

# Boulder Valley Models ..... #551 Chunky Little Log Car ..... Assembly Instructions

**Metric equivalents:** 1" actual measure = 2.54 cm or 25.4 mm  
 1" (inch) scale measure = 0.53 mm \* 1' (foot) scale measure = 6.35 mm

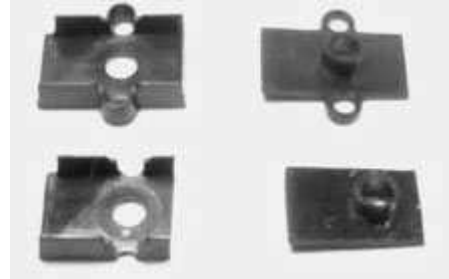
★ Before you begin: Wash resin parts, read notes on parts listing page, read instructions & consider your own preferences regarding painting, etc. prior to assembly.



★ **Speckled Castings** -- The Spine (Part A) and Bunk (Part B) castings are filled with tiny steel beads to add extra weight to the finished car, so the "speckled" appearance is normal! We recommend that you do not attempt to cut or drill into the areas filled with steel beads, as this may result in the breakage of parts. If you need custom parts for kitbashing, please contact us!

## Prepare Kadee Couplers

★ **Note:** The coupler pockets on Log Car Spine (Part A) will accept Kadee #5 coupler boxes with the ears cut-off. Photo shows stock Kadee parts (top) and modified parts (bottom).

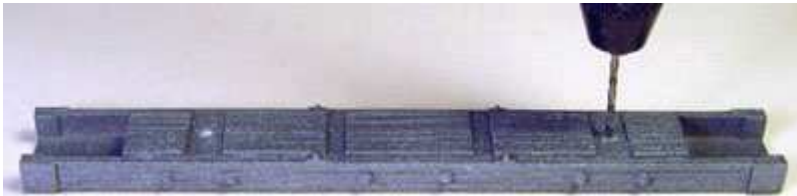


□ Modify Kadee coupler boxes by removing the rounded "ears" as shown in photo. Assemble coupler boxes using tiny dabs of ACC (super glue) to fix the box lids in place -- avoid getting any glue into working part of couplers.

★ **Note:** In the photos, you'll see that we straightened and re-bent the trip pins on our couplers to represent manual release levers. This is strictly a matter of personal preference and it does defeat the magnetic uncoupling feature.

## Basic Assembly

★ **Note:** We've pre-painted individual parts to improve photo quality -- we suggest assembling **unpainted** parts and following the painting tips given along the way!



□ Pre-drill holes for truck screws in Spine (Part A). From the top side of casting, drill two #60 pilot holes -- one in the center of each of the wider grooves for placement of the log bunks. Locations shown with white dots in photo. Be careful to hold drill straight (vertical) and drill all the way thru to bottom.

□ Turn casting over and enlarge both holes using a 1/16" drill bit [1.6 mm]. Use a knife or file to remove any burrs around holes on top and bottom of casting.



□ Place trucks (sold separately) and tap screws into bottom of casting as shown. If you don't have the trucks handy, just tap the screw about 2/3 the way. Pre-tapping will reduce stress on the final assembly, so you can mount trucks without damaging any of the fine details on the finished car.

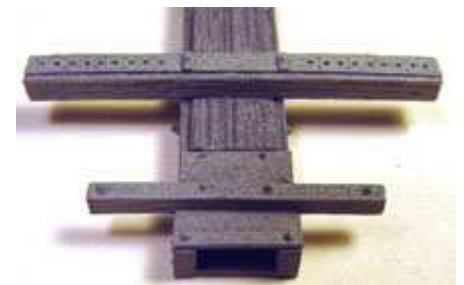
□ Remove trucks and screws.



□ Test fit Kadee couplers as shown. If needed, file edges of coupler box for a good fit. **Do not glue** couplers in place at this time.

