

M1A2 SEP 戰車操作手冊譯本(第十三章-預防性維護檢查與保養-底盤使用後檢查)

TM9-2350-388-10-3, FEBRUARY 2009,

HEADQUARTERS, DEPARTMENT OF THE ARMY.

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提要

- 一、本篇譯文-美陸軍司令部2009年2月版M1A2 SEP 120公厘火炮全履帶戰車操作手冊，本書籍區分三冊十七個章節，為美陸軍配賦M1A2戰車之部隊所用之單位技術書刊，然其內容包含裝備諸元性能、操作機件名稱及功用、正常及非正常之操作程序、單位保養項目及規範、簡易故障排除要領等，實可供我未來部屬該型裝備之單位運用。
- 二、本篇譯文針對第三冊第十三章(預防性維護檢查與保養之底盤使用後檢查)等項目加以說明，闡明該裝備保養之時機、律定保養執行人員職責、檢查程序、及標準；另亦就危安防處及裝備停用之評估標準予以明確說明。

關鍵詞：機電燃油系統、引擎液壓系統、履帶張力調節器、蒸氣壓維系統單元、人員加熱器

壹、前言

鑑於裝甲部隊為地面防衛作戰決定性兵種，我軍近期已積極展開戰車的汰舊換新將攸關防衛作戰任務之成敗，近期美方正式同意向我軍出售M1A2戰車，使得我裝甲部隊為期多年缺乏新式戰車之困境畫下的句點，此次新式戰車的獲得將使我裝甲部隊戰力大幅提升，在新戰車獲得的同時應先對於該項裝備之特殊設計、系統特性、操作、保養等項目有初步之了解，俾利未來接裝訓練時可加速接裝人員對裝備了解及提升對裝備之熟悉度。本篇譯文-美陸軍司令部2009年2月版M1A2 SEP 120公厘火炮全履帶戰車操作手冊，本書籍區分三冊十七個章節，美陸軍配賦M1A2戰車之部隊所用之單位技術書刊，故實屬為我陸軍配屬M1A2戰車之裝甲部隊重要運用之書籍之一；囿於全書篇幅過大及筆者任職單位屬性，且預防保養的落實攸關裝備的良劣與否，故先行譯文第三冊第十三章「預防性維護檢查與保養-底盤操作後檢查」等項目，俾供讀者參酌運用。



貳、譯文

第十三章 預防性維護檢查與保養/ PREVENTIVE MAINTENANCE CHECKS AND SERVICES

於每日操作時，預防性維護檢查與保養程序圖，將協助您執行操作前、中、後，預防性維護檢查與保養項目。各項需執行之保養及檢查項目均以編號及箭頭顯示在戰車中之相對位置。如圖 1

These routing diagrams will help you perform your B, D, and A PMCS. They show the locations where you will perform various PMCS items. The PMCS item numbers are shown with arrows to locations on or in vehicle.

圖 1、預防性維護檢查與保養-每日預防保養檢查流程-操作前

每日預防保養檢查流程

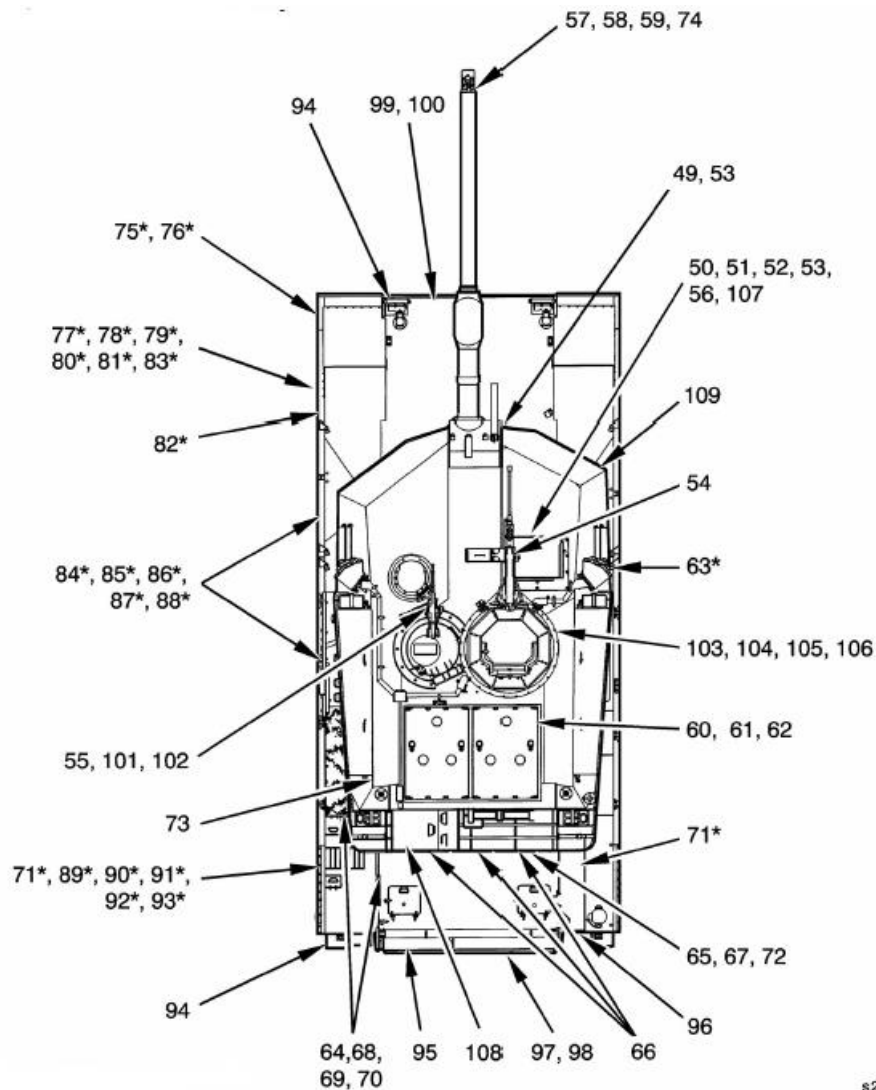
DAILY "WALK AROUND" PMCS PROCEDURES - continued

行駛後

AFTER

檢查點於圖面 49~109 項

Numbers used : 49 through 109



一、每日預防保養檢查流程項目-操作後/ PREVENTIVE MAINTENANCE CHECKS AND SERVICES- DAILY "WALK AROUND" PMCS PROCEDURES- REAR

(一)項次49-駕駛艙門蓋/ Driver's Hatch (圖2)

