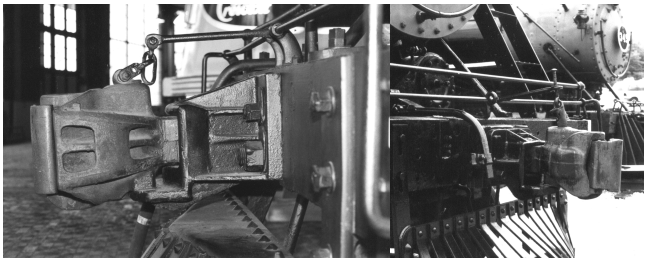
Assembly and Installation Instructions Sergent Engineering ES1P87

AAR Type E Coupler and Pocket

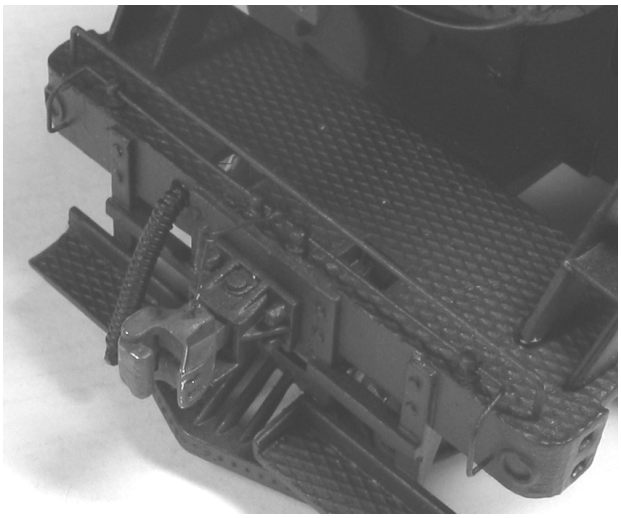
Introduction

Steam locomotive pilot couplers present an interesting challenge for modelers. Perhaps nowhere else is a coupler so prominently displayed as mounted the on the pilot of a steam locomotive. Traditional knuckle couplers mounted to the front of the locomotive never seem to look right. In the past, modelers have always had to compromise in this regard. One could install a working coupler which was necessary for realistic operation, or one could install a dummy coupler which can be made to look more realistic at the sacrifice of realistic operation. Manufacturers of model steam locomotives have produced both examples of this compromise.

Since pilot couplers have very rarely been modeled accurately in the past, many modelers are not familiar with the particular application. Here are some typical prototype photos to use as examples.



Note that the shelf located on the bottom of the pocket to support the coupler is not always present. If your particular prototype did not have this feature the pocket provided with the kit can be modified appropriately. An interesting fact is that most steam locomotives have no shock absorbing draft gear for the front coupler. The couplers have a very short shank with a pin that allows it to swing from side to side. The coupler pocket is very unlike the striker plate that might be found supporting the much longer coupler shank on the end of a freight car, or even mounted on the engine's tender.



The Sergent Engineering Model ES1P87 finally allows the modeler quit compromising! This kit contains an operational scale size coupler and a highly detailed insulating coupler pocket. These instructions specifically address the application of the ES1P87 to the popular Bachmann Spectrum Line 2-8-0. The pocket and coupler can be fit to most HO scale model steam locomotives, but since each model is different, installation details will vary.

Kit Contents

The ES1P87 kit contains the following items:

One Scale Size Clear Acrylic Pocket Casting
One Metal Top Coupler Casting
One Metal Bottom Coupler Casting
One Metal Knuckle Casting
Two Stainless Steel Locking Balls
One Nickel Plated Brass Pin
Short Length of 0.010" Diameter Brass Wire
Short Length of 0.008" Phosphor Bronze Wire

Assembly and Installation

Assembly of the ES1P87 coupler is straight-forward and not really any different than assembly of the popular EC87 couplers offered by Sergent Engineering. You should use the same techniques you have developed in assembling Sergent Engineering's EC87K couplers. The coupler itself should be assembled first.

