

USA Trains Woodside Reefer CamPac Box™ Install Guide



USA Trains American Series Woodside Reefer as received out of box sans detail parts and truck mounted hook & loop couplers



Woodside Reefer now with body mounted 3-D printed CamPac Box™ fitted with Kadee center set coupler in factory draft gear opening - albeit modified

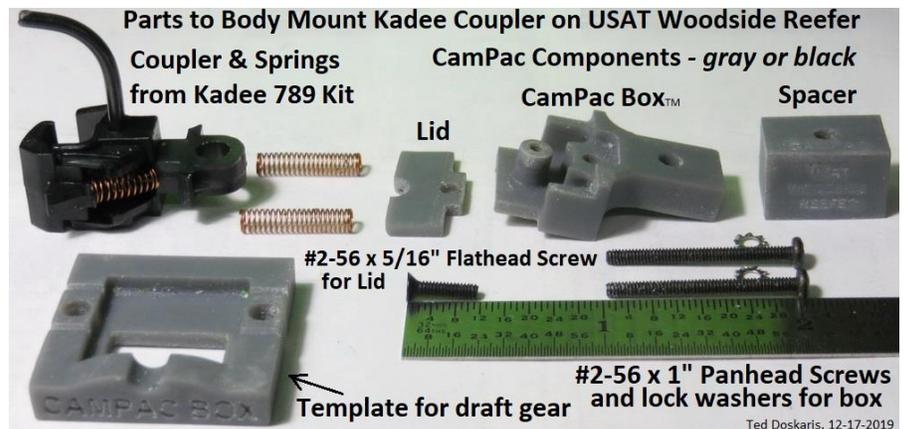
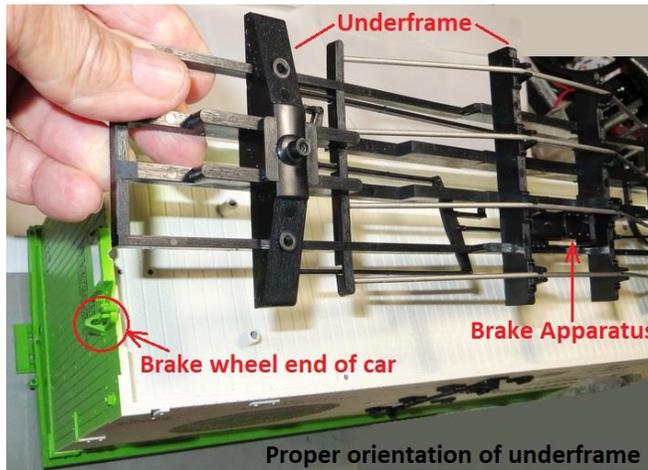
Though it's preferred the car's detail parts be installed after installation of CamPac parts & couplers, there is no need to remove them, but use caution when handling the car.

The car from the factory may have its underframe wrongly oriented with respect to the brake wheel car end when compared to a prototype. The underframe can be installed either way because it's not keyed. During the process of installing CamPac Boxes™ and couplers, the underframe will be removed, so when it's reinstalled it should be properly oriented.

The user is to supply a Kadee 789 kit in which only the couplers and springs are utilized. These parts will eventually be installed in the CamPac Boxes™ during the installation process, later described and illustrated. CamPac components along with the Kadee parts are illustrated here.

Preface:

USA Trains American Series Woodside Reefer Underframe Orientation



Preparation:



