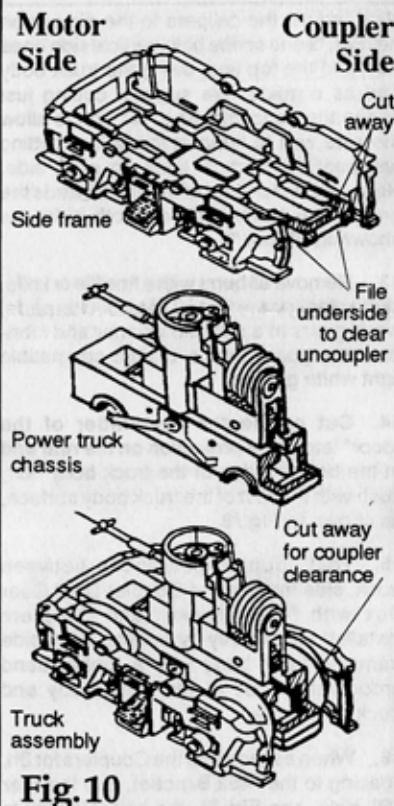


making sure the "door" latch, see Fig. \*7-C is facing towards the motor side of the slot. The #452 Bracket is then inserted up from the bottom and in-between the Snubber and the motor side of the slot. Hold the Snubber in place until the two latches engage or snap together, see Fig. \*7-C, keeping both tight and preventing the #452 Bracket and the Coupler from dropping.

18. The last alteration, which is necessary regardless of Coupler spacing chosen, will be to file the underside of the truck sideframe just enough to clear the Magnetic Uncoupling Ramp. You may find this more easily accomplished with the side frame detached from the truck body.

### F-7 A and B Truck Modifications

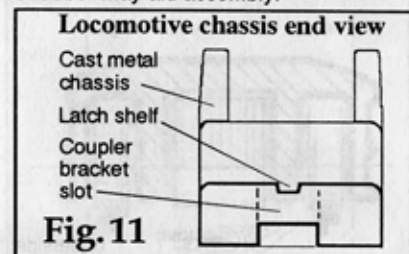


19. After the body shell and the #452 Bracket and Couplers are in place on the chassis check for truck and coupler clearance between the two on a curved piece of track. After observing the clearance between the truck, tip the truck sideframe down enough to apply a small amount of super glue between them, letting the rubber bands hold the truck body and side frames

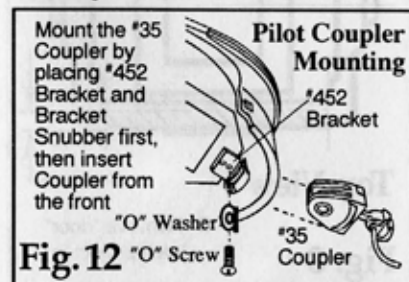
together while aligning the two of them together side-wise and length-wise. Check for height and space dimensions with the Kadée® #205 Coupler Height and Multi-Purpose Gauge.

### Tips for inserting the #452 Bracket into the Bachmann Plus™ EMD F-7A and F-7B.

Because of possible variations in the die-cast chassis bracket slots, consisting of some mis-match of the opposing cores and metal flash, see Fig. \*11, it may make it necessary to file the flash, burrs and parting line mis-match in the chassis coupler bracket slot and clear it of any obstructions, before inserting the #452 Bracket and Bracket Snubber. A small amount of a plastic compatible grease applied to Bracket and Snubber may aid assembly.



In order to maintain the correct Coupler height, the Snubber has been designed to hold the #452 Bracket up and tight to allow for the choice of either 5ft. or 3ft. Coupler spacing. Please see respective sections for specific mounting instructions.



When Coupler is used on top of the Coupler Draft Gear Box and the Torsion Spring is used on the bottom of the Box, a Washer must be used with the "O" sized screw, to hold Spring Lid on to the Box.



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## Kadée® #452 COUPLER CONVERSION INSTRUCTIONS

### FOR: Bachmann Plus™ F-7 A and B Locomotives

**Standard: 5 ft. Conversion Instructions, PART I,** show how to modify the locomotive(s) to allow a five-foot space between units that will negotiate a 20" minimum radius.

