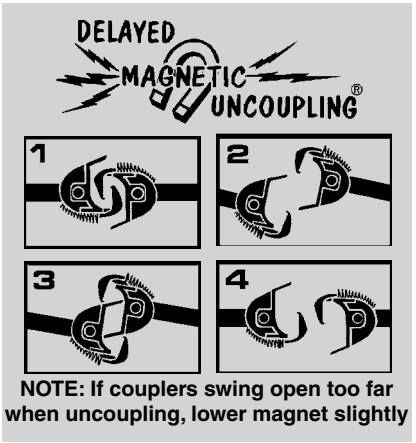


NOTE: If couplers swing open too far when uncoupling, lower magnet slightly

To uncouple stop over a Magnetic Uncoupling Ramp, mounted in or under your track, with Couplers centered over the ramp. For Couplers to uncouple you must create slack between the Couplers. This allows the joined Couplers to be automatically drawn to an open position by magnetic force acting on the Trip Pins, **see No. 1**.You then pull away (with only the cars between engine and ramp that are still coupled) until Couplers part. At this point magnetic force will draw each Coupler off center to opposite sides, **see No. 2.** (Couplers will hold this position as long as they are over magnet). When you back in again bringing Couplers together again (over magnet) they will not couple but will mis-mate in "delayed" position, **see No. 3**. You can set Couplers on one car or a string of cars in "delayed" position for spotting at several points beyond the Uncoupler, thus cutting down on the number of ramps required. You then push car or cars to position on layout desired for spotting. As two Couplers in "delayed" position are parted, they will snap back to normal center position, ready to couple when you come back to pick up car, **see No. 4**. You can see, "delayed" uncoupling has unlimited possibilities for realistic operation of your railroad - even better than prototype because Kadee® Couplers work automatically with nothing touching them.

2. Use Kadee® **#308 Under-The-Track** (first try single stack, then double or triple stacked) **Magnetic Uncouplers** with Kadee® S-Scale Couplers. They are specially designed to operate these Couplers properly. If substituting with other types of magnets, we cannot guarantee correct operation. Kadee® Uncouplers include detailed instructions for locating and mounting Uncouplers.

3. Use Kadee® **#231 *Greas-em***, a dry graphite lubricant recommended for use in all Kadee® Magne-Matic® Couplers. Greas-em does not attract dirt or dust that can gum up the insides of Couplers as oil and grease does.

For the supplied self-tapping screws, drill a #55 (.052") hole using a Kadee® **#780 Tap and Drill Packet** and the screw will self-tap.

Kadee® Quality products co.
673 Avenue C
White City, OR 97503-1078
Made in the U.S.A.

#802
S-SCALE COUPLER ASSEMBLY INSTRUCTIONS

Packet contains: four Couplers, four Draft Gear Boxes, four Draft Gear Box Lids, eight 0-48 x 1/4" and eight 0-48 x 3/8" screws, six (two extra) Coupler Centering Springs and two (extra) Knuckle Springs. (The #802 Special contains only one pair of couplers, therefore only one-half of these parts). See **Fig.1** for part identification.

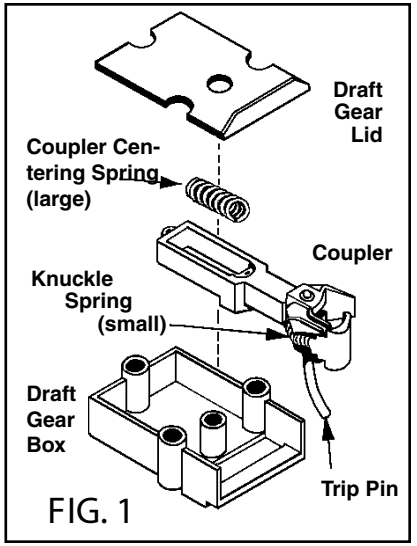


FIG. 1

ASSEMBLY:

1. **IMPORTANT: Before** assembling Couplers, check areas shown with arrows in **Fig.2** for burrs and rough spots - remove with a fine file.

2. Burnish the arrow marked surfaces shown in **Fig. 2** with Kadee® **#231 *Greas-em*** (a fine dry graphite lubricant especially suited for Kadee® Couplers). Place coupler parts in small plastic bag with **#231 *Greas-em*** and shake contents to coat parts before assembling.

