

WALKER BULLDOG

U.S. ARMY 76mm M-41 LIGHT TANK

assembly
instructions



YOUR RENWAL BLUEPRINT MODEL

The U. S. Army M-41 Walker Bulldog Light Tank Weapon is another in a series of models built in strict accordance with specifications contained in official U. S. Army blueprints. We wish to take this opportunity to express our sincere gratitude to the U. S. Army Ordnance Corps, and the Office of the Chief of Information and Education, for generously furnishing complete and accurate data. Without this cooperation, the development of a completely authentic model would not have been possible. This model incorporates virtually all of the movable features of the actual weapon from traveling position through firing position, plus a unique suspension system wherein all Road Wheels are individually Spring Operated, similar to the real vehicle.

IN TRAVELING POSITION

The caterpillar action, necessary for fordability over uneven terrain, can best be demonstrated by pushing model over irregular object and surfaces while applying slight downward pressure. Note that authentic suspension permits realistic side to side and front to rear rocking. This feature alone should intrigue admirers of your completed model.

IN FIRING POSITION

The 76mm gun can be elevated 19.75 degrees, depressed 9.75 degrees and rotated 360 degrees by traversing turret. The crew members are easily adapted to combat positions. All of the hatches and doors operate, and the machine gun swivels, elevates and can be positioned for firing in either of two mounts on turret.

Your model is one of our SERIES "M", which are scaled $\frac{3}{8}$ in. = 1 ft. thus making possible a collection wherein all models are in true scale to each other.

PAINTING YOUR MODEL

Essentially, your model has been molded in authentic colors of Olive Drab for hull and turret, and black for the flexible track. However, it is recommended that certain small parts be painted to provide additional realism. Therefore, if you intend to paint your model we recommend that you fully examine all the steps in the instruction sheet for pieces requiring decoration. Complete the painting of all of these pieces prior to assembly, making certain to avoid getting paint on cementing areas. Use only enamel paints and allow sufficient drying time. Recommended tools for painting are a small (#1) artist's brush, and the end of a toothpick or opened paper clip for minute detailing, such as nuts, rivet heads, etc.

GENERAL INSTRUCTIONS

A. Notice that all parts are identified with a part number which is either stamped on the back of the piece or on a small detachable disc. Remove this disc once you properly identify it with the assembly you are working on.

B. Examine pieces and remove any other excess plastic with a sharp knife blade, making sure all protrusions have been removed. X-Acto knife sets are very handy for trimming and may be purchased at all hobby counters.

C. Purchase only cement for polystyrene plastic at your local store. Have a small cloth handy to wipe any cement you may accidentally get on your fingers.

D. See back of decals for instructions on how to apply.

"NO-SHOW" CEMENT TECHNIQUE

NO-SHOW CEMENTING is designed into your kit. The parts have been specifically engineered to enable you to complete a model which is free of burns and smears. The instructions and drawings have also been designed to carry out the "NO-SHOW" cementing feature, through the use of blue tones to indicate cementing areas. These design features will enable you to obtain favorable results and reward you with a model you will be proud to display.

1. First, locate and fit pieces together, prior to cementing.

NOTE: Most parts have been designed so that cement can be applied to underside or inside surfaces, to eliminate visible cement smears.

2. Apply cement wherever possible to underside or inside surfaces. Elsewhere, APPLY CEMENT SPARINGLY ONLY TO THE CEMENT AREAS INDICATED IN BLUE ON THE INSTRUCTION DRAWINGS. Hold or clamp parts until a permanent bond is assured.

LEGEND

- -Cementing area.
- ▨ -Special "No-Show" Cementing Points. Apply cement here after the parts are in assembled position.
- ▩ -Hidden cementing areas.

Follow numbered steps carefully for ease of assembly

NOTE: Circled numbers are ONLY for parts identification, and have no bearing on the assembly sequence.



NOTE: LIGHT GREY TONE INDICATES INDIVIDUAL PARTS. DARKER GREY TONE INDICATES PARTS THAT HAVE BEEN ASSEMBLED.

1 hull sides, wheel assembly

CHECK FIT OF PIECES AND TRIM IF NECESSARY

For ease of assembly and superior results be sure to take full advantage of "no-show" cement technique previously described. If you are planning to paint your model, examine entire instruction sheet for pieces that require paint and complete the necessary painting for the entire model before beginning assembly.

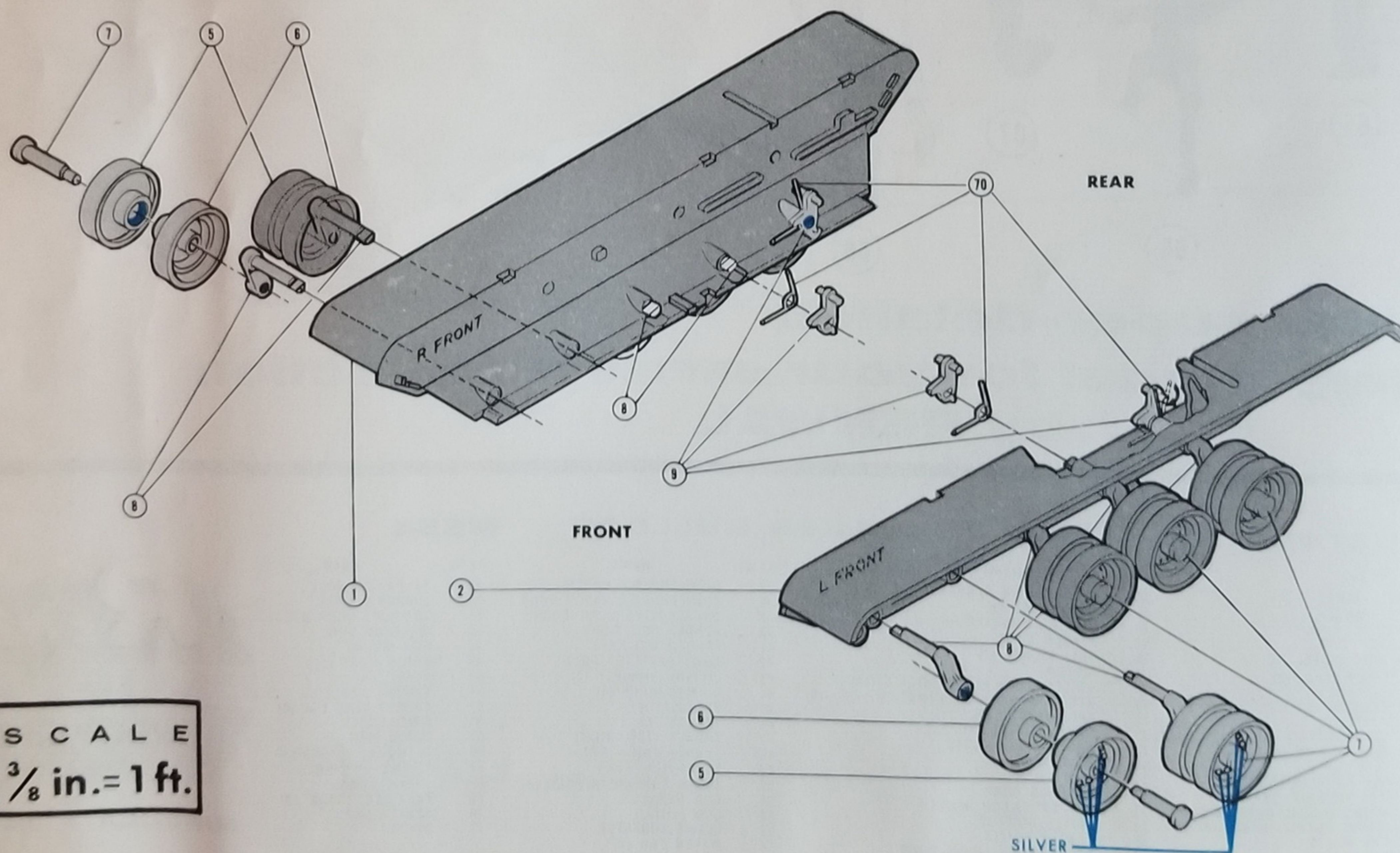
Find ten Outside Road Wheels (5) and ten Inside Road Wheels (6).

Note: Before proceeding with the following step, be sure all the road wheel assemblies are the same size in diameter. (A smaller diameter Compensating Wheel included in this kit looks exactly like the Road Wheels except . . . it is smaller.)

Join Wheels by applying cement to blue areas shown.

Find ten Road Wheel Pins (7) (make certain all pins are the same length), and ten Road Wheel Arms (8). Insert pins into Road Wheel assemblies and join to Arms by placing small amount of cement into hole in Arm and inserting Pin. Road Wheels should rotate freely.

Now position Right Hull Panel (1) making certain the word *front* appears as shown. Insert Arm and Wheel assembly into hole in Panel and place hole in Spring (70) over protruding Arm as shown. Study drawing carefully and insert "D" shaped hole in Spring Lever (9) over protruding "D" shaped Arm. Permanently join Arm and Spring Lever by applying cement to area shown. Assembly should pivot freely. Note: After cement has dried thoroughly, Springs can be flipped over pin on Spring Lever. Therefore, while waiting for cement to dry, it is best to join all Road Wheel assemblies to Right Hull Panel and Left Hull Panel (2) as shown, and then properly position Springs.



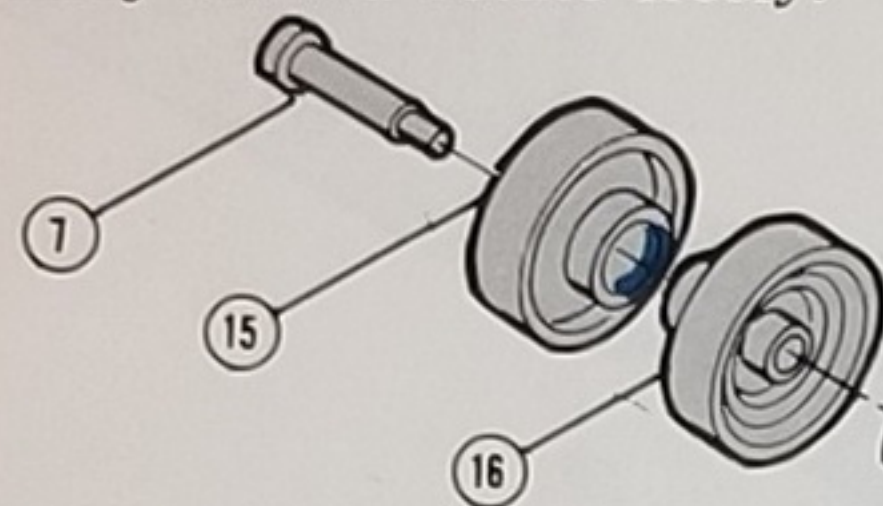
SERIES
M SCALE
3/8 in. = 1 ft.

