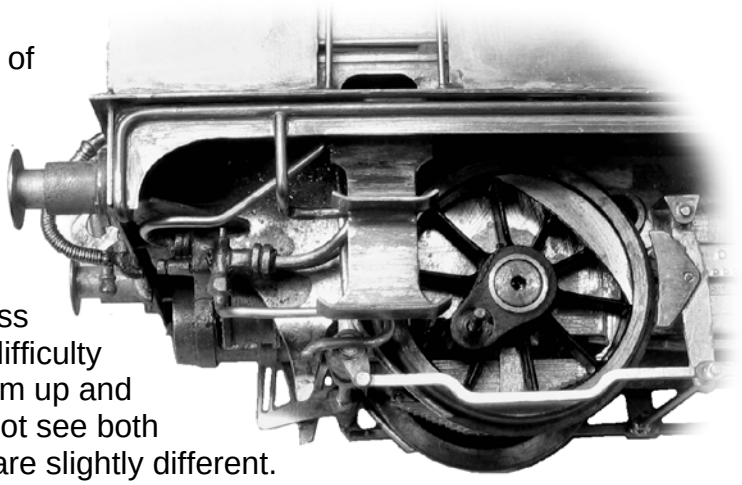


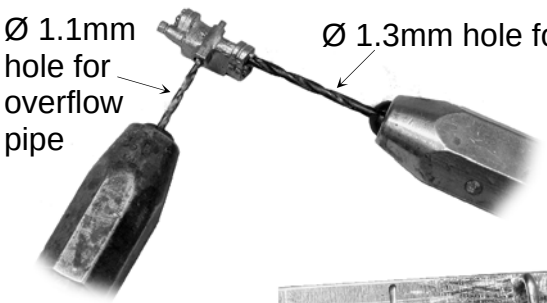
Now I have accepted this legacy issue but I know many of my customers are more ingenious than me. Straight pull rods are produced easy enough by soldering a strip obtained from the fret waste on top of the pull rod, then soldering drop section behind.

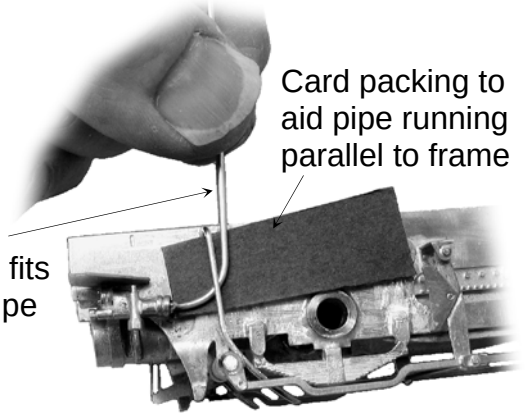
But the pull rod will still not clear the crank pin throw as the bottom of the brake hanger needs to be longer. By nicking the bottom with a triangular file the 0.9mm brass cross wires can be soldered below. A sliver of brass tube passed over the wire could be used to add some bulk to the bottom of the brake hanger. Something similar could be done at the rear operating crank.

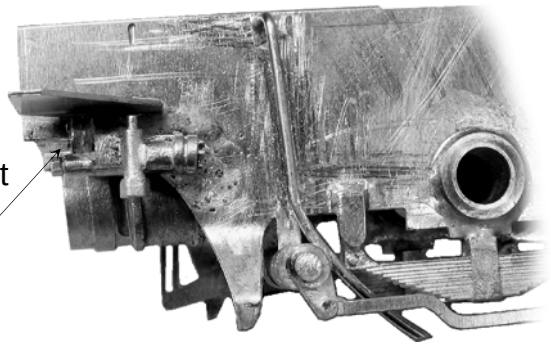
Injectors and pipe work.

