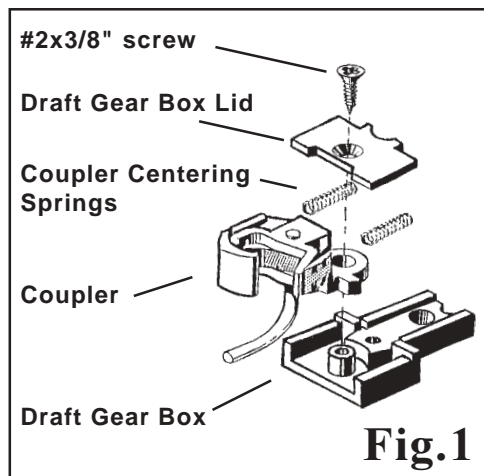




COUPLER CONVERSION FOR Hartland Locomotive Works "BIG JOHN"

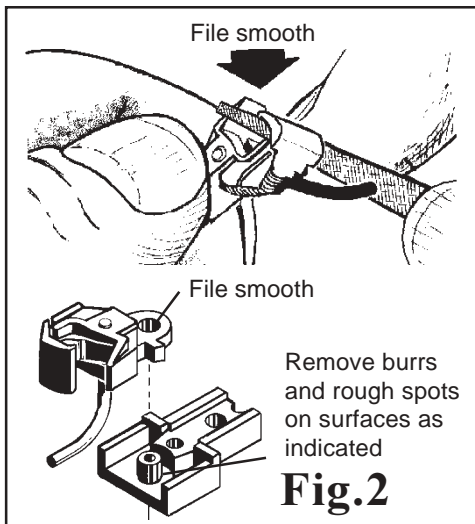
Check packet, it should contain: 2ea. Couplers, 2ea. Draft Gear Boxes, 2ea. Gear Box Lids, 5ea. Coupler Centering Springs, 2ea. #2 x 3/8" screws, 2ea. #8 x 3/4" screws, 4ea. plastic plates and 4ea. bushings. All springs are made of stainless steel so they will not be affected by outdoor use.

ASSEMBLY

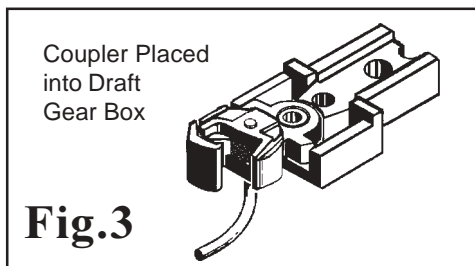


1. IMPORTANT: Before assembling Couplers, check arrow-marked areas shown in **Fig.2** for burrs and rough spots. Remove all flash and burrs with fine file or a hobby knife to assure freedom of movement after the Coupler is assembled.

2. Burnish the surfaces indicated by arrows in **Fig. 2** with **Kadee® #231 Greas-em**, a fine, dry lubricant specially suited for Kadee® Couplers. **DO NOT** skimp on steps 1 and 2, they are mandatory for smooth, trouble-free, Coupler performance.



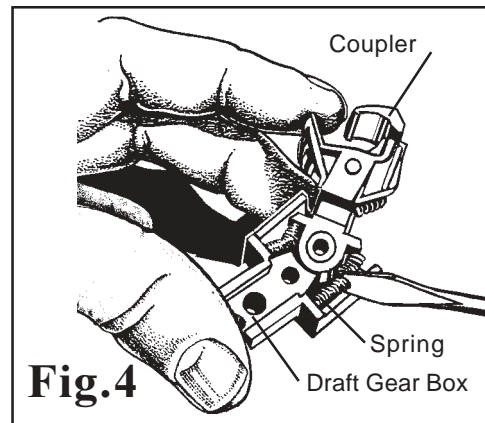
3. Place Coupler into Draft Gear Box as shown in **Fig. 3**. Add a little more **Greas-em** and work Coupler back and forth within gear box to polish.



