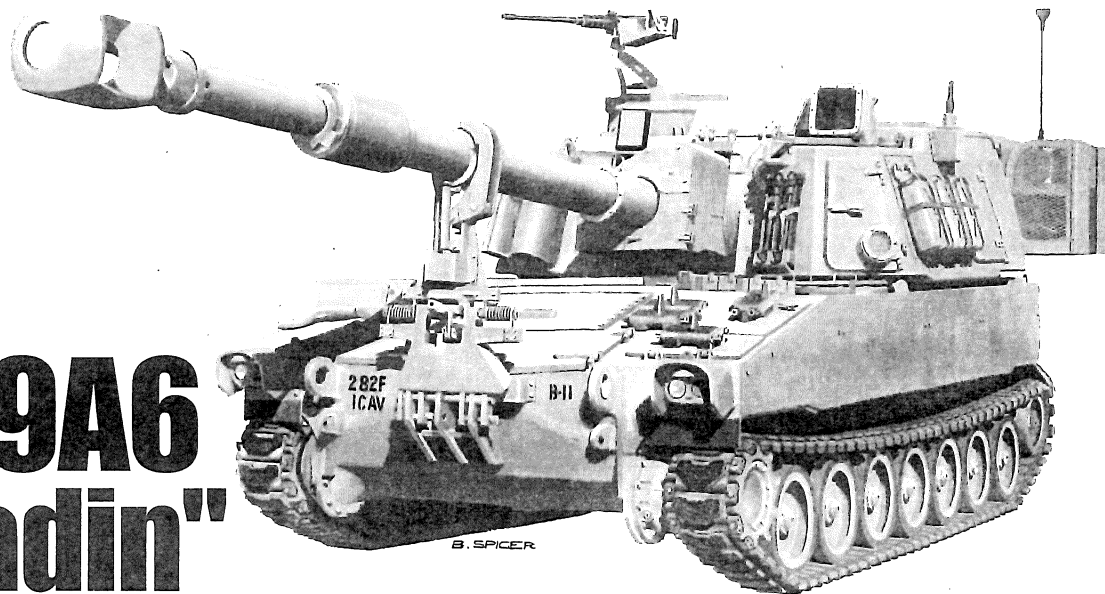




M109A6 "Paladin"

self-propelled 155 mm howitzer



In WWII, US Army's self-propelled howitzer was all based on tank chassis, up to the Korean War. Advantages of adopting tank chassis could lessen logistics burdens, yet it is also against self-propelled howitzer's needs. Self-propelled howitzers need to supply ammunition through the back door. Generally tank's engine is mounted at rear of the hull, therefore the hull has to be reversed to meet self-propelled howitzer's requirement. The driver's seat needs to be relocated accordingly, likely to be located at combatant compartment, which would limited zone of fire on both sides.

To meet US Army's requirement, a dedicated chassis for self-propelled howitzers project commenced in 1952. This new chassis adopted front-engine and all-welded aluminum armour, and the turret is able to traverse through 360 degrees. By 1958 after changing the engine and howitzer caliber, new designs were designated T195E1 and T196E1, with 105 mm and 155 mm howitzer respectively. They passed tests in 1961 and entered mass production phase in the following year. By 1963, they entered Army services and were designated as M108 and M109 respectively.

It has been 50years since M109 howitzer to be mass produced and join the service of US army from 1963, different from other countries to develop the new artillery platform to match up the future battle ,US army chose to just upgrade M109 which has already in service to satisfy the demand of artillery support from armed forces . M109A6 which in service now named as "Paladin" was given it' s title and serial number in 1990, it armed with M248 155mm howitzer which fire range can reach 30 km, and the major difference of appearance from other type of other M109s is the newly designed turret, it has Kevlar armor, also equipped with anti Nuclear, Biological and Chemical weapons system. But the most important improvement of all is that M1909A6 equipped with battle information exchange system, it can share the field information with the recon units and battle units, analyzing the date and aim the artillery to the target area automatically. With constantly upgrading and improving, the M109 series can continue their service till 2050.

米陸軍の装備する自走砲は第二次大戦中に発展し、朝鮮戦争までにはすべて戦車の車体をベースにしたものになっていた。自走砲に戦車の車体を利用することは、燃料やパーツの供給といった兵站面で非常に有効であったが、一方で運用には不便な点もあった。自走砲は、弾薬の搭載を後部ドアから行うようになっていた。通常戦車のエンジンは車体後部に位置しており、自走砲として使用するには車体の前後を逆転させる必要がある。そのために操縦席の位置変更の必要から、戦闘室内部に配置されその結果砲の左右の射界を狭めてしまうことにもつながった。

1952年、米陸軍の要求に沿うように、専用の車体を用いた自走砲の開発計画が始まった。新車体は、フロントエンジン、全溶接のアルミニウム装甲を採用し、360度旋回 of 砲塔を搭載していた。1958年までにエンジンと搭載砲の口径を変更した後、105mm砲搭載のT195E1、155mm砲搭載のT196E1として、型式名称を与えられた。両車は1961年に試験を通過し、翌年量産開始、1963年にそれぞれM108、M109として、配備が開始されて、配備が開始されたのだった。

M109自走砲の量産が始まり米陸軍に配備された1963年から、50年が経過した。将来の戦闘に対応するために各国が新規に自走砲を開発したのと異なり、米陸軍は既存のM109を改良することで、砲兵部隊の需要に応える策を選択した。射程30kmのM248 155mm榴弾砲を新たに装備した改良型は、M109A6"パラディン"の名称を与えられ1990年に配備がはじめられた。従来のM109自走砲シリーズとの大きな違いは、ケブラー繊維を装甲に用いた新砲塔を搭載したこと、同時に対NBC(核・生物・化学)防護装備が施されている。しかし、最も重要な改良点は、戦闘情報交換システムを装備したことで、偵察部隊と戦闘部隊が戦場の情報を共有することが可能となり、データを分析し、目標を自動的に射撃照準に捉えることが可能となった。M109シリーズは絶えず改良が加えられており、2050年まで第一線部隊での使用が見込まれている。

二次大戰時美國全履帶式自走砲的發展與其他國家相仿，均是沿用來自戰車的底盤改裝。這種情形一直延續至韓戰期間。沿用戰車底盤的自走砲固然有減輕部分後勤負擔的優點，但是自走砲在運用上經常需要由尾門進出與補充彈藥，這使得一般採取後置引擎布局的戰車底盤，必須以倒轉車體的方式來適應砲兵的需要。如此一來駕駛的位置必須重新考慮，往往被安排在與戰鬥室同一個空間之內，這連帶的也影響了火炮的左右射界。

這樣的設計在1950年代已不能滿足陸軍的需要，1952年起美國陸軍開始為自走榴彈砲研製專屬的底盤，新底盤將採用前置發動機的布局與鋁合金車體，另外還包括了360°旋轉的砲塔。在變更了原始設定的火炮口徑及發動機之後，1958年誕生了採用相同砲塔與底盤的T195E1與T196E1，其火炮口徑分別為105毫米與155毫米。1961年通過了測試，1962年開始量產，1963年賦與它們正式的型號為M108與M109並進入陸軍服役。

M109自走砲自一九六三年正式量產進入美軍服役迄今已逾五十年，有別於其他西方國家開發新的自走砲載臺以符合未來作戰的做法。M109選擇在原有的底盤上以組件升級的方式來滿足部隊對這種曲射武器的需求。目前服役中的M109A6是在1990年所賦與的型號，並被命名為“帕拉丁”，採用了M284型155毫米口徑榴砲，最大射程能夠到達三十公里，外觀上最大的不同在於新設計的砲塔，增設了凱夫勒防彈內襯，同時全車具有核生化防護能力。但M109A6最重要改進項目是來自資訊技術，能夠與其他偵察、戰鬥單位共享場訊息，並自動控制火炮的瞄準射擊。在不斷的升級與改良之下，預計M109家族持續的在部隊中服役的年限將可達到2050年。

Illustration: 圖示說明



Method For Applying Decals:

1. Clean Model Surface With Wet Cloth.
2. Cut Out Of Decal Sheet And Dip Them In Warm Water For 15 Seconds.
3. Place it on proper position on model.
4. Slide off base paper leaving decals On Model With Wet Finger Tip.
5. Move Decals To Exact Position, Push Out Excess Water Under Decal With Soft Cotton Cloth.
6. When Decals Get Dry Then Complete.

水貼紙使用說明:

1. 將模型表面擦乾淨
2. 將貼紙剪下泡入溫水中浸泡約15秒
3. 將泡濕之貼紙取出置於欲貼處旁
4. 用指尖輕推貼紙表面使其滑出底紙
5. 將貼紙調整至適當位置並輕擦拭水份
6. 待其自然乾燥後即完成

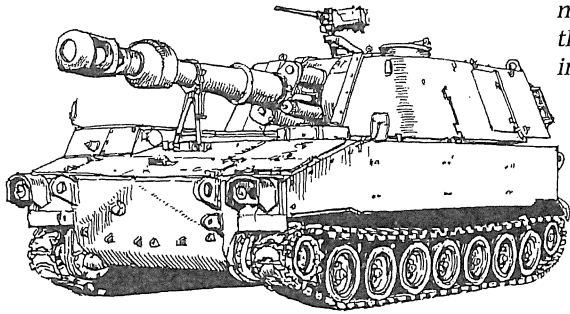
Color list: 塗料表

| Color | Brand | Gunze Sangyo | | | Humbrol | Revell | Lifecolor |
|-------------------|-------|--------------|----------|----------------|---------|--------|-----------|
| | | Hobby Color | Mr.Color | Mr.Color Spray | | | |
| Black | 黑 | H2 | C2 | J2 | 21 | 7 | LC52 |
| Brass | 黃銅 | H9 | C9 | J9 | 54 | 92 | LC75 |
| Bronze green | 青銅綠 | | TC10 | | | | |
| Clear green | 透明綠 | H94 | | | | | |
| Flat black | 消光黑 | H12 | C33 | J33 | 33 | 8 | LC02 |
| Flat white | 消光白 | H11 | C62 | J62 | 34 | 05 | LC01 |
| Green FS34227 | 綠 | H312 | C312 | | 179 | | H26 |
| Khaki | 卡其 | H81 | C55 | | 72 | | UA39 |
| Leather brown | 皮革棕 | | TC11 | | | | |
| Olive drab(1) | 橄欖綠 | H52 | C12 | J12 | 155 | | UA15 |
| Red | 紅 | H3 | C3 | J3 | 19 | 31 | UA90 |
| Red brown | 紅褐 | H47/H406 | C41 | J41 | 160 | 383 | UA085 |
| RLM02 Gray | 灰 | H70 | C60 | | | | UA71 |
| Sail color | 帆布 | H85 | C45 | | 28 | | UA099 |
| Silver | 銀 | H8 | C8 | J8 | 11 | 90 | LC07 |
| Steel | 黑鐵 | H18 | C28 | J28 | 53 | 91 | LC26 |
| Tar black | 瀝青 | H12 | TC12 | J33 | 33 | 8 | LC02 |
| Tire black | 輪胎黑 | H77 | C33+C62 | | 85 | 302 | LC02 |
| Wood brown | 木棕 | H37 | C43 | | 169 | | FS12 |
| Yellow FS33531 | 黃 | H313 | C313 | | 168 | | DR05 |
| RLM79 Sandy brown | 黃褐 | H66 | C19 | | | | UA81 |

M109 155mm self-propelled howitzer forms the backbone of US Army artillery units.

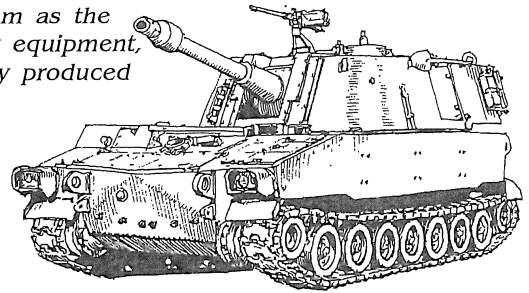
M109 (1962)

The maximum range 14,600 meters.



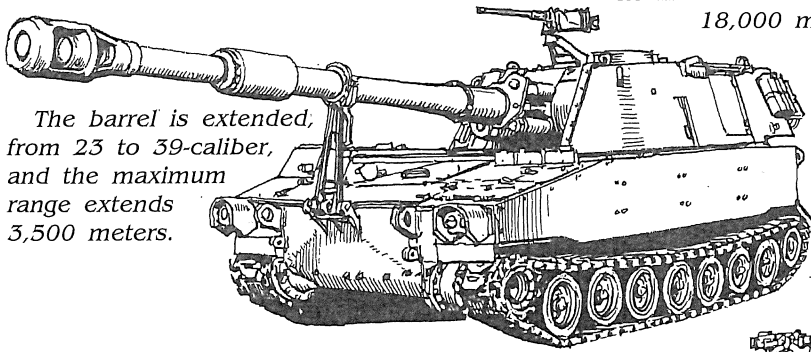
M108 105mm self-propelled howitzer (1963)

Share the same chassis and turret as M109
US Army use 155mm as the mainstream artillery equipment, therefore M108 only produced in small numbers.



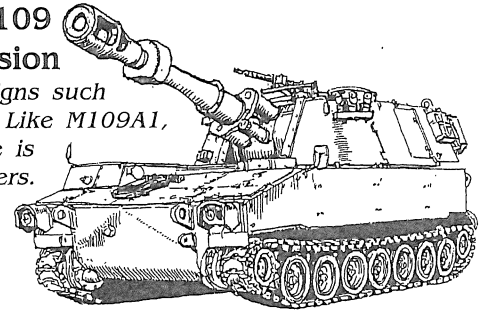
M109A1 (1970)

The barrel is extended, from 23 to 39-caliber, and the maximum range extends 3,500 meters.



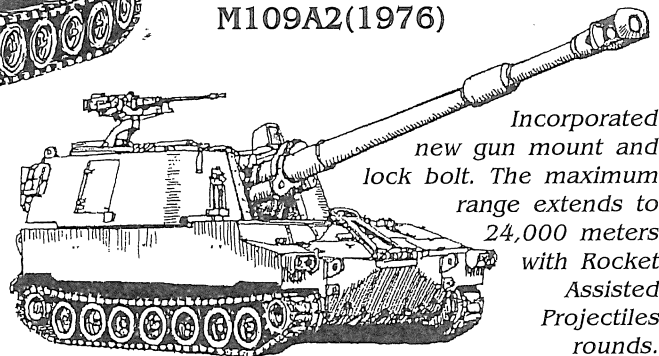
West German Army version

Distinguished by unique designs such as short barrel, and lock bolt. Like M109A1, its maximum range is 18,000 meters.



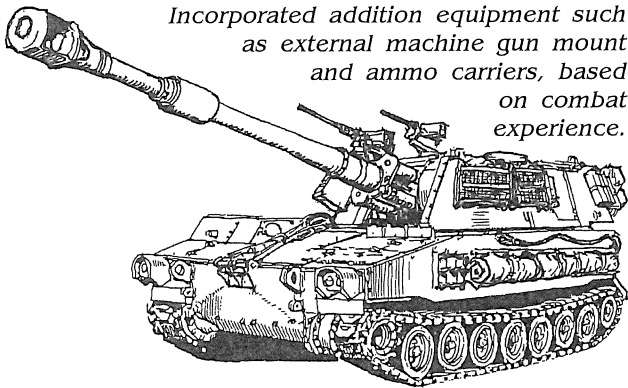
M109A2 (1976)

Incorporated new gun mount and lock bolt. The maximum range extends to 24,000 meters with Rocket Assisted Projectiles rounds.



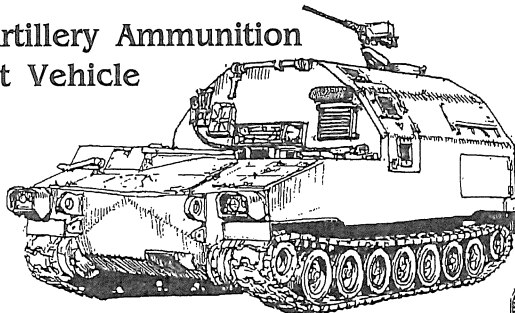
M109AL Israeli Army version

Incorporated addition equipment such as external machine gun mount and ammo carriers, based on combat experience.



M992

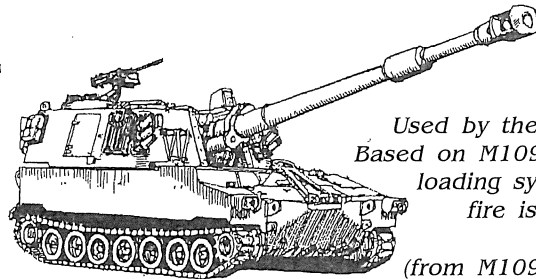
Field Artillery Ammunition Support Vehicle



It can transfer 8 round per minute to M109 through its back door.