1. 負責乘員/Crewmember

駕駛/DRIVER

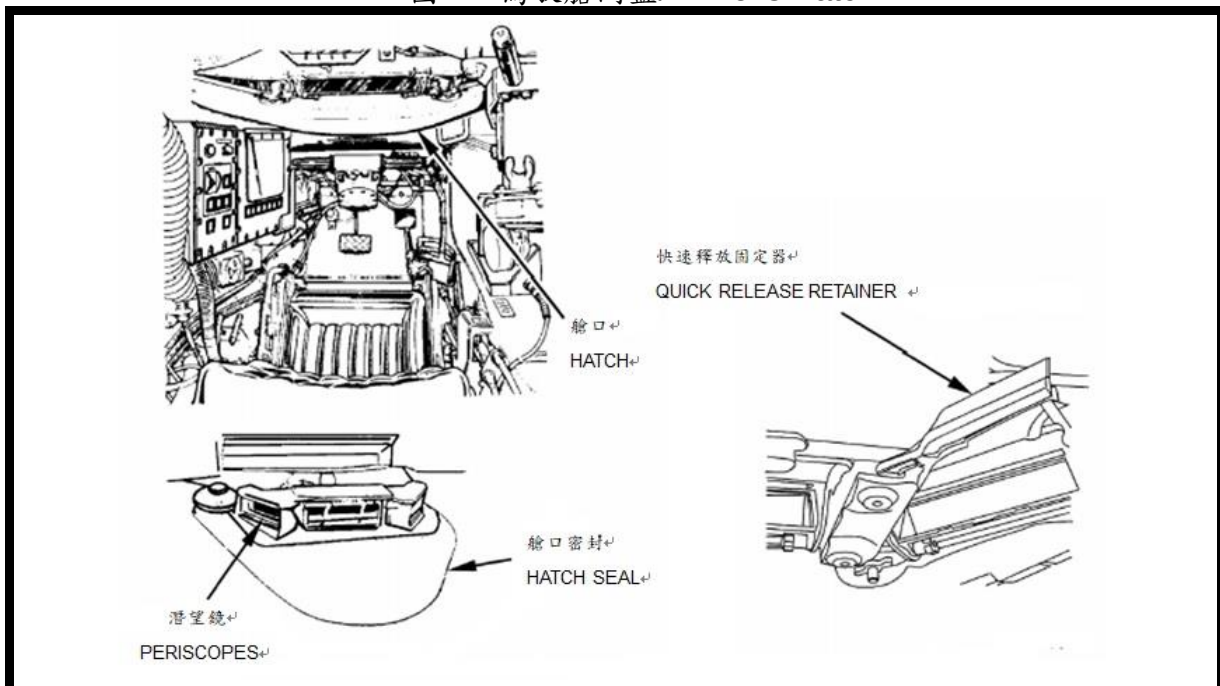
2. 檢查流程/Procedure :

- (1). 操作艙口蓋可正常操作開啟及關閉鎖定。
Check hatch for ease of operation and for positive open and close locking.
- (2). 檢查艙口蓋密閉是否也缺口或分離。
Check hatch seal for rips or separation from hatch.
- (3). 確保潛望鏡均乾淨清晰。
Make sure unity periscopes are clear and clean.
- (4). 檢查駕駛艙蓋聯動鎖是否操作正常，參考(VOL1 WP0093)
Check operation of driver's hatch interlock (Vol 1, WP 0093).
- (5). 如配備快速釋放固定器，請檢查操作的簡便性及強制鎖定功能。
If equipped with quick release retainers, check for ease of operation and positive locking.

3. 以下狀況停用/Not Fully Mission Capable if:

- (1). 艙口蓋缺損或無作用。
Hatch missing or inoperative.
- (2). 中央潛望鏡視線模糊度超過50%。
Center periscope missing or over 50% of vision obscured.
- (3). 零件缺損、老化、保持器粘黏或無法作用。
Parts missing or damaged. Retainer sticking, binding, or inoperative.

圖 2、駕駛艙門蓋/ Driver's Hatch





(二)項次53-圓頂燈/ **Dome Lights**

1. 負責乘員/**Crewmember** :

乘員/**CREWMEMBER**

2. 檢查流程/**Procedure** :

(1). 檢查圓頂燈是否作用正常。

Check dome lights for operation.

(2). 檢查燈面是否破裂，電纜是否損壞及變阻器旋鈕是否損壞，如有通知現場維護。

Check dome lights for broken or cracked lenses, damaged cables, broken or damaged rheostat knobs. If damaged, notify field maintenance.

3. 以下狀況停用/**Not Fully Mission Capable if:**

無/**NON**

(三)項次61-緊急燃油關閉T型手柄/ **Emergency Fuel Shut Off T Handle(圖3)**

1. 負責乘員/**Crewmember**

駕駛及乘員/ **DRIVER AND CREWMEMBER**

2. 檢查流程/**Procedure**

(1). 穿越砲塔後可接觸手柄。

Traverse turret for access to handle.

(2). 隨著發動機處於戰術怠速運轉下，脈衝T型手柄一直處於打開狀態。

With engine at Tac idle, pull handle all the way out.

(3). 降低引擎轉速，聽其運轉聲音約2分鐘。

Listen for engine RPM to decrease, (approximately 2 minutes).

(4). 當轉速降低時，持續推動脈衝T型手柄。

When RPMs start to decrease, push handle in all the way.

(5). 確保引擎轉速返回至戰術怠速未啟動狀態。

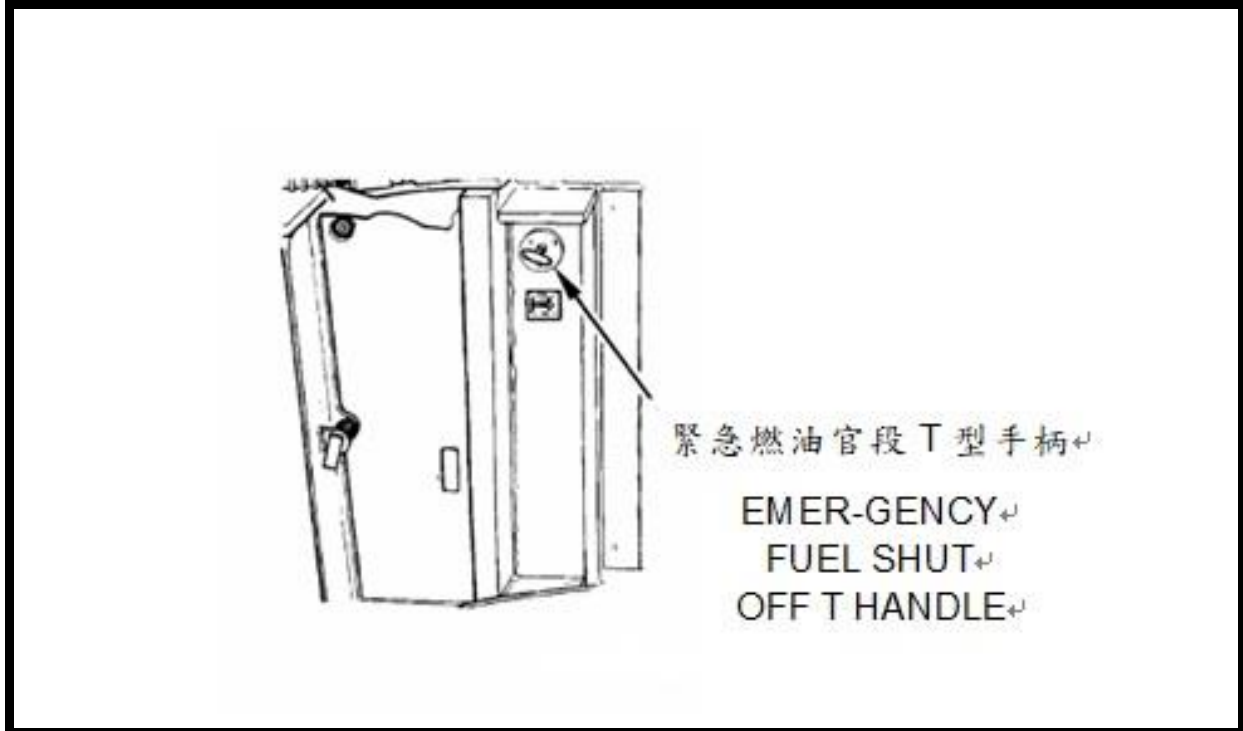
Make sure engine RPMs return to Tac idle.

3. 以下狀況停用/**Not Fully Mission Capable if:**

轉速無下降

RPMs do not decrease.

圖 3、緊急燃油關閉 T 型手柄/ Emergency Fuel Shut Off T Handle



(四)項次64-預防清潔/ Pre-cleaner

1. 負責乘員/Crewmember

乘員/ CREWMEMBER

2. 檢查流程/Procedure

- 將主砲橫向左超過第二承載輪。

Traverse turret so main gun is over number 2 left roadwheel.

