

LGB 3 Bay Modern Hopper Car CamPac Box™ Install Guide

Ted Doskaris, 4/3/2021

LGB 3 Bay Hopper vis-à-vis USA Trains 4 Bay Hopper



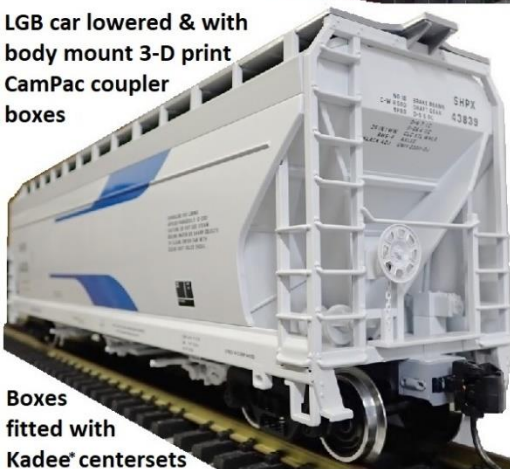
Unrealistically tall LGB 3 bay hopper car with not very realistic trucks



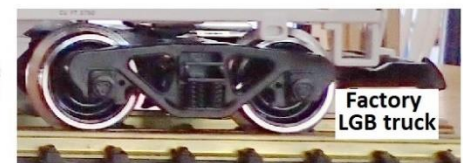
Truck mount Hook & Loops are to be eliminated along with trucks



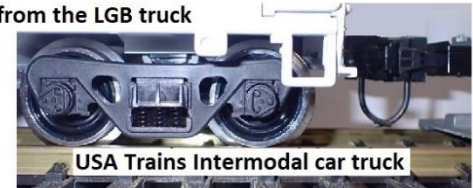
LGB car lowered & with body mount 3-D print CamPac coupler boxes



Boxes fitted with Kadee® centersets



To lower car, factory LGB trucks replaced with another brand trucks - example USA Trains Intermodal truck fitted with metal wheels from the LGB truck



Lowered LGB car now comparable to USA Trains car



*Kadee is a registered trademark of Kadee Quality Products Co., White City, Oregon, USA.

Preface

LGB trucks do not appear to accurately replicate prototypes that this 1/29 scale model modern ACF 3 Bay hopper car represents. Moreover, the LGB trucks (shared with other American LGB cars, including 40 footers) have an intrinsic design that raises the car high off the railhead. Accordingly, these trucks are to be replaced with more realistic trucks serving to lower the car almost a quarter inch for a more realistic height from the railhead that's, also, behooving to do when employing body mount centerset couplers. In this regard, the factory truck mount hook & loop couplers along with the trucks are done away with - being replaced by direct fit body mount 3-D printed CamPac coupler boxes which accept more realistic Kadee* centerset (no offset) "G" scale AAR E type knuckle couplers.

*Kadee is a registered trademark of Kadee Quality Products Co., White City, Oregon, USA.

Replacement Trucks

The installer can choose from, and is to obtain, one of the following replacement brands of trucks:

- USA Trains Intermodal car plastic [roller bearing truck #R2034](#) – pair needed - [wheels #R2093](#) *not* included & sold separately. (**Note:** The LGB metal clad wheels, *albeit light weight*, that come with the car can be fitted in the Intermodal truck to save on cost.); **OR**
- Aristo-Craft 100 ton plastic roller bearing truck pair #ART-29100 - may *not* be available; **OR**
- [Kadee 70 ton #973](#), (or much preferred [Kadee 100 ton #974](#)) all metal roller bearing truck pair

CamPac Kit Parts

When choosing USA Trains Intermodal truck, Wheels used must be specified at time order:

- If using LGB large diameter metal wheels, the CamPac kit is to further add eight (8) axle tip spacer washers, #4 size, 0.047 inch thick, [DigiKey P/N 36-345-ND](#), and add two (2) truck spacer washers, 0.032 inch thick, [DigiKey P/N RPC10115-ND](#). **OR:**
- If using USA Trains metal wheels, the CamPac kit is to add two truck spacer washers (2) 0.062 inch thick, [DigiKey P/N RPC10185-ND](#)

The CamPac kit, regardless of truck brand, includes two (2) 3-D resin printed direct fit (no spacers needed) CamPac coupler boxes **AND** two (2) 3-D printed caps to fit over the LGB chassis bolsters.

