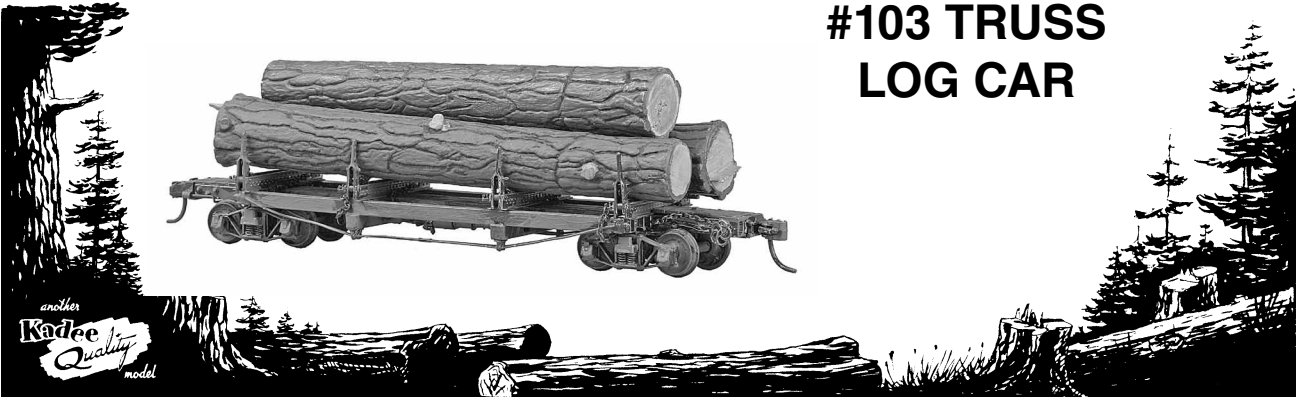
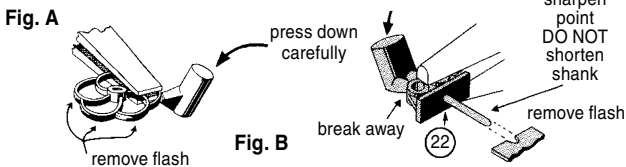


