INSTRUCTIONS

SCALE 1:220

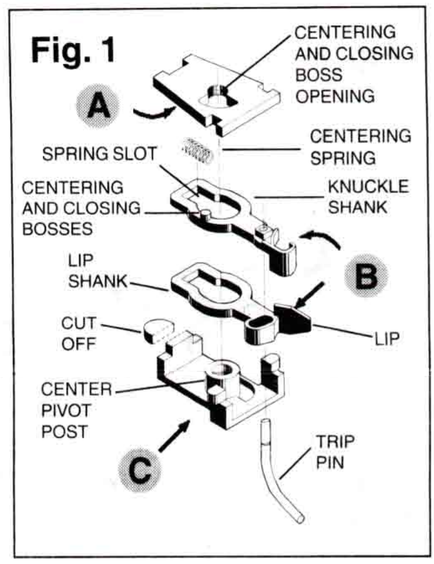
SCALE 1:160

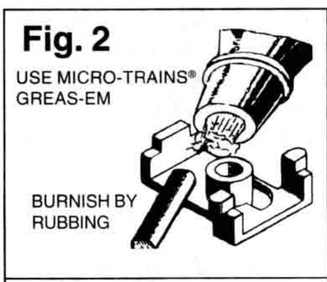
PATENT NUMBER
U.S.A. 5,090,332
OTHER PATENTS PENDING
Exclusively Made in the U.S.A.

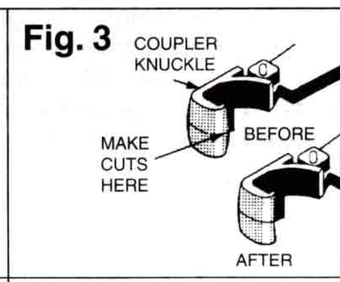
COUPLER ASSEMBLY INSTRUCTIONS

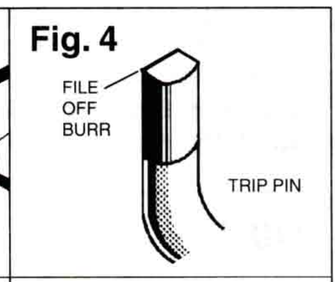
PREPARATION:

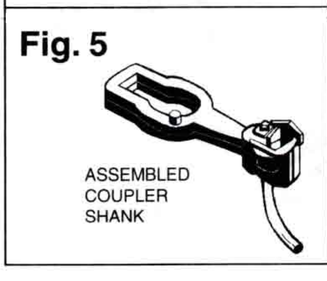
Please read all instructions through once, study **(Fig. 1)** to familiarize yourself with the name of each part. Carefully remove each part from sprue, and with sharp knife, trim areas where flashing remains. Trim flash near draft gear box openings and around ejector pin marks on inside of coupler shanks. Burnish all working surfaces using the round end of a small drill bit and Micro-Trains® **Greas-em** as shown in **(Fig. 2)**. Give special attention to areas A, B, and C, in Fig. 1. To insure maximum gripping performance from your Micro-Trains® Magne-Matic® couplers, you may wish to modify the coupler knuckle. The slightly rounded surface on the knuckle hook can, under the pressure of an especially long train, cause the couplers to slip up or down against each other. This problem is easily solved by cutting from each edge of the knuckle hook towards the middle **(Fig. 3)**, thus reversing the angle of the coupler face and making more surface contact between the couplers. Hold the knuckle shank with a clamp, and using a sharp blade, carefully make angled cuts of no more than 4° towards the center of the knuckle hook.

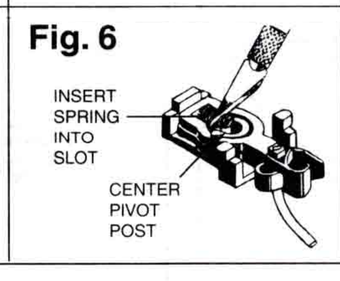












ASSEMBLY:

After properly preparing all parts, begin assembly. **A)** File off burr on flattened end of trip pin **(Fig. 4)**, then insert into slot on the underside of the knuckle shank **(Fig. 10)**. Push pin in until it is visible coming through top of slot. **B)** Assemble two halves of coupler shank. The trip pin, now in the top half, should be inserted through the elongated slot in the bottom half, or lip shank. The two halves will then fit together perfectly **(Fig. 5)**. **C)** Place the bottom of the draft gear box on Micro-Trains® **Coupler Assembly Fixture**, or the edge of a slightly raised surface. Place the assembled coupler shank in the draft gear box so trip pin is down, and hole in the coupler shank is over the center pivot post. **D)** Using a knife blade wedged between the end coils, insert centering spring in the slot between draft gear center post and coupler ends **(Fig. 6)**. **E)** Being careful not to dislodge the spring, place the draft gear cover plate over the assembly **(Fig. 7)**. Make sure the small coupler centering bosses are correctly positioned in the centering and closing holes of the draft gear cover plate. **F)** Hold draft gear box together and test coupler action. If the coupler fails to snap back to center, remove cover plate and make certain the centering spring didn't slip during assembly. With a small soldering iron, the cover may be heat welded onto the draft gear box. Touch each corner joint with a soldering iron just hot enough to melt the plastic, and weld together. With a sharp knife, smooth any roughness.