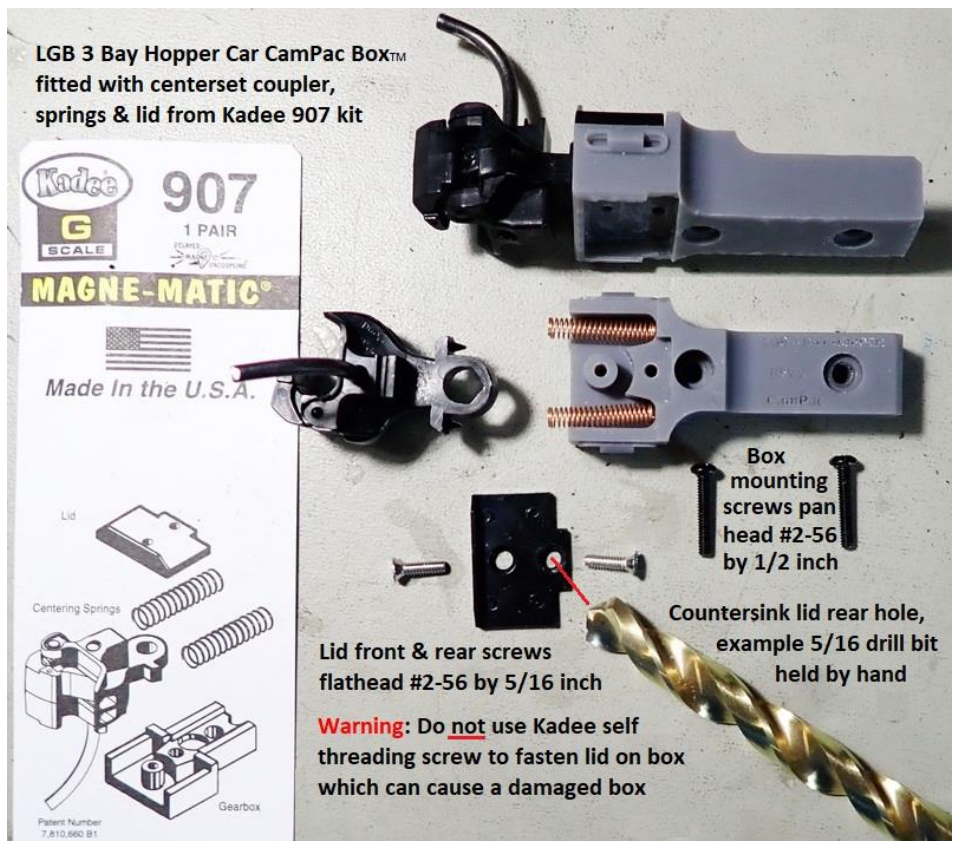


Preassembled coupler boxes can be painted



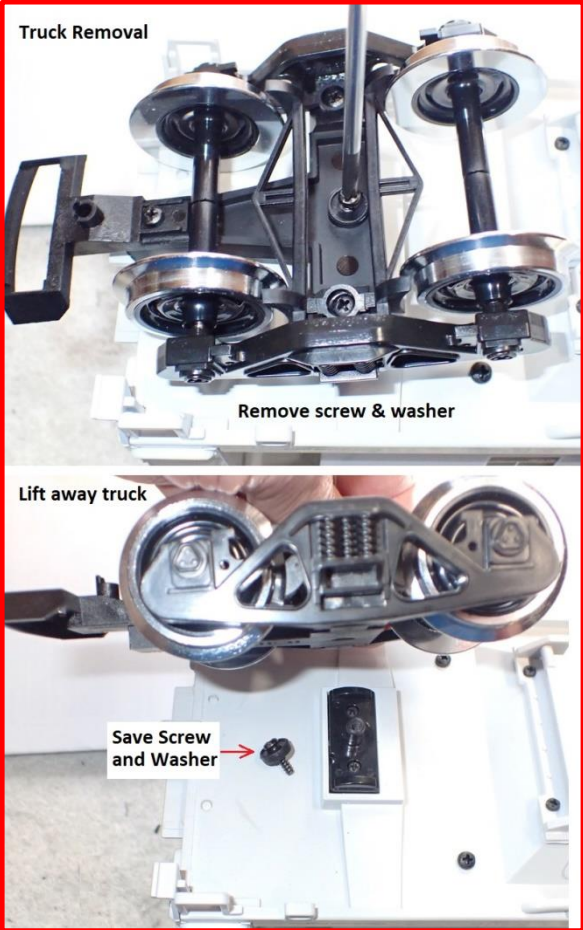
The installer is to obtain the Kadee 907 kit and assemble the boxes as illustrated; they can be pre painted to desired color.