2 idler, drive wheels, plate

CHECK FIT OF PIECES AND TRIM IF NECESSARY

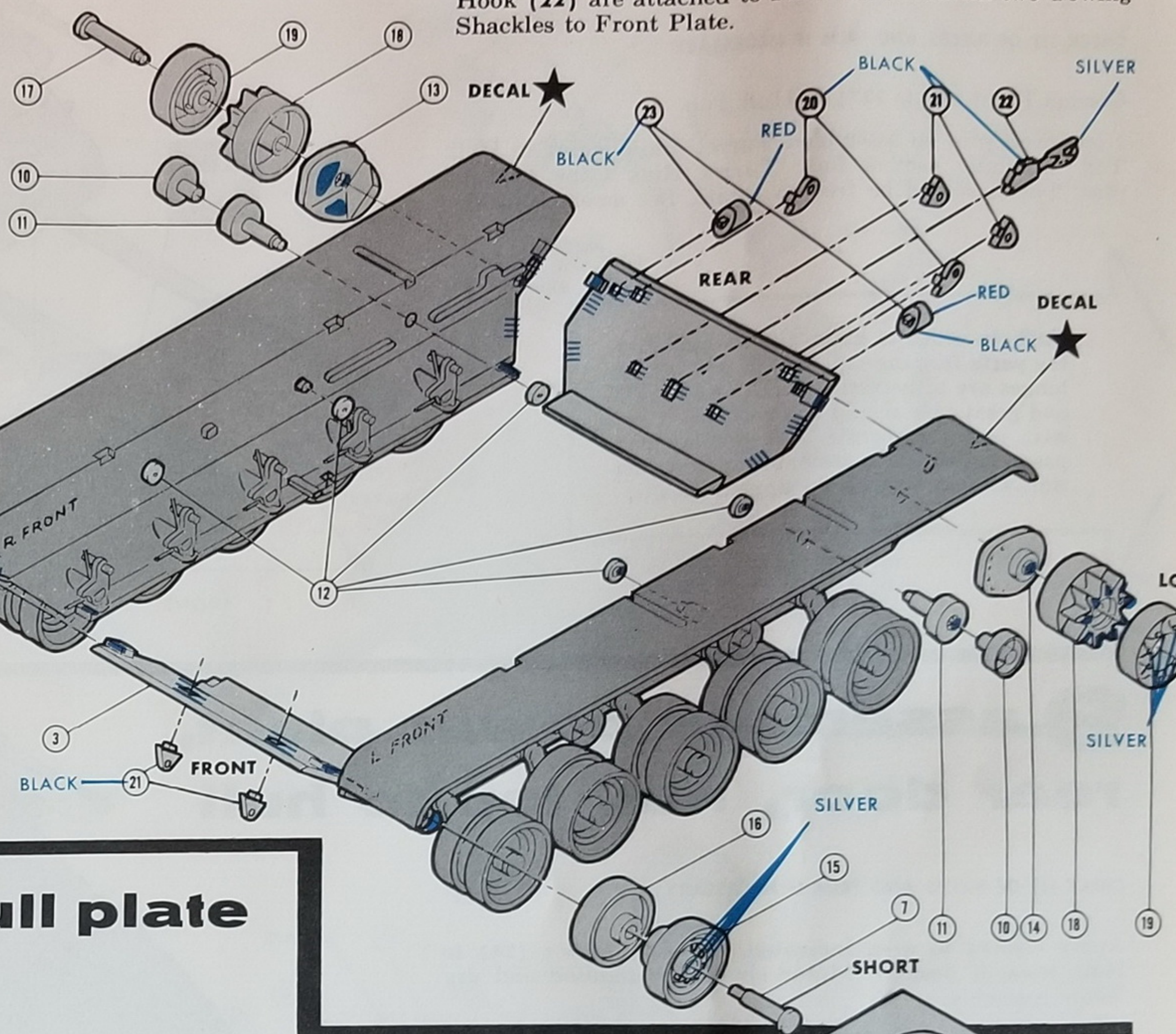
Join six Idler Wheels—Outside (10) to six Idler Wheels—Inside (11). Insert assembled Idlers into holes in Hull and permanently attach by carefully applying cement to recess in Idler Wheel Cap (12) and placing Cap over protruding Idler pin. Idler Wheels should rotate freely.

Cement Final Drive Housing Left and Right (13-14) to Hull assembly. Join two Final Drives (18) to two Final Drive Sprockets (19). Now carefully examine four remaining Pins in this kit and insert two of the longest Pins—Final Drive Pins (17) into holes in Sprocket assemblies. Join Sprockets to Hull assembly by placing small amount of cement into hole in Housing and inserting Pin and Sprocket assembly. Assembly should rotate freely.



Join two Compensating Wheels—Inside and Outside—(15-16). Insert remaining two Road Wheel Pins (7) into holes in Compensating Wheels. Join to Hull as shown. Wheels should rotate freely.

Join Rear Plate (4) to Right Hull Panel (1) by applying cement to area shown. In the same manner join Front Plate (3) to Right Hull Panel. Now join Left Hull Panel (2) to assembly by using same procedure. For a stronger assembly, apply cement to special "no-show" areas indicated on drawing. Allow cement to dry.



Insert Tail Lights (23) into cutout in Rear Plate on Hull and apply cement to tab in cutout. In the same manner Rear Hooks (20), two Towing Shackles (21) and Pintle Hook (22) are attached to Rear Plate. Cement two Towing Shackles to Front Plate.

3 flexible tracks, hull plate

CHECK FIT OF PIECES AND TRIM IF NECESSARY

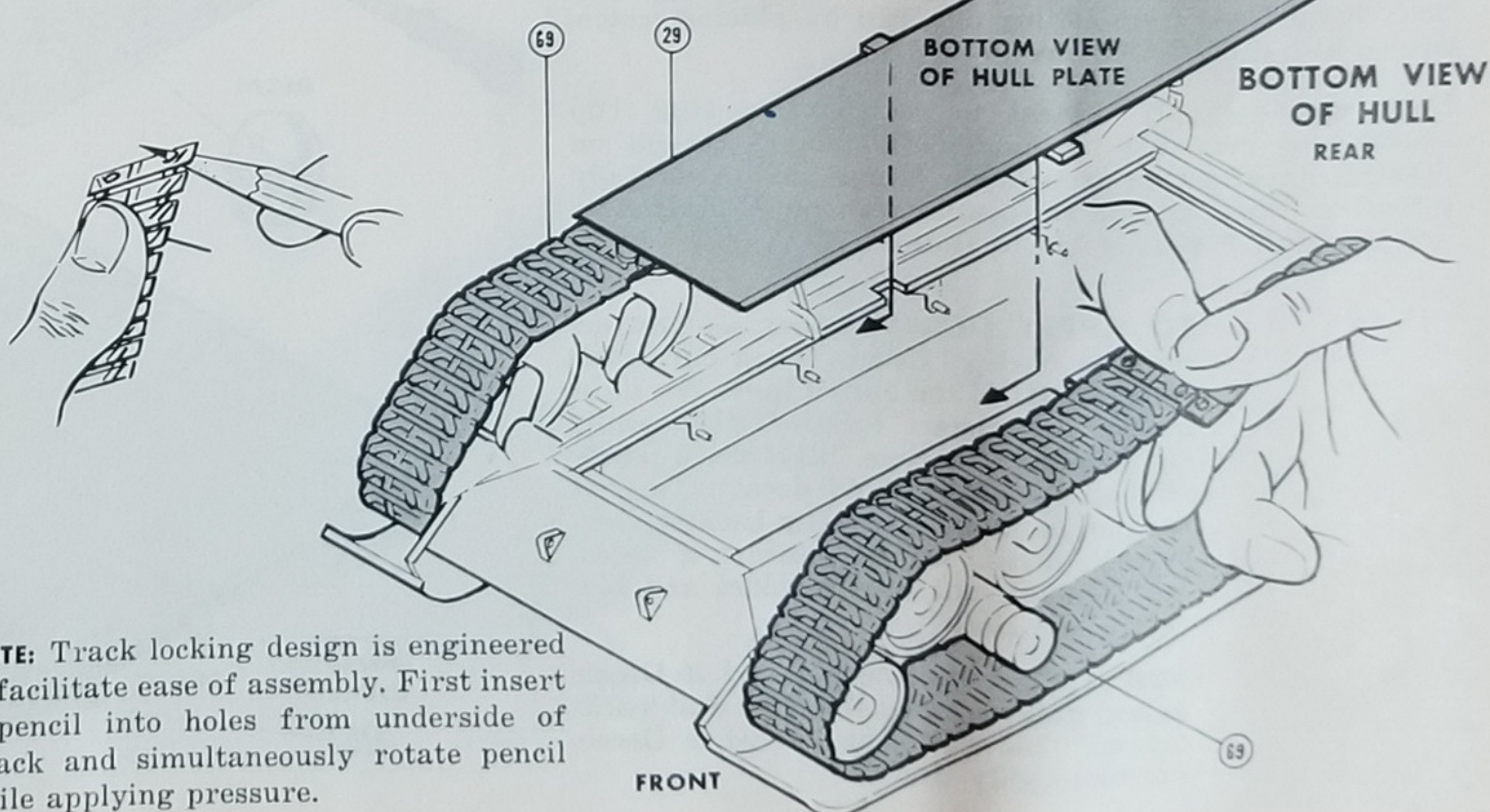
Flexible Tracks (69) are fastened to assembly by engaging teeth on Track with teeth on Drive Sprocket and threading Tracks completely around Idlers and Road Wheels until two ends are positioned for fastening. (Note direction of track design for authentic position.) Check Road Wheel action by pushing assembly along flat surface and over an obstacle such as a pencil. Observe realistic action of Road Wheels independently motivated by unique Spring suspension. The Hull can be rocked forward, backward and from side to side.