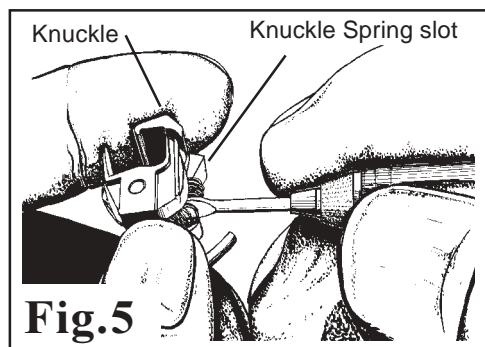
4. Swing Coupler to either side and install the first Centering Spring with a small screwdriver or tweezers as shown in **Fig. 4**. Now swing the Coupler to compress the installed spring and hold in place with your thumb. This will give you room to fit the second Centering Spring in place. After installing both springs, allow the Coupler to center itself. Then, assured the springs are properly seated, carefully place Draft Gear Box Lid on Gear Box and secure with a #2 x 3/8" screw to hold in place.

5. Test Coupler centering action by working it back and forth. If it doesn't work freely and snap back to the center position, take Coupler and Draft Gear apart and start over again. It is possible that the springs aren't properly set in place or a burr is preventing proper movement.

6. Coupler Knuckle Springs are factory installed. If one should come out during mounting, replace as follows: Insert small screwdriver blade between coils at one end of spring, then place other end of spring



over either of the cone-shaped projections in the knuckle spring slot. Compress spring until the end can be slipped over opposite cone, see **Fig. 5**. Use only **#860 Kadee® G Scale Knuckle Springs** or **#1875 Kadee® #1 Scale Knuckle Springs** designed for this purpose. Any substitutions will not allow the coupler to work properly.

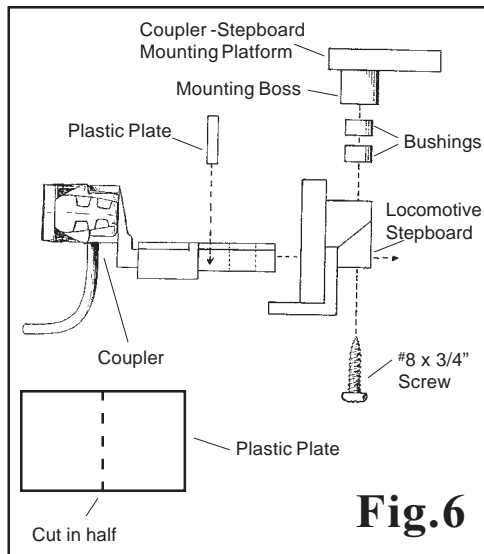


7. Coupler Assembly is now ready for mounting. NOTE: If after extended use, the Coupler does not snap back to center as when new, it is because the uncoupling action tends to collapse one centering spring more than the other and it takes a slightly shorter set. To correct this, simply remove and switch springs from one side to the other.

MOUNTING

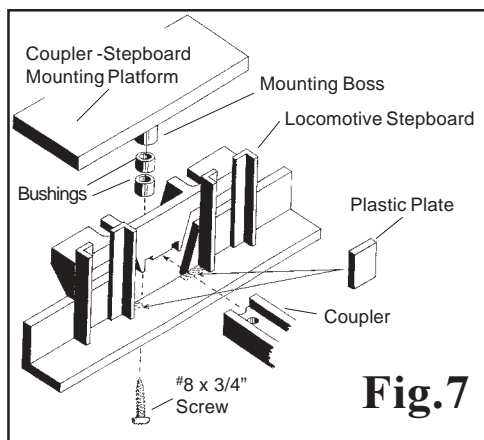
1. Invert the loco and place it on a padded surface to avoid scratching the finish or damaging detail parts.

2. The #8 x 3/4" screw is a tight fit in the gearbox mounting hole. It is easiest to run the screw through the hole with a screwdriver before mounting making sure the screw is straight.



