ITEM 35070

M3A2 U.S.ARMOURED PERSONNEL CARRIER M3A2 HALF TRACK

TAMIYA

1|35 MILITARY MINIATURE SERIES



Half-tracks were first used for military purposes during WWII, when many different unique variations of the vehicle were produced and employed to accompany tanks into battle. They served as the main personnel carrier in U.S. and German mechanized divisions, although the two countries' designs were significantly different. All U.S. half-tracks featured powered front wheels which were also tasked with all of the vehicle's steering functions. The front wheels of German half-tracks were unpowered, not equipped with brakes, and could be steered up to 15° in either direction, beyond which the drive sprocket on the turning side would be fractionally idled to enable the tracks to aid with the turn. These differences likely arose from the fact that American half-track designs were based on trucks which had their rear axles replaced with tracks, while those produced by Germany were based on fully-tracked vehicles which had front wheels added to increase length. In addition, American half-tracks were all conceived from the beginning as armored fighting vehicles while German designs featured the same chassis regardless of whether they were armored or not.

It had been known since WWI that the fitting of tracks around the rear axles of a truck, the basic concept of a half-track, would increase the ground contact area for greater mobility. Numerous countries independently began developing this type of vehicle, with the research focused mainly on the design of the rear suspension for the tracks. During this period, a Citroën-Kégresse half-track car successfully crossed the Sahara Desert and this achievement heightened interest in half-track development. The United States began developing half-tracks in earnest in 1925, when the U.S. Army Ordnance Department purchased two Citroën-Kégresse half-track cars from France for evaluation. These were followed by the purchase of a Citroën-Kégresse P17 half-track in 1931, and this vehicle in particular went on to influence subsequent American



Citroën-Kégresse Half-Track

half-track designs. The first half-track built for the U.S. military was created in December 1932 by James Cunningham, Son & Co. of Rochester, New York, which was involved in the development of the experimental T1 light tank at the time. The company improved upon the Citroën-Kégresse suspension and mounted an open-top body on the chassis to create the prototype T1 half-track reconnaissance car. In the period between this development and 1937, James Cunningham, Son & Co., Linn Manufacturing Company, GMC, and Ford-Marmon-Herrington created a series of military half-tracks designated T1 to T9E1, which were designed to be used by mechanized cavalry and artillery units for reconnaissance, artillery towing, and personnel/logistical transport. The T9 to T9E1 half-tracks built by Ford-Marmon-Herrington were based on the Model 1936 Ford 1½-Ton 4x2 truck chassis with front drive wheels and a rear tracks, but still utilized the flawed Kégresse-type bogie suspension. Ford-Marmon-Herrington then partnered with another manufacturer to jointly develop a suspension system which incorporated a one-piece belt-type rubber track made by B.F. Goodrich Company. This new suspension system exhibited excellent performance during tests and was subsequently accepted for use by the U.S. Army, becoming the standard suspension fitted to all U.S. half-tracks including the M2 and M3 series.

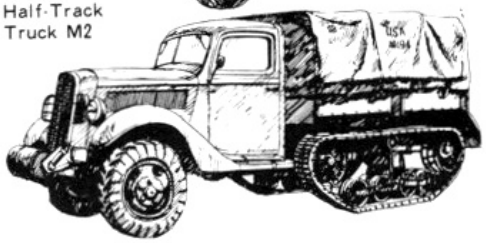
After observing the German military's Blitzkrieg tactics at the start of WWII, which was based on highly mobile ground units equipped with fully-tracked or half-track vehicles, the U.S. began the mass-production of half-tracks. A wide range of half-tracks were built and deployed, including the following models and variants.

M2 Half-Track:

In 1939, Diamond T Motor Car Company created the prototype T14 half-track armored personnel carrier, which utilized the body from an armored car that was then in use by U.S. armored cavalry



Scout Car M3A1



Half-Track Truck M2

units. It was accepted in September 1940 as the M2, thus becoming the first mass-produced U.S. military half-track. Between 1940 and 1943, a total of 11,415 were built, 2,992 by Autocar Company and 8,423 by White Motor Company.

M2A1 Half-Track:

An improved variant of the M2, the M2A1 featured an M45 ring mount (known as the "pulpit") with a .50-caliber (12.7mm) M2 Browning machine gun

fitted above the right side of the driver's cabin. 1,643 were produced from October 1943 to March 1944.

M3 Half-Track:

This model was developed as a personnel and logistical transport for armored divisions. Autocar Company and Diamond T Motor Car Company produced 12,499 of them in parallel with the M2 half-track, and in addition to being used by U.S. Army, they were also provided to Allied countries such as Great Britain and Russia.

M3A1 Half-Track:

Like the M2A1, this variant also featured an M45 ring mount with a .50-caliber M2 Browning machine

gun fitted above the right side of the driver's cabin. 2,862 were built from October 1943 to March 1944 by White Motor Company, Autocar Company, and Diamond T Motor Car Company.



Half-Track M2

Together with the M3, they were used as armored command vehicles, ambulances, communications vehicles, or general purpose vehicles by U.S armored divisions during WWII. British armored divisions also used the M3A1, and even fitted a jib to the front of some half-tracks for use as armored recovery vehicles.

M3A2 Half-Track:

This final production variant of the M3 was designed as a general-purpose half-track to replace the previous M2, M2A1, M3, and M3A1. The prototype, designated T29, was completed in July 1943 and it was officially accepted as the M3A2 in October. The same three companies which produced the M3A1 also built the M3A2, and it served as a mainstay of mechanized infantry units in armored divisions from 1944 onwards.

The M3A2 featured the same open-top design as the M2 and M3 series half-tracks, with hardened armor plates either welded or bolted to the body to provide 6.25mm to 12.7mm of armor, including thick steel plates to protect the front of the vehicle. It could carry between five to twelve passengers, so one half-track could transport a fully-equipped infantry squad. It also carried a variety of weapons including a .50-caliber M2 Browning heavy machine gun, a .30-caliber M1919A4 machine guns, an M9 or M9A1 2.36-inch bazooka, a .45-caliber M3 submachine gun, and twelve M1 Garand or equivalent .30-caliber rifles. Ammunition for these weapons: 330 rounds for the .50-caliber machine gun, 2,000 rounds for the .30-caliber machine gun, six M6

Half-Track M3



anti-tank rockets, 24 M1 mines, 48 hand grenades, and 180 rounds for the M3 submachine gun, were stowed onboard, and two seats could be removed to make way for 600 rounds of .50-caliber and 6,000 rounds of .30-caliber ammunition if required. The vehicle was fitted with the same 143hp White 160AX 4-cycle, liquid-cooled, inline 6-cylinder gasoline engine as other M2 and M3 series half-tracks, enabling a maximum road speed of 72km/h. Power was transmitted to the sprocket wheels via a dry-type single-plate clutch, 4-forward/1-reverse speed constant mesh transmission, a two-speed transfer case, and a

banjo-type rear axle. The transfer case of this all-wheel drive system could also send power to the split-type front axle if the need arose. Fuel consumption was 1.49km per liter, therefore the 227 liter fuel capacity translated to an operating range of 320km.

Although the M3A2's front suspension was the same as that of a normal truck, its rear suspension featured two rows of four road wheels fitted with 305mm diameter/105mm wide rubber tires which were connected by links to the bogie assembly equipped with vertical volute springs. The belt-type rubber track was supported by the rollers at the top of the bogie assembly as well as by the idler wheel, and the sprocket wheel meshed with guides along the center of this track to drive the vehicle.

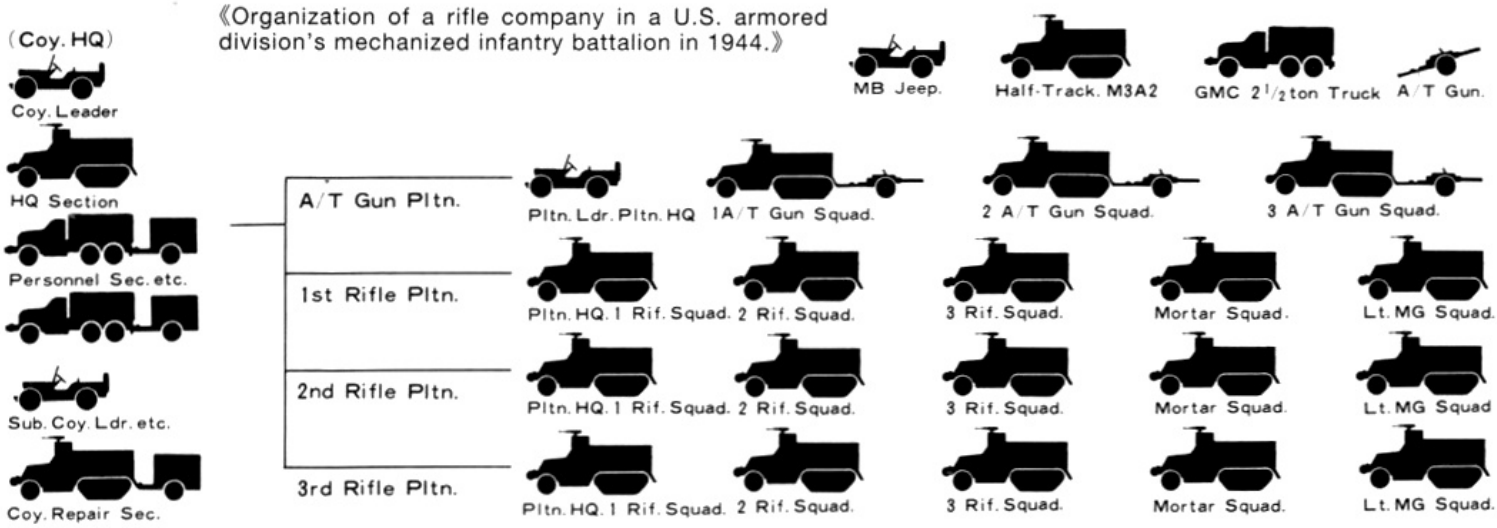
The number of half-tracks produced by the U.S. from 1941 to 1945 totaled 37,164 personnel carrier models and 7,880 self-propelled gun models. These included both M2 and M3 series half-tracks as well as various prototypes, mortar carriers, gun carriages, self-propelled howitzers, and self-propelled anti-aircraft guns. In addition to 16 U.S. armored divisions, they also equipped several independent mechanized cavalry, tank destroyer, armored, and infantry units and saw action in every theater of the war.

