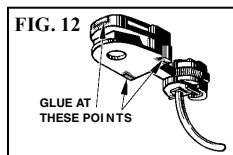
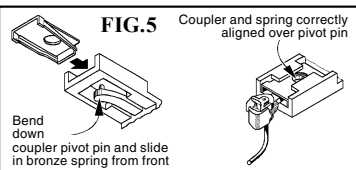
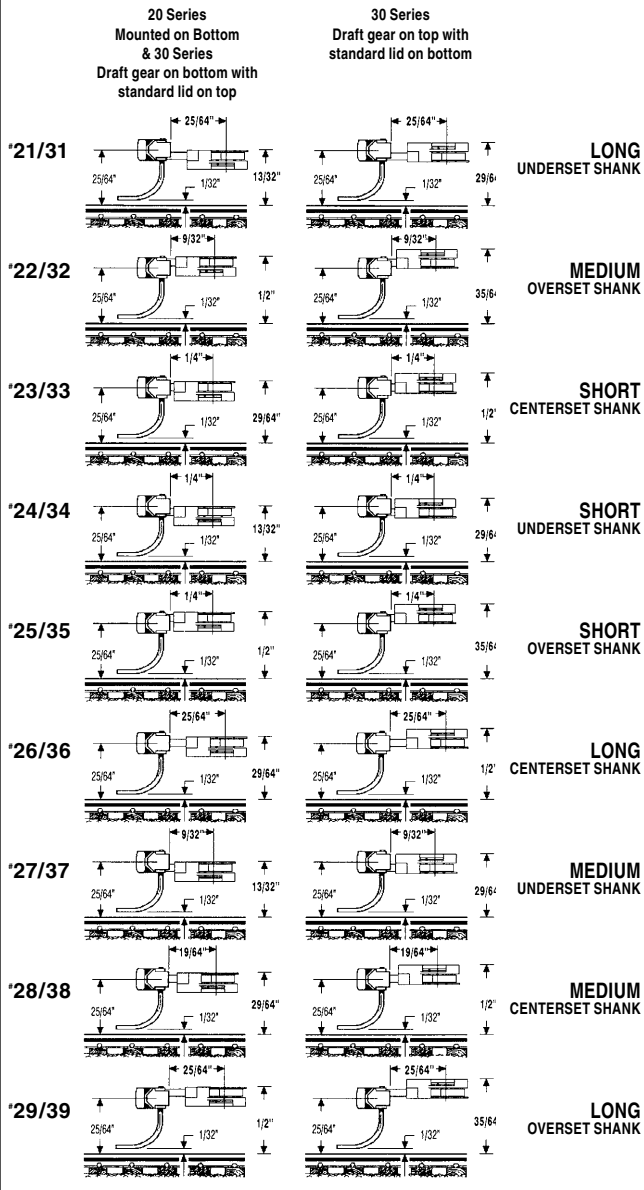


## 20 & 30 Series Kadee® Magne-Matic® Couplers



# 20 & 30 SERIES COUPLERS



### BEFORE ASSEMBLING ALL COUPLERS:

The 20 or 30 series coupler lines are insulated plastic shanked couplers. After removing the draft gear box from the sprue file off the break away point and any flash, making sure the inside of the box is smooth. Burnish the coupler shank on both sides. Note: On 20 series couplers the bronze centering spring plate must always be installed on the top of the coupler with the spring leaves (arms) facing down straddling both sides of the standard shank coupler. Note: Fig. 2 & Fig. 10 represents a listing of parts only, at no time would all these components be used in a single mounting situation.

### COUPLER ASSEMBLY INSTRUCTIONS 20-SERIES (NO. 5 TYPE GEAR BOX: #232 or #234 GEAR BOX)

To assemble/install the coupler follow the illustrations in these instructions. (See Fig. 1) You can cement the lid on the box using a small amount of solvent cement carefully placed along the seams if you wish. Fasten assembled coupler on mounting platforms' centerline with a #2 or 2-56 screw through the center hole or with two 0-48 or 0-80 screws through each of the two outer holes. Where the use of a screw is not possible a solvent cement can be used on a styrene mount and a "CA" glue can be used for other mounts.

