

When mounting the replacement brackets to the chassis use the new flat springs and place the springs in their brackets first then slide the coupler/bracket assembly over the pivot hole and press the pin in firmly. Flip the bracket back and forth. If it does not 'snap' back

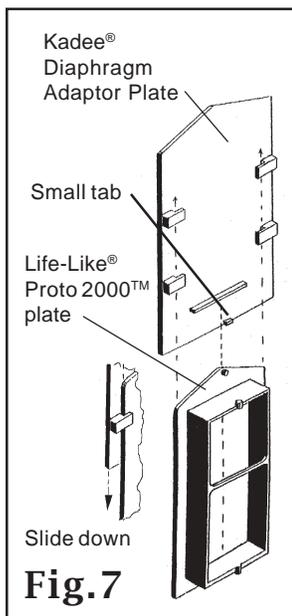
into place easily check to see if the pin is pressed in too tight or if the platform needs to be filed smooth (on some frames there is a molded ridge and flash on the platform that may interfere with the brackets movement).

Check all couplers with the #205 coupler height gauge for correct height. As mentioned previously there may be inconsistencies of the mounting platform between the various production runs causing differences in the coupler heights. So keep in mind that you may have to use various combinations of shims to achieve the correct coupler height of each individual locomotive.

#### DIAPHRAGM ADAPTOR PLATE:

Due to the length of the locomotives equipped with the new Kadée® Close Coupling Swing Brackets, the clearances between the two locomotives when run back-end to back-end causes the diaphragms to touch. This results in a problem on "S" curves of less than 30" radius due to the diaphragms swinging past each other, thus causing the diaphragms to interlock, resulting in a derailment of the locomotives.

This problem will be eliminated by the use of the extra width Kadée® Diaphragm Adaptor Plate, supplied with this kit, which is slipped down and snapped over the manufacturers existing face plate, **see Fig. 7**, thus preventing the diaphragms from bypassing each other on 18" or larger radius curves.



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673 Avenue C  
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# 455

## CLOSE COUPLING SWING BRACKET ADAPTOR KIT

For all LIFE-LIKE®  
PROTO 2000™ E-7 "A" & "B" Units  
and the PA/PB Locomotives

**CONTENTS:** 2 ea #455 Brackets, 2 ea Diaphragm Adaptor Plates, 2 ea 30 Series Draft Gear Boxes, 1 ea #36 Coupler, 2 ea #33 Couplers, 2 ea Die Cast Shim Sets, 2 ea Splined Bushings, 2 ea Flat Bronze Springs, 3 ea Bronze Torsion Springs, 1 ea Knuckle Spring, 2 ea 0-80x3/8" Flat Head Screws, 2 ea 0-80 Hex Nuts, 2 ea 2-56x1/2" Plastic Screws. NOTE: For additional coupler strength you can use the metal #46 and #43 couplers to replace the #36 and #33 in this kit.

#### SUGGESTED TOOLS:

Kadée #205 Coupler Height Gauge, #780 (0-80) and #246 (2-56) Tap and Drill Sets, Small Screwdrivers, Small Files including a round file, Hobby Knife, .113" (#33) Drill Bit, a CA Glue of your choice, Tweezers, and Various Thicknesses of Shim Stock.

#### READ THE INSTRUCTIONS CAREFULLY BEFORE YOU BEGIN.

The standard conversion for these locomotives calls for a #26 coupler in the pilots and a #23 for the rear of the 'A' units and both ends of the 'B' units. The coupler and centering spring just drops into the draft gear box on the original bracket. This, however, leaves a gap between the diaphragms when the locomotives are coupled together, even using the shortest shanked coupler (#23).