An American armored division would be allotted 448 M3A2 half-tracks, including those in the three mechanized infantry battalions (72 half-tracks each: 20 in each of three rifle companies, 11 in the headquarters company, and 1 in the service company). Below is the typical strength of a rifle company in a U.S. armored division's mechanized infantry battalion in 1944:

Each rifle squad's half-track carried a driver plus nine soldiers: the squad leader and his sergeant, five riflemen, an automatic rifleman, and an ammunition bearer. The platoon leader's vehicle would additionally carry the platoon leader and platoon sergeant for a total of twelve men. The mortar squad's half-track carried the driver plus seven soldiers: the squad leader, two mortar gunners, two ammunition bearers, and two riflemen; while that of the light machine gun squad carried the driver plus twelve soldiers: the squad leader and his sergeant, four riflemen, two machine gunners, two assistant gunners, and two ammunition bearers. The anti-tank squad's half-track carried the driver plus six soldiers: the squad leader, two gunners, two ammunition bearers, and one rifleman.

From the Korean War onwards, the U.S. military phased out its half-tracks and replaced them with fully-tracked armored personnel carriers such as the M113, so the only places in the United States where one could see half-tracks today would be in museums or private collections. However, other countries continued to use them as combat vehicles in various conflicts in the Middle East, South America, and Southeast Asia, with many still serving to this day.

《Organization of a rifle company in a U.S. armored division's mechanized infantry battalion in 1944.》





《Read Before Assembly》

★This kit includes parts to assemble one M3A2 half-track, 8 figures to place inside the vehicle, and 1 figure to place outside the vehicle. Follow the instructions carefully when assembling.

★Use of a modeling knife, a file, tweezers, and side cutters is recommended.

★Paint the model after assembly is completed. Paint figures and small parts individually, then wait for the paint on the vehicle model to dry before attaching.

★Refer to the separate sheet for painting and marking instructions.

Areas shaded in this manner indicate cementing surfaces. Arrows also indicate surfaces to be cemented.

This shows the colour this part should be painted. Instructions for overall painting are given in the accompanying sheet. Instructions for painting model figures are given at the left of ⑯.

《Converting into M3A1》

You can build the M3A1 from this kit by changing some parts. Refer to page 9 and "Painting".

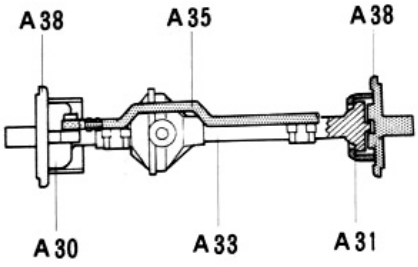
2 〈Fixing of Chassis Parts〉

Cement two pieces of C21 together and fix them to Chassis by means of C22 and C23. Do not cement C21 to C22 or C23.

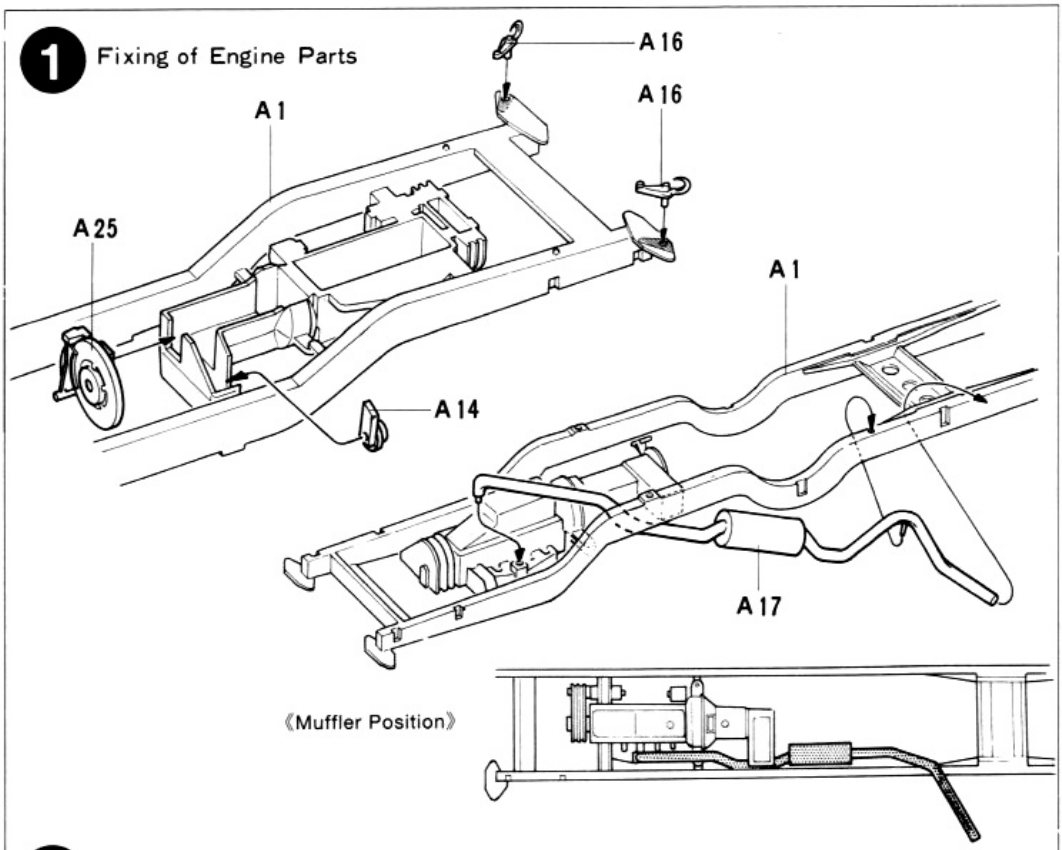
3 〈Construction of Axles〉

Be careful of surfaces to be cemented. Never put cement on movable parts.

