☐ #789

☐ #1789

BODY MOUNTED COUPLER WITH EXTENDED GEAR BOX ASSEMBLY INSTRUCTIONS

Check packet, it should contain:
2 ea. Couplers, 2 ea. Draft Gear Boxes, 4 ea. Draft Gear Box Lids (2 ea. flat with notch, 2 ea. with flange lip), 5 ea. Centering Springs, 1 ea. Knuckle Spring, 2 ea. #4 x 1/2" screws, 2 ea. #4 x 3/4" screws, 2 ea. #2 x 3/8" screws and 4 ea. white plastic .010" shims. Extra springs are provided should any become damaged or lost. All springs are made of stainless steel so they will not be affected by outdoor use.

Kadee® body mounted Couplers are available in several variations for different applications. The **Kadee® #830 (G)** or **#820 (#1) body mounted Coupler with standard Draft Gear Box** are used when there is ample room and for tighter radius curves. Also available are the **#835, #836** and **#837** for **G** or the **#1835, #1836** and **#1837** for **#1 Coupler Packets** which use a smaller gear box. For some mountings however, the hole pattern on this smaller gear box makes mounting difficult, so this packet is offered as an alternative. These couplers do not swing as far as the #830 or #820 Couplers so they are most effectively operated on track with a larger radius.

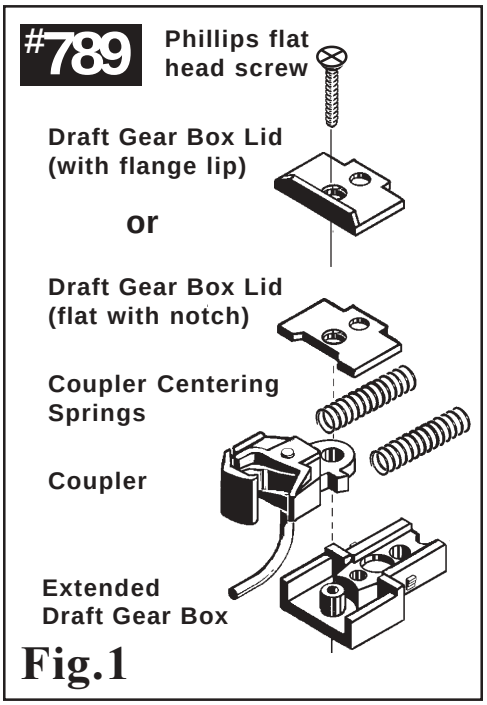


Fig.1

If alterations to the car are required, they should be done as carefully and accurately as possible. *For maximum performance, it is important that the Coupler be mounted at the correct height, directly on the cars' width centerline. Note: If the car is going to be changed to metal wheels this should be done first since it may change the coupler height.*

Please read through instructions carefully and completely before proceeding.

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.

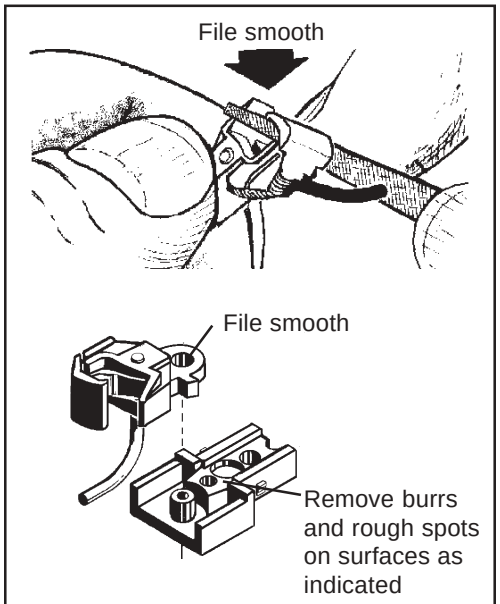


Fig.2

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.

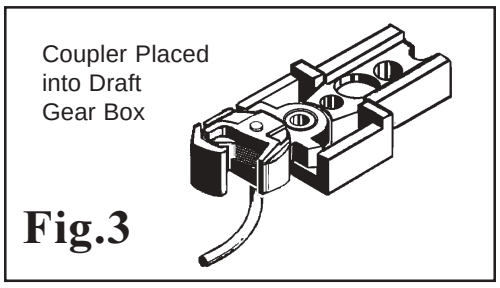


Fig.3

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 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 Box and secure with a #2 x 3/8" screw.

Note: Two different Draft Gear Box Lids are included in this packet. One has a lip and one does not. Use the one that will give the best appearance for your conversion (you can change later if you wish).

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.

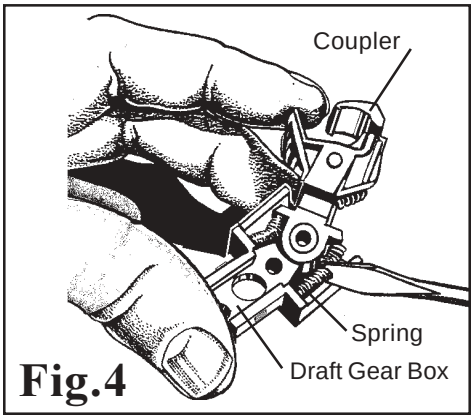


Fig.4

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.