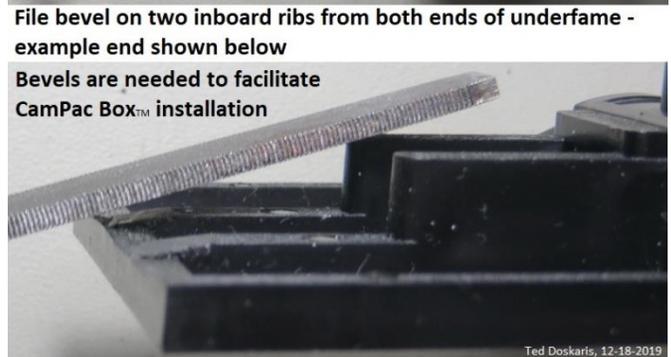
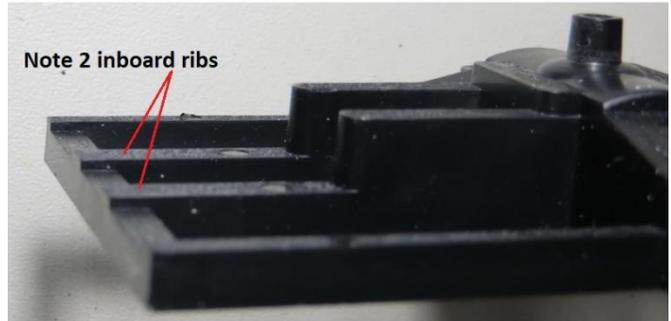
After trucks are removed, the car's underframe is to be removed from the chassis so its end ribs can be beveled. This must be done to facilitate installation of the CamPac 3-D printed coupler box - illustrated below:



First, remove the trucks from the car, and discard their couplers. Plastic wheels are to be replaced with user obtained USA Trains metal wheels that have a smaller diameter for which the CamPac Box™ installation is optimized for coupler height alignment with the [Kadee 880 gauge](#).

Kadee centerset couplers from the Kadee 789 kit are used in favor of the newer AAR "E" type couplers owing to their somewhat smaller size, that not only facilitates installation, but is more prototypical appearing for the early 1890's - 1915's era of the car.

Though the back of the coupler can be trimmed to help installation as shown below, it's not mandatory, so you are urged to try installation without trimming, first.



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

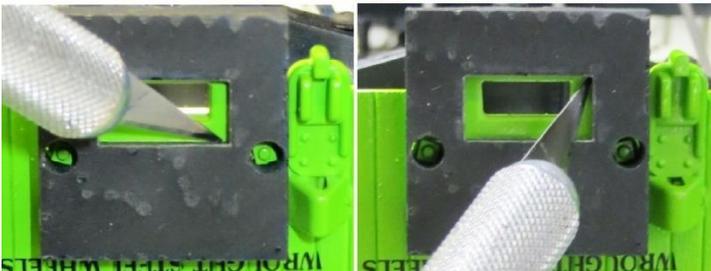
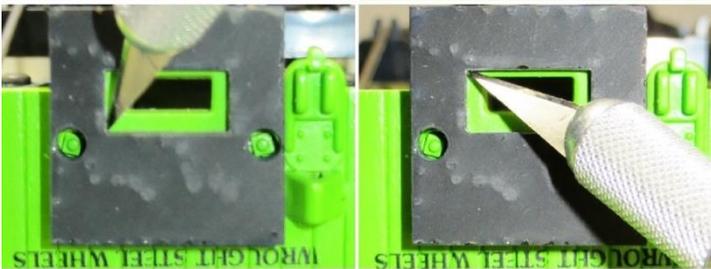
Draft Gear Modification:

Unlike some prior art methods, the factory draft gear is neither notched out nor cut off in order to accept an off-the-shelf Kadee coupler box assembly. Rather, the factory draft gear opening is enlarged and its backside beveled to accept the centerset type coupler from a Kadee 789 kit in concert with using a custom designed 3-D printed CamPac Box™. (A pair of 3-D printed CamPac Boxes™, lids & spacers is supplied to equip both ends of the car.)

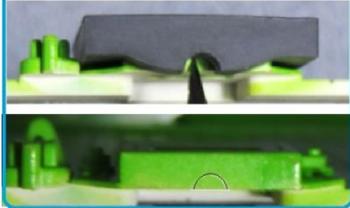
First, the CamPac template is used for locating and marking the new opening size, and then an example technique is used to accomplish it - both illustrated here.