At this point Hull Access Plate (29) should be assembled to the Hull.

Note: The Access Plate has been designed into your model to satisfy the curiosity of those individuals, who admire and examine your completed model, and would like to see the Road Wheel Spring mechanism. Also, should any of the Spring Levers become loose, the Access Plate enables you to make the repairs.

Make certain the front of assembled Hull is facing in direction shown and Access Plate positioned as shown in drawing. Now rest forward end of Plate against the top of forward ledge on Hull so that it overlaps by about 1/32 inch. Tabs on Plate should line up with cutouts in Hull. Press tabs into cutouts and slide Plate forward. Press both ends of Plate gently so that small pads on inside surface of Plate lock ends in place.

NOTE: Track locking design is engineered to facilitate ease of assembly. First insert a pencil into holes from underside of Track and simultaneously rotate pencil while applying pressure.



4 turret assembly, 76mm gun, tarpaulins, box

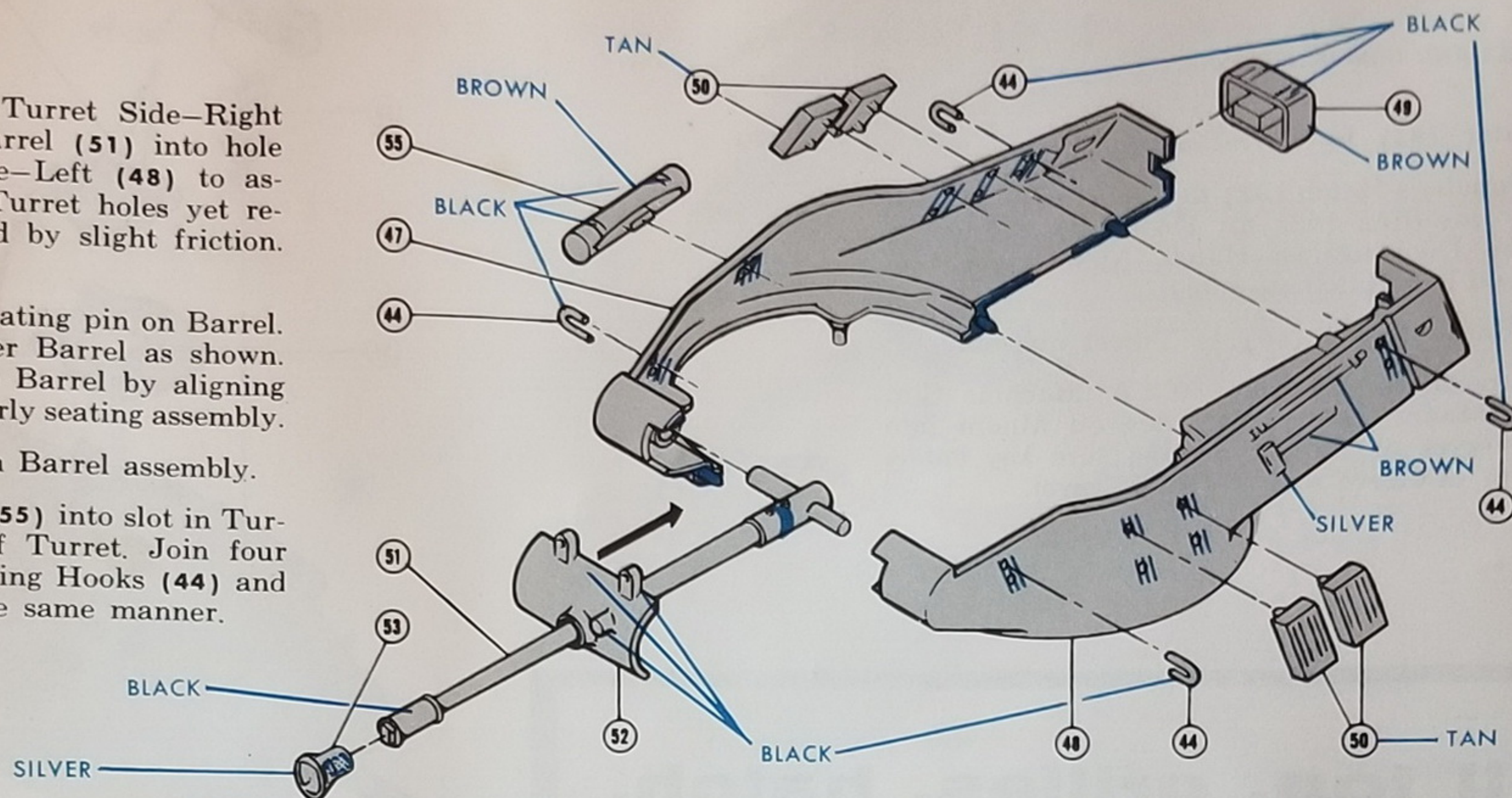
CHECK FIT OF PIECES AND TRIM IF NECESSARY

Apply cement to area indicated on Turret Side-Right (47) and insert large pin on Gun Barrel (51) into hole in Turret. Carefully join Turret Side-Left (48) to assembly. Gun Barrel should pivot in Turret holes yet remain in any desired position provided by slight friction. Allow cement to dry.

Apply cement to surface near small locating pin on Barrel. Position hole in Gun Shield (52) over Barrel as shown. Slide Shield along Barrel and join to Barrel by aligning small pin with slot in Shield and properly seating assembly.

Now join Flame Arrestor (53) to Gun Barrel assembly.

Insert locating tab on Tarpaulin Roll (55) into slot in Turret and apply cement from inside of Turret. Join four Small Tarpaulin Packs (50), four Lifting Hooks (44) and Tarpaulin Pack (49) to Turret in the same manner.



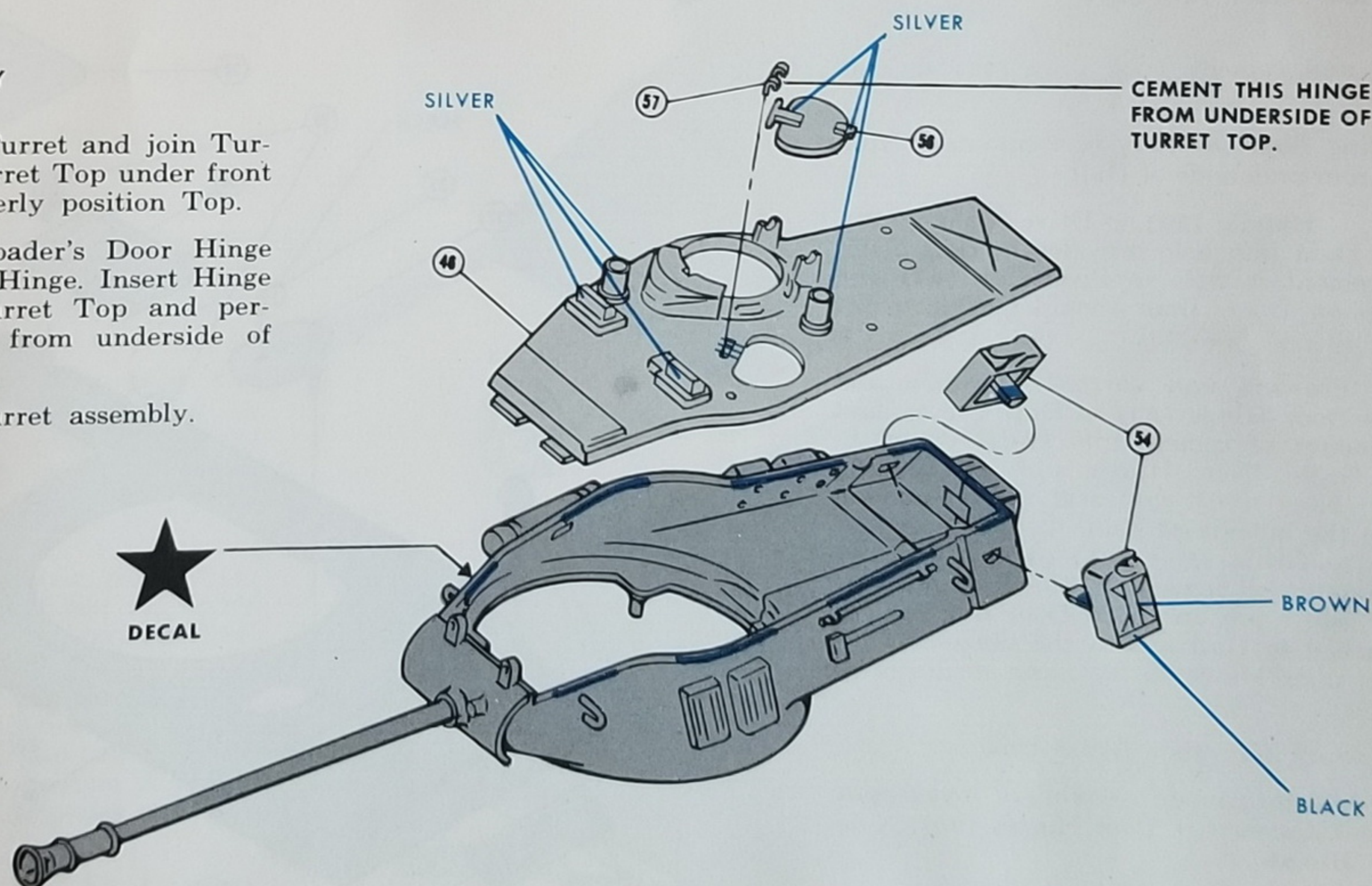
5 turret top, hooks, auxiliary cans

CHECK FIT OF PIECES AND TRIM IF NECESSARY

Apply cement to area indicated on Turret and join Turret Top (46) by inserting tabs on Turret Top under front ledge on assembled Turret and properly position Top.

Assemble Loader's Door (56) to Loader's Door Hinge (57) by inserting pins on Door into Hinge. Insert Hinge and Door assembly into slot in Turret Top and permanently join by applying cement from underside of Turret Top. Door should pivot freely.

Cement two Water Cans (54) to Turret assembly.



