RAIL YARD MODELS
PENN CENTRAL G47 52'-6" FRUEHAUF GONDOLA

General Instructions

- Before starting assembly, please read through the instructions. Occasionally, there are steps where parts are test fit without cement or only temporarily tacked in place. Missing these steps can complicate assembly later on!
- Familiarize yourself with each of the parts contained in this kit. There are several visual indexes showing the cast and etched metal parts. There is also a list of all parts that are included in this model. If you find that any parts are missing or damaged please contact Rail Yard Models for a replacement. Refer to the drawings and photos for specific part placement details.
- Casting gates and flash must be carefully removed prior to assembly. This is best accomplished with a sharp modeling knife or a small flat file. Remove parts from casting sheets by tracing around perimeter of part with a sharp knife.
- This model has been designed to position visible joints along naturally occurring seams on the prototype. Test fit parts to ensure a tight, gap free joint and proper alignment before cementing together. Cyano-acrylate glue (CA) is recommended for assembly. Some of the brake detail parts can use styrene glue for sub-assembly. Several of the smaller parts have some extras in case you loose or break a few.
- Prior to assembly, all cast urethane parts should be washed with warm soapy water. This step is required to remove any mold release residue and other oils that may interfere with the adhesives used in building the model. It also reduces the cleaning effort required before painting the model.
- Unless noted in the instructions as having a "**reverse bend**", metal parts with bends are folded toward the grooved side of the part. Also, unless noted, all bends are 90°.
- Optional steps or places where you may need to skip certain steps are highlighted in blue.
- Warnings or steps that may require special attention are highlighted in red.
- This kit is designed to use Kadee #158 couplers. (Not included) other couplers may be used, but the draft gear casting or car body may need to be modified to work properly.
- There is a visual parts index on the last two pages that identify the smaller cast and etched metal parts.
- Etched metal parts are referred to by name and part ID starting with the letter A. (A4, B3, etc)
- The urethane castings in this kit are referred to by name only. These include the car body, end panels, retaining valve, draft gear and lids.
- Styrene brake detail parts are referred to by name and part ID starting with the letter T. (T1, T2, etc.) The number corresponds to the number cast into the styrene brake parts sprue.

Supplies

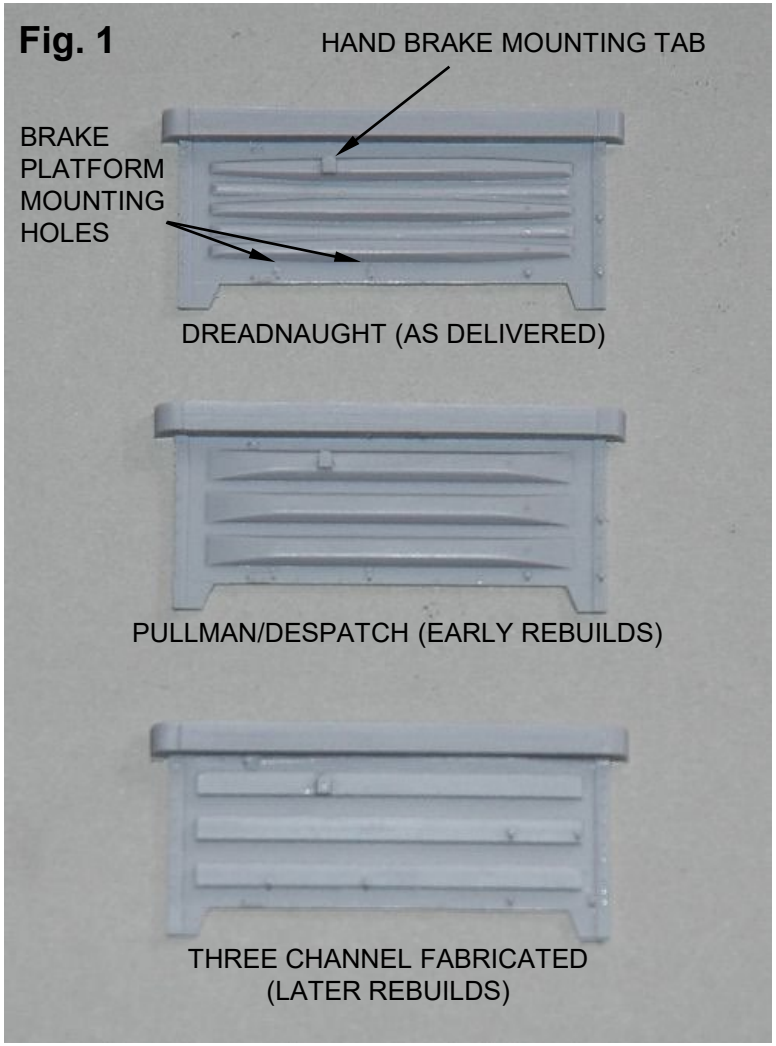
Required

- Miniature drill bit set (80-61) and pin vise
- Sharp modeling knife blades
- Thin, fast setting CA glue
- Thick, slow setting CA glue
- Small flat bladed screwdriver
- Smooth jaw tweezers or smooth jaw long nose pliers
- 1 pair of Kadee #158 couplers
- Paint & decal application supplies of your choice

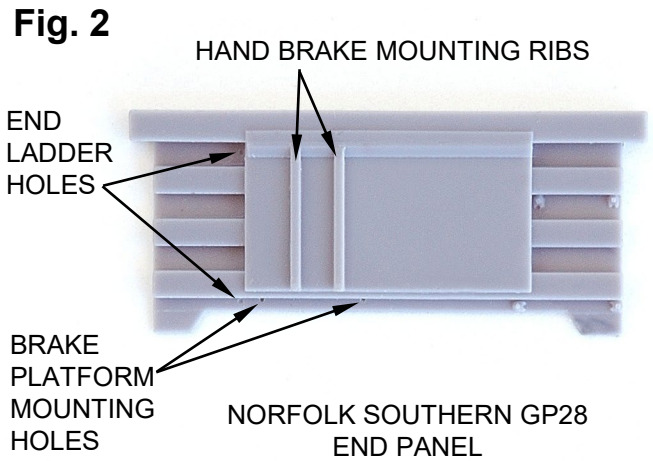
Optional

- Sprue nippers
- Styrene cement
- Etched metal bending tool:
  - Mission Models Etch Mate
  - The Small Shop's Hold & Fold
- Optivisor or other magnifying aid
- Cheap fingernail clippers (Good for cutting brass wire)

End Panel Identification



- Determine which type of end panels you wish to use. (Fig 1, 2)
- If you are modeling the Norfolk Southern GP28, your kit includes the GP28 end panels. (Fig 2)
- As a guide, the earlier the era you model, the more likely the car still had it's original dreadnaught ends. There are three A End and three B End panels. The B End panels have a mounting tab for the hand brake and drill dimples for the brake platform.
- The Norfolk Southern GP28 B Ends panels have two mounting ribs for the hand brake and drill dimples for the brake platform.



B End Identification

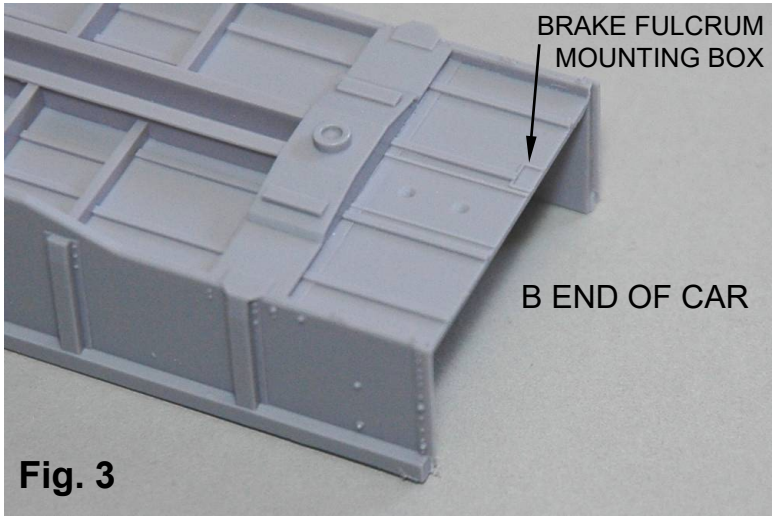
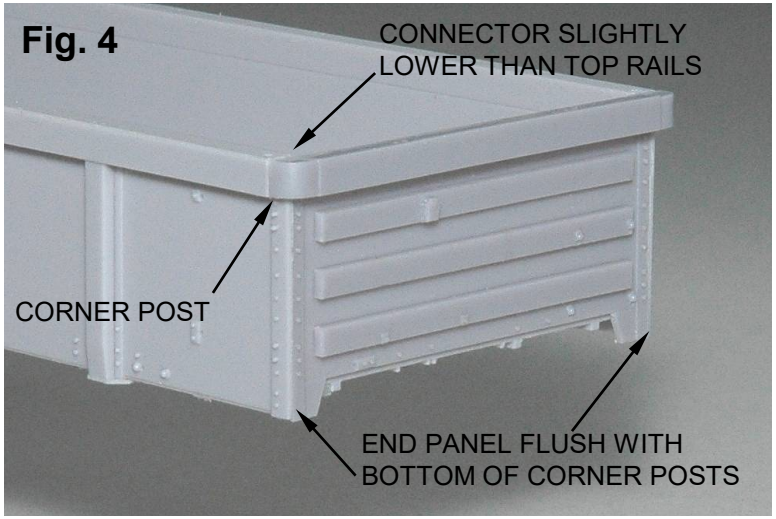


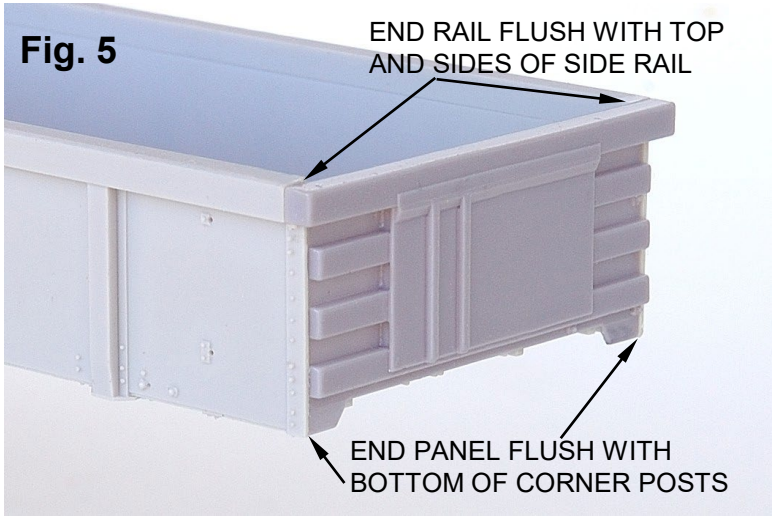
Fig. 3

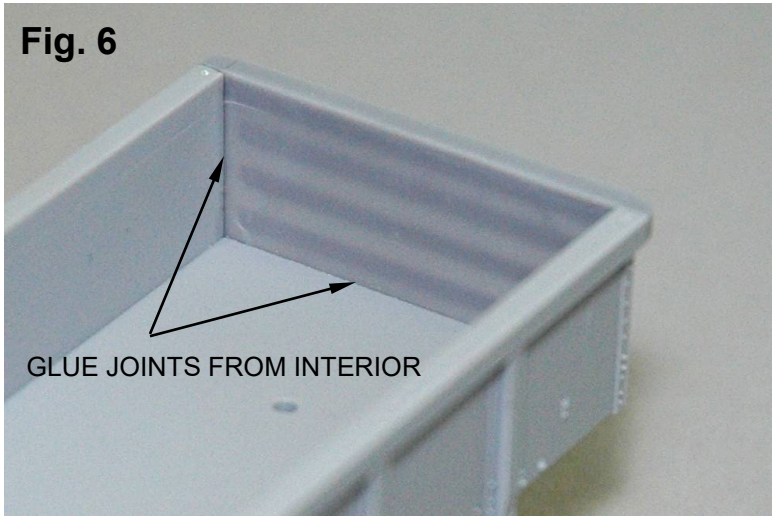
- The B End of the car body is identified by the brake fulcrum mounting box. (Fig. 3)
- Make certain to install the B End panel on the B end of the car.

Car End Panel Installation

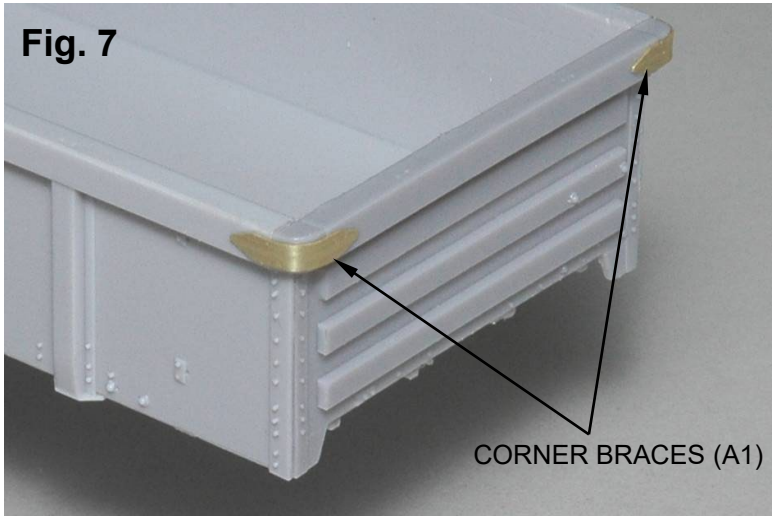


- Test fit the selected end panels to ensure they fit between the car sides.
- The bottom of the end panel should be flush with the bottom of the car side's corner posts. The top rail of the end should be level with the top rails of the sides. The curved connector between the end and side top rails is slightly lower than the rails.
- The top rail of the NS GP28 car ends should be flush with the car's side rails. (Fig. 5)
- Adjust the fit by carefully removing material from the top of the car side's corner post. Once satisfied with the fit cement into place by applying thin CA glue along joints from the car's inside. (Fig. 6)

