

TALES FROM BARLOW WORKS

Lightly sprung plunger pickups

Materials required....

Plastruct plastic tube (labeled 3.20 mm)
K&S 2mm diameter brass rod(labeled 0.81)
Copper clad strip
.45 brass wire
Fine multi strand wire
Access to a spring bending and cutting jig
Super glue
Hair clip

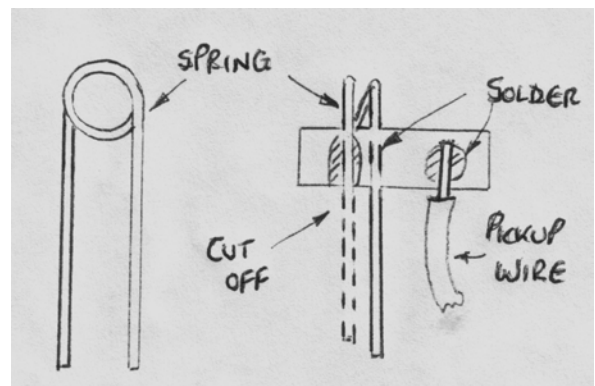
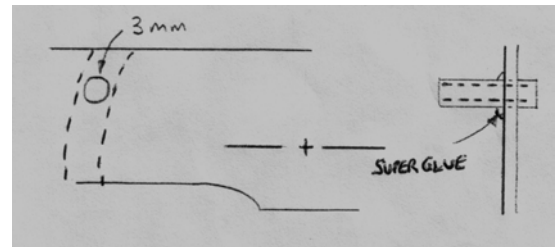
These plunger pickups can usually be fitted in place of the commercial plungers advocated by the model trade. They provide a light contact pressure and therefore less drag than the commercial units and have the added advantage that the plungers can be readily removed from the engine and replaced when required without damage to the chassis.

Method.....

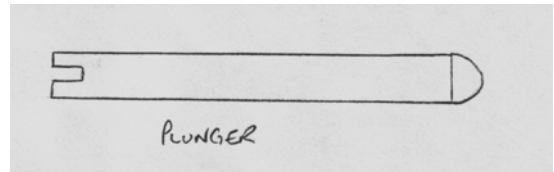
Before the pickups can be fitted the location has to be determined. This can either be done with the frames assembled or flat but it must be possible to either locate the axle centres or fit the wheels in their bearings. Mark the outer edge of the wheel flange and the inside of the rim on the outer faces of the frames in permanent marker either using a compass or using the wheel itself. Determine where the plunger is required taking into account any frame spacers and also the position of the spring units on the inside. Mark the eventual location with a centre pop and drill 3mm. Open out this hole to be a tight sliding fit for the tube.

Superglue a length of approx 10-15mm of tube into each hole from the inside leaving about 2-3 mm on the outside. Put to one side to set hard. Using the .45 wire make up the springs using the bending jig, the length of the spring does not matter as it will be adjusted later.

Put one turn on the spring as in the diagram and put the spring to one side. Take a length of fine multi strand wire and strip about 10mm of the insulation from one end. Tin this end with solder. Cut a length of sleeper strip to the required length. I use OO sleepers and cut them in half, O gauge sleepers could be cut into three. Take into account where the spring wants to be on the sleeper strip and which way the pickup wire wants to go and solder the wire and spring onto the copper clad strip. The spring can come off from the side or the end or you can even put an extra twist on the spring and mount it on its side if space is a bit tight. Ensure the inside face of the frame is clean and superglue the spring unit in place using the hair clip to hold it in position while the glue sets (lately I



have been using Loctite gel which seems to give a good solid bond). Ensure that the spring wire goes across the end of the plunger tube and is in line. To prepare the plunger take the 2mm brass rod and screw it into the plunger jig level with the end. Cut off flush and file the end smooth. Still holding it in the jig cut a slot in the end using a junior hacksaw, the jig will eventually develop a slot to act as a guide. Remove from the jig and file the other end into a half round shape to bear on the back of the wheel. Trim the tube to length ensuring it does not foul the wheel at the front and there is enough room for the plunger at the rear To assemble the plunger insert from the rear with the wheels in place and adjust the spring to a light contact that will keep the plunger in contact with the wheels at all times (allowing for Slaters wheels). You can apply a touch of contact cleaner or WD40 to the plunger for a really smooth movement but it requires the smallest amount so don't go mad. Finally when painting remove the plungers and keep safe, the tubes can be protected with a cocktail stick pushed through and the spring units can be painted if required, remember to scrape of the paint from the end of the spring where it contacts the plunger when painting is completed.



Engine to tender pipes

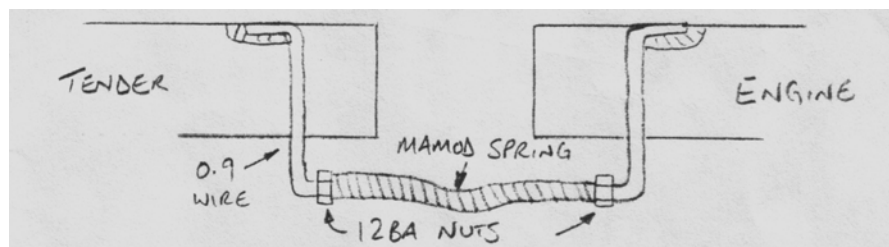
Materials required.....

- 0.9 brass wire
- 12 BA nuts
- Mamod drive spring

The provision of pipes between the engine and tender is a simple addition that can add that extra detail for very little effort. It really works best if the loco and tender are permanently coupled but it could be connected by hand if required though it could be a bit of a fiddle.

Method.....

Take the 0.9 mm wire and bend two lengths into the shape required and solder to the inside of



the tender chassis. Take two more lengths and do the same for the engine. The pipe runs should not touch the trackwork and finish about 15-20mm apart. Take a 12 BA nut and ream out with a taper broach until it is a sliding fit on the rod. Solder about 10 mm from the end of the rod. Repeat for the other pipes. Cut a length of spring so that there is enough to form a slight bend between the two pipes and slide it onto the 0.9 mm rod. Solder the end on the tender permanently in place but leave the other end free. It is better when painting to colour the springs with black permanent marker as paint will chip off as the spring flexes. It is possible to use these pipes to carry current if required by soldering the 0.9 mm rod to suitably gapped copper clad and arranging suitable pick up wires.

Steam and vacuum pipes

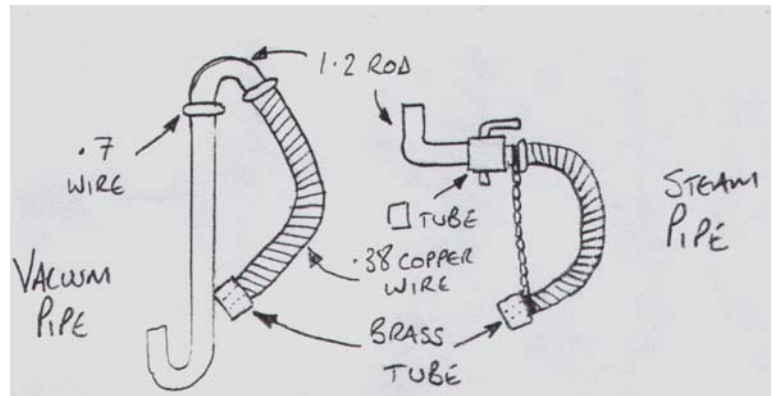
Materials required.....

1.2 mm brass rod
Tube
0.7 mm wire
0.38 copper wire
Brass tube to fit end of 1.2 mm wire

This method makes a very presentable and more robust alternative to the cast whitmetal offerings provided by some of our kit manufacturers today.

Method.....

Bend the 1.2 mm brass rod to the required shape for the vacuum or steam pipe. Cut a length of brass tube about 3-4 mm long and solder to the end of the 1.2 mm brass rod (with 224 degree solder if possible). Twist a length of 0.7 mm wire around a spare length of your 1.2 mm rod. Holding it lightly in a vice use a razor saw to cut along the length of the rod to form individual links of 0.7 mm wire. Take two of these links and solder them to the top bend of the pipe to represent the joints in the pipe. Wrap the 0.38 copper wire tightly round the pipe to represent the flexible hose and make fast when complete. Flood these windings with solder and cut off the loose ends to complete. Bend up and fix the



pipe to the rear of the buffer beam (note that some vac pipes come through the footplate). For steam pipes follow the same procedure but on the buffer beam end solder a short piece of square tube. Carefully drill a 0.7 mm hole through this square section and fit a handle bent up from 0.7 mm wire. Locate in place with a dab of superglue. Some steam pipes were held up with a length of chain and this can be represented by twisting a length of 0.38 copper wire into a braid and securing it to the pipe, this makes a convincing fine chain at a distance. Also some steam pipes were held to the buffer beam with a bracket. This can be fashioned from a strip of nickel silver and threaded over the steam pipe prior to fitting.

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