□ **Study photo on Parts Listing sheet to see correct placement of Parts B, C & D.**

□ Trim Hanger Beam w/ Coupler Cover (two Part D) from thin backing and dress edges. Test fit as shown (above right). Notice that one end of the coupler cover is wider and has a raised band along the edge. This end of the casting should align with the end of the spine as shown. **Double-check orientation** of parts! Then, glue both Part D castings in place.



□ Remove any burrs around screw holes in spine casting. Test fit Bunk (Part B) as shown. Notice the raised strap details near the center -- these have NBW (nut-bolt-washer) cast in place. These strap details will align with strap details on the spine. Glue both bunks in place being careful to center and align those details.



□ Trim Hanger Beams (Part C) from thin backing and dress edges. Test fit on spine as shown (larger photo on Parts Listing sheet). Carefully center and align NBW detail. Glue in place.

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- Trim Bottom Coupler Plates (Part E) from thin backing and dress edges. Test fit on BOTTOM of car as shown. Glue in place.
- If you plan on installing the truck hanger chains (described below), pre-drill eight #72 holes (about 1/2 way into casting) in the locations shown above -- one at each end of each hanger beam. To avoid breakage of these delicate parts, use your fingers to brace the beams while drilling as shown at right.



- ★ **“Iron strap” detail:** We use styrene strip (included) to simulate the iron straps that secure the log bunks to the spine. It takes a little care and patience to fit these delicate details, but the result is well worth the effort!

- ★ **Orientation of strap detail:** The ends of each strap butt against the raised strap details on the spine and log bunks. We suggest cutting pieces and then trimming these to fit each location.



- ★ **Orientation of strap ends on coupler covers:** Notice that the raised strap detail on the coupler covers is inset from the end -- this detail is located next to the hanger beam. Study photo at right to see correct location of strap ends.

- Cut a piece of 010x040 styrene strip (Part G) to 1/2” length [12.5 mm] and test fit between the strap detail on the log bunk and the strap detail on the coupler cover. Trim end as needed so ends of strap will butt against cast-on strap details. (There should be enough of the styrene strip to allow for a couple of miss-cut pieces.)



- Place a droplet of ACC on wax paper, hold strap with tweezers and touch each end of the strap to ACC then set in place on car.

- Cut another 1/2” piece and fit between the raised strap detail on bunk and the raised strap detail on the spine (at left in the preceding photo). Trim end as needed so ends of strap will butt against cast-on strap detail. Glue in place.

- Repeat steps to create a total of EIGHT straps -- four at each end as shown in preceding photo. Take a short break after working with these little pieces!

- ★ **Optional Cheese Block (log retainer) placement:** The cheese block castings (Part F) are optional and their placement may be varied as desired. To use the chain hoops as shown, these should be placed with the vertical edge of each casting toward the outside edge of each bunk.



- ★ The photo at right shows two Cheese Blocks placed at different locations. We suggest placing them toward the outside edge of bunk as shown at right, but you may place them closer together for specific log loads if desired.



- Trim Cheese Blocks from thin backing and dress edges as needed. Hold the blocks with tweezers as shown while filing edges.

- ★ **Optional Chain Hoops** on cheese blocks: If you plan to wrap chain directly around removable loads (See “Using Chains” below), you may choose to omit these. If you wish to secure chain to the bunks, use the following steps.

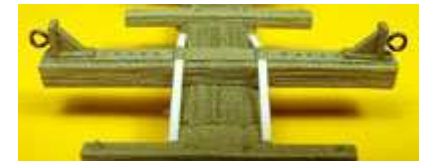
- Pre-drill #70 hole in each cheese block as shown above right - centered on vertical portion of block. Depth of hole should be roughly equal to thickness of vertical portion of casting.



- Determine desired location of cheese blocks and glue in place on log bunks. In order to use the chain-retainer hoops, the vertical edge of each part should face the outside end of each log bunk.

