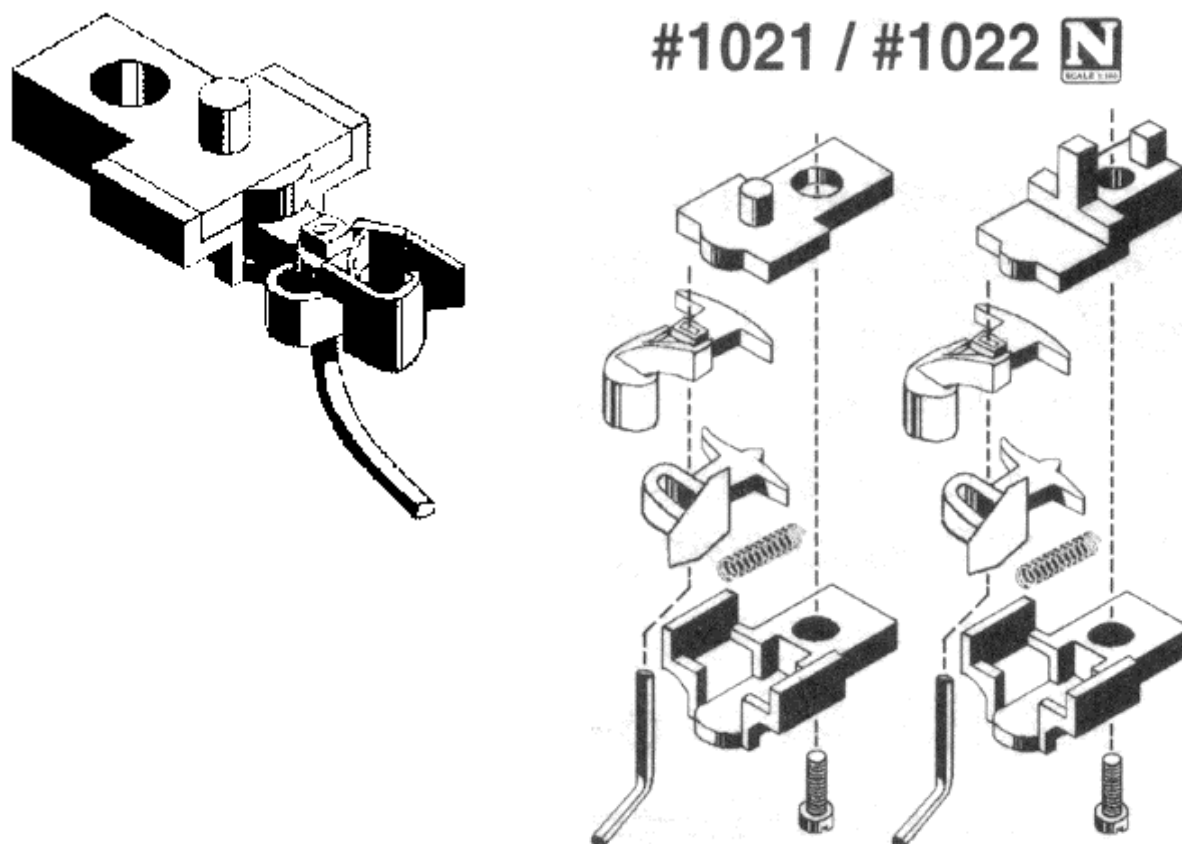


Micro-Trains #1021/#1022 Low short profile coupler

Low short profile coupler, for locomotives and cars with limited mounting area, makes 2 pair of either (1021) Life-Like E8A Pilot or Bachmann 4-8-4 pilot.