#103 TRUSS LOG CAR



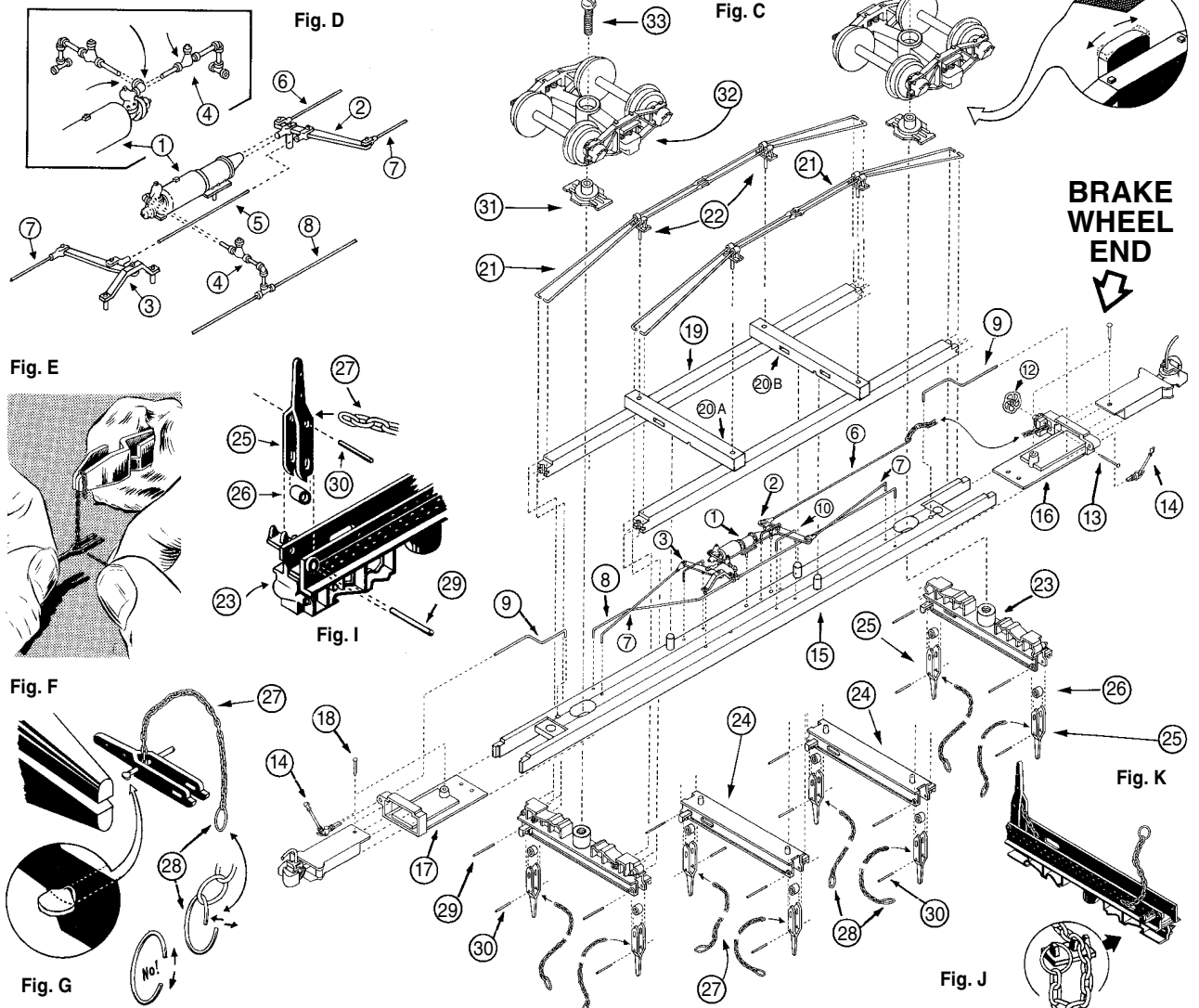
GENERAL INSTRUCTIONS: Read instructions completely to become familiar with individual parts and assembly procedure. Study exploded view Fig. C, note each part is numbered relating to text. Study pattern of pre-cast holes on underside of sill (15), compare to sketch and identify BRAKE WHEEL END. Pencil a letter "B" on underside at that end to avoid mix up later.

Clean flash from parts with a knife blade, or gentle file strokes. Flashing may be found in openings on sides and undersides of log bunks (23 & 24), on centrifugal dirt trap (4, Fig. D), queen posts (22), stakes (25) and brake wheel (12). Note dirt trap and piping must be detached from air tank (1) as shown in Fig. D. This part should be detached prior to removing flash from trap itself. The trap pipe cements into elbow on air tank later when assembling brake rigging on center sill. The brake wheel comes attached to a sprue which is removed by carefully gripping wheel with pliers as shown Fig. A, then apply finger pressure downward to break away sprue piece. Clean flash from holes in queen posts (22), then break away flash from shank (Fig. B). Lightly file point of shank to remove burrs, DO NOT shorten shank in the process. As with brake wheel, grip queen post with pliers while pressing down on sprue piece to break it away. Note also, end log bunks (23) are allowed back and forth movement in elongated holes of center sill (15). This is to facilitate capturing the truss system between end bunks.



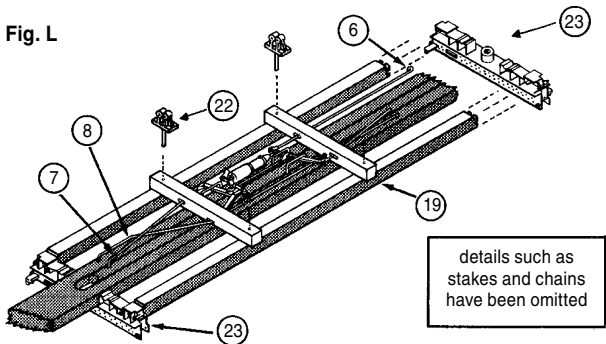
STAKE AND CHAIN ASSEMBLY: Logs sometimes were held to cars with chains wrapped around the load as a safety measure, usually when cars were interchanged for handling on common carrier roads. Private logging roads seldom followed this practice for their own traffic it seems. Those who wish, could procure chain for this purpose, or use sewing thread to simulate wire cable, which the prototypes also used. At any rate, on this model, the logs are held by stakes (25) standing erect in each end of the log bunks (23 & 24). Chain supplied is meant to attach to these stakes to adjust and lock them in position for loading.