- ★ **Trimming wire parts:** We use an old pair of small, inexpensive scissors to cut the ends off eye pins and wire parts. If you use wire cutters, you may wish to use an emery board on the cut end to remove any burrs.

- ★ **Orientation of hoops:** These may be placed vertically (as shown) or horizontally. Our tests seemed to suggest that the chain hooks sit more naturally when the hoops are placed vertically as shown.



- Cut straight end of one eye pin (Part K) to approximately 3” scale [6.5 mm] as shown above and test fit in cheese block. Touch end to a dab of ACC and glue in place as shown in following photo.



- Repeat steps to place a total of FOUR chain hoops -- one in each cheese block. This completes the basic car assembly, we’ll install hanger chains after the car is painted!

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- ★ At this point, we painted the completed assembly. We suggest a solvent-based primer, such as Krylon (spray-paint) or Floquil (air-brush). A good primer coat forms the base for almost any type of painting techniques that you may wish to use.
- ★ Also pre-paint and weather trucks prior to installing truck-hanger chains.
- ★ We “painted” our cars using dry pigments from Bragdon Enterprises as shown on our website at <http://hometown.aol.com/on30railroadkits/logcar-7.html>
- ★ If you don’t have internet access, please call or send a self-addressed stamped envelope and request a print-out of the Log Car Painting & Weathering techniques.
- ★ Log loads: Visit our website for suggested vendors!

### Install Truck-Hanger Chains

- ★ This is a “fussy” little detail that adds greatly to the visual appeal of these little cars. It takes a little care and patience, but we think it’s worth the effort. If you find it too tedious to add this detail, just leave it off and the cars will still look great!
- ★ **Note:** To cut a piece of chain that is 8 links long, use an old pair of scissors to snip the 9th link -- then discard the pieces of that clipped link.



- Paint and weather car assembly and trucks prior to installing hanger chains.
- Cut eight pieces of chain, each 8 links long as described above. Use a pair of small needle-nose pliers to “squish” the link at each end of each piece of chain as shown above.
- Study the photos at right. We’ll drill a hole in the end of each journal box as shown. (The “journal box” is the bulky detail on the truck frame where the wheel bearing is located.) (BVM T-2 trucks shown.)
- Drill (4) #72 holes in each truck -- one hole in the end of each journal box as shown. Repeat for second truck.
- Test fit “squished” end link of 8-link chain piece into hole in journal box.
- ★ **Use care when gluing chains to trucks!** Read steps and test fit before gluing.
- Use a toothpick or fine applicator to place a droplet of ACC into one of the holes you drilled in truck frame. Hold “squished” end link with a pair of fine tweezers and press end link into hole in frame. Make sure chain is pressed straight into end of journal box and allow glue to set before removing tweezers. (Using tweezers to hold the end link will push back the second link and avoid gluing the chain links together.)
- ★ **Helpful reminder:** Working with these tiny pieces can be frustrating. The first couple are the worst! Take breaks as needed. Good lighting and magnification can help!



- Repeat steps to install a total of four chains on each truck as shown. (Truck shown upside-down.)
- If you didn’t pre-drill the holes in the underside of hanger beams as shown at the top of page 2, do that now as described.
- Turn the car assembly upside down and place some scrap material like cardboard or wood strips under the bunks to avoid damaging or breaking loose the cheese blocks.
- Screw trucks in place carefully.
- Test fit “squished” end link of each chain into the hole on the nearest hanger beam before gluing.
- ★ **Use care when gluing chains to hanger beams!** Read steps and test fit before gluing.
- Use a toothpick or fine applicator to place a droplet of ACC into the hole on hanger beam. Use tweezers to press the “squished” end link of chain into the hole. Make sure chain is pressed straight into the bottom of hanger beam and allow glue to set before removing tweezers. (Using tweezers to hold the end link will push back the second link and avoid gluing the chain links together.)
- ★ **Helpful reminder:** Working with these tiny pieces can be tedious. Get up, stretch your legs and take a break as needed! You’ll love the detail when it’s all finished.
- Repeat steps to secure the hanger-beam end of each chain as shown.
- Use weathering chalks and/or washes to weather the hanger chains in place. Use a fine brush and a light touch.
- ★ Now your car is ready to roll! Take a break and run an empty log train ... then gather some logs and choose your favorite technique for securing your railroad’s payload!