The CamPac kit also includes screws to fasten lid and mount boxes on the car along with hardware specific to installer's chosen trucks at time of order.

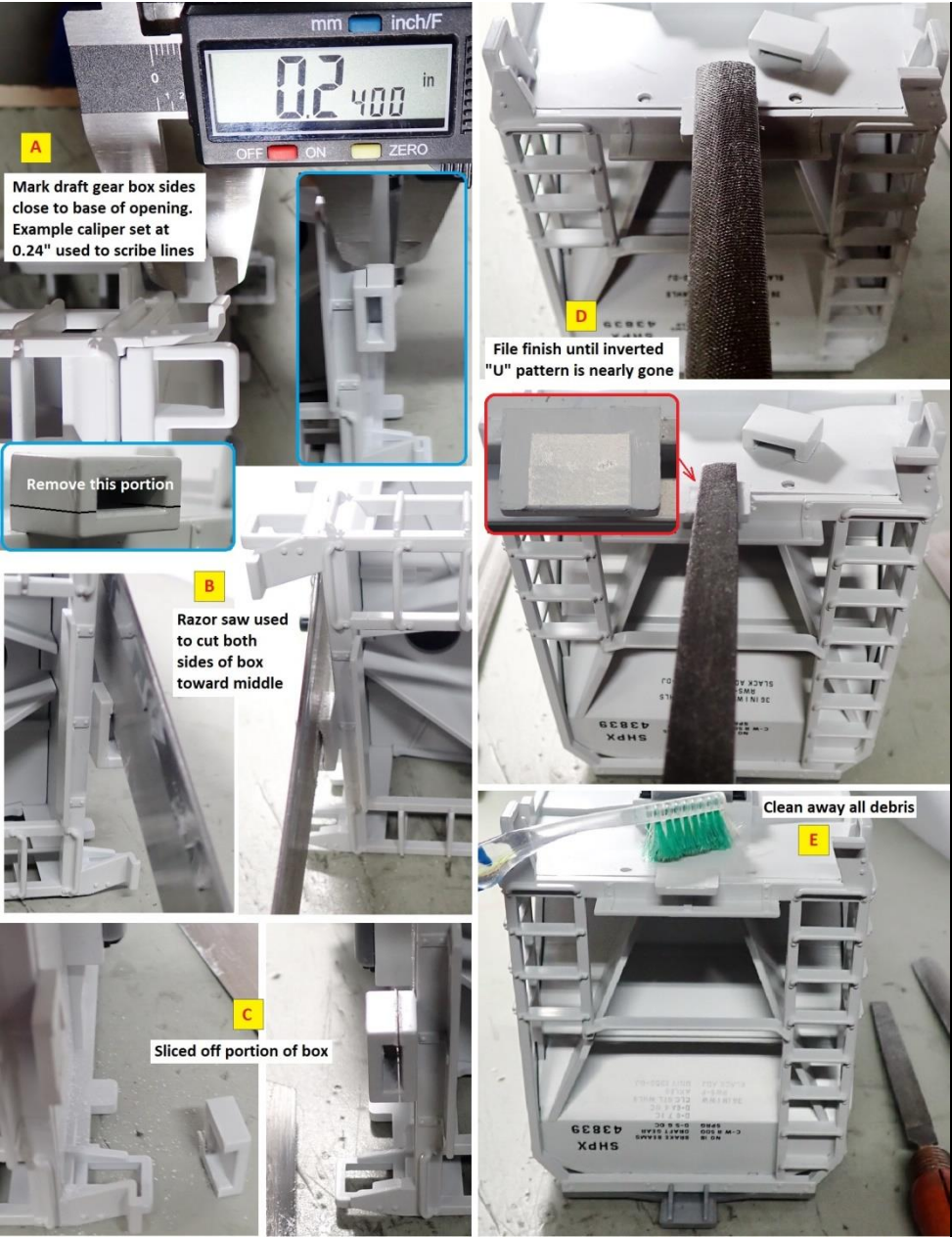


The CamPac bolster caps & assembled coupler boxes will be installed later

Remove the LGB trucks (but save screws & washers), and then slice off a portion from the molded-in draft gear boxes, leaving a thin appendage to remain - as illustrated.