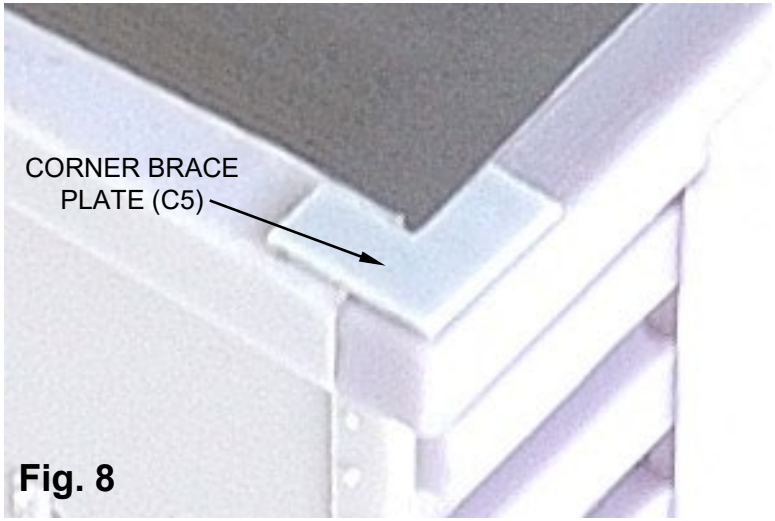




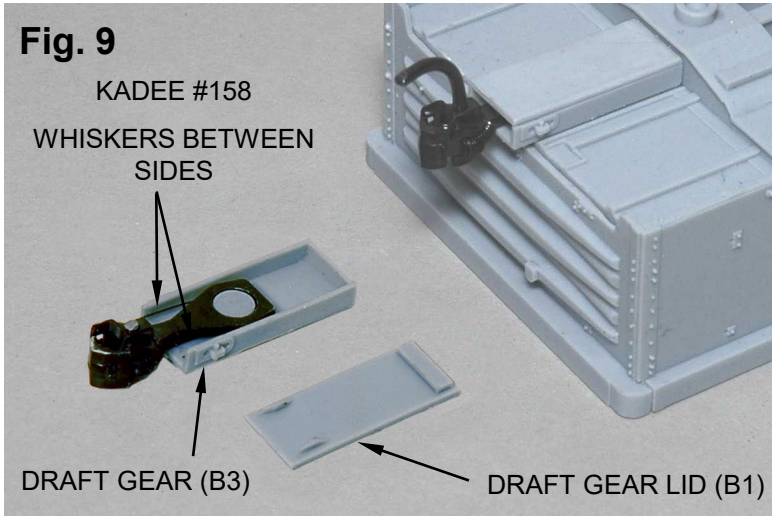
Corner Brace Installation

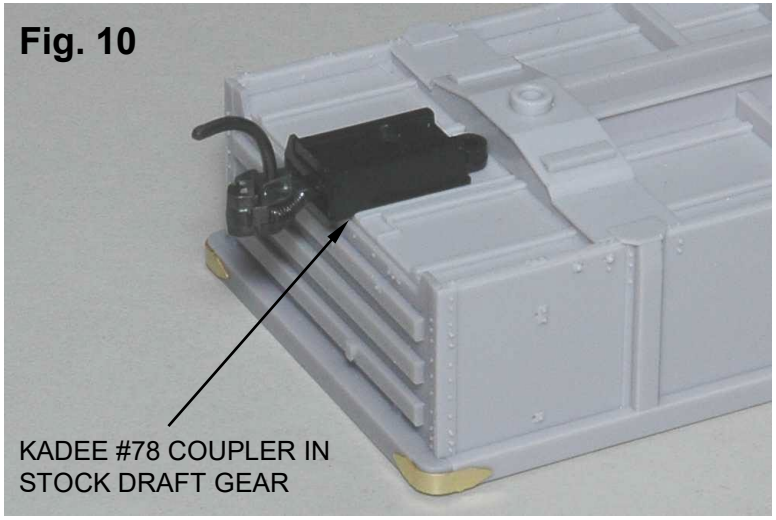


- If modeling the Conrail cars, locate the four metal corner braces (A1), curve to fit top rail corners. Bending them around a 1/8” or #34 drill bit works well.
- Hold each brace in place and cement with a slow setting CA. (Fig. 7)
- If modeling the Norfolk Southern GP28 cars, add four corner brace plates (C5) to the top chord at each corner of the car. (Fig. 8)



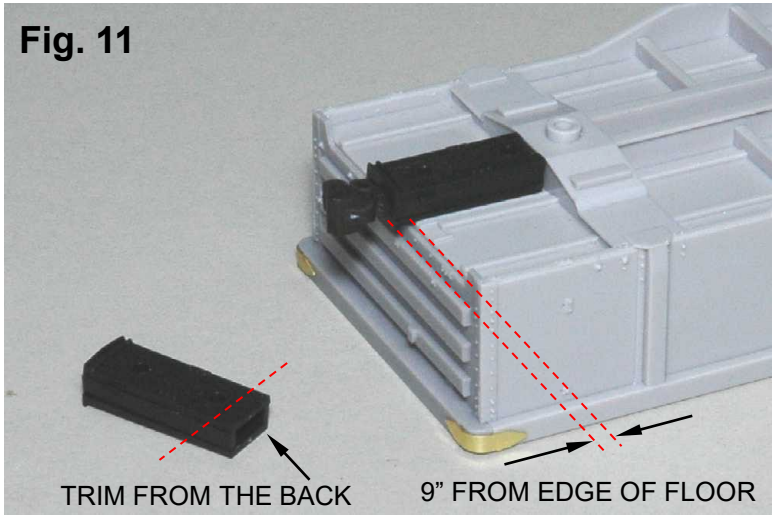
Coupler Pocket Installation



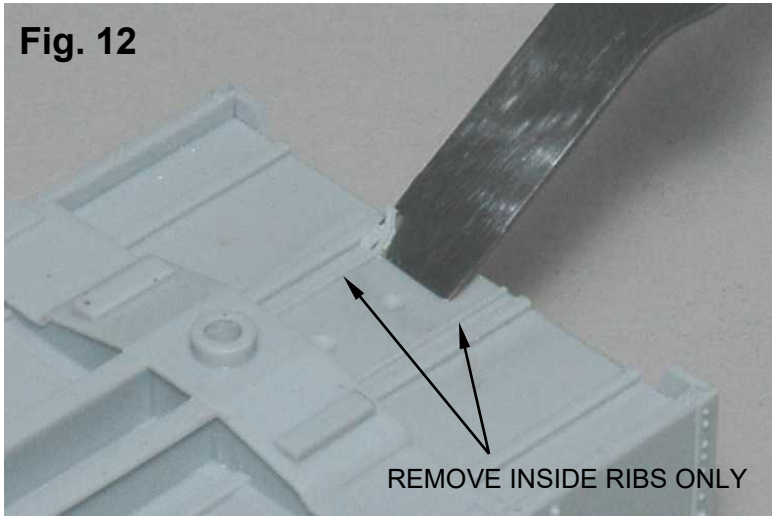


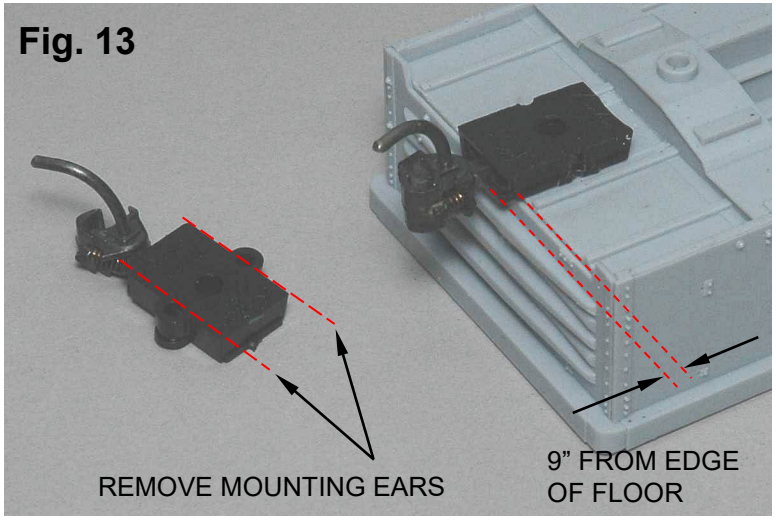
- This kit is designed to be compatible with a number of coupler designs. Determine which type you will use and follow the specific instructions. Regardless of which type used, it is suggested that the coupler draft gear be glued in place on this model. The use of screws to mount the couplers can be tricky, since the floor is fairly thin. It can be done, but will require trimming the screws or making holes in the car weight. At this time, the coupler height will be checked and adjusted, so do not permanently mount the couplers. Use tape or a very small dot of CA glue to hold coupler in place for now.
- If you prefer to run without trip pins, cut them off your couplers at this time.
- **Kadee #158 in kit's cast draft gear:** (Fig. 9) Test fit draft gear casting (B3) between the alignment ribs. Install coupler in draft gear ensuring whiskers seat between draft gear sides.
- Cement lid (B1) in place with small dots of CA cement around edge.
- **Kadee #78 in stock draft gear:** (Fig. 10) The standard #78 draft gear will fit between the alignment ribs. Adjust position so draft gear striker protrudes about 9 scale inches past end of car floor. The drill dimple nearest the end of the car can be used to make a hole for screw mounting this style draft gear. The rear mounting lug can be used with a second screw, or cut off. The space between the draft gear and bolster can be filled in with some styrene pieces. (not supplied in kit)

Coupler Pocket Installation (continued)

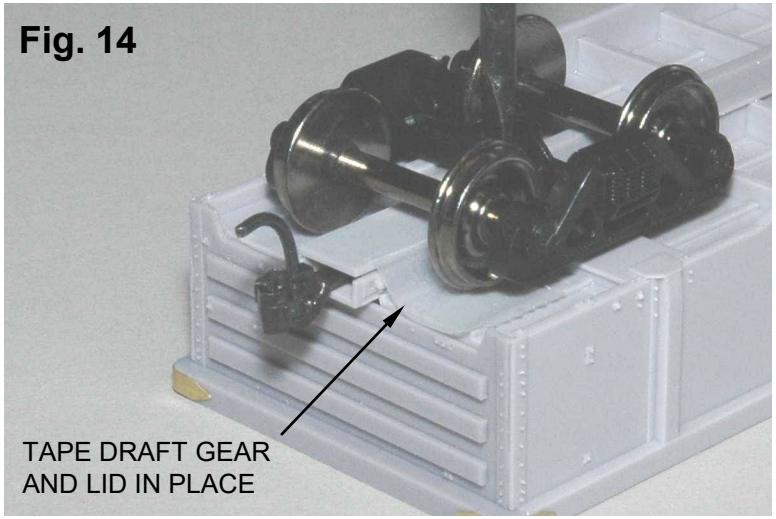


- **Accu-mate ProtoHO:** (Fig. 11) The ProtoHO draft gear will fit between the alignment ribs, but is slightly too long. Trim material from the rear of the draft gear until the striker protrudes about 9 scale inches past end of car floor with the draft gear touching the bolster. The drill dimple nearest the bolster can be used to make a hole for screw mounting this style draft gear.
- **Kadee #5 or #58 in Kadee draft gear:** (Fig. 12) Using a chisel blade, remove the inner draft gear alignment ribs and the inner half of the brake fulcrum mounting box ribs. Assemble the couplers in the draft gear, trim off draft gear mounting ears. (Fig. 13) Adjust position of draft gear so draft gear striker protrudes 9 scale inches past end of car floor. The drill dimple nearest the bolster can be used to make a hole for screw mounting this style draft gear.

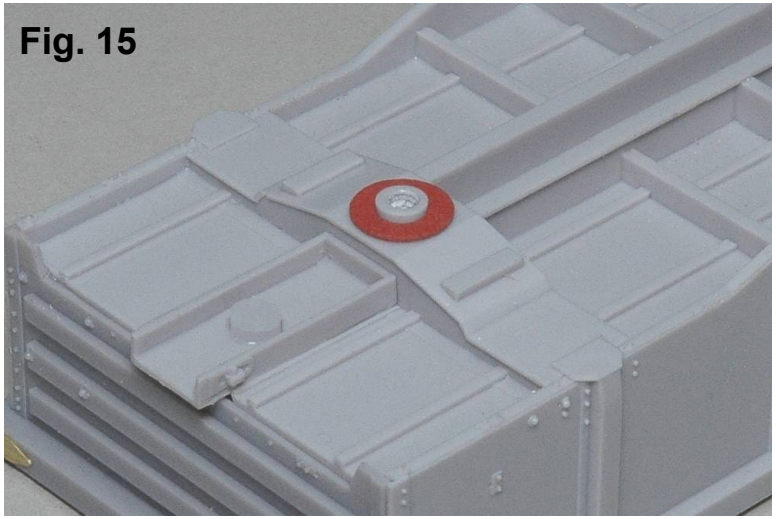


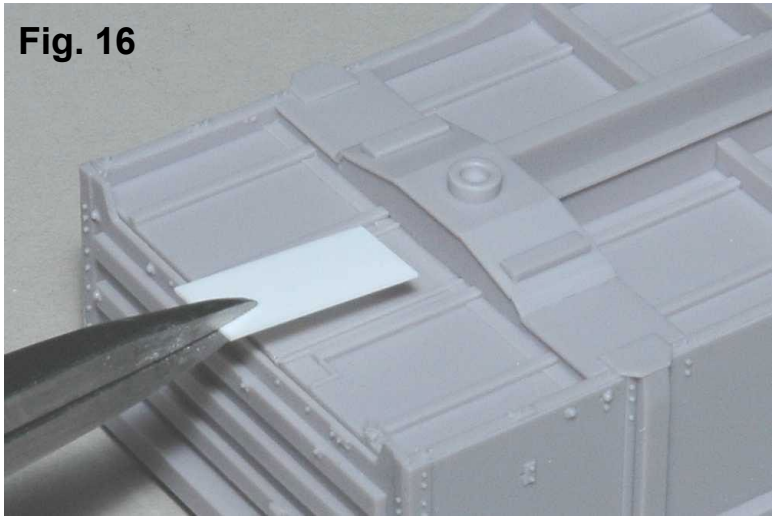


Coupler Height Adjustment



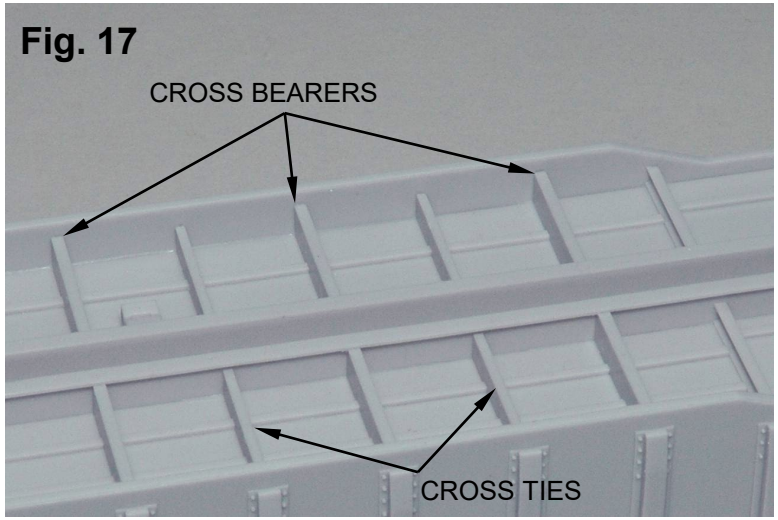
- Install the couplers and draft gear with tape or a very small dot of glue. (Fig 14) Install trucks with 2-56 screws provided. Test coupler height.
- Raise coupler height with bolster washers such as those made by Kadee (Fig 15) or by making from thin styrene.
- Lower coupler height by inserting styrene shims between car body and draft gear. (Fig. 16)
- Remove trucks and couplers.
- Cement draft gear and any shims into place. (Do not cement bolster washers) If you are using screws to mount the draft gear, the draft gear and couplers can be installed later.

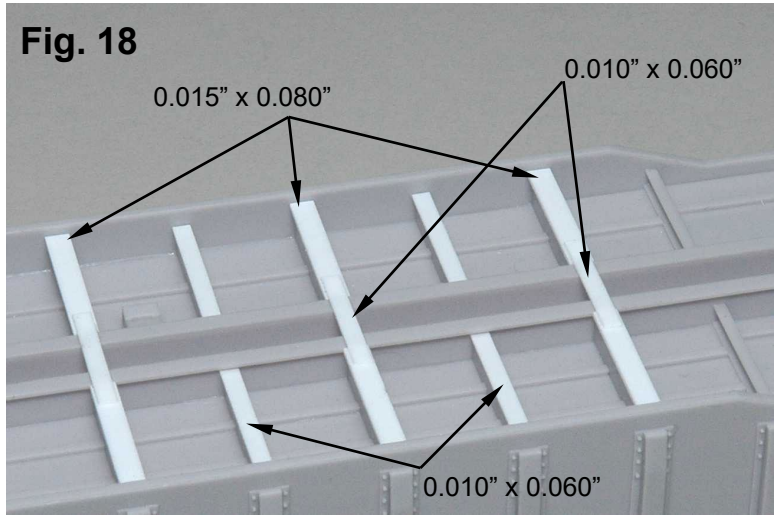




Cross Bearer & Cross Tie Flanges

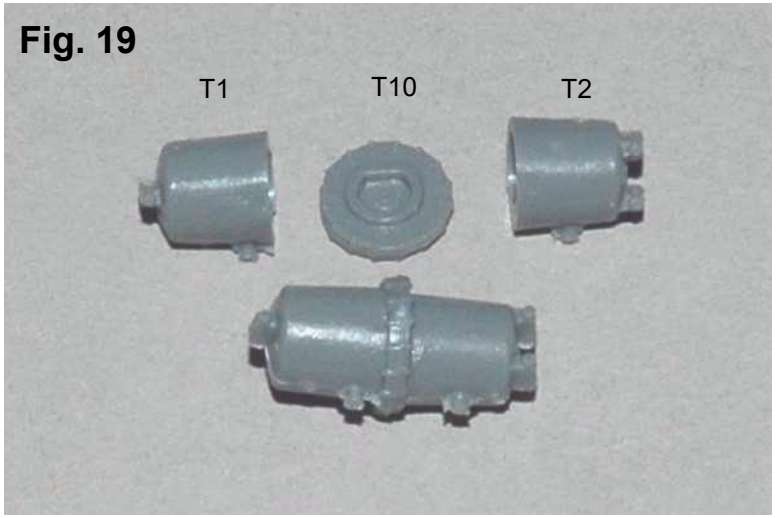
- The underframe of the car is composed of a series of six cross bearers and four cross ties arranged in halves on either side of the center sill. These are represented by rectangular bars on the model. (Fig 17) Each of these will get a styrene strip to represent the bottom flange of the I beam as used on the prototype.
- The use of slow setting CA is advised for the following steps. This will allow time to position the flanges properly.
- **Cross Bearer Flanges:** Install twelve 0.015” x 0080” styrene strips (Fig. 18)
- **Cross Tie Flanges:** Install eight 0.010” x 0060” styrene strips
- **Cross Bearer Connectors:** Each of the cross bearers has a connector made from 0.010” x 0.060” strip. Each connector crosses the center sill and extends 0.080” out over the cross bearer flanges.