**Custom: 3 ft. Conversion Instructions, PART II,** show how to modify the locomotive(s) for prototypical three-foot spacing between units that will allow 18" minimum radius on curves. You may wish to follow instructions in PART II which includes additional modifications.

**Contents:** two #452 Brackets, two Bracket Snubbers, two Coupler Lids, two #35 Kadée® Magne-Matic® Couplers, two Draft Gear Boxes, three Torsion Springs, two Spring Lids, three "O" x 1/4" self-tapping screws, one Knuckle Spring, four "O" size Plastic Washers and two instruction sheets.

**NOTE:** Thoroughly read both of the instruction sheets before starting on this Conversion. The cosmetic modifications needed for the 3 foot spacing between engines will require additional alterations to the end of each power truck with the suggested tools described in the instructions. This will be well worth the extra effort, resulting in improved locomotive appearance, and better operation over switches and "S" curves.

**SPECIAL NOTE:** The Gear Box included in the #452 is not interchangeable with the 30-Series Gear Box. The #452 Gear Box has a smaller diameter hole than the standard 30-Series Gear Box.

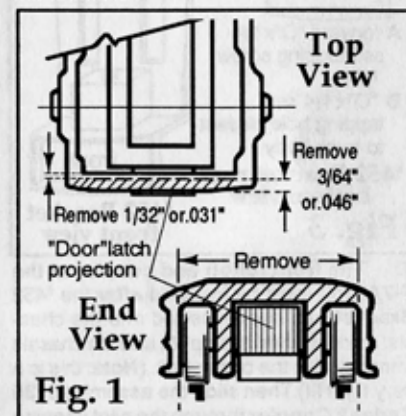
## INSTRUCTIONS:

### PART I (5 foot standard spacing)

1. Assemble Coupler with the Spring on top and the Coupler on the bottom of the Draft Gear Box, following the Coupler Instructions closely for best results.
2. Remove the locomotive body shell from the chassis by turning engine over carefully and removing the two screws at opposite corners of the oil tank on the bottom of the chassis. **DO NOT** remove the two inline screws on the bottom of chassis.
3. Remove the Bachmann #6207-1 coupler brackets from both ends of the chassis by pressing the "door" latch type

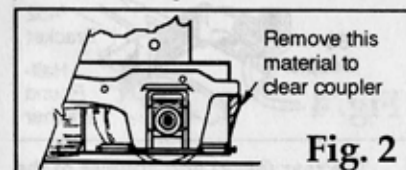
engagement at the top of the slot in the chassis down - in - and then out with a small screwdriver, see Fig. \*3.

4. A slight modification to the rear end of each truck is necessary. Using a small screwdriver placed between the end crossbar of the truck side frame and truck body, pry out - up and away from the truck body until it snaps out. Be careful not to break the crossbar.



5. On one end only of each truck, cut or file the cross bar and the two vertical bars, see Fig. \*1, to a thickness of about 1/32" or .031". Reinstall the side frames with the "thinned" crossbar end opposite the fuel tank, see Fig. \*2.

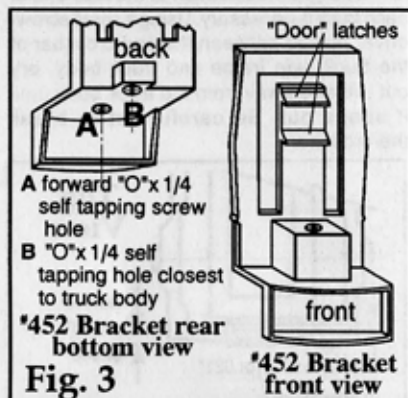
It may be necessary to file or cut the "door" latch type projection on the end of the truck body back, until it is flush with the "thinned" truck side frame crossbar just filed, See Fig. \*2.