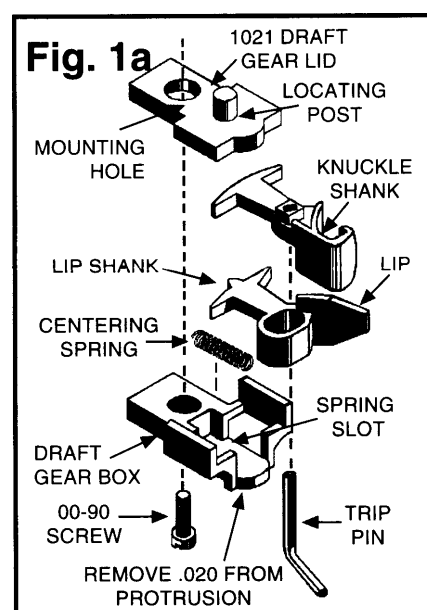
#1021 for locomotive with limited mounting area. Bachmann 4-8-4 with Tender. #1022 for Con-Cor (Kato) 1500HP and similarly constructed locomotives.

(See Bachmann's instruction sheet for coupler assembly part numbers)

PREPARATION:

Read all directions through at least once before you start. Study Fig. 1a and 1b to familiarize yourself with the name of each part.

1. While coupler parts remain on sprue, burnish all working surfaces using rounded end of a small drill bit and Micro-Trains 'Greas-em' 988 00 141 (Fig. 2). Give special attention to inside of draft gear box, and draft gear lid.
2. With a sharp hobby knife, carefully remove each part, except draft gear box, from sprue so no flash remains.
3. To insure maximum gripping performance from your Magne-Matic couplers, you may wish to modify the coupler knuckle. The slightly rounded surface on the knuckle hook can, under the stress of an especially long train, cause the couplers to slip up or down against each other. This problem is solved by cutting from each edge of the knuckle hook towards the middle (Fig. 15), thus reversing the angle of the coupler face and creating more contact



between couplers. Hold the knuckle shank with a clamp, and carefully make angled cuts of no more than 4° towards the center of the knuckle hook.

ASSEMBLY:

4. Remove any burrs on the long end of trip pin (Fig. 3) and align this end with slot in underside of knuckle shank (Fig. 13). Carefully push pin into slot until the pin is visible coming through the top side of slot.

5. Assemble (2) halves of coupler shank by inserting the trip pin, now in knuckle shank, through elongated slot in lip shank. The (2) halves then fit together (Fig. 4).

6. Hold the draft gear box between thumb and forefinger. Using the Micro-Trains 988 00 061 Coupler Tweezers, insert assembled coupler shanks into draft gear box so trip pin is facing down, (so it will extend towards track after assembly), and coupler 'T' shank ends nest into the wide opening of the draft gear box (Fig. 5).

7. Using a sharp hobby knife, pick up a coiled centering spring by inserting blade between coils at one end of spring. Insert spring, coupler side first, between coupler shanks and small slot in draft gear box (Fig. 5).