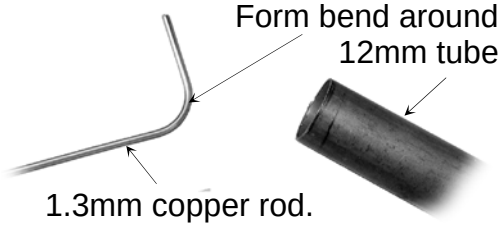
Originally the injectors were fitted forward of the step and underneath the footplate and from a model point of view, could not be seen. They were later moved and fitted to the frames underneath the bunker (probably by 1923). The pipe runs I fitted to my model are a slightly simplified representation and terminate in the darkness behind the steps (otherwise you will have difficulty splitting chassis from body). It is best to form up and position the pipe runs by eye, as you can not see both sides at the same time, don't worry if they are slightly different. Looking at prototype photos the plumbing appears slightly different between locos.



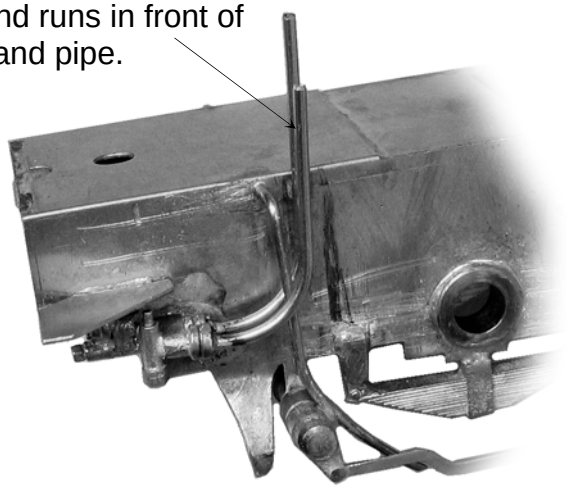


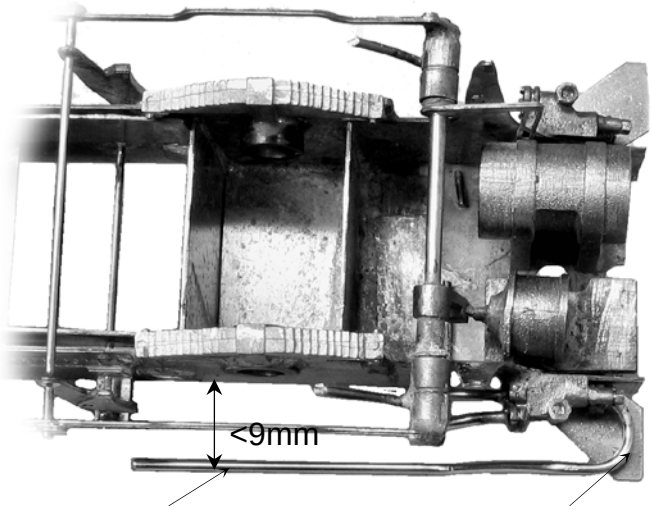






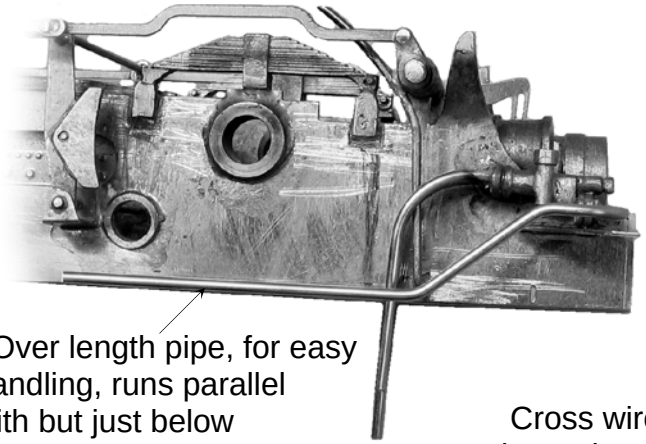
Second pipe is slightly set over and runs in front of sand pipe.