Car Preparation



Bulging Floor Advisory

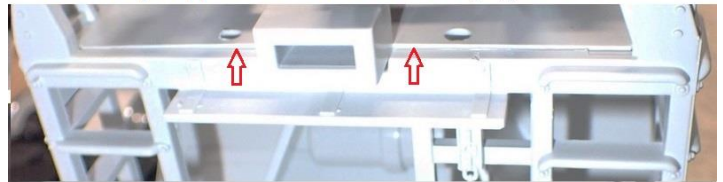
Before CamPac coupler boxes are to be mounted, mention needs to be made about the LGB 3 bay hopper car's chassis floor. The floor is attached to a lip on the car's end sill, but it's passive using pegs without screws to keep it from bulging and having a gap at the lip – shown in this illustration.

Body mount couplers rely on platform (pad) consistency of predictable attitude so couplers can be expected to align with the Kadee coupler height gauge at both ends of a car and on different cars. Accordingly, the floor must be properly anchored.

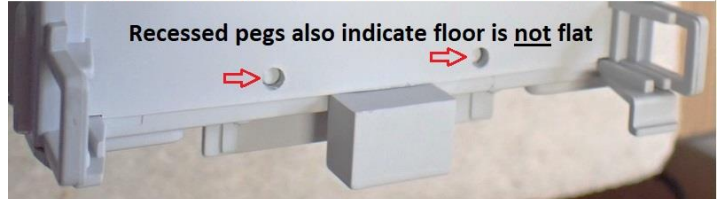
When CamPac boxes are properly installed, they will also serve to anchor the floor.

A clamp (example as shown in this illustration) could be used during the installation process of CamPac boxes – described on the next sheet.

LGB 3 bay Hopper Car Characteristic Bulging Chassis Floor



For body mount couplers, floor fit must be corrected so it's flat



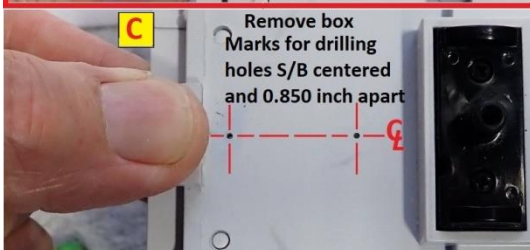
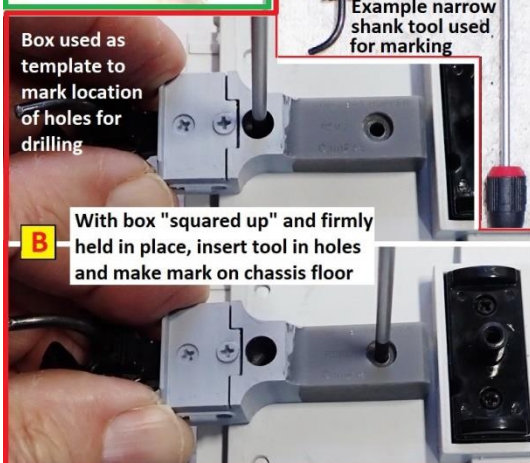
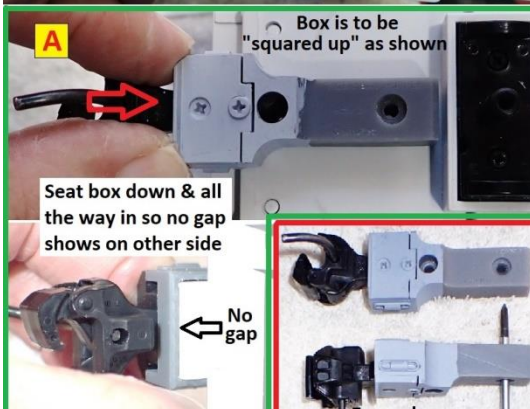
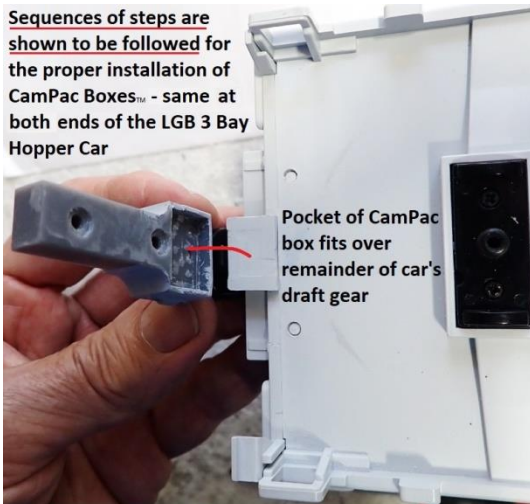
Interior gap resulting from bulging chassis floor between it and car end must be closed - example temporary clamp utilized until drilling & fastening



