

JAPANESE MEDIUM TANK TYPE 97 CHI-HA

1/35 MILITARY MINIATURE SERIES



TAMIYA
TAMIYA PLASTIC MODEL CO.
3-7, ONDWARA, SHIZUOKA-CITY, JAPAN



Type 97 Medium Tank

The Type 97 medium tank was a typical tank of the Japanese Army and shared hardships with tank men before and throughout World War II in the Pacific theatre including China and the Kurile Islands.

Its well-proportioned low silhouette, aerial spread around the vehicle top, unsymmetrical turret, complicated body front, seesaw-type suspension system, etc. combined to give the tank unique beauty that clearly distinguished it from other tanks.

The Type 97 medium tank was planned in 1936 as a new main tank for infantry support to take the place of the existing Type 89 medium tank. In those days, the Japanese Army was divided into two in opinion as to what sort of a new tank to make. The high command and military administration hoped to have small, light and un-expensive tanks as many as possible, while fighting troops needed heavier tanks of satisfactory

performance. Since both of them held fast to their own opinion, it was decided to make and study two different experimental tanks. This was a rare case very different from the conventional practice of showing the same specifications to several competitors and having them make their own experimental vehicle.

To distinguish between them, the heavier tank insisted upon by the fighting troops was given the secret code of "Chi-Ha" and the lighter tank needed by the military authorities was coded "Chi-Ni". "Chi" is an abbreviation of "Chusen-sha" which means medium tank. "Ha" and "Ni" correspond to "C" and "D" respectively, showing the order of design. Thus, the "Chi-Ha" means medium tank designed in the third place and the "Chi-Ni" stands for medium tank designed in the fourth place.

In 1937, the Tokyo Plant of Mitsubishi Heavy Industries Ltd. completed an experimental vehicle of the "Chi-Ha" and Osaka Arsenal completed that of the "Chi-Ni".

The advantages and disadvantages of the two types had already been clear from their design drawings. Therefore, the discord of opinion at the design stage remained unchanged even when the experimental vehicles were completed. In the meantime, the Chinese-Japanese War broke out on 7th July, 1937 and peacetime budgetary limitations were removed. At last, the "Chi-Ha" was accepted as a new medium tank to be produced. In June 1937, some weeks before that, the "Chi-Ha" was tested at Army Tank School in Chiba. The "Chi-Ha" at stage, like the later German Panther and Tiger tanks, had road wheels in staggered arrangement and was very different in shape from the production model. Running trials on steep slopes proved that the tracks were liable to get out of position, and the "Chi-Ha" was to undergo improvements immediately.

To prevent it, two measures were taken: One was to replace two central road wheels by conventional double wheels. The other was to replace all the road wheels by double ones. The two improved versions, still different in spring arrangement from the production model, were put to tests in January 1938. Officially accepted for production was the design whose 1st and 6th road wheels were independently sprung.

The "Chi-Ha" officially designated Type 97 medium tank was a well-shaped, modern vehicle quite unlike the Type 89 medium tank.

The Type 97 medium tank was equipped with a 57 mm gun type 97, which was the same in calibre as the main gun type 90 of the Type 89 medium tank but was of the Type 97, not of the conventional type 90. As secondary armament, the vehicle carried two 7.7 mm heavy machine guns of the Type 97, one on the frontal left of the body and the other on a ball mount in the rear of the turret. The latter machine gun could be remounted at the top of the turret for anti-air purpose.

The vehicle carried 114 rounds of main-gun ammunition and 4,035 rounds of machine-gun ammunition.

The main gun was 18.4 calibres long. Muzzle velocity for shells was no more than 355.3 m/



see but, in view of the character of the Type 97 medium tank developed for infantry support, this was the best possible figure at that time. Concerning engines that could be referred to as the heart of tanks, the Japanese successfully put air-cooled diesel engines into practical use for the first time in the world in 1934. There were several reasons as follows why the Japanese had developed and adopted them for use in tanks instead of petrol engines and water-cooled diesel engines: First, their experience told that petrol engines consumed more fuel and might cause fire when they backfired or when the vehicle received a hit. Secondly, Japan was poor in oil resources and it was considered to be difficult to supply sufficient petrol in war time. Thirdly, air-cooled engines were more desirable in operational areas where little cooling water was obtainable. Developed for the "Chi-Ha" vehicle was a V 12-cylinder engine offering 170 hp. Two different experimental engines of this type were made by Mitsubishi Heavy Industries Ltd., and Ikegai Iron Works Ltd. In the event, the Army chose a direct injection engine that Mitsubishi made. The transmission was of the sliding selection type. It had four forward and one reverse speeds with high-low change-over. The steering mechanism was of the clutch-brake type with planetary gears. The fourth speed gave a total reduction gear ratio of 5.58, which on paper means that the "Chi-Ha" vehicle had a maximum speed of 42 km/h. In practice, however, it was limited to 38 km/h because the rubber tyres of road wheels were liable to run hot when the vehicle ran at higher speeds.

The Type 97 medium tank was manufactured by Mitsubishi Heavy Industries, Sagami Arsenal, Hitachi, Ltd., etc. Production totalled 2,123 vehicles. This means that in number the Type 97 medium tank was slightly smaller than the Type 95 light tank but, of course, larger than any other main tank of Japan. Of the 2,123 vehicles, 1,224 were manufactured by Mitsubishi Heavy Industries and 355 by Hitachi. The total was made up as follows: 25 manufactured in 1938, 202 in 1939, 315 in 1940, 507 in 1941, 531 in 1942 and 543 in 1943. Although production reached the peak in 1943, no vehicles of this type were manufactured in 1944 because production was changed in this year over to the new Type 1 medium tank, Type 1 self-propelled gun, etc. The total of 2,123 includes "Chi-Ha" vehicles mounting the Type 1-47 mm tank gun on the new turret and therefore the exact number of "Chi-Ha" vehicles with the 57 mm gun is not known. However, it



may fairly be presumed that the number of the latter vehicles was 1,049 i.e. total production of 1938-1941.

The Type 97 medium tank first saw action in the Nomonhan Incident of July 1939. The 3rd Tank Regiment of Yasuoka's Detached Force had already received new Type 97 medium tanks as substitutes for existing Type 89 medium tanks, but the Regiment had replaced only four including the regimental commander's vehicle with the new tanks by the time the incident occurred. In the fierce fighting against the Russians, the regimental commander's vehicle received a hit and Colonel Yoshimaru died in the vehicle.

This was a grave warning to the Type 97 medium tank that had been designed in disregard of tank fighting. However, Japan entered World War II before sufficient countermeasures were considered.

In the invasion of Malaya at the beginning of the Pacific War, Type 97 medium tanks of the 1st and 6th Tank Regiments, achieved brilliant war results by showing their mobility to the

full and much improved the morale of the troops. However, the "Chi-Ha" vehicle with the short-barrelled 57 mm tank gun and maximum armour thickness of only 25 mm proved completely powerless against the Allied M4 medium tank that appeared in course of time. The new "Chi-Ha" carrying the high-velocity 47 mm tank gun on the new turret was first introduced into the 7th Tank Regiment in the invasion of the Philippines, but even this vehicle was no match for the enemy tank.

In due consideration of anti-tank fighting, the Type 3 medium tank, Type 4 medium tank, etc. were designed and trial-manufactured. However, raw material available for their production was much limited.

As the main strength of Tank Regiments, the Type 97 medium tank was forced to fight desperately against longer odds until the end of the war.



PARTS

A PARTS

- | | |
|-----------------------|-----------------------|
| 1. Road Wheel (A) | 2. Drive Wheel (A) |
| 3. Drive Wheel (B) | 4. Road Wheel (B) |
| 5. Support Roller (A) | 6. Support Roller (B) |
| 7. Support Roller (C) | 8. Road Wheel (C) |
| 9. Road Wheel (D) | 10. Rear Wheel (A) |
| 11. Rear Wheel (B) | 12. Wheel Cap |
| 13. Unnecessary. | 14. Rear Shaft |

B PARTS

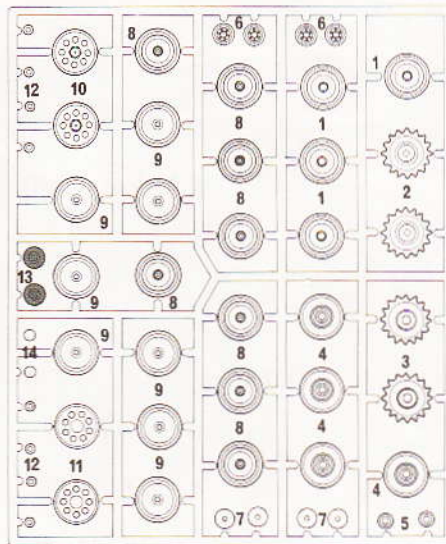
- | | |
|-------------------------|-----------------------|
| 1. Gun Mount | 2. Anti Aircraft Gun |
| 3. Spring Protector | 4. Periscope |
| 5. Front Hook Guide | 6. Upper Guide |
| 7. Front Hook | 8. Suspension |
| 9. Spring Holder (A) | 10. Spring Holder (B) |
| 11. Spring | 12. Front Panel |
| 13. Spring Holder (C) | |
| 14. Rear Wheel Adjuster | |
| 15. Front Light | 16. Helmet |
| 17. Gear Cover (A) | 18. Gear Cover (B) |
| 19. Exhaust Cover (A) | 20. Exhaust Cover (B) |
| 21. Exhaust Pipe | 22. Protector (A) |
| 23. Protector (B) | 24. Exhaust Head (A) |
| 25. Exhaust Head (B) | 26. Knob |
| 27. Inspection Hatch | 28. Handrail |
| 29. Oil Cooler | 30. Oil Cooler Cover |
| 31. Gun Support | 32. Driver Episcopo |
| 33. Tank Machine Gun | 34. Tug Rope |
| 35. Rear Hook Guide | 36. Rear Panel |
| 37. Rope Holder | 38. Number Plate |
| 39. Tail Lamp | 40. Rear Hook |
| 41. Jack | 42. Jack Accessory |

C PARTS

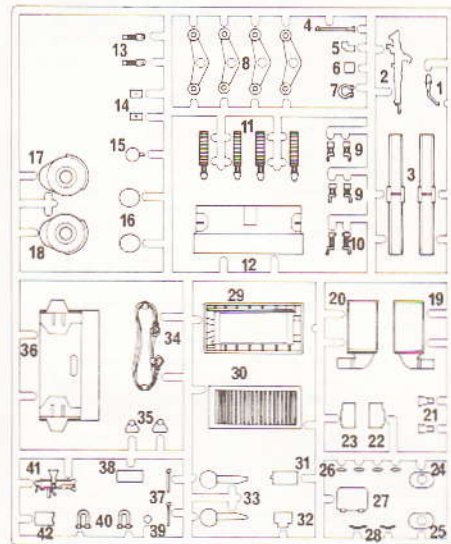
- | | |
|------------------------------------|-------------------------|
| 1. Turret Panel | 2. Driver's Hatch |
| 3. Bullet Proof Plate | 4. Duct Cover (Right) |
| 5. Duct Cover (Left) | 6. Ground Shovel |
| 7. Bayonet | 8. Driver Seat |
| 9. Tool | 10. Tool case |
| 11. Body of Commander Figure | |
| 12. Left Arm for Commander Figure | |
| 13. Right Arm for Commander Figure | |
| 14. Water Bottle | 15. Field Glasses |
| 16. Holster | 17. Pickaxe |
| 18. Driver | 19. Cupola Hatch (A) |
| 20. Handrail | 21. Upper Cupola |
| 22. Cupola Base | 23. Turret Base |
| 24. Signal Lamp | 25. Cupola Hatch (B) |
| 26. Cupola Hatch (C) | 27. Machine Gun Mount |
| 28. Commander Seat | 29. Mantelet (A) |
| 30. Mantelet (B) | 31. Machine Gun Support |
| 32. Gun Barrel Top | 33. Gun Barrel |
| 34. Antenna | |



A PARTS A-13 is unnecessary
A-13 werden nicht benötigt



B PARTS



C PARTS

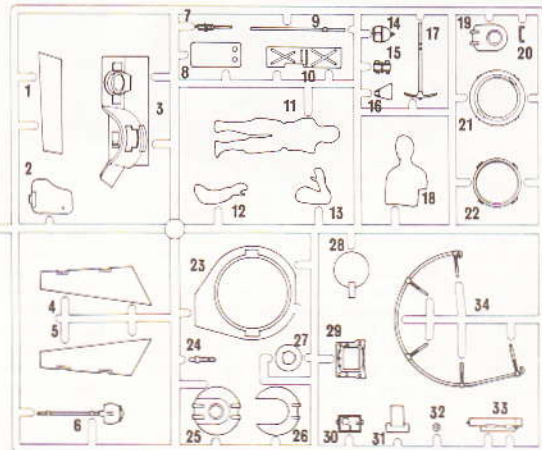
(Poly-Caps)



1 are unnecessary
1 werden nicht benötigt



Upper Turret
Turm Oberteil



Read Before Assembly
Erst lesen - dann bauen.

★Study the instructions before you start assembly. Make sure of parts shape and area to be cemented before you apply cement.

★You will need a sharp knife, a screwdriver, a pair of tweezers, and a file.

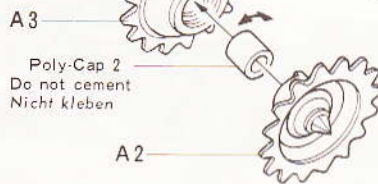
This mark shows the colour this part should be painted. See also page 8.

★Vor Beginn die Bauanleitung studieren. Die Teile nach Bauabschnitten zusammenbauen. Teile nicht vom Spritzling brechen - abschneiden oder abwickeln, vor Kleben zusammenhalten - auf Passung achten.

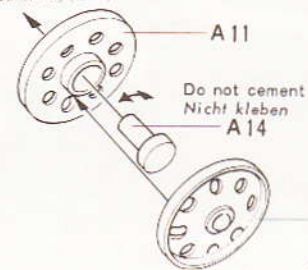
★Nicht zuviel Klebstoff verwenden. Kleine Teile mit Pinzette halten.
★Abziehbilder vorsichtig im Wasser abschieben, auf richtigen Sitz achten und gut trocknen.

1 Construction of Wheels Zusammenbau der Räder

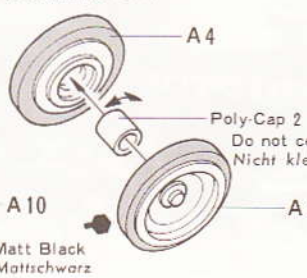
(Drive Sprocket)
Make 2 sets.
(Kettentribrad)
(2x)



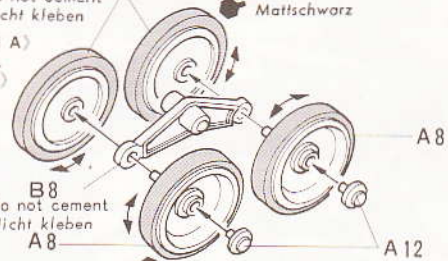
(Idler Wheel)
Make 2 sets.
(Spannrad) (2x)



(Road Wheel A)
Make 4 sets.
(Laufräder A)
(4x)

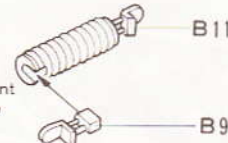


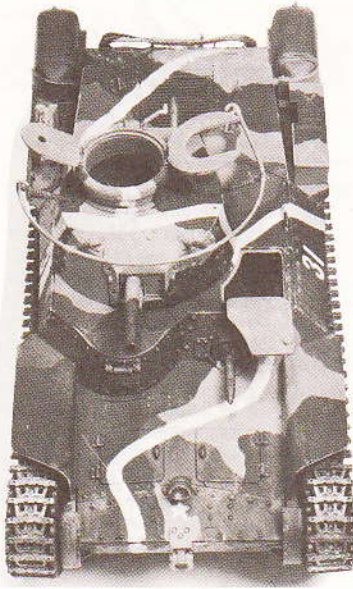
Do not cement
Nicht kleben



Matt Black
Mattschwarz

(Coil Spring)
Make 4 sets.



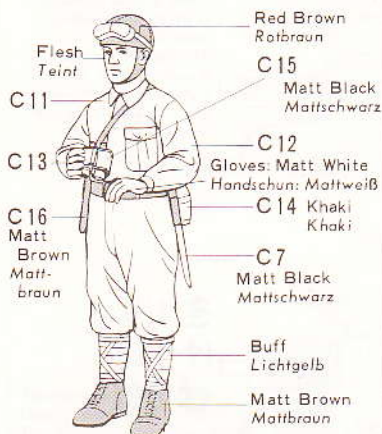
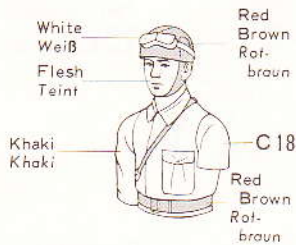


6 Construction of Upper Hull C

Do not cement Machine Gun B33. Instead, hold it in place with Support B31. C8 serves as a mount of Machine-Gunner Figure. MG B33 nur einstecken und Halter B31 einkleben.

Construction and Painting of Figures

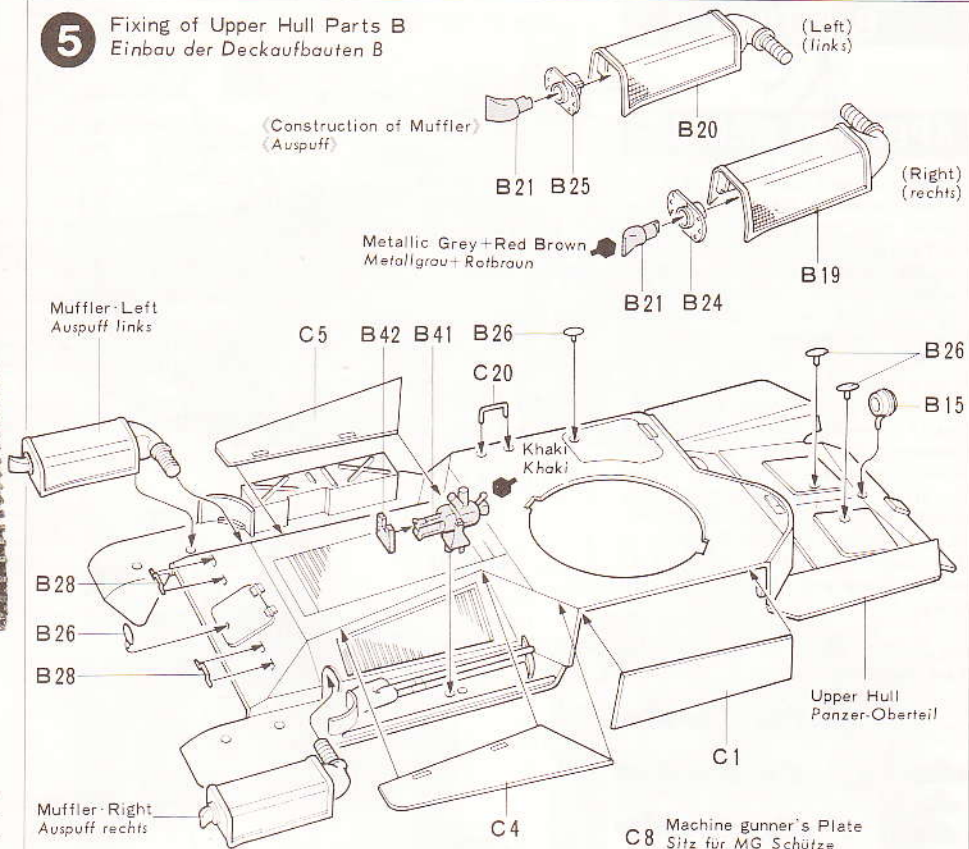
«Mannchenbau»



★If you are to put this in the tank, do not fix C14.
 ★Wenn Figur in Tank gestellt wird, dann Feldflasche C14 nicht ankleben

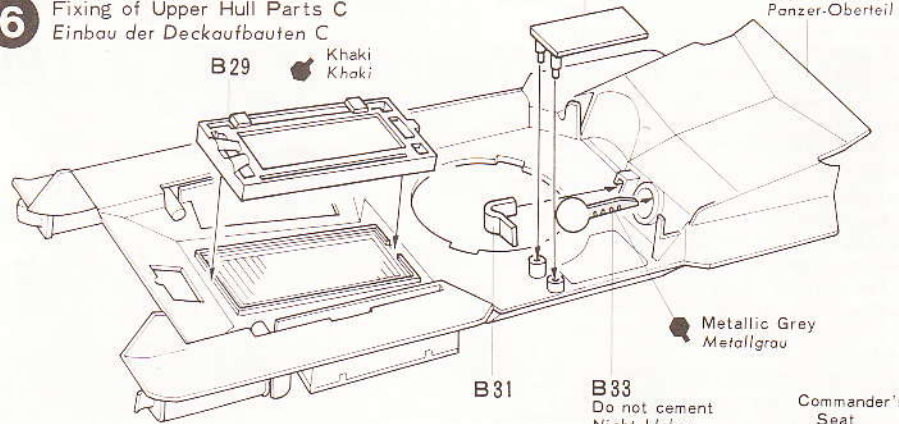
5 Fixing of Upper Hull Parts B

Einbau der Deckaufbauten B



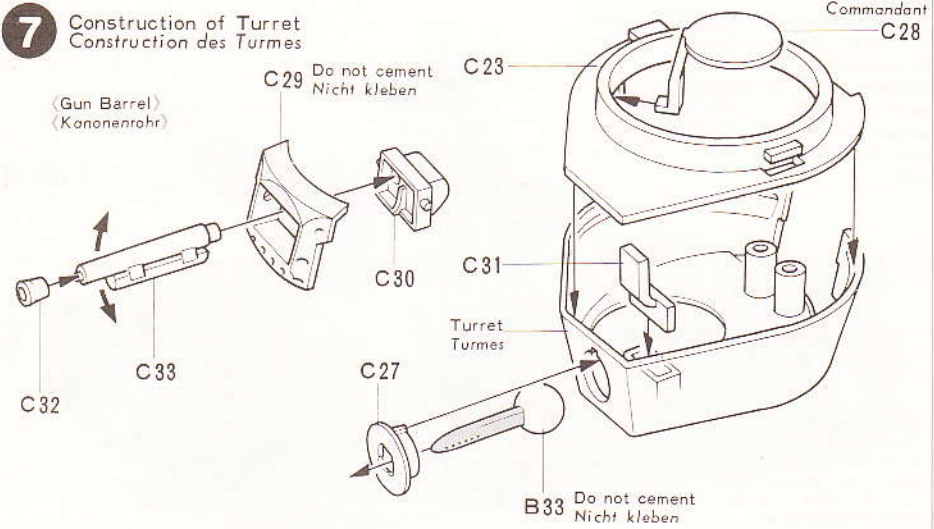
6 Fixing of Upper Hull Parts C

Einbau der Deckaufbauten C



7 Construction of Turret

Construction des Turmes

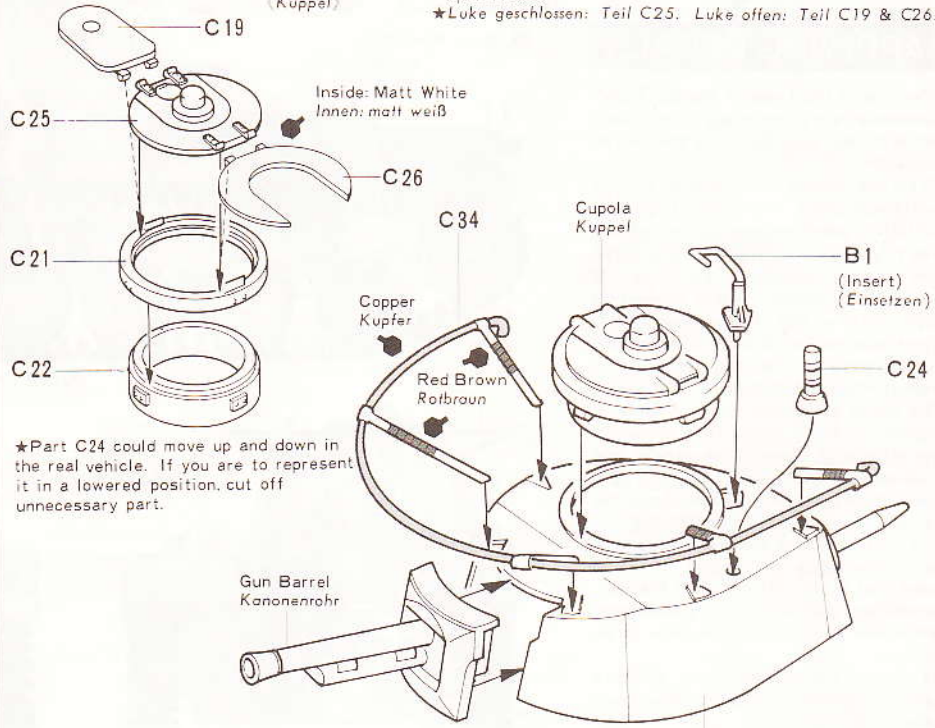




8 Fixing of Turret Parts Einbau der Turmteile

(Cupola)
(Kuppel)

★C25 represents closed Hatch. C19 & C26 represent open Hatch.
★Luke geschlossen: Teil C25. Luke offen: Teil C19 & C26.

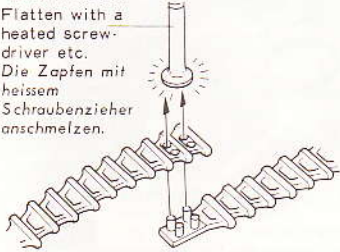


★Part C24 could move up and down in the real vehicle. If you are to represent it in a lowered position, cut off unnecessary part.

(Construction of Tracks) (Construction der Ketten)

★Flatten with a heated screw driver etc.
★Die Zapfen mit heissem schraubenzieher anschmelzen.

Flatten with a heated screw-driver etc.
Die Zapfen mit heissem Schraubenzieher anschmelzen.



★Put finger to make pins as in the figure.
★Mit Finger flachdrücken.



Put finger to make pins as in the figure.
Mit Finger flachdrücken

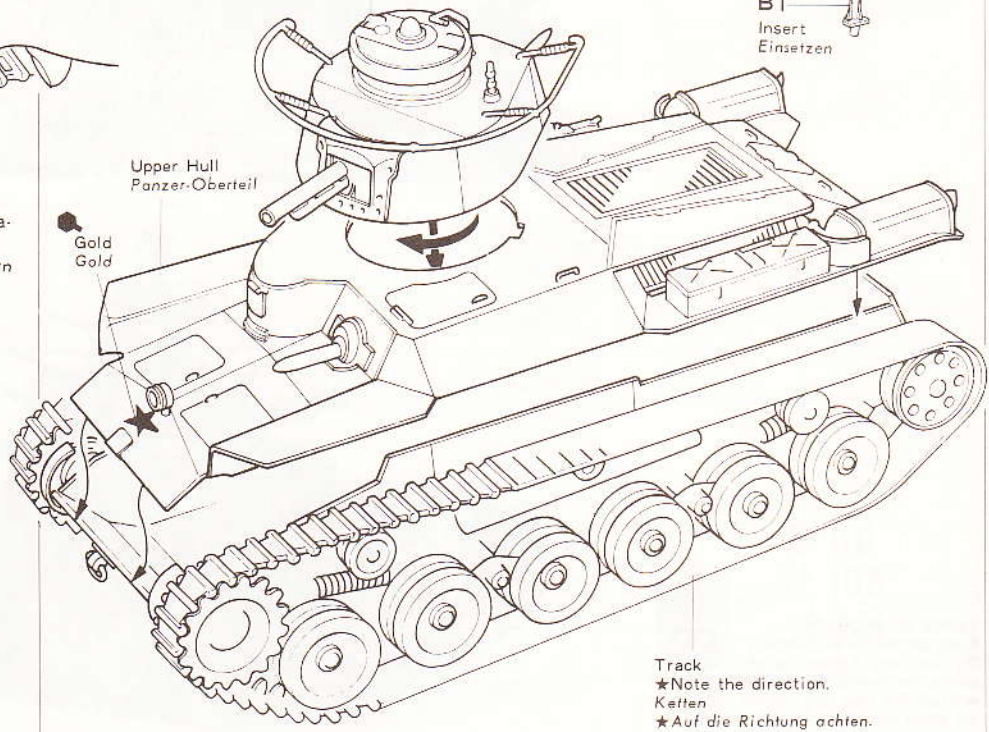
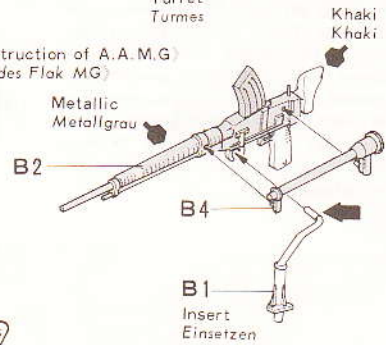
★If track broken strengthen with staplers or thread.
★Bei Kettenbruch mit Heftklammern oder Draht flicken.



9 Completion Endmontage

(Construction of A.A.M.G.)
(Bau des Flak MG)

Turret
★Fit in this position and turn.
★Turn in dieser Richtung einstecken und drehen.



Track
★Note the direction.
Ketten
★Auf die Richtung achten.

PAINTING



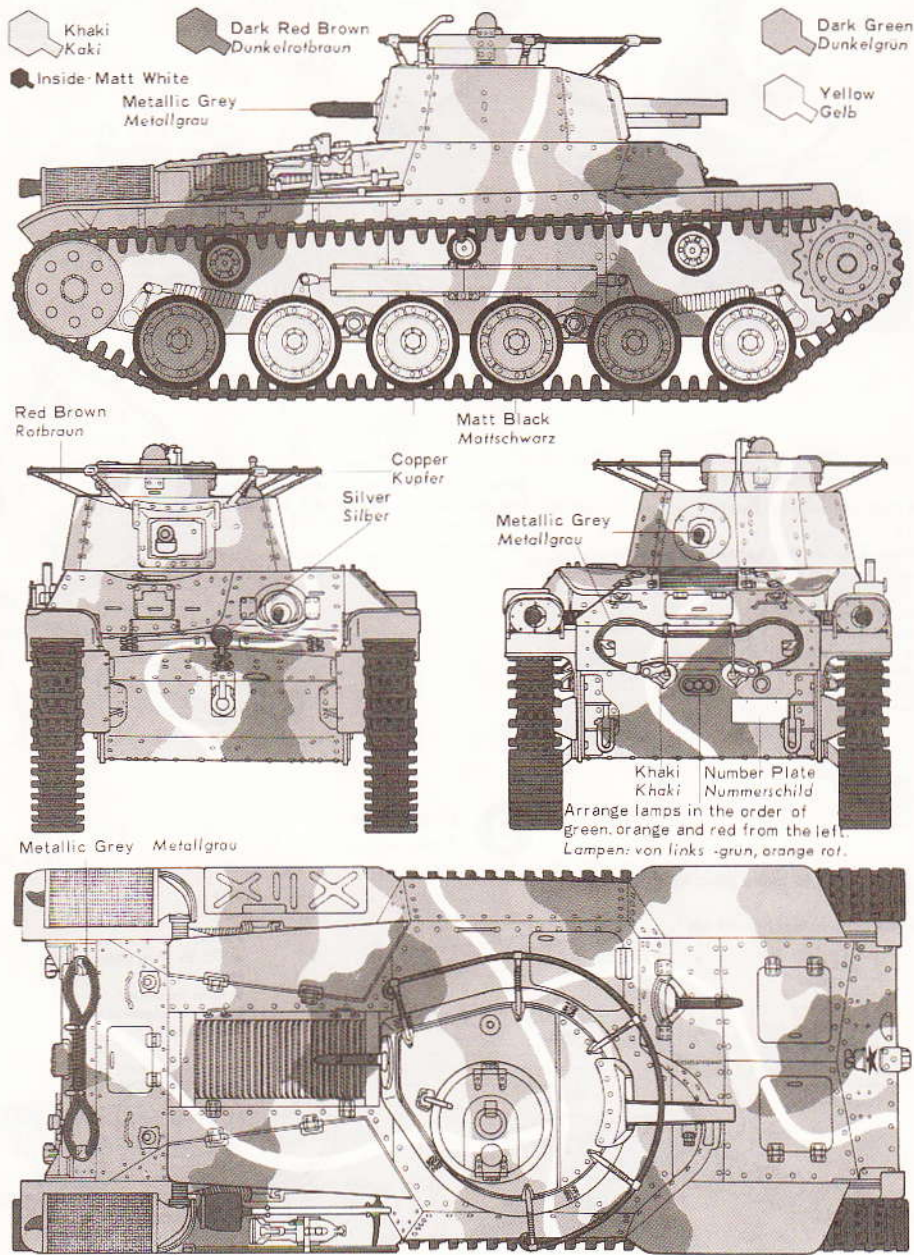
APPLYING DECALS

(Painting of the Type 97 Medium Tank)
Japanese tanks had unique camouflage patterns and were basically painted as follows:

First, the vehicle was sprayed overall with Khaki paint. Then, a fleeting-cloud pattern in earth and dark-green colours was brushed on it. There was no fixed rule as to camouflage patterns. It seems that painters were allowed to apply them at will. Regardless of the three colours, yellow belts with smooth curves were further painted on them from the turret top down to four sides. The yellow belts later came to have irregular winding curves. They produced the effects of dividing the vehicle and misleading its direction. Such unique camouflage patterns could also have the satisfactory effects of misleading the size and shape of the vehicle as well as of overawing the enemy. It would seem that, in the latter half of the war, camouflage painting had no yellow belts and mainly consisted of the other three colours.

As winter camouflage, some vehicles had white water paint brushed on their camouflage pattern.

(Bemalung des Type 97 Medium Tank)
Japanische Tanks hatten einheitliche Tarnung: Grundfarbe Khaki gespritzt, Erdbraun und dunkelgrün wurde dann aufgemalt. Gelbe Streifen wurden vom Turm nach allen Seiten gezogen und dienten der Erkennung. Zur Winter-tarnung wurde dann noch weisse Wasserfarbe aufgemalt.



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PAINTING



APPLYING DECALS

Marking of the Type 97 Medium Tank

On 8th December 1941, the Japanese started their Malay Operations. The 3rd Tank Group had been incorporated into Lieutenant General Yamashita's Twenty-Fifth Army. Its 1st, 6th and 14th Regiments took part in the Operations. The 1st Tank Regiment was under the 5th Division which formed part of the Army's main body, and landed at Singora in Thailand as the first landing troops. One of its medium tank companies (3rd Company), then forming part of the Saeki Detachment, was in the van of the attack and succeeded in breaking through the British defence position. As shown below, the 3rd Company at that time consisted of ten Type 97 medium tanks and two Type 95 light tanks.

Organization of the 3rd Company, 1st Tank Regiment



Each tank wore a platoon identification number on both sides of the body. Characters seen on the turret sides derived from Chikushino near Kurume, Kyushu where the 1st Tank Regiment was born. "ち" (Chi), one of these characters, represented its Light Tank Company.

(Markierungen)

1. Tank Regiment in Malaysia
Am 8. Dezember 1941 begannen die Japaner ihre Operationen in Malaysia. Die 3. Tank Gruppe wurde der 25. Armee Generalleutnants Yamashita unterstellt. Das 1., 6. und 14. Regiment nahm an den Kämpfen teil.

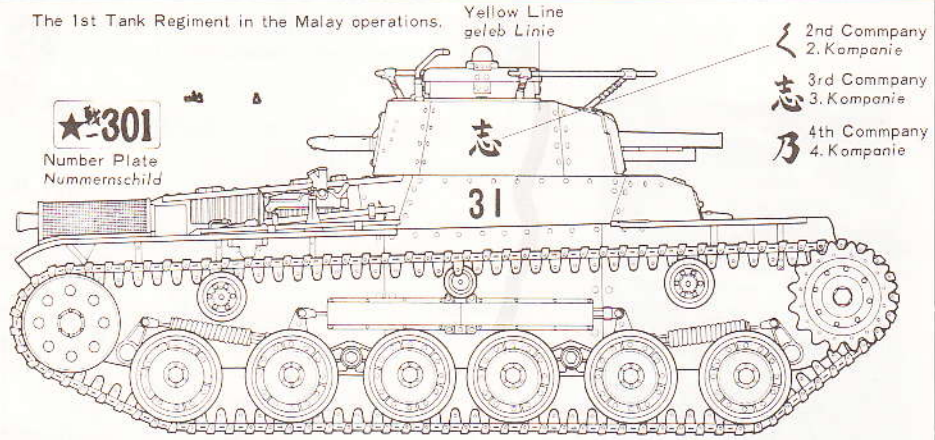
Das 1. Regiment in der 5. Division landete in Singora Thailand mit den ersten Sturmtruppen. Die 3. Kompanie (10 Medium 97 und 2 Type 95) unter First Lieutenant Yamane mit 3 Zügen durchbrach die britischen Linien. Nach Beendigung der Operationen wurde das Regiment in Burma eingesetzt.

Nach Rückkehr in die Mandchurui wurde die Kraft des Regiments durch eine Kompanie Selbstfahrlafetten erhöht.

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The 1st Tank Regiment in the Malay operations.



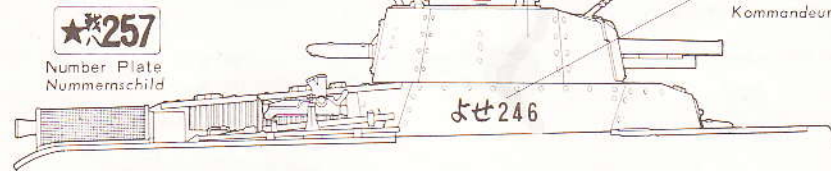
Vehicle of the 3rd Company, 1st Tank Regiment When Preparing for the Expected Decisive Battle in Japan Proper.

In Manchuria, "ら" was seen instead of "良". In der Mandchurui wurde das Zeichen "ら" mit dem folgendem ersetzt "良".

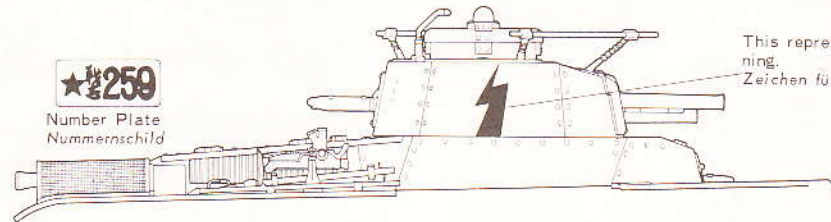


Vehicle of the 8th Tank Regiment

Initials of Regimental Commander 米原善与. Zeichen des Regiment Kommandeurs 米原善与.

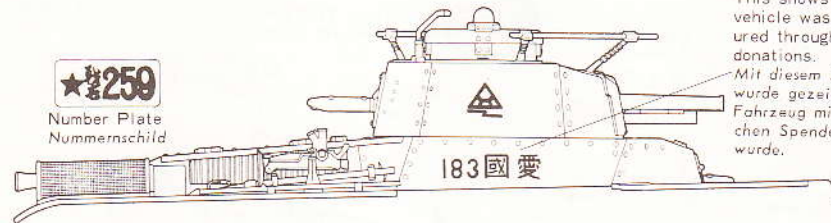


Vehicle of the 5th Company, 17th Tank Regiment



Vehicle of the 2nd Company, 34th Tank Regiment

This represents lightning. Zeichen für "Blitz"



Vehicle of the Chiba Army Tank School

This shows that the vehicle was manufactured through public donations. Mit diesem Zeichen wurde gezeigt, dass das Fahrzeug mit öffentlichen Spenden gebaut wurde.