《Front Axle Assembly》

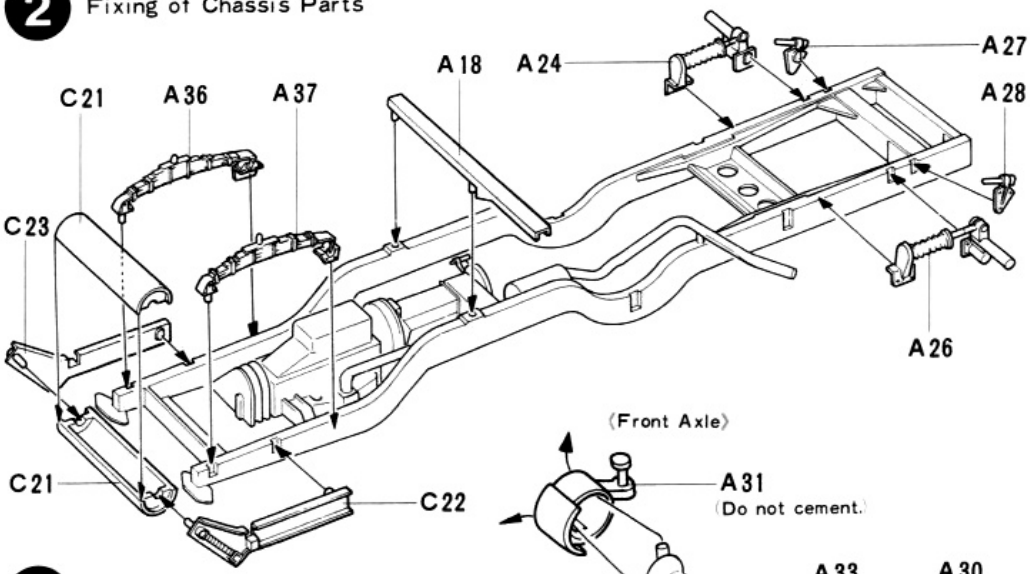


1 Fixing of Engine Parts

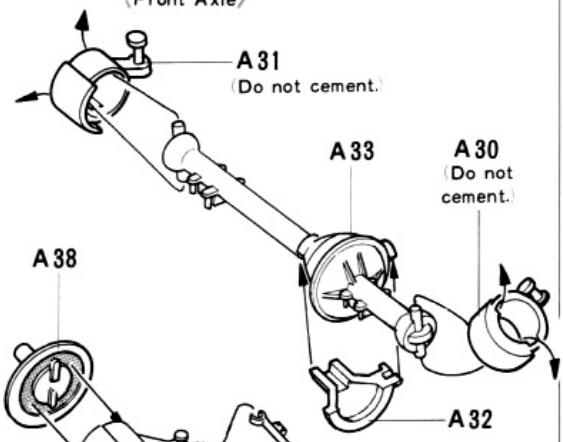


《Muffler Position》

2 Fixing of Chassis Parts

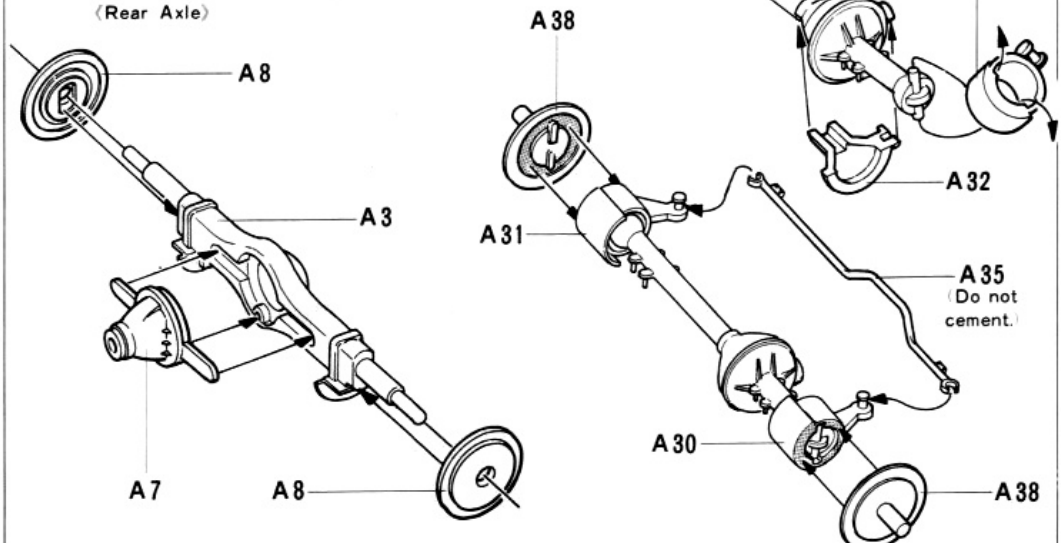


〈Front Axle〉

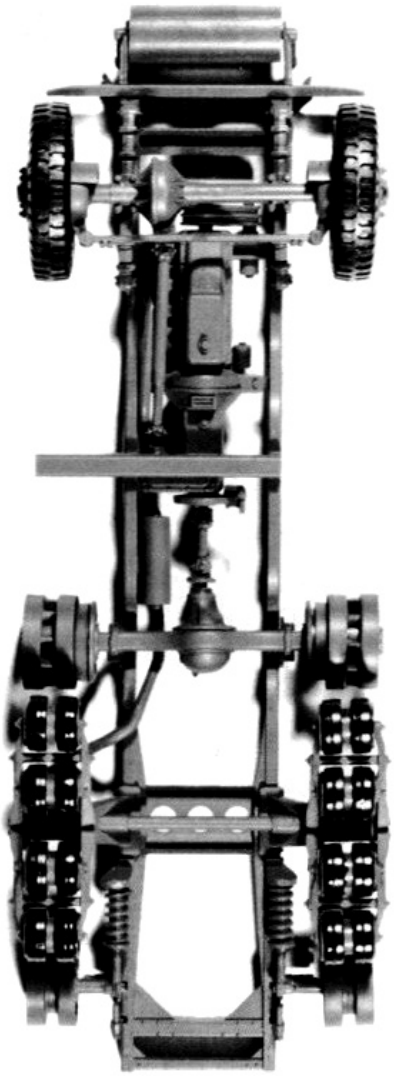


3 Construction of Axles

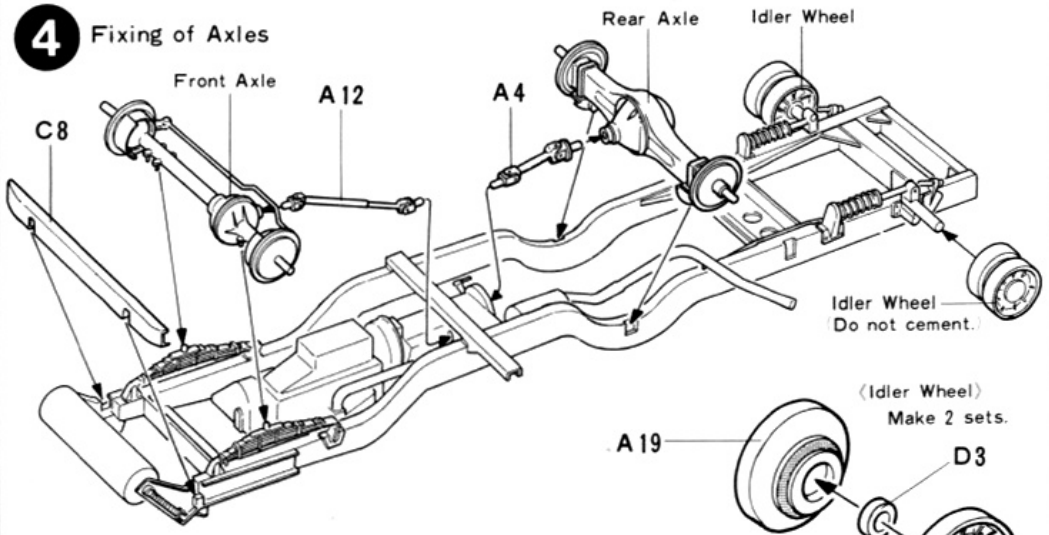
〈Rear Axle〉



4 〈Fixing of Axles〉



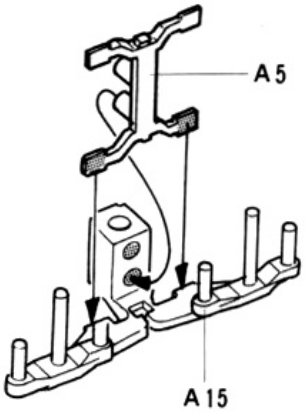
4 Fixing of Axles

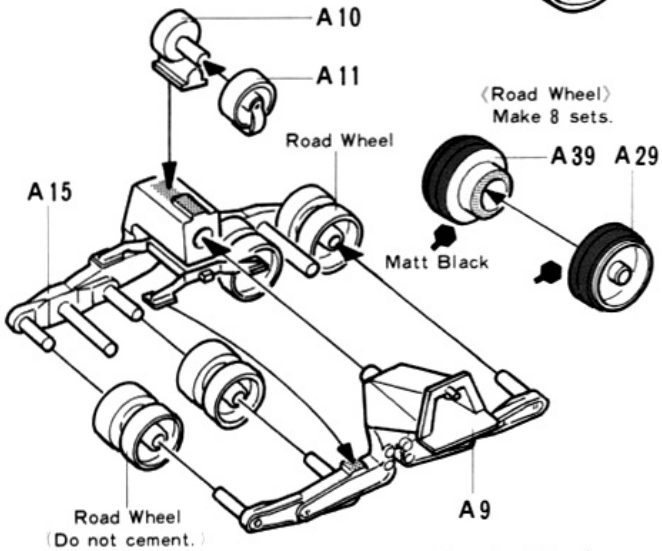


〈Idler Wheel〉
Make 2 sets.

5 Construction of Suspension

Make 2 sets.

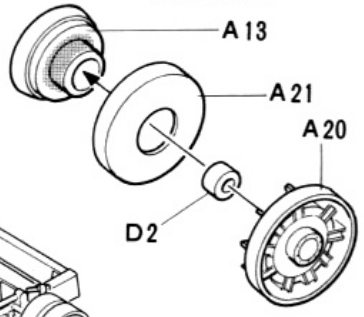




〈Road Wheel〉
Make 8 sets.

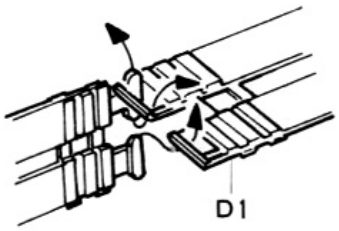
6 Completion of Chassis

〈Sprocket Wheel〉
Make 2 sets.

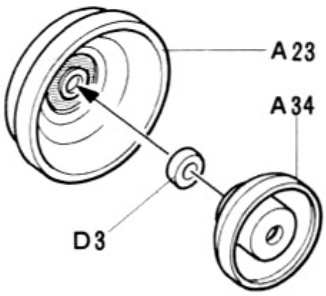


★Do not cement but just fit each wheel

〈Construction of Tracks〉
Make 2 sets.



〈Front Wheel〉
Make 2 sets.



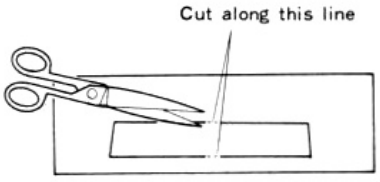
7 〈Construction of Driver's Seat〉

Put each Lever in place and fix it with cement. The end of Levers B30, B31 and B37 should be painted in Matt Black.

8 〈Fixing of Bonnet〉

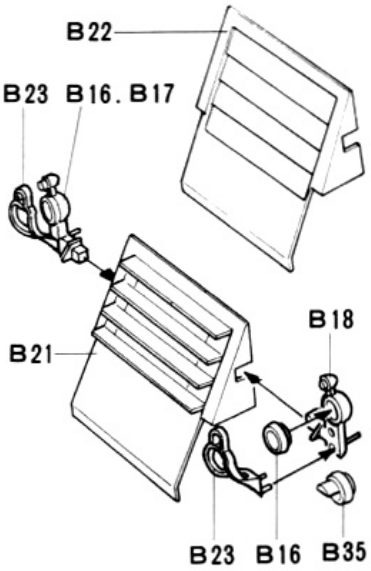
Transparent part for Windscreen should be cut out with a knife or scissors as shown in the figure below. In painting, Windscreen should be removed or masked with tape.