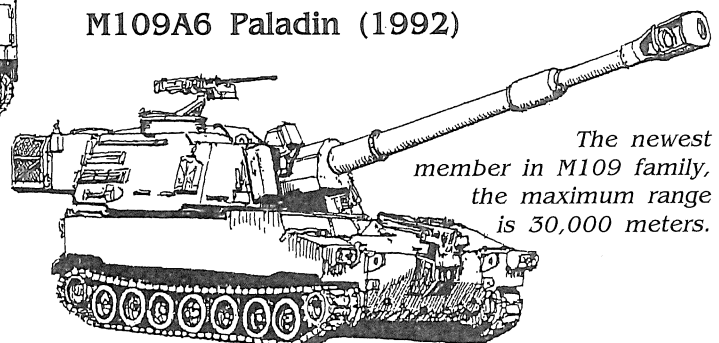
PzH74

Used by the Swiss Army. Based on M109A1 with new loading system, rate of fire is improved to 6 rpm (from M109A1's 4 rpm).



M109A6 Paladin (1992)

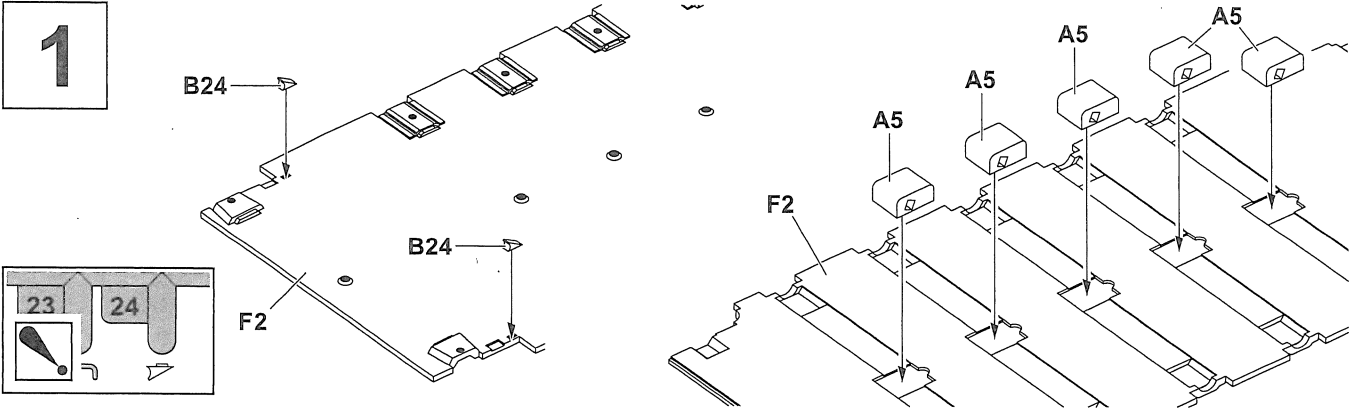
The newest member in M109 family, the maximum range is 30,000 meters.



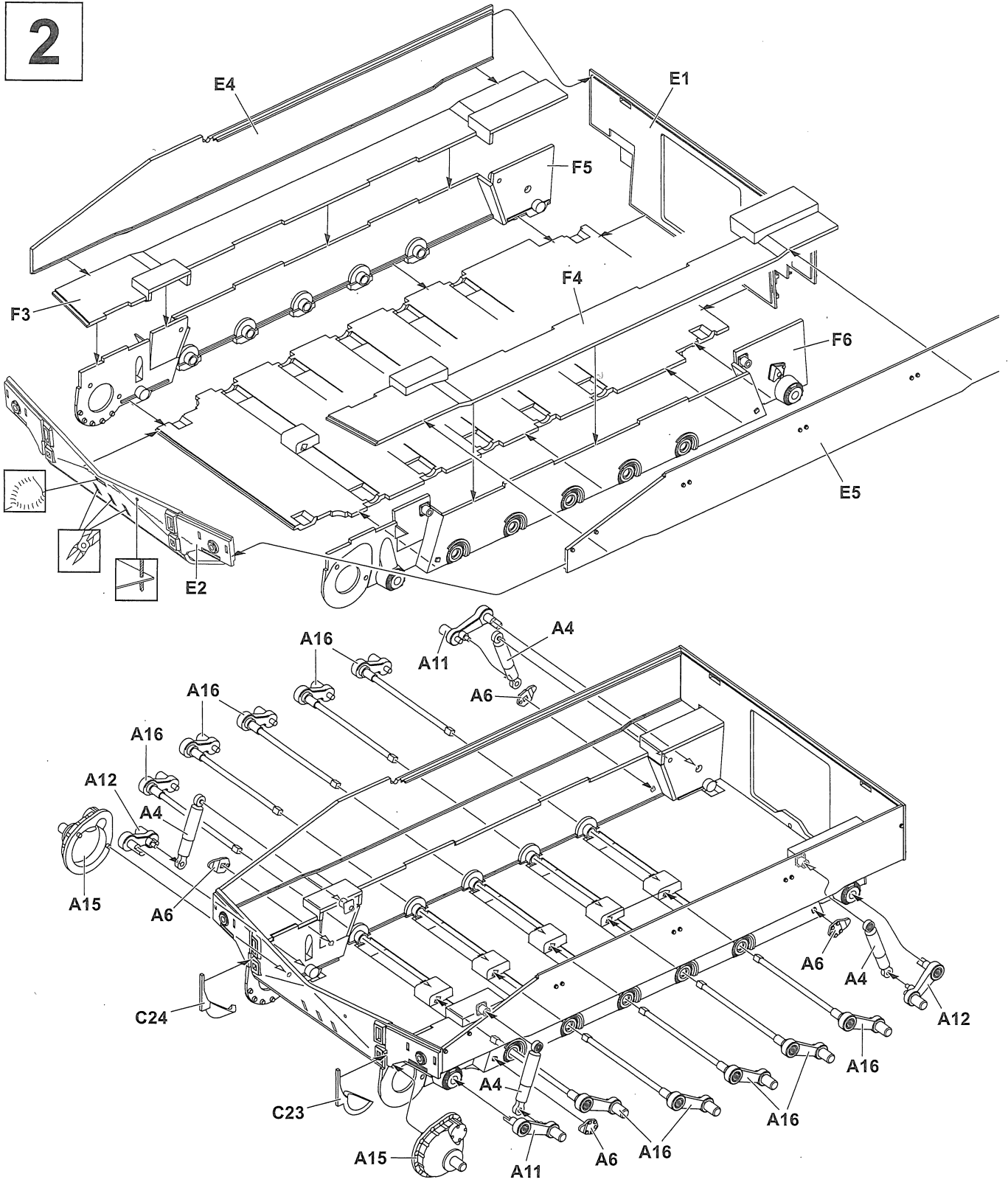
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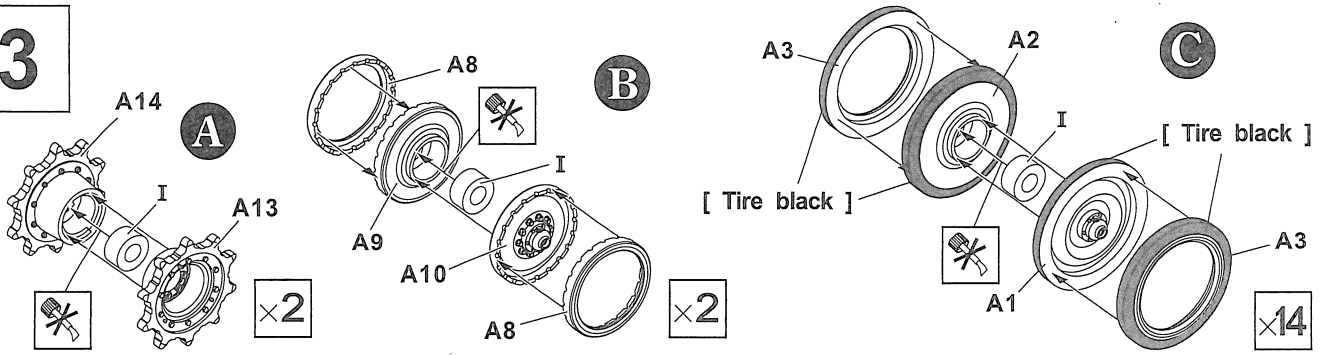
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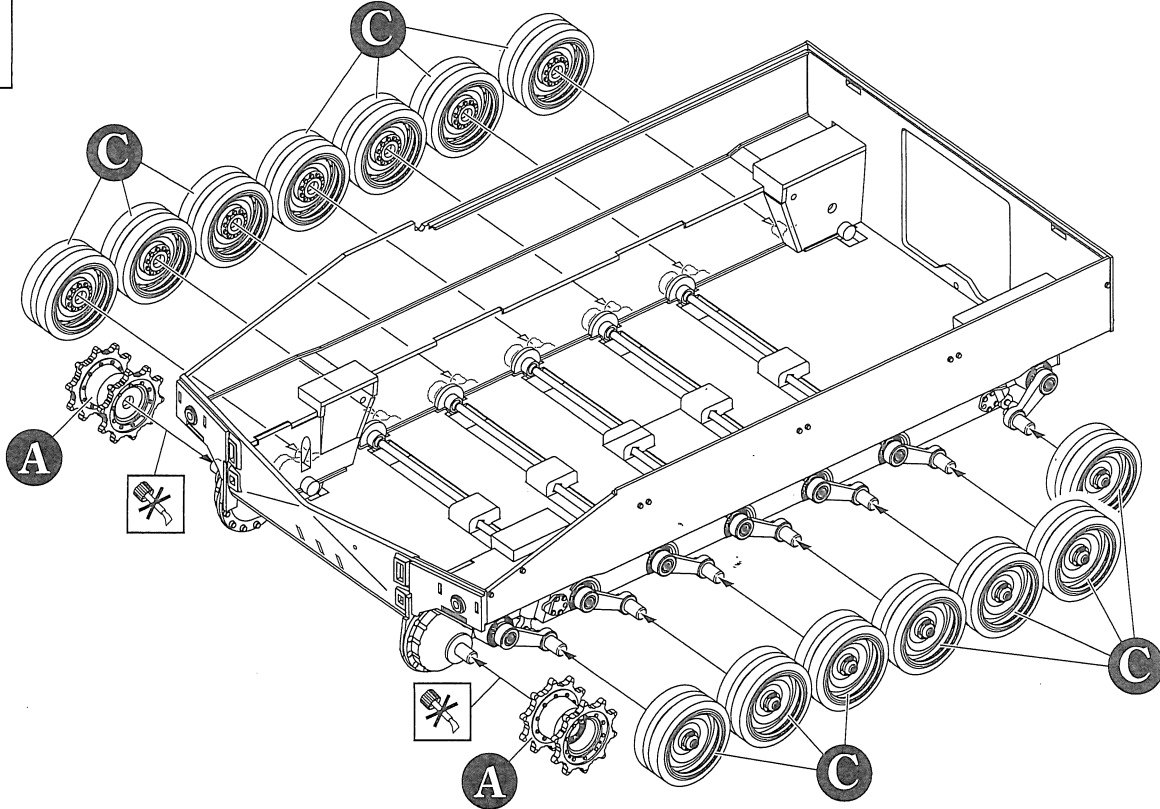
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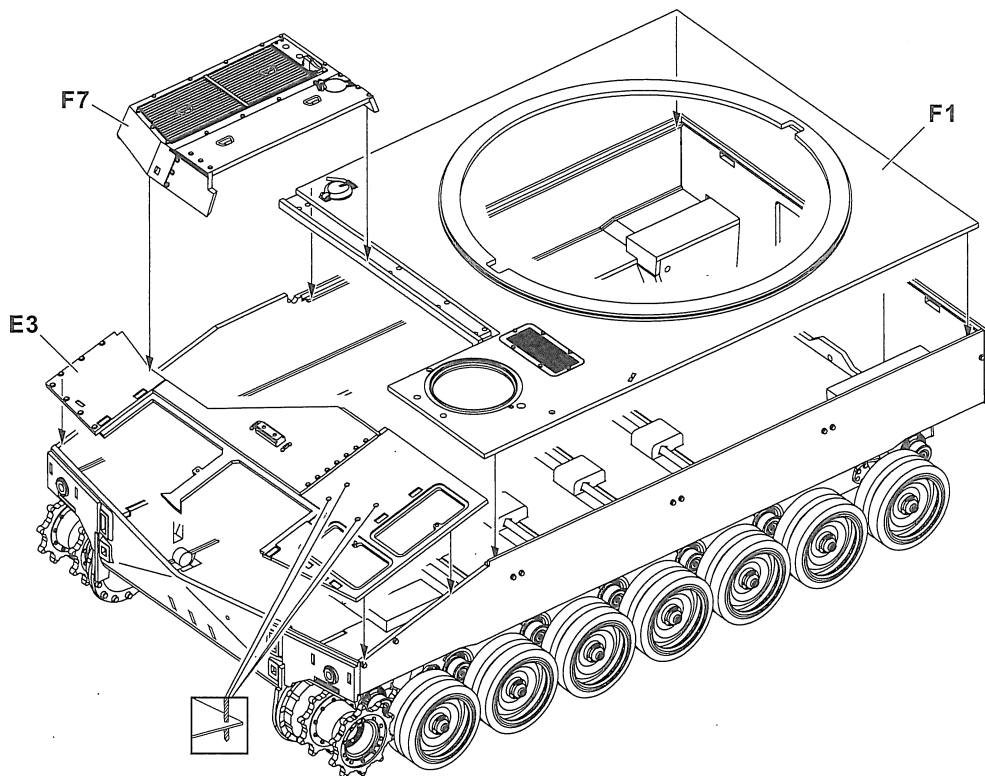
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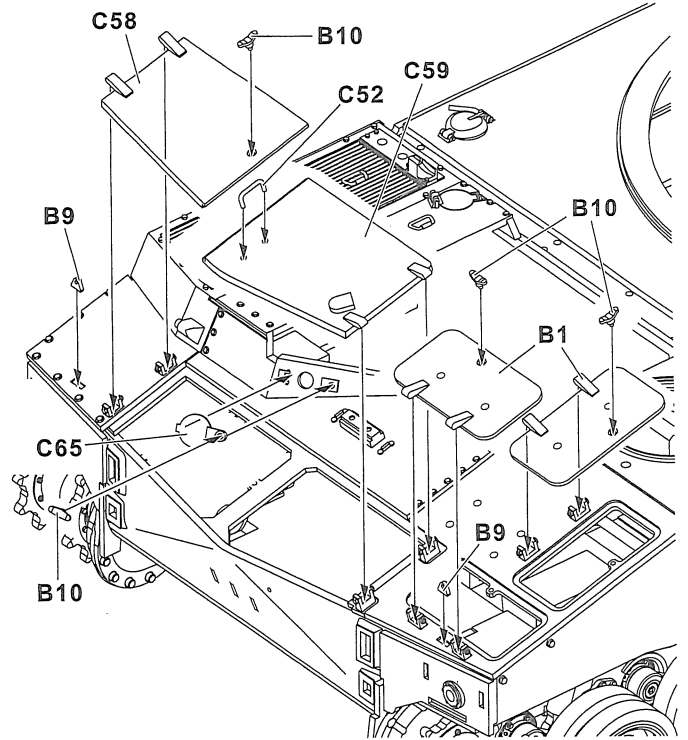
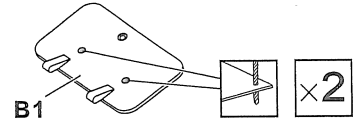
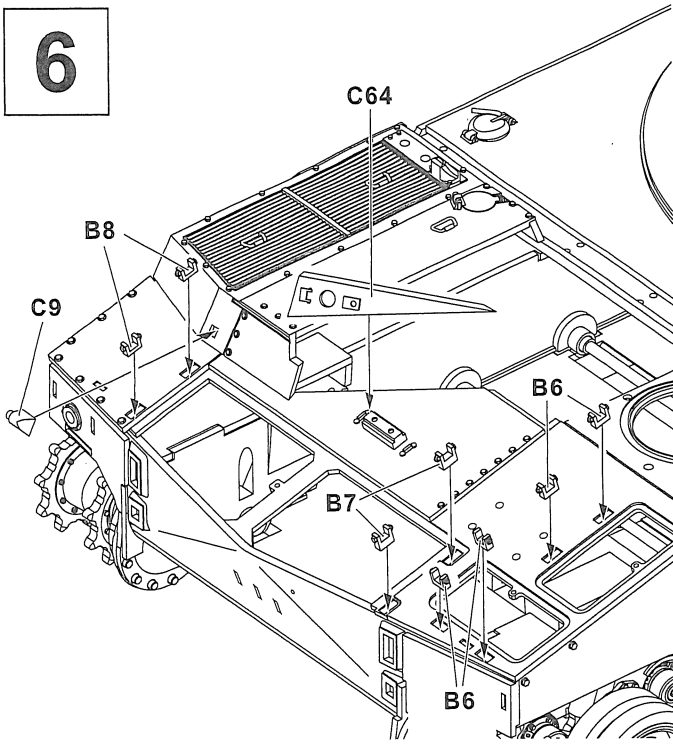
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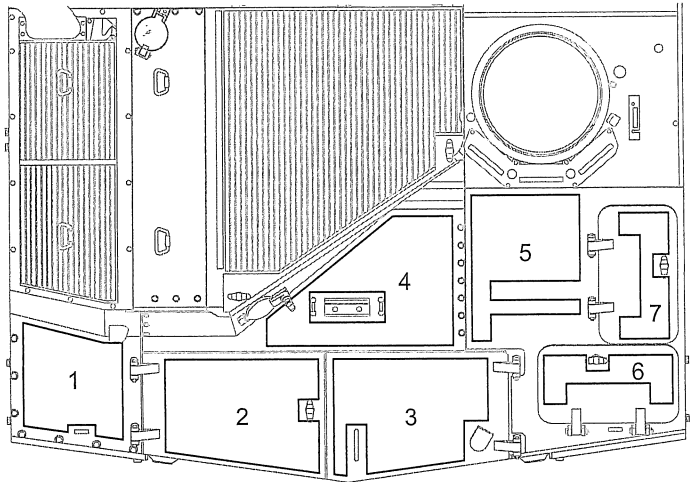