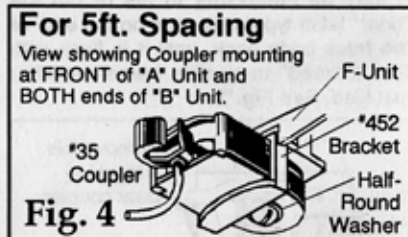
6. Assemble the #35 Kadée® Magne-Matic® Coupler according to the #30 Series Instructions and attach to the #452 Bracket using the "O" x 1/4" self-tapping screw with the size "O" Half-Round Plastic Washer between screw head and Draft Gear Box Lid. The Half-Round Plastic Washers are used for the "A" Unit pilot (front) mounting and for the 5 ft. coupler spacing on the rear of the "A" Unit and both ends of the "B" Unit. See Figure \*3 and \*4. Insert this assembly into the rear end of the F-7A Unit and both ends of the F-7B Unit, see Fig. \*3 and \*4.

**Note:** 1. Round plastic washers are used only for 3 ft. close coupling.

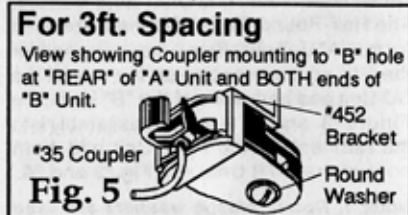
**Note: 2, When assembling the Couplers to the #452 Bracket always use the front hole "A" for the Five foot spacing and the rear hole "B" for the 3 foot spacing, see Fig.\*3. Read on before assembling to chassis.**



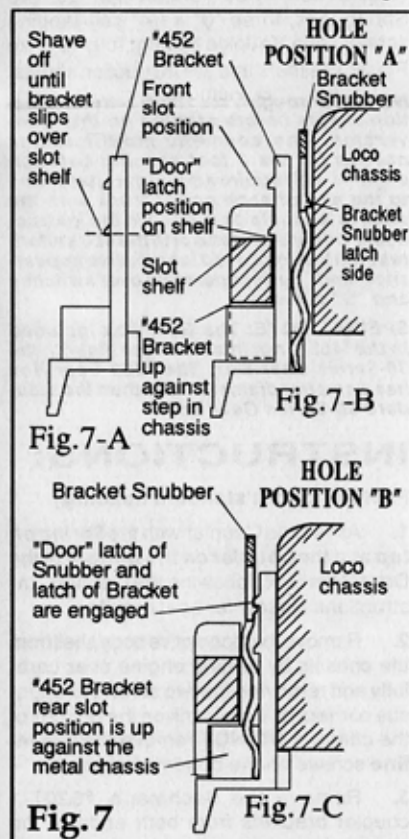
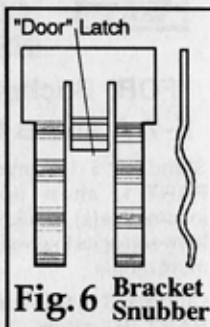
7. The front (pilot) end coupler of the F-7A Unit must be installed **after** the #452 Bracket has been inserted into the chassis, as described in step #8, and the chassis reinstalled in the body shell. (Note: this is a very tight fit) Then slide the assembled #35 Kadee® Coupler through the pilot opening in the front of the shell and through the loop on the #452 Bracket and attach with the "O" x 1/4" self-tapping screw placed in the forward "A" mounting hole. Test for correct Coupler height by using the Kadee® #205 Coupler Height Gauge and check for freedom of operation.



8. The rear (back) end coupler of the F-7A and both ends of the F-7B Unit require that you insert the #452 Bracket from the bottom of the chassis slot, see Fig.\*7-B. Using a small screwdriver, press forward until the "door" latch snaps or slips forward over the top of the slot shelf.