6 complete turret assembly

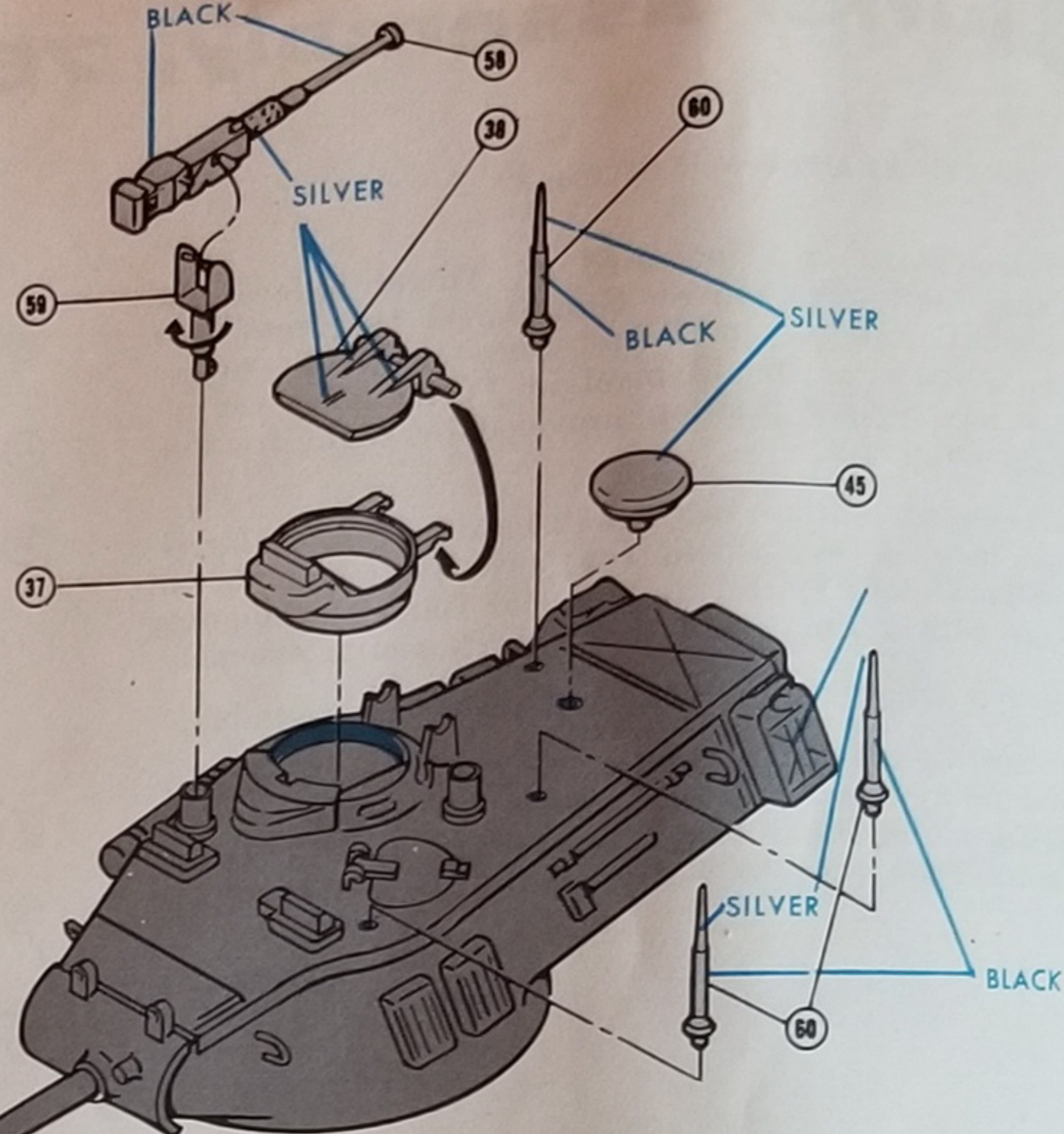
CHECK FIT OF PIECES AND TRIM IF NECESSARY

Cement Ventilator (45) to Turret assembly.

Assemble Commander's Hatch (37) to Commander's Hatch Door (38) by inserting pins on Door into cutouts in Hatch and close Door against Hatch. Apply cement to hole in Turret and join Hatch assembly.

Cement three Radio Masts (60) to Turret assembly.

Now carefully position and snap 50 cal. Machine Gun (58) into Gun Mount (59). Insert key on Mount into either of two sleeves on Turret making sure key enters cutout at bottom of sleeve and is free to pivot.



7 hull top, grilles, hatch, door, tool box

CHECK FIT OF PIECES AND TRIM IF NECESSARY

Position as shown and cement Tool Tray (31) to Hull Top (30).

Insert tabs on Lifting Shackles (43) into cutouts in Hull and apply cement from underside of Hull.

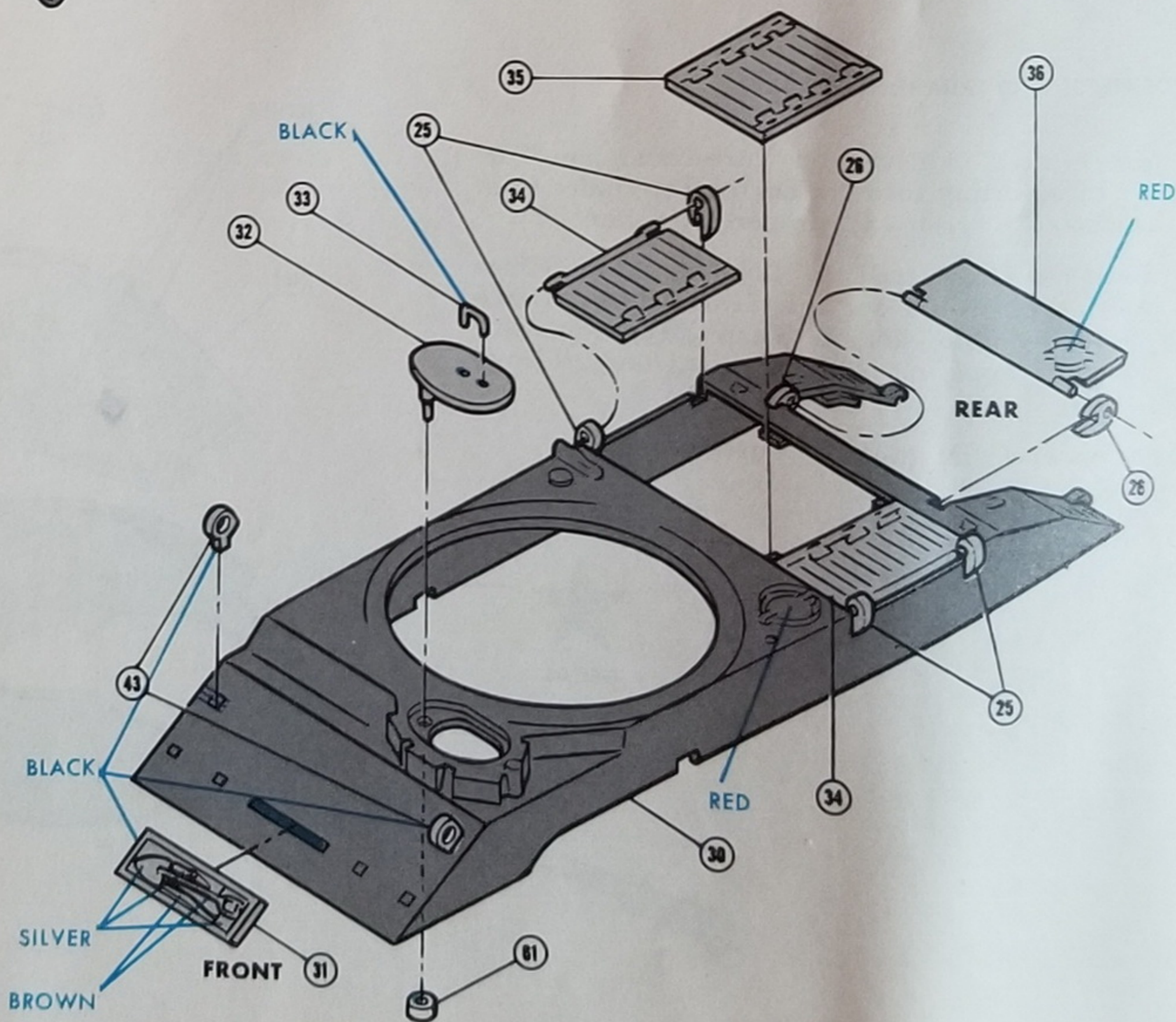
Cement Driver's Handle (33) to Driver's Door (32). Now insert pin on Door into hole provided in Hull. Place small amount of cement in hole in Pivot Cap (61) and place Cap over pin on Door. Door should be free to lift up and pivot.

Carefully examine drawing and correctly position and assemble one Grille Door Hinge (25) to Hull Top by first placing a small amount of cement into Hinge cutout in Hull Top. **Note:** Grille Door Hinges are the smallest Hinges in this kit. Now insert and seat Hinge, making sure short leg is on the outside of Hull. Assemble another Grille Door Hinge to Grille Door (34) as shown. Carefully apply small amount of cement to other Hinge cutout in Hull Top. Now insert pin on Grille Door into hole in Hinge already attached to Hull and at the same time inserting and seating other Hinge. Grille Door should open and close freely.

Repeat above procedure for other Grille Door.

Repeat procedure again for proper assembly of Accessories Front Door (36) and Accessories Door Hinges (26). Note proper position for Hinges.

Center Grille (35) is shown in this step for simplicity and should be positioned over Motor opening (without cementing) when model is complete.



