



Adapting Delayed-Action Couplers

Delayed-Action Couplers offer the ultimate in automatic operation, "smooth as silk" coupling plus quiet, "ghost-like" delayed magnetic uncoupling. Delayed-Action Couplers are offered in a variety of shank styles to adapt to most any mounting situation. If your present couplers snarl up your operation, try our DELAYED MAGNE-MATICS and begin to really ENJOY THE HOBBY!

Until manufacturers of rolling stock and locomotives eventually settle upon a standardized draft gear configuration, or at least a standard coupler mounting platform, the present confused situation is likely to prevail. It's an unfortunate state of affairs calling for many specialized adaptations to continually present problems for hobbyists. Kadee has recognized this problem however, and we've come to the aid of the modeler. We offer several styles of coupler shanks in various mounting arrangements to help simplify fitting couplers to these many unusual situations.

A whole booklet would be required to list detailed instructions for coupler installation on all the makes and types of locomotives alone, not to mention rolling stock. Still we realize there is a pressing need for at least some general instruction notes, so we've prepared the following material as a guide for modelers in making their coupler adaptations. We've attempted to break these adaptations down into several categories most commonly encountered in the hobby, then show a few typical problems along with suggested methods of handling them. Working from these suggestions, we feel any model railroader can follow the steps required to decide upon the correct Kadee coupler for his purpose, then make alterations to his locomotive, if and where necessary. Most of this discussion centers around locomotives because they seem to present the greatest problem, but most of what is covered herein can be applied to fitting couplers on rolling stock as well.

COUPLER TABLE

No. 4	
No. 5 NO. 9 <small>(A) 13/64" (5), 17/64" (9)</small>	
No. 6	
No. 7	
No. 8	
No. 16	
No. 711 & 714 <small>(A) 25/64" (711), 9/32" (714) (B) 29/64" (711), 11/32" (714)</small>	

Most modelers will have on hand the few tools required for this work and usually hand taps will be found among them. The four most common sized for model use are; 00-90, 0-80, 1-72 and 2-56, all of which come in handy at times. The 2-56 size will get one by for most coupler attachments though, and along with a No. 50 tap drill, will be found a worthwhile investment for this type of work.

KEEP THESE POINTS IN MIND:

- Follow very carefully the assembly instructions included with each Kadee coupler kit ... much thought has been put into them to help the modeler get top performance from our couplers.
- Kadee coupler castings are of top quality and free of flashing, but we do recommend polishing and burnishing the working parts along with an application of our GREAS-EM to help reduce friction to a minimum.
- A coupler can be expected to perform best when mounted within the draft gear designed for and supplied with it. In view of this it is often advisable to entirely remove cast-on draft gear from a model to provide a flat mounting area upon which the complete Kadee unit can be attached. It is usually worth the little extra effort involved.
- All Kadee draft gear styles have holes and lugs for mounting, but in some cases it is more expedient to cement the unit in position. Cement plastic draft gear to plastic models with a liquid type styrene cement used sparingly. Walther's Goo, or a similar adhesive, is useful for Delrin type draft gear, metal types to wood, or metal to metal. In such instances, if the lugs are not required for mounting, and especially if space is at a premium, the lugs can be removed to provide extra clearance.
- Be sure to purchase a 205 Kadee coupler height gauge and use it constantly to keep all the couplers on your equipment at one standard setting for peak performance.
- The uncoupling arm (trip pin) can be bent up or down slightly to allow for minor discrepancies in coupler height. Each coupler kit has instructions for bending this arm.
- The coupler centerline should always be 25/64" from the railtop for HO (9/32" for HO_N3) ... the mounting platform is adjusted to suit the particular coupler mounting arrangement chosen.
- Nos. 6, 7, 8 & 16 couplers were designed primarily for mounting to locomotive pilots. No. 6 for long nosed pilots. No. 7 (with underslung shank) for short pilots and low mounting situations. No. 8 can be used for medium length pilots. No. 16 can be used for European & traction pilots.
- No. 4, our first shank style (metal) & still a popular one, has metal draft gear box and cover, coiled centering spring and spacer dowel. Available separately is a metal adaptor plate for fitting this coupler to various makes of rolling stock having a cast-on draft gear and for minimum space adaptations.
- No. 5, is our biggest seller. Metal coupler with insulated plastic draft gear box and cover, bronze centering spring plate. Has center screw mounting hole or side lugs. No. 9 coupler is similar to the No. 5 except for a smaller draft gear box center hole and the back of the box to the center hole dimension. It is used for truck mounting situations.
- No. 6, No. 7, No. 8 & No. 16 couplers, with similar shank styles in varying lengths, are designed to fit unusual mountings of many loco pilots and difficult cars having limited space. Plastic draft gear box insulates couplers. From the center of the screw hole to the rear of the draft gear box is 5/32". No. 7 couplers have a .050" underset shank and are used for locos and cars with low mounting pads. Examples are some of the TYCO, AHM, Bowser locomotives and cars. No. 16 coupler is a combination of the No. 6 coupler and No. 7 draft gear box. It is useful for European equipment with buffers and certain traction applications.
- No. 714, a 3/4 size coupler made of Delrin for HO_N3 locomotives and equipment. ● No. 711, a 3/4 size coupler made of Delrin exactly like No. 714 but with a longer trip pin so it can be used for standard gauge old-time and light duty locos and cars.