From the length of chain supplied, cut a piece 5/8" long. LAY THIS ASIDE FOR LATER USE WITH THE BRAKE SYSTEM. Remaining chain is to be cut into eight equal parts, each about 1 7/8" long. One of these (27) is attached to each stake (25). Fig. E shows one method where a clamp type tweezer is buried in modeling clay, the chain gripped so one end hangs free. Hold stake so last link of chain is between holes in stake legs. Feed length of wire (supplied) through stake leg on one side, through end chain link, and finally through opposite stake leg. This forms chain anchor wire (30). With chain thus captured, flatten end of wire between pillar jaws. Trim squashed wire on dashed line (Fig. F inset). Leave enough flare to stop wire from pulling back through hole. Force flattened end close to stake side while wire is trimmed close to stake on opposite side. Repeat flattening and trimming here, as on first side. The object is to have as little excess wire beyond stakes sides as possible, otherwise stake will not fit down between bunk sides. Spread free ends of split grab ring (28) apart to enter through end link of stake chain (27). One grab ring is attached to each of the eight chains. Fig. G shows how NOT to spread this ring, instead follow the arrows, in Fig. H to spread ring ends sideways enough to clear chain link. After inserting chain link, close ends of ring together. **STAKE TO BUNK:** Insert plastic bushing (26) between legs of stake (25) and center over holes in lower end of stake (see Fig. I). Using wire provided, push length through hole in bunk end, through plastic bushing inside stake and out through other side of bunk. This forms stake pivot wire (29). Use pliers to force wire through with a twisting motion, wire being a snug fit in bushing creates friction to hold it in place. Trim wire close to bunk sides. With stakes in place, feed free end of chains (27) through side openings in bunk, opposite from stake location (see Fig. K where only one stake and chain is shown for clarity). To hold log load, stakes must be near vertical and prevented from falling outward by chain adjustment on opposite end of bunk. Here, chain links are caught between two lugs on bracket on bunk side (Fig. J). Excess chain drapes down. Its end brought up with grab ring (28) placed over a third outer lug on bracket. Lay these four completed bunk assemblies (23-24) aside until later.