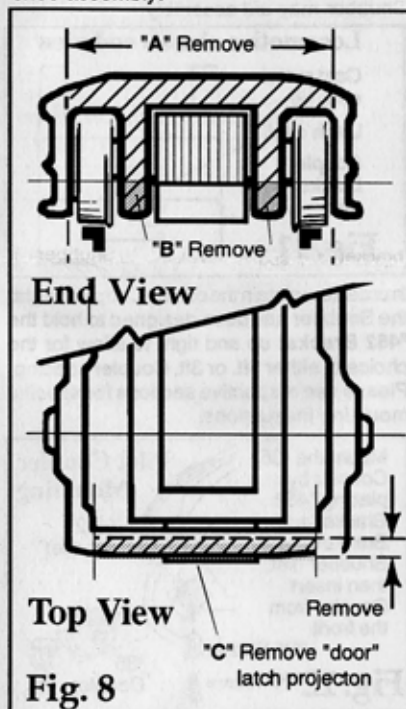
There is about 1/64 of an inch difference between the front and back slot latch shelf. See Fig.\*11 and "Tips...". It may be necessary to file the shelf or the bracket's latch face engaging the shelf surface, see Fig.\*7-A and Fig.\*11, to allow it to snap or slip over the shelf. The **Bracket Snubber**, a flat wavy plastic spring, is now very carefully slipped between the #452 Bracket and the motor side of the slot and pushed all the way down. The Snubber holds the latch in place and prevents it and the Coupler from dropping down and out. The Bracket Snubber, Fig.\*6, is meant to be tight to prevent the #452 Bracket from flexing in the slot and to stabilize the Coupler height. If Snubber is too tight, file the "door" latch side, see Fig.\*7-B, just enough to maintain a tight fit. Remember the spring is on top and the coupler is on bottom for correct height.



## PART II For Prototype 3 Foot Spacing

9. Complete steps 1 through 3 of PART I of these instructions. Read and familiarize yourself with the rest of PART I, steps 4 thru 8, as these instructions contain some important information about converting to 3 ft. spacing. You may find it helpful to detach the truck and electrical pick up from the chassis to accomplish the following modifications.

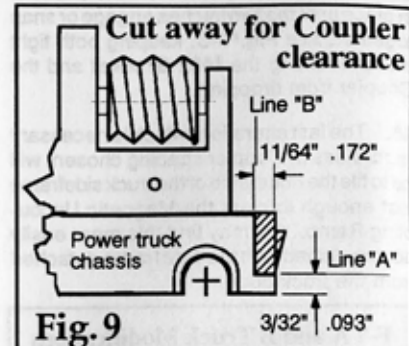
10. Completely remove the material between "A" and "C", the crossbar and the two vertical bars, as shown in Fig.\*8. Cut or file any part of vertical bars remaining flush with the rear end at the bottom edge of the truck sideframe, "B", as shown in Fig.\*8. **DO NOT** remove or disturb the brake shoe assembly.



11. Next, with a fine jewelers or "Zona" type saw, cut a step 11/64" or .172" deep in the end of the power truck chassis, leaving a ledge of about 3/32" high at the rear end bottom of the truck, see Fig.\*9 & \*10.

12. If you have a dial caliper it will simplify layout of the lines on the truck body for cutting clearance to clear the #452 Bracket and Coupler Draft Gear Box for 3 ft. prototype close coupling.

Set the calipers to the dimensions per Fig.\*9. Use one jaw and the bottom of the truck body as a guide and the other jaw to scribe a horizontal line "A" along the bottom on both sides and the end.



Next, adjust the calipers to the dimension per Fig.\*9 and scribe both vertical side lines "B" and the top line, using the truck body end as a guide. We suggest cutting just above the horizontal line "A" first to allow the side wall to support the ledge, cutting just past the vertical lines on each side. Now, just cut forward of the line towards the end of the truck body on both sides as shown in Fig.\*9.

13. Remove all burrs with a fine file or knife, clean plastic sawdust off of all plastic parts, wash gears in a suitable cleaner and lubricate the gears with a plastic compatible light white grease.

14. Cut or file the remainder of the "door" latch type projection on the rear end at the bottom edge of the truck body "C", flush with the rest of the truck body surface, as shown in Fig.\*8.

15. Test coupler clearances between truck, side frames and Coupler Draft Gear Box with #452 Bracket and Couplers installed temporarily by holding truck side frame to truck body with a rubber band around the ends of the truck body and truck sideframe.

16. When assembling the Couplers for 3ft. spacing to the #452 Bracket, use the **rear** "B" hole, see Fig.\*3, the hole **closest** to the truck body and the round plastic washers. See Fig.\*3 and \*5. Check for clearance between the truck and Coupler on level track. There should be about .031" or 1/32 of an inch clearance between the two.

17. To assure a tight and proper Coupler fit with 3ft. spacing, a Snubber, see Fig.\*6 and \*7-C, is inserted first all the way down from the top towards the front of the slot,