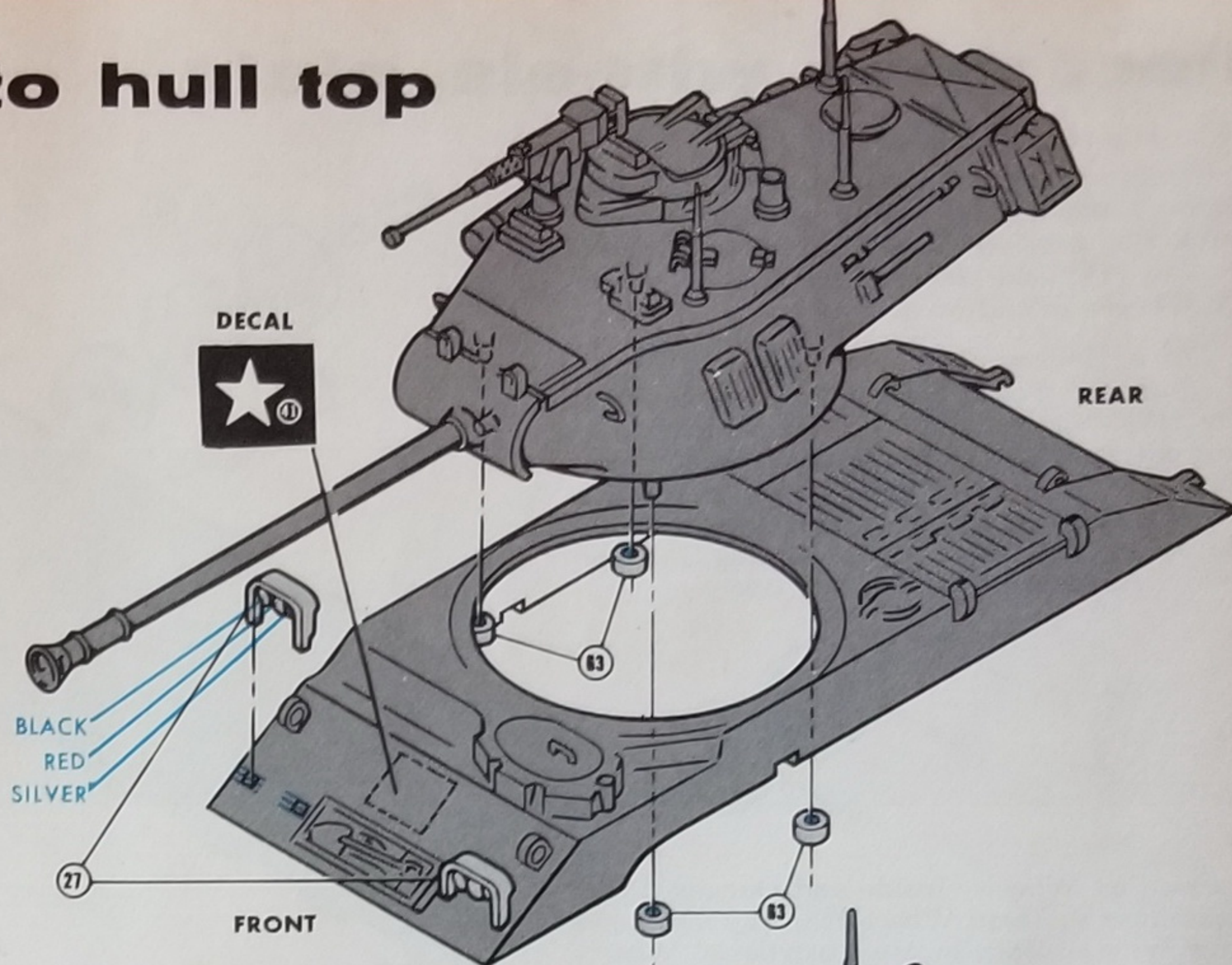
8 assemble turret to hull top

CHECK FIT OF PIECES AND TRIM IF NECESSARY

Cement Front Lights (27) to Hull Top.

Now insert pins on assembled Turret into opening in Hull Top. Carefully cement four Turret Ring Caps (63) to pins. Turret should be free to rotate. Set assembly aside.

NOTE: In order to maintain authenticity, the parts forming the Hatch and Grille hinges are of necessity small and fragile and great care should be exercised if you wish parts to operate. For display purposes, model can be cemented in any position without any loss in appearance.



9 assemble power plant, rear door, hull top to hull

CHECK FIT OF PIECES AND TRIM IF NECESSARY

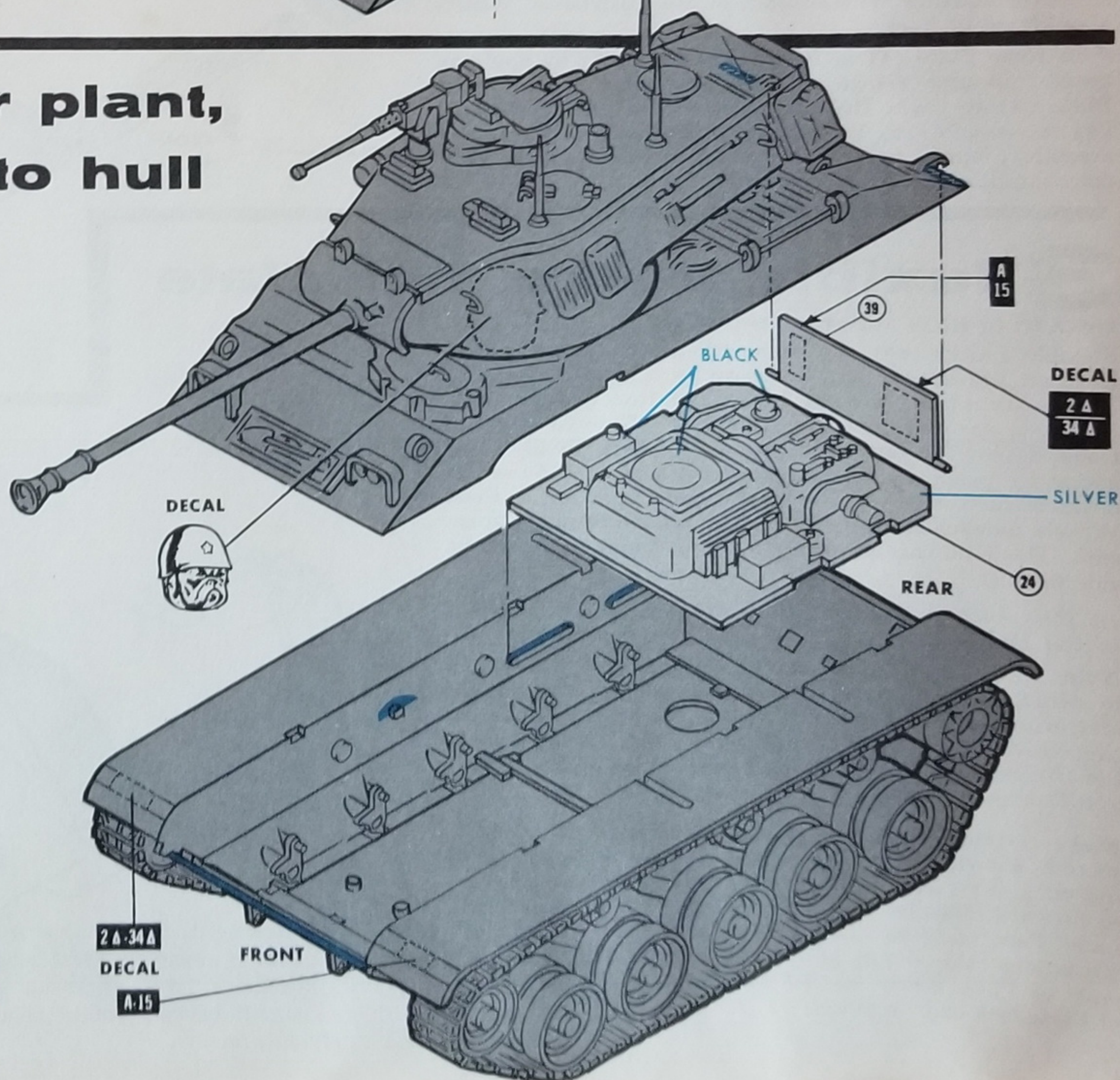
Apply cement to area indicated and join Motor (24) to Hull. **Note:** if desired, Motor should be painted and dry before assembly.

Assemble Accessories Rear Door (39) to Hull Top by inserting pins on Door into Hinges on Hull and closing Door. Keep Door from falling off Hull by placing scotch tape on both ends of Door temporarily.

Now carefully apply cement to rear end of Hull Top assembly as indicated by hidden "no show" cement on drawing. Avoid getting cement on Hinge pins. Also apply cement to front ledge and locating tab on Hull Bottom and join Hull Top assembly to Bottom.

TO APPLY DECALS—First see instructions on back of decals. Then cut decals apart **INSIDE** the dotted lines. See illustration for correct location, then apply one subject at a time. Slide decal partly off paper backing, hold decal in correct position on model, then slip backing from beneath decal. Adjust position if necessary, smooth out any wrinkles and blot with a soft cloth.

NOTE: Do not become alarmed if Decals appear milky against the olive drab background. This will disappear when Decals are thoroughly dry.