- 通過前清潔器進入排水口。

Access to sponson drain port is through precleaner.

- (1). 清潔隔柵板污垢、落葉及其他髒污。

Clean dirt, leaves, and other material from precleaner grille.

- (2). 清除排水區周圍地區的污垢、落葉及其他髒污，確保排水口不會堵塞。

Clean dirt, leaves, and other debris out of drain and surrounding area to make sure sponson drain port does not become clogged.

- (3). 檢查預濾器頂部和整個密封組件是否有裂縫或凹痕。

Inspect top of precleaner and entire seal assembly for cracks or dents.

- (4). 從前面的頂部去除樹葉、樹枝或其他碎片，如果清潔後仍顯示空氣濾清器限制或堵塞的慎重訊息，請依據(Vol2 WP0422)實施故障排除。

Remove leaves, twigs, or other debris from top of precleaner. If AIR FILTER RESTRICTED or AIR FILTER CLOGGED caution message is displayed on caution/warning menu after cleaning, do troubleshooting (Vol 2, WP 0422).

- (5). 關閉預濾器蓋

Close precleaner cover



3. 以下狀況停用/Not Fully Mission Capable if

空氣濾清器堵塞訊號持續顯示。

AIR FILTER CLOGGED caution message stays active.

(五) 項次65-變速箱機油油量/Transmission Oil Level

1. 負責乘員/Crewmember

乘員/ CREWMEMBER

2. 檢查流程/Procedure

●車輛須停於平面上。

Vehicle should be on level surface.

●在檢查變速箱機油油量，應先關閉發動機靜待10分鐘後測量。

Engine should be shut down for 10 minutes before checking transmission oil level.

(1). 檢查變速箱機油油量，請參照(LO9-2350-388-13)潤滑令。

Check for leaks around transmission.

(2). 檢查變速箱周圍是否有滲漏現象。

Check for leaks around transmission.

(3). 檢查是否有洩漏。如果運轉期間變速箱機油油量由正常變過滿，

請通知現場維護。

Check for leaks. If transmission oil level changes from normal to over full during operation, notify field maintenance.

3. 以下狀況停用/Not Fully Mission Capable if

機油達三級滲漏

Class III leak is identified.

(六) 項次66-發動機艙滅火器感知器鏡頭/Engine Compartment Fire Extinguisher Sensor Lenses

1. 負責乘員/Crewmember

乘員/ CREWMEMBER

2. 檢查流程/Procedure

(1). 檢查並清潔四個發動機艙感知器鏡頭，如被上漆或覆蓋，請通知現場維護。

Inspect and clean lenses on four engine compartment fire extinguisher sensors. If lenses are painted over, notify field maintenance.

(2). 連接器或電纜損壞，請通知現場維護。

If connectors or cables are damaged, notify field maintenance.

(3). 在檢查和清潔感知器鏡頭時檢查發動機艙是否有洩漏。

Check for leaks in engine compartment when inspecting and cleaning sensor lenses.

3. 以下狀況停用/Not Fully Mission Capable if:

(1). 感應器破損、遺失、鏡面不潔。

Sensors broken, missing or painted over.

(2). 洩漏達三級

Class III leak is identified.

(七) 項次67-引擎機油油量/ Engine Oil Level

1. 負責乘員/Crewmember

乘員/ CREWMEMBER

2. 檢查流程/Procedure

警告

引擎機油(MIL-PRF-23699和MIL-PRF-7808)可能含有磷酸三甲苯酯，如誤食將產生麻痺。潤滑油可以通過皮膚，檢查時需著長袖、手套、護目鏡和面罩，如不小心噴到眼睛，須立即以清水沖洗並送醫，如沾附皮膚須以清水或肥皂水清徹底清潔，尤其在進食或吸菸前更須加以清潔，此能降低危害程度至最小。

Engine lubricating oils (MIL-PRF-23699 and MIL-PRF-7808) may contain tricresyl phosphate which, if taken internally, can produce paralysis. Lubricating oil may be absorbed through the skin. Wear long sleeves, gloves, goggles and faceshield. If lubricating oil gets in eyes, wash them immediately and get medical aid immediately. If lubricating oil gets on skin, thoroughly wash with soap and water. Wash hands thoroughly prior to eating or smoking. Application of these measures is considered an effective control of the hazard.

註記

設備操作時允許輕微漏(1級或2級)。必須考慮檢查項目或系統的流體容量，如有疑問通知你的主管。

Equipment operation is allowable with minor leaks (Class I or II). Consideration must be given to fluid capacity of item or system being checked. When in doubt, notify your supervisor.

(1). 檢查引擎機油油量，需添加請參照(LO9-2350-388-13)。

Check engine oil level. Add oil as required (LO 9-2350388-13).

(2). 檢查有無洩漏。

Check for leaks.

3. 以下狀況停用/Not Fully Mission Capable if

(1). 洩漏達三級。

Class III leak is identified.

(2). 每小時消耗超過一夸脫。

Oil consumption is more than one quart per hour of operation.

(八) 項次68-機電燃油系統(EMFS)/ Electromechanical Fuel System (EMFS)(圖4)

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

(1). 拆下引擎檢修蓋，目視檢查系統是否缺損固定螺。

Remove engine access cover. Visually inspect EMFS for loose or missing locknut.

(2). 目視檢查系統有無洩漏。

Visually inspect EMFS for leaks.

(3). 目視檢查系統配件是否鬆動。

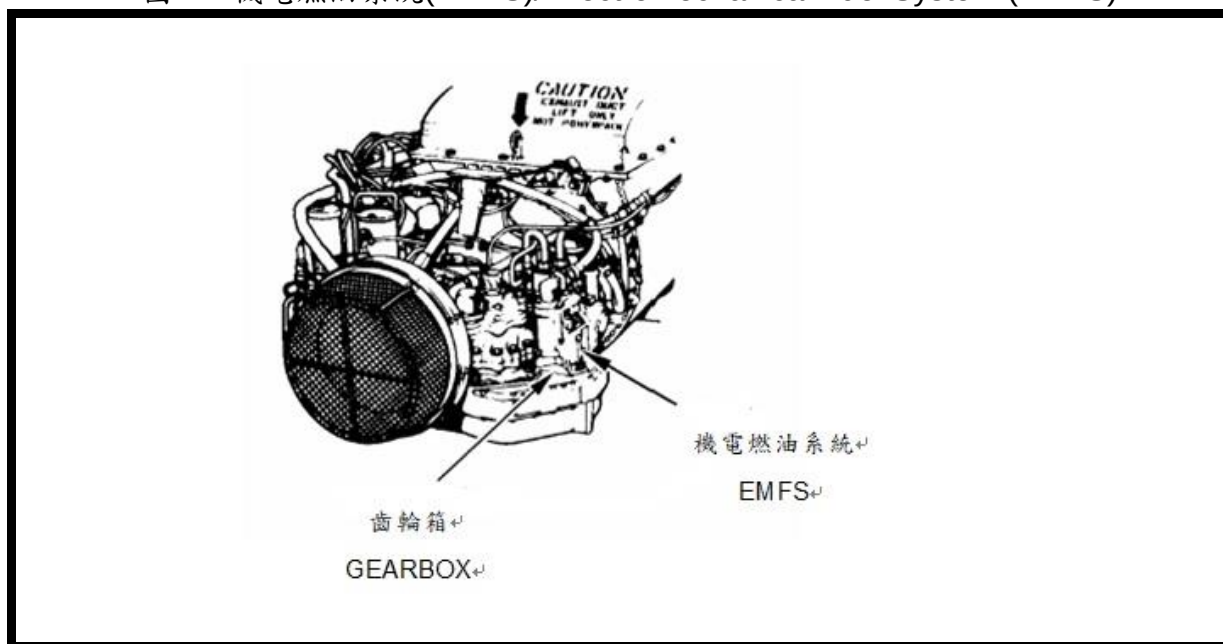
Visually inspect EMFS for loose fittings.