〈Cutting out Windscreen〉



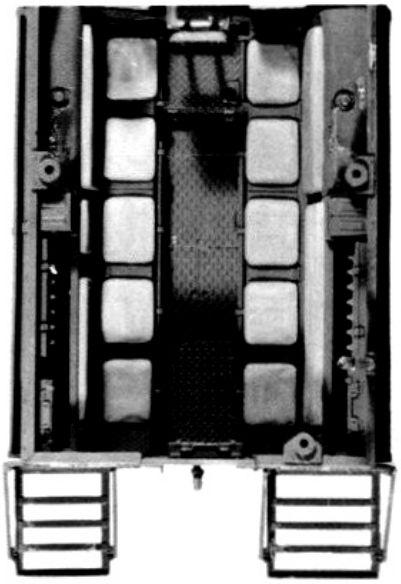
〈Construction of Radiator〉

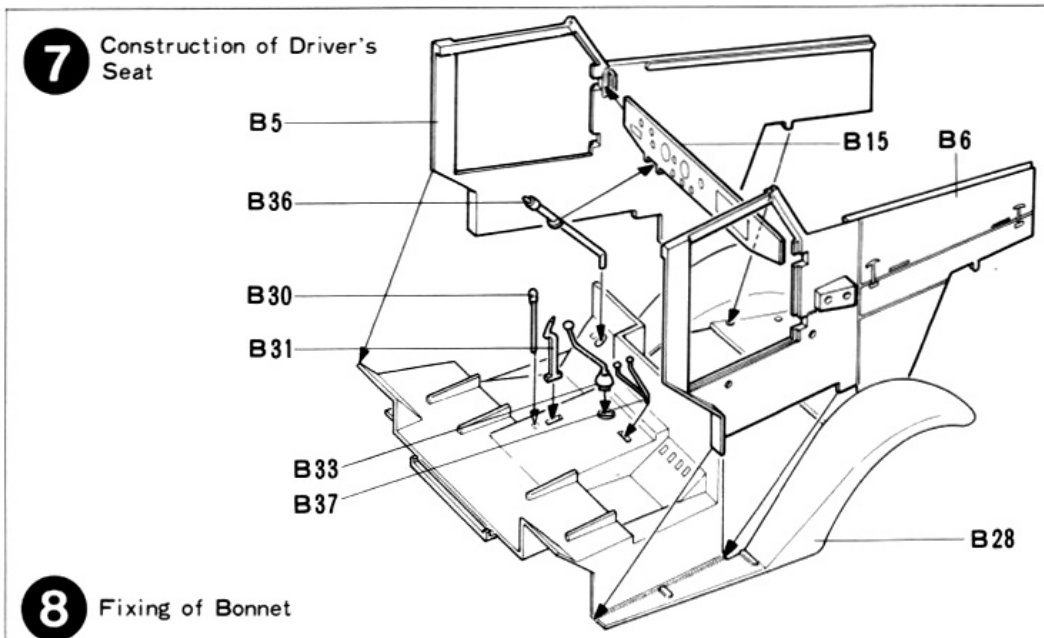
★Select either Radiator Grille B22 or B21 and fix various parts.

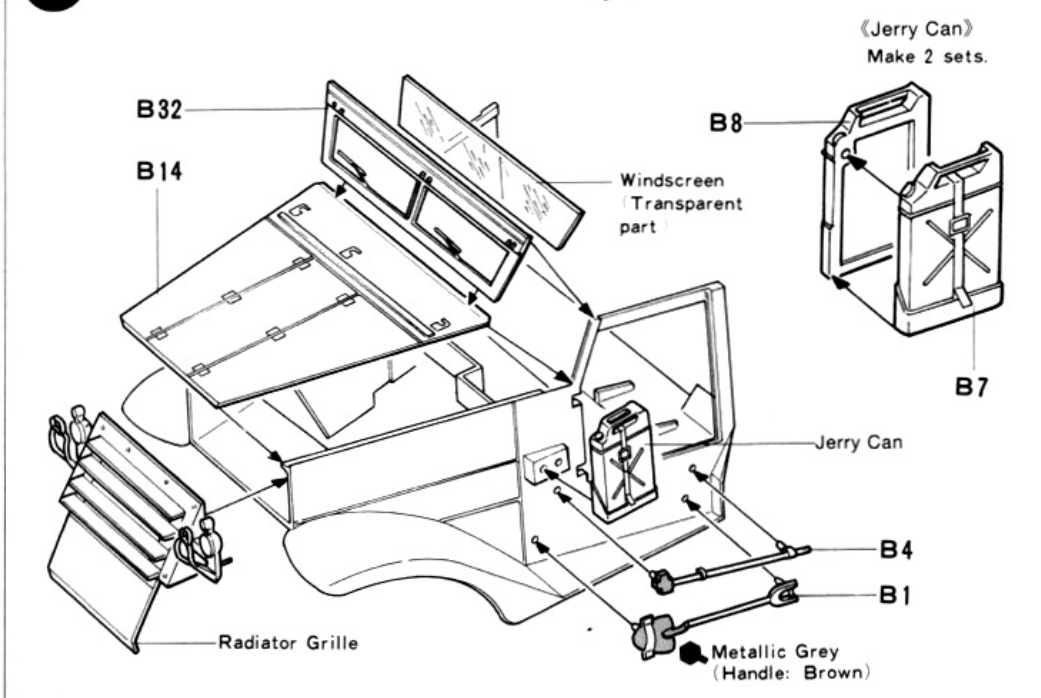


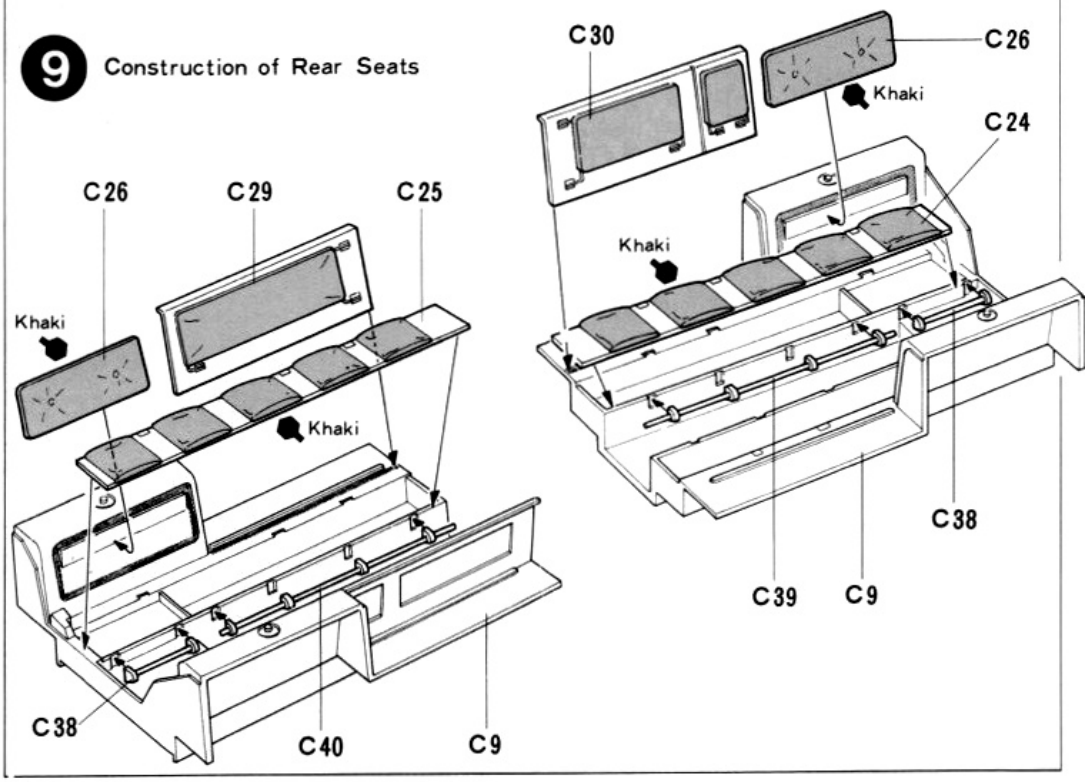
★Choose B16 or B25 and fix.

9 〈Construction of Rear Seats〉







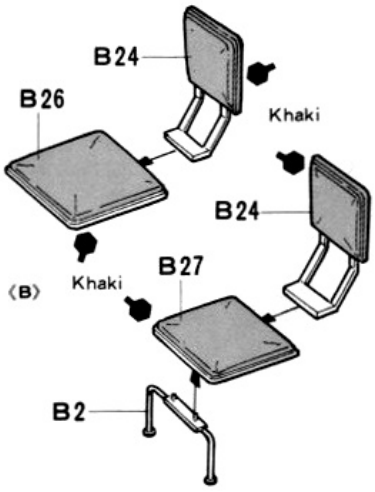


10 〈Construction of Side Panels〉

★Make sure the correct parts are attached to Side Panels.

〈Construction of Seats〉

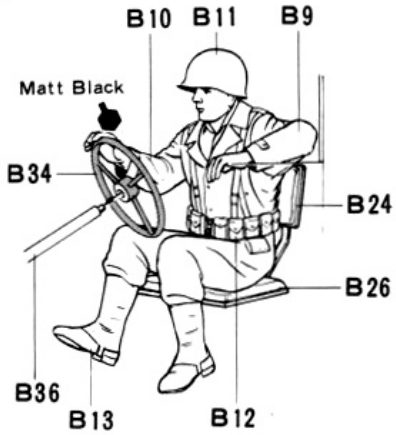
〈A〉 Make 2 sets.