Brake Detail Preparation

Fig. 19



- If you will be modeling the brake pipes and other fittings, you must drill #80 holes in the brake details before mounting them on the car. Once these parts are mounted on the car it is very difficult or impossible to drill the required holes.
- Assemble air reservoir from parts T1, T2 & T10 (Fig. 19) When glue has set, drill #80 holes in the two pipe fittings on the side. (Fig. 20)
- Assemble brake cylinder from parts T3, T8, T9 & T25 (Fig. 21)

Fig. 20

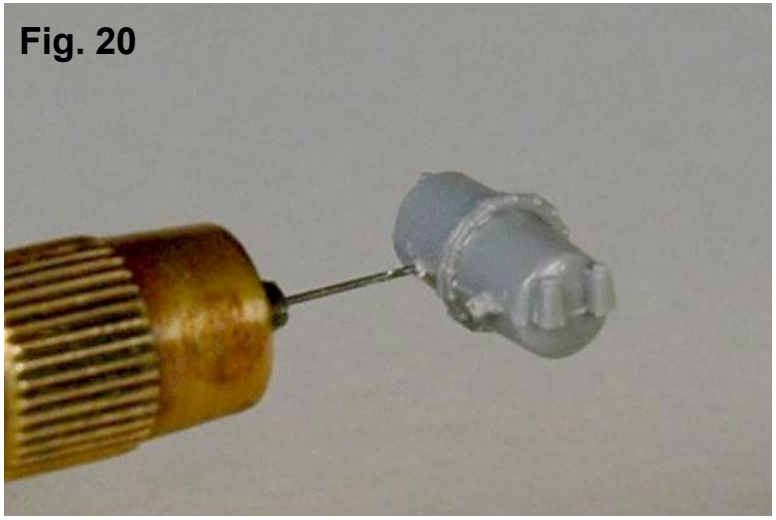
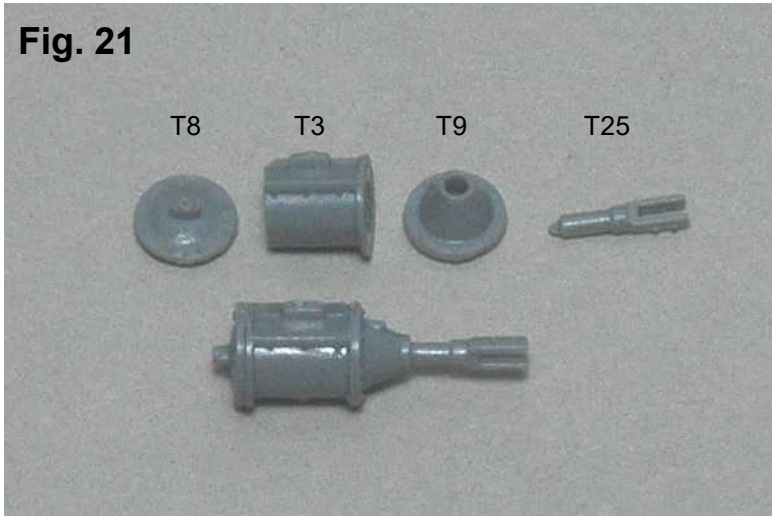
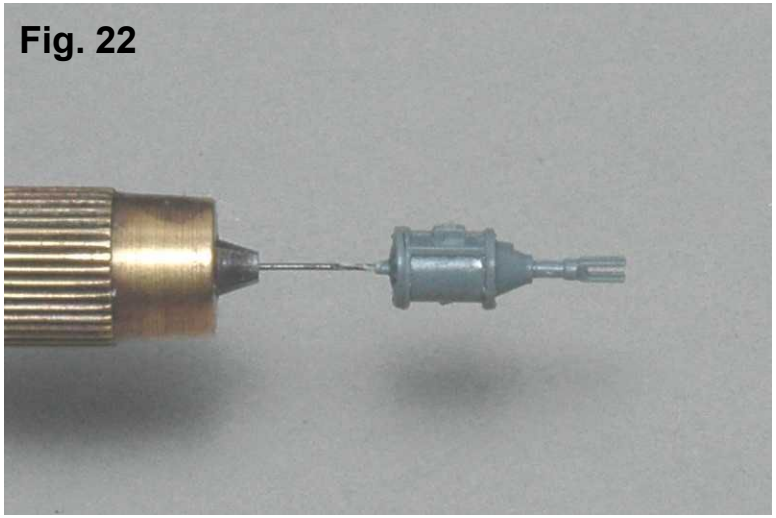


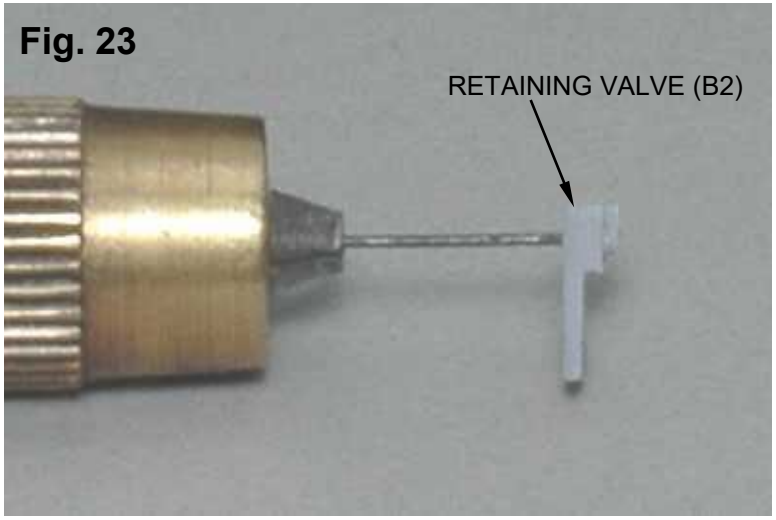
Fig. 21

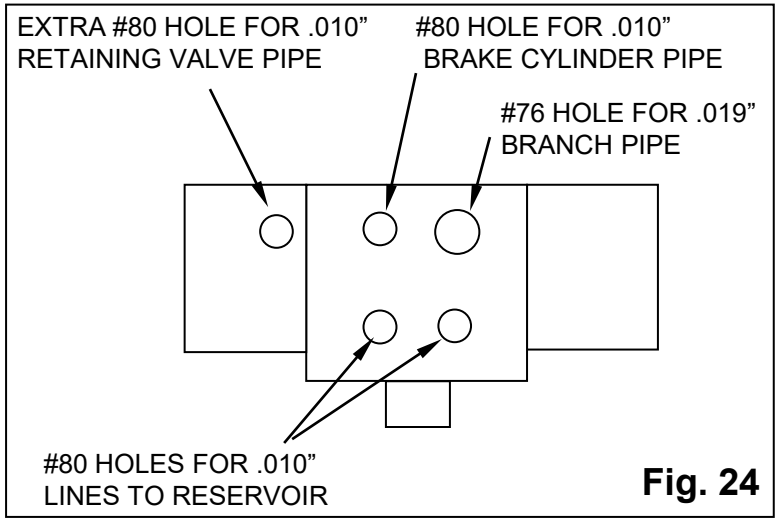


Brake Detail Preparation (continued)



- When glue has set on brake cylinder, drill #80 hole through the pipe fitting on the rear of cylinder. (Fig. 22)
- Locate and trim the flash from the retaining valve casting (B2). Drill a shallow #80 hole in back directly behind the center of the valve. The hole should only go about half way through the casting. (Fig. 23)
- Prepare the brake valve (T5) by drilling four #80 holes and one #76 hole in the positions indicated in Figure 24. Dimples exist for all but one pipe. The extra hole must be drilled for the retaining valve pipe. The #76 hole is already fairly large and just needs to be cleaned up to take the 0.019” wire.





Brake Travel Inspection & Brake Release Rod Holes

- Each side of the car has two dimples near the center of the side sill. These need to be drilled through to simulate the holes on the prototype. The larger of the holes is used to inspect brake cylinder travel, the smaller hole is for the brake release rod. Each side has one large and one small hole.
- Use a #72 bit to make the larger brake travel inspection holes. (Fig. 25)
- Use a # 79 bit for the smaller brake release rod hole (Fig. 26)


Fig. 25

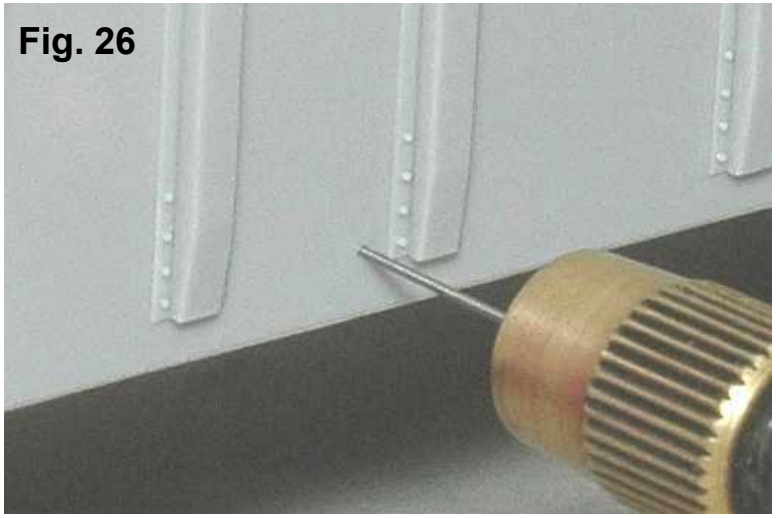
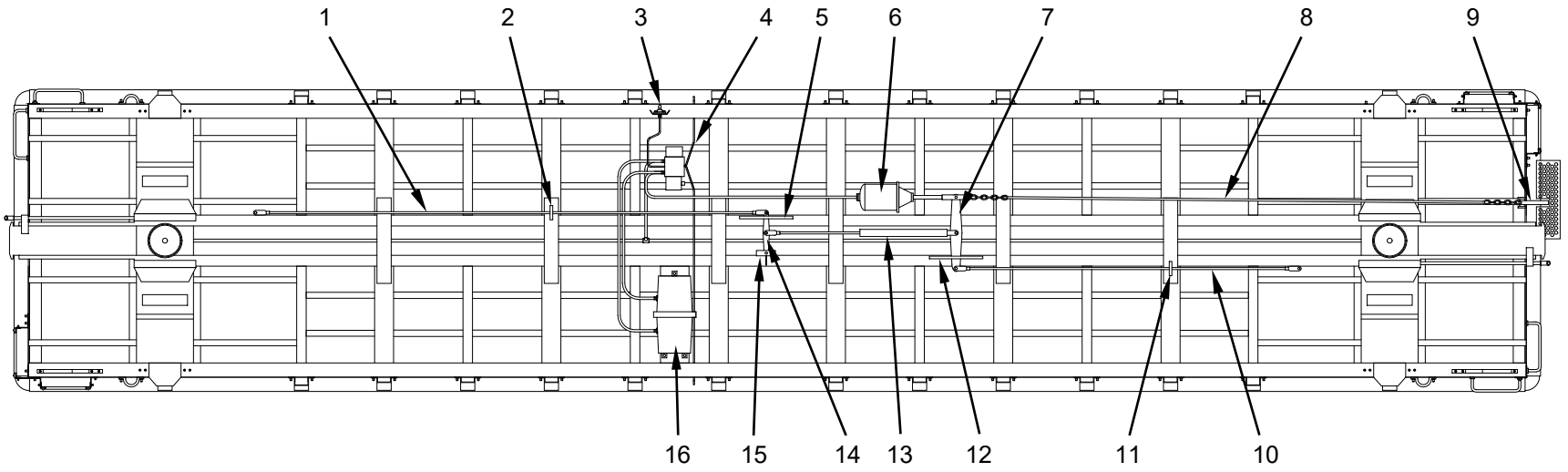


Fig. 26

Brake Hardware Arrangement

- Use this drawing to properly orient and install the brake hardware, plumbing and rods. The following pages will outline each step of the process of installing these components.

Fig. 27



1. A End brake rod
2. Brake rod support
3. Retaining valve
4. Release rod
5. Brake lever support
6. Brake cylinder
7. Large brake lever
8. Hand brake rod
9. Brake fulcrum
10. B End brake rod
11. Brake rod support
12. Large brake lever support
13. Slack adjuster
14. Small brake lever
15. Brake lever pivot
16. Air reservoir

Brake Bellcrank Installation

Fig. 28

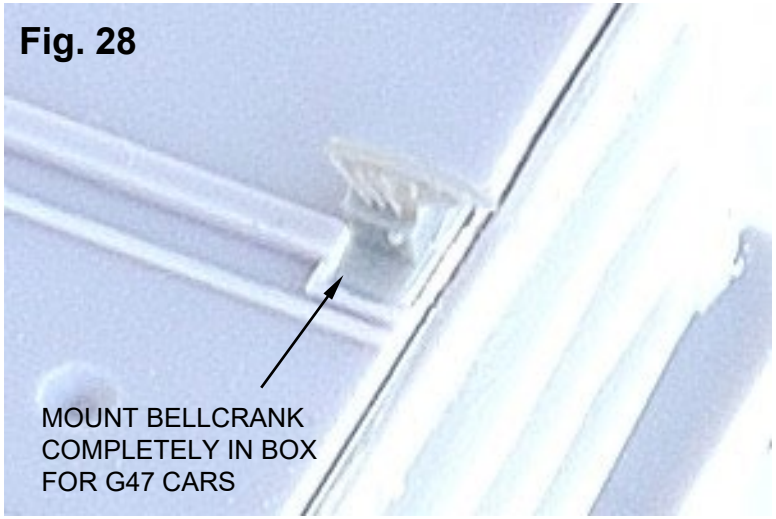
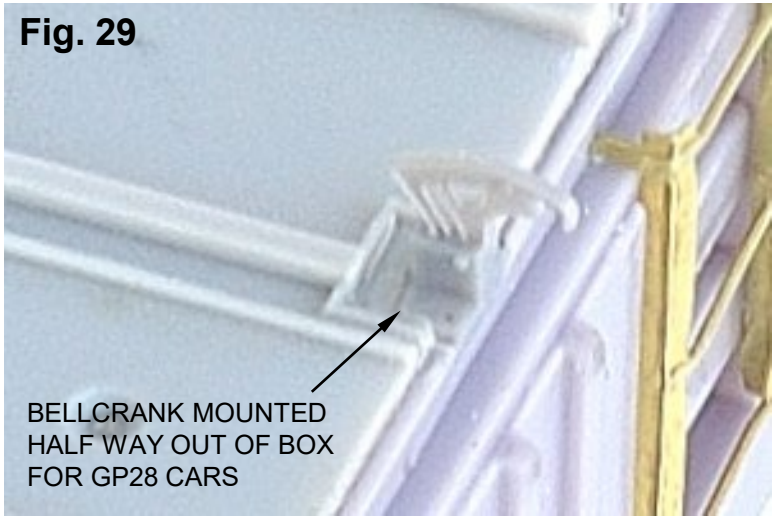
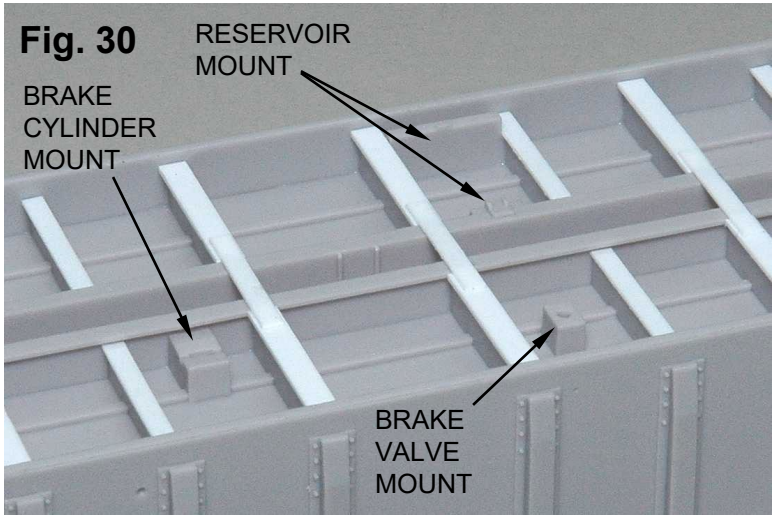