10 final assembly

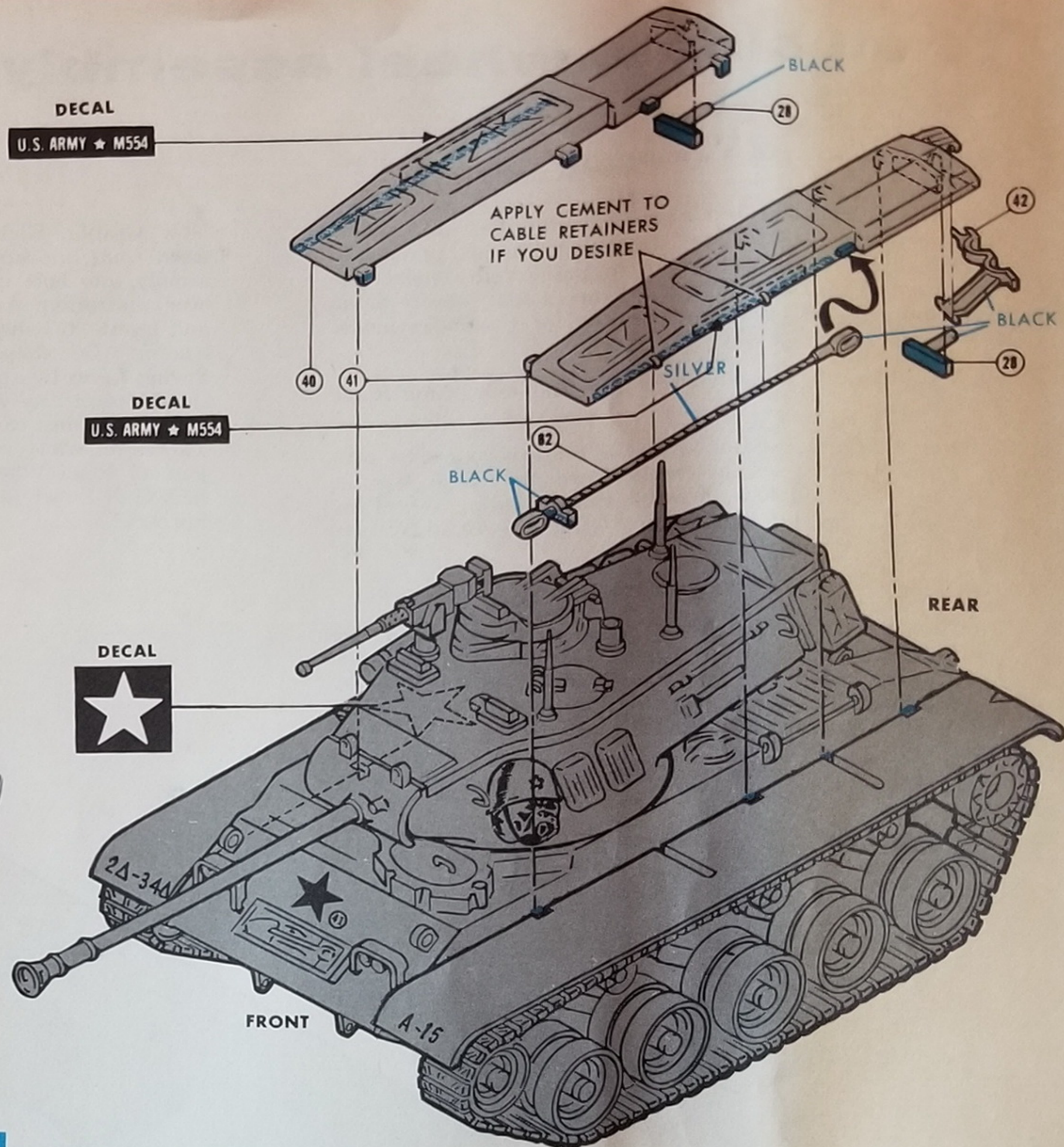
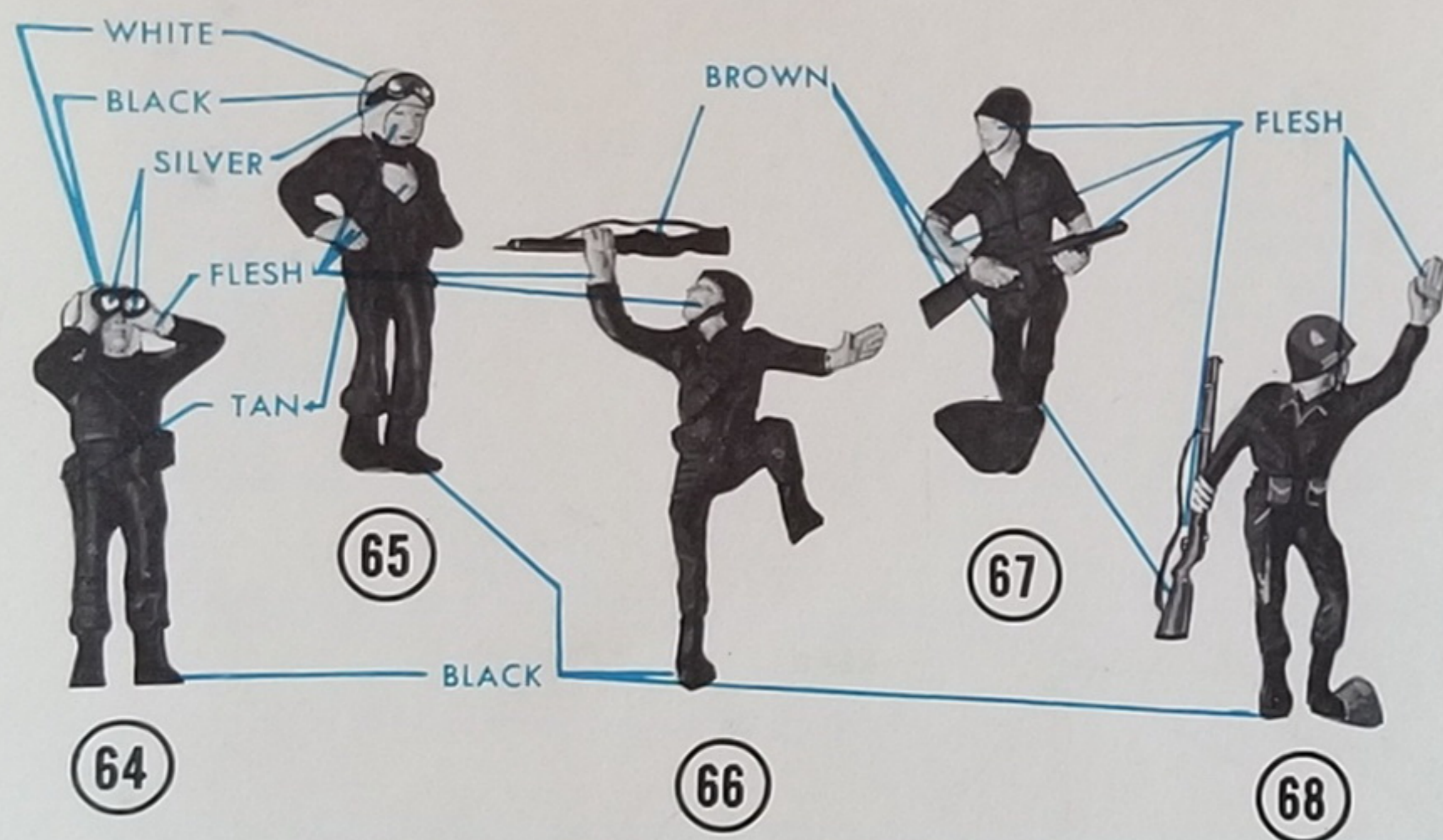
CHECK FIT OF PIECES AND TRIM IF NECESSARY

Cement Exhaust Pipe (28) to Fender Box-Right (40).
Join Fender Box to Hull.

Cement remaining Exhaust Pipe to Fender Box-Left (41).
Apply cement to tab on Fender Box-Left as shown and
carefully position Towing Cable (62) as shown. Now insert
loop on Cable over tab on Box and hook Cable into
two "U" shaped retainers. Now insert Gun Traveling Lock
(42) into "U" shaped hinge on Fender Box and join
assembly to Hull.

Center Grille previously mentioned in step number 7 can
be placed above Motor and your model is complete.

Crew members can be positioned in or out of the vehicle as
desired.



Another super-detailed
military model for your SERIES **M** collection
... by RENWAL

PARTS LIST FOR YOUR SERIES **M** WALKER BULLDOG

| Part No. | NAME |
|----------|--------------------------------|
| 1 | RIGHT HULL PANEL |
| 2 | LEFT HULL PANEL |
| 3 | FRONT PLATE |
| 4 | REAR PLATE |
| 5 | OUTSIDE ROAD WHEEL (10) |
| 6 | INSIDE ROAD WHEEL (10) |
| 7 | ROAD WHEEL PIN (12) |
| 8 | ROAD WHEEL ARM (10) |
| 9 | SPRING LEVER (10) |
| 10 | IDLER WHEEL-OUTSIDE (6) |
| 11 | IDLER WHEEL-INSIDE (6) |
| 12 | IDLER WHEEL CAP (6) |
| 13 | FINAL DRIVE HOUSING-RIGHT |
| 14 | FINAL DRIVE HOUSING-LEFT |
| 15 | COMPENSATING WHEEL-OUTSIDE (2) |
| 16 | COMPENSATING WHEEL-INSIDE (2) |
| 17 | FINAL DRIVE PIN (2) |
| 18 | FINAL DRIVE (2) |

| Part No. | NAME |
|----------|--------------------------------------|
| 19 | FINAL DRIVE SPROCKET (2) |
| 20 | REAR HOOK (2) |
| 21 | TOWING SHACKLE (4) |
| 22 | PINTLE HOOK |
| 23 | TAIL LIGHTS (2) |
| 24 | MOTOR |
| 25 | GRILLE DOOR HINGE (4) (1 Extra) |
| 26 | ACCESSORIES DOOR HINGE (2) (1 Extra) |
| 27 | FRONT LIGHT (2) |
| 28 | EXHAUST PIPE (2) |
| 29 | HULL ACCESS PLATE |
| 30 | HULL TOP |
| 31 | TOOL TRAY |
| 32 | DRIVER'S DOOR |
| 33 | DRIVER'S DOOR HANDLE |
| 34 | GRILLE DOOR (2) |
| 35 | CENTER GRILLE |
| 36 | ACCESSORIES FRONT DOOR |

| Part No. | NAME |
|----------|--------------------------|
| 37 | COMMANDER'S HATCH |
| 38 | COMMANDER'S HATCH DOOR |
| 39 | ACCESSORIES REAR DOOR |
| 40 | FENDER BOX RIGHT |
| 41 | FENDER BOX LEFT |
| 42 | GUN TRAVELING LOCK |
| 43 | LIFTING SHACKLE (2) |
| 44 | LIFTING HOOK (4) |
| 45 | VENTILATOR |
| 46 | TURRET TOP |
| 47 | TURRET SIDE-RIGHT |
| 48 | TURRET SIDE-LEFT |
| 49 | TARPAULIN PACK |
| 50 | SMALL TARPAULIN PACK (4) |
| 51 | GUN BARREL |
| 52 | GUN SHIELD |
| 53 | FLAME ARRESTOR |
| 54 | WATER CAN (2) |

M554

| Part No. | NAME |
|----------|---------------------|
| 55 | TARPAULIN ROLL |
| 56 | LOADER'S DOOR |
| 57 | LOADER'S DOOR HINGE |
| 58 | MACHINE GUN |
| 59 | GUN MOUNT |
| 60 | RADIO MAST (3) |
| 61 | PIVOT CAP |
| 62 | TOWING CABLE |
| 63 | TURRET RING CAP (4) |
| 64 | COMMANDER |
| 65 | RADIO MAN |
| 66 | CLIMBING RIFLEMAN |
| 67 | TOMMY GUNNER |
| 68 | INFANTRYMAN |
| 69 | FLEXIBLE TRACK (2) |
| 70 | SPRING (10) |
| 71 | DECALS |

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BLUEPRINT
MODELS
BUILD THE FINEST

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RENWAL
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MODELS
BUILD THE FINEST



RENWAL "NO-SHOW" CEMENT TECHNIQUE

THE INDIVIDUAL PARTS OF THIS KIT ARE NOT ONLY DESIGNED TO INCORPORATE THE ULTIMATE IN AUTHENTIC DETAIL, BUT ARE ALSO PAINSTAKINGLY ENGINEERED TO INCLUDE SPECIAL CEMENTING SURFACES SUCH AS TABS, RIBS, SHOULDERS, ETC. USING THESE FEATURES IN COMBINATION WITH OUR UNIQUE ASSEMBLY DRAWINGS AND PROCEDURE, WE FEEL THAT YOUR EFFORTS AND OURS WILL BE AMPLY REWARDED BY A CLEAN, DURABLE, QUALITY SCALE MODEL OF SUPERIOR CRAFTSMANSHIP.