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Install CamPac Boxes™

Sequences of steps are shown to be followed for the proper installation of CamPac Boxes™ - same at both ends of the LGB 3 Bay Hopper Car



Note: Leveling shims will likely be needed depending on tolerances and truck & wheel selections

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Install CamPac Bolster Caps – same at both ends of chassis.

LGB cars can have different types of chassis bolsters

"Mushroom" type bolster

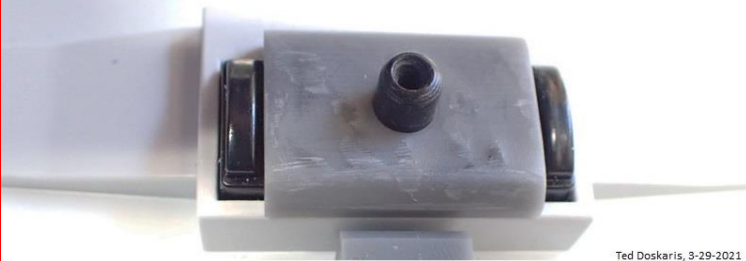
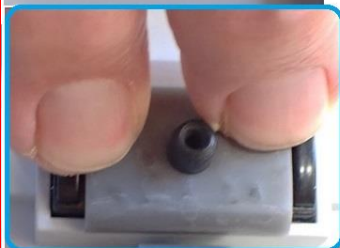


Open type bolster



To facilitate mounting different brands of trucks, two (2) CamPac Caps to cover over the bolsters are provided with the CamPac kit. These must be installed before trucks are mounted.

The caps fit the same on both types of chassis bolsters



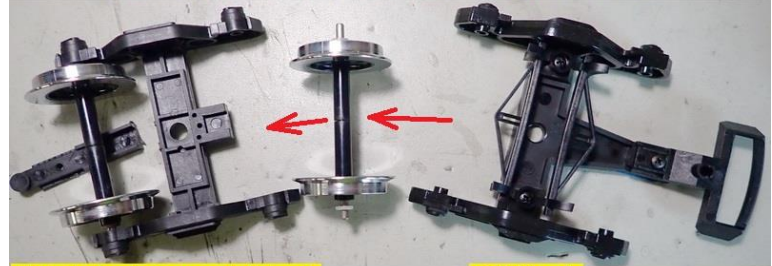
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USA Trains Intermodal Truck Considerations

The coupler tang can be left in place if truck installed rotated 180 degrees but looks better if removed.

If using LGB metal clad wheel, see Illustration below.