Fig. 29

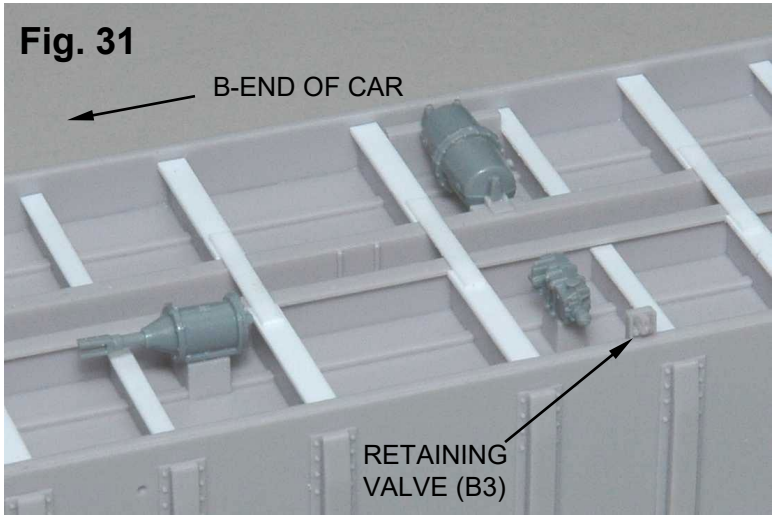


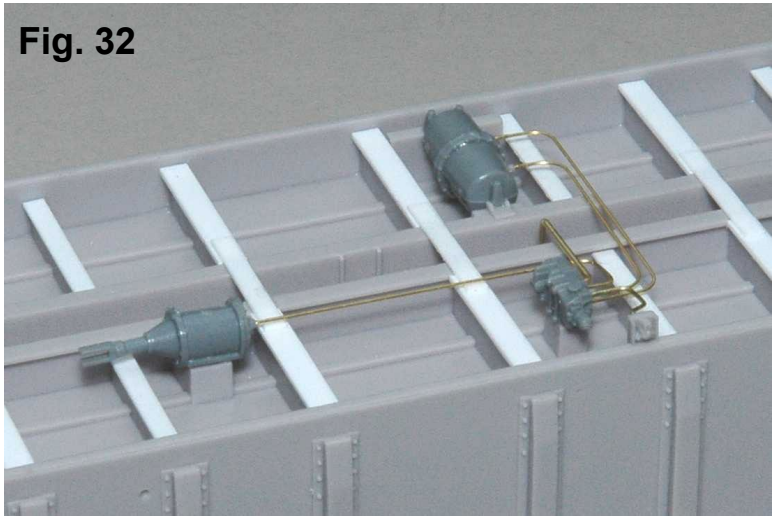
- Install the brake bellcrank (T22) in the mounting box next to the coupler. (Fig. 28)
- For GP28 cars, the bellcrank must be mounted half way out of the box. (Fig 29) This is required to allow for the extra thickness of the hand brake mounting ribs on the GP28 end.

Brake Detail Installation

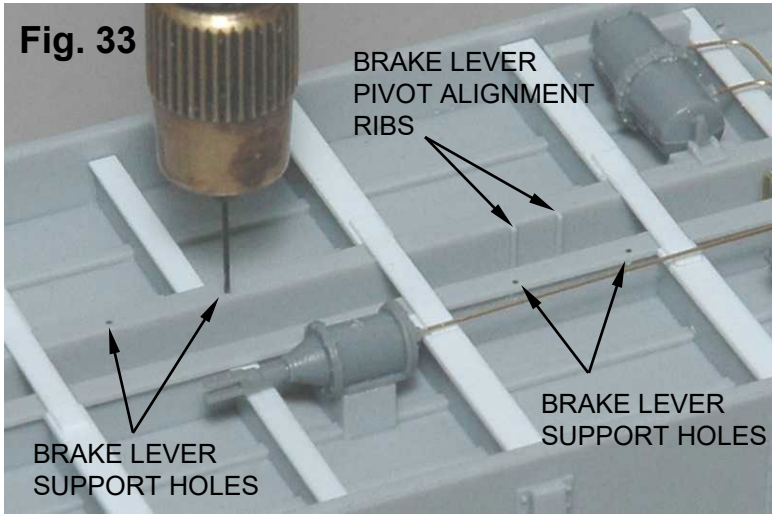


- Install the reservoir, brake valve, cylinder on the mounts indicated in Figure 27. The pipe fittings on all of the hardware point toward the A-End of the car. (Fig. 30)
- Install the retaining valve (B3), with the valve handle facing out, on the side wall of the car as shown in Figure 31.
- Refer to Figures 24, 27 & 32 for the following steps:
- Use 0.010” wire to form the two lines between the reservoir and brake valve.
- Use 0.010” wire to form the line from the brake cylinder to the brake valve
- Use 0.019” wire to form the branch pipe.
- Use 0.010” wire to form the line to the retaining valve.

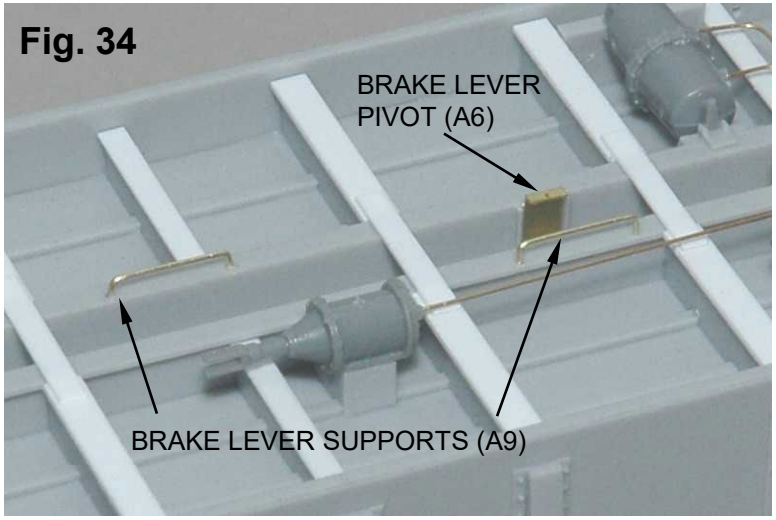


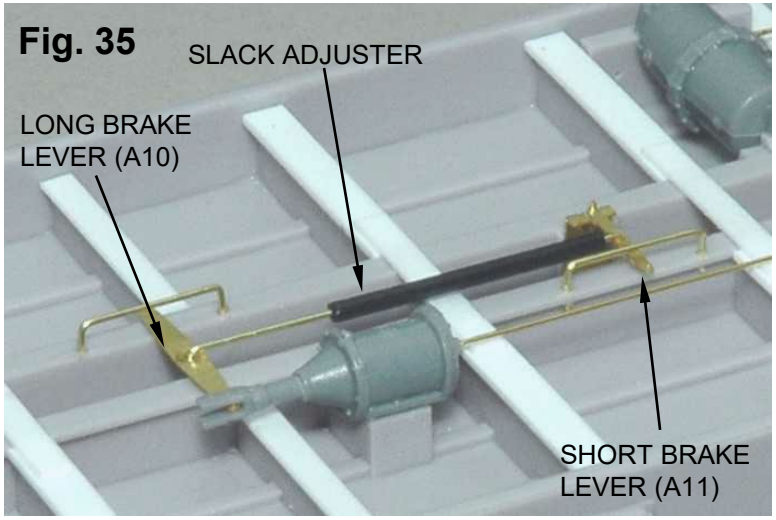


Brake Levers & Supports

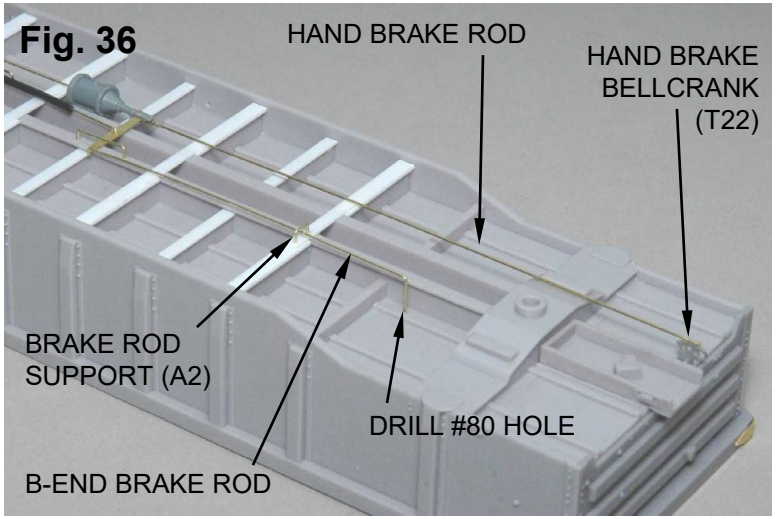


- Drill four #80 holes for the brake lever supports. (Fig. 33) Form the two brake lever supports (A9) and install in these holes. (Fig. 33)
- Make a 90° bend on the tab of the brake lever pivot (A6). Install the pivot between the alignment ribs (Fig. 33, 34)
- Install the long brake lever (A10) in the brake cylinder clevis. (Fig 35) Position the tip of the lever to the rear of the clevis.
- Install the short brake lever (A11) on the pivot. A small section of 0.010” wire can be used to position the lever on the pivot.
- Form the slack adjuster from 0.012” wire. Slide the length of insulation over the wire, form two short 90° bends and install in center holes of brake levers. (Fig. 35)

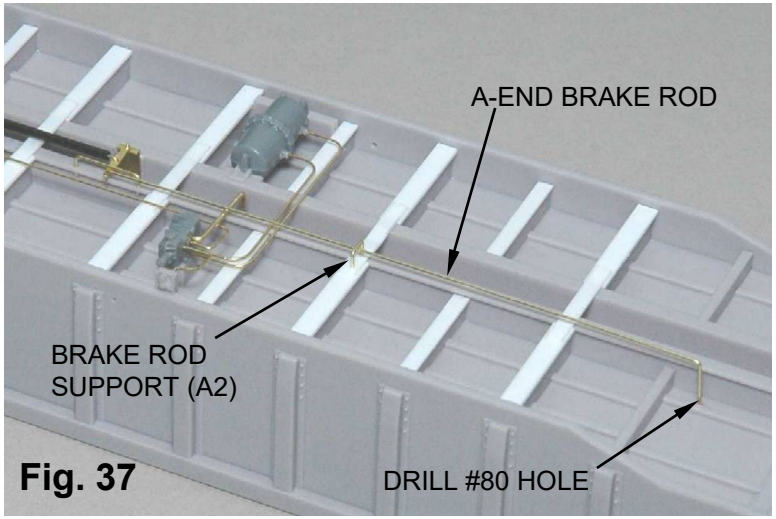


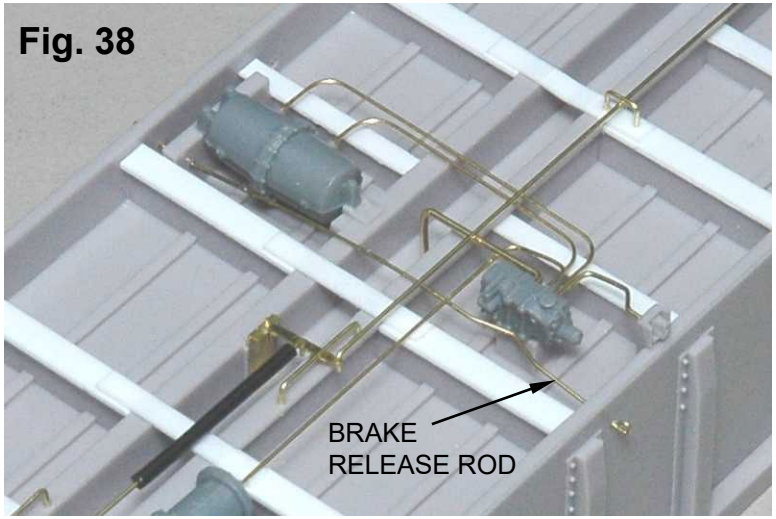


Brake Rods

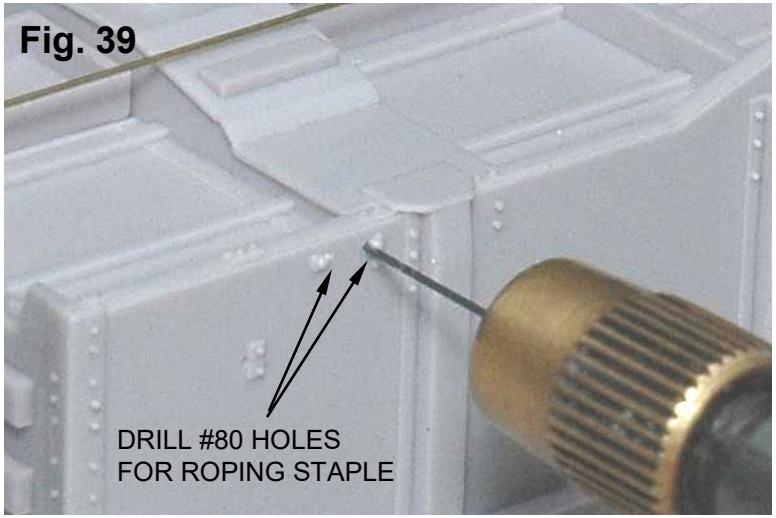


- Mount 0.012” wire hand brake rod between brake clevis and top of bellcrank. (Fig. 36)
- Drill #80 hole in floor near side of center sill in dimple on floor. (Fig. 36) Form B end brake rod from 0.012” wire and install between tip of large brake lever and hole.
- Drill two #80 holes on cross bearer connector. Holes should be about 0.060” apart and on either side of rod. Form the brake rod supports (A2) and insert over brake rod. (Fig 36)
- Repeat for A end brake rod. (Fig. 37) Mount rod on tip of small brake lever. Also note location of rod support.
- If desired, the air release rod can be added at this time. (See Fig. 38) This part is not included in the kit. It can be modeled using 0.010” wire.