3. 以下狀況停用/Not Fully Mission Capable if:



- (1). 固定螺絲鬆動、斷裂或缺件。
Locknut is loose or missing or stud is broken.
- (2). 發現任何洩漏。
Any leak is identified.
- (3). 配線或配件損壞或遺失。
Line or fitting is broken or leaking.

圖 4、機電燃油系統(EMFS)/ Electromechanical Fuel System (EMFS)

**(九)項次69-引擎液壓系統/ Engine Hydraulics(圖5)****1. 負責乘員/Crewmember :**乘員/ **CREWMEMBER****2. 檢查流程/Procedure :****警告**

必須在引擎冷卻時進行檢查，如果在很熱時檢查該系統，會造成很嚴重之灼傷。

This inspection must be made when engine is cold. Crew members can be severely burned if they attempt to inspect engine hydraulics while engine is hot.

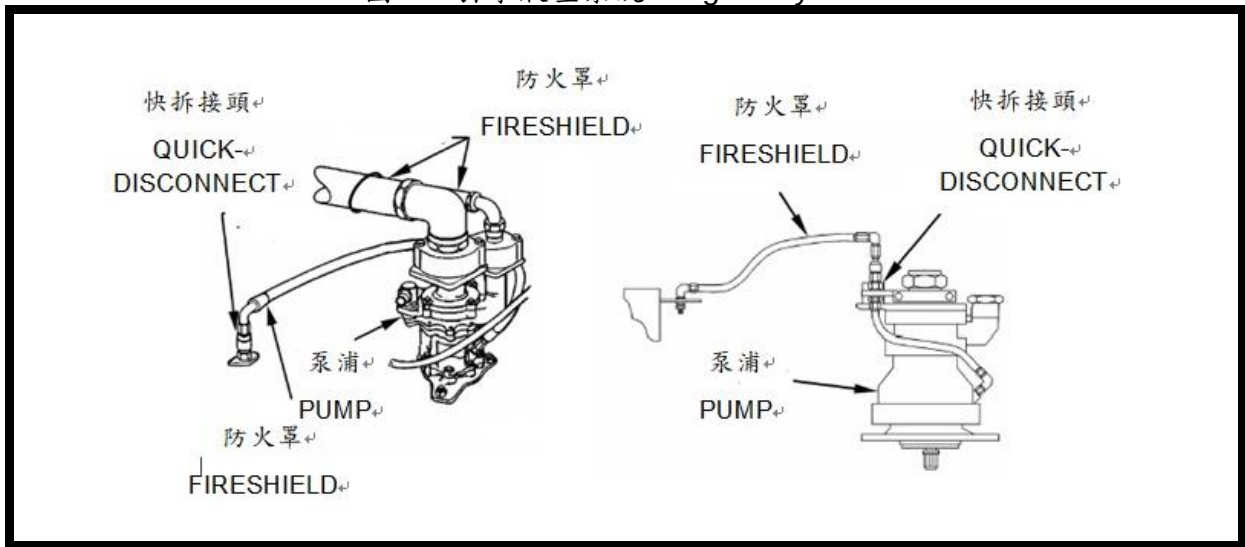
- (1). 目視檢查液壓泵及管線是否有液體洩漏。
Visually inspect hydraulic pump and lines for fluid leakage.
- (2). 目視檢查液壓泵是否鬆動，或缺少緊定螺帽，螺栓是否斷裂或損壞。
Visually inspect hydraulic pump for loose or missing locknut or broken stud or wear.
- (3). 檢查軟管，防火罩配件及快速段開裝置是否洩漏。
Inspect hoses, fireshields, fittings and quick-disconnects for leaks.
- (4). 檢查軟管及防火板是否有擦傷跡象。
Check hoses and fireshields for signs of chafing.
- (5). 檢查固定帶是否正確安裝在軟管及防火罩周圍。
Check retaining straps for proper mounting around hoses and fireshields.

- (6).用手搖動泵體組件並檢查泵體底座是否鬆動。
Grasp pump assembly and check for looseness at pump base.

3.以下狀況停用/Not Fully Mission Capable if:

- (1).洩漏達三級。
Class III leak is identified.
- (2).緊定螺鬆動、缺損或螺栓斷裂。
Locknut is loose or missing or stud is broken.
- (3).泵體鬆動或無法使用。
Pump is loose or inoperative.

圖 5、引擎液壓系統/ Engine Hydraulics



(十)項次70-渦輪定子執行器和線路/ Power Turbine Stator (PTS)
Actuator and Lines(圖6)

1.負責乘員/Crewmember :

乘員/ CREWMEMBER

2.檢查流程/Procedure :

- (1).目視檢查渦輪定子執行器線路及配件是否缺損或斷線。
Visually inspect PTS for broken lines and fittings.

註記

在正常操作期間，燃料在活塞軸上形成薄膜。執行器底座上形成的液滴(執行器在關閉位置)表示燃油洩漏。

Fuel forms a film on the piston shaft during normal operation. A fuel leak is indicated by drops forming on the actuator base (actuator closed in the shutdown position).

- (2).目視檢查渦輪定子執行器(PTS)是否洩漏，如果發現洩漏，請通知現場維護。

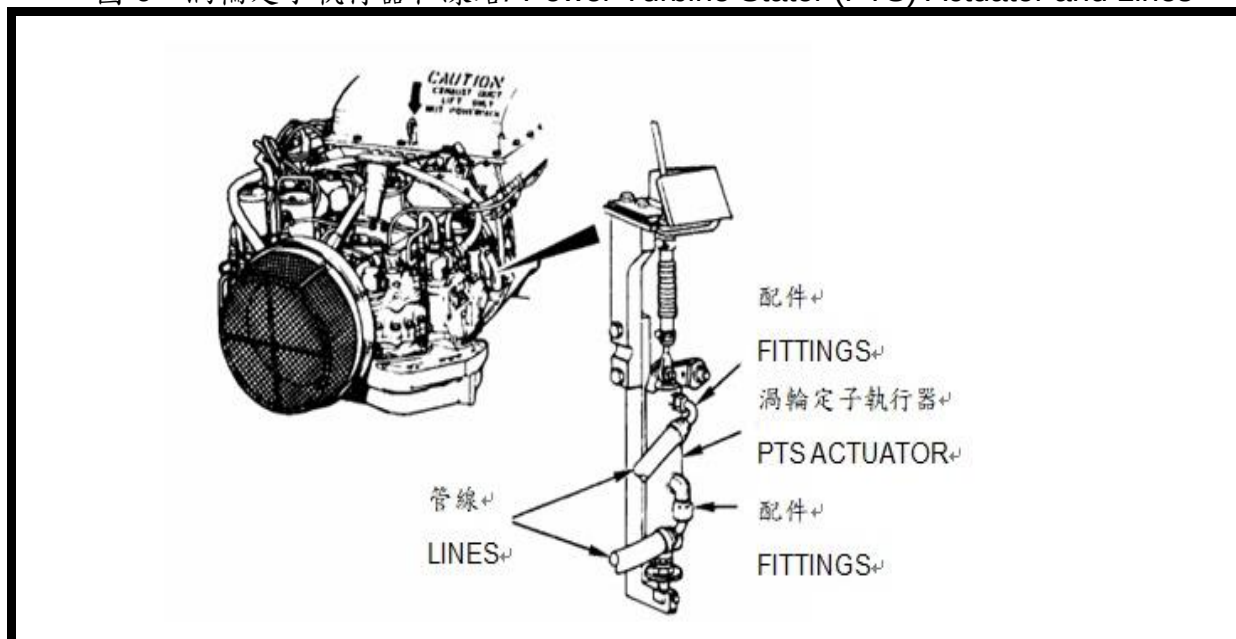
Visually inspect PTS for leaks. If leaks are found, notify field maintenance.

