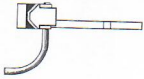
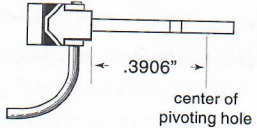
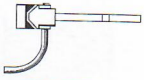
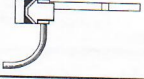
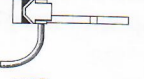
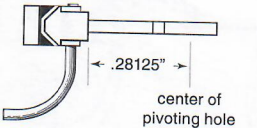



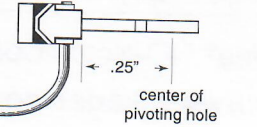




Kadee HO Coupler Offset Chart

SCALE

<p>21, 31, 141*</p> 	<p>"LU" Long Underset Shank Raises knuckle height about .050"</p>	 <p>center of pivoting hole</p> <p>Long Centerset Shank</p>
<p>26, 36, 146*, 156*</p> 	<p>"LC" Long Centerset Shank Knuckle is centered</p>	
<p>29, 39, 149*</p> 	<p>"LO" Long Overset Shank Lowers knuckle height about .050"</p>	
<p>27, 37, 147*</p> 	<p>"MU" Medium Underset Shank Raises knuckle height about .050"</p>	 <p>center of pivoting hole</p> <p>Medium Centerset Shank</p>
<p>NO.5^o, 9, 28, 38, 58, 118*, 119*, 148*, 158*</p> 	<p>"MC" Medium Centerset Shank Knuckle is centered</p>	
<p>22, 32, 142*</p> 	<p>"MO" Medium Overset Shank Lowers knuckle height about .050"</p>	
<p>24, 34, 144*</p> 	<p>"SU" Short Underset Shank Raises knuckle height about .050"</p>	 <p>center of pivoting hole</p> <p>Short Centerset Shank</p>
<p>23, 33, 143*, 153*</p> 	<p>"SC" Short Centerset Shank Knuckle is centered</p>	
<p>25, 35, 145*</p> 	<p>"SO" Short Overset Shank Lowers knuckle height about .050"</p>	

This Chart Represents Kadee® Coupler Shank Variations.

* Denotes couplers with the Whisker® Shank all other couplers use the Standard Shank. All couplers listed will function in each others draft gear boxes with exception of the 30-Series #233 gear box will not work with Whisker® Couplers. The #252 gear box is the Whisker® Coupler 30-Series equivalent gear box.

NO.5^o, 9, 58, & all Whisker® Couplers are all metal.

20 & 30 Series Couplers have plastic insulated shanks and metal knuckles.



* Whisker® Shank

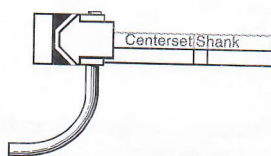
Standard Shank

Patent numbers 5,682,229

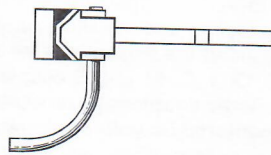
Kadee® Shank Offsets

Raise or lower coupler head the thickness of the shank.

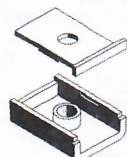
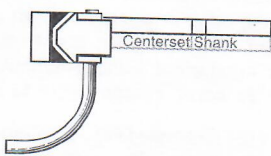
Underset Shank
raises knuckle height about .050"



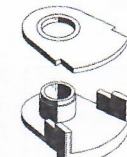
Centerset Shank
knuckle is centered



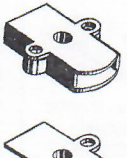
Overset Shank
lowers knuckle height about .050"



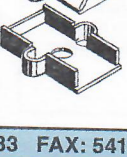
#242 Universal "Black Box" Snap-Together Draft Gear Box



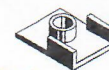
#252 Small Whisker® Snap-Together Draft Gear Box



#234 Short Coupler Draft Gear Box



#232 NO.5 Style Draft Gear Box



#213 20-Series Draft Gear Box



#212 Talgo Truck Adaptor



#262 Narrow Low Profile Whisker® Snap-Together Draft Gear Box



#233 30 Series Draft Gear Box



NO.5, 20, 30 Series & 58 Style Coupler Shank



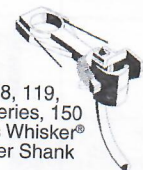
Bronze Centering Spring



Torsion Spring



Coil Spring



#3, 118, 119, 140 Series, 150 Series Whisker® Coupler Shank



HO Coupler Information

SCALE

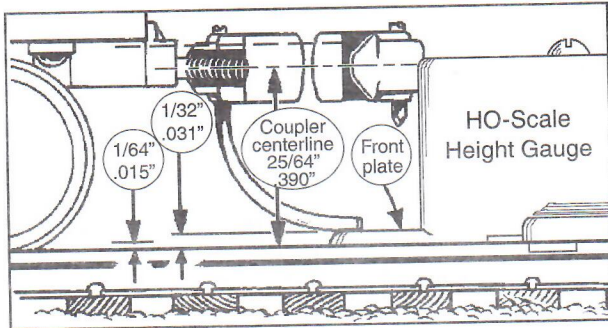
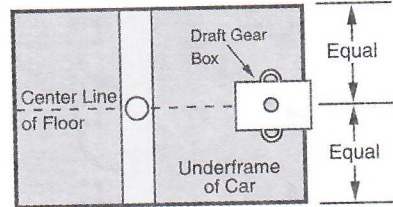
Kadee HO Gear Boxes using center hole (except #9, #711 or 712 Coupler gear boxes)
2-56 screws are the most commonly used screw for mounting using center hole.

