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PATENT NUMBERS
 Japan 1,204,377
 Germany 2,542,787
 Germany 2,559,813
 U.S.A. 4,799,431
 U.S.A. 4,898,326
 U.S.A. 4,948,073
 U.S.A. D381,376
 OTHER PATENTS PENDING
 Exclusively Made
 in the U.S.A.

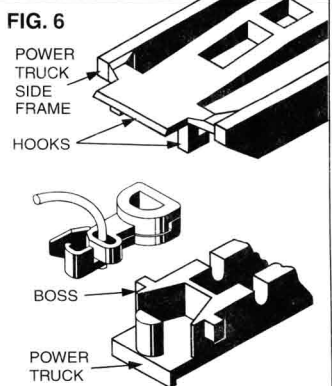
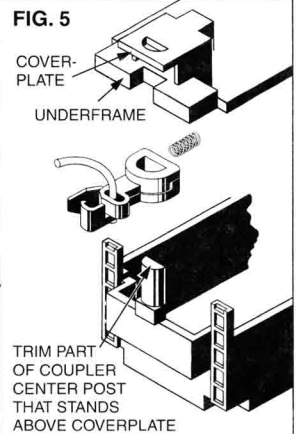
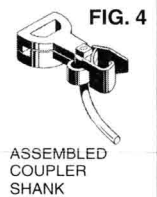
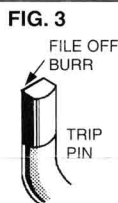
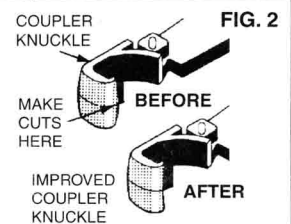
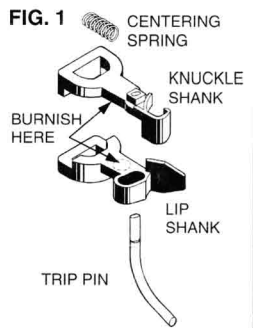
Two (2) pair, Medium and Short, Loop Shank couplers for use with Marklin locos and cars

Preparation: Please read all directions through once and 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® #231 Greas-em. 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. 2**), 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. **Note:** We have already done this for you on our 1015, 1016, 1023 and 1025 N gauge couplers made since 1997.

Assembly: After preparing all parts, the couplers are ready for assembly. File off burr on flattened end of trip pin (**Fig. 3**), then insert pin into the slot on the underside of the knuckle. Push pin in until it becomes visible through the top slot. Assemble the two halves of the coupler shanks by inserting the trip pin through the elongated slot on the front of the lip shank. The two halves should fit together perfectly (**Fig. 4**). **Figs. 5, 6, and 7**, show the coupler mounting platforms on three basic types of Marklin Z gauge models. Access to the draft gear boxes will vary somewhat with each model, so find the illustration that most closely matches the model you are working with, then follow the corresponding instructions.

Tenders: (FIG. 5) There are three posts on the Marklin tender that hold the underframe in place; one on either side of the middle axle, and the coupler center post at the rear end. In order to expose the draft gear, you must carefully cut off the portion of these posts that stands above the underframe and coupler coverplate surfaces. After the tops of the three posts are removed, take a small screwdriver and pry off the underframe.

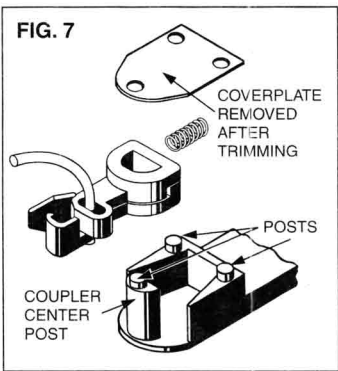
Diesel & Electric Locos: (FIG. 6) Simply unscrew the power truck side frame and lift off. There are two hooks



on the end of the side frame that fit over bosses on the power truck. When removing the side frame, shove forward, off the bosses, then lift up.

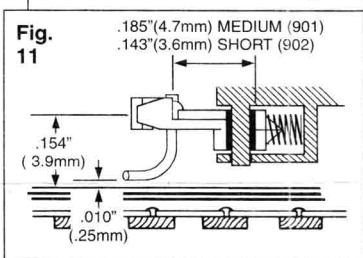
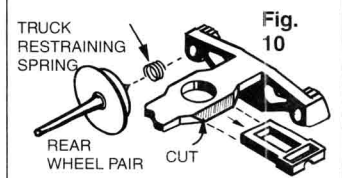
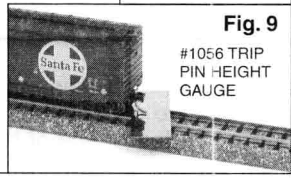
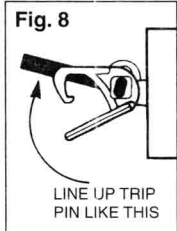
Truck Mounted Couplers: (FIG. 7)

Cut off portion of the three posts that stands above the metal cover plate, then carefully remove cover plate to expose draft gear pocket. It may be necessary to further trim sides of posts so they fit back into the cover plate holes on reassembly. After accessing the draft gear box and discarding the *Marklin* coupler, set the assembled Micro-Trains® coupler over coupler pivot post so trip pin is pointed toward bottom of the loco, car or tender. Using a knife blade wedged between the end coils, insert coupler centering spring into the space behind coupler shank and rear end of coupler pocket. Being careful not to dislodge spring, replace cover plate over posts. Hold assembly together and test the coupler centering action, If coupler fails to center properly, examine coupler halves and check spring placement. Where assembly is not screwed together, fix cover plate and center posts with small amount of cement, taking care it does not enter coupler housing area. Add a puff of Greas-em into draft gear box and work coupler back and forth within box to lubricate and burnish.



Testing: Place car on track, and check coupler height using Micro-Trains® #920 Coupler Height Gauge (Fig. 11). If coupler sets too low or high, adjust by shimming or removing material from either coupler mounting platform or truck/body bolster. Check trip pin height with Micro-Trains® #1056 Trip Pin Height Gauge (Fig.9). The pin should just barely clear the gauge. To adjust pin height, move it up or down in the coupler shank. If couplers cross the wrong way over uncoupler, locking themselves closed instead of opening, adjust trip pin angle. Trip pin should line up with the knuckle part of the coupler (Fig. 8). Remove trip pin by carefully pulling straight down while holding coupler knuckle. Twist pin top so it angles outward slightly more, then reinstall. **DO NOT bend or twist trip pin while in coupler.** If light cars with steel axles or weights are drawn into the magnet, remove back wheel set on one truck of each car and insert our truck restraining spring between the wheel and truck side frame (Fig.10). To do this, turn the axle cone up and add a drop of water to hold the spring in place, then place the spring over the axle cone. Reinstall wheel set into truck. The spring should create enough drag to prevent the car from being pulled into the magnetic uncoupler. If this creates too much drag, clip off enough spring coils to keep the car from drawing in. Micro-Trains® Z-scale couplers are designed to operate with the No. 921 uncoupler centered and placed directly under the tie strip.

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