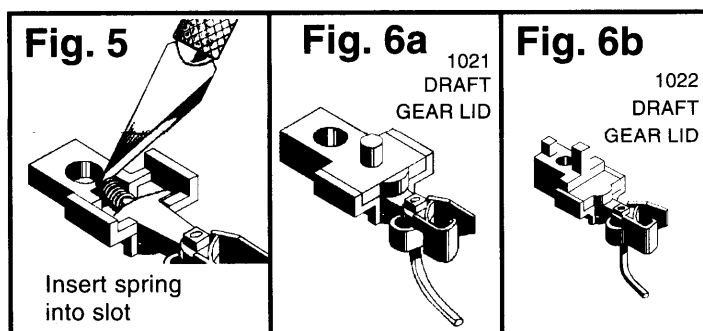
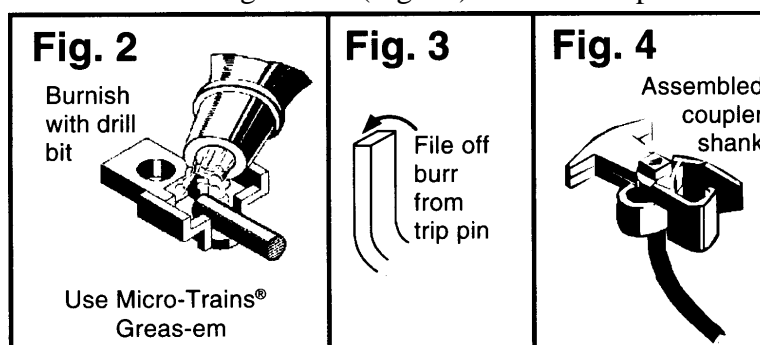
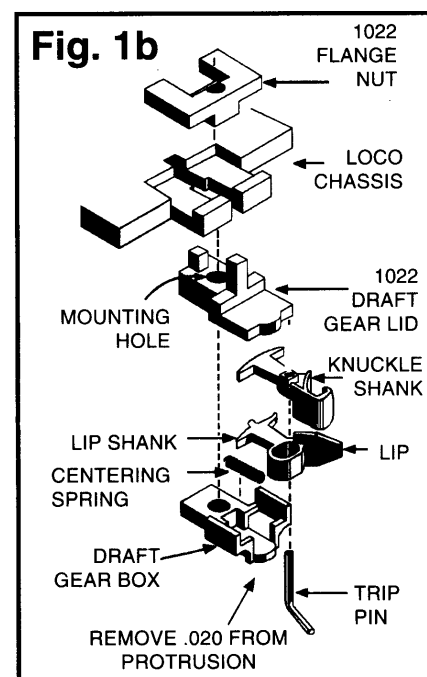
8. Now carefully, so as not to dislodge spring, place draft gear lid over assembly (Fig 6a or 6b).

9. Using Micro-Trains 988 00 061 Coupler Tweezers, hold draft gear box assembly together and insert a #56 or .046" (1.2mm) diameter drill into coupler mounting hole to align draft gear box and lid. Test coupler action. Coupler should easily pivot from side to side, in and out, always returning to center position. If the coupler fails to perform properly, remove draft gear lid and make certain the centering spring did not dislodge out of position while assembling. For track radius 8.75" (222.3mm) and smaller, it will be necessary to remove .020" (.5mm) from the rounded protrusion on the front of the draft gear box (Fig. 1a) to allow coupler knuckle to swing fully in both directions.

10. After testing for proper operation, you may CAREFULLY touch each corner joint of draft gear with a small soldering iron just hot enough to melt the plastic. This will heat weld the lid to the draft gear box.

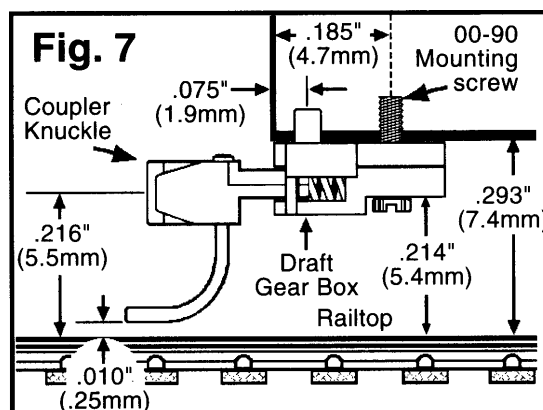
11. Remove draft gear box assembly from sprue. Smooth down any irregularities that welding may have caused with a fine file or a sharp hobby knife.

12. After assembling, add a puff of Micro-Trains 988 00 141 'Greas-em' into the draft gear box and work coupler back and forth within box to lubricate and burnish it.



#1021 INSTALLATION

When mounting, be sure coupler assembly is in exact center of the underbody and a correct height. The correct NMRA coupler centerline height is $7/32"$ or $.216"$ (5.5mm) above railtop. The area on the locomotive where the coupler assembly mounts should be $.293"$ (7.4mm) from railtop (Fig. 7). For your convenience Micro-Trains offers the 988 00 033 Adjustable Micrometer Height Gauge. If the coupler mounting platform is too low, remove material from mounting platform. If coupler mounting platform is too high, shim between mounting platform and coupler assembly. Once mounting platform height is correct, proceed with mounting coupler assembly.