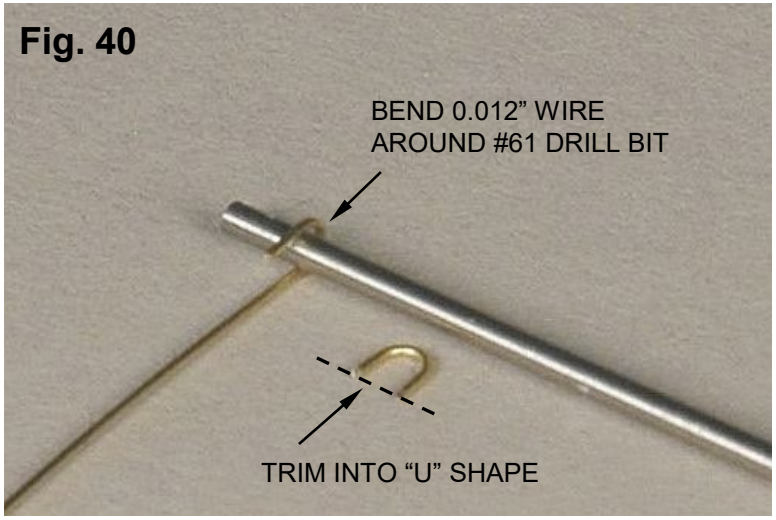


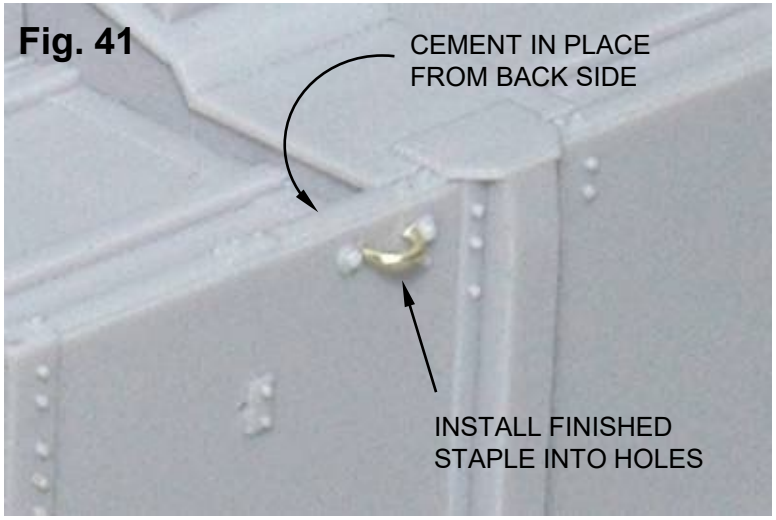


Roping Staples



- Use a #80 bit to make holes for the roping staples located at each corner of the car body. (Fig 39) These holes can go through the car side.
- Form a half loop of 0.012” brass wire around a #61 drill bit, trim to loop of wire into a U shape. (Fig. 40)
- Install loop in holes and lock in place with a small dot of thin CA applied from the tip of a fine wire and allowed to wick into the back side of the hole. (Fig. 41)





G47 Corner Ladders

- If modeling an NS GP28, go to the GP28 Corner Ladder page.
- Carefully separate the ladder assembly from the fret.
- Refer to Figure 42 for ladder folding order.
- **Fold 1:** Position ladder with the dashed folding grooves facing up. Using fine pointed tweezers or small smooth jawed pliers, grasp ladder side rail along the dashed groove for fold 1.
- Place the ladder on a smooth hard surface with a sharp edge. A sheet of hard masonite with a sharp, square edge works well. (Fig. 43) Position the tweezers along the sharp edge and slowly bend the ladder up
- **Fold 2:** Turn the ladder over and slowly make 90 ° **reverse bends** in the ladder connector straps (Fig. 44). Be certain the bend goes along the groove, and not through the two mounting holes.

Fig. 42 LADDER GROOVE FOLDING ORDER

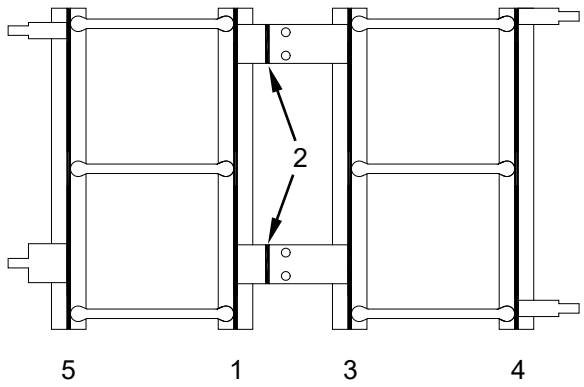


Fig. 43

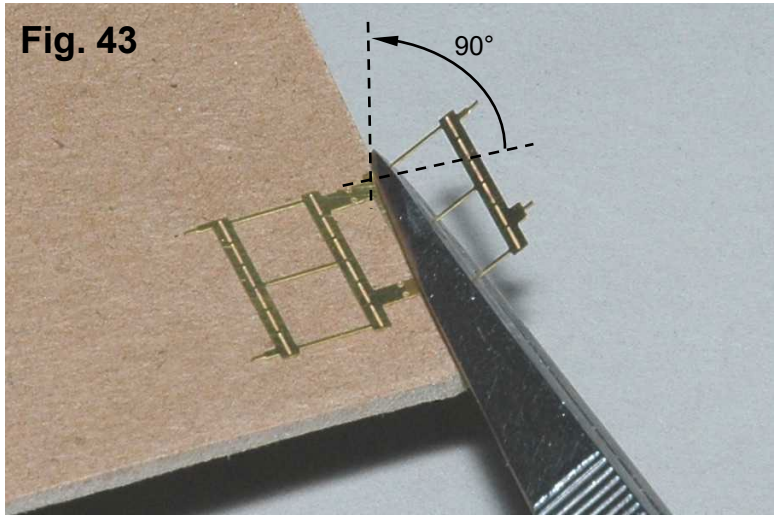
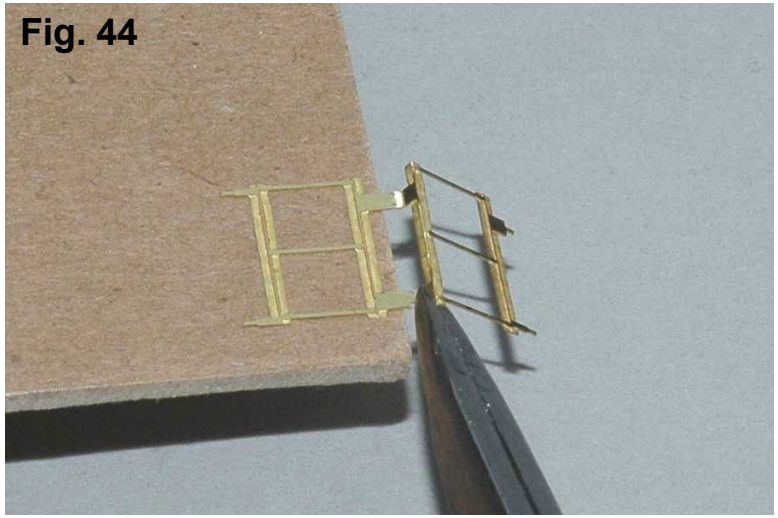
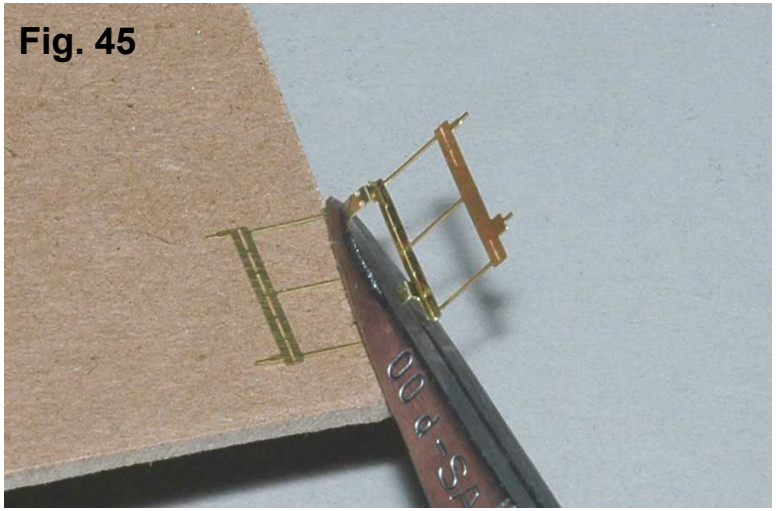


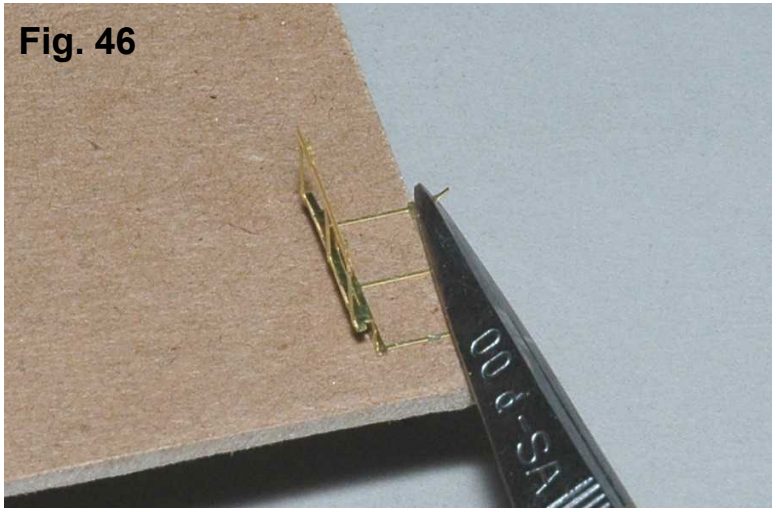
Fig. 44

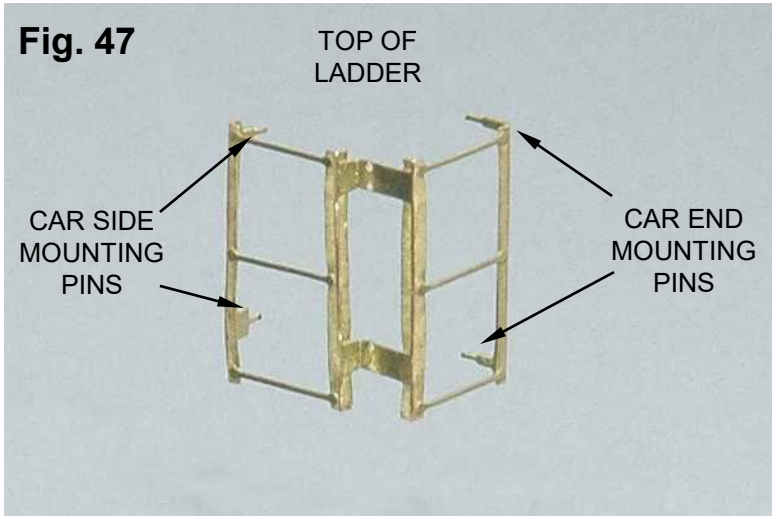


G47 Corner Ladders (continued)

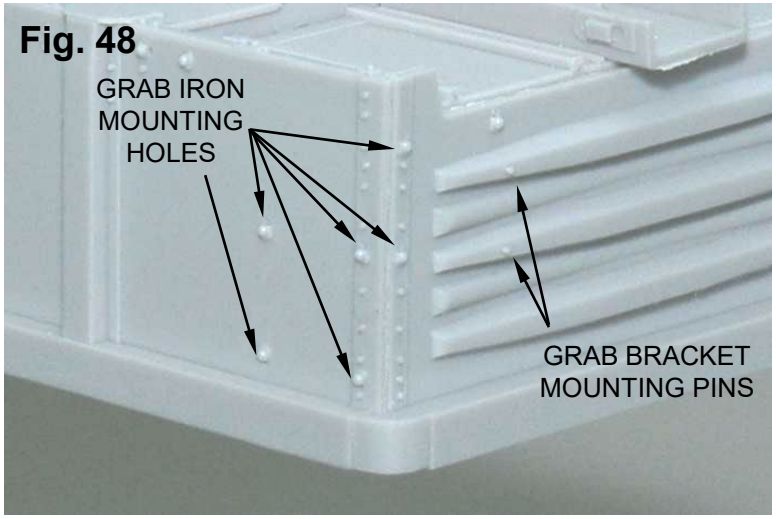


- **Fold 3:** Turn the ladder over and make 90° bends in the ladder side rail for fold 3. (Fig. 45)
- **Folds 4 & 5:** Grasp the ladder side rail along the edge with the mounting pins. Bend the side rail angle up 90 °. (Fig. 46) Repeat this for the other side rail.
- When complete, the ladder should appear as shown in figure 47.
- Repeat these steps for other ladder.

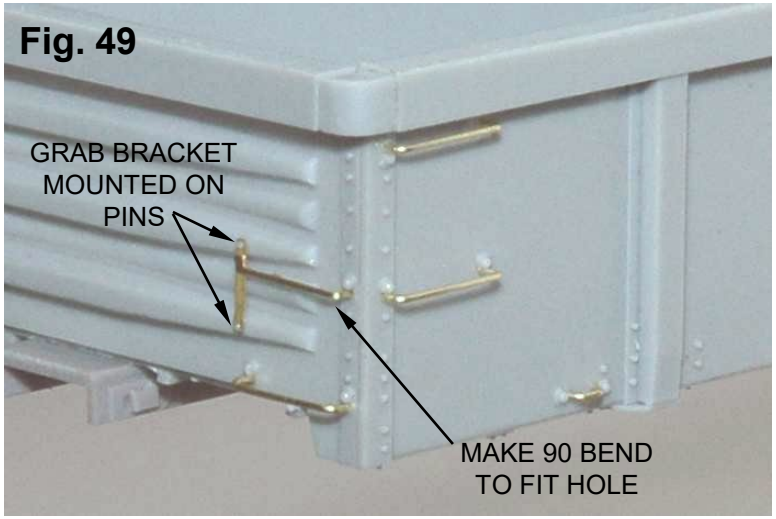




G47 Grab Irons

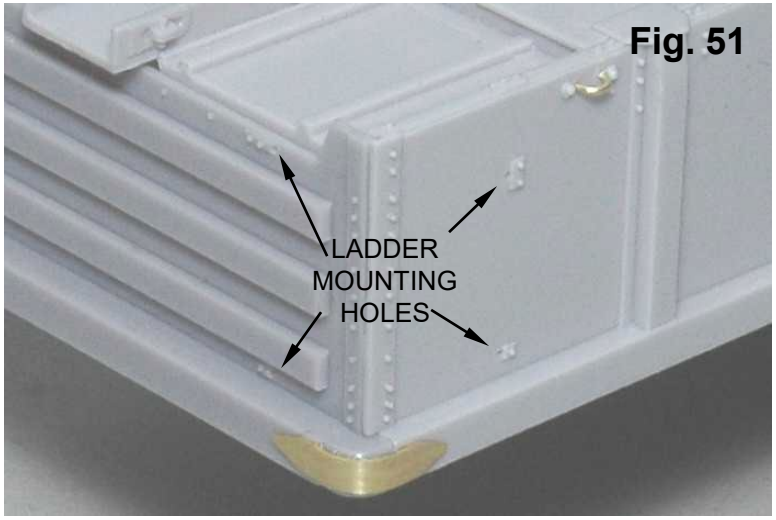


- Drill #80 holes for the grab irons (Fig. 48) The Dreadnought and Despatch style end panels use a grab with bracket combination. (Etched part A3) These grab irons use a pair of locating pins and one hole on the corner post.(Fig 49)
- Form the grab irons from 0.012” wire and install. Cement in place from inside of car body with thin CA glue allowed to wick into holes. Some holes by the corner posts or floor may not break through to inside of the car. In these cases, carefully cement the grab iron in place with a small drop of CA applied from the tip of a wire. (Fig. 49, 50)
- Locate the end grab & bracket (A3) and place holes of bracket over mounting pins on car end. (Fig 49) Determine the proper length of the grab and bend tip 90° to fit in hole in corner post. Insert grab into hole. Insert grab tip in hole, position bracket holes over pins and lock in place with CA.