### COUPLER ASSEMBLY INSTRUCTIONS 20-SERIES ("DROP IN" CAST-ON DRAFT GEAR BOXES & MANUFACTURERS CLIP ON DRAFT GEAR BOXES)

To assemble/install the coupler follow the illustrations in these instructions. (See Fig. 1) Test fit the spring, it must have room to flex the arms without binding. Some center posts may be too small, allowing too much coupler play and will hinder centering action. Compare the play in the supplied draft gear box to the cast on draft gear box and check if the spring functions properly. Make a small bushing (or sleeve) to slip over the post. We include two sizes of sleeves in our 20 series coupler packages (.055" ID and .100" ID) and they also are marketed separately as product #213. Place the spring and coupler into the draft gear box, again making sure the spring is on top of the coupler. Place the lid on the box and secure according to the manufacturers instructions. Do not over tighten for some lids may bind the spring. On Athearn® and other types of clip on lids you may need to file the edge of the tabs the lids clip onto to relieve any binding.

### COUPLER ASSEMBLY INSTRUCTIONS 20-SERIES (UNIVERSAL ADAPTOR PLATE: #213 GEAR BOX)

To assemble/install the coupler follow the illustrations in these instructions. (See Fig. 2) is used in applications that require a lid with a centering boss. Raised sides forward, spring on top of coupler. Fasten assembly to centerline of coupler mounting platform with a 2-56 Screw.

### COUPLER ASSEMBLY INSTRUCTIONS 20-SERIES (TALGO-TRUCKS: #212 TALGO ADAPTORS)

Fig. 3 Represents the common talgo-trucks. Remove Talgo-truck from underframe and twist horn hook coupler out of coupler box. With a sharp hobby knife, remove areas shown in Fig. 4 from the existing coupler box. The opening must be just wide enough to hold the Bronze Centering Spring without binding or distorting it. Remove any obstructions which may interfere with the coupler operation & burnish inside coupler box. Set coupler in position and check coupler height before inserting talgo adaptor.

### TYCO® STYLE TALGO-TRUCK:

Insert Bronze Centering Spring. (see Fig. 5) Bend down coupler pivot pin just far enough to slide spring past it from the front. Push spring back against center post to make room for Coupler. Pull pivot pin down once more and insert Coupler until hole in Coupler Shank rests directly above coupler pivot pin. Now, slide centering spring forward, aligning spring hole with both coupler hole and pivot pin. (see Fig. 5) Proceed to **INSERTION PIC** below to completion of this assembly.

### LIFE-LIKE™ & MODEL POWER® STYLE TALGO-TRUCK:

Install Coupler from the front at an angle and slide Coupler Shank underneath one lip of coupler box. (see Fig. 6) When the coupler hole is centered over pivot pin, twist Coupler down over pin, letting both lips capture Coupler Shank. Insert Bronze Centering Spring from the rear, bringing it forward over Coupler. Align holes in both the Coupler and spring over the pivot pin. (see Fig. 7) Proceed to **INSERTION PIC** to completion of this assembly.

### INSERTION PIC:

Using the Kadee® #230 Insertion Pic, set Talgo-Truck Adaptor cross-wise into the spring and Coupler holes. Turn Insertion Pic and attached Adaptor 90° and press down, snapping Adaptor into position. (see Fig. 8) Make sure the broad section of the Adaptor faces toward the Coupler Knuckle and pivot pin has entered hole. Re-assemble truck to equipment and check coupler clearance.

## COUPLER ASSEMBLY INSTRUCTIONS 30-SERIES (#233 GEAR BOX)

Determine which coupler configuration and method of mounting the Draft Gear Box that will be necessary for your particular situation. (see Fig. 10) Assemble the Coupler and Draft Gear Box as shown in Fig. 10. Place the wire torsion spring over the center post with the spring arm that's on the bottom into the hole where the upper arm points out & is outside of the gear box. Place your finger on the post holding the spring in place. With a pair of tweezers move the upper arm over into the open hole uncrossing the arms. Make sure the spring arms are uncrossed and in position. Roll your finger back and slide the spring lid under until it is holding the spring in place. Move the lid around until it "POPS" in place. You can lift the box up & do this being careful not to release the spring. If handled carefully the spring lid will stay in place. However, you can carefully cement it in place by placing a small drop of styrene cement on the seam of the lid and center post. Place the hole in the coupler shank over the center post and position the shank in between the separated protruding spring legs. Slide the Coupler Lid over the coupler shank, center post, indexing it between the two projections at the front of the Draft Gear Box. (See Fig.11) Testing coupler centering action by toggling back and forth. Coupler should move freely and automatically snap back to center position. NOTE: A thicker Lid has been added to aid in achieving correct coupler height. Use the thicker Lid in place of standard lid or as a shim where needed.

If so desired, when the coupler functions properly & when mounted the correct coupler height is achieved, the Spring Lid and Coupler Lid can be cemented to the Draft Gear Box with a suitable glue or clear solvent cement. Use care not to saturate the Coupler Assembly as this would prevent coupler from functioning. Only a minute dab of adhesive is necessary at the indicated points. (See Fig. 12) Cementing, however, will prevent disassembly.