INTERESTING FACTS about your **WALKER BULLDOG** U.S. ARMY 76mm M-41 LIGHT TANK

THE U. S. ARMY WALKER BULLDOG TANK was the first completely new tank built by the Army since World War II. The existence of production models was publicly announced in March 1951. The Army provided a plant in Cleveland for the contractor, the Cadillac Division of General Motors, and assisted that company in tooling up for production.

This Light Tank is designed to be fast and highly maneuverable. It is used for probing, reconnaissance and patrol duty, and for knocking out any intervening light enemy opposition. Its primary mission is to detect points of enemy strength and weakness and to report such observations back to the Army Commander. The M-41 also has the ability to destroy small enemy units which might impede progress of our main forces. It also meets the modern demand of air transportability.

When this speedy little fighter arrived to support U.N. Forces on the Korean Battlefield, the enemy began to encounter much difficulty with this destructive and elusive "Bulldog." By the time enemy batteries managed to bring fire upon its last known position, most of their ammunition was expended upon empty target areas. When an enemy gunner was fortunate enough to get the "Bulldog" in his sights, he found it an almost impossible target, due to its extremely low silhouette and large number of deflecting surfaces designed into its hull and turret

armor. The Walker M-41 Light Tank has truly proven itself to be the "Bulldog" of Democracy.

GENERAL ORDNANCE DATA - The 76mm Gun Tank is an armored, full track, low silhouette, light combat vehicle, mounting a 76mm Gun. A cal. 50 machine gun is mounted on turret roof. The contours of hull and turret were designed for maximum projectile deflection. This vehicle carries a crew of four. Combat weight is 26 tons.

This vehicle is powered by a Continental 500 h.p. six cylinder, horizontally opposed, air cooled gasoline engine, with overhead valves and a single camshaft for each bank of three cylinders. The engine is supercharged; two conventional float-type carburetors are used, one for each bank of three cylinders. Cooling is provided by one axial flow fan mounted over the engine. Power is transmitted to the final drives and track sprockets through a cross drive transmission. Maximum speed of the vehicle is in excess of 40 mph with a cruising range of approximately 120 miles. Fuel capacity is 140 gallons. Cost to produce this vehicle is \$135,000.00.

The hull is a welded unit made up of armor steel castings, plates, and sections welded together. The "V" shaped front section is welded to the hull floor and side plates. The top of the "V" extends up and back to form the front of the vehicle. The rear sec-

tion is welded to the floor and side plates. The crew compartment is separated from the engine compartment by a bulkhead.

The removable engine compartment grilles (directly over the engine cooling fan) are attached to a frame work which is bolted to the hull. Hinged doors and grilles provide protection and accessibility to all other parts of the engine compartment.

The turret mounts the 76mm Gun which can be traversed 360 degrees in either direction both manually and hydraulically. The 76mm Gun can be elevated 19 $\frac{3}{4}$ degrees and depressed 9 $\frac{3}{4}$ degrees both manually and hydraulically.

Each road wheel is attached to the vehicle by a forged steel support arm which is independently sprung by a torsion bar extending across the hull immediately above the floor. The vehicle's fordability is 48 inches and can climb obstacles 28 inches in height plus ability to span a ditch 6 feet wide.

When the gun is in traveling position the length of the vehicle is 275 inches long, 128 $\frac{1}{2}$ inches wide and 108 inches high.

Numerous types of 76mm ammunition, such as Armor Piercing, High Explosive, Tracer Smoke, etc., can be fired from the 76mm Gun. Shells vary in length from 31 to 34 inches and projectiles weigh approximately 8 to 15 pounds.

MADE OF TOUGH, DURABLE HIGH-IMPACT POLYSTYRENE PLASTIC

RENWAL • MINEOLA, NEW YORK

SERIES
M
SCALE
3/8 in. = 1 ft.

WALKER BULLDOG

WITH BATTERY OPERATED
ELECTRIC MOTOR

SPECIAL

MOTORIZING INSTRUCTIONS

M 444

RENWAL
BLUEPRINT
MODELS
BUILD THE FINEST

LEGEND

- Cementing Area
- Hidden Cement Areas
- Lubricating Points

DO NOT HURRY!
Care, deliberation & patience are required in every assembly procedure or your model will not operate.

TO BUILD YOUR MOTORIZED WALKER BULLDOG, follow these instructions first, and complete the Motorizing Assemblies prior to beginning Hull Assembly shown on the large General Instruction Sheet.

THIS MOTORIZING KIT has been engineered to include the additional parts required to build a Battery-Operated (forward-reverse) model of this famous military vehicle. You will find that the detailed plastic Motor, Part (24) (shown in General Instructions Step 7), is to be eliminated and replaced by the Drive & Electric Motor Assembly. Also, two Drive Wheel Pins (17) shown in Step 2 of General Instructions are replaced by a metal Drive Axle (U). The Front and Rear Hull Plates (3-4) are also to be replaced by Front Hull Plate (N) and Rear Hull Plate (O). A Small Bearing Plate (R) is mounted inside the Left Rear Hull Side to accept the Small Gear Shaft, and the nearest Spring Lever (9) is trimmed for clearance as shown in Drawing 4.

IMPORTANT NOTICE!

THESE INSTRUCTIONS MUST BE COMPLETED FIRST, BEFORE BEGINNING STEPS SHOWN ON LARGE GENERAL INSTRUCTION SHEET!

NOW COMPLETE THESE ASSEMBLIES PRIOR TO BEGINNING GENERAL ASSEMBLY . . .

1 assemble drive & motor unit

CHECK FIT OF PARTS AND TRIM IF NECESSARY

Press Motor Pinion (J) over shaft on Electric Motor (W) until end of Shaft is flush with Pinion. Find Gear Box & Motor Mount (E) and insert Motor with Pinion into position as shown in Drawing 1A. Cement Motor Bearing Top (G) in location shown.

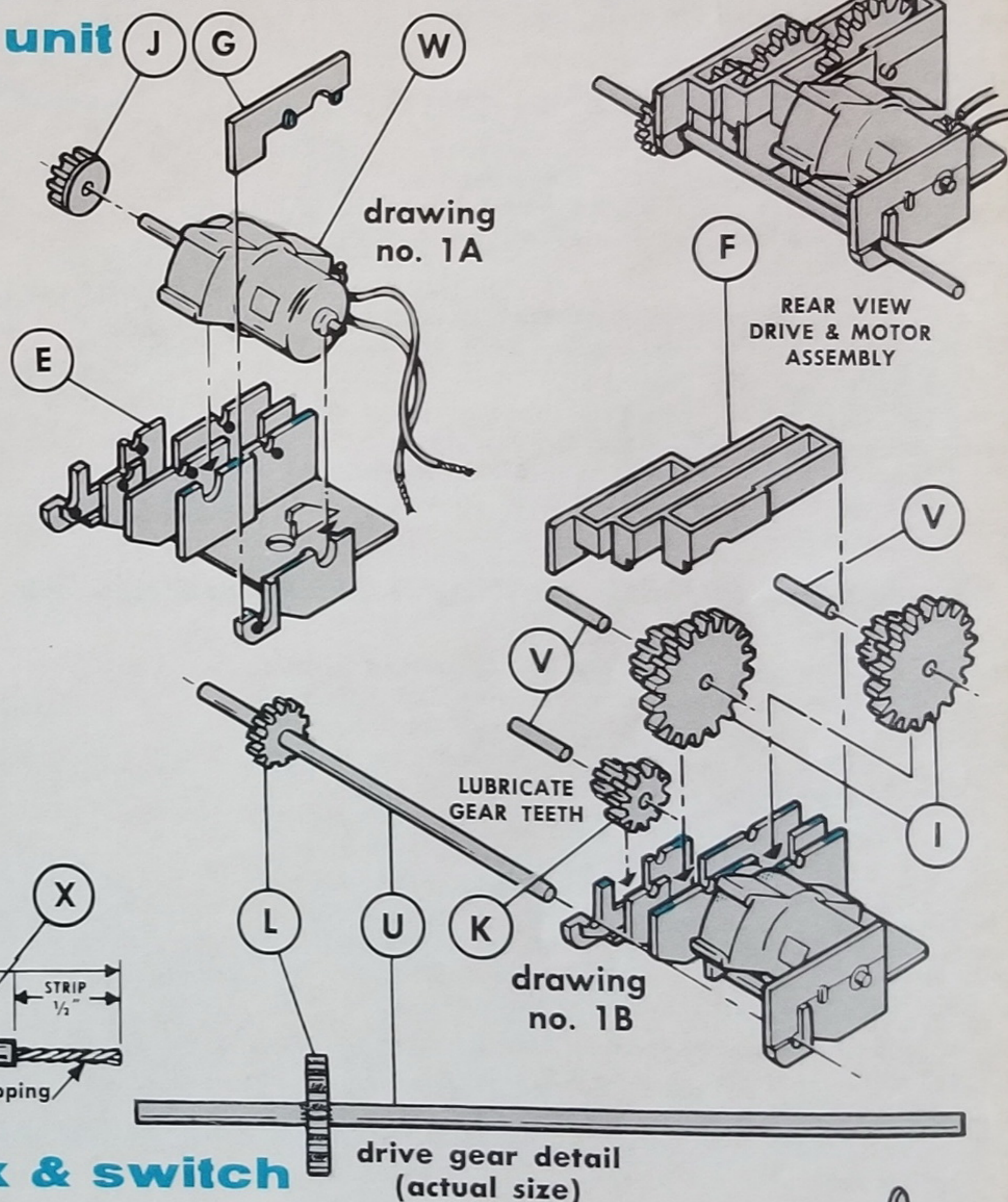
LUBRICATION: Note the oiling points indicated by the black dots on the drawings. Use either vaseline or mineral oil as a lubricant.