3.以下狀況停用/Not Fully Mission Capable if:

線路及配件損壞，發現任何洩漏
Line or fitting is broken. Any leak is identified.



圖 6、渦輪定子執行器和線路/ Power Turbine Stator (PTS) Actuator and Lines

**(十一)項次71-電池/ Batteries****1. 負責乘員/Crewmember :**乘員/ **CREWMEMBER****2. 檢查流程/Procedure :**

檢查電池盒、或者是否配備左右電池盒，以查看電弧放電的跡象。
Inspect battery compartment, or if equipped, left and right battery compartments, for signs of arcing.

3. 以下狀況停用/Not Fully Mission Capable if:

存在電弧的證據(即，塑料蓋或金屬部件上的燒傷區域或熔化點)。
Evidence of arcing exists (i.e., burned areas or melted spots on plastic covers or metal parts).

(十二)項次72-熱交換器(使用LV100-5燃氣渦輪機) / Heat Exchanger**1. 負責乘員/Crewmember :**乘員/ **CREWMEMBER****2. 檢查流程/Procedure :**

檢查熱交換器是否有堵塞或翅片損壞。
Inspect heat exchanger for clogged or damaged fins.

3. 以下狀況停用/Not Fully Mission Capable if:無/**NON****(十三)項次73- NBC備源系統(新鮮空氣)進氣屏幕/ NBC Backup system (Fresh Air) Intake Screen(圖7)****1. 負責乘員/Crewmember :**乘員/ **CREWMEMBER**

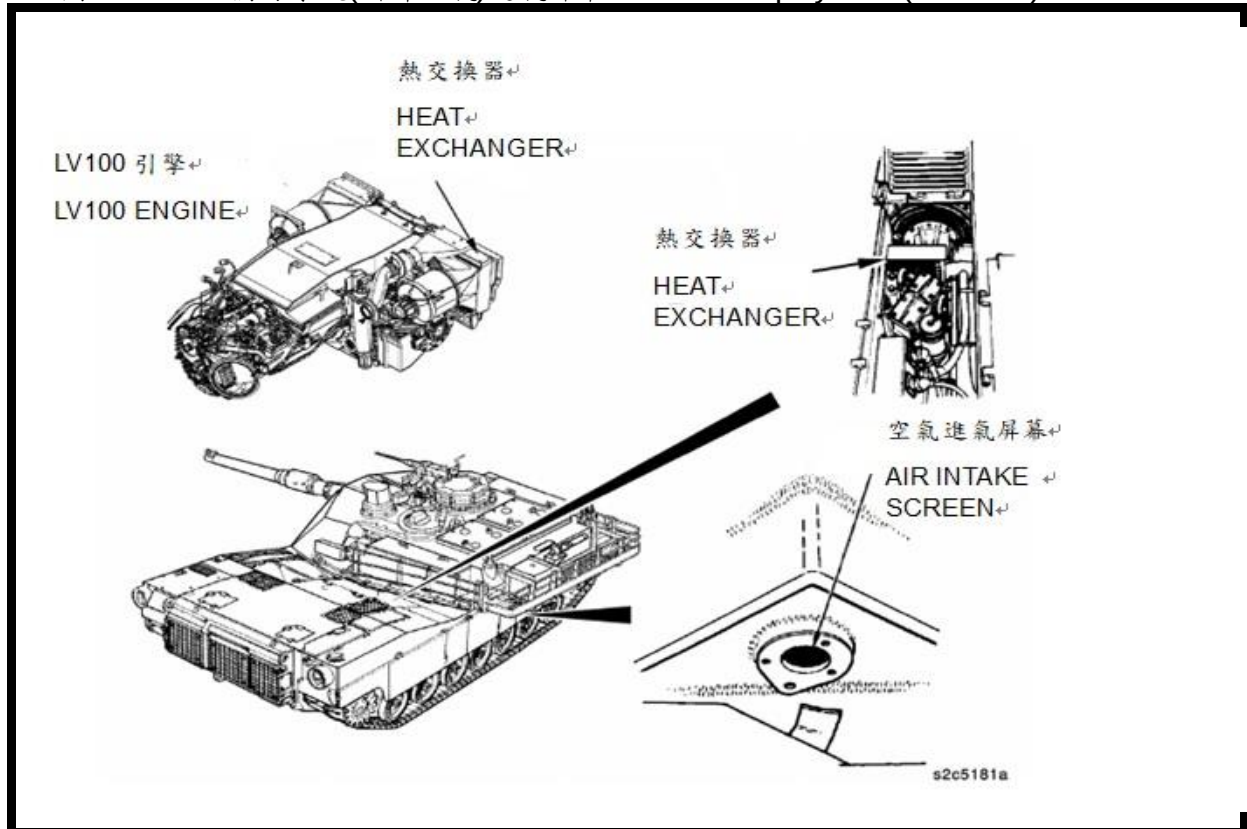
2. 檢查流程/Procedure :

從進氣屏幕清潔污垢和其他碎屑。
Clean dirt and other debris from air intake screen.

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON

圖 7、NBC 備源系統(新鮮空氣)進氣屏幕/ NBC Backup system (Fresh Air) Intake Screen



(十四)項次75-履帶終端連結器(左側、右側。側面)/ Track End Connectors (Left and Right Sides)(圖8)

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

●抬起右前檔泥板，尋找履帶終端連結器和右側#1裙邊的間隙。
Lift right front fender and look for gap at track-end connector and right #1 skirt.

●抬起左前檔泥板，尋找履帶終端連結器和左側#1裙邊的間隙。
Lift left front fender and look for gap at track-end connector and left #1 skirt.

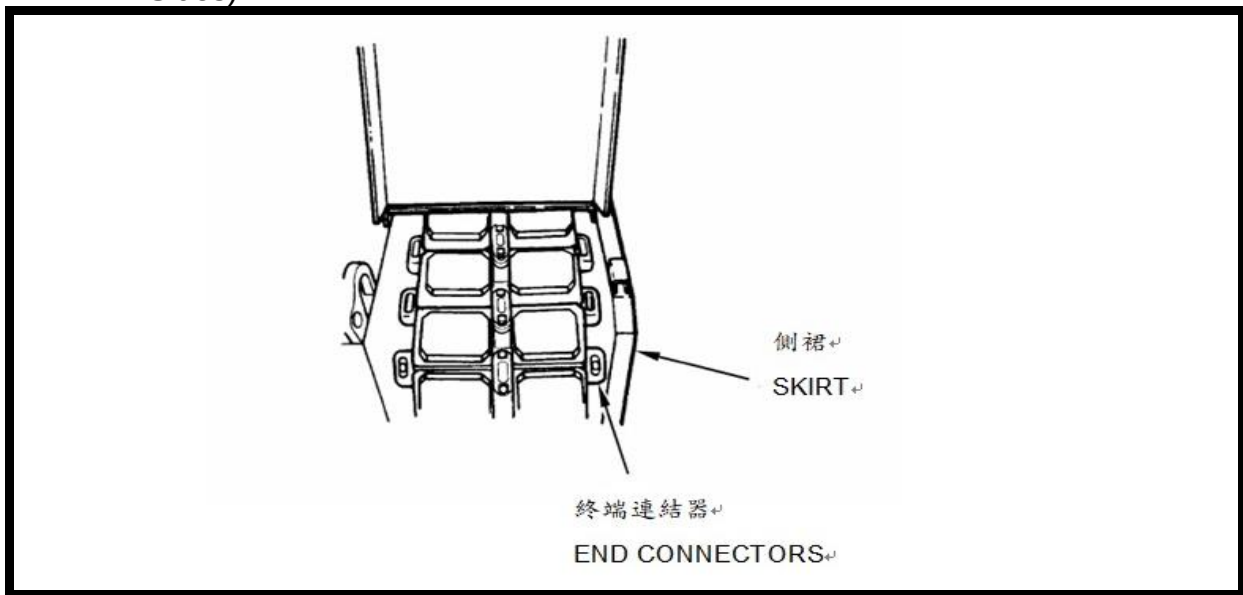
檢查以確保終端連結器和#1側裙之間間隙為1/8英吋或更大。
Check to make sure clearance between end connector and #1 skirt is 1/8-inch or more.