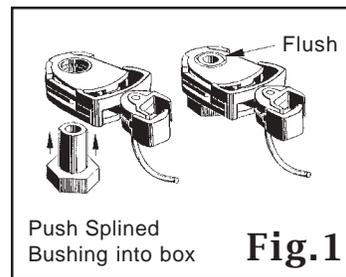
The #455 Swing Bracket Kit was developed for closer coupling so the diaphragms will actually touch. The kit contains the items needed to convert the front and rear of one locomotive, either an 'A' or 'B' unit. When properly installed and adjusted it will allow the coupled locomotives to negotiate 'S' curves, turns, turn outs, and switches with radii down to 18 inches.

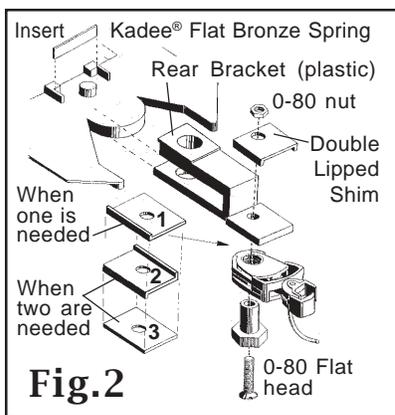
Due to various production releases of these locomotives there are some minor modifications needed on the bracket to adapt it to the two different pivoting mounts. The early production E-7 locomotives (models) have a cast (molded) on pivoting post that the bracket snaps over. The later E-7s and the PA/PB locomotives have a press fit pivot pin holding the bracket on.

Due to the variations of the mounting platform, achieving the correct coupler height will be a matter of using the right combination of shims and the orientation of the draft gear box. Assemble the spring side of the draft gear box according to the 30 series coupler instructions.

#### There are two basic options for shimming.

**Option one (#1)** is to use the die cast shims and bushing. Determine from the information below or by trial and error if the spring side of the draft gear box needs to be on top or bottom of the coupler and assemble it as such. Clean any flash from the shims and bushing. Carefully press the bushing through the bottom of the coupler assembly until the hex end is flush against the bottom surface and the lip of the other end is flush with or very slightly protrudes above the top surface illustrated in **Fig 1**. Slip the 0-80 flat head screw through the bushing and place the shims onto the coupler as illustrated in **Fig 2**. Place the assembly onto the bracket





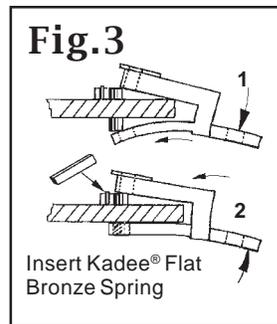
with the smaller double lipped shim on top of the platform followed by the 0-80 hex nut and tighten snugly. If the assembly turns on the bracket after the screw is tightened you may have to use a very small drop of CA cement between the shims and the bracket or where it is needed. This option can use any combination of the die cast shims to achieve the correct coupler height.

**Option two (#2)** is to drill and tap the coupler mounting hole in the bracket for a 2-56 screw. Assemble the coupler as above, place the

thicker draft gear box lid on top of the assembled coupler as a shim, then place it on the bottom of the bracket. Secure the assembly with the 2-56x1/2" plastic screw and trim it off flush with the top of the platform. This may be simpler than using the die cast shims, however, you do not have as many height adjusting options. You can, of course, use other shim stock material with option #2.

### EARLY E-7 'A' & 'B' UNITS

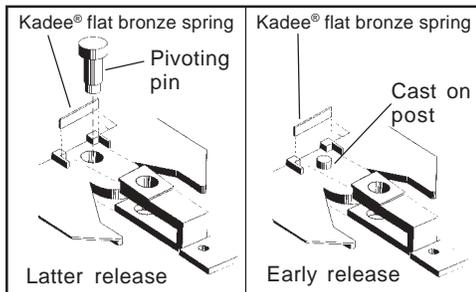
For the early production E-7 'A' and 'B' units with the cast on pivot posts the following applies. Carefully remove the body, remove the swinging coupler bracket by slipping a small screwdriver blade under the brackets upper arm lifting it off the post. Let the upper arm rest on the post while you pry the bottom arm off the post. You also can remove the flat centering spring. On the pilot use the long shanked coupler (#36) with the spring side of the draft gear box on top of the coupler and the thin lid on the bottom. Then assemble using option #2 as above.