The coupler opening in the locomotive pilot beam must be enlarged to 5/16" (.312") wide by just over 1/8" (.134") high to accommodate the Coupler Draft Gear Box. The Draft Gear Box can be used as a gauge and should line up and be on center with the locomotive centerline and be parallel to the track, for proper operation of the coupler. If there is no platform or support area provided for coupler mounting, you will need to build one. The Draft Gear Box mounting platform surface should be level, smooth, and even with the top of the Draft Gear Box opening when mounting from the bottom side or level with the bottom when mounting from the top side of the platform. Slipping coupler assembly into the coupler pilot opening so that the Trip Pin of the coupler will just clear any part of the locomotive pilot when swinging from right to left. Mark a pilot hole centerline, crosswise to and on the locomotive centerline. Drill a tap hole for a 2-56 screw with a #50 drill, and then tap hole. If the area will not accommodate this size screw, cement a small plastic dowel, for a bushing, into the Coupler Draft Gear Box hole. Drill a 1/16" #52 clearance hole in the center of the dowel for an 0-80 screw. Then, drill a tap hole for the same screw with a #55 drill on the previously marked pilot hole centerline. If there is an existing mounting hole present, fill it by cementing another plastic dowel in the hole. This plastic dowel is to be drilled as above, for a 0-80 screw size tap hole. Be careful, in either case, not to fasten the screw so tight that it will prevent freedom of movement of the coupler's operation. Small washers are included for use with 0-80 screws.

### 30-SERIES A.H.M.\* TALGO-TRUCK:

Remove Talgo-truck from underframe and twist horn hook coupler out of coupler box. With a sharp knife, remove areas shown in Fig. 9 from the top and front of Talgo-truck coupler box. Mount the #37 Coupler then trim a small amount from the two side mounting lugs for clearance. The assembled Coupler may now be set into the modified Talgo-truck.

### CHECKING MOUNTING

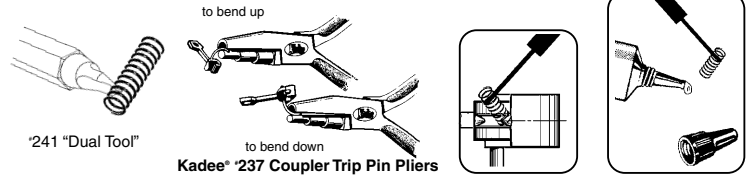
Add a puff of Kadee® #231 Greas-em on the insides of the Coupler Assembly. Work the coupler back and forth to lubricate and evenly distribute the graphite. This will greatly enhance the coupler's performance. Use our #205 or #206 Height Gauge to check for the correct coupler height and trip pin clearance. The HO-Scale N.M.R.A. standard for coupler height is the centerline of coupler at 25/64" (.390"). Use our #237 Trip Pin Pliers to carefully adjust the trip pin clearance if necessary. Note: The Knuckle Spring used on Kadee® "scale" couplers are unique and should not be interchanged with the standard #622 HO-Scale Knuckle Spring. Replacement springs for "scale" couplers are sold as the #625 Knuckle Spring.

To replace the knuckle spring, use our #241 Dual Tool (Manual Uncoupling Tool & Spring Pic) and insert it between the last two coils on either end of the spring. Then slip the end of the spring onto one of the retaining cones in the knuckle and compress the spring until you can slip the other end onto the opposing cone then withdraw the pick.

NOTE: To secure the knuckle spring more durably carefully dip the last two coils in DUCO® (or similar type of glue) or a thick slow drying CA glue ("do not" use the thin CA glue because it can easily "wick" into the knuckle and ruin the coupler). Then slip the end of the spring onto one of the retaining cones in the knuckle and compress the spring until you can slip the other end onto the opposing cone then withdraw the pick.

For Non-Delayed Uncoupling use our #312 Between-the-Rails Permanent Magnet Uncoupler. For Delayed Action Uncoupling use our #321 Between-the-Rails Permanent Magnet Uncoupler, #308 Under-the-Track Permanent Magnet, or our #309 Magne-Electric (Electro-Magnet) Under-the-Ties Uncoupler.

Kadee® coupler conversion list & coupler conversions are on the Kadee® website for your convince. [www.kadee.com/convpl.htm](http://www.kadee.com/convpl.htm)



**WARNING:**  
CHOKING HAZARD - Small Parts  
Not for children under 14 years.



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in the U.S.A.

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