12 〈Fixing of Carrier〉

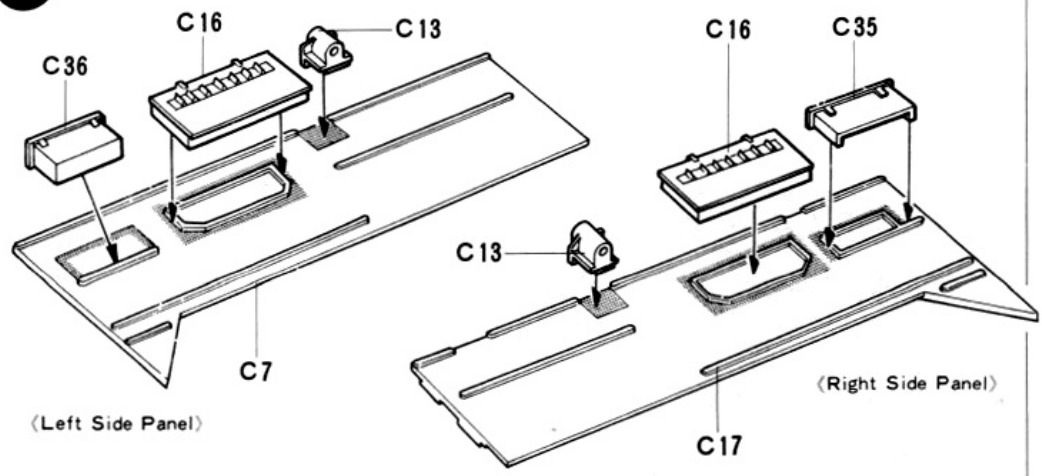
★Locating pins on C18 and C34 indicate which part is the outer hinge and which is the inner hinge. Check before attaching.

〈Construction of Driver〉

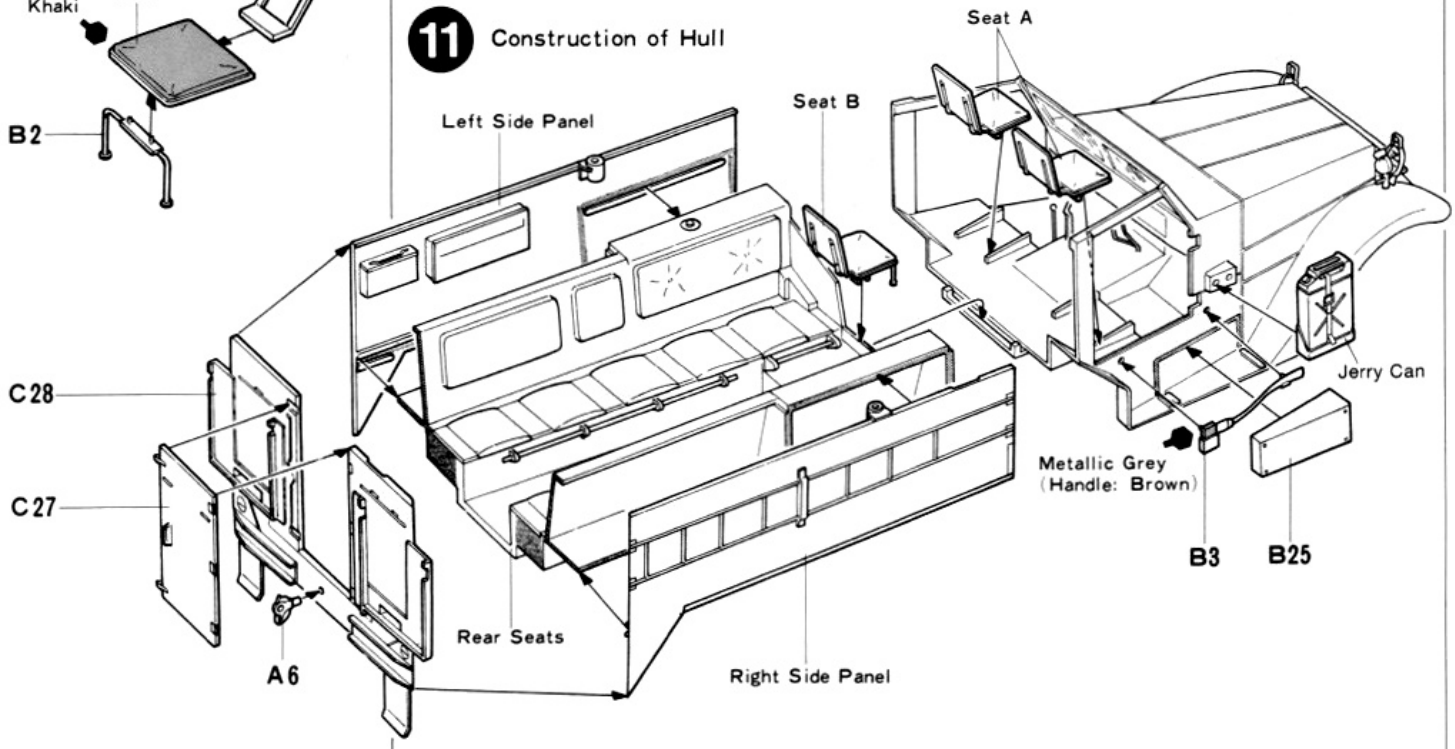


★Refer to Page 8 for painting.

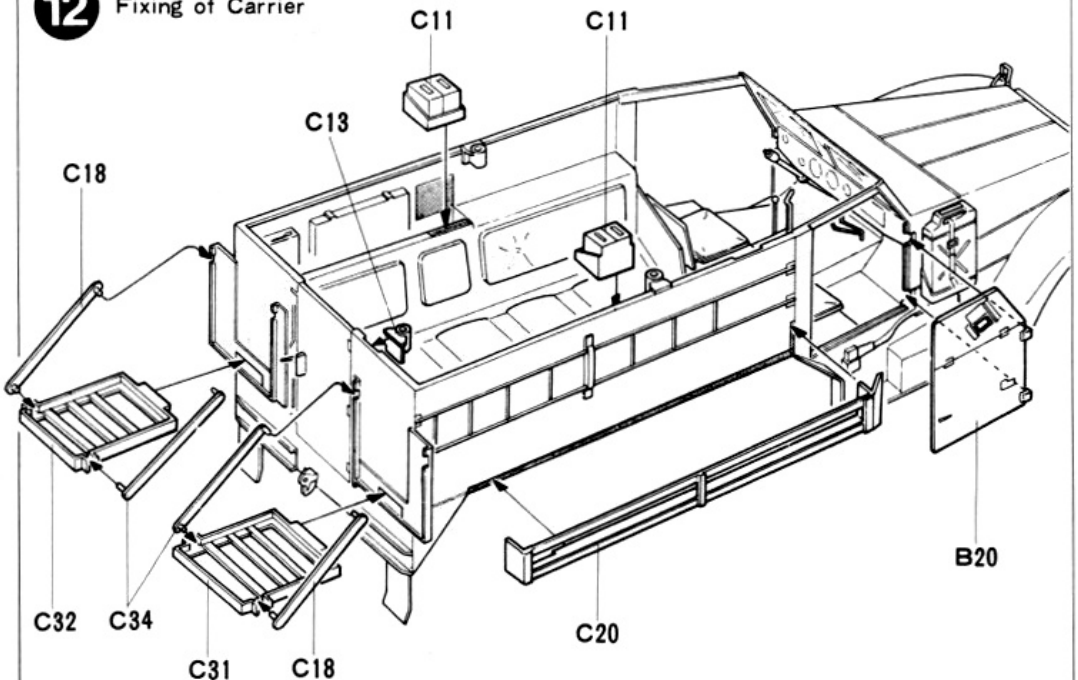
10 Construction of Side Panels



11 Construction of Hull



12 Fixing of Carrier



13 〈Fixing of Doors〉

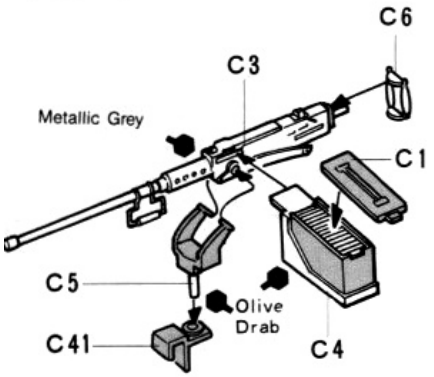
If you are to mount Driver, Left Door should be kept open.

14 〈Completion of Hull〉

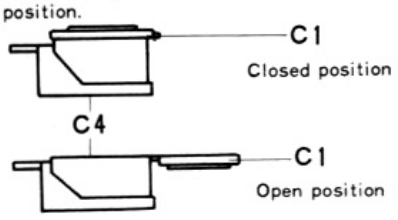
★Place the driver's figure as shown in the photo below.



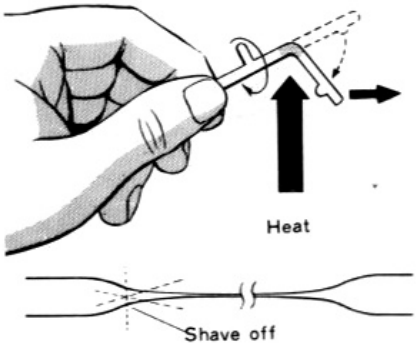
〈Construction of Machine Gun〉



★C1 can be fixed in either one of two position.



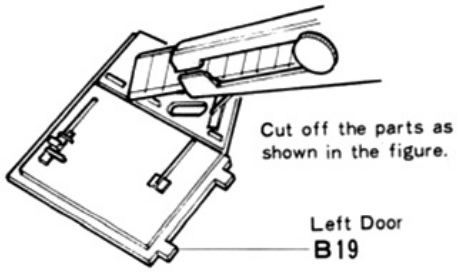
〈How to Make Antenna〉



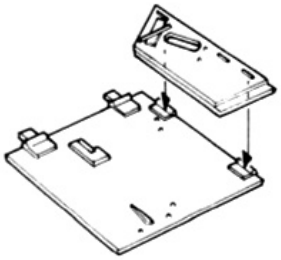
★Heat a section of a sprue gradually. When softened, pull on the two ends to stretch out the plastic material to the desired thickness. Allow to cool, then cut off a 3cm length.

★Make sure to take all necessary precautions when handling the heat source.

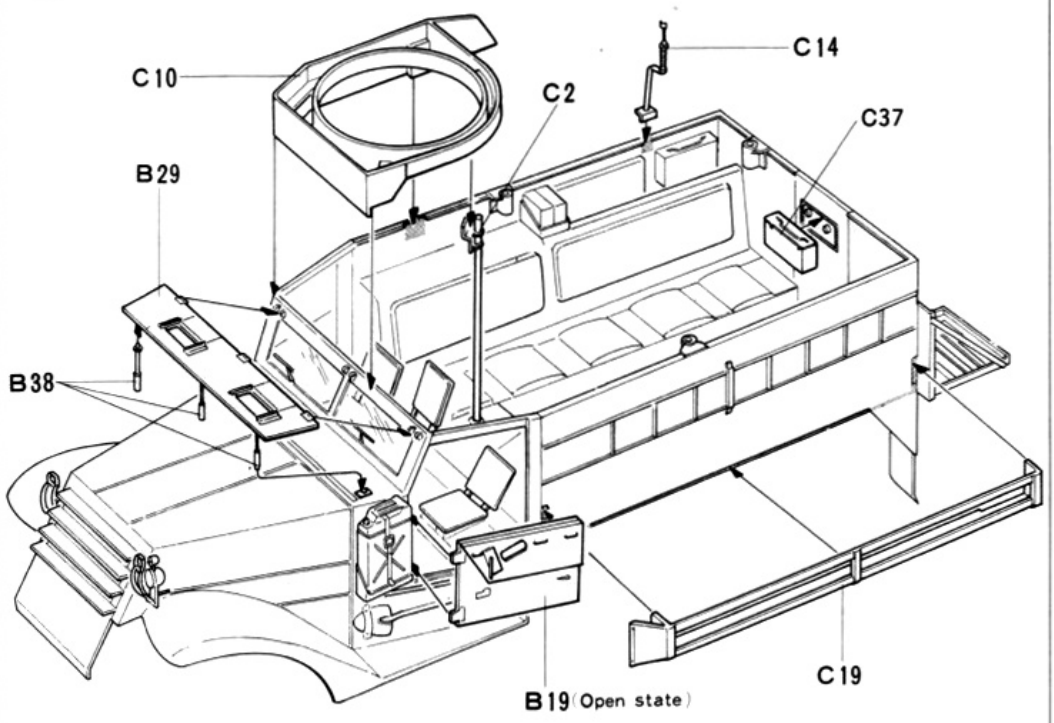
13 Fixing of Doors



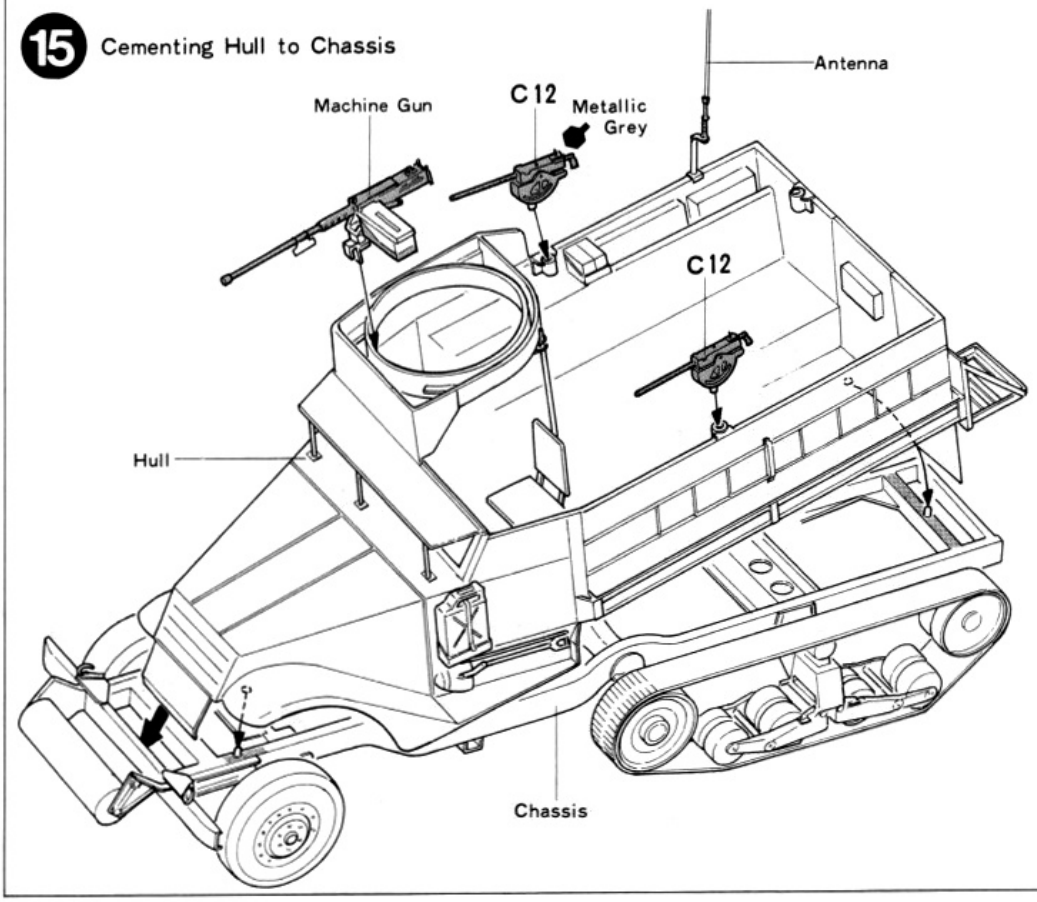
★Cut the door hatch and cement it in folded position.



14 Completion of Hull



15 Cementing Hull to Chassis

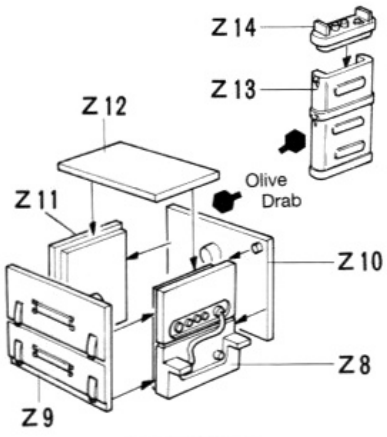


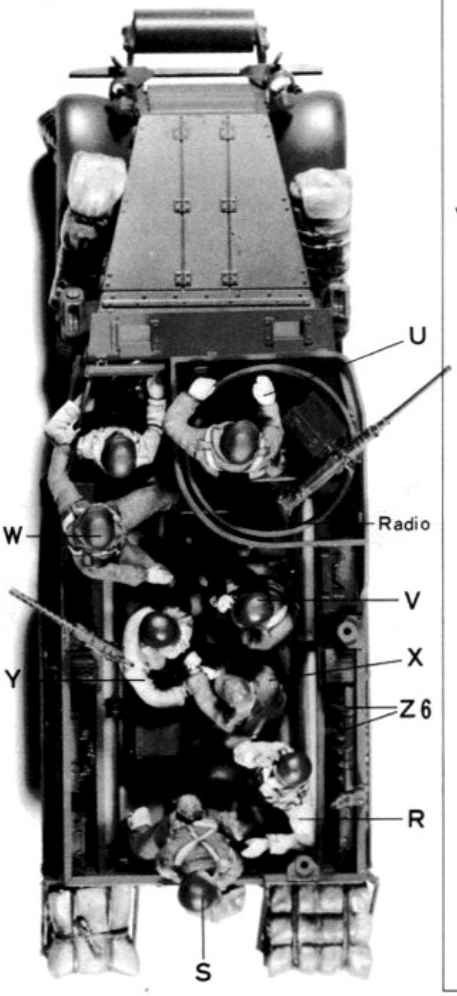
《Construction of Figures》

《 Painting of Figure》

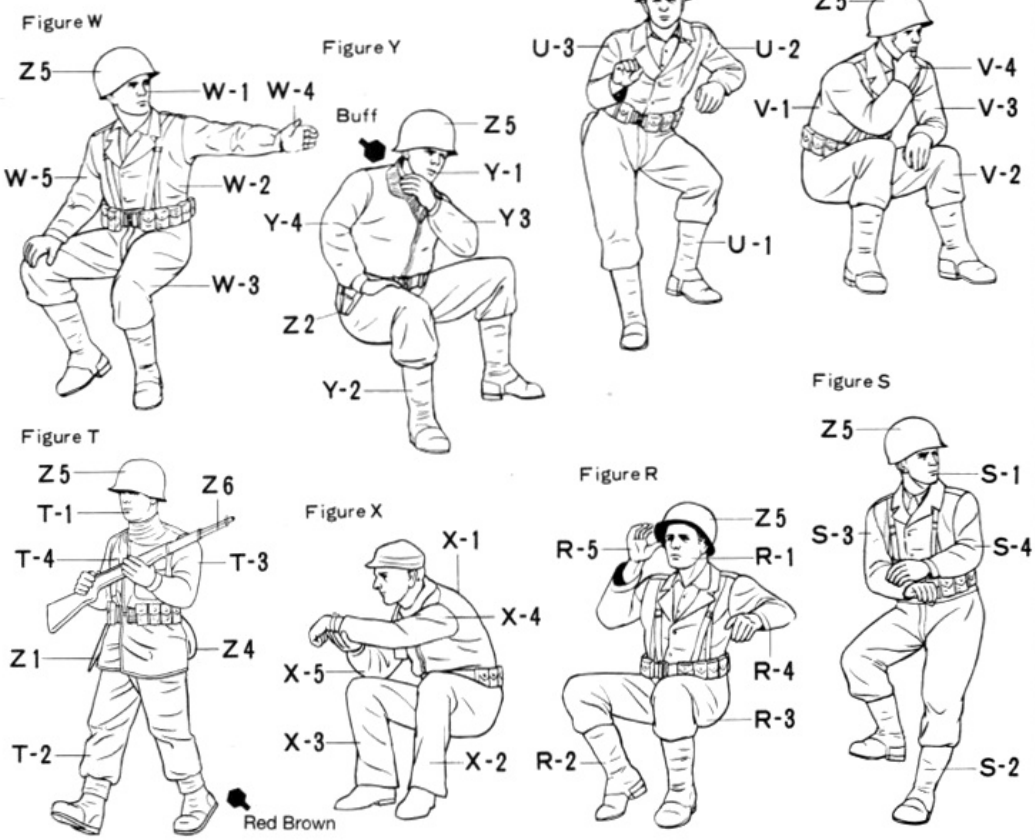


《Construction of Radios》

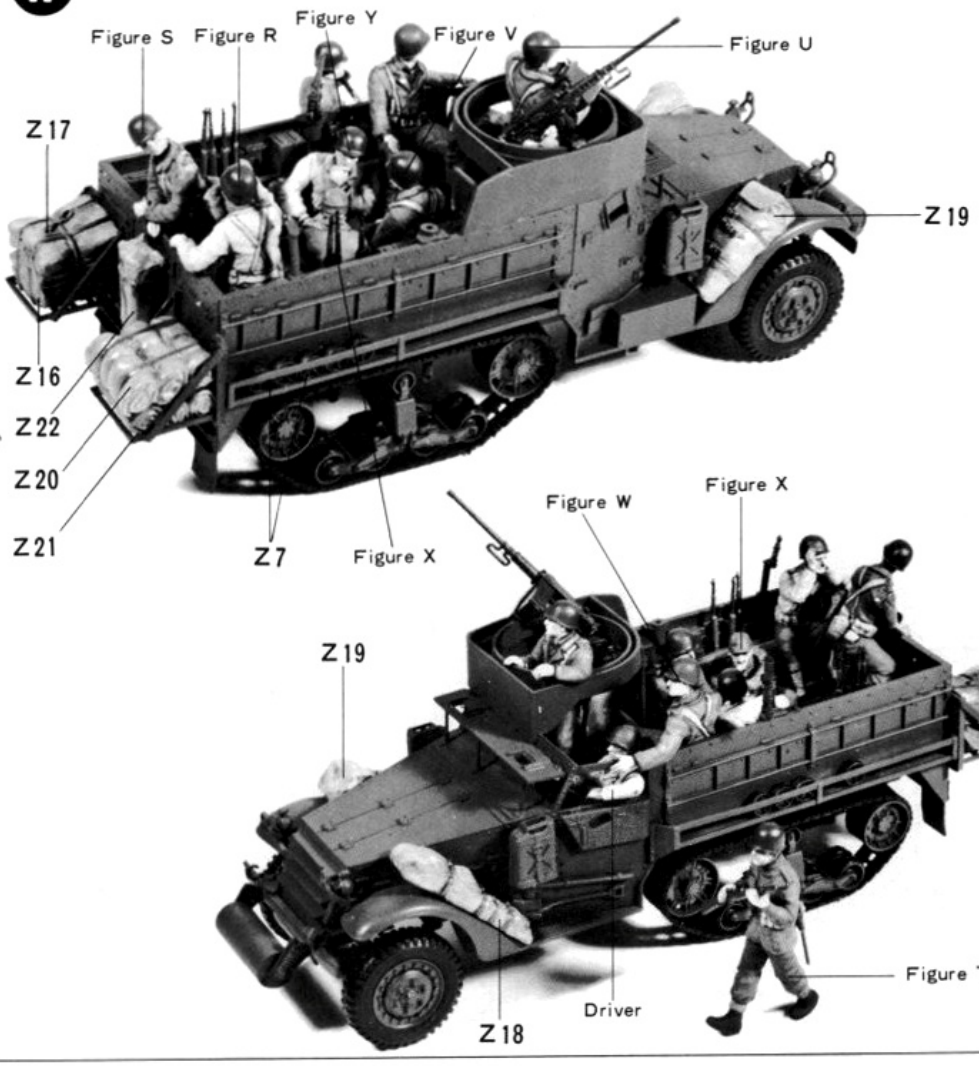




16 Construction of Figures



17 Fixing of Accessory Parts and Figures



PAINTING & APPLYING DECALS

〈Marking of the M3 Personnel Carrier〉
The M3 wore unit numbers ("9△27-1" for example) and vehicle numbers as well as star marks symbolic of the U.S. Army. To cite instances, "1△6-1, A-3" meant No.3 vehicle of the A Company, 6th Infantry Battalion, 1st Armoured Division and "9△27-1, A-11" represented No.11 vehicle of the A Company, 27th Infantry Battalion, 9th Armoured Division.

〈Painting of the M3 Personnel Carrier〉
The M3 Personnel Carrier, like other military vehicles of the U.S. Army, was painted overall in Olive Drab.
★What we call "weathering" is a good way to lend additional realism to your military vehicles. It may be interesting to represent the following, for instance: dirt which stuck to the vehicle in a desert, swamp, etc.; and bullet marks made in actual fighting.
★The following are different in colour from the body: headlights (Silver), machine gun (Metallic Grey) and seat (Khaki). It may be interesting to paint tools differently according to the action of the vehicle.

〈Converting into M3A1〉
If you want to build the M3A1 by conversion, cut off the darkest-shadowed portions in the figure (ladders on sides, rear racks, a part of mold on MG mount).

BUILD A COLLECTION OF TAMIYA 1/35 SCALE TANK AND ARMORED CAR MODELS

1/35 GERMAN Sdkfz 250/3 GREIF



1/35 GERMAN HANOMAG Sdkfz 251/1



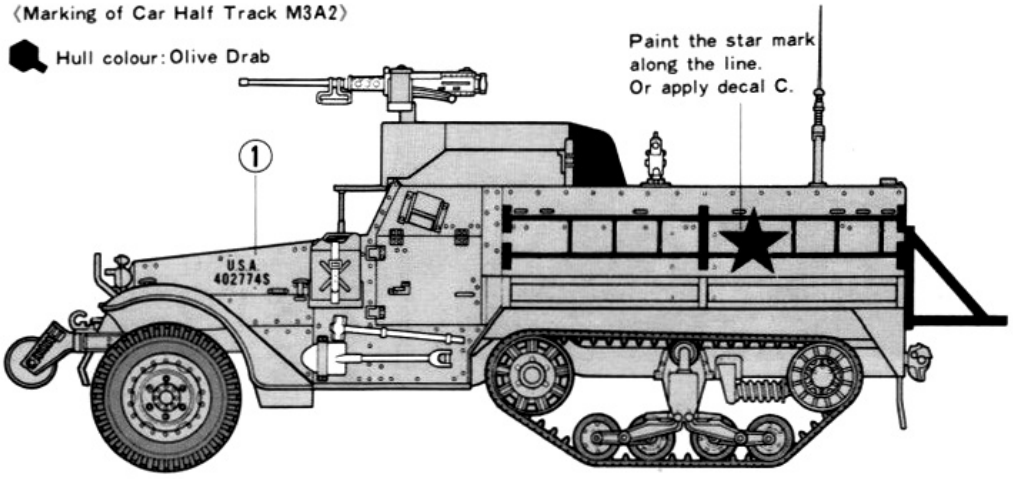
1/35 Ger. 8Ton Semi Track Sd.kfz 7/2



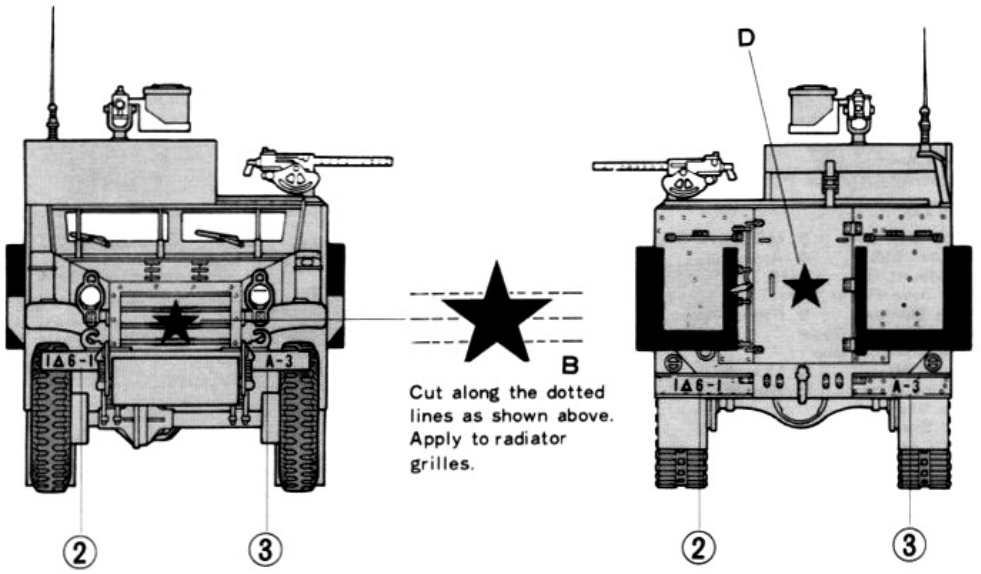
TAMIYA
TAMIYA, INC.

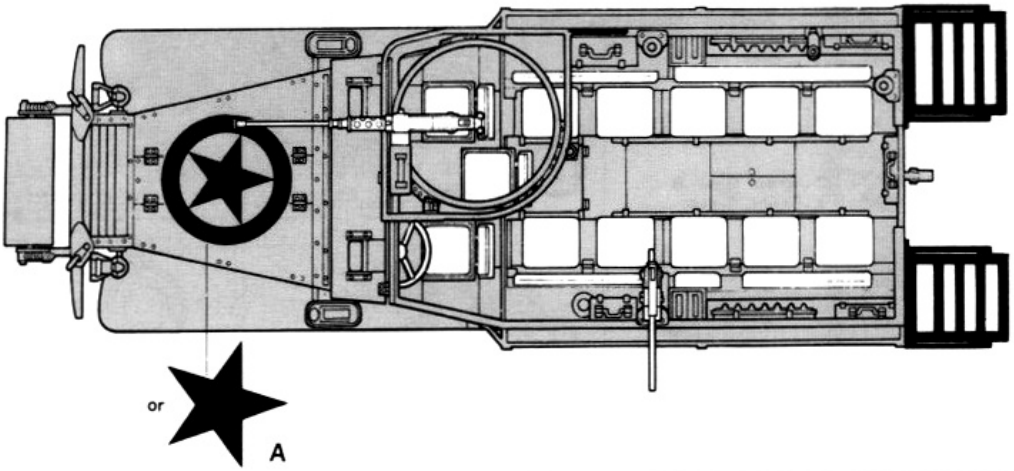
〈Marking of Car Half Track M3A2〉

Hull colour: Olive Drab



	①	②	③
1st Armoured Division	U.S.A. 402774S	1△6-1	A-3
9th Armoured Division	U.S.A. 403653S	9△27-1	A-11





PARTS

A PARTS

1. Frame
2. Cross Tube
3. Rear Axle
4. Rear Shaft
5. Spring Arm
6. Hooks
7. Rear Axle Parts
8. Rear Brake Covers
9. Suspension B
10. Top Rollers A
11. Top Rollers B
12. Front Shaft
13. Rear Brake Drums
14. Transfer Parts
15. Suspension A
16. Front Hooks
17. Muffler
18. Battery Frame
19. Idler Wheels A
20. Drive Wheels A
21. Drive Wheels B
22. Idler Wheels B
23. Front Wheels
24. Idler Wheel Shaft (Left)
25. Discs
26. Idler Wheel Shaft (Right)
27. Idler Adjust Rod (Left)
28. Idler Adjust Rod (Right)
29. Road Wheels B
30. Knuckle (Right)
31. Knuckle (Left)
32. Front Axle B
33. Front Axle A
34. Front Brake Drum
35. Tie Rod
36. Leaf Spring (Left)
37. Leaf Spring (Right)
38. Front Brake Cover
39. Road Wheels A

B PARTS

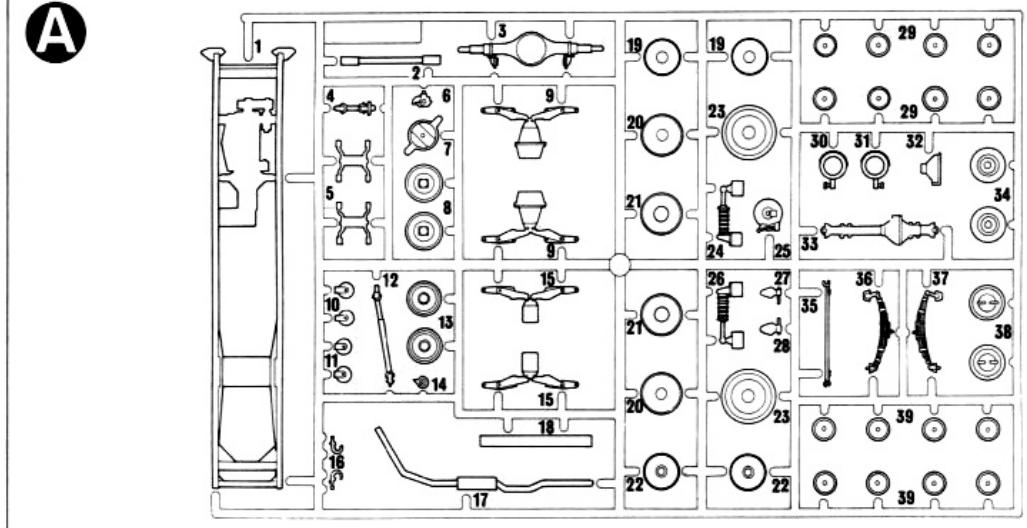
1. Shovel
2. Seat Support
3. Ax
4. Hammer
5. Front Side Panel (Left)
6. Front Side Panel (Right)
7. Spare Tank B
8. Spare Tank A
9. Driver's Left Arm
10. Driver's Right Arm
11. Helmets
12. Driver's Body
13. Driver's Feet
14. Bonnet
15. Instrument Panel
16. Headlight B
17. Headlight A (Right)
18. Headlight A (Left)
19. Door (Left)
20. Door (Right)
21. Radiator Grille A
22. Radiator Grille B
23. Headlight Guards
24. Seat Back Rest
25. Battery Case
26. Seat A
27. Seat B
28. Front Fender
29. Windscreen Armour Plate
30. Lever B
31. Side Brake Lever
32. Windscreen Frame
33. Lever A
34. Steering Wheel
35. Headlight C
36. Steering Wheel Shaft
37. Twin Lever
38. Windscreen Armour Plate Support

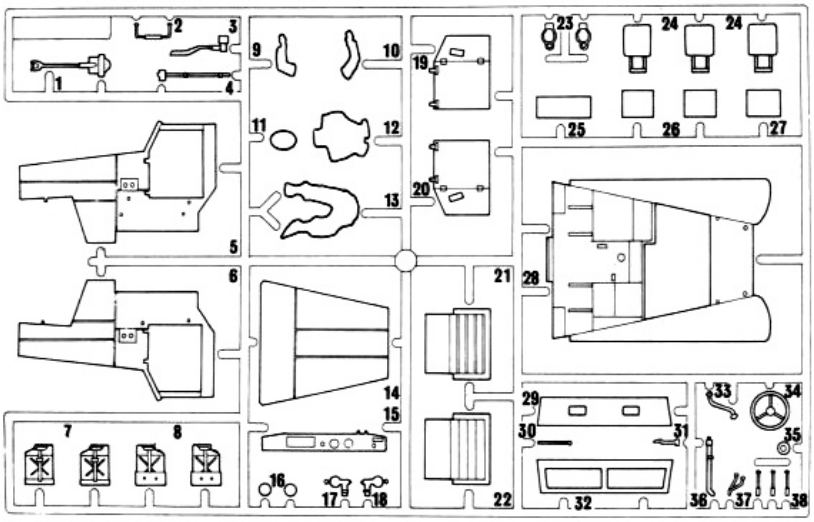
C PARTS

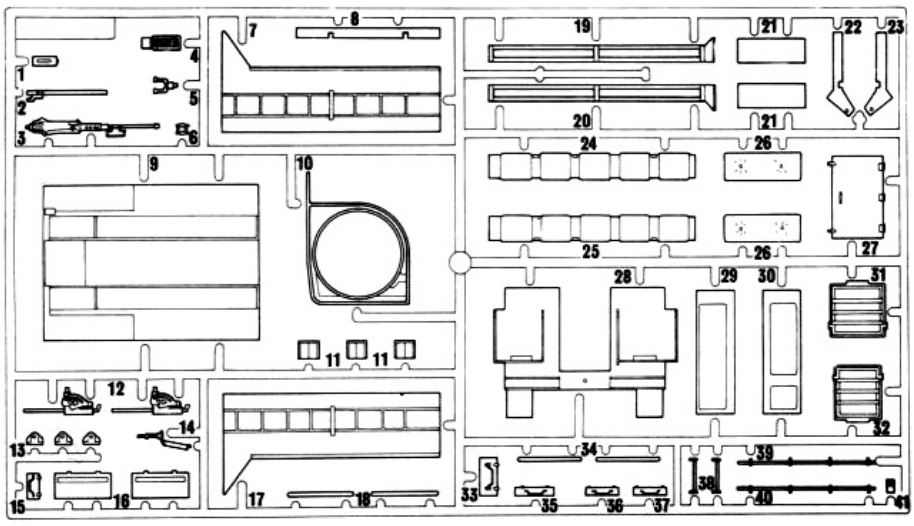
1. Ammo Box Lid
2. MG Base Stay
3. 12.7 mm MG
4. Ammo Box
5. MG Mount B
6. 12.7 mm MG Stay
7. Rear Side Panel (Left)
8. Front Bumper
9. Floor Panel
10. Revolving MG Base
11. 7.7 mm Ammo Box
12. 7.7 mm MG
13. MG Mount A
14. Antenna Stay
15. Box B
16. Rifle Stay
17. Rear Side Panel (Right)
18. Rear Carrier Stay A
19. Side Carrier A
20. Side Carrier B
21. Roller
22. Roller Frame (Right)
23. Roller Frame (Left)
24. Bench Seat B
25. Bench Seat A
26. Seat Back Rest
27. Rear Door
28. Rear Panel
29. Seat Panel A
30. Seat Panel B
31. Rear Carrier (Right)
32. Rear Carrier (Left)
33. Box A
34. Rear Carrier Stay B
35. Box D
36. Box C
37. Box E
38. Bar A
39. Bar B (Left)
40. Bar B (Right)
41. MG Mount Holder

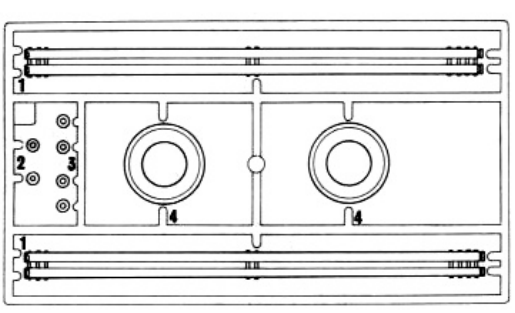
D PARTS

1. Track
2. Wheel Bush B
3. Wheel Bush A
4. Front Tyres

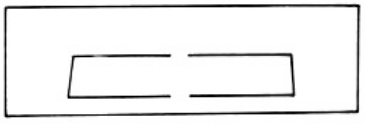








Transparent Part





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