In addition to the styles of couplers shown above, Kadee® now offers the #20-Series and #30-Series Couplers. See our flyers and inserts for details.

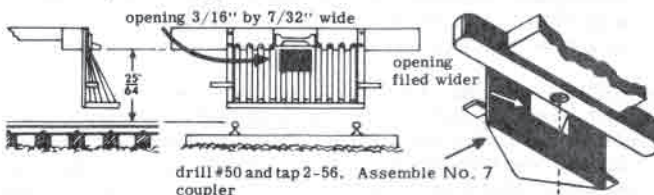
Here's How To Adapt Kadee Couplers To Steam Locomotives

To choose the correct Kadee coupler for a given locomotive, one should first rest the locomotive on the rails and measure from the railtop to the top of the draft gear opening in the loco pilot. Usually this will be the same height as the coupler mounting platform. Once this height has been determined, check through the various coupler styles in the Coupler Table, select one with a similar height from the rail. If there are none showing the exact dimension required for the job, you can then pick the one coming nearest. In such case, it will be necessary to either file away a slight amount from the mounting platform, or else provide a spacer shim on top of the coupler assembly, depending upon whether the choice was lower or higher than desired.

It may also be necessary to make alterations to the existing draft gear opening in the pilot to accept the coupler of your choice. Measure the width and depth of this opening and then compare your figures with those dimensions listed for the various draft gear assemblies shown in the table. If it is necessary to enlarge the width of this opening, be sure to remove equal amounts from both sides in order that the coupler will eventually be mounted on the centerline of the pilot and frame.

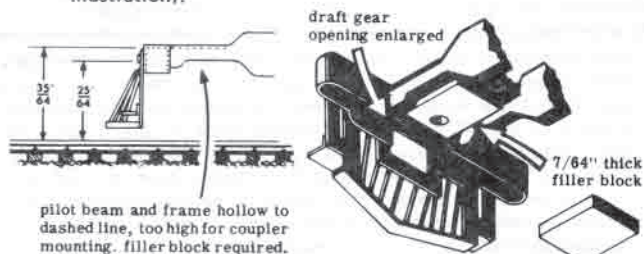
In review, let's remember, there are several things you can do in adapting a coupler. The varying dimensions among the coupler arrangements above, allows you to make the most suitable choice. In some cases it may be advisable to use a coupler mounting that requires filing away the mounting platform where it is found that a particular coupler fits the pilot opening without alteration. On the other hand, alterations to the pilot opening may be the wisest choice, as compared to working on the mounting platform in another case. Certainly it makes good sense to study the locomotive itself, and the coupler drawings, well enough to make a logical decision, rather than make a haphazard guess that will lead to alterations of more than one area. Still there will be occasions when the latter will be unavoidable. At any rate, all the information necessary will be found herein. From the coupler styles and mounting arrangements shown, it will be possible to choose a coupler and pre-determine any alterations that will be required, thus one can avoid damaging errors and frayed nerves.