G47 Corner Ladder Installation

- Drill the four ladder mounting holes using a #80 bit. (Fig 51) These holes are in the same positions on all end panel types.
- Orient the ladder as shown in Figure 52, then insert the car side mounting pins in their respective holes. Cement in place with thin CA glue applied to the holes from inside the car body.
- Align the car end mounting pins and insert them into the holes in the car end. Cement these in place.
- Align the holes on the ladder connecting straps over the paired pins on the corner angle. Slide the straps down these pins to rest against the angle. Lock in place with small drops of CA.
- Repeat for other corner of car.
- Skip to the Hand Brake & Platform page.



GP28 Corner Ladders

- Carefully separate the ladder assembly from the fret.
- Refer to Figure 53 for ladder cutting locations and folding.
- Separate the side and end ladders by cutting the connecting straps along the red dotted lines shown in figure 53**.**
- Place the ladder on a smooth hard surface with a sharp edge. A sheet of hard masonite with a sharp, square edge works well. (Fig. 54)
- **Fold 1:** Position side ladder with the dashed folding grooves facing up. Using fine pointed tweezers or small smooth jawed pliers, grasp ladder side rail along the dashed groove for fold 1.
- **Fold 2:** Turn the ladder around and make 90° bends in the ladder side rail for fold 2. (Fig. 55)

Fig. 53 LADDER GROOVE FOLDING ORDER

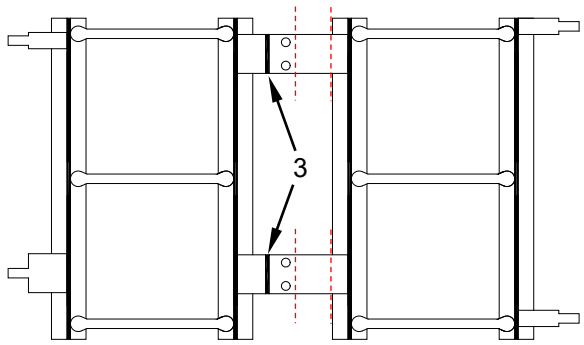


Fig. 54

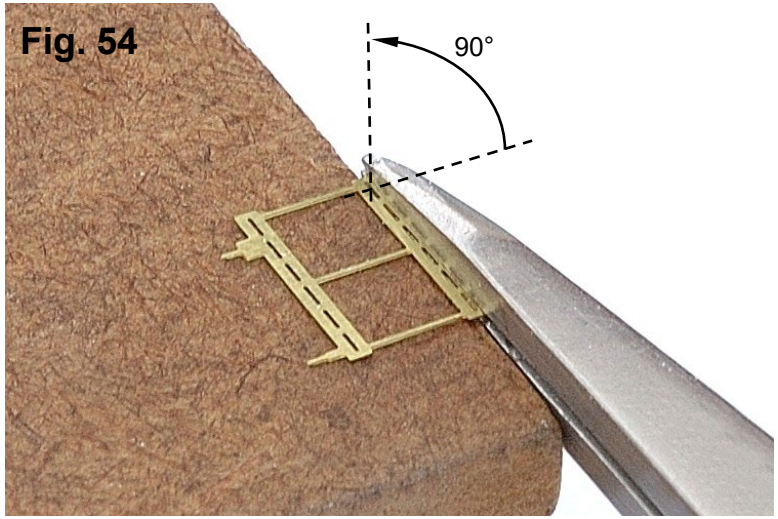
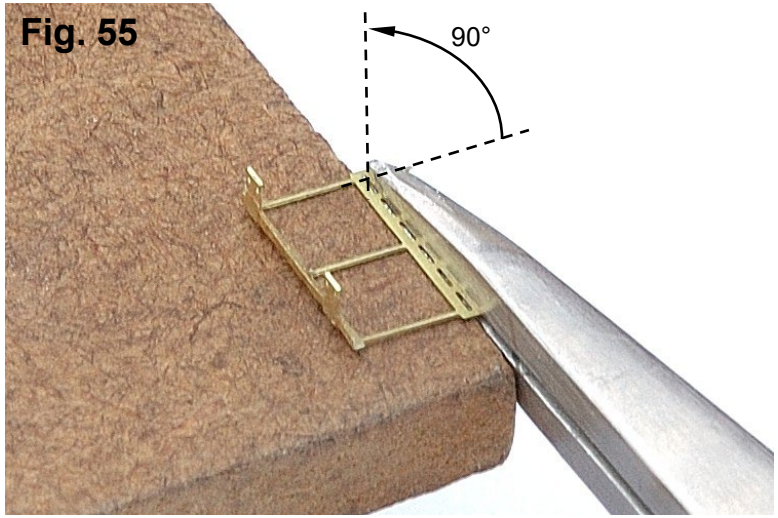


Fig. 55



GP28 Corner Ladders (continued)

Fig. 56

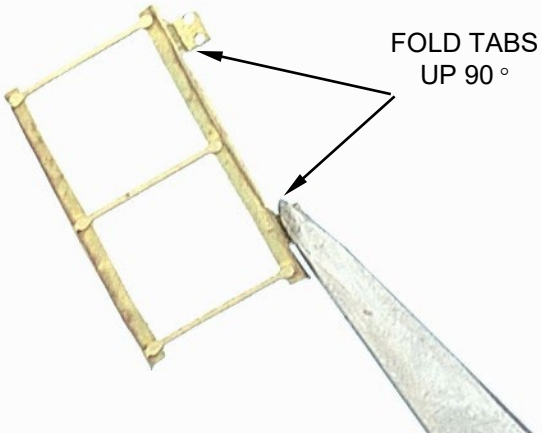
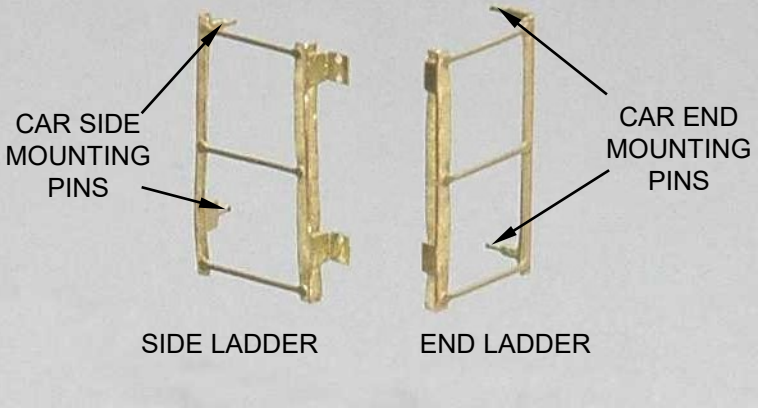


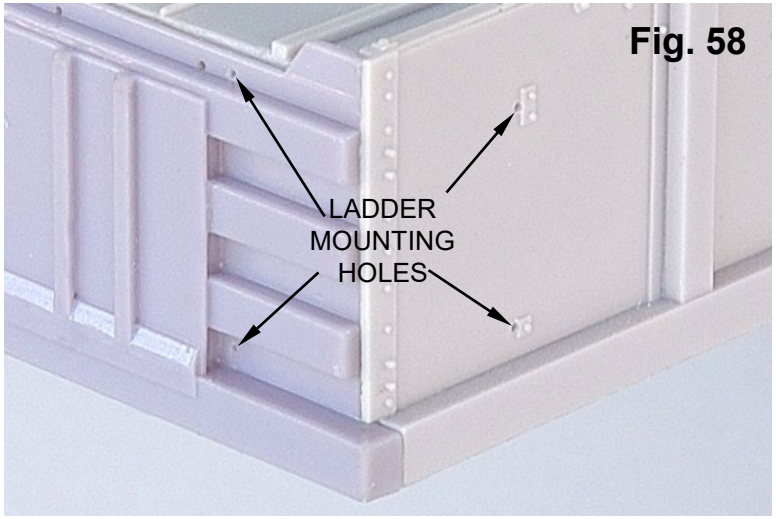
Fig. 57

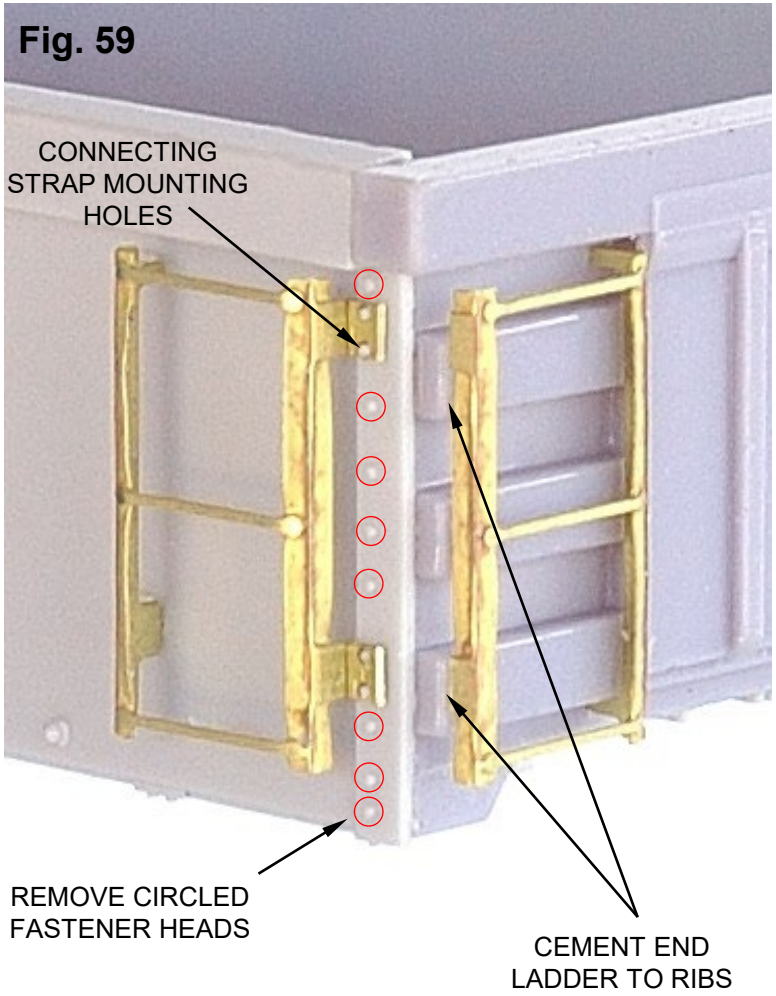


- **Fold 3:** Turn the ladder over and slowly make 90 ° **reverse bends** in the ladder connector straps (Fig. 56). Be certain the bend goes along the groove, and not through the two mounting holes.
- **Folds 4 & 5:** These folds are the same as Folds 1 & 2, but using the end ladder segment.
- When complete, the ladders should appear as shown in figure 57.
- Repeat these steps for other ladder.

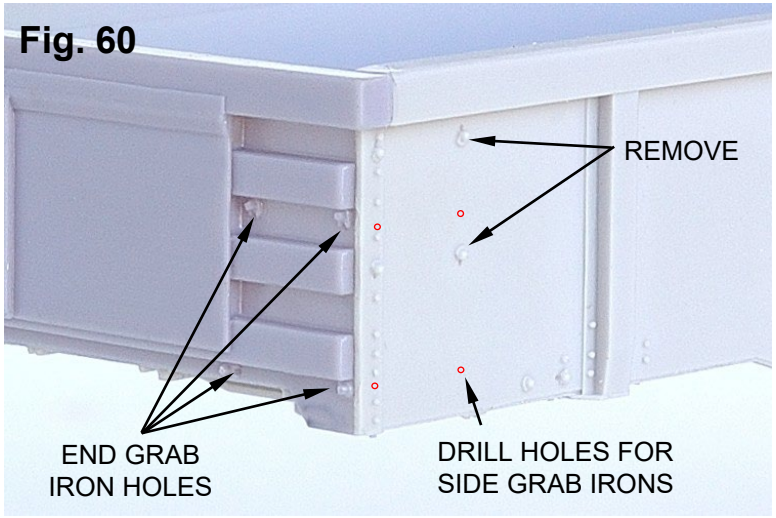
GP28 Corner Ladder Installation

- Drill the four ladder mounting holes using a #80 bit. (Fig 58)
- Orient the side ladder as shown in Figure 59, then insert the car side mounting pins in their holes and position the connecting straps over the paired pins on the corner angle. Slide the straps down these pins to rest against the angle.
- Cement in place with thin CA glue applied to the holes from inside the car body and over pins on connecting straps.
- Insert the end ladder mounting pins and push ladder against ribs. Cement pins and side rail in place.
- Carefully remove the corner post fastener heads as shown in figure 59. Shave these off level with the corner post surface.
- Repeat for other corner of car.

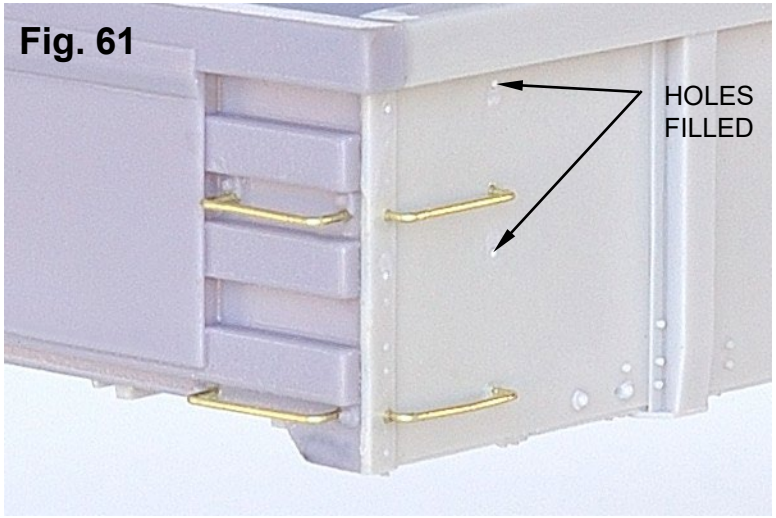


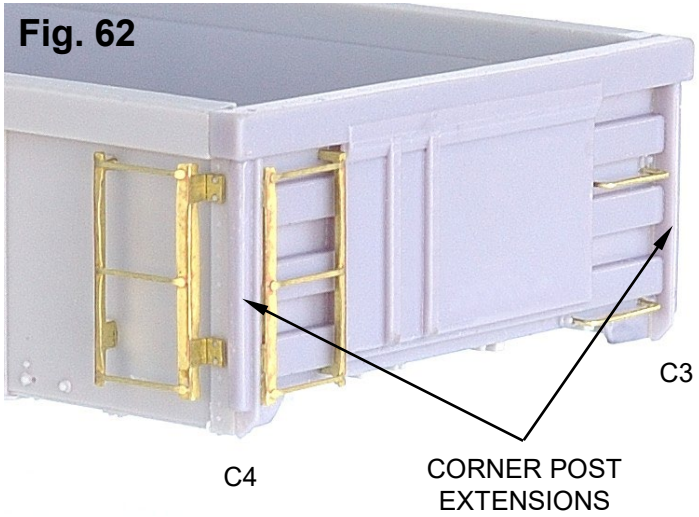


GP28 Grab Irons



- Remove all fasteners on corner post and the grab iron ends on the car side (Fig. 60) Grab iron ends can be saved to place next to new holes if desired. The pilot dimples on the car side can be filled for a smoother look.
- Drill #80 holes for the grab irons (Fig. 60) There are pilot holes next to the grab fittings on the car end. Locations shown for car side holes with small red circles.
- Form the grab irons from 0.012” wire and install. Cement in place from inside of car body with thin CA glue allowed to wick into holes. Holes by the corner posts or floor may not break through to inside of the car. In these cases, carefully cement the grab iron in place with a small drop of CA applied from the tip of a wire. (Fig. 61)
- Install corner post extensions (C3 & C4) as shown in figure 62.





Hand Brake & Platform

- Assemble the hand brake and chain (T16, T19) and mount on the hand brake tab of the B end panel. (Fig. 63)
- Mount the hand brake on the rails on the GP28 car. (Fig. 64)
- Position the end of the chain in the tip of the brake fulcrum. Cement chain to bellcrank.
- Drill #76 hole in hand brake housing and install brake wheel (T13).
- Use a #80 bit to make holes for the brake platform. The pilot dimples are located just below the lowest rib.
- Install the brake platform (A6) with the cutout centered over the hand brake chain. If it doesn't fit, try turning the platform over. Cement in place with thin CA.