Transplanting LGB metal wheels to USAT Intermodal truck

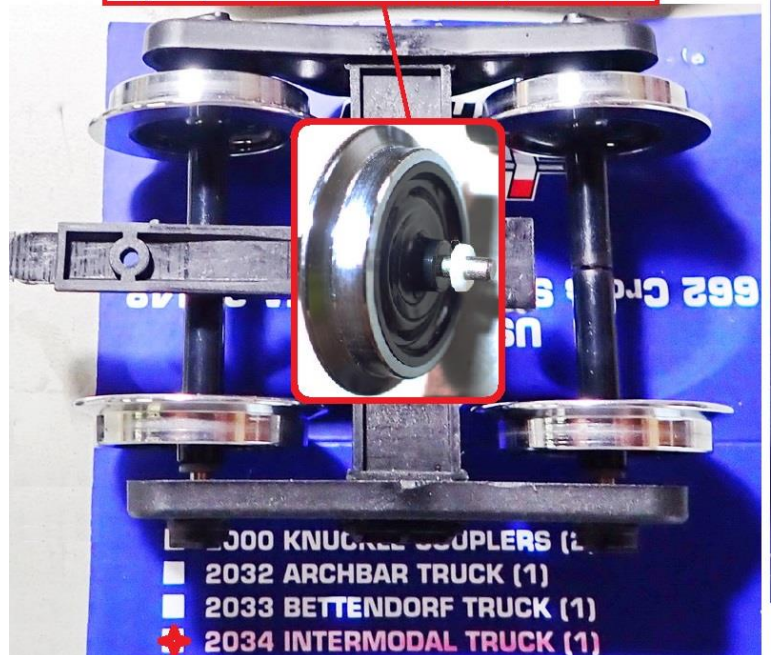


USA Trains Intermodal Truck

LGB Truck



0.047 inch thick washer needs to be placed on axle tips to prevent excessive lateral displacement



Note: The tread diameter of the LGB metal wheels scales up to almost 36 inch, which is about prototypical for the 3 bay hopper car.

Truck Mounting

Each of the replacement brand choices of trucks useable to lower the car will be described.

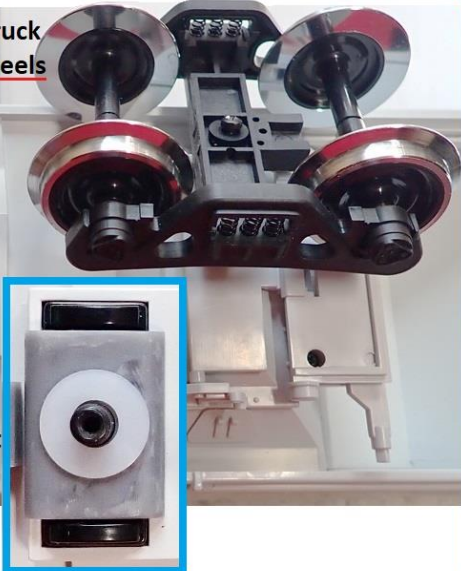
Mounting USA Trains Intermodal Roller Bearing Truck

Note the truck spacer washer is different depending on wheels used

USA Trains Intermodal Truck fitted with LGB metal wheels

Ensure bolster Cap is installed

Place 0.032 inch thick spacer washer over post



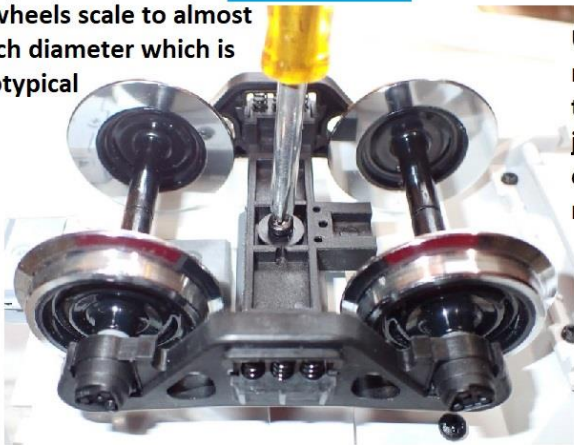
USA Trains Intermodal Truck fitted with USA Trains metal wheels

Ensure bolster Cap is installed

Place 0.062 inch thick spacer washer over post

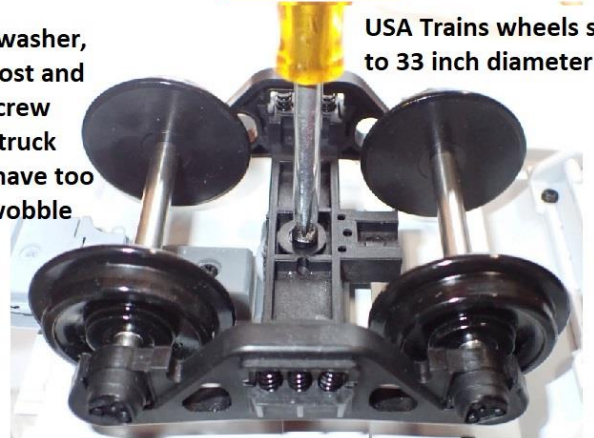


LGB wheels scale to almost 36 inch diameter which is prototypical



Using LGB screw & washer, mount truck over post and tighten down the screw just enough so the truck can rotate but not have too much side to side wobble