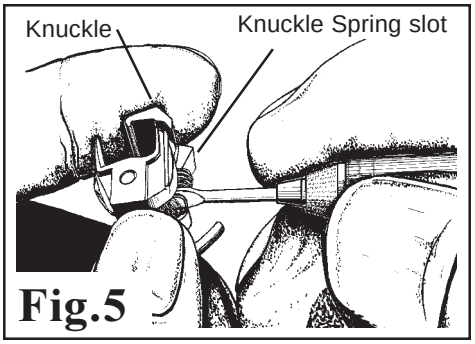


Fig.5

MOUNTING

1. To permit standardization of your rolling stock and interchange of equipment on different model railroads, we recommend a mounting height "**A**" of 1.125" (1 1/8") for G or 1.062" (1 1/16") for #1 from top of rails to centerline of Coupler. **Kadee's® #880 (G)** or **#829 (#1) Height Gauge** will assist in faster and more accurate mounting of our Couplers.

2. To mount Coupler gear box assembly at this height, it may be necessary to alter the Coupler mounting surface. **Fig. 6** shows the distance "**B**" from mounting surface to top of rail and also the Trip Pin Clearance "**C**".

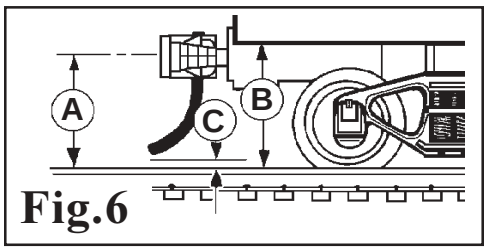


Fig.6

#789

A: Railtop to Coupler centerline = 1.125" (1 1/8")
B: Railtop to car underbody = 1.300" (1 5/16")
C: Trip Pin clearance = .125" (1/8")

#1789

A: Railtop to Coupler centerline = 1.062" (1 1/16")
B: Railtop to car underbody = 1.203" (1 13/64")
C: Trip Pin clearance = .125" (1/8")

3. Turn car over and place Coupler with Draft Gear Box in position, directly on the car width centerline. Look for obstacles which might prevent Gear Box from laying flat in position. **(NOTE:** *The protruding European style bumper cushion which some LGB™ cars have, must be removed for proper clearance.* Pulling straight out and removing half may be enough or it should be cut off as close to the car as possible). It might be helpful to hold the Coupler Assembly in place with double-backed adhesive tape so you can check distance from center of Coupler to top of rail. Once you have established this measurement, you can determine if you must shim Gear Box down or cut the underbody to raise the Coupler Draft Gear Box. Once the shims are securely in place (they can be glued) place the coupler-gear box assembly in the proper location on the car centerline and either flush with end of the car or sticking out slightly. Mark the rear hole location, remove the coupler and drill a 3/32" hole. Install the coupler using a #4 x 1/2" screw. Once you are sure the coupler is straight and in the correct location tighten screw and then mark location of front hole. Remove and once again drill a 3/32" hole. The coupler can now be mounted using a #4 x 3/4" screw in the front along with the 1/2" screw in the rear.

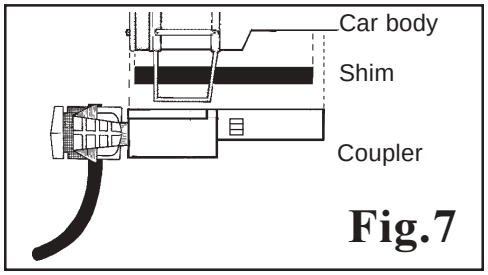


Fig.7

4. If Coupler mounting surface is uneven, or too high from the track, use one or more plastic shims to support the Coupler Assembly, **see Fig. 7**. In many cases, you can place shims on, or between, the center sills and end sills of the car underframe to provide a solid base for the Gear Box.

5. If Coupler mounting surface is too low, the underframe must be cut to raise the Coupler to the proper height. Carefully lay out the area to be cut so the Gear Box will be level, centered and at the correct height. It may be best to remove most of the material with a chisel or small saw, **see Fig. 8**, leaving finish material which can be carefully removed with a fine file until desired fit and depth is achieved. Placing shims between the truck bolster and the car body bolster to raise the car is an alternative to cutting the car body underframe for some cars. Another option may be to use Kadee® offset couplers.

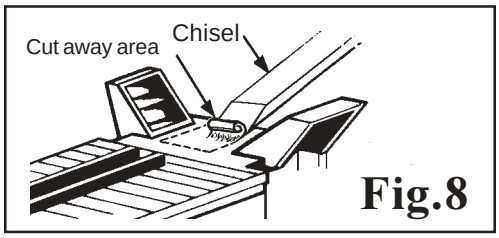
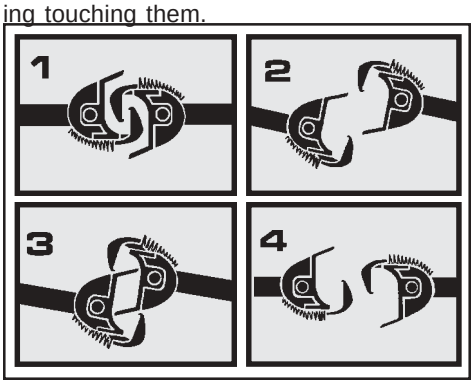


Fig.8

6. After mounting the Coupler, place car on track and check height. If height is off slightly one or two of the white shims can be placed under the rear or front of gear box to tip Coupler up or down slightly.

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 mismate in the "delayed" position, **see #3**. With a single Kadee® Uncoupling Ramp, you can set the Couplers on one car, or a string of a 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 box may need to be modified to properly allow clearance for your new Kadee® Couplers. Simply cut openings in the box ends to give extra clearance for Kadee® Couplers.

MAGNE-MATIC®

Kadee® Quality products co.
673 Avenue C
White City, OR 97503

Made in the U.S.A.

012600