Press three metal Gear Shafts (V) into two Large Gear & Pinions (I) and Small Gear & Pinion (K), until equal length of Shaft protrudes on either side of gears. Now insert two Large Gear & Pinions into first and second gear slot, and Small Gear & Pinion into third gear slot, as shown in Drawing 1B.

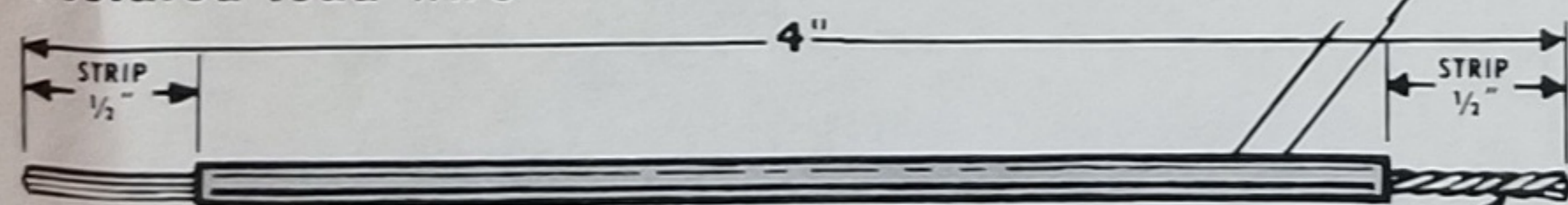
Now cement Gear Box Cover (F) over assembled Gear Box, making certain to keep cement away from bearing points in order to prevent binding. Cement *only* the areas indicated with blue tones on the drawings.

Press Drive Gear (L) over knurled section of steel Drive Axle (U) as shown in Drive Gear Detail drawing. Insert this assembly into Axle Bearing Holes in Drive & Motor Assembly as indicated in Drawing 1B.

Now Lubricate all Gear teeth, and test drive action by rotating gears to be sure they mesh properly. Your Drive & Motor Assembly is complete.



insulated lead wire



NOTE: Twist stranded wire after stripping

2 assemble terminal box & switch

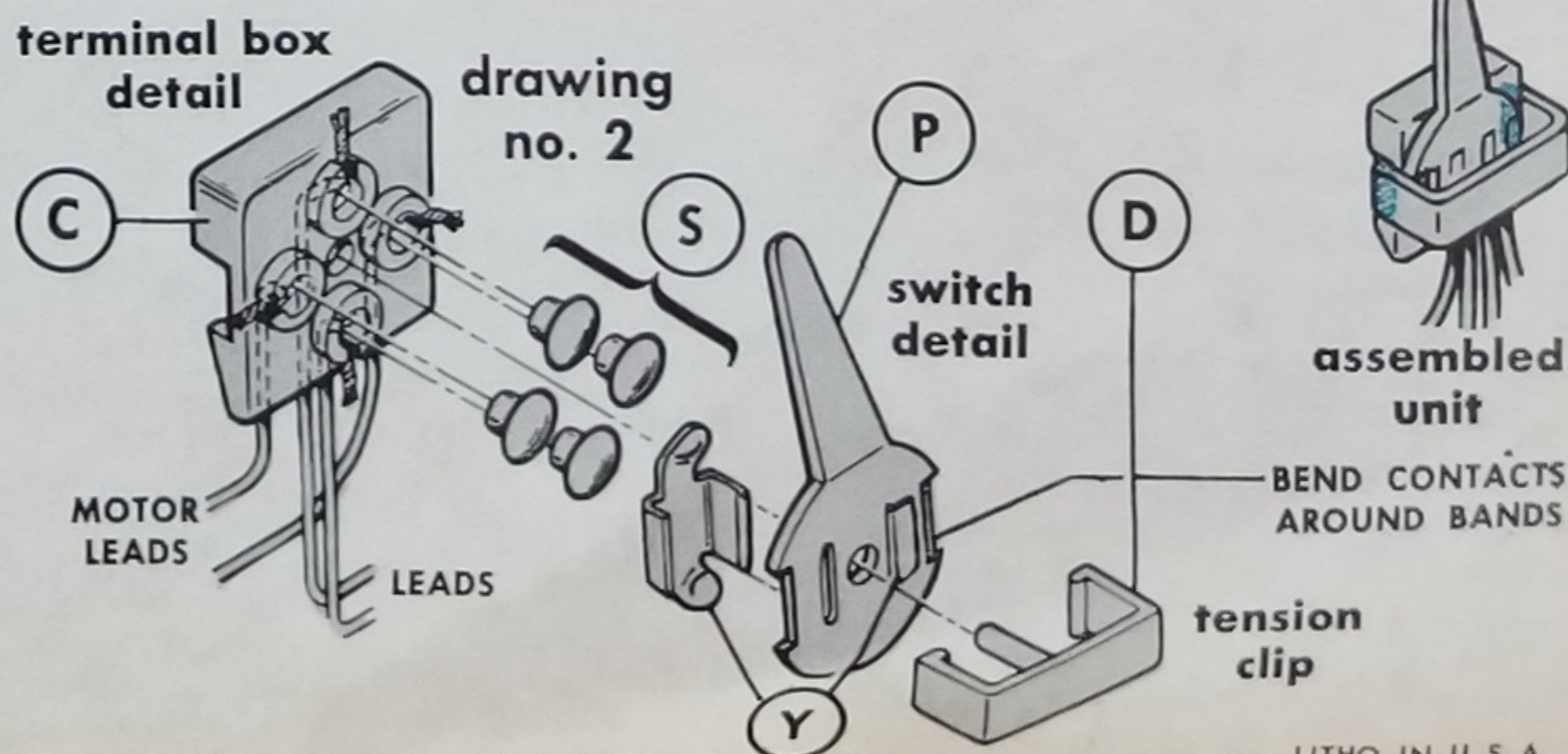
CHECK FIT OF PARTS AND TRIM IF NECESSARY

Find 12" Insulated Wire Lead. Cut and strip the Wire as indicated in drawing; one 4" Wire as shown and one 8" Wire. After stripping Wires about 1/2" on each end, twist wires for better contact.

Now find Terminal Box (C) and insert Wire Leads and the Motor Leads individually into Wire slots in the terminal holes shown in drawing, and fasten Leads by pressing Rivet Contacts (S) into terminal holes as shown.

Find two Switch Contacts (Y) and bend around posts on Switch Lever (P).

Now find Switch Tension Clip (D) and position Switch Assembly on pin so that Switch Contacts face the Rivet Contacts. Without cement, press Tension Clip with Switch over Terminal Box. (You may cement as indicated later when you are certain circuits check out properly.)



3 assemble switch to battery housing

CHECK FIT OF PARTS AND TRIM IF NECESSARY

Pass 4" Wire through rear slot in Battery Housing Box (A) and 8" Wire through front slot. Locate two Battery Spring Contacts (T) and position in top of channels so that "V" contacts face inward, as shown. Pass the bared wires through Contact holes and loop under the Spring Contacts. Then press the Contacts firmly into the channels, thus locking the wiring securely in place.

Now install four size AA (Penlite) batteries in the Battery Housing Box. Your Switch should now operate the Drive & Motor Unit in a forward and reverse action. (If Motor does not operate, check wiring, terminal connections and batteries to assure positive electrical contact.) When good contact is assured, then cement Tension Clip to Terminal Box, as shown in Drawing 2.

Note: Battery Terminals should face in the same Direction.

YOUR MOTORIZING ASSEMBLIES ARE NOW COMPLETE.

NOW REFER TO YOUR LARGE GENERAL INSTRUCTION SHEET; READ INSTRUCTIONS, THEN COMPLETE STEP 1 AS SHOWN ON LARGE INSTRUCTION SHEET THEN RETURN TO THIS SHEET.

2 drive wheels, plates

Before completing step 2 shown on the Large General Instruction Sheet, refer to drawing no. 4 on this Sheet; Notice that Front Plate (3) is replaced by Part (N) and Rear Plate (4) is replaced by Part (O).

Also, 2 Drive Pins (17) are eliminated from the Rear Drive Wheels, so that they will accept the ends of the metal Drive Wheel Axle.

MAKE SUBSTITUTIONS AND COMPLETE STEP 2 OF LARGE GENERAL INSTRUCTION SHEET EXCEPT (IMPORTANT) DO NOT CEMENT LEFT HULL PANEL (2) TO HULL ASSEMBLY AS SHOWN IN DRAWING NO. 4 ON THIS INSTRUCTION SHEET. NOW RETURN TO THIS SHEET AND COMPLETE THE FOLLOWING STEP:

4 assemble motorizing units to hull

CHECK FIT OF PARTS AND TRIM IF NECESSARY

Test fit Drive & Motor Assembly into Rear Hull location as shown in Drawing No. 4. When you hold Left Hull Panel (2) in assembled position, you will note that the inside pin of the last Spring Lever (9) must be trimmed for clearance, as shown in Drawing No. 4.

You will also note that Small Bearing Plate (R) must be cemented over tab now, prior to assembly of Left Hull. Now apply cement and insert Drive & Motor Assembly in location shown, then cement Left Hull Panel in place as shown in Drawing No. 4. Firmly press Drive Wheel Assemblies over the Axle ends of Drive Axle which protrude through Hull Sides, as shown in same drawing.

Apply cement to Battery Housing Assembly and install in forward Hull, as shown in same drawing.

Now apply cement inside terminal seating in Rear Plate (O). Insert Switch Lever through opening below seating, then press Terminal Box firmly into seating, as shown in Drawing No. 5.

3 flexible tracks

Before proceeding with Step 3 of the General Instruction Sheet, it is desirable to slit Tracks as illustrated in the diagram, in order to provide additional flexibility to the treads of your motorized model. Do not cut treads next to locking thread, as shown. Then complete Step 3 of General Instruction Sheet.

YOUR MOTORIZING INSTRUCTIONS ARE NOW COMPLETED! You may now complete Steps 4 through 10 of your Large General Instruction Sheet without further reference to this SPECIAL MOTORIZING INSTRUCTION SHEET. However please note that Part (24) shown in Step 9 must be eliminated from your Motorized Vehicle.