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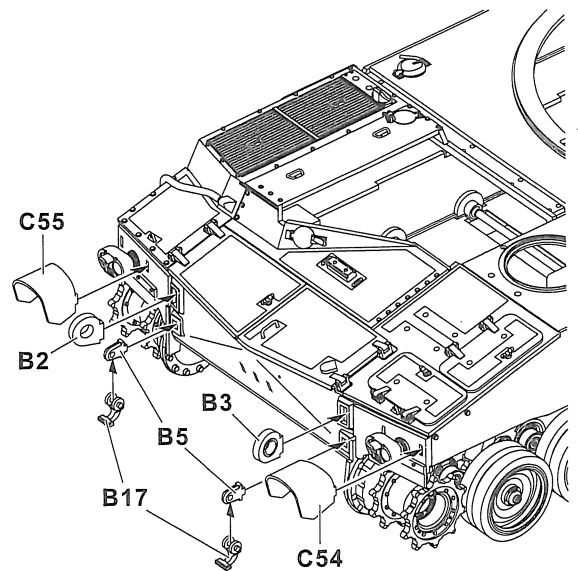
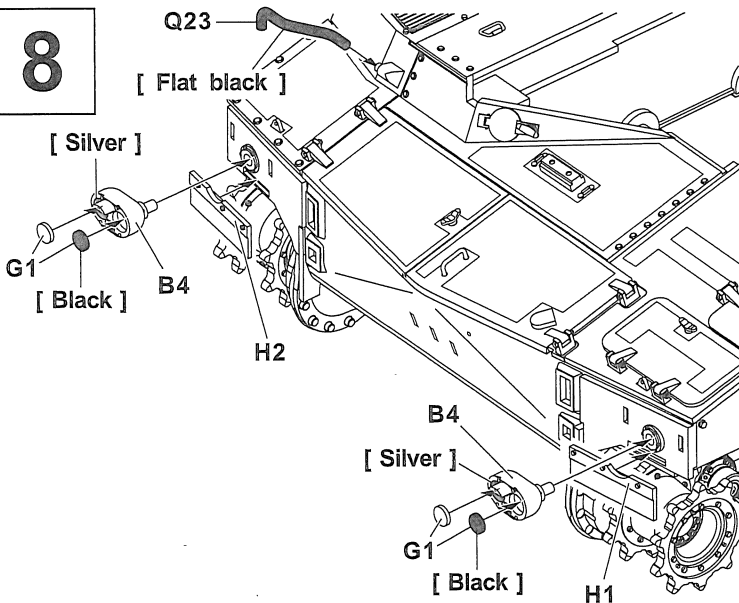


Please follow the instruction , affixing the anti-slip materials (made by plastic) on the proper locations as numbers showed on the picture, and trimming part number three as the size indicated on the picture.