MODIFICATION:

Modification of the Z and Nn3 draft gear box for additional clearance needed due to obstructions such as trucks, or for extending coupler shank, is shown in **(Fig. 8)**. Be careful not to cut away too much, or spring may fall out, boss openings may be destroyed, or shank droop may occur. **(Fig. 9)** shows the position of a new mounting hole (.100"/2.5mm from end of car body) for a shortened draft gear box.

MOUNTING COUPLER & DRAFT GEAR:
When mounting the coupler, be sure coupler is in exact center and at correct height. The Z and Nn3 Scale coupler centerline is .154" (3.9mm) above the rail head. The coupler mounting platform should be .206" (5.2mm) above the top of the rails **(Fig. 9)**. For ease in measuring, use Micro-Trains® non-magnetic trucks for best results with our couplers. **A)** Locate and mark the position for the car body mounting hole it (*is on the centerline*), exactly .100" (2.5mm) back from

Fig. 8

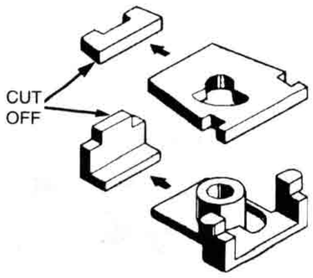
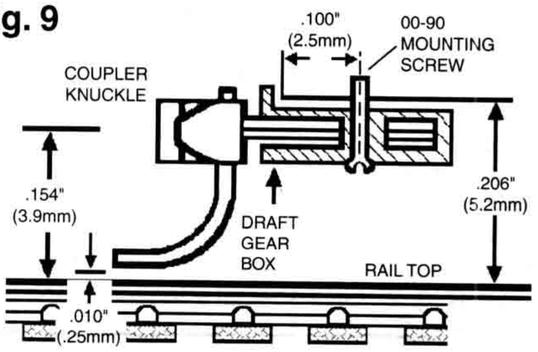


Fig. 9



the end of the car. **B)** Drill a No. 62 (.038" diameter) hole and tap it for the 00-90 screw provided in the kit **(Fig. 9)**. **C)** After mounting, add a puff of Micro-Trains® '**Greas-em**' into the draft gear box and work the coupler back and forth within the box to lubricate and burnish it. **DO NOT USE OIL**.

TESTING:
A) Test coupler for proper centering action. Coupler should move freely from side to side, in and out, always returning to center position. If it doesn't, disassemble and check spring for proper centering, damage, or improper seating. Correct and add a puff of Micro-Trains® **Greas-em**, and work couplers back and forth to lubricate and burnish parts. DO NOT USE OIL. **B)** Place car on track, and check coupler height using Micro-Trains® **Coupler Height Gauge (Fig. 9)**. **C)** If coupler sets too low or high, adjust height by shimming or removing material from either coupler/mounting platform or truck /body bolster. **D)** Check trip pin height with Micro-Trains® **Trip Pin Height Gauge.** Lay gauge across rails and roll trip pin up to it **(Fig. 9)**. Pin should just clear gauge, but not be so low it fouls on turnouts and

Fig. 10

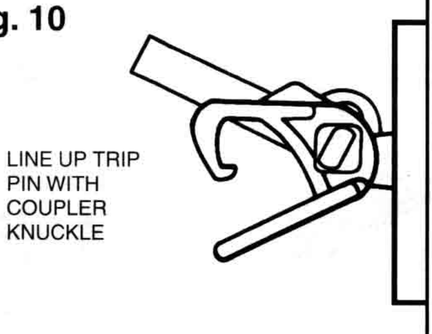
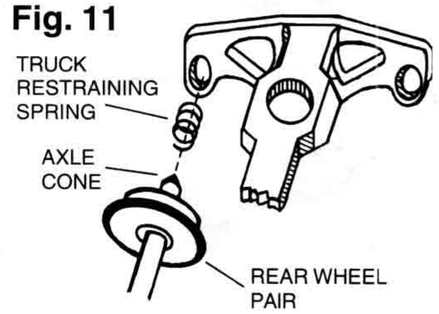


Fig. 11



crossover rails. If trip pin is too short or long, adjust by pulling or pushing up or down in coupler shank. **E)** If couplers cross the wrong way over uncoupler, locking closed instead of open, adjust trip pin angle. Trip pin should line up with knuckle part of coupler **(Fig. 10). F)** Remove trip pin by carefully pulling straight down while holding coupler knuckle. **G)** Twist pin top so it angles outward slightly more, then reinstall. **DO NOT** bend or twist trip pin while in coupler. If light cars, or cars with steel axles and weights are drawn into the magnet, replace wheelsets with our non-magnetic wheelsets or modify existing wheelsets: **A)** Remove the back wheel pair from one truck on each car (back wheel pair is the one closest to the center of the car and away from the coupler end of truck) and add one truck restraining spring (included in kit). **B)** To do this, turn axle cone up and add a dab of saliva to it to hold spring in place. Then position spring over axle cone. Reinstall wheel pair to truck, and this spring should make enough drag to keep car from being pulled into magnet. If not, add another spring to the other truck **(Fig. 11)**. Replace steel weight with part of an old (cleaned) car tire weight or flattened fishing sinker.

UNCOUPLING:
The Micro-Trains® Z and Nn3 Scale Magne-Matic® Couplers are designed to operate with the **988 00 211** Uncoupler, centered, and placed directly under the tie strip.

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