Load Anchors


Fig. 65

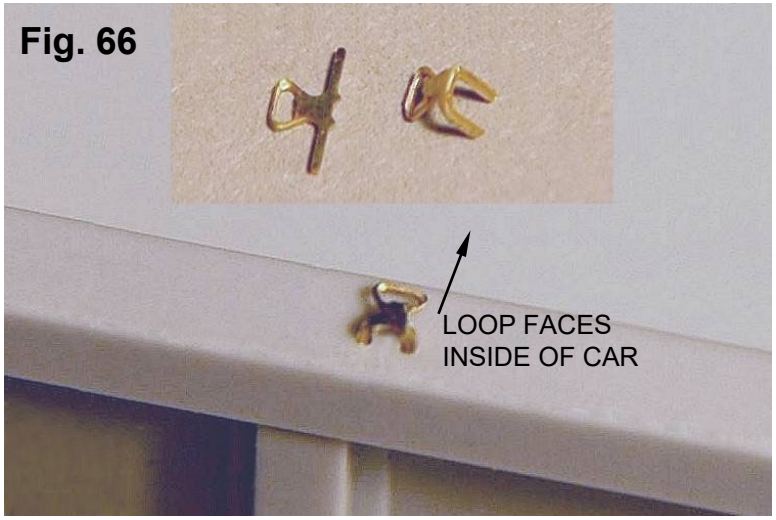
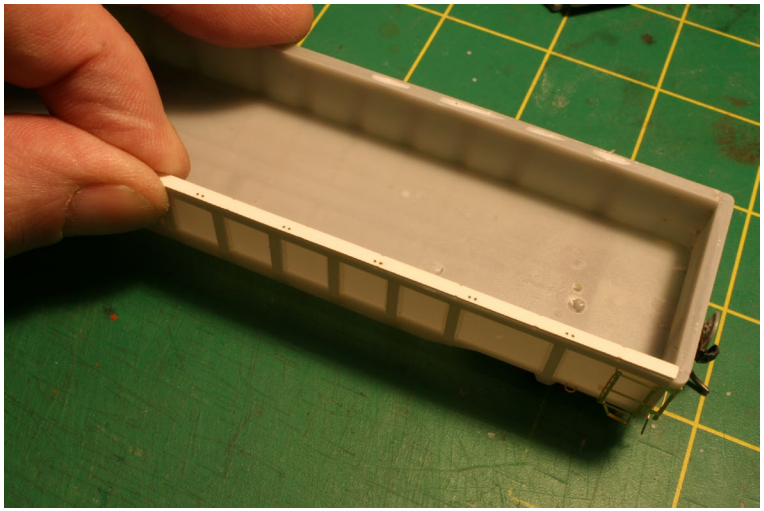
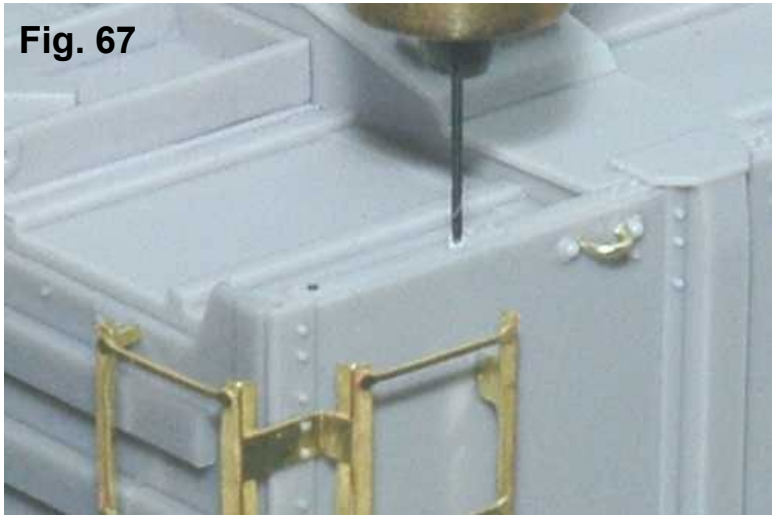


Fig. 66

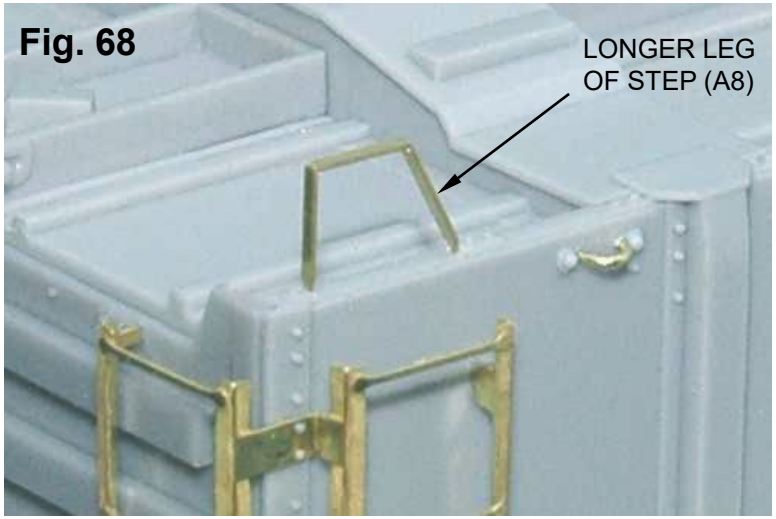
- Load anchor installation is optional. As built these cars had a series of load anchor loops along the top rail of the car. As the cars aged, these anchors were either removed or broke off.
- Norfolk Southern GP28 cars do not have load anchors
- Use a #80 bit to make the holes for each anchor. (Fig. 65) Each hole only needs to be about 0.040” deep. Do not drill through top rail.
- Make 90° bends in the mounting pins of each anchor (A7). These pins don’t have grooves, so there is no top or bottom side. (Fig 66)
- Insert the anchor into the holes with the loop toward the inside of the car.
- Lock in place with a small drop of thin CA glue.
- The kit includes a laser guide template for laying out the mounting holes.
- Lay the template on the top chord with the holes towards the outside edge of the top chord
- Mark with a sharp pin and drill

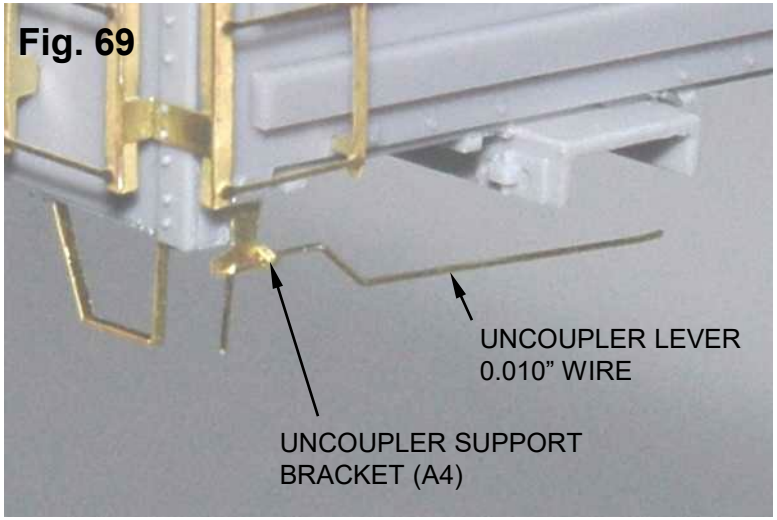


Corner Steps & Uncoupler Brackets



- Use a #80 bit to drill the corner step mounting holes. (Fig. 67) Be careful to drill straight into car side about 0.040”.
- Form and install the etched metal corner steps (A8) The longer leg of the part forms the diagonal portion of the step. The diagonal leg of the step faces the center of the car. (Fig. 68)
- Form the uncoupler support bracket (A4) by bending the lower tab up 90°. Install bracket on car end as shown in Figure 69. Form uncoupler lever from 0.010” wire.
- Once this step is completed, be careful when setting the car down on the corner steps.





Car Weight & Floor Options


Fig. 70

- Install the car weight. Use several drops of slow set CA glue to cement it in place. (Fig 70)
- For steel floor and coil service cars, the weight is the model's visible floor. You may overlay the weight with a thin styrene sheet if you would prefer that surface to paint & weather.
- **Wood Floor Option:** Test fit the wood floor. (Fig 71) Lightly sand the end and sides if it is too large to fit inside the car. Remove floor until after painting.
- **Coil Steel Car Option:** Test fit the coil cradle. (Fig 72) It may be necessary to trim the end or side bolsters of the cradle to get a good fit between the car ends and sides. Remove cradle so it can be painted separately from car.

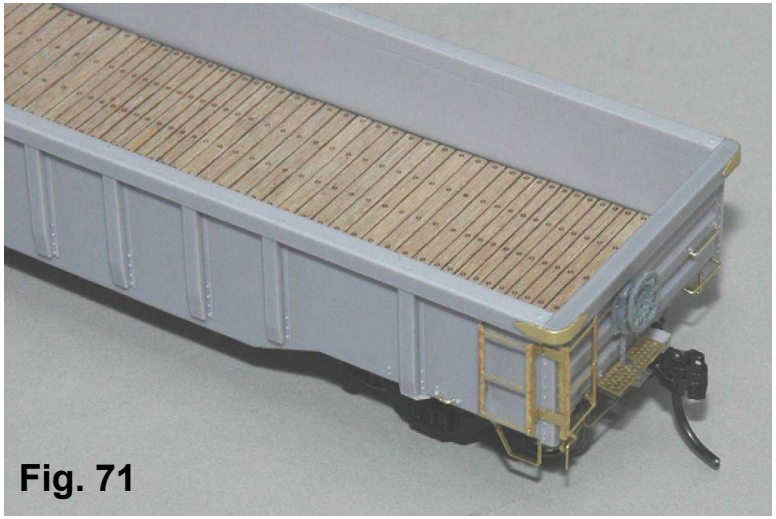
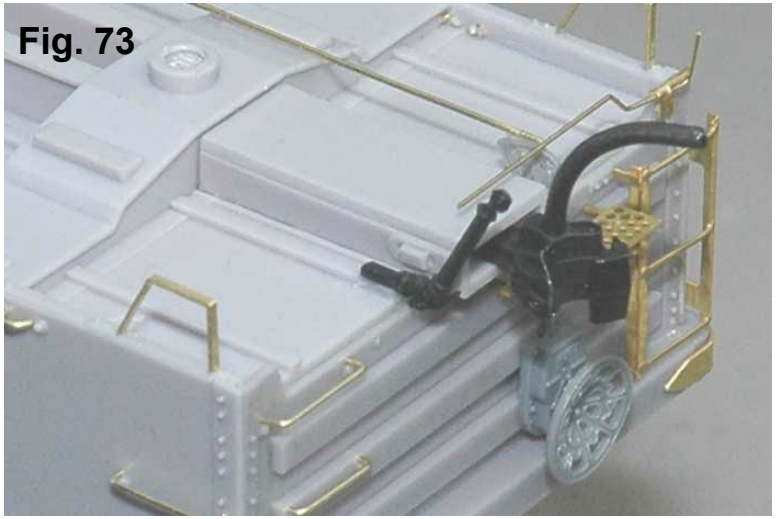


Fig. 71


Fig. 72

Painting & Final Assembly

- Mount brake air hoses on the longitudinal rib next to the draft gear. (Fig. 73) Scrape a bit of the paint off the rib to provide a better surface for the cement to bond.
- Carefully wash the model in warm soapy water and allow to dry fully.
- Paint using your preferred model railroad paint. Penn Central & Conrail colors varied significantly, here are some suggestions:
- Penn Central:
  - Scalecoat II PC Green (available through the Penn Central Historical Society, see address below)
  - Polly Scale Acrylic PC Green: 414368
  - ModelFlex PC Green: 16-90
- Conrail:
  - ModelFlex Light Tuscan Oxide Red:16-14
  - Polly Scale Acrylic Oxide Red: 404079
  - Scalecoat II Boxcar Red: 2087
- Norfolk Southern:
  - Your choice of black paint.
- Once paint is dry, apply gloss coat and decal according to instructions provided. Refer to the drawings and prototype photos for decal placement. After decals are dry, complete painting with a flat or semi-gloss finish.
- Install couplers, centering springs and draft gear lids. Secure in place with small dots of CA glue applied to the side of the lid and allowed to wick into the joint.
- Install trucks

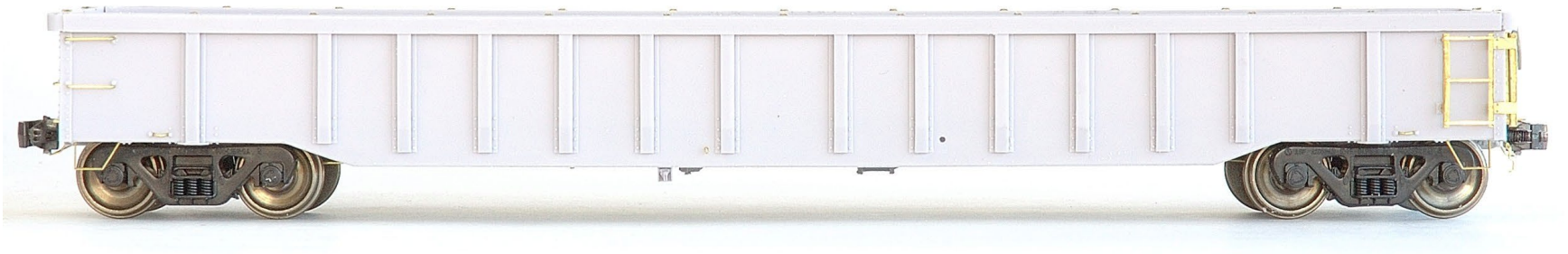


- For wood floor cars, install the wood floor insert using a few drops of slow set CA cement or rubber cement.
- For coil steel cars, install the coil cradle using a few drops of slow set CA cement.
- Penn Central RR Historical Society:

  On the web: www.pcrrhs.org

  By Mail: PCRRHS
  P.O. Box 43
  Flagtown, NJ 08821-0043

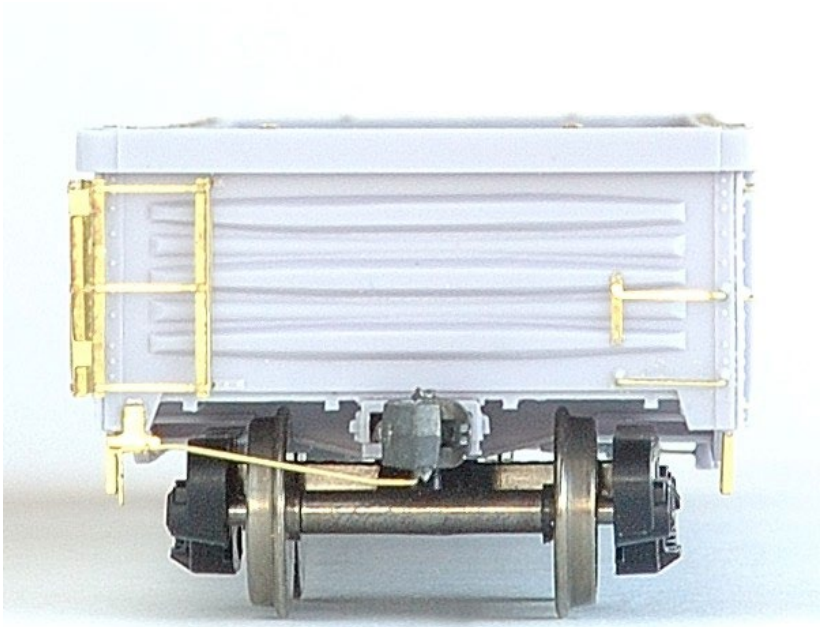
Finished Car Photos



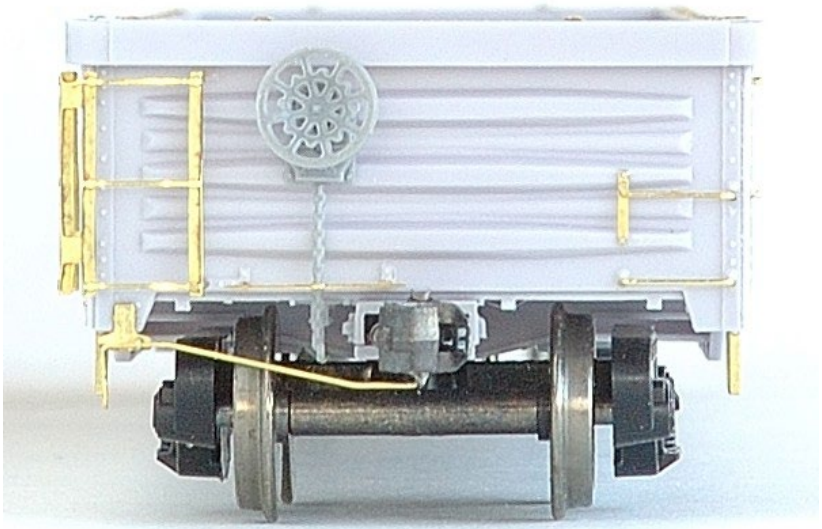
A END LEFT SIDE B END

B END RIGHT SIDE A END

Finished Car Photos

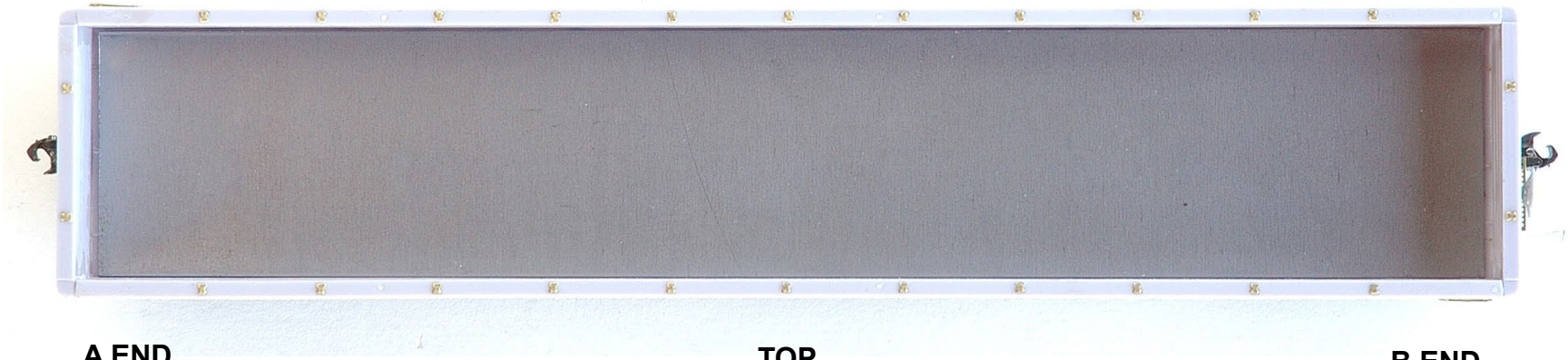


RIGHT SIDE A END LEFT SIDE

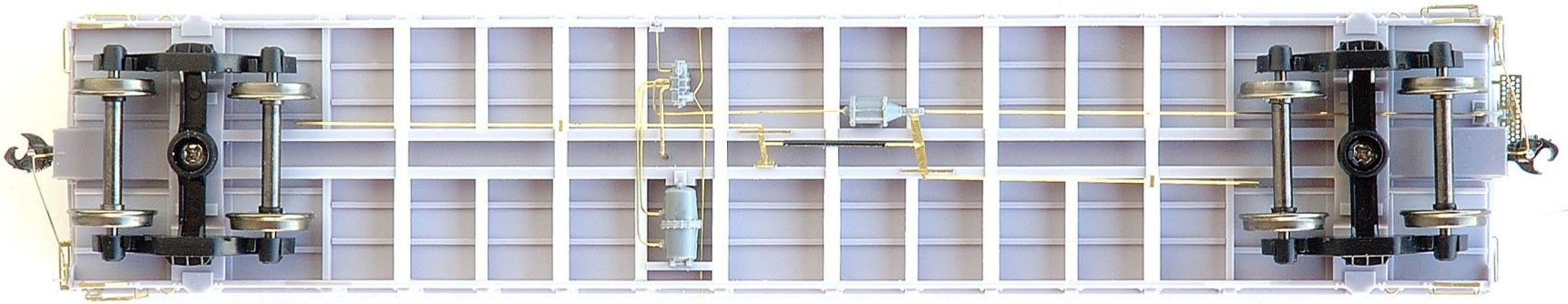


LEFT SIDE B END RIGHT SIDE

Finished Car Photos

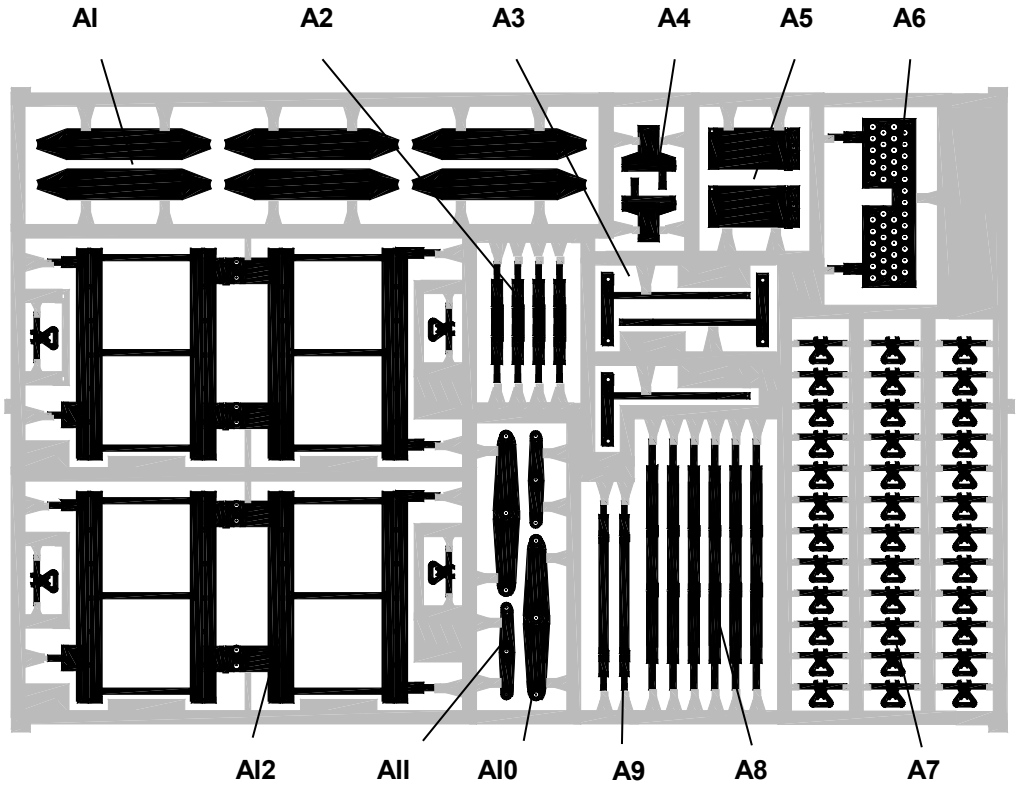


A END TOP B END



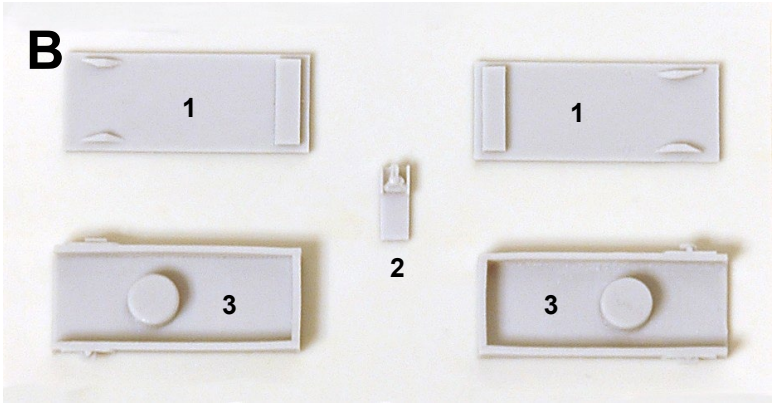
A END BOTTOM B END

Metal Parts Index

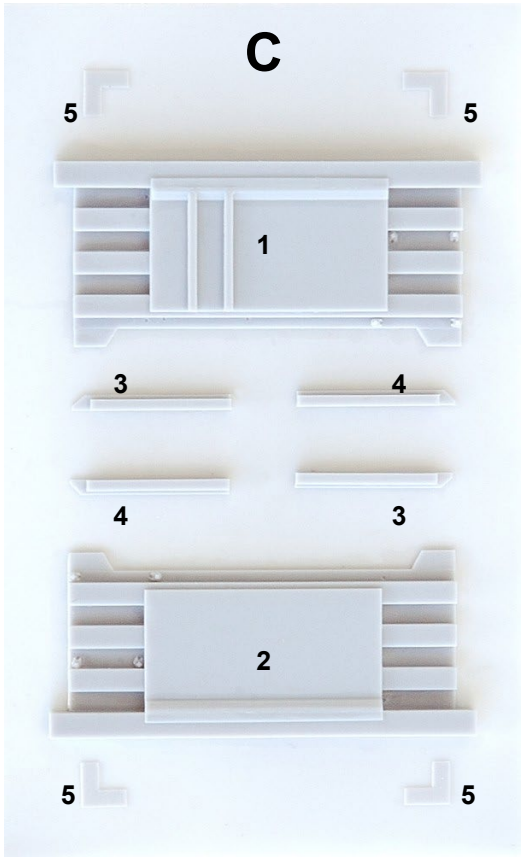


AI. Corner Braces (6)
A2. Brake rod support (4)
A3. End grab and bracket (3)
A4. Cut lever support (2)
A5. Brake lever pivot (2)
A6. Brake platform
A7. Load anchors (40)
A8. Corner steps (6)
A9. Brake lever support (2)
AI0. Large brake lever (2)
AII. Small brake lever (2)
AI2. Ladders (2)

Cast Parts Index



B1. Coupler Draft Gear Lid (2)
B2. Retaining Valve
B3. Coupler Draft Gear (2)



C1. GP28 B End
C2. GP28 A End
C3. GP28 Right Corner Post (2)
C4. GP28 Left Corner Post (2)
C5. GP28 Corner Brace Plates (4)

Parts List

Part Description	Qty	Part #	Price
G47 Body	1	900.105.1	$14.00/ea
G47 A End Set (3 types)	1	900.105.2	$4.00/set
G47 B End Set (3 types)	1	900.105.3	$4.00/set
Coupler draft gear & lid	1	900.105.4	$3.00/set
NS GP28 End Set	1	900.105.5	$3.00/set
Trucks	2	BOW-74254	$2.00/pr
Wheelsets	4	36-1-1040	$1.00/ea
2-56 screws	2	CD256316	$0.10/ea
Brake Detail Parts	1	TTG-3013	$3.00/ea
Air hoses	2	KD-438	$0.50/pr
Weight	1	CIM-105	$1.50/ea

Part Description	Qty	Part #	Price
Etched Metal Parts	1	910.105	$4.00/ea
0.010” x 0.060” styrene	7”	EVG-103	$0.10/ea
0.015” x 0.080” styrene	7”	EVG-114	$0.10/ea
0.010” brass wire	6”	DA-2503	$0.60/foot
0.012” brass wire	12”	DA-2504	$0.50/foot
0.019” brass wire	1”	DA-2504	$0.50/foot
Slack adjuster sleeve	1/2”		$0.15/ea
Wood Floor (optional)	1	IM-105	$4.00/ea
Coil Steel Cradle (optional)	1	900.105.6	$4.00/ea
Decals	1	905.105.x	$4.00/ea
Instructions (CD-ROM)	1	990.105	$4.00/ea

Missing and defective parts will be replaced free of charge within 90 days after purchase. Should you require a replacement part after this period due to breakage or other problem, please contact us with the parts needed, payment for the parts plus $5.75 for return postage.

If you are only ordering decals or instructions, return postage is $2.00.

Be sure to visit the Rail Yard Models web site to see our latest offerings: www.railyardmodels.com

APPLICATION INSTRUCTIONS

Rail Graphics®
CUSTOM DECALS

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847/742-5404 Fax: 847/742-5407 email: info@railgraphicsdecals.com

RAIL GRAPHICS *SUPERFLEX* thin decal film is made of modern materials which have a stable shelf life. Unused decals will last many years if stored in a cool, dry place.

MODEL SURFACE PREPARATION

For the best results, decals should be applied to a glossy surface. We have found Badger Model-Flex, Floquil Poly Scale, Scalecoat, and Scalecoat II, paints to be excellent, as they dry to a glossy finish. When our decals are applied to these paints, the clear film virtually disappears.

If you are using a *flat* paint such as Floquil, it is best to coat the painted model with a clear, gloss overcoat. Allow this overcoat to dry thoroughly (3-4 days or until the odor of solvents disappears). Always wait until the odor of paint has disappeared before applying your decals.

APPLICATION INSTRUCTIONS

To apply **RAIL GRAPHICS** decals, first cut out the decal as close as possible to the printed material. We suggest you use an x-acto knife. The less clear decal film you have around the printing, the better. Place the trimmed decal into a dish of warm water and allow to soak until the backing paper falls off. On larger decals you may have to nudge the decal to get the paper to fall off. Continue to soak the decal to dissolve any residue glue from the backing paper. *NOTE: The glue applied to the backing paper is used to facilitate the release of the decal film from the paper. The glue does NOT make the decal stick to the model.*

SOLVENT APPLICATION

In order for the decals to nestle down over the details of the model, recommend the use of Solvaset. We suggest two methods for applying the solvent to the model.

The **FLOATING METHOD** floats the decal onto the solvent. Determine where the decal is to be placed on the model and apply the solvent with a small brush. Using a tweezers, carefully remove the decal from the water. Run it along the edge of the dish to remove excess water. Place the decal on the model making sure that it is "floating" on the solvent. This floating method will eliminate most of the air bubbles under the decal. If you find that the decal begins to soften too soon for you to arrange in its final position, then we recommend the CAPILLARY METHOD.

The **CAPILLARY METHOD** allows the solvent to flow under the decal through capillary action. Remove the decal from the water as you would have using the floating method. Place it on the model without any solvent. With a tissue, carefully blot any excess water. Using a small brush, apply the decal solvent to the edges of the decal. The solvent solvent to all edges to ensure complete saturation of the decal.

Regardless of which method you use, repeated applications of solvent may be needed to help the decal contract around rivets and other details. If bubbles appear under the film, prick them with a straight pin and apply a small amount of solvent to the area. *NOTE: Do not allow large drops of solvent to sit on the decal film. If this occurs, use the tip of a tissue to absorb the excess. Drops of this type may cause the decal to distort and break down the inks.*

After decals are dry, take a water dampened cotton swab and remove any traces of residue decal solvent from the model. Finish off the model with a flat cover coat. We recommend Badger Modelflex Clear Flat. Other dull cover coats will also work. This will hide the shine of the decal film, plus give the model a realistic dull appearance. Weathering may be applied to represent the age and service of the model.

TOOLS TO APPLY DECALS		DECAL SOLVENTS	GLOSS COATS (USE ONE)	DULL COATS (USE ONE)
Scissors	Facial Tissues	Solvaset*	Floquil Crystal Cote	Badger Modelflex Clear Flat*
X-acto Knife	Toothpicks	Micro-sol	Floquil Hi-Gloss	Floquil Flat Finish
Tweezers	Straight Pins	Micro-set	Floquil Glaze	Testors Dullcoat
Cotton Swabs	Paint brush	Decal-set	Testors Glossscoat	

*Recommended