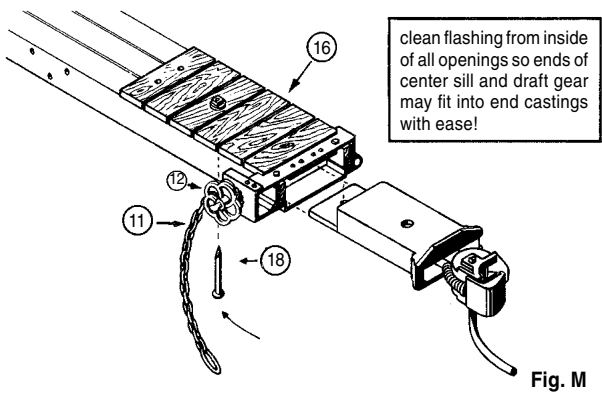


K-2 BRAKE SYSTEM: Be certain end of center sill (15) to bear brake wheel has been identified. Begin by placing air tank (1) with tapered end toward brake wheel end of car as seen in Fig. C, exploded view. Note that lever (2) has a clevis projection to enter into end of air tank (see Fig. D). Fit these together, then enter mounting studs of these parts into proper holes in center sill (15). Do this once on a trial basis without cement to gain a better idea of the procedure. Next, mounting studs of lever (3) are entered into holes in car body and at the same time, insert rod (5) into clevis openings of levers (2) and (3) as seen in Figs. C and D. Use cement on the joined parts. Dirt trap (4), briefly mentioned earlier, is to be detached from its original position as it comes joined to the triple valve on end of air tank (1). It is to be swung around to form a right angle with the air tank (Fig. D). Note also, air line pipe (8) must pass through opening of tee on end of dirt trap piping (4). One end angle of pre-bent pipe (8) can be reduced, using pliers, to allow it to pass through dirt trap tee. When this has been done restore bend in pipe to former angle. Slide dirt trap assembly along pipe (8) until correctly positioned to cement free end of piping into elbow on triple valve at end of air tank (see Figs. C and D). Cement ends of (8) into center sill. A halt must be called in brake system assembly at this point. This is because two rods (7) and another rod (6) must pass through slots in cross bearers (20A and 20B) of the truss system. This can be seen in Fig. L. Rod (6) must also pass through an opening in the end bunk closest to the brake wheel (Fig. a.). These rods are to be added later. Three staples (10) are supplied as supports, one for lever (3) and two for lever (2), as seen in Fig. C. These can be installed and cemented now.

Fig. L



ASSEMBLING TRUSS SYSTEM TO MODEL: Center stud projections of end bunk assemblies (23) are entered into extreme outer ends of elongated holes in center sill (15) so bunks are spread as far apart as possible. Flashing may be found on sides of center stud, make sure these areas are clean for a proper fit. Enter ends of truss rods (21) through holes in queen posts (22), (See supplement Instruction sheet for further clarification' feeding one queen post onto each end of each pair of rods. Handle these rods carefully since they will bend under pressure. Next, enter queen post shank pins into holes in cross bearers (20A and 20B). Truss rods can be kept in alignment much better if the piece of paper (supplied) is entered through the open turnbuckles across the complete set of rods. This prevents them from twisting around temporarily, then the paper can be removed once rods are secured into end bunks. Now secure the rod ends into the end slot of sill. (Refer to supplementary Instruction data Fig. U-1). Place this whole truss assembly on underside of center sill, being sure notches in the bearers fit properly over pipe "8" and align the holes on truss system with the posts on center sill (15). Once the truss system is located on center sill, slide end bunks (23) toward extreme inner ends of elongated holes in center sill, capturing the truss system between the two end bunks.



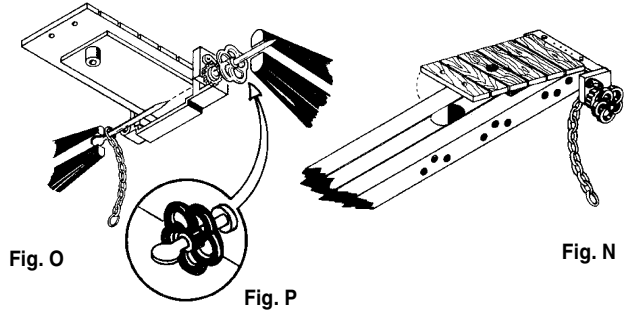
COUPLER AND DRAFT GEAR: Be sure end castings (16 and 17) are clear of flashing in all openings, especially where the thin ends of the center sill enter these castings. Note: End casting (16) bears a ratchet assembly to carry the brake wheel, this fits at car end earlier marked with a letter "B". Thus it is properly placed to accept the rod from the brake system. End casting (17) without brake ratchet, naturally fits the opposite end.

Now before proceeding further, flatten the head of the short 1/2" common pin with a pair of pliers. Thread it through the end link of the 5/8" piece of chain as shown in Fig. O. Next push pin all the way into the hole on the inside of end casting (16) and out through the brake ratchet. Put brake wheel on exposed pin end and cut off pin leaving about 1/16" protruding beyond brake wheel. With pliers,