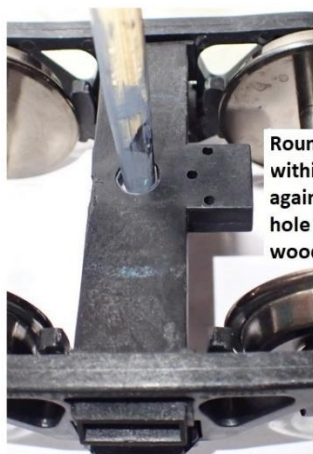
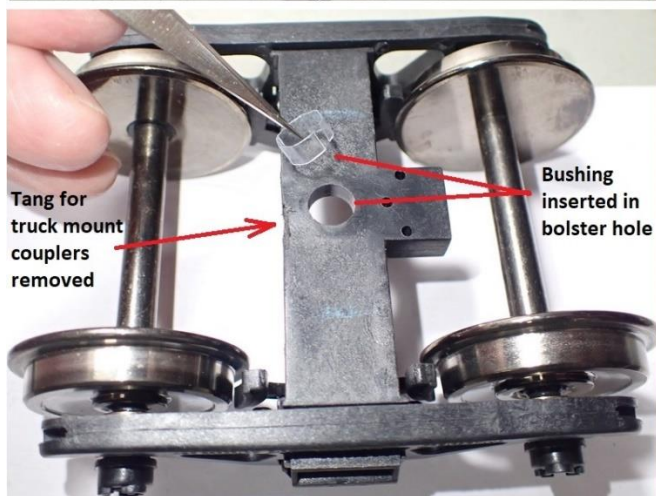
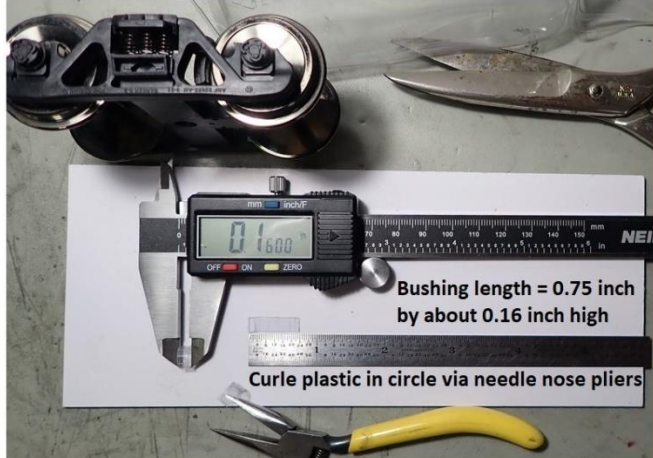
USA Trains wheels scale to 33 inch diameter



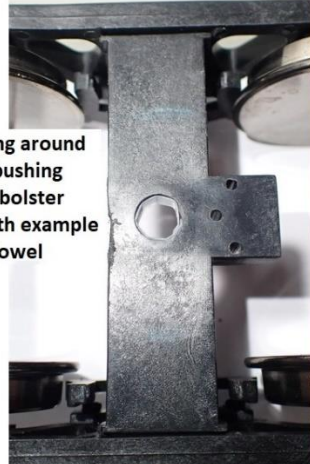
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Mounting Aristo-Craft 100 ton Roller Bearing Truck

Installation of Aristo-Craft 100 ton roller bearing truck on LGB 3 bay hopper needs a thin bushing inserted into its relatively large bolster hole to prevent excessive lateral movement when mounting over / on the car's chassis post. The bushing can be made using a Kadee plastic box package by cutting it to the dimensions as illustrated below.



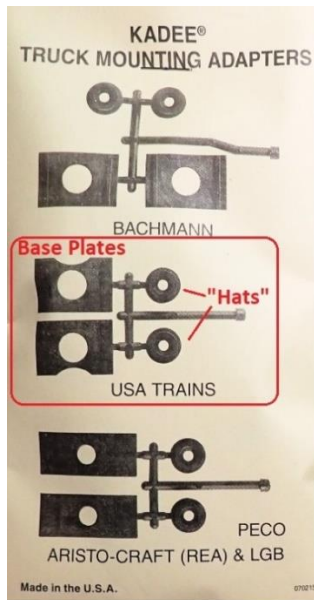
Rounding around within bushing against bolster hole with example wood dowel



Using LGB screw & washer, mount truck over post and tighten down the screw all the way. There will be desired clearance for the truck to freely rotate.