3. 以下狀況停用/Not Fully Mission Capable if:

終端連結器與側裙間隙小於1/8英吋或已造成摩擦。
Track end connector to skirt gap is less than 1/8inch or touching skirt.



圖 8、履帶終端連結器(左側、右側。側面)/ Track End Connectors (Left and Right Sides)



(十五)項次76-履帶側裙及鉸鍊(左側、右側#1和#2側裙)/ **Skirts and Hinges Left and Right Side #1 and #2 Skirts(圖9)(圖10)**

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

警告

如果兩片側裙同用一鉸鍊時，則不同時打開兩片側裙，此舉可能使側裙斷裂並且容易使人員受傷。

鉸鍊位於#1及#2側裙、#3及#4側裙、#5及#6側裙之間。

Do not open two skirts at the same time if they have the same hinge line. Skirt could break off and injure you. Hinge lines are between skirts 1 and 2, 3 and 4, and 5 and 6.

(1). 打開側裙邊之前，檢查#1及#2裙邊是否有破裂或鉸鍊折斷或缺少鉸鍊銷。

Inspect #1 and #2 skirts for cracked or broken hinges or missing hinge pins before opening skirts.

(2). 檢查#1及#2裙邊是否有裂縫和損壞。

Inspect #1 and #2 skirts for cracks and damage.

註記

打開履帶側裙#1

Open #1 skirt.

(3). 檢查擋泥板支架是否破損或損壞。

Inspect for broken, cracked or damaged fender brace or fender support.

3. 以下狀況停用/Not Fully Mission Capable if:

(1). 鉸鍊、鉸鍊銷及插銷遺失或斷裂。

Broken or missing hinges, pins or clips.

(2).履帶側裙遺失

Ballistic skirt missing.

(3).支持架或支撐架斷裂。

Broken fender support or fender brace.

圖 9、履帶側裙及鉸鍊(左側、右側#1 和#2 側裙)/ Skirts and Hinges Left and Right Side #1 and #2 Skirts

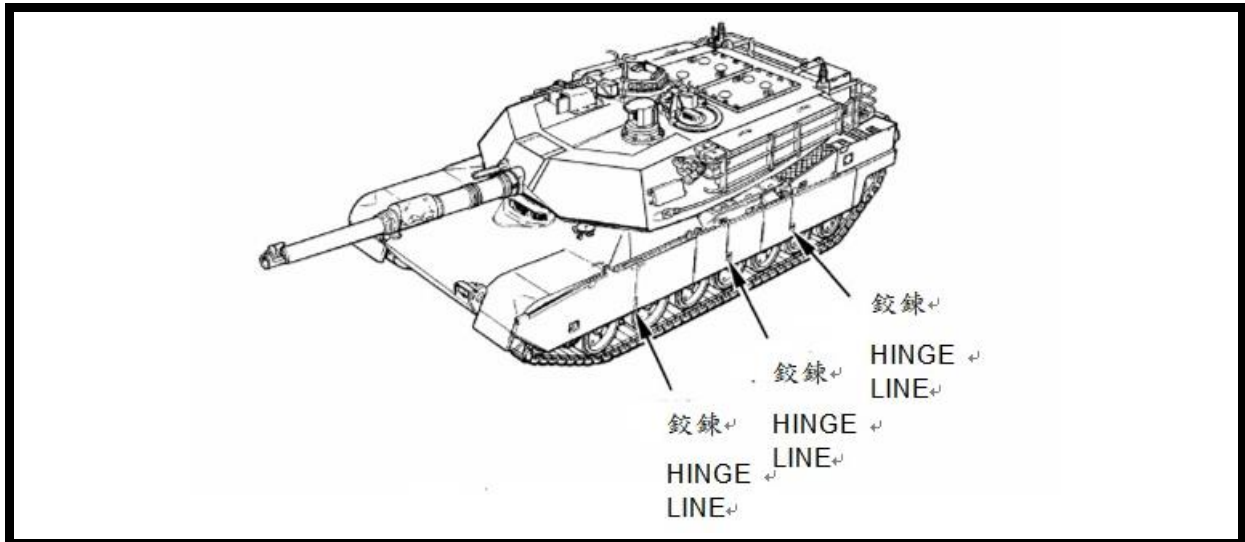
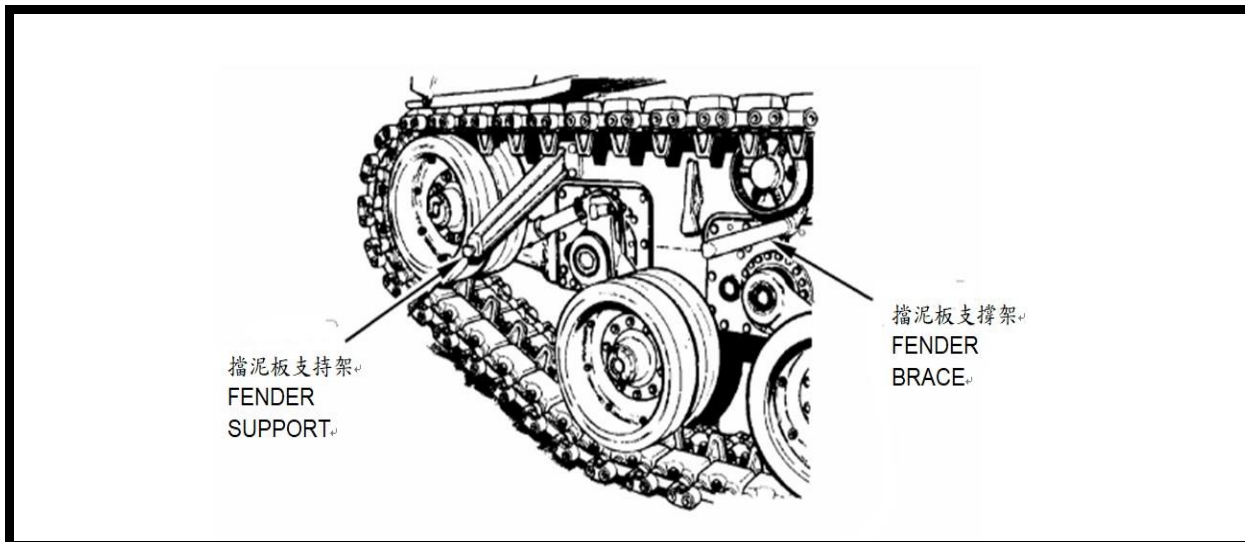


圖 10、履帶側裙及鉸鍊(左側、右側#1 和#2 側裙)/ Skirts and Hinges Left and Right Side #1 and #2 Skirts



(十六)項次77-補償惰輪組件/#1和#2地輪組件左右兩側/

Compensating Idler Wheel Assembly/ #1 and #2 Roadwheel Assemblies Left and Right Side(圖11)

1.負責乘員/Crewmember :

乘員/ CREWMEMBER

2.檢查流程/Procedure :



(1).檢查彎曲，折斷或損壞的承載輪/補償惰輪。

Check for bent, broken, or missing roadwheel/ compensating idler wheel.