Check and make sure that the length of the coupler reaches out enough to clear both pilots. You may have to move the hole in the bracket a little forward or retain the original bracket conversion. For the rear of the 'A' unit use option #1 as above but with the short shanked coupler (#33) and the spring side of the draft gear box on the bottom of the coupler.

For both ends of the 'B' unit use option #2 using a short shanked coupler (#33) with the spring side of the draft gear box on the top of the coupler and the thin lid on the bottom.

To install the brackets on the cast on posts (early production E-7 locomotives) first gently push the Kadee bracket forward tipping the end down to allow the bottom hole to slip over the post. Then tip the bracket up and forward so that it slips over and rests on top of the post to allow the insertion of the flat centering spring see Fig. 3. You can use the provided replacement spring or the original spring if it was not damaged during disassembly. Make sure the spring is set into the corners of the spring retaining brackets. Press the bracket



over the post capturing the spring. Flip the bracket back and forth to check for free movement then check for the correct coupler height. Make any necessary adjustments.

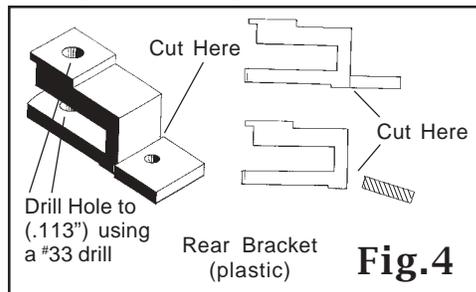
### LATER E-7 & PA/PB

The later production releases of the E-7 and PA/PB locomotive models uses a plastic pivoting pin in place of the earlier cast on post. This pin is larger in diameter than the post so the pivoting hole in the bracket needs to be enlarged (see below).

To remove the pin and bracket, remove the body from the chassis using a thin blade screwdriver. Slip it under the upper arm of the bracket and pry up the arm until the pin is raised enough to pull out. Be careful when you remove the pin, as you pull it may still be tight and flip loose when it comes free. The weight inside of the PA locomotive needs to be loosened so you can access the bracket. Remove the small screws holding the electric control board and then remove the larger screws holding the weight to the frame, then you can carefully lift the weight enough to remove the pin and bracket. The other bracket mounts should be accessible.

Use a #33 drill (.113") and carefully drill the pivot hole out of both the upper and lower bracket arms, the front edge of the upper arm will be rather thin so take care when drilling. Test fit the pin in the enlarged hole, use a small round file if you need a little extra clearance, the pin needs to turn freely in the bracket.

For the pilot of the later production E-7 'A' and the PA locomotives use option #2



with the #36 long shanked coupler and the spring side of the gear box on the bottom. Also use option #2 but with the #33 short shanked coupler for the rear of the E-7 'A', PA, and both ends of the later production E-7 'B' unit, with the spring side of the gear box on the bottom.

There is a short bracket on one end of the PB locomotive and in order to replace it for closer coupling the #455 bracket needs another modification, in addition to enlarging the pivot hole. On the other end use option #1 with the spring side of the gear box on the bottom of the coupler. For the shorter bracket cut off the extended mounting platform, as illustrated in Fig 4 & 5. Place the draft gear box on the bottom of the bracket with the front edge even with the cut off edge of the bracket. Mark the bracket on the centerline through the hole of the box. Drill and tap a hole through the bottom of the bracket for an 0-80 screw (#780 0-80 tap and drill set) see Fig 6. Use option #1 with the spring side of the draft gear box on the top of the coupler, but without the small double lipped shim and the 0-80 hex nut. Mount the coupler assembly to the bracket with the 0-80 flat head screw and carefully clip off the end extending through the arm and file smooth.