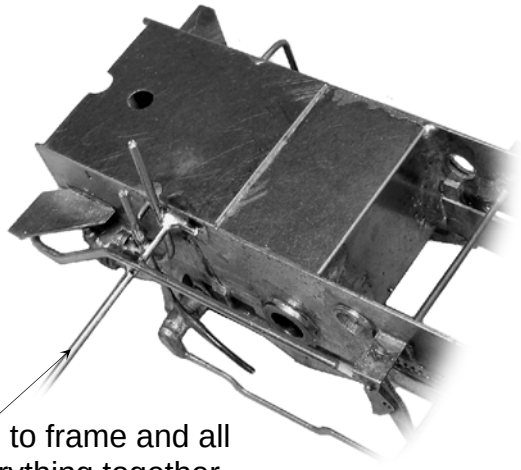


Runs parallel with but less than 9mm from frame to enable clearance between step backs.

Form bend around 6mm tube

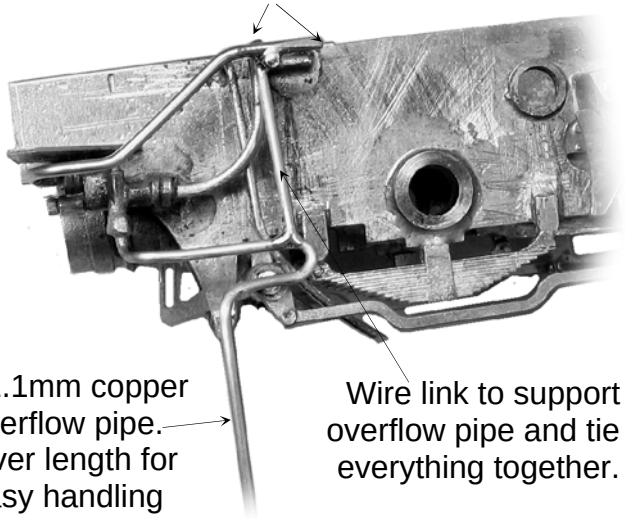


Over length pipe, for easy handling, runs parallel with but just below top of frame.



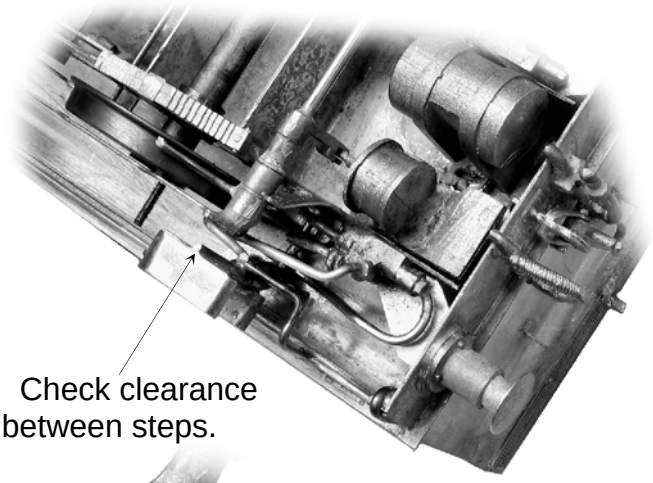
Cross wire soldered to frame and all three pipes to tie everything together.

Trim off excess pipe lengths.



1.1mm copper overflow pipe. Over length for easy handling

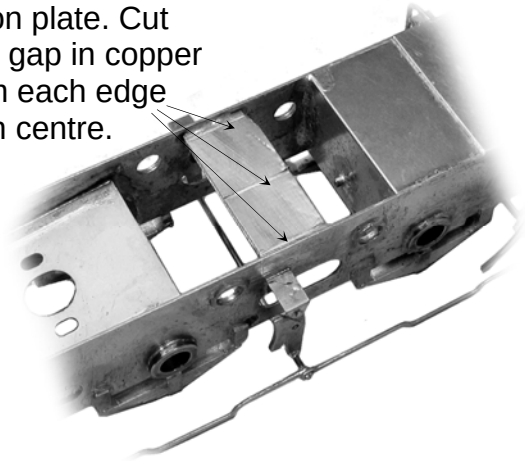
Wire link to support overflow pipe and tie everything together.