A. Drill a #62 or $.038"$ (1.0mm) diameter coupler mounting hole on centerline of car or locomotive underbody exactly $.185"$ (4.7mm) back from end of car or locomotive.

B. Tap hole carefully with 00-90 tap. For your convenience, Micro-Trains offers the 988 00 121 Tap & Drill Package. Drill a #56 or $.046"$ (1.2mm) diameter coupler locating hole on centerline of car or loco underbody exactly $.075$ (1.9mm) back from end of car or loco. OPTIONAL: Omit the #56 or $.046$ (1.2mm) diameter hole and remove locating post from draft gear lid (Fig. 1a). Mount coupler with 00-90 screw provided.

CON-COR (KATO) 1500 HP and similarly constructed locomotives.

1022 INSTALLATION

Follow the 001 02 021 general assembly instructions and install using these instructions. Remove body shell by carefully prying it away from metal locomotive chassis.

A. Loosen chassis screws to allow removal of original draft gear and replace with #1022 conversion flange nut and coupler assembly. (See Fig. 1b and 8 for correct relationship of parts to chassis).

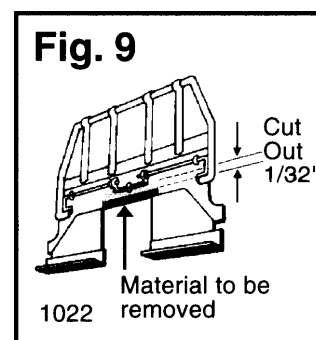
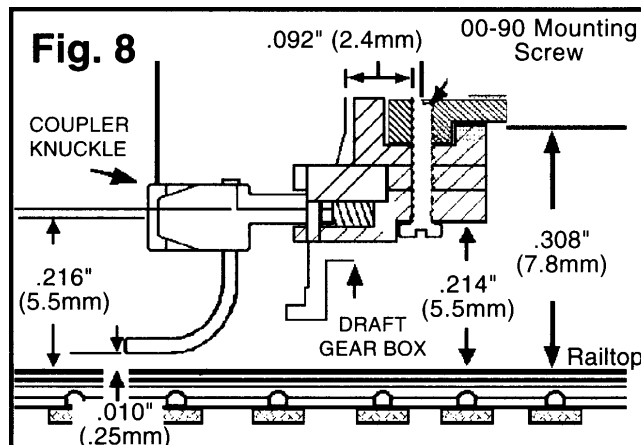
B. Insert 00-90 screws. Before tightening, snug up chassis screws, making sure power trucks are correctly in place.

C. Tighten 00-90 screws and chassis screws. Be careful not to strip threads by over tightening.

D. After mounting, add a puff of Micro-Trains 988 00 141 'Grease-em' into the draft gear box and work coupler back and forth within box to lubricate and burnish it.

E. Carefully cut or file $1/32"$ ($.031"$) (0.8mm) from both ends of diesel hood, at coupler openings. This will give you the necessary draft gear clearance (Fig. 9).

F. Replace diesel hood.



Bachmann 4-8-4 with Tender Pilot Mount #1021 Installation:

Follow the 001 02 021 general assembly instructions and use these additional alterations. NOTE: Assemble 1021 coupler IN REVERSE, with lid on bottom and box on top. To do this, insert couplers with trip pin facing up instead of down (Step 5 on 001 02 021 instructions). Trim off post on coupler lid.

FOR PILOT:

1. Using a sharp hobby knife or jewelers saw, carefully remove original dummy coupler. Prepare pilot for Magne-Matic coupler by cutting away area shown in (Fig. 10) to allow room for head of mounting screw and (Fig. 11) for draft gear box clearance.

2. Drill a #62 hole and tap with 00-90 tap exactly .083" in front of lip on underframe. (Fig. 10 & 11).

3. From outside of cow catcher, set coupler in place, so that hump of coupler rests against cut-away section of pilot (Fig. 11). Push in until coupler mounting hole lines up with newly tapped and drilled hole.