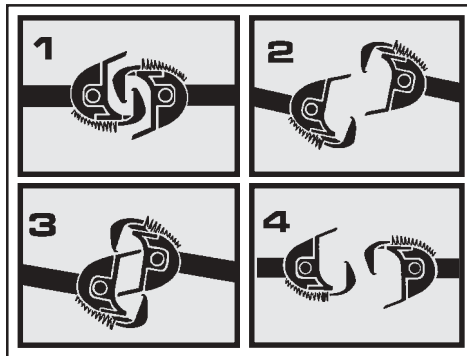
3. Remove the screw holding the coupler and stepboard in place. After removing the coupler and stepboard stack two of the supplied bushings on the mounting boss shown in **Fig. 6**. Reposition the stepboard and slip the assembled coupler-gearbox in the stepboard opening and line up the screw holes. Secure coupler with a #8 x 3/4" screw. Do not overtighten.

4. The stepboard will have some free movement. This is corrected as follows: The supplied plastic plates must be cut in half (**Fig. 6**) and slipped between the gearbox and stepboard. Carefully mark the center of the plate and cut in half. File cut side of the plate until it will snugly slip in as shown in **Fig. 7**. Do this for each side of the gearbox. This will hold the stepboard back and prevent the gearbox from pivoting. Extra plates are included should you need them.



OPERATION

One of the many desirable features of Kadee® Magne-Matic® Couplers is their ability to perform "delayed uncoupling". **TO COUPLE:** Simply push cars together. Upon touching, the operating knuckles move to



opposite sides then couple in a closed position. Only a "feather touch" is required to couple. **TO UNCOUPLE:** Stop over a Magnetic Uncoupler so your Kadee® Magne-Matic® Couplers are approximately half way over the Uncoupler. You must create slack between the Couplers which will allow them to be drawn open by the magnetic force acting on the two Trip Pins. Each Coupler has a wire or "Trip Pin" extending down from its knuckle, towards the track, that looks like an unhooked air hose. **See #1.** **Note:** You may find it best to pull the train past the magnet, then back the cars over it. Now, when you pull forward, the Couplers disengage. At this point, magnetic force will draw the Couplers off-center, **see #2**. Couplers will hold this position as long as they remain over the magnet. When you back up, bringing Couplers together again over the magnet, they will not recouple, but will mismatch in the "delayed" position, **see #3**. With a single Kadee® Uncoupling Ramp, you can set the Couplers on one car, or a string of cars, in the "delayed" position for spotting cars at several points beyond the Uncoupler. Just push the car or cars to the desired location and drop off. As you pull forward again, the two Couplers in the "delayed" position separate and snap back to their normal centered position, ready for recoupling, **see #4**. Kadee®

Magne-Matic® "delayed action" uncoupling has unlimited possibilities for realistic operation of your railroad. Kadee® Couplers work even better than the prototype because they work automatically, with nothing touching them.

Use Kadee® #231 Greas-em, the dry lubricant recommended for use with all Kadee® Magne-Matic® Couplers. Greas-em will not attract the dirt and dust that gums up the inside of couplers like oil, grease or other lubricants will.

Use Kadee® #840, #841, #842, and #844 Magnetic Uncouplers with our G and #1 scale Couplers. **The #840 and #841 Uncouplers** are mounted in the track section of your choice, either LGB™ #840, or Kalamazoo #841. **#842 Uncouplers** come without track and are for mounting in LGB™ or other similar tracks. It will be necessary to cut the track, complete instructions are included. **#844 Uncouplers** also come without track and are for use with LGB™ or other similar types of track. No cutting of the track is necessary. We cannot guarantee the satisfactory operation of our Couplers if other kinds of magnets are substituted for the Kadee® Magnetic Uncouplers.

NOTE: To prevent damage to couplers: If you plan to store your equipment in the original box, the gear box may need to be modified to properly allow clearance for your new Kadee® Couplers. Simply cut openings in the gear box ends to give extra clearance for Kadee® Couplers.

MAGNE-MATIC®

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Made in the U.S.A.