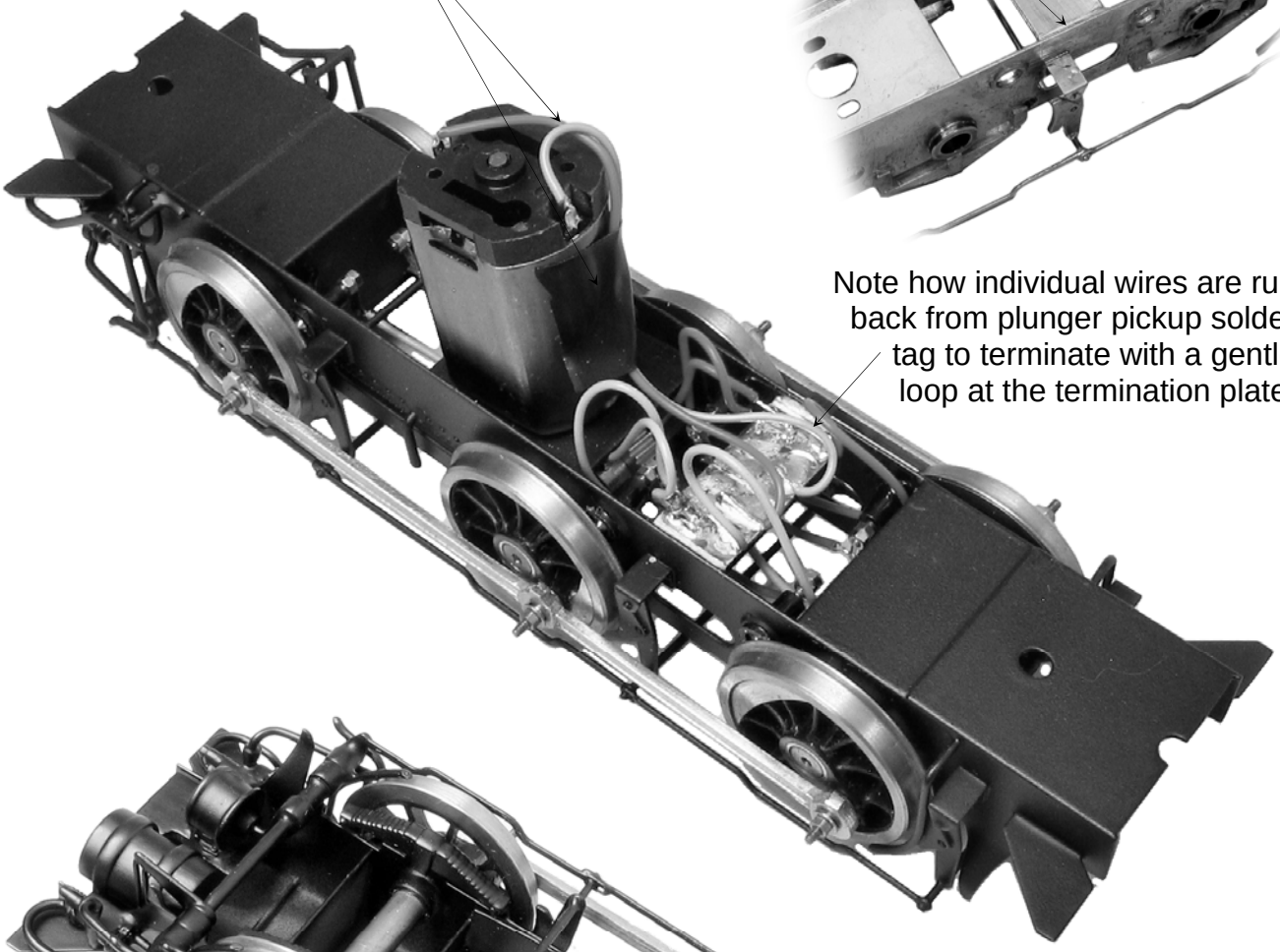


Check clearance between steps.