Draft Gear Scribed Using Template
- example razor knife used

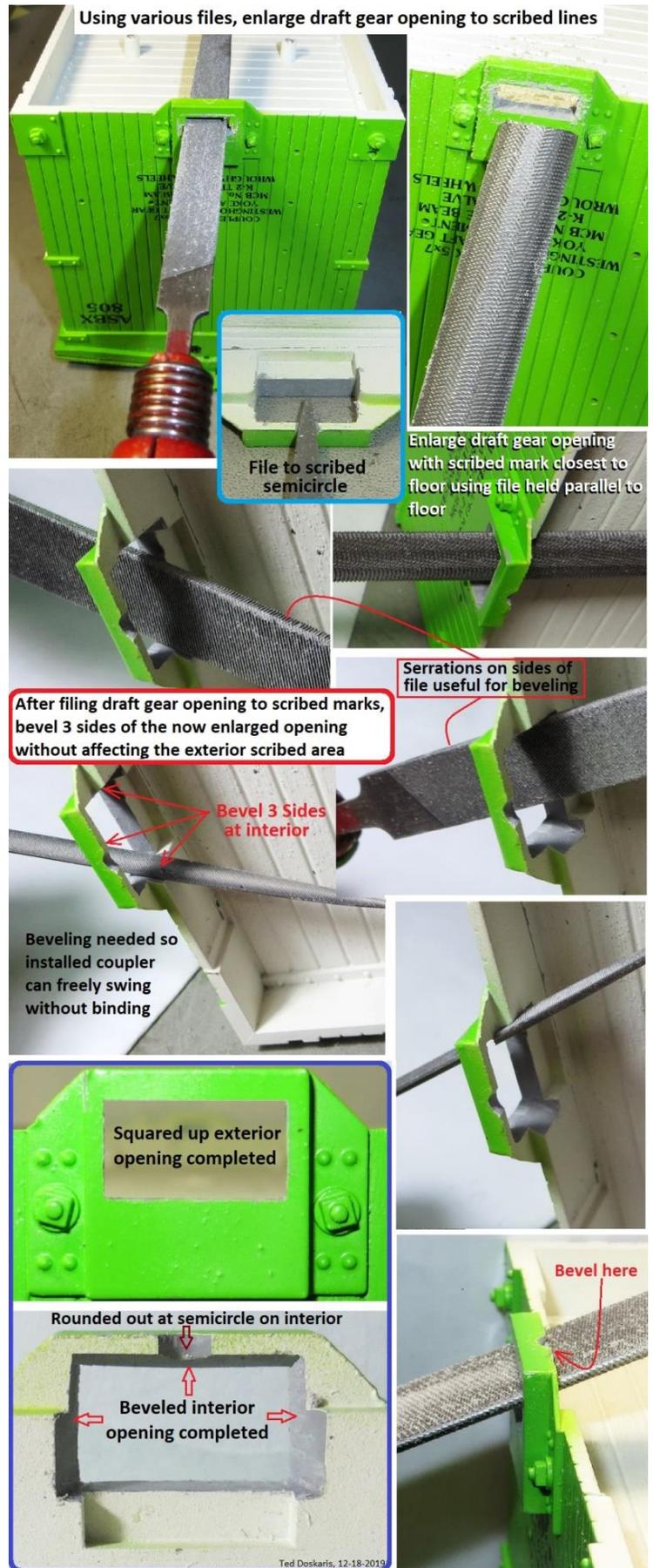
Fully seat template **side to side & top to bottom** over existing car draft gear area
Both ends of car to be done same way