Locomotive pilots can be generally classified into two groups, those with solid metal pilot beams and main frames, and those built up of sheet metal stock so they are hollow. The former offers little difficulty in attaching coupler gear since there is usually sufficient thickness of material to allow a screw fastening ... although in some cases a little metal must be filed away to make proper clearance from the rail. Not so with the sheet metal pilot and frame which often does not provide the thickness needed to accept a threaded attachment. In such cases it will perhaps be necessary to add filler pieces of metal, wood or plastic to the hollow areas to provide a satisfactory mounting platform.



The above illustration shows a typical example. With the locomotive resting on the rails, we see the distance from railtop to top of draft gear opening (coupler mounting platform) is 25/64". Our No. 205 (B-5) Coupler Height Gauge can help you determine this position. Checking the Coupler table, we find the No. 7, gives us this correct mounting height. Next, compare the draft gear opening in the above illustration (3/16" deep and 7/32" wide) against the assembled draft gear box for the No. 7 coupler as seen in the table. It becomes apparent the opening 3/16" deep as compared to only 3/32" required for the coupler box, so we are alright here. The opening width however is only 7/32" and the box requires 5/16". In view of this, 3/64" must be filed away from each side of the opening to accommodate this coupler unit. One further step ... check the length of the coupler shank against the pilot length to be sure the

uncoupling arm will hang clear of the pilot extension. Except in the case of extremely long pilots, there should be little difficulty encountered here. Usually there will be some leeway in mounting the coupler, so the unit can be moved backward or forward to allow the uncoupling arm to swing clear of the pilot. Once the coupler assembly has been so adjusted, mark the location of the mounting hole, drill No. 50 and tap 2-56 to make the attachment (at right in illustration).



Let's take another typical example. This time (above illustration) we have a locomotive frame built up of thin brass stock, as a result, the pilot beam and main frame are hollow. When placed on the rails for measuring, we see the draft gear opening to railtop measurement is 25/64". At the same time, we notice (by dashed lines on the drawing) that the coupler mounting platform is up inside the frame, 35/64" from the railtop. This height is too great for any of the coupler mountings shown in the Coupler Table, so the solution is to add a filler block to the frame to create a platform of a suitable height from the rail. In view of this, we can choose a coupler for various other features and temporarily disregard the mounting height.

Checking the draft gear opening determined what alterations were necessary to accept any of the couplers shown on the Coupler Table. Because a slightly longer coupler shank was desirable to clear the pilot on this loco, No. 8 was chosen and assembled as shown in the Coupler Table. The mounting height required for this assembly is 7/16" while the existing mounting platform as noted earlier is 35/64" from the rails, the difference being 7/64". This latter is the thickness of the filler, or spacer block, required to create the proper mounting platform height (above illustration, right).

The filler piece can be installed, either by soldering if metal, or cementing if made of wood or plastic. Walther's Goo, or a similar adhesive is useful for this work, however, an epoxy is the best cement for this purpose. Now after the draft gear opening has been enlarged, the assembled draft gear is entered and adjusted back and forth to correct the position of the uncoupling arm so it clears the pilot. Now the mounting hole is located, drilled No. 50 and tapped 2-56 to make the attachment.

ADAPTING KADEE COUPLERS TO DIESEL LOCOMOTIVES ...

For diesels, as in the case of the steam loco information, the procedure for determining the correct coupler is essentially the same. Simply place the loco on the rails and measure the rail to coupler platform height, as well as taking note of the size of the draft gear opening. Then compare these figures with the coupler table to find the suitable coupler. Remember to prepare couplers and draft gear box surfaces and assemble as recommended in each coupler instruction sheet.