註記

- 履帶張力調節器的壓力安全閥上有黃油冒出，表示鎖緊螺栓或鎖緊螺母可能鬆動。

The presence of grease at the adjusting link relief valve means that either the lock bolt or locknut may be loose.

- 車輪與輪轂之間有間隙或產生橢圓狀的螺孔，此表示該承載輪或惰輪已損壞。

Gap between roadwheel and hub may indicate elongated lug nut holes or worn hub or roadwheel/ compensating idler wheel.

(2).檢查安裝螺栓或螺帽是否鬆動或遺損，如發現鬆動請參照(WP 0422)所規範之方法旋緊。

Check for any loose or missing mounting bolts or nuts. If found loose, apply proper torque (WP 0422).

(3).檢查是否有鬆動、缺損、被刨削的耐磨板或安裝螺帽。

Check for loose, missing, cracked, or gouged wear plates and mounting nuts.

(4).檢查承載輪、惰輪膠圈是否有破裂或與輪鋼圈分離，如果有上述狀況，則更換承載輪(WP 0495)或惰輪(WP 0496)。

Check roadwheel and compensating idler wheels for chunking or separation. If rubber is chunked or separated, replace roadwheel (WP 0495) or idler wheel (WP 0496).

(5).檢查輪轂內外是否洩漏

Inspect inner and outer roadwheel hub and compensating idler hub for leaks.

(6).檢查輪轂蓋內黃油容量、其標準應與栓蓋平齊，如檢查為不足或(乳化)進水，請通知現場維護。

Inspect for oil level at hub caps. Level should be to the bottom of the hole for the plug. If oil is milky (water is present), notify field maintenance.

警告

輪轂行駛後可能會很燙，如果貿然以觸摸測試有可能會造成燙傷。 Hubs can be hot. Use care when test-touching hubs. You can be burned.

註記

車輛停止時用手逐一檢查輪轂，是否有一或數個輪轂溫度異常過高。

At halts, perform hub touch test with hand. Check for one hotter than the others.

(7).檢查承載輪臂上是否有黃油洩漏。

Inspect upper end of roadwheel arms for leaks at housing.

(8).檢查承載輪臂是否有變形或深鑿。

Check roadwheel arms for bends or deep gouges.

3. 以下狀況停用/Not Fully Mission Capable if:

(1).缺少承載輪或補償輪。

Missing roadwheel or compensating idler wheel.

(2).同一個惰輪輪轂上缺少2個或以上的安裝螺帽。同一個承載輪股轂缺少2個或以上的安裝螺帽。

Two or more mounting nuts missing on same idler wheel hub. Three or more mounting

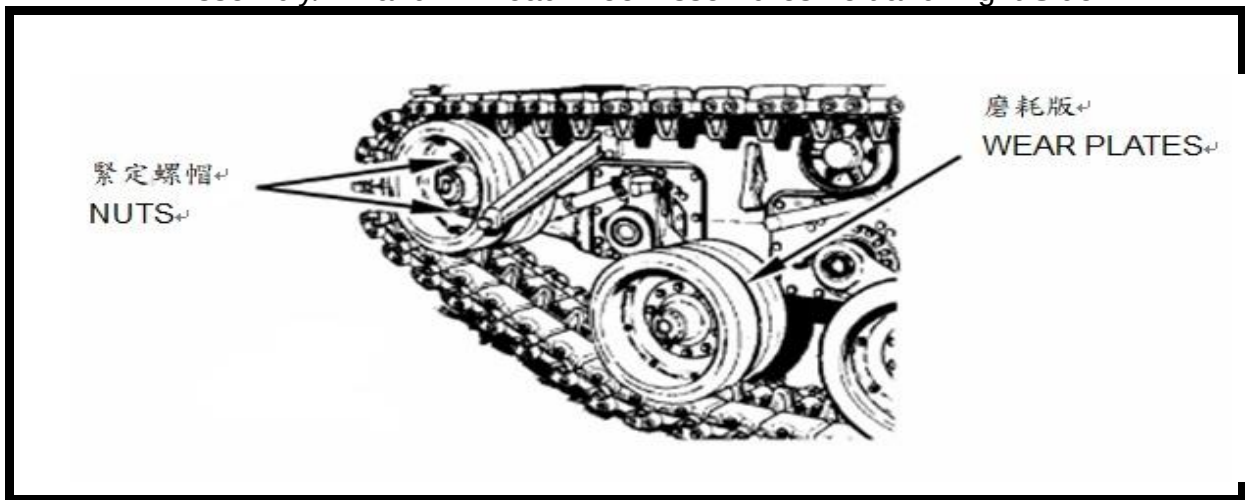
nuts missing on same roadwheel hub.

- (3). 膠圈與鋼圈密合處產生1英吋(含)以上之間隙，輪圈膠面覆蓋於金屬圈上之面積低於75%或膠圈表面產生3X4英吋(含) 以上之破面。

Separation of 1 inch of rubber contact from metal surface around 75% of roadwheel and or chunking that exposes metal extending 3x4 inches on wheel surface.

- (4). 滲漏達三級
Class III leak.

圖 11、補償惰輪組件/#1 和#2 地輪組件左右兩側/ Compensating Idler Wheel Assembly/ #1 and #2 Roadwheel Assemblies Left and Right Side



(十七)項次78-履帶張力調節器/ Adjusting Link Assembly and Track Tension Left and Right Side(圖12)

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

- (1). 將車輛向前移動20英呎，向後移動20英呎後將車輛熄火。

Move tank rearward 20 feet, then forward 20 feet and shut down engine.

- (2). 移動車輛時，檢查終端連結器是否缺損，檢查履帶內外楔型鐵是否鬆動或缺失。

While moving tank, check for cracked or missing end connectors and loose or missing wedges and bolts on inside and outside of track.

註記

張力調節器軸承內露過多的襯套，屬正常狀態，無須調整。

Excess packing material protruding from the track adjusting link bearing is a normal condition, no corrective action is required.

- (3). 檢查張力器組件是否有鬆動，螺栓及黃油嘴等機件缺損。

Inspect adjusting link assembly for loose, cracked or missing hardware or lube fitting.

- (4). 以下列方式檢查內部止回閥的黃油是否洩漏。用工具翹起減壓

閥。如黃油由減壓閥流出，則內部止回閥不良。通知現場維護。

Check internal check valve for leaking grease as follows. Pry up on pressure relief



valve with screwdriver. If grease flows from pressure relief valve, internal check valve is bad. Notify field maintenance.

(5).檢查張力調節器上的伸長限制指標。如果伸長限制指標露出，則移除一節履帶

Check to see if bronze-link-over extension indicator on adjusting link is showing. If bronze-link-over extension indicator is showing, remove one track shoe.

警告

履帶張力調節器中的黃油是有壓力的。為了避免受傷，配戴護目鏡。

不要在長度限制口上塗黃油。長度限制口是作為進氣使用。

Grease is under pressure in track tension adjusting link assembly. To avoid injury, wear goggles. Do not put grease in fitting on cylinder. This grease fitting is used for cylinder air intake.