Semicircle scribed - for screw clearance



Above are desired results - with template removed Ted Doskaris, 12-18-2019

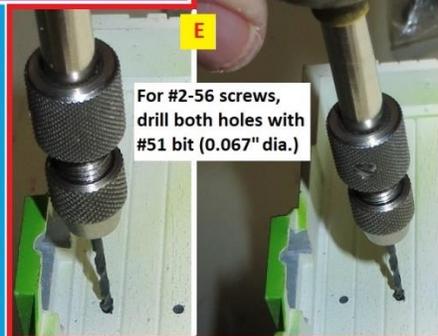
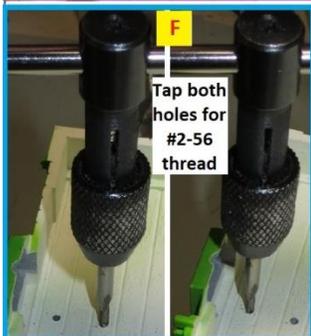
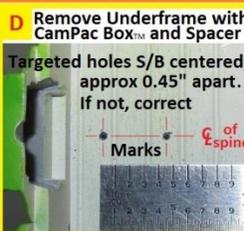
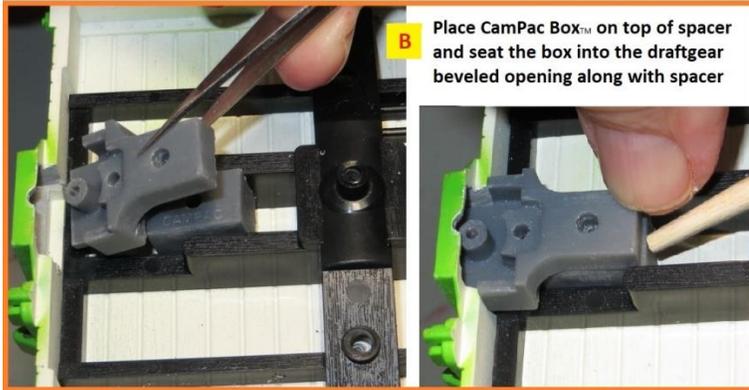


Mounting & Coupler Installation

First, mounting holes are established on the chassis, and then the installation process is performed - both illustrated here. Once installed, couplers should freely swing side to side, if not; the draft gear back side beveling may be unsatisfactory.

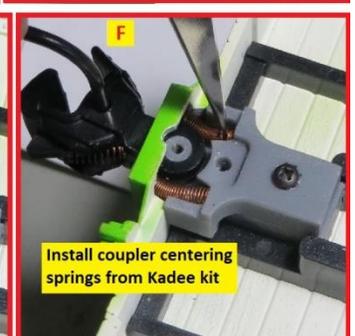
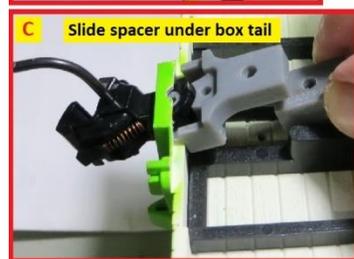
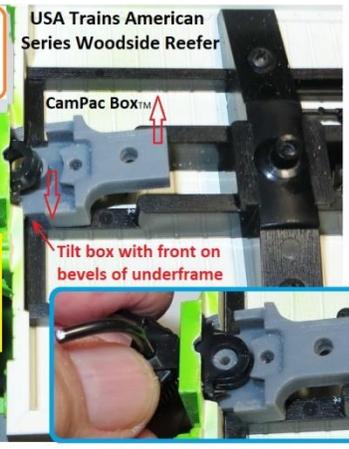
Example Method for locating holes to be drilled & tapped in chassis to mount CamPac Box™ with spacer (One end of car is illustrated, but both ends are done same)

After enlarging and beveling the draftgear opening, temporarily install the underframe - then slide in CamPac spacer between the inboard ribs



Example Method for installing Kadee® coupler in CamPac Box™ insitu with spacer (Same for both ends) **Note:** For this installation, manipulation of coupler and CamPac Box™, together, requires some dexterity and perseverance with the reward of an aesthetically appealing, more prototypical appearance.

Coupler and springs from Kadee 789 kit are only items utilized from kit **A** Wiggle box and coupler up & down whilst pushing in until shank hole engages box post **Draftgear opening & underframe must have been modified for this installation**



Before proceeding to the installation process illustrated on the right, fasten the underframe to the chassis with its proper orientation as described on page 1.

Fastened trucks to underframe, rotated with tang inboard.

Done