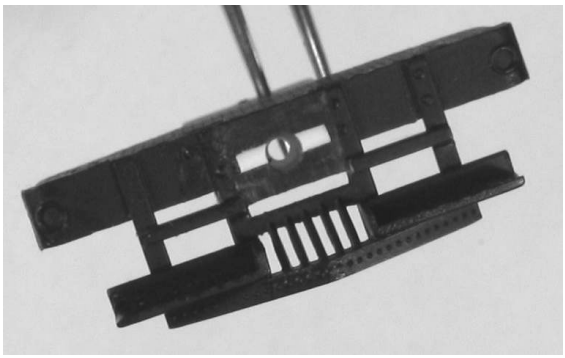
A brass pin is provided with the kit to attach the coupler to the pocket. Mount the pin in a pinvise and reduce the size of the pin head to mimic the prototype. Test fit the coupler as pinned in the pocket. You may need to open the hole in the pocket up a little with a #71 drill. You should feel a slight resistance in rotating the coupler in the pocket from side to side.

Now remove the coupler from the pocket to continue with installation of the pocket into the locomotive's pilot.

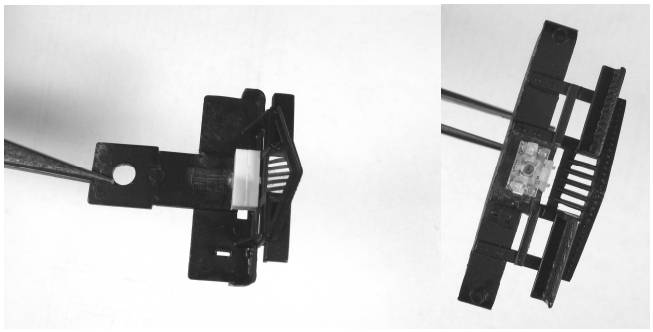
To facilitate use in many different models, the pocket uses a very simple 3/32" diameter post for mounting. The end of the post has a hole which can be drilled through with a #55 drill and tapped for an 0-80 mounting screw if desired. Our tests have shown that this mounting screw is not required though and that simply fixing the pocket to the pilot with CA is more than adequate.

As is the case with the Bachmann 2-8-0, most plastic RTR locomotives have an oversize pocket that is cast into the pilot beam. If possible remove the pilot beam from the locomotive to prevent damage to the rest of the engine while surgery is performed on the pilot beam. Clip off the bulk of the oversize pocket with diagonal cutters, and then carve the remainder of the pocket casting with a chisel. We seem to have better luck with a ¼" wood chisel than with any other tool for this task. The wood chisel is very controllable compared with a chisel type blade mounted in a hobby knife.

Once the old pocket has been removed from the pilot, the resulting rectangular hole should be filled in with scrap styrene. You may also need to add a bit of styrene behind the pilot to accommodate the length of the pocket's mounting post. Finally, use a pinvise to drill a 3/32" diameter hole in the pilot to accept the mounting post. This hole should be at a height nominally 33 ½" from the top of the railhead and obviously centered between the ends of the pilot beam. The best way to do this is to start with a smaller drill and work your way up to the final diameter. This will allow you to correct minor errors in the hole location as you go.



The photos below show the pocket as mounted in the modified locomotive pilot. Note that the 0-80 mounting screw is not really required, but installed just to be “proper”.



Now all that is left to do is apply a little paint and put it all back together. Clip the mounting pin off below the pocket and flatten it to prevent it from inadvertently coming out.

Going Event Farther

A nice touch is the addition of a scale size cut lever and linkage. If you look carefully, you’ll notice that the coupler provided with the kit has a very small hole drilled in the top of the horn. This hole is provided for the application of a loop formed from 0.008” brass wire and applied to the head of coupler as is shown in the introductory photo. For this example, a new cut lever was also formed from 0.010” brass wire and mounted in 4mm scale shoulderless handrail knobs from Alan Gibson in the UK. The linkage between the cut lever and the loop was formed from 0.008” brass wire.

There is no magic to shaping brass wire into super small loops and cut levers. A couple of decent quality hemostats are required though. These can be obtained from MicroMark, etc. A technique for creating loops is shown below. Just pull a loop tight around a wire or drill of a suitable diameter. Flatten the wire where the two ends cross and trim. Trimming is best performed with a hobby knife against a smooth hard surface, rather than diagonal cutters.

Short lengths of wire included in the kit may be used to form the cut lever linkage and/or a new cut lever in the event that the original cut lever on the locomotive is no longer suitable.