Fig. R

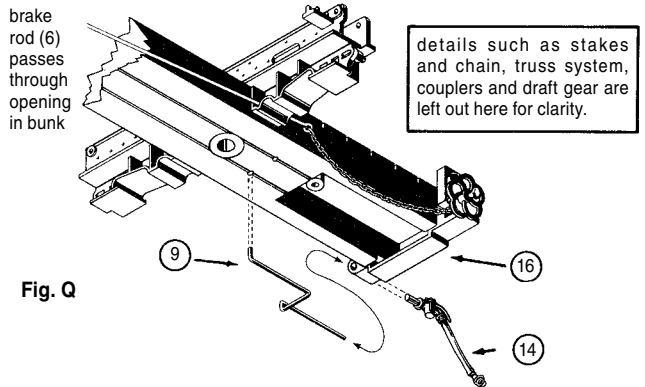


pinch pin as close to brake wheel as possible to flare it, cut off just enough of the flat so the wheel will not come off. (See Fig. O and Fig. P). Slide end castings onto ends of center sill (see Fig. N). Once the couplers have been fitted to the draft gear, enter these assemblies into end castings. Apply a little Kadee® #231 "Grease-em", burnishing and polishing will greatly reduce friction of working parts and improve coupler performance. Assemble the coupler as shown in Fig. R. Add #231 "Grease-em" to inside of coupler unit and work coupler back and forth. Be sure coupler consistently snaps back to center position before continuing further. Slide assembled draft gear unit into the end casting as shown in Fig. M and secure draft gear boxes to end sills by inserting pins (18) in mounting holes (see Fig. M and C). Position rod (6) in holes in cross bearer (20B) and log bunk (23) but do not secure to lever (2) yet. Now capture the end link of the 5/8" chain, from brake wheel, with the looped end of brake rod (6). Close the loop with pliers to secure the chain. Cement straight end of rod (6) into clevis on lever 2 (see Fig. a and Fig. C). Use our #205 or #206 coupler height gauge to check for the correct height and trip pin clearance. The HO-Scale N.M.R.A. standard for coupler height is the centerline of coupler at 25/64" (.390"). Use our #237 Trip Pin Pliers to carefully adjust the trip pin clearance if necessary.



FINAL ASSEMBLY: The two brake rods (7) can now be entered through slots in cross bearers so their straight ends cement into clevis openings of levers (2 and 3). The bent ends of rod cement into holes in center sill (see Fig. L). Install two air pipes (9), one at each end of car, by entering straight end of the rods into openings in end casting at rear of where air hoses (14) are located, then enter bent end into hole in center sill. All this can be seen in Fig. a. To prevent wheels from hitting center sill (15) on extremely tight radius curves, carefully scoop out wheel wells with a Sharp blade at the points where wheels touch sill. Likewise, on extremely tight curves, the bearing pad of truck frame could pass beyond corresponding pad on underside ends of end bunks, thus they might stub and catch when returning from the curve. To remedy this, file the top of truck bearing pad slightly round as seen in Fig. C (Inset).

Now the two center bunks (24) can be installed in the holes on the side sills (19) and across the center sill (15). These bunks are to be located directly over the cross bearers (20A and 20B). Insert 2-56 screw (33) through truck frame (32), then through king pin bearing plate (31) (with sprue removed) and thread into center stud of end bunks located in center sill (see Fig. C). Finally, cement air hoses (14) into openings at side of end castings (Fig. a).



Like this model !!! Then try our other super fine "Masters Builders" kits. #102 Skeleton Log Flat is the same as the #103 except it has no truss system, and only two bunks. The #101 Disconnected Log Car is a unique log hauling arrangement. The #104 Industrial Caboose is designed after logging prototypes. All cars are equipped with Kadee® Magne-Matic® couplers.

GLUING INSERT

To prevent losing knuckle springs by being dislodged use the following steps and supplies. Kadee® #241 Dual Tool (Manual Uncoupling Tool & Spring Pic), small piece of blue denim cloth, DUOCO® CEMENT or WALTHERS® GOO®, or similar type cement. **CAUTION:** Always follow safety instructions for the cement that you may be using.

1. To pick up spring place it on the cloth (this allows the small springs to be seen and picked up easier) and insert #241 Dual Tool (Manual Uncoupling Tool & Spring Pic) into spring between coils near one end. See Fig. 1.
2. Touch one end of the spring into the cement so that no more than one or two coils are coated (too much cement will hamper coupler performance). See Fig. 2.



3. Place glued end over the knuckle retaining post and then compress spring so that it may slip over the opposing shank retaining post. See Fig. 3.



4. Carefully remove pic from spring.