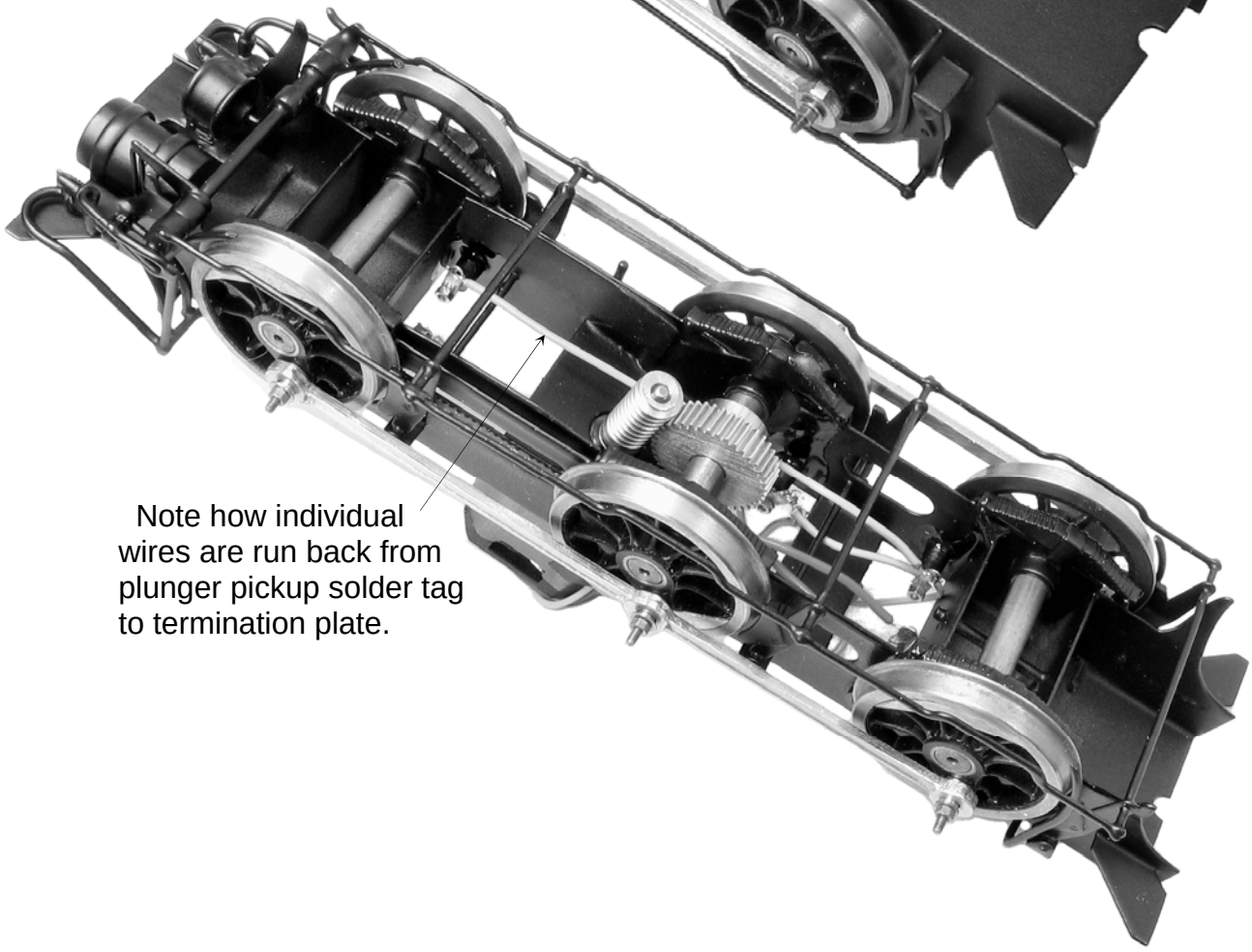
Two wires (flying leads) run from motor solder tags to termination plate. The motor/loco direction can be reversed to match the direction of your layouts other locos by swapping over these wires. Tidy wires by securing to motor with a little insulation tape.

Printed circuit board termination plate. Cut insulating gap in copper 2mm from each edge And down centre.





Note how individual wires are run back from plunger pickup solder tag to terminate with a gentle loop at the termination plate.



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