### Using Chains / General

- ★ **Review the different methods described and choose your favorite before you begin!**
- ★ If you run operating sessions that require easily removable logs to simulate movement of loaded and empty cars, then choose Technique #1 or #2. For one-piece log load

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castings, such as those offered by Rusty Rail, Technique #1 and #3 work best.

- ★ The kit includes enough chain to model the truck hanger chains and secure loads using any of the techniques shown -- using logs similar in size (5/8" diameter) to those shown. Additional chain may be purchased separately.
- ★ Visit our web page to see [LARGER PHOTOS](#) of the various chain techniques!

## Using Chains -- Easily Removable Loads #1

- ★ This technique wraps the chains around the entire load. It's the simplest variation!
- **Important:** We suggest that your pre-weather the chain for this technique. The kit includes "blackened" chain, but this still has a little bit of shine. We suggest that you measure the required length of chain as shown and pre-weather with chalks or washes prior to gluing.
- Step 1 -- Cut a piece of wax paper to fit across the bunks as shown (beneath logs). We'll be gluing these logs together with hot glue. The wax paper will prevent damaging the car's finish or accidentally gluing the load in place! Place bottom logs.
- Step 2 -- Add a few small dabs of hot glue where the top log will touch the lower logs. If you don't have hot glue, use a thick, pasty glue that won't run. Glue top log in place.
- Step 3 -- Remove logs. Place a piece of scrap paper next to car and make marks as shown. These will provide a guide for making sure the chains wrapped around the logs will fit between the bunks, so the load will sit flat.
- Step 4 -- Add more hot glue between the logs (underneath) to strengthen. Glue one end of chain in place beneath the logs. Wrap chain around to determine cut-off point. Trim chain and glue second end beneath logs. Repeat for second chain.
- For operating sessions that require easily changing "loaded" cars into "empties" use Technique #1 or #2!



## Using Chains -- Easily Removable Loads #2

- ★ One-piece load with chains placed between the logs. Many real railroads chained the bottom logs only and allowed weight of top logs to hold chain taut.
- **Important:** We suggest that your pre-weather the chain for this technique. The kit

includes "blackened" chain, but this still has a little bit of shine. We suggest that you measure the required length of chain as shown and pre-weather with chalks or washes prior to gluing.

- Step 1 -- Cut a piece of wax paper to fit across the bunks as shown before. We'll be gluing these logs together with hot glue. The wax paper will prevent damaging the car's finish or accidentally gluing the load in place! Place bottom logs as shown. Drape chain as shown, leaving enough hanging over each side to be glue underneath.
- Step 2 -- Place one chain at each end of load, **between** the log bunks. Push the chain into the open areas between the bottom logs. Add a few small dabs of ACC to secure the chain to keep it from shifting when top logs are added. Place glue dabs where they won't show on the finished load!
- Step 3 -- Use dabs of hot glue to secure top logs.
- Step 4 -- Remove logs. Place a piece of scrap paper next to the car and make marks as shown in previous section -- these will provide a guide for making sure the chains that are wrapped around the logs will fit between the bunks, so load will sit flat.
- Step 5 -- Add more hot glue between the logs to strengthen. Glue ends of chain in place beneath the logs using the paper template for placement. The additional glue between the logs will strengthen the load to endure handling when placing and removing the load.