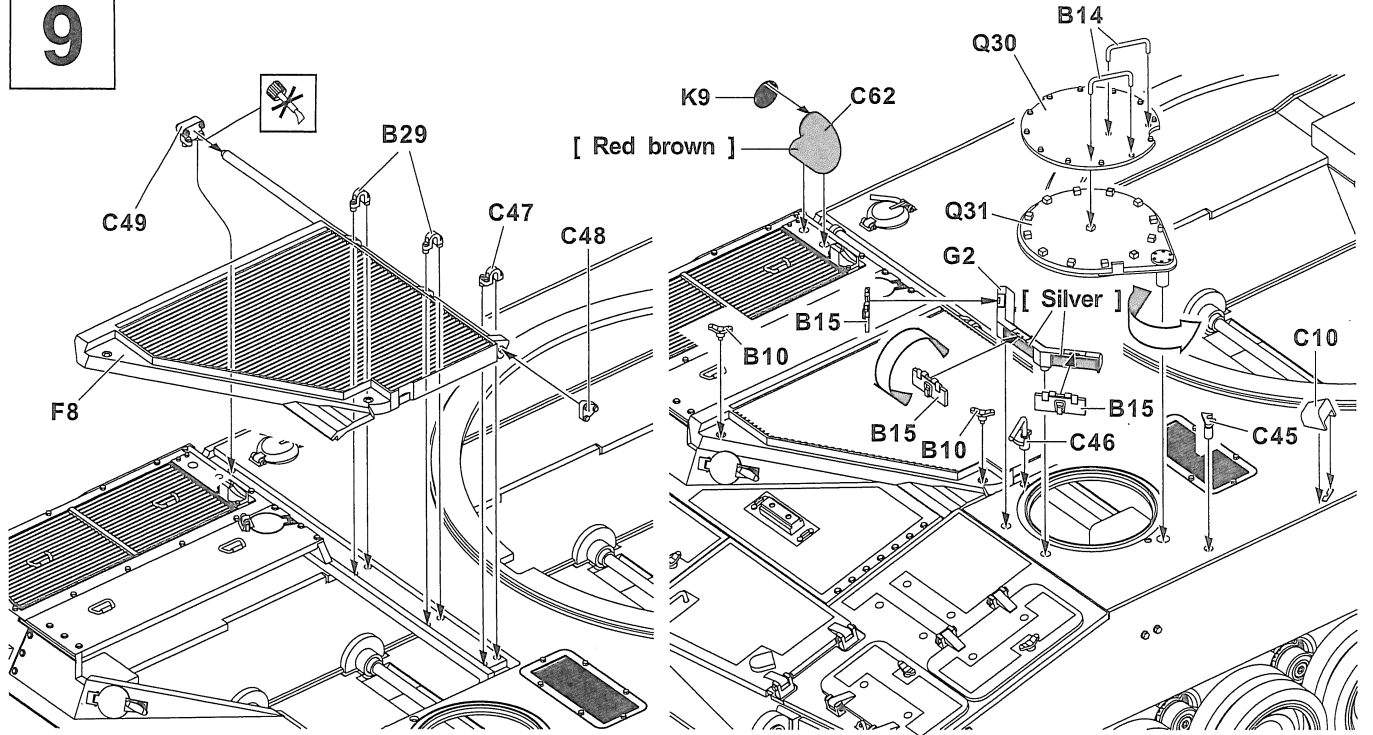
請按圖示將防滑紋貼片依號碼貼在適當的位置,其中的3號貼片請按圖稍做裁剪。



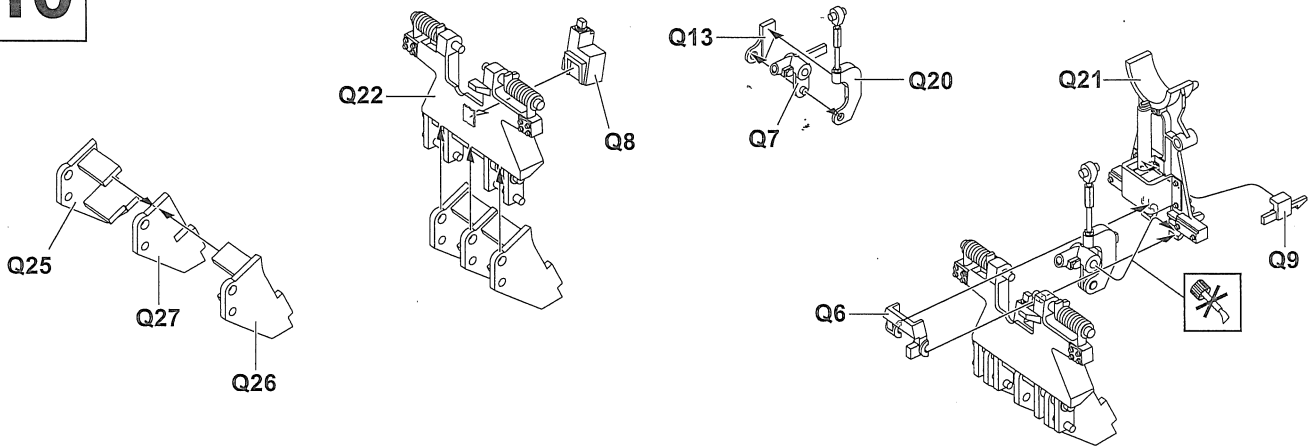
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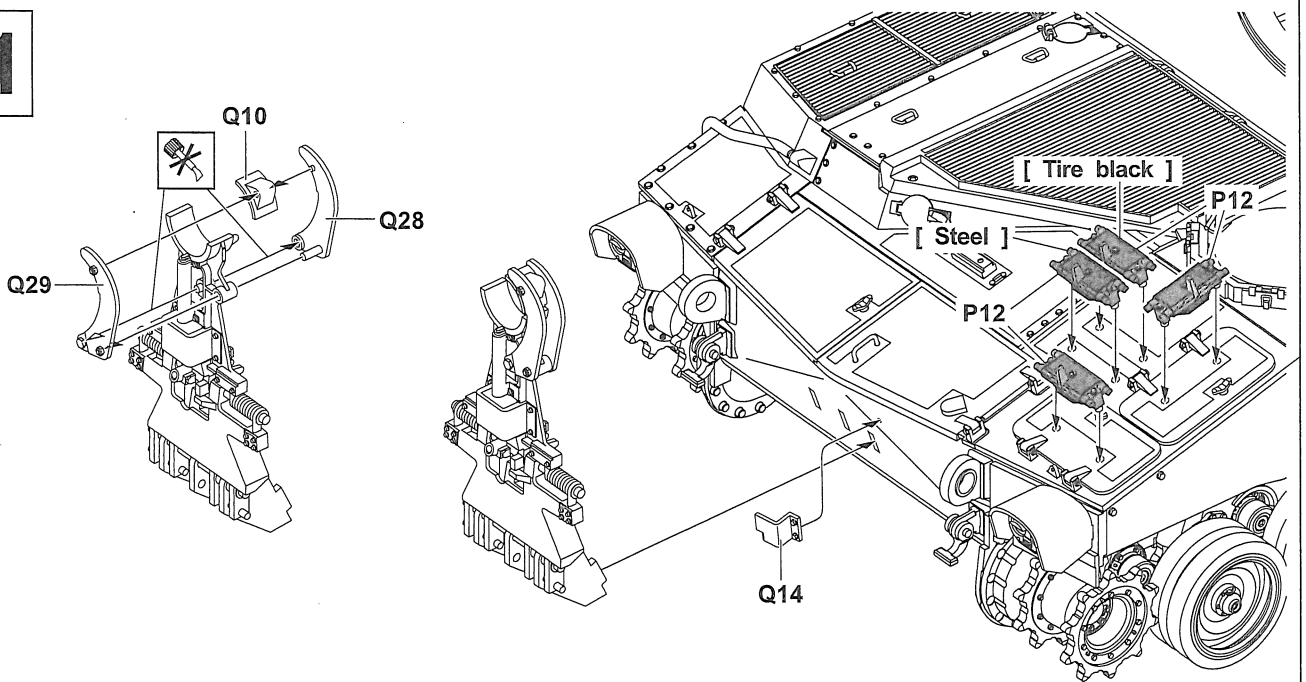
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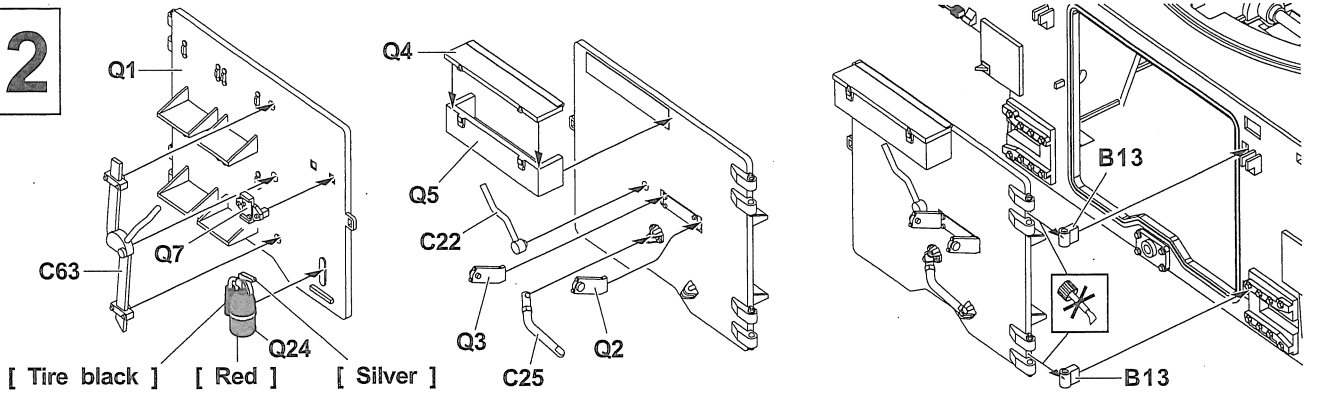
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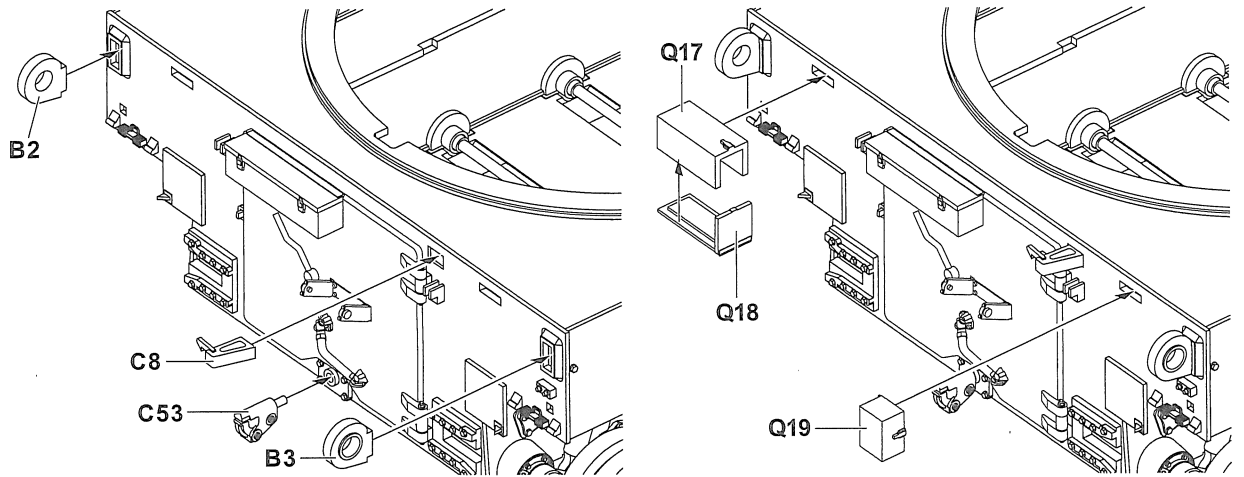
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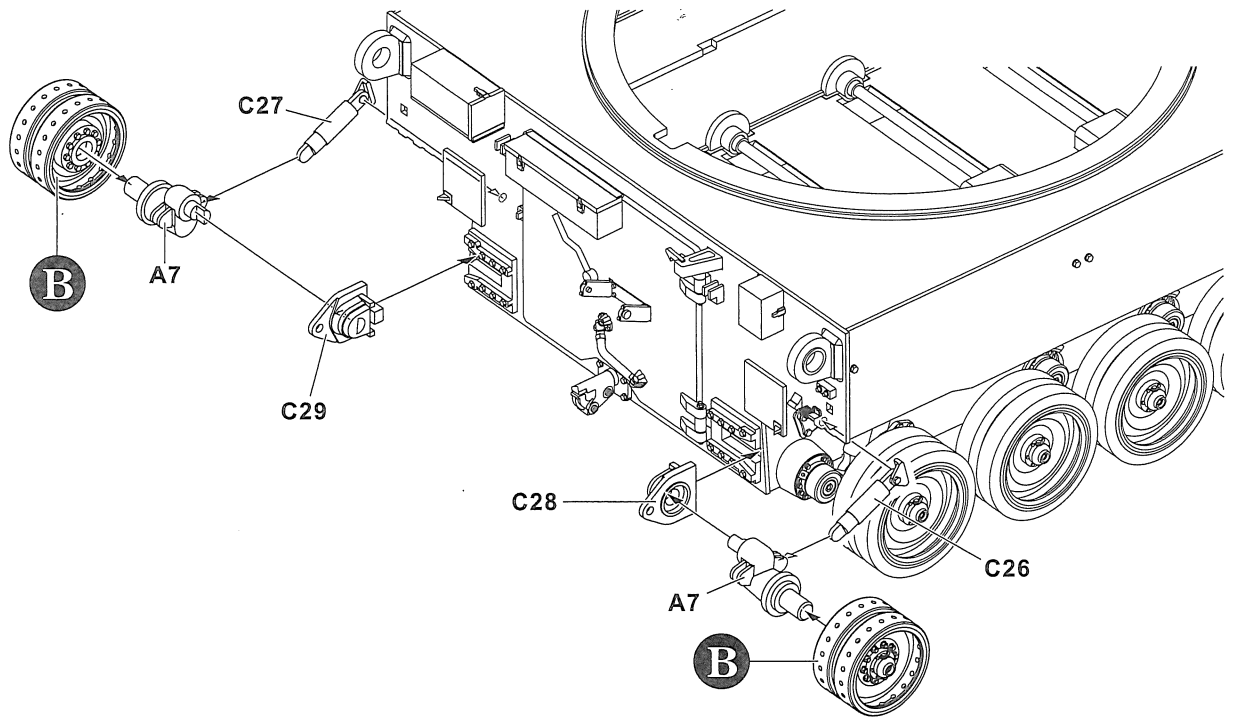
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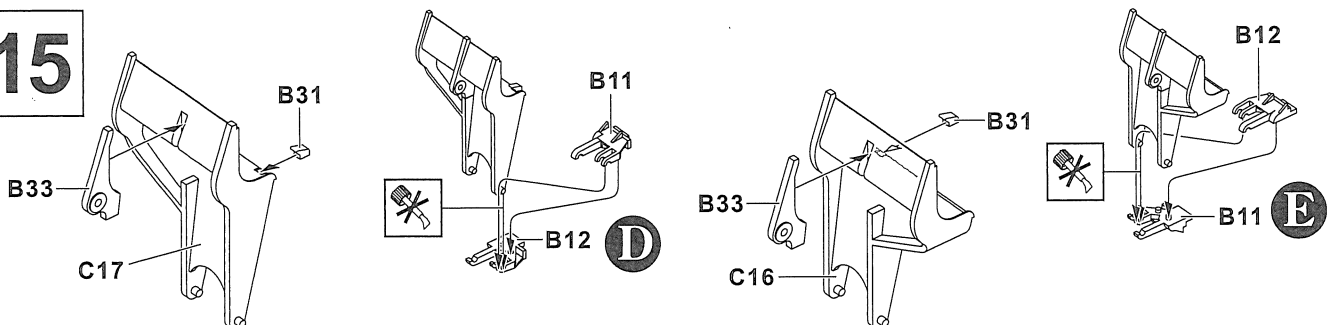
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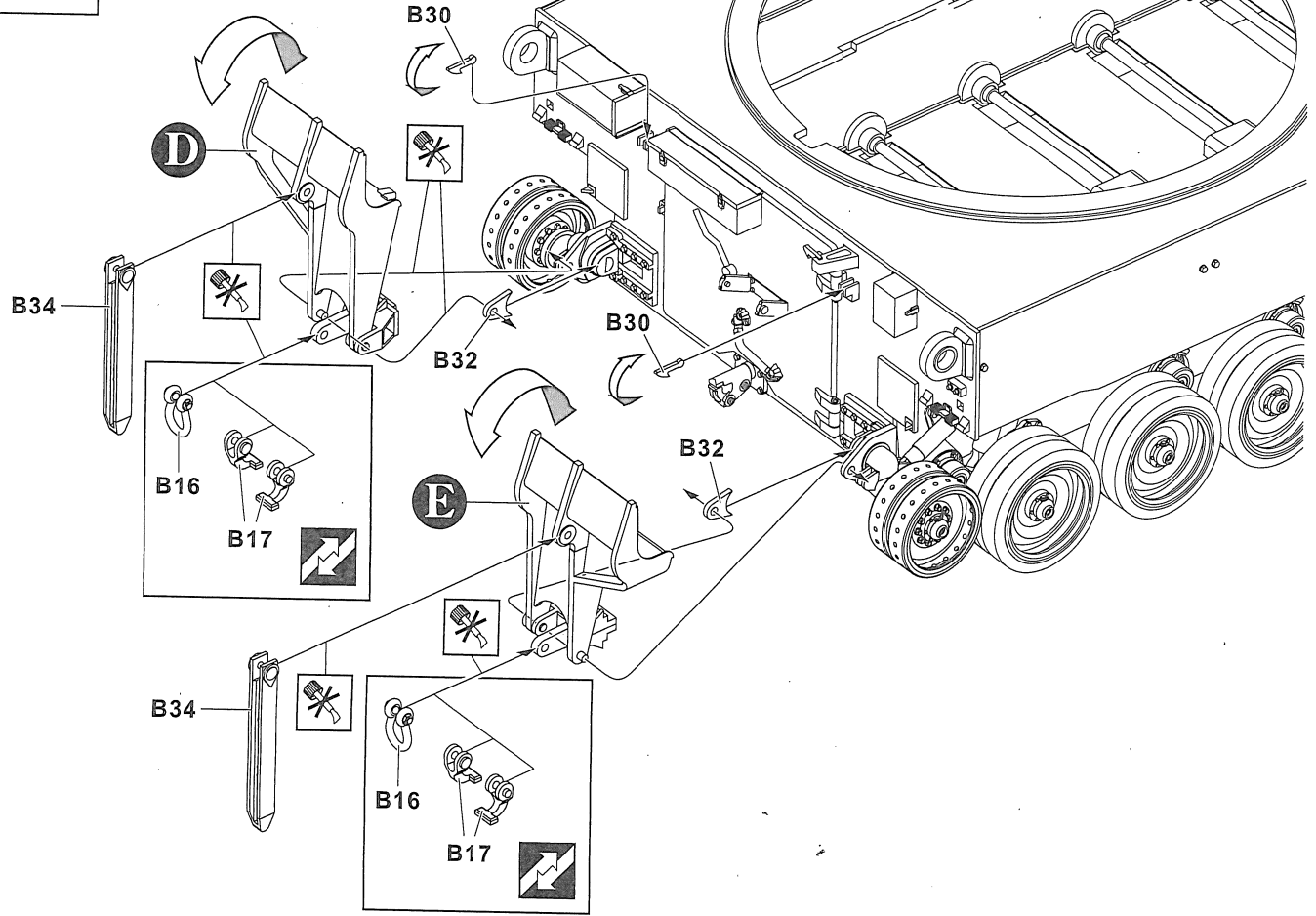
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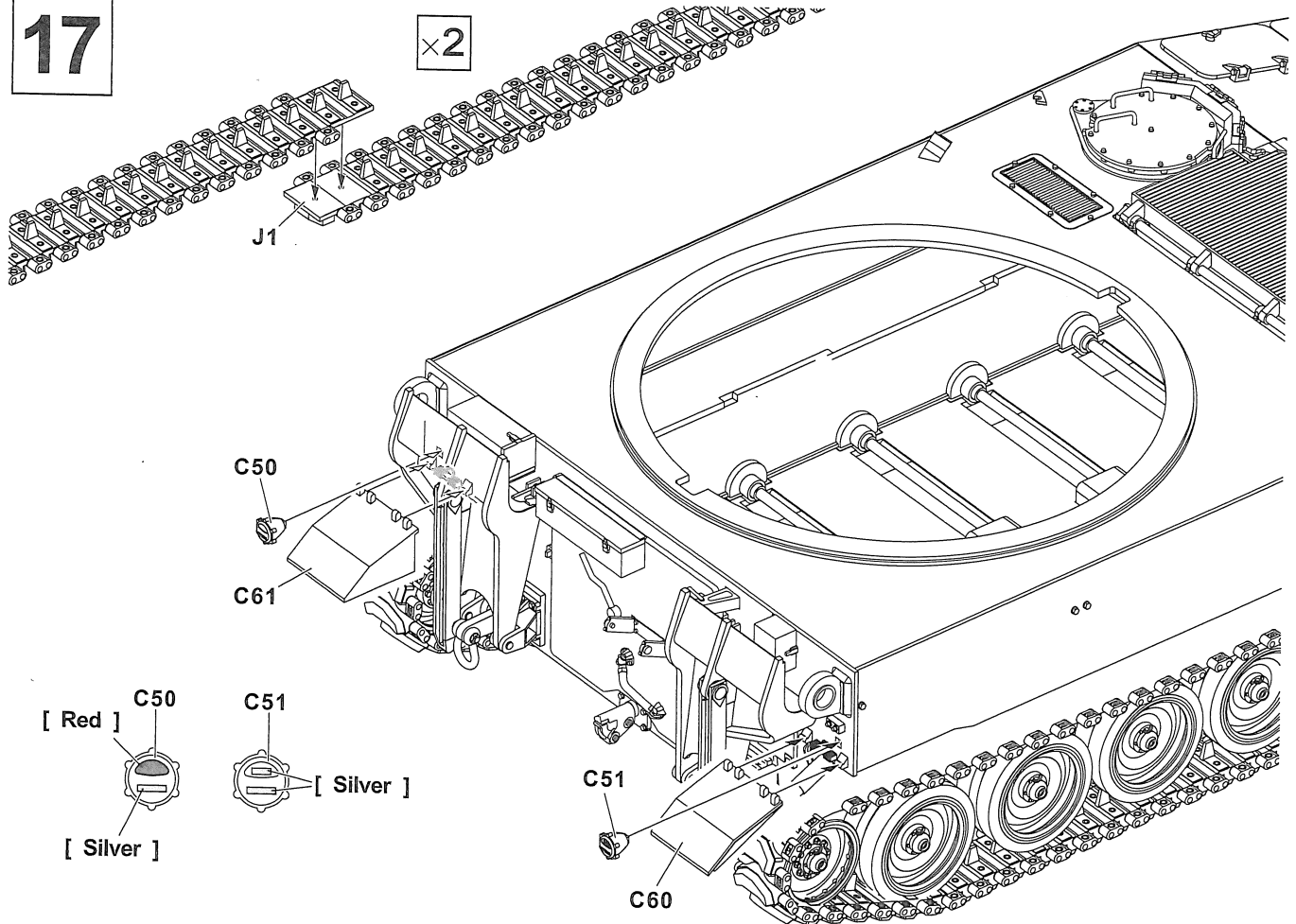