Kadee HO Gear Boxes using side or rear mounting holes

0-48 or 0-80 screws are used for mounting with the side or rear hole.

Kadee HO #9, #711 or 712 Couplers

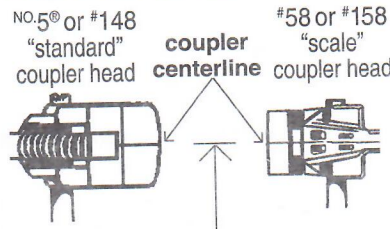
0-48 or 0-80 screws are the most commonly used screws for mounting.



Kadee® HO-Scale Coupler Conversions

<http://www.kadee.com/conv/hocc.htm>

Kadee® recommends "standard" coupler heads over "scale" coupler heads. This will help with rough track issues.



"center" of the couplers knuckle (coupler centerline) to top of Rail should be 25/64"

Fig. 1

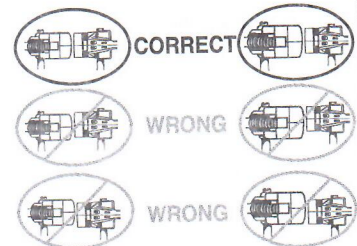
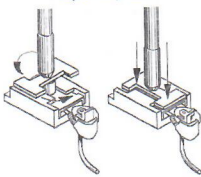


Fig. 2 Coupler height should only be measured from the "center" of the couplers knuckle (coupler centerline).

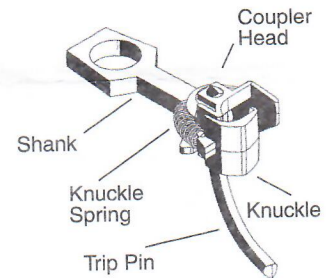
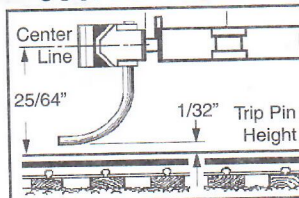
Use Kadee® #230 Insertion Pic. Set Adaptor crosswise into hole. Turn 90° and press down until it snaps into place.



#212 Talgo Truck Adaptor

Used with truck mounted "Talgo" type coupler pockets. 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. Make sure the broad section of the Adaptor faces toward the Coupler Knuckle and pivot pin has entered hole.

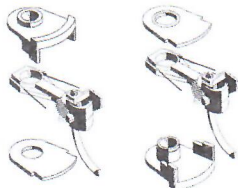
NMRA STANDARD COUPLER HEIGHTS



30 Series Coupler - Whisker® Coupler Equivalent Option: Use the #252 Small Snap-together Gear Box & appropriate Whisker® Coupler to make an 30 Series Coupler equivalent coupler (see coupler offset chart). The advantages to using the #252 Gear Box and a Whisker® Couplers are; the Whisker® Metal Coupler is stronger & has a built in Whisker® centering spring, combined with the #252 Snap-together Gear box makes assembly simple and easy.



#252 Inverted Position
Any Whisker® Coupler



#252 Standard Position
Any Whisker® Coupler

30 Series Couplers - Made Easy Coupler Option

#252 Small Snap-together Gear Box



Any Whisker® Coupler



30 Series Coupler Equivalent

MAGNE-MATIC®



1 Stop over a Magnetic uncoupler, allowing slack to occur between the couplers. Knuckles have opened.



2 Withdraw slightly to disengage couplers. Magnetic force of the uncoupler draws couplers apart, uncoupling them.



3 Enter over uncoupler again, couplers are in delayed position allowing pushing of car(s) without causing re-coupling.



4 Withdraw, leaving uncoupled car(s) on desired track. Couplers automatically return to normal coupling position.

STANDARDS

We at Kadee® follow these **NMRA Standards and recommended practices** as closely as possible in all of our products. Our couplers are very close to prototype appearance, so they do require a different approach to adapting and mounting on your equipment. For this reason we included the illustrations for *standard* dimensions for HO_{N3}, HO, S, On3, O, #1 and G couplers. **It is very important that you mount the couplers (in all scales) at the proper height and exactly centered on your equipment.** If the manufacturer of a particular car or locomotive has followed the **NMRA** standards for height of the coupler pocket or draft gear box on their model, you should be able to adapt the **Kadee® Coupler** and Draft Gear to their equipment without difficulty. If they have not, you may have to do some custom work to adapt Kadee® Couplers.

NMRA, Inc., 4121 Cromwell Rd., Chattanooga, TN 37421, web site www.nmra.org, phone (423) 892-2846.