註記

將黃油槍連接加注口並將黃油打入直至黃油從洩放閥流出。提起黃油槍並旋轉使黃油槍和加注口分離。

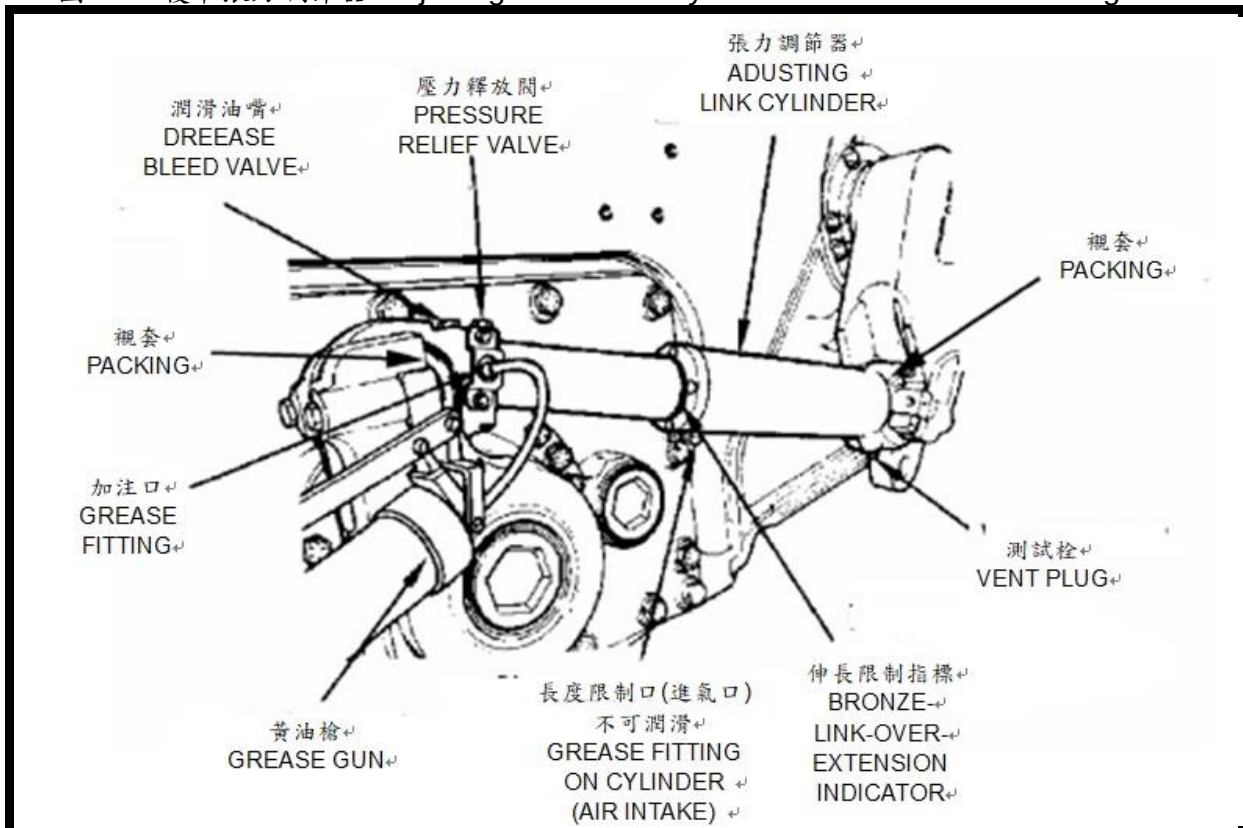
Connect grease gun to fitting and pump grease into fitting until grease spurts out of relief valve. Disconnect grease gun by lifting and then twist and pull off fitting.

3. 以下狀況停用/Not Fully Mission Capable if:

張力調節器缺損或破裂。

Adjusting link assembly missing, cracked or broken.

圖 12、履帶張力調節器/ Adjusting Link Assembly and Track Tension Left and Right Side



(十八)項次79-左、右(#1、#2)之承載輪減震器(前方)/ Shock Absorbers Left and Right Front #1 and #2 Roadwheel(圖13)

1. 負責乘員/**Crewmember**：

乘員/**CREWMEMBER**

2. 檢查流程/**Procedure**：

- (1). 檢查減震器觀測計的油量位置是否合適，指示球必須位於視線表的中間或頂部之間。如油量過低或有乳化現象(含水)，請通知現場維護。

Check shock absorber sight gages for proper oil level. Indicator ball must be between middle and top of sight gage. If oil is low or milky (water is present), notify field maintenance.

- (2). 檢查減震器外殼是否有鬆動現象，安裝螺栓是否缺損。
Inspect shock absorber housing for loose, missing, or broken mounting bolts.

- (3). 檢查減震器外殼是否洩漏，如果洩漏通知現場維護。
Inspect shock absorber housing for leaks. If leaking notify field maintenance.

- (4). 在減震器外殼上進行觸摸測試。
Perform touch-test on shock absorber housing.

註記

以手背觸碰減震器外殼。如該外殼比其他減震器外殼還冷，較冷外殼中之減震器可能損壞，通知現場維護。

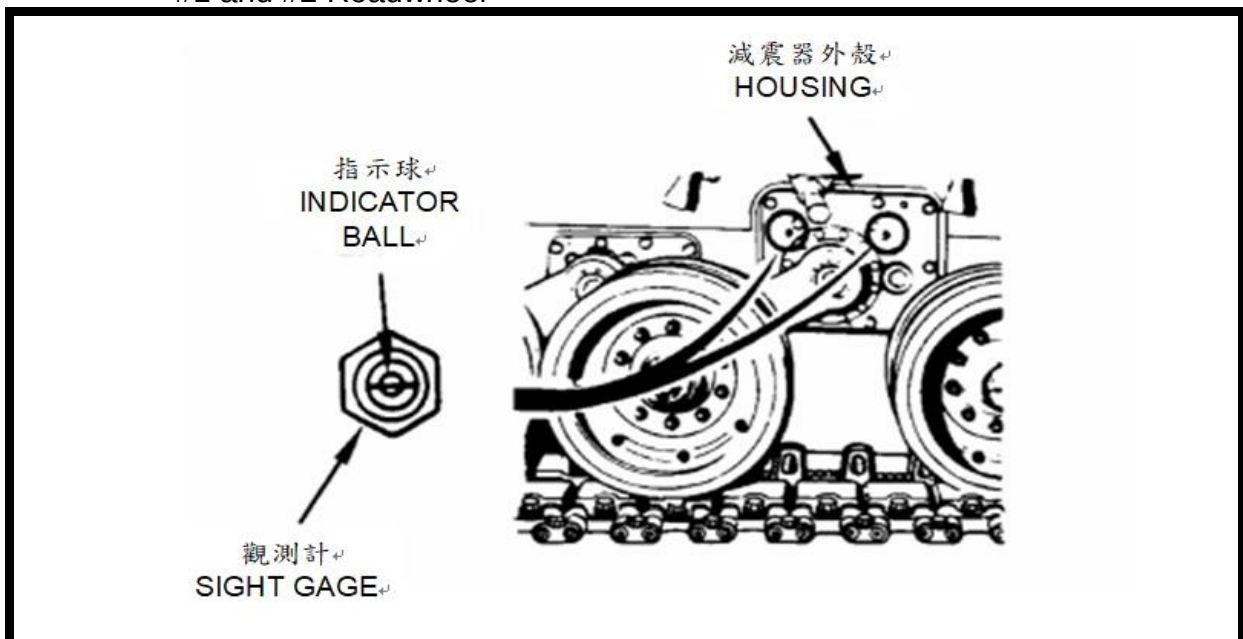
Touch shock absorber housing with back of hand. If housing is colder than other shock absorber housings, shock absorber in cold housing may be broken. Notify field maintenance.

3. 以下狀況停用/**Not Fully Mission Capable if:**

- (1). 兩個(含)以上減震器無作用。
Two or more shock absorbers inoperative.

- (2). 達三級滲漏
Class III leak is identified.

圖 13、左、右(#1、#2)之承載輪減震器(前方)/ Shock Absorbers Left and Right Front #1 and #2 Roadwheel





(十九)項次80-左、右側承載臂(前方)抑制桿(焊接型)/ **Bump Stop Bracket, Welded, Front, Left and Right Sides(圖14)**

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