Mounting Kadee 70 ton OR 100 ton Roller Bearing Trucks



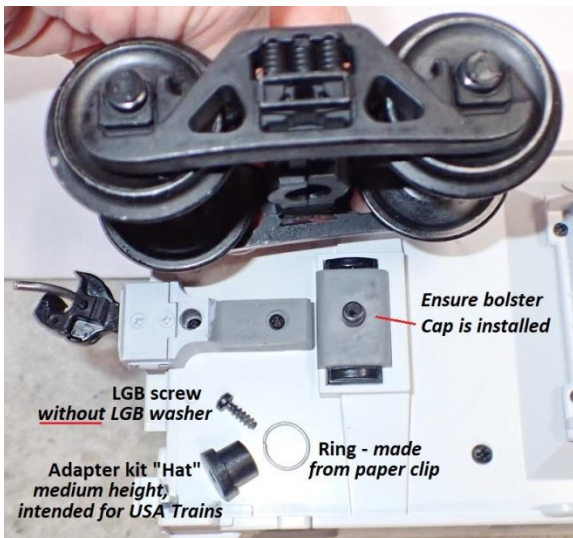
The Kadee #973, 70 ton or #974 100 ton trucks can be used on the LGB 3 Bay Hopper car. An adapter kit is provided with the trucks. However, only the kit's "Hats", which Kadee intended for the USA Trains application, will be used for mounting trucks.



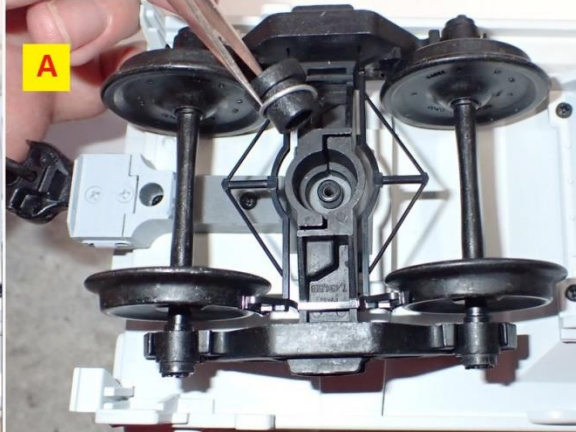
Because the Kadee base plate is not to be used, excess vertical truck slack is to be limited, so a ring must be made from a paper clip to wrap around the hat's shank.



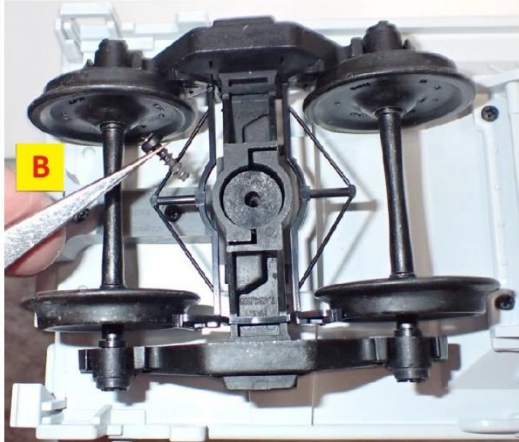
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Kadee 70 ton & 100 ton "roller bearing" trucks mount the same way on the LGB 3 bay hopper car with virtually the same results. An example 100 ton truck illustrated having wheel treads scaled to a prototypical 36 inch diameter - appropriate for this car



The truck is mounted over the post directly on the CamPac Cap with "Hat" & ring inserted as illustrated, and then fastened using only the LGB screw. (The Kadee adapter kit's screw is too long, but the Kadee 907 kit's medium length screw could be used, too)



Shimming CamPac Coupler Box™

Choices of replacement truck and wheels affects coupler box shimming to align coupler. Shim thickness (typical Kadee 1 or 2 stacked) and positioning will serve to align the coupler with the Kadee 980 gauge for all truck choices.

Method sequence when coupler box shimming needed to align coupler with Kadee 980 coupler height gauge