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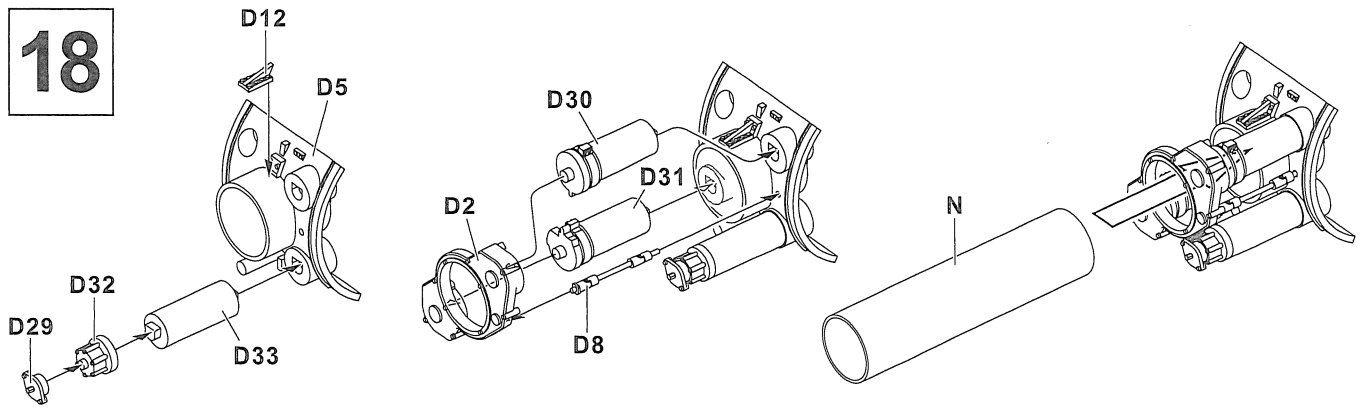
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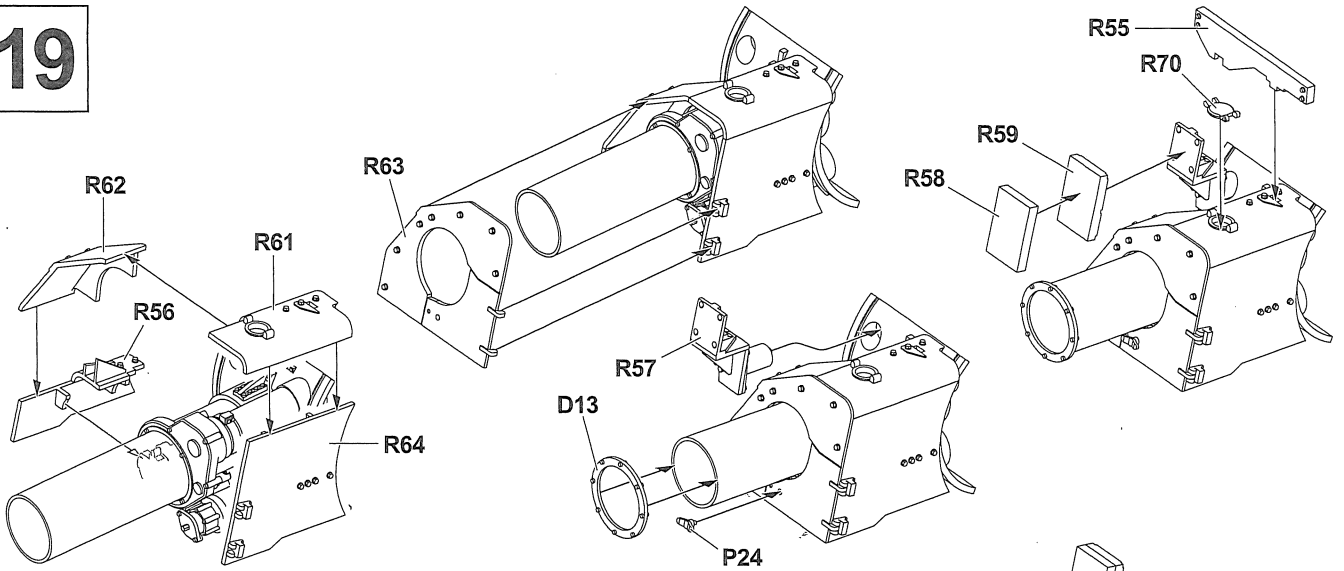
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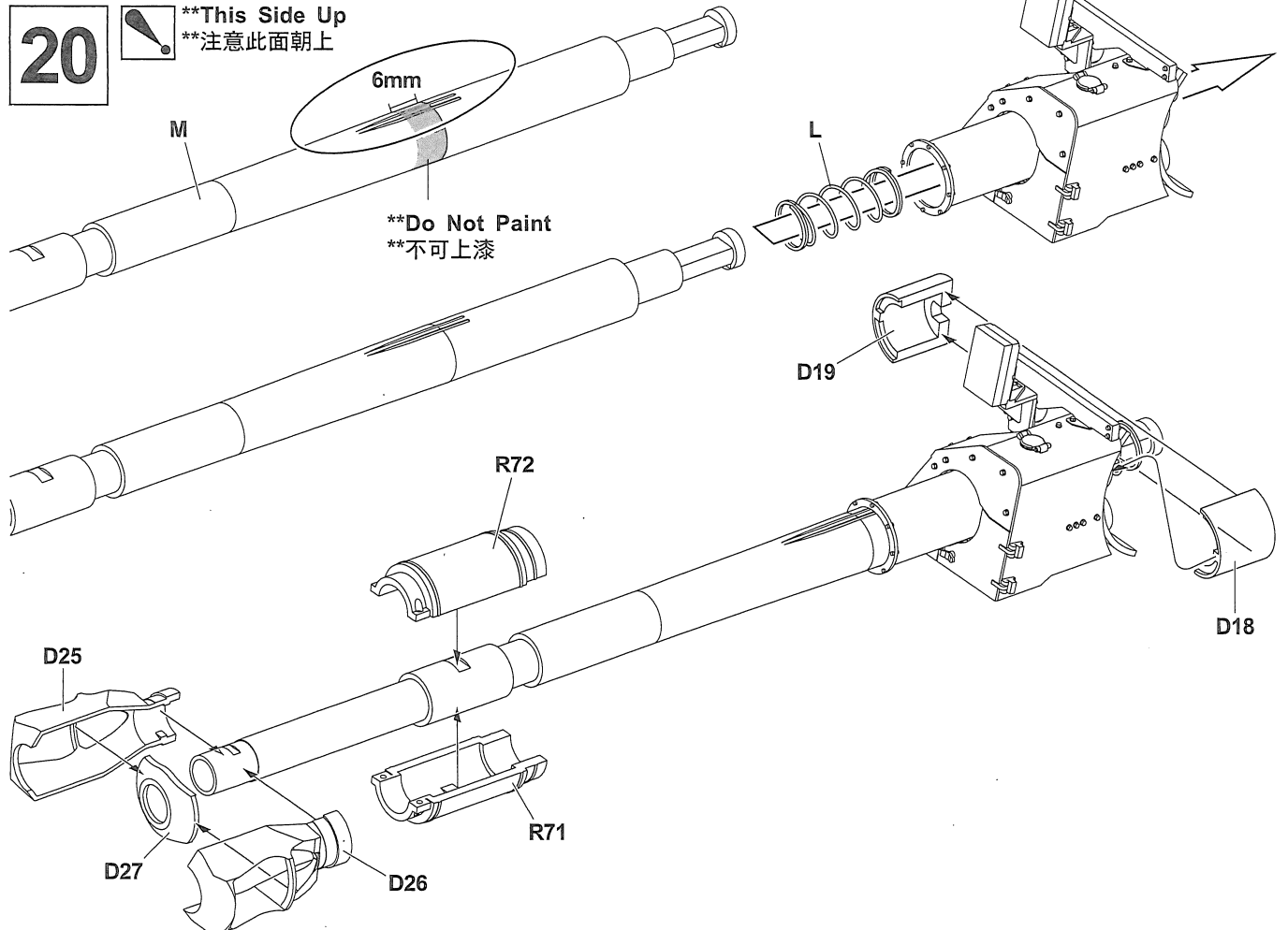
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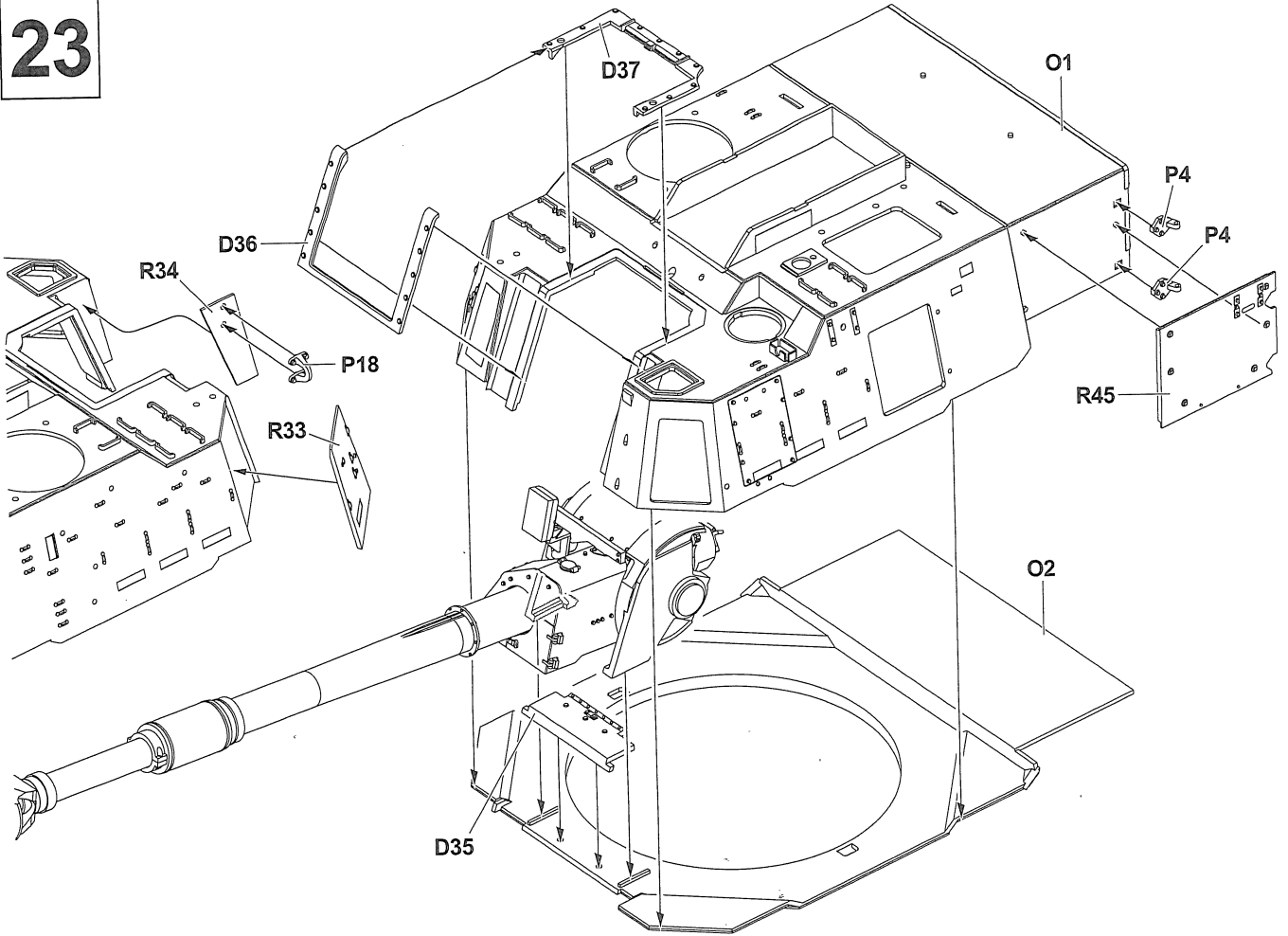
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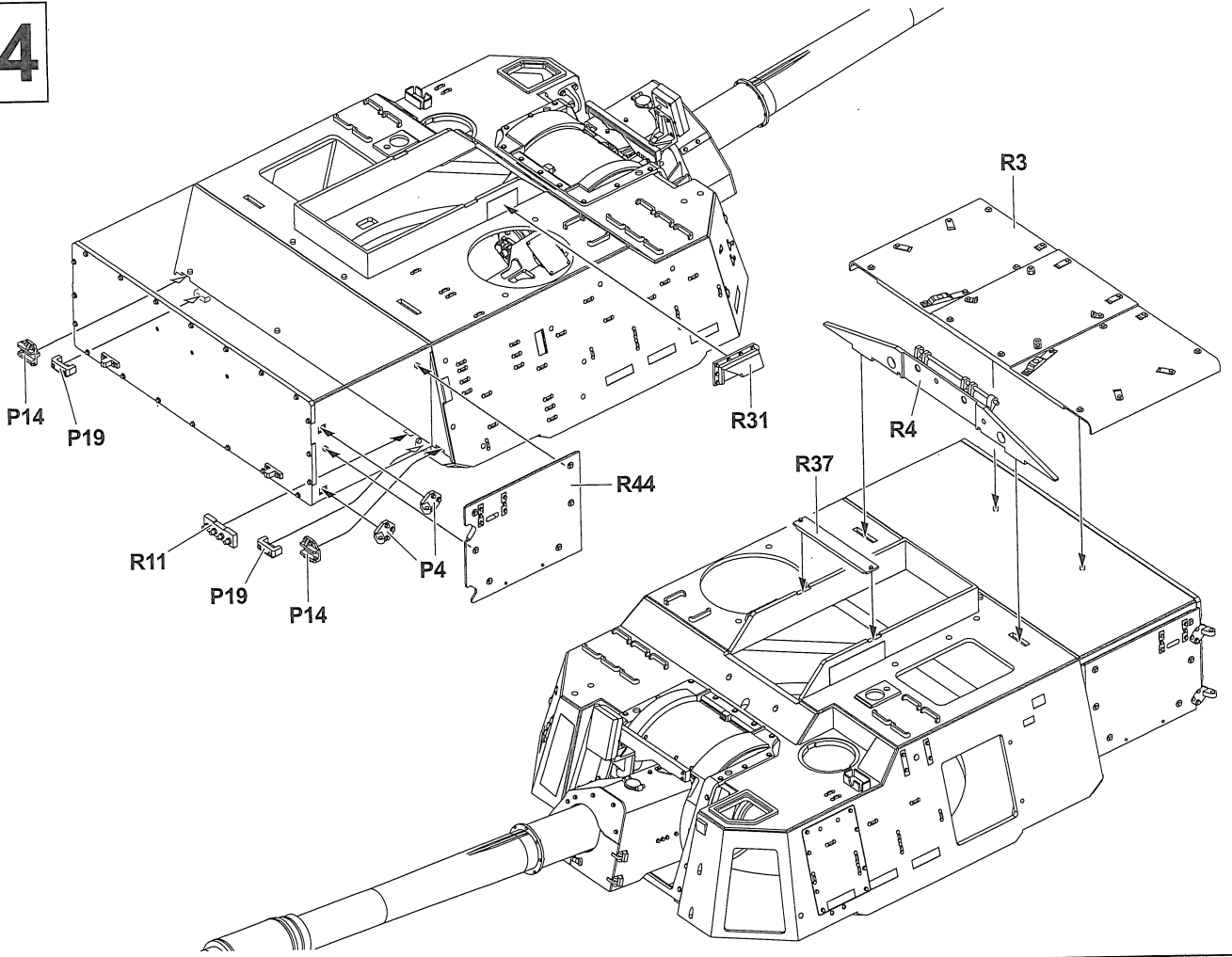
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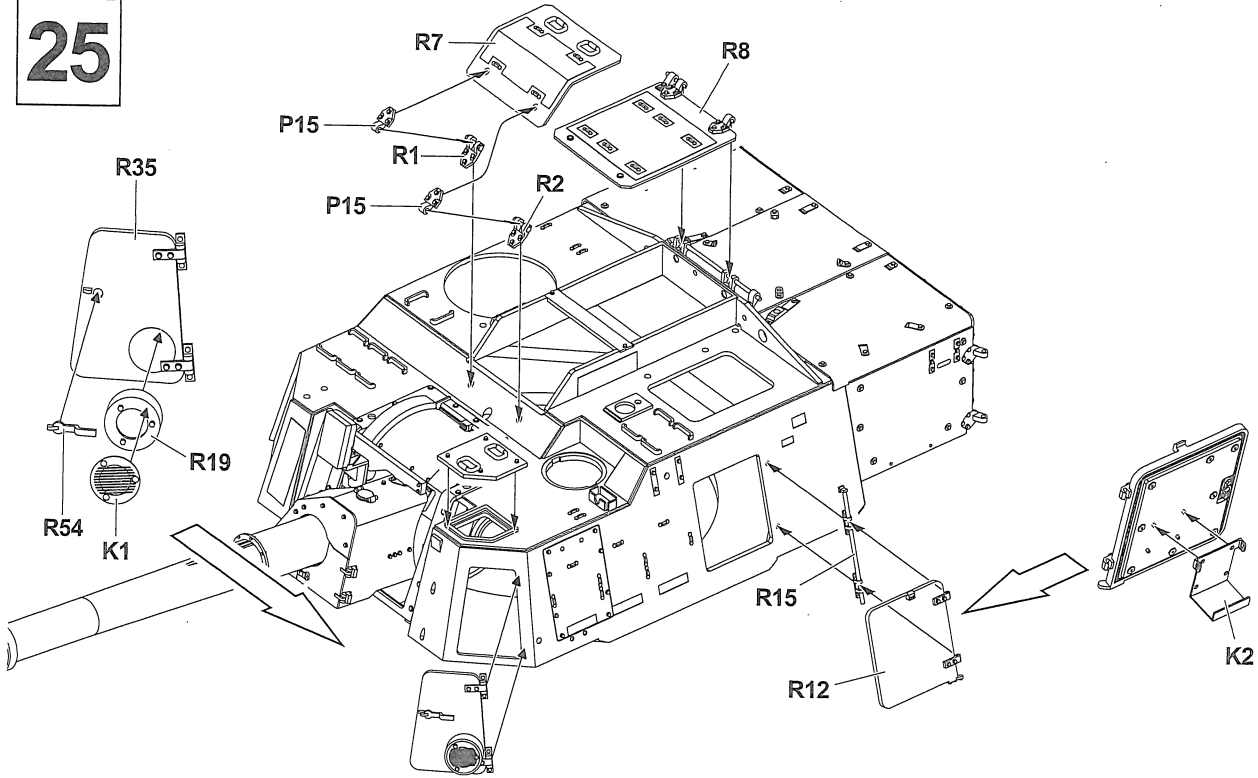
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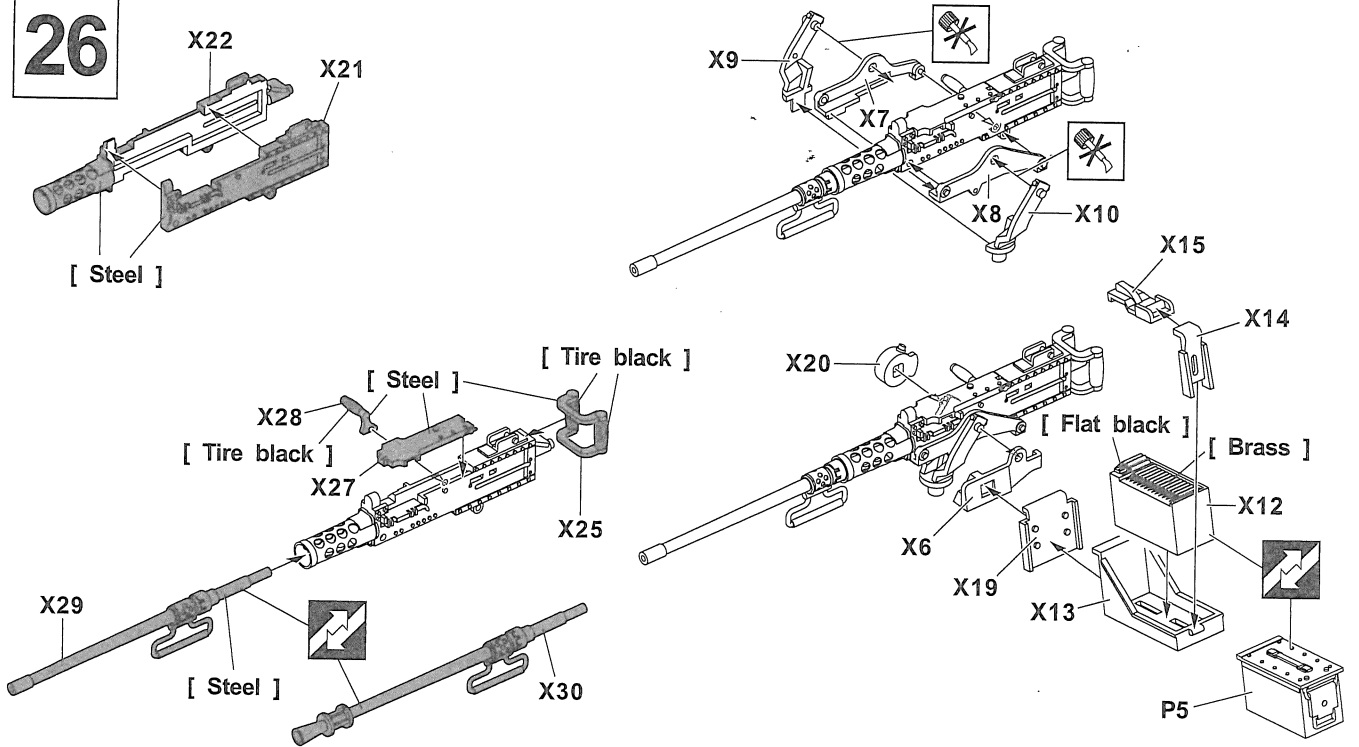
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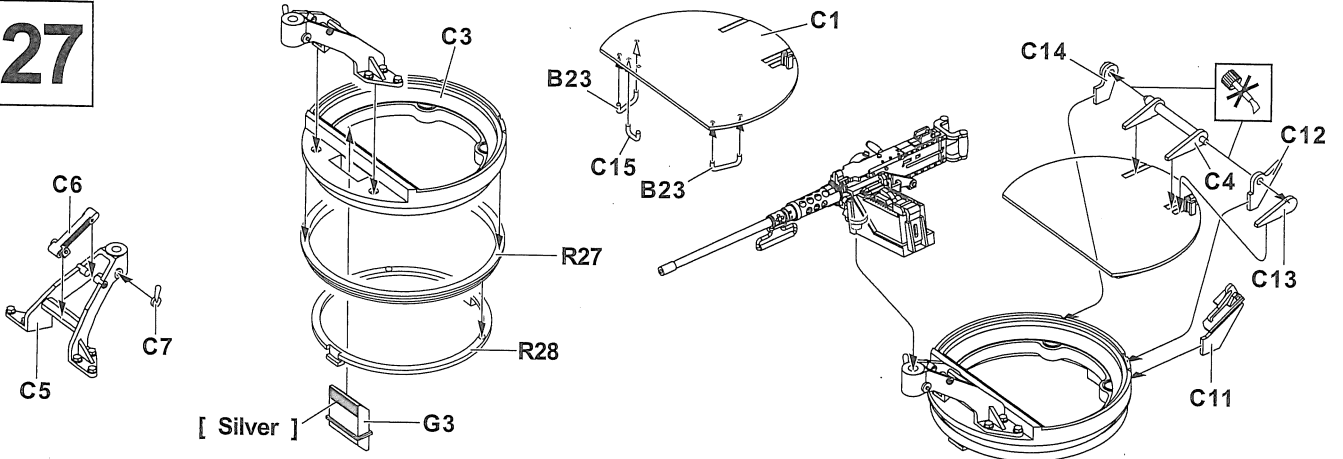
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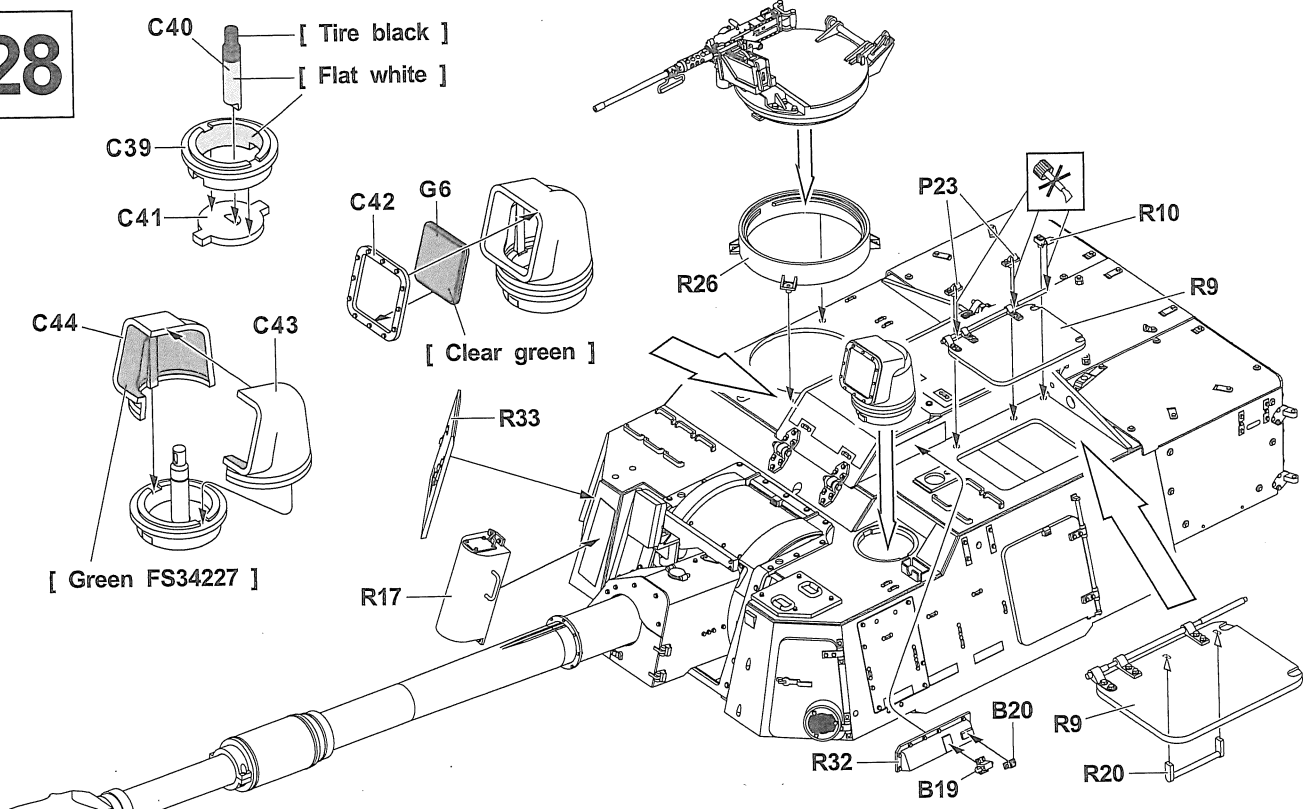