FOR TENDER:

1. For tenders with #9723 draft gear box and #9722 coupler (see Bachmann instruction sheet for parts listing), use Magne-Matic 001 30 012. Refer to 001 30 012 installation instructions.

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 988 00 141 'Greas-em', and work couplers back and forth to lubricate and bur-nish parts. DO NOT USE OIL.

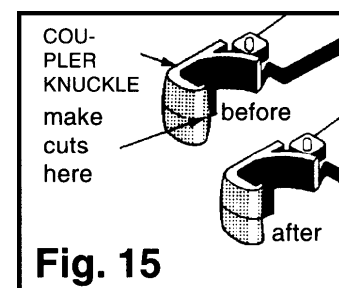
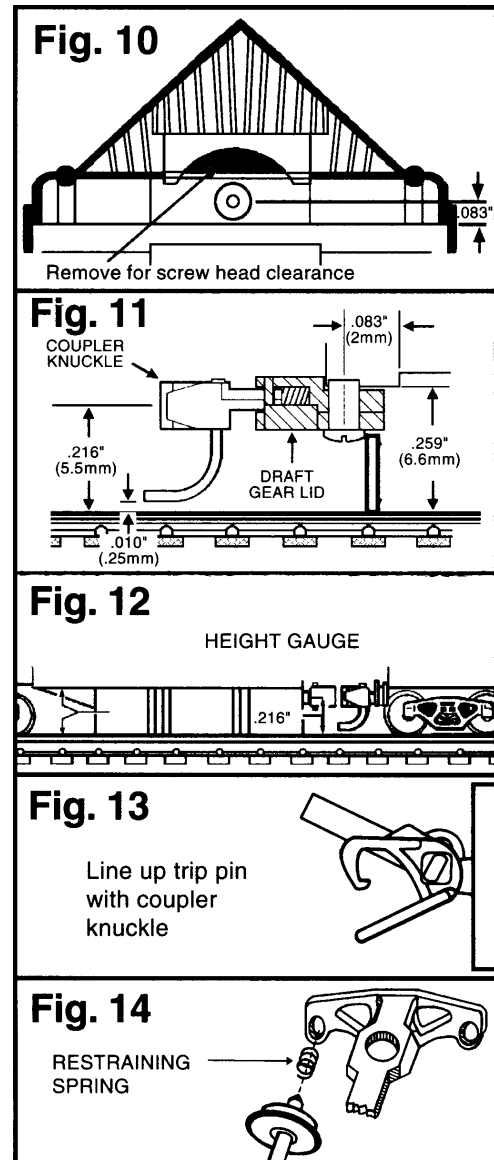
B) Place car on track, and check coupler height using Micro-Trains 988 00 031 Coupler Height Gauge (Fig. 7).

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 988 00 034 Trip Pin Height Gauge Lay gauge across rails and roll trip pin up to it (Fig. 7). Pin should just clear gauge, but not be so low it fouls on turn-outs and 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 uncouples, locking closed instead of open, adjust trip pin angle. Trip pin should line up with knuckle part of coupler (Fig. 13).

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.

NOTE: If light cars, and cars with steel axles and weights are drawn into the magnet, replace magnetic wheel sets with our non-magnetic wheelsets or modify existing wheelsets the following way: Remove the back wheel pair from one truck on each car (back wheel pair would be the one closest to the center of the car away from the coupler end of the truck) and add one Micro-Trains 001 12002 truck restraining spring, not included in kit. To do this, turn axle cone up, add a dab of saliva to it to hold spring in place, then place spring over the axle cone. Reinstall wheel pair to truck, this spring should create enough drag to keep car from being pulled by magnet. If not, add another spring to the other truck (Fig. 14). Replace the steel weight with soft white metal or flattened fishing sinker.

UNCOUPLING:

The Micro-Trains N-Scale couplers are designed to operate with the following Magne-Matic Uncouplers:

988 00 171 Under the Ties Uncoupler

988 00 172 Permanent Magnet Uncoupler, without track

988 00 173 Permanent Magnet Uncoupler, mounted in Atlas type track