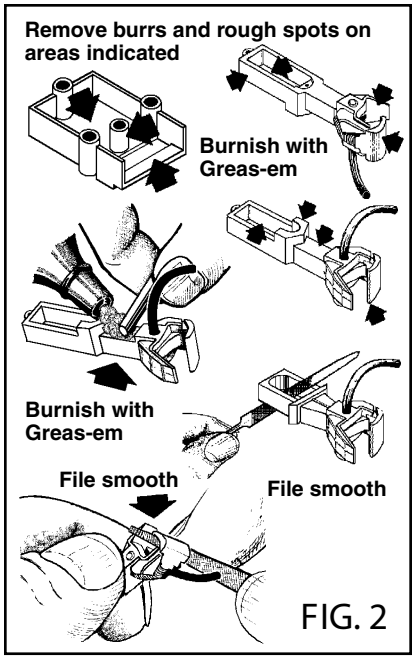


FIG. 2

NOTE: Follow and complete Assembly Steps 1 & 2 carefully, to assure smooth, trouble-free coupler performance.

3. Place Coupler into Draft Gear Box, as shown in **Fig. 3**. Add a little more **#231 *Greas-em*** and "toggle" coupler back and forth in box to burnish further.

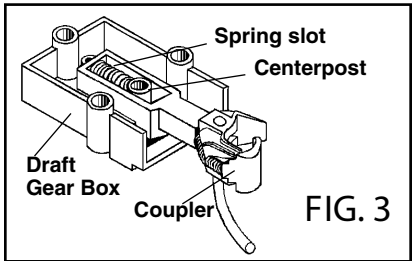


FIG. 3

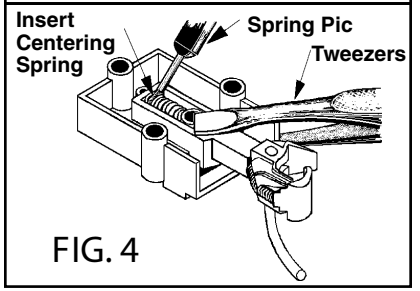


FIG. 4

4. Place Coupler and Draft Gear Box together. While holding with tweezers, install Centering Spring into spring slot using a Kadee® **#235 Spring Pic** or small jewelers screwdriver wedged between the last two coils of the spring, see **Fig. 4**.

5. Place Draft Gear Box Lid on box, being careful not to dislodge Centering Spring, then slip tweezers out. While holding lid in place, test Coupler centering action by toggling it back and forth. Coupler should move freely and automatically snap back into center position. If needed, disassemble Coupler, check for proper spring seating, then reassemble.

6. Coupler Knuckle Springs are pre-installed. If one should come out during mounting - replace as follows: Insert **#235 Spring Pic** (or small jewelers screwdriver) between end coils of spring. Place opposite spring end over cone shaped projection in knuckle spring slot, then compress spring until opposite end can be slipped over other cone. Remove Spring Pic, see **Fig. 5.** Do not substitute any other spring for Knuckle Spring. To assure proper coupler operation, use only Kadee® **#847 S-Scale Knuckle Springs.**

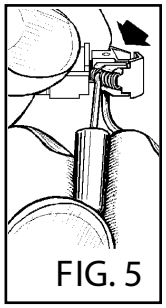


FIG. 5

7. Coupler and Draft Gear Box are now assembled. For mounting on equipment with limited space, Draft Gear Box can be altered. **Fig. 6** shows possible alterations.

MOUNTING:

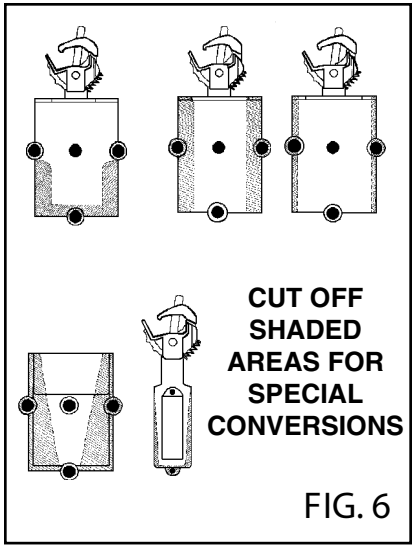


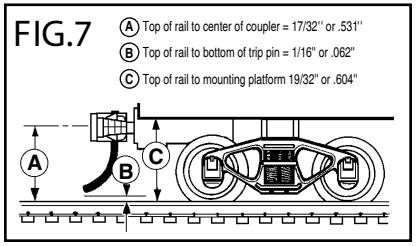
FIG. 6

1. To permit standardization of your rolling stock and interchange of equipment on different model railroads - we recommend mounting couplers at N.M.R.A. standard height, which is .531" or 17/32" from top of rail to centerline of coupler, see **Fig.7**.

2. To mount Coupler and Draft Gear Box at correct height, it may be necessary to alter coupler mounting surface or car height by one of the following methods:

   a. Install spacer washers between truck and body bolsters. Use Kadee® **#208 octagonal (.015" thick) or #209 round (.010" thick) fiber washers**. This will raise car body, thus raising coupler mounting surface. Two octagonal or three round washers will raise car 1/32" inch.

   b. If coupler mounting surface is too high - use a shim of correct thickness to lower coupler to N.M.R.A. height in between coupler and car mounting surface, see **Fig. 7** and **8**.



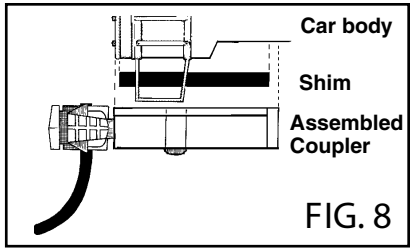


FIG. 8

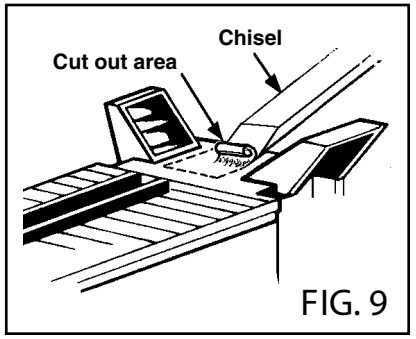


FIG. 9

c. If coupler mounting surface is too low and you cannot raise car with washers - cut out a section of car floor to raise coupler mounting surface (take care to make it level and straight), see **Fig. 9.**

3. When car body is at correct height, measure to find exact centerline of car, then mount Coupler and Draft Gear to car (on centerline) using any two of the four mounting holes. Use the 0-48 x 1/4" or 0-48 x 3/8" screws as appropriate. Truck kingpins must be on centerline also, or Couplers will not mate.

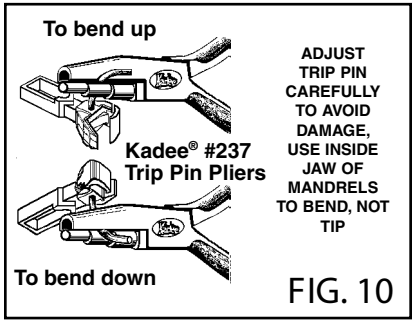


FIG. 10

4. Check Coupler Trip Pin height using a .046" or 3/64" thick piece of metal or plastic as a gauge. Place this gauge across rails. Set car on track and roll car up to gauge. Trip Pin should just skim over top of gauge. If Trip Pin is too high or too low, adjust as shown in **Fig. 10.** Trip Pin standard S-Scale height is 1/16" above rail top.

5. Your S-Scale Coupler is made with an acetal plastic, so it is completely insulated for mounting on metal cars or locomotives. Use metal screws to hold draft gear and couplers in place. The plastic does not have the rigidity of the metal coupler and will deflect under too heavy of a load. It is ideal for pilot mounting for double heading on metal locomotives and cars.

6. We recommend making up a 36" long test track with an Uncoupler mounted about center for testing each coupler and adjusting each Trip Pin before putting equipment to work on your layout.

TO OPERATE:

1. One of the many desirable features of Kadee® S-Scale 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 close in coupled position. Only a "feather touch" is required to couple. **TO UNCOUPLE -** each Coupler has a wire or "Trip Pin" extending down from its Knuckle towards the track, which looks like an unhooked air hose. The Trip Pin causes the Knuckle to swing open.