## Using Chains -- Semi-Removable Loads #3

- ★ Use the "semi-removable" techniques #3 or #4 if you want a fancier appearance to the log tie-downs. The chains CAN be removed, but they are NOT quickly or easily removed on the layout. Instead, designate several cars as semi-permanent "loads" and several others as semi-permanent "empties" and stage these between operating sessions. These techniques take a little more patience, but the look is well worth the extra effort!



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- You can wrap the chain around the entire load or run the chain between the logs as desired. Adjust length of chain depending on your preference!



- Step 1 -- Form hooks from eye pins (Part K). Use needle-nose pliers to open the hook end as shown. Make a bend in stem of eye pin about 4 to 6 scale inches from hook -- a little more than 90 degrees. Cut off end about 4" scale. File burrs off end so chain will over wire.



- Work end link of chain over wire end. Use needle-nose pliers to crimp end of eye pin over chain as shown. Kit includes a couple extra eye pins to allow for mistakes!



- Step 2 -- Hook the chain onto the loop on the cheese block.

- Step 3 -- Place logs as desired and drape uncut end of chain over the logs. Alternative: You can chain ONLY the bottom logs and allow the top log to provide tension on the chain. Nice prototypical touch, but the top log will fall off when the car is handled!

- Step 4 -- Form second hook and hold against the chain to determine placement. The hook should be placed so that it will connect with the ring on the cheese block. See test fitting in next step.



- Step 5 -- Insert second hook in location determined in Step 4 and TEST FIT to make sure that it connects with the ring on cheese block. See photo in next column. Move as needed. Then trim chain, cut long stem on hook and crimp hook to chain.
- Repeat steps for second chain.



- Remove chains and treat with chalks or washes if additional weathering is desired. (Chains are "blackened" but still have a bit of shine.)

## Using Chains -- Semi-Removable Loads #4

- ★ Use the "semi-removable" techniques #3 or #4 if you want a fancier appearance to the log tie-downs. The chains CAN be removed, but they are NOT quickly or easily removed on the layout. Instead, designate several cars as semi-permanent "loads" and several others as semi-permanent "empties" and stage these between operating sessions. These techniques take a little more patience, but the look is well worth the extra effort!



- Step 1 -- Use the eyehooks provided to form hooks on one end of each chain.

- Step 2 -- Cut the chain to 5" length (for 5/8" diameter logs shown -- additional chain may be required if using larger logs.) Form wire hook on second chain as shown below.

- **Wire hook:** Use the fine wire (Part H) to form a wire hook as shown at bottom right. Make a bend roughly 3" scale from end of wire; insert thru chain; crimp 3" end over chain with needle-nose pliers. Make another bend 4-6" scale from the crimp and cut off the end of wire as shown. Test fit, then paint hook prior to final installation.



- ★ Photo on shows chain with additional weathering at top. Chain with eye-pin hook in center. Chain with wire hook at bottom.

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- Step 3 -- Attach rounded hook to hoop on cheese block. Place bottom row of logs and drape wire-hook end across logs.
- Step 4 -- Use tweezers to feed wire-hook end thru hoop on cheese block on opposite side of car. (We left this hook unpainted in an effort to make it show up in photos!)
- Step 5 -- Place top log. Wrap wire-hook over that and secure it to the chain on opposite side. If the chain is too long, clip off the end and form another wire hook in new location. Notice that we used a shorter chain at the rear of this car for variety.
- Step 6 -- Remove chains and paint or blacken the wire hooks. Add additional weathering to chains with chalks or washes if desired, then reassemble.
- ★ Technique #4 is my personal favorite ... but I look forward to seeing what you come up with! Send photos of your completed log cars for our Gallery! Thank you, Dallas



**Visit our website for more photos of finished model and lots of other great On30 kits!**

## Some larger photos of finished, empty car:



- ★ Boulder Valley Models is owned & operated by Dallas Mallerich -- an On30 modeler who shares your interests and enthusiasm. Please feel free to write or email with any questions or ideas that you may have!
- ★ Thank you for your continued support, interest, ideas and encouragement! -- Dallas

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