


MODEL SIGNAL ENGINEERING



Part of WIZARD MODELS

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SCALE	CODE	
7mm	MP7	

# SPRAT & WINKLE AUTO-COUPLING MOUNTING PLATES (7mm)

**32 mounting plates for easier fixing of  
Sprat & Winkle couplings to 7mm  
scale wagons.**

**Enables the couplings to be used on  
7mm scale 4ft radius curves.**

## INSTRUCTIONS FOR USE

These notes should be used instead of those supplied with the couplings or coupling starter pack.

### Preparing the wagon:

For reliable operation, Sprat & Winkle couplings must be mounted at a consistent height on each wagon. Most kit-built wagons have an open-frame arrangement of solebars and headstocks assembled around the wagon floor, usually with a representation of the underframe members found on the prototype. This effectively gives a choice of two mounting heights: inside the solebars ("upper" method), or on their bottom face ("lower" method). If you wish to maintain compatibility with stock already fitted with Sprat & Winkle couplings, you will have decided upon one or the other.

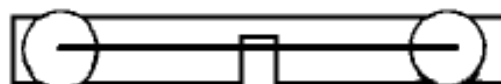
**If you are a new user, then the lower method is strongly recommended, as it involves the minimum of modification to the wagon.** Having made your choice, proceed as follows:

#### **Lower method:**

A clear, flat area 22mm wide by 17mm deep immediately behind and flush with the bottom of the headstock is required. Use plasticard or similar to fill in below the wagon floor as required.

#### **Upper method**

Cut a slot in the headstock to clear the coupling shank, and fix a length of MSE's *NSW7* nickel silver wire across the buffer centre-line as shown below. Alternatively, fix a wire loop into the headstock, at the same height as the buffer centre-line. This will usually be 24.5mm above the railhead, and it is most important to get this dimension consistent between wagons.



#### **Other types of rolling stock**

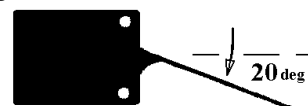
Locomotives do not require a coupling to be fixed, only the wire across the buffers or the wire loop at the appropriate upper or lower height. Please note that the mounting plates have not been tested on bogie stock, but they should fit some types.

### Preparing the coupling:

Begin by removing a coupling from its fret, and bending the paddle at 90° to the hook:



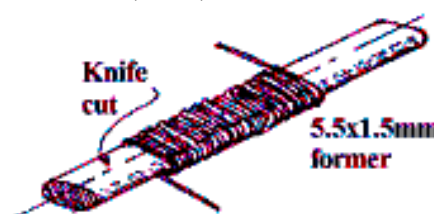
Next, offset the hook around 20° to the right, as viewed from the top of the coupling:



Finally, bend the paddle down around 10° from the horizontal, so it will clear the wagon floor when the coupling is disengaged:



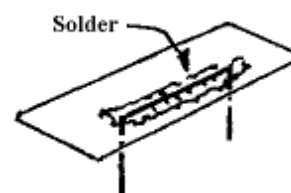
Make sufficient 3-link droppers by winding soft iron wire (MSE's *SIW7*) round a 5.5x1.5mm former. Score the side with a knife or saw, and break off the links with pliers. Alternatively, purchase MSE's ready-made links (*LNK7*).



Assemble a 3-link chain as shown, inserting the top link through the dropper hole. Use pliers to close any unsightly gaps.



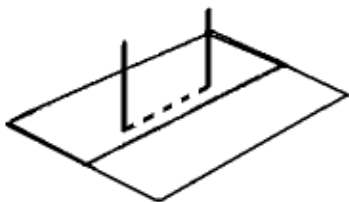
### Preparing the mounting plate:



Remove a plate from the fret and burnish both sides. Fold up a wire staple from MSE's *NSW7* nickel silver wire to the shape shown. The legs should be around 8mm long and 8mm apart. Pass

the legs through the outer pair of holes in the plate and solder the staple in place. Do not pre-tin the wire before making the bends, as this tends to cause it to fracture. The half-etched notches are irrelevant in 7mm scale, so the plate may be used either way up.

If using the lower mounting height, prepare the coupling loop from *NSW7* wire. Again, this is staple-shaped, with the legs 22mm apart, and 24mm long. Solder the wire at the edges of the plate as shown. The ends of the wire should be flush with the rear face of the plate. Again do not pre-tin the wire before making the bends.



Finally, drop the coupling top down onto the mounting plate, and bend over the legs to secure it in place. A pair of circlip pliers with 1mm diameter ends is the perfect tool for this. Ensure that the coupling is free to pivot in the vertical plane. Wash off any surplus flux and spray the whole unit with black or red oxide primer, but keep the top (fixing) surface paint-free.

**Fixing the coupling in place:**

***Lower method:***

Roughen up the prepared base and the plate's top surface to provide a key for the adhesive. Offer up the coupling unit to the wagon, so that as seen from above, the loop is in line with the front face of the buffers (hook omitted for clarity):



Using a minidrill and slitting disc, abrade a channel in the base to accommodate the wire on the top surface of the plate. Once the plate fits flush to the base, fix it in place using an impact adhesive such as Evostik, having checked that the adhesive does not harm the wagon.

***Upper method***

Proceed as above, but position the unit so the distance (x) between the loop and the inside of the hook bend is 8mm (the buffer/loop wire should sit in the crook of the top hook as shown):



Once dry, check for free operation of the couplings. In particular, take care that any adhesive spilt out from the rear of the plate has not stuck to the coupling paddle. You may find that the two flat brass surfaces tend to stick to each other - if so, bend the paddle into a slight U shape, so it only makes contact with the mounting plate at the sides.

**Adjusting the couplings:**

Standardising the coupling height has already been covered for the upper height method. For the lower method, the loop should be around 20mm above the railhead. Again, it is important for all wagons to be the same, so either make a simple height gauge, or nominate a "master" wagon, and adjust all other couplings against this, by simply bending the loop up or down.

The couplings have been tested on curves down to 4ft radius under all modes of operation.

**Location of magnets:**

Magnets should be placed at any point where uncoupling is desired, remembering that wagons can be uncoupled and then pushed as far as needed without recoupling taking place. At pointwork, ensure that the magnet position does not leave wagons within the fouling point of the converging track.

Both electromagnets (*PK MAG*) and permanent magnets (*7MAG*) are available from MSE. For *PK MAG*, follow the supplied installation instructions. For *7MAG*, orient the magnets parallel to the rails, with the widest face (the pole) uppermost. Reliability is aided by having all magnets with the same pole on top - check by bringing two magnets together, remembering that like poles repel. For best operation of both types, the magnet's pole should be within 5-6mm of the end of the 3-link chain. It is usually sufficient to bury the magnet within the thickness of the cork base (if used), as scale sleepers and scale rail will usually give the correct spacing. If you are using a deeper section rail and thicker sleepers, such as PECO Streamline, it may be necessary to bring the magnet nearer the sleepers' top surface. Try one magnet and see how it performs. If satisfactory, then follow for the others, if not then modify to suit. Once ballasted over, the magnets will be invisible, so don't forget to place a small trackside marker to remind you where they are.

**Operation:**

To couple two wagons (or a wagon to a locomotive), simply buffer up away from a magnet.

To uncouple, stop over a magnet, ease back slightly, at which point both couplings will drop, and then pull away. Alternatively, once the couplings have dropped, you can push the uncoupled portion as far as you wish (the "delay" mode).

Note that pulling or pushing at a steady speed over a magnet will not cause uncoupling.

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