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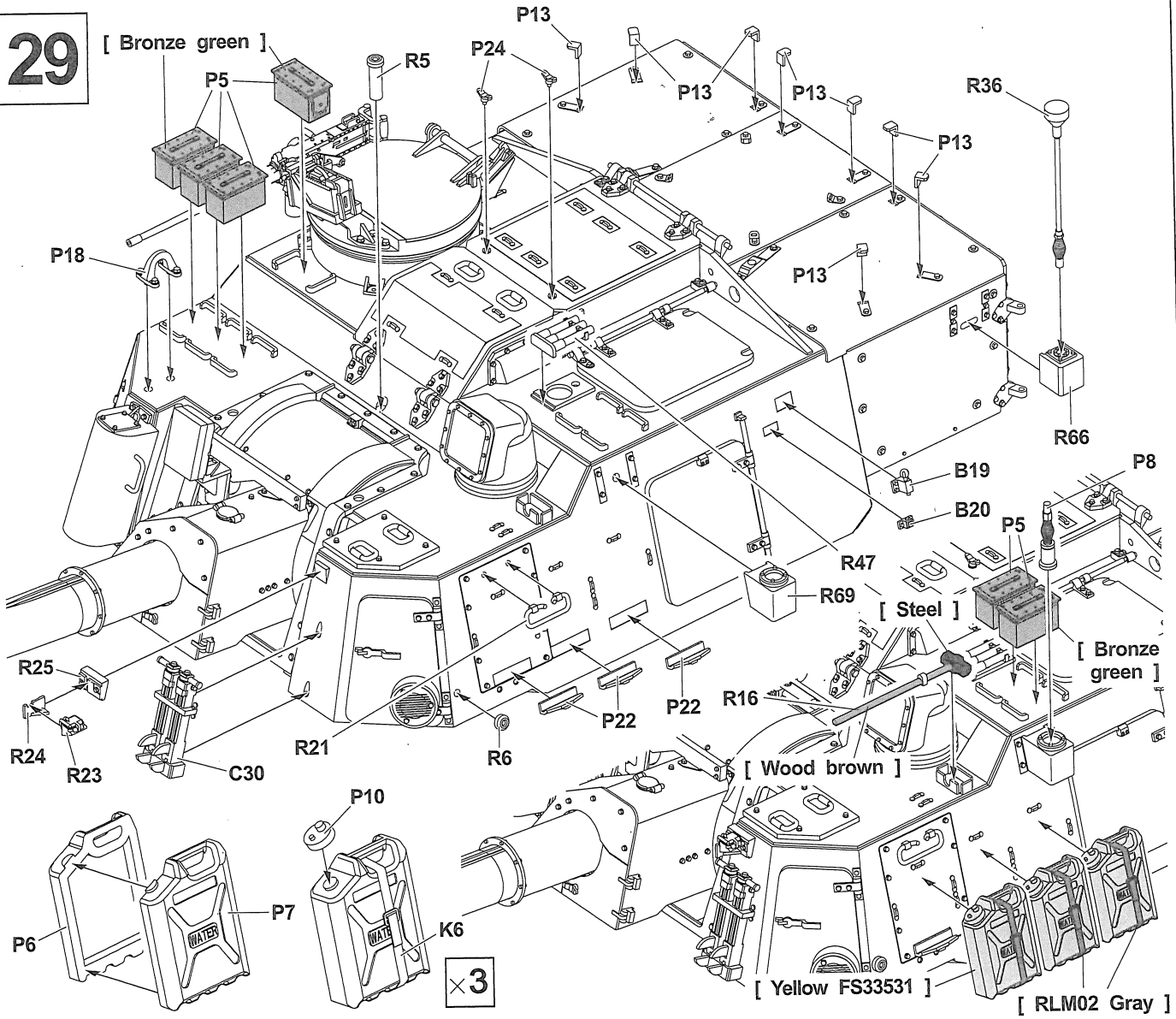
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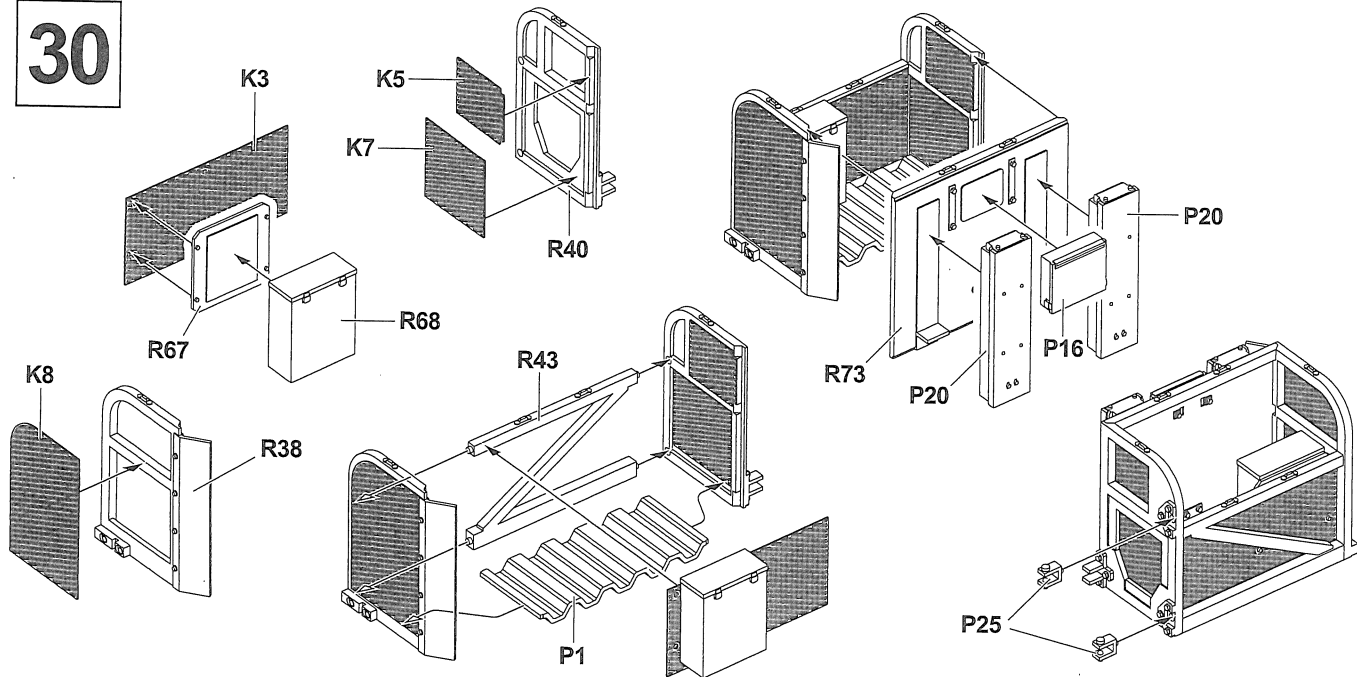
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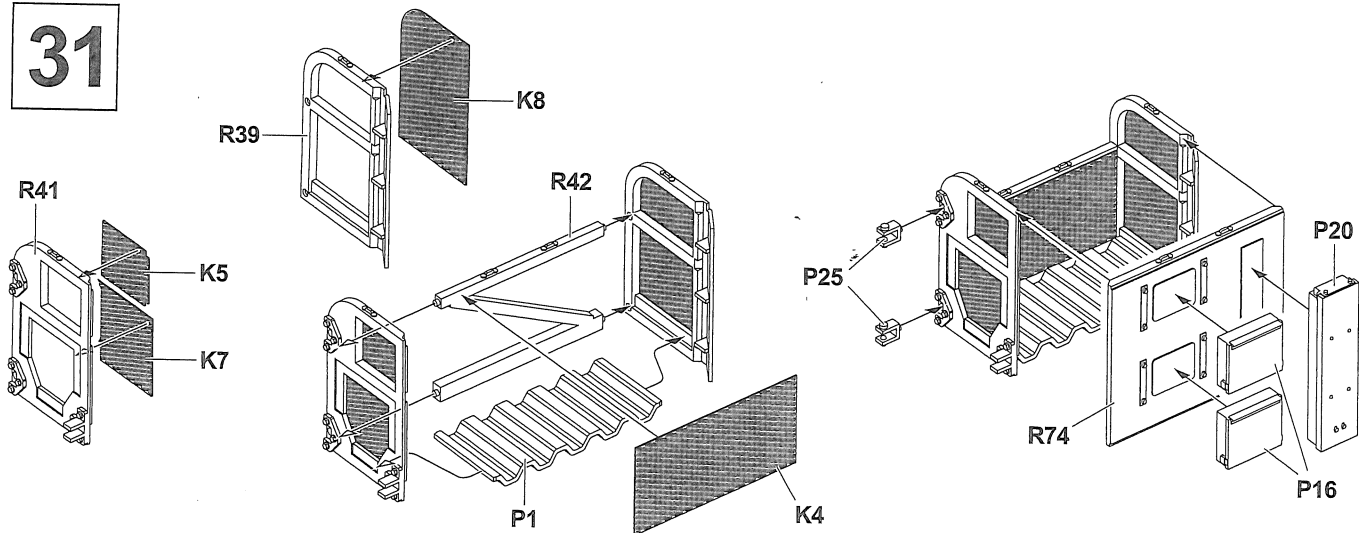
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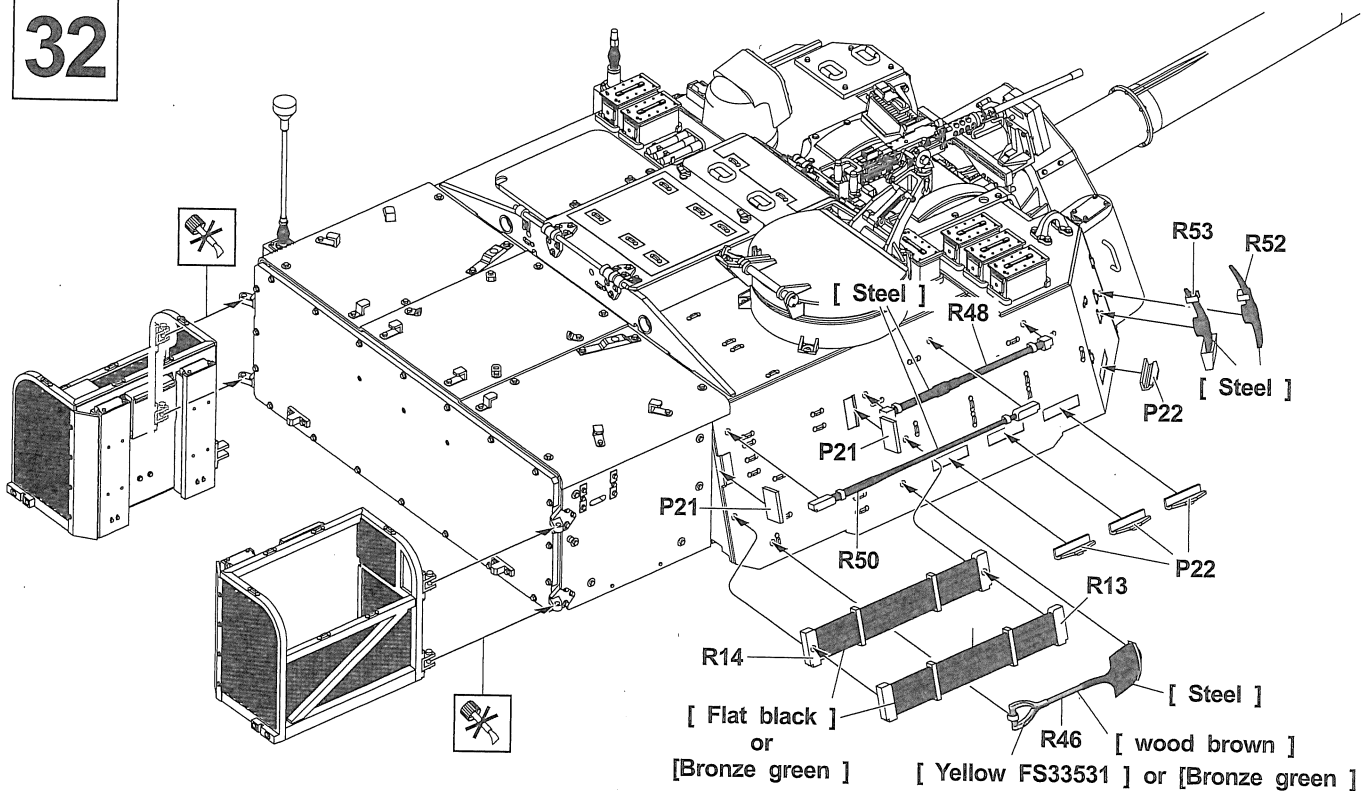
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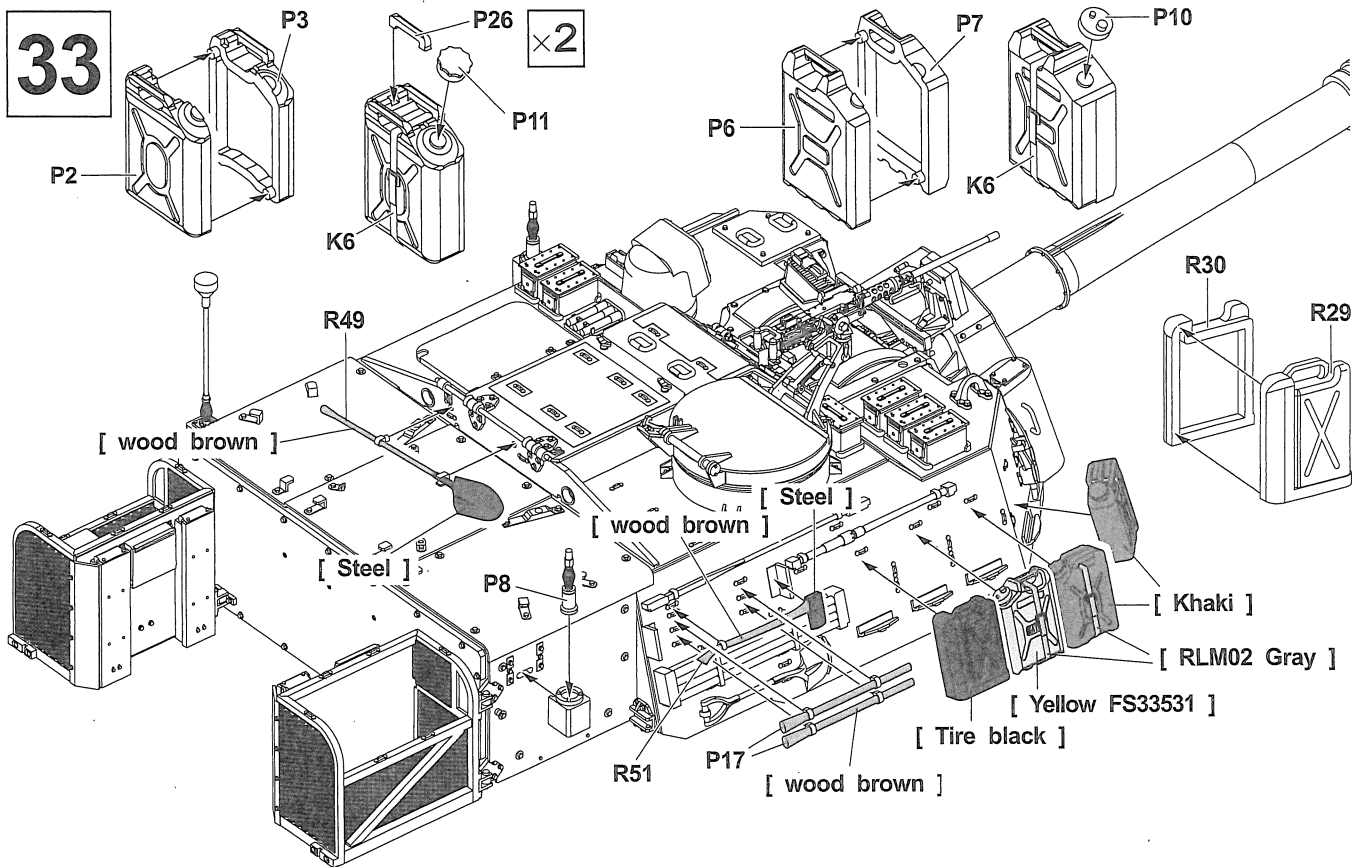
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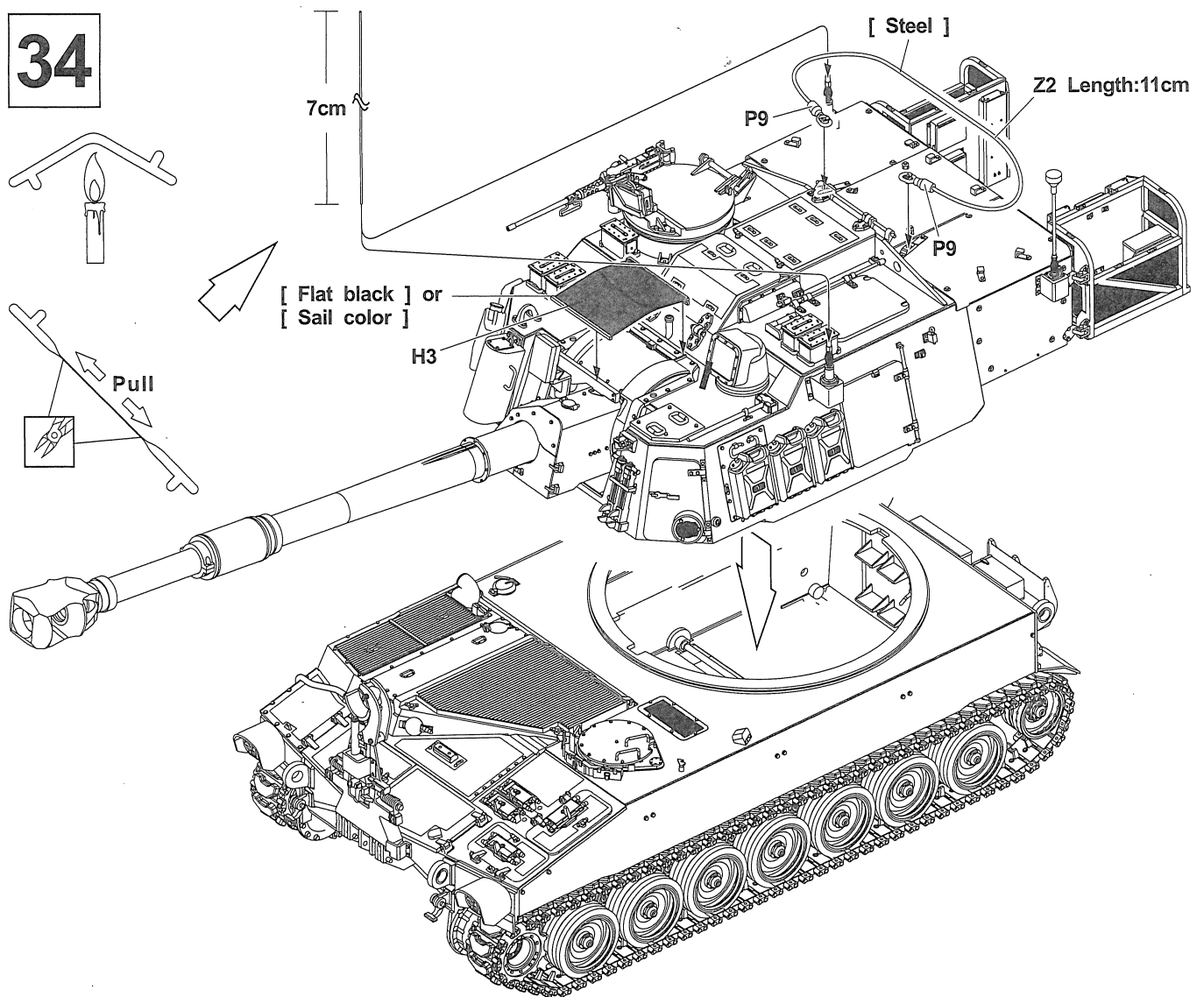
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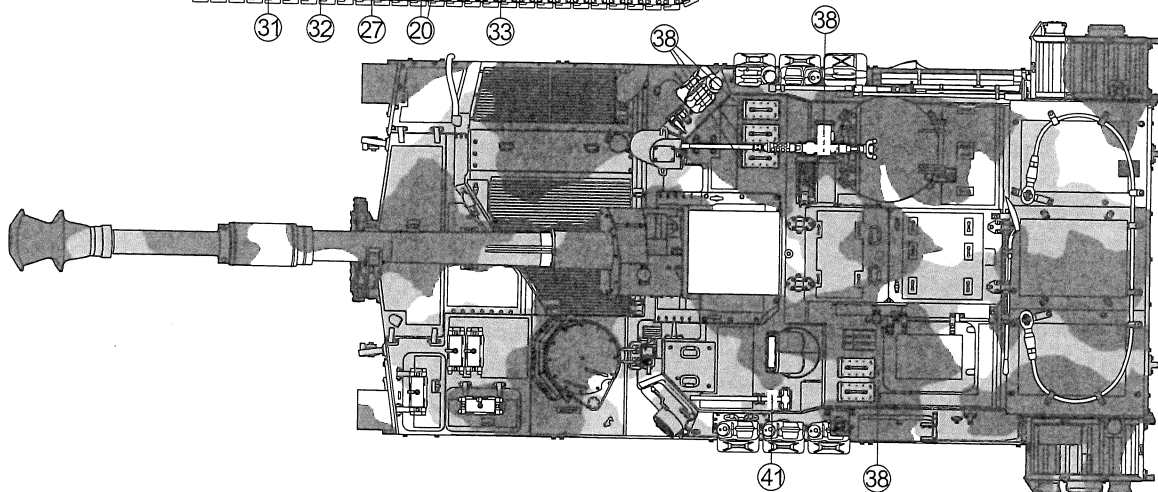
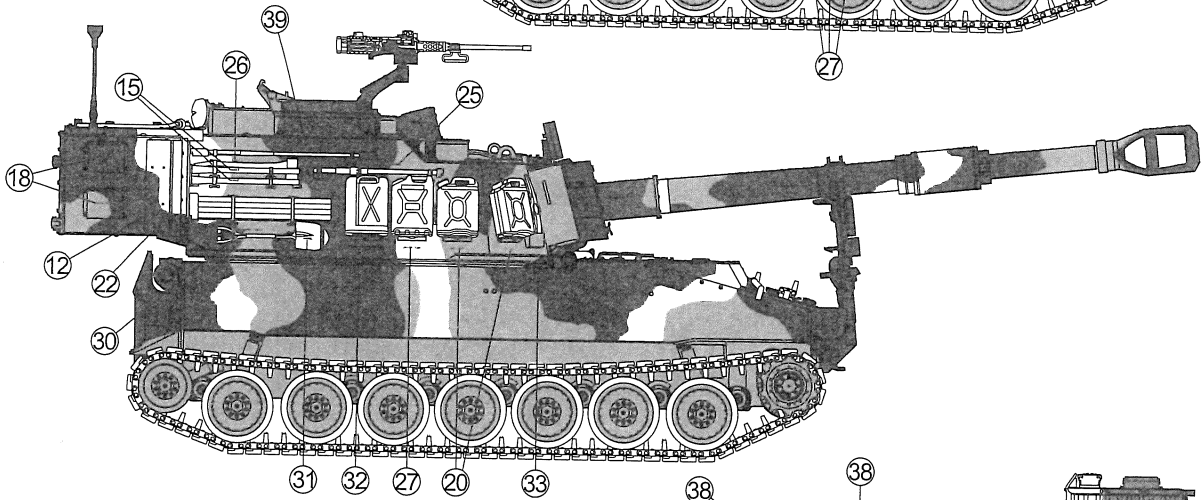
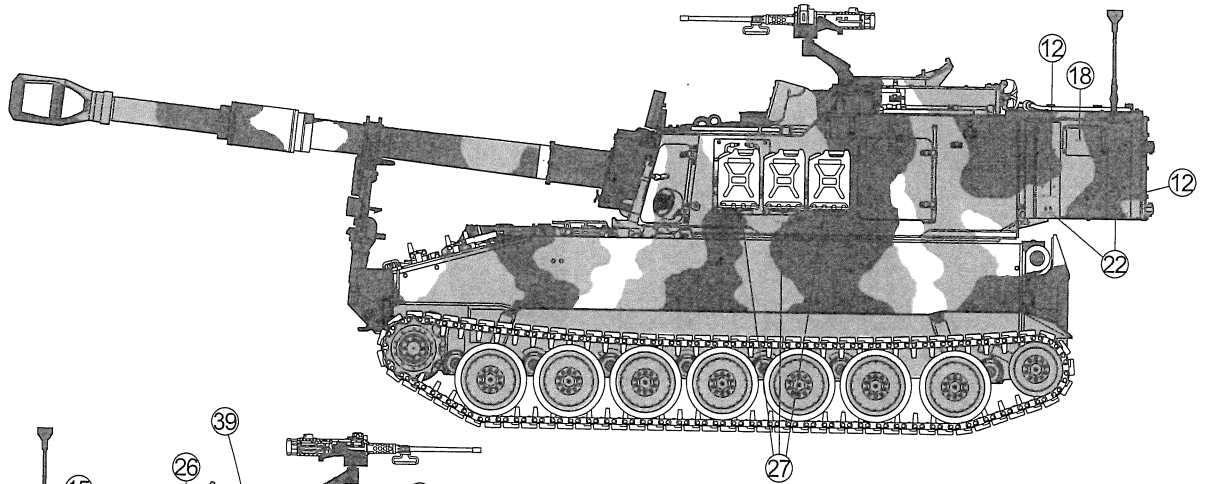
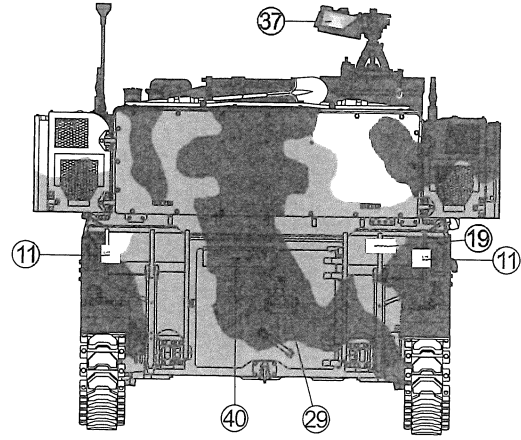
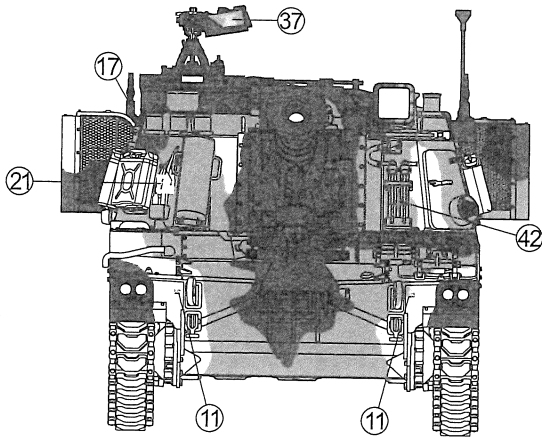
34



A


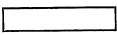

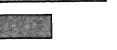
U.S. Army
美國陸軍

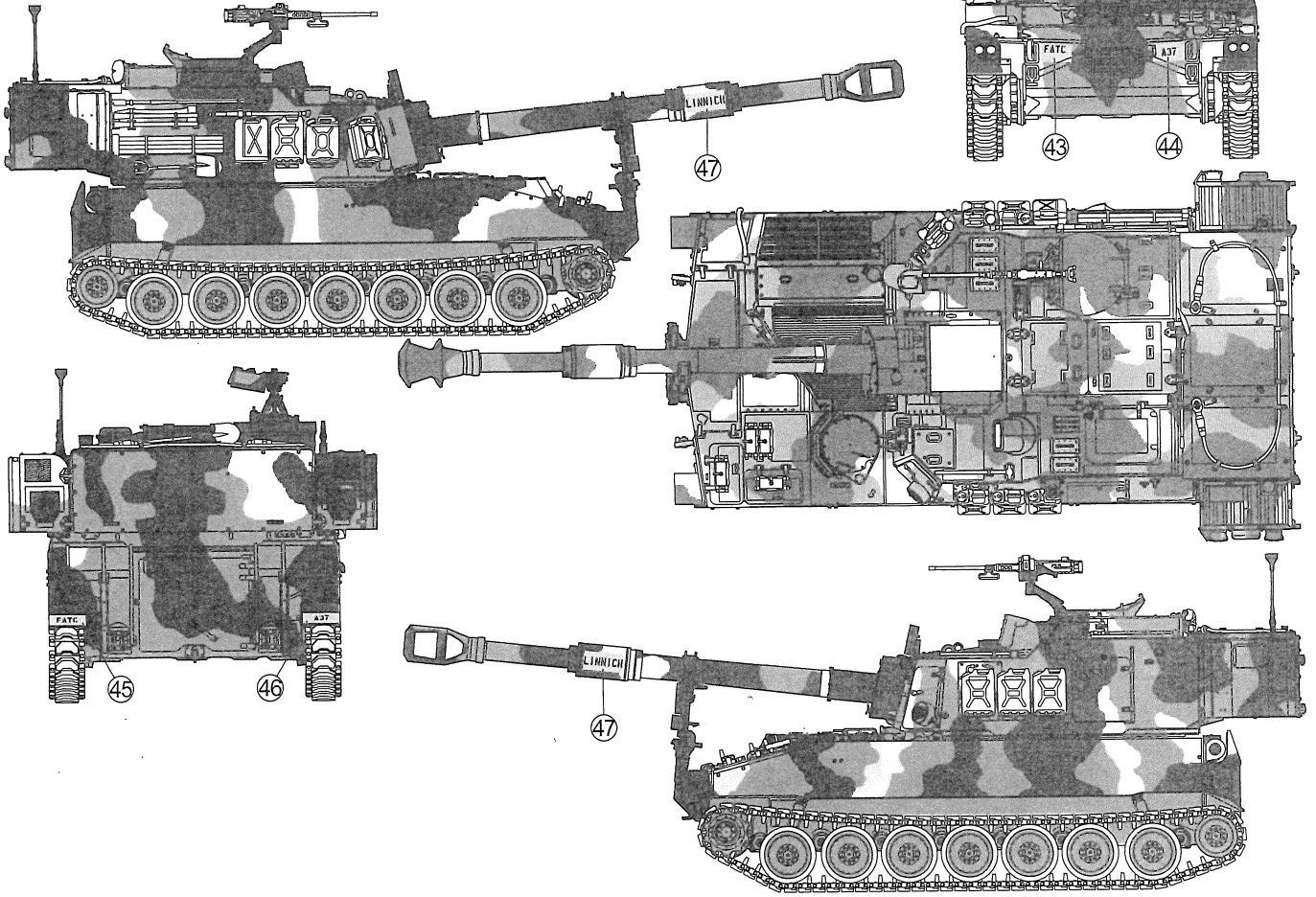
Body Color: Leather brown
Bronze green
Tar black



B

U.S. Army
美國陸軍

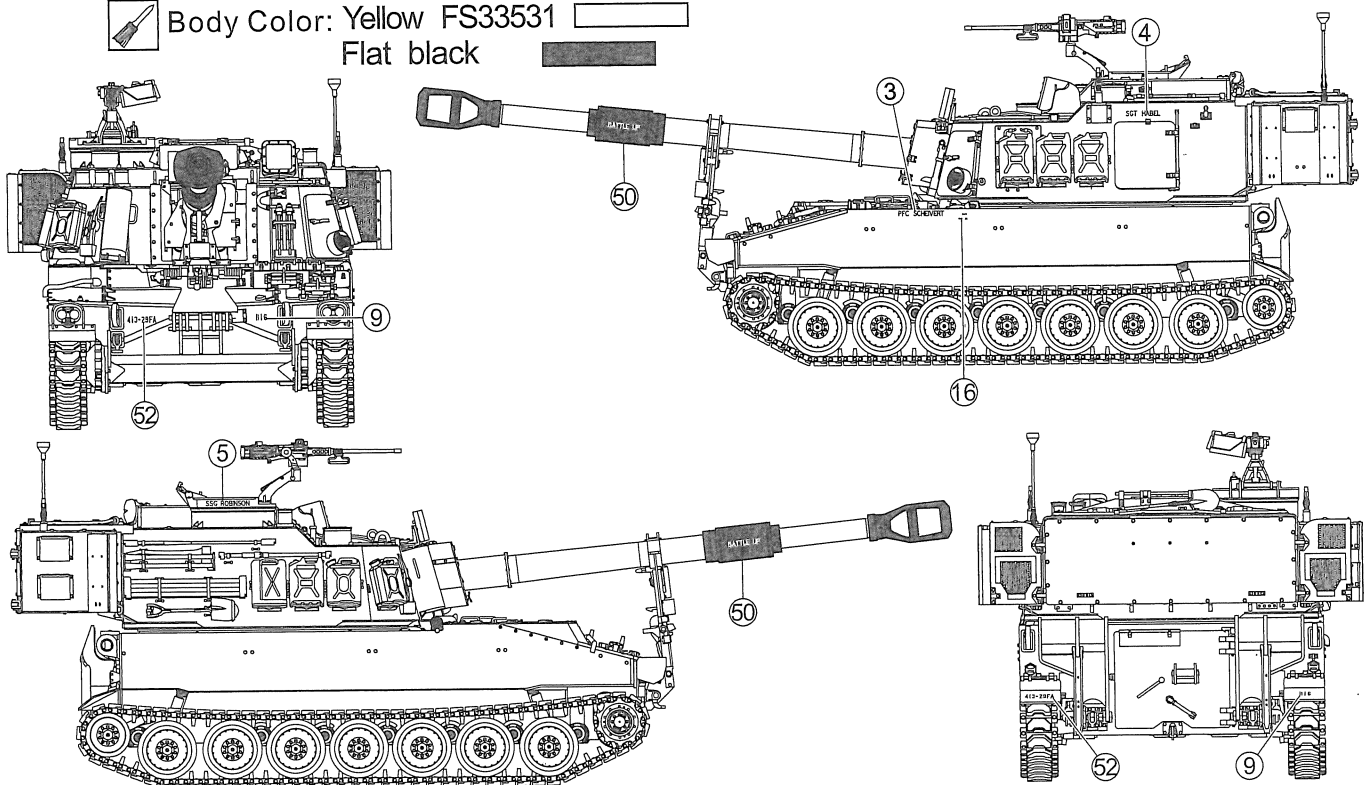
 Body Color: Leather brown 
 Bronze green 
 Tar black 



C


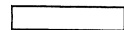


U.S. Army
美國陸軍

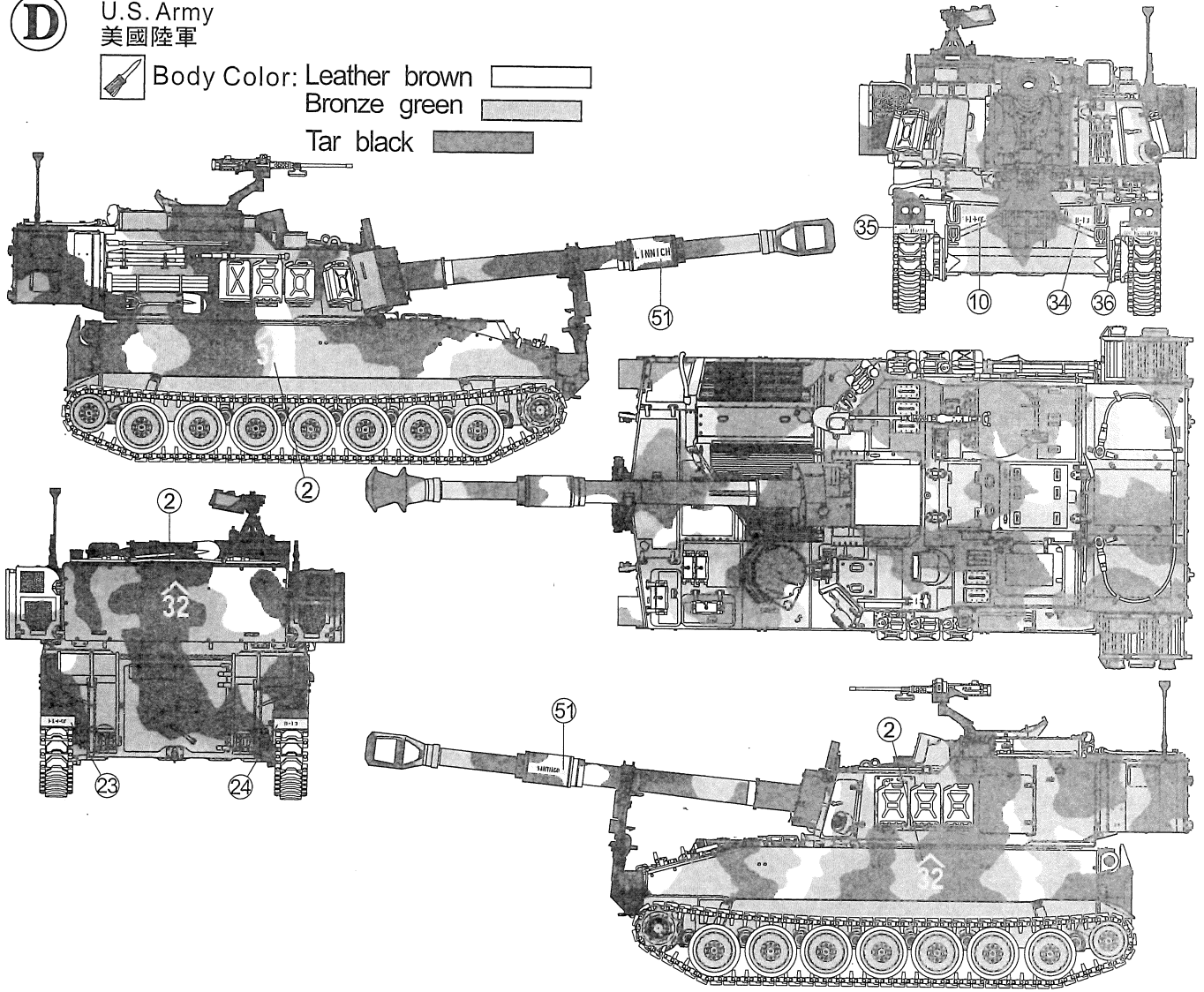
 Body Color: Yellow FS33531 
 Flat black 



D


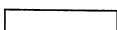

U.S. Army
美國陸軍

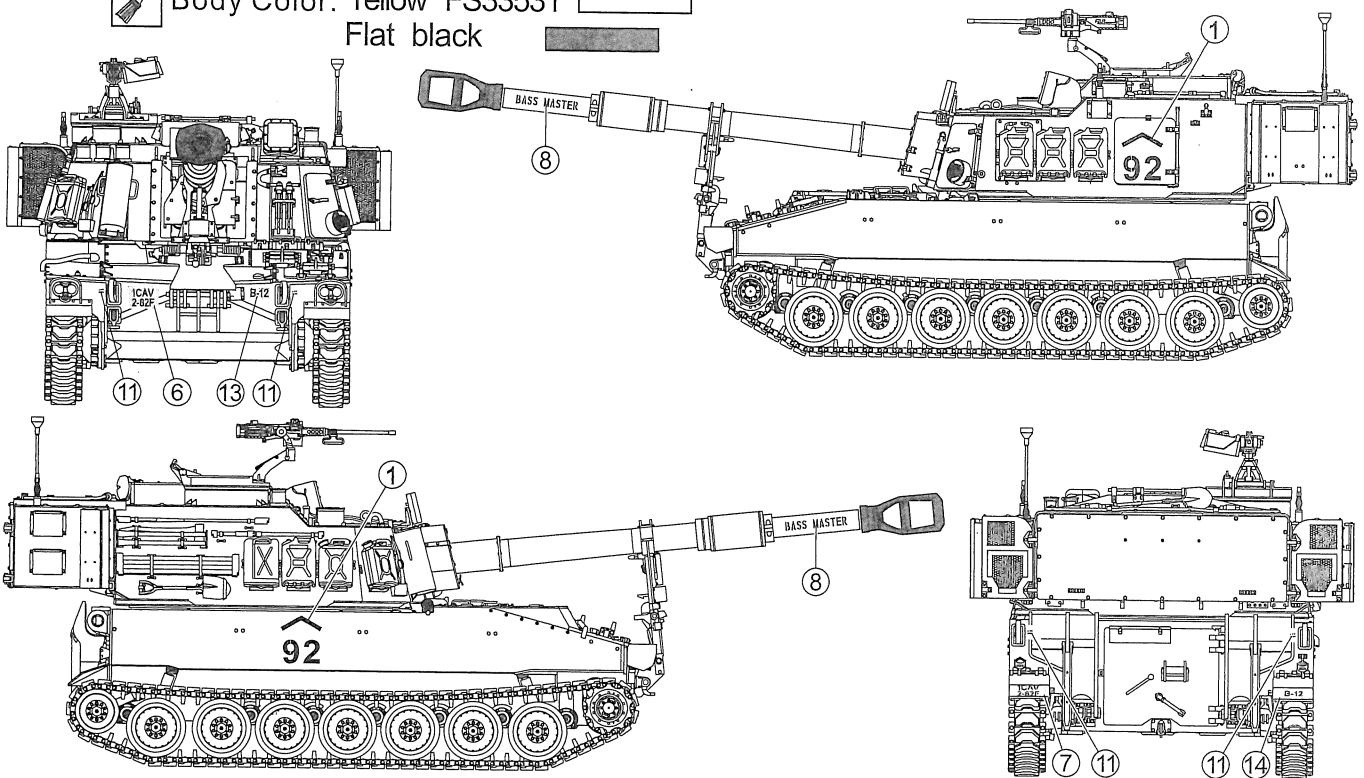
 Body Color: Leather brown 
 Bronze green 
 Tar black 



E

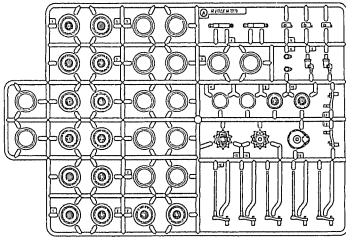
U.S. Army
美國陸軍

 Body Color: Yellow FS33531 
 Flat black 

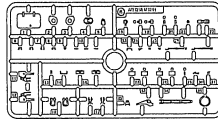


PARTS LIST 零件表

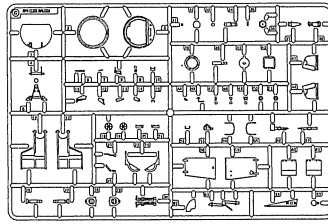
A X2 AF 35248



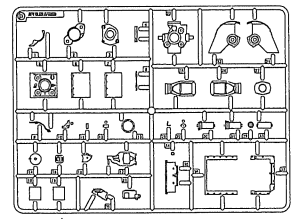
B X2 AF 35109



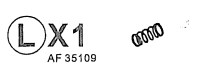
C X1 AF 35109



D X1 AF 35109



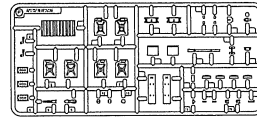
I X1 AF 35541



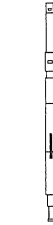
N X1 AF 35109



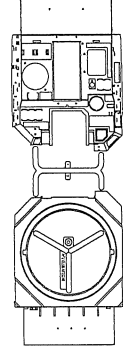
P X2 AF 35248



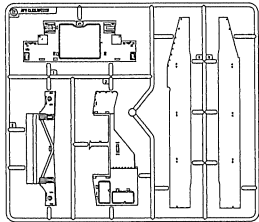
M X1 AF 35248



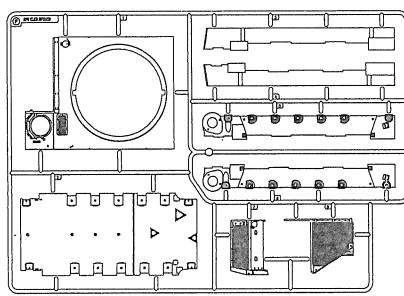
O X1 AF 35248



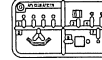
E X1 AF 35109



F X1 AF 35109



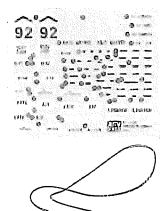
G X1 AF 35109



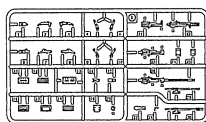
K X1 AF 35248



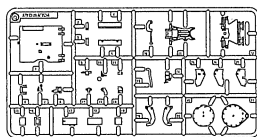
Z X1 AF 35248



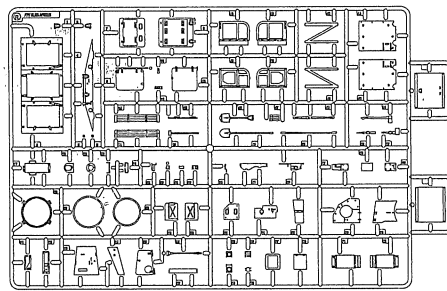
X X1 AF 35248



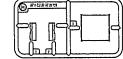
Q X1 AF 35248



R X1 AF 35248



H X1 AF 35248



S X1 AF 35248



J X2 AF 35248



Instructions:

If for some reason, you are not fully satisfied or have questions concerning our product; Please use the form provide, and send it to our nearest representative or mail it directly to our office.

We will deal with that A.S.A.P.



AF 35248 Parts Replacement Form

- | | |
|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> AF 35248-A | <input type="checkbox"/> AF 35109-L |
| <input type="checkbox"/> AF 35109-B | <input type="checkbox"/> AF 35248-M |
| <input type="checkbox"/> AF 35109-C | <input type="checkbox"/> AF 35109-N |
| <input type="checkbox"/> AF 35109-D | <input type="checkbox"/> AF 35248-O |
| <input type="checkbox"/> AF 35109-E | <input type="checkbox"/> AF 35248-P |
| <input type="checkbox"/> AF 35109-F | <input type="checkbox"/> AF 35248-Q |
| <input type="checkbox"/> AF 35109-G | <input type="checkbox"/> AF 35248-R |
| <input type="checkbox"/> AF 35248-H | <input type="checkbox"/> AF 35248-S |
| <input type="checkbox"/> AF 35S41-I | <input type="checkbox"/> AF 35246-X |
| <input type="checkbox"/> AF 35248-J | <input type="checkbox"/> AF 35248-Z |
| <input type="checkbox"/> AF 35248-K | |

Reason for replacement: Missing

Broken

Signature: _____

限臺灣地區使用 For Taiwanese use only!

總代理戰鷹企業 請將本表與該部品相同金額之郵政匯票一同寄至本公司將儘速為您處理。



AF 35248 零件補充申請表

申請人
姓名 地址 電話

- | | |
|-------------------------------------|----------|
| <input type="checkbox"/> AF 35248-A | NT\$ 300 |
| <input type="checkbox"/> AF 35109-B | NT\$ 200 |
| <input type="checkbox"/> AF 35109-C | NT\$ 200 |
| <input type="checkbox"/> AF 35109-D | NT\$ 200 |
| <input type="checkbox"/> AF 35109-E | NT\$ 180 |
| <input type="checkbox"/> AF 35109-F | NT\$ 200 |
| <input type="checkbox"/> AF 35109-G | NT\$ 120 |
| <input type="checkbox"/> AF 35248-H | NT\$ 100 |
| <input type="checkbox"/> AF 35S41-I | NT\$ 80 |
| <input type="checkbox"/> AF 35248-J | NT\$ 280 |
| <input type="checkbox"/> AF 35248-K | NT\$ 200 |
| <input type="checkbox"/> AF 35109-L | NT\$ 60 |
| <input type="checkbox"/> AF 35248-M | NT\$ 280 |
| <input type="checkbox"/> AF 35109-N | NT\$ 60 |
| <input type="checkbox"/> AF 35248-O | NT\$ 220 |
| <input type="checkbox"/> AF 35248-P | NT\$ 220 |
| <input type="checkbox"/> AF 35248-Q | NT\$ 200 |
| <input type="checkbox"/> AF 35248-R | NT\$ 280 |
| <input type="checkbox"/> AF 35248-S | NT\$ 80 |
| <input type="checkbox"/> AF 35246-X | NT\$ 180 |
| <input type="checkbox"/> AF 35248-Z | NT\$ 160 |
| +郵寄費 | NT\$ 80 |

(請填)總計NT\$ _____

零件補充原因:(請於打√)

原包裝即遺失或毀損,

製作途中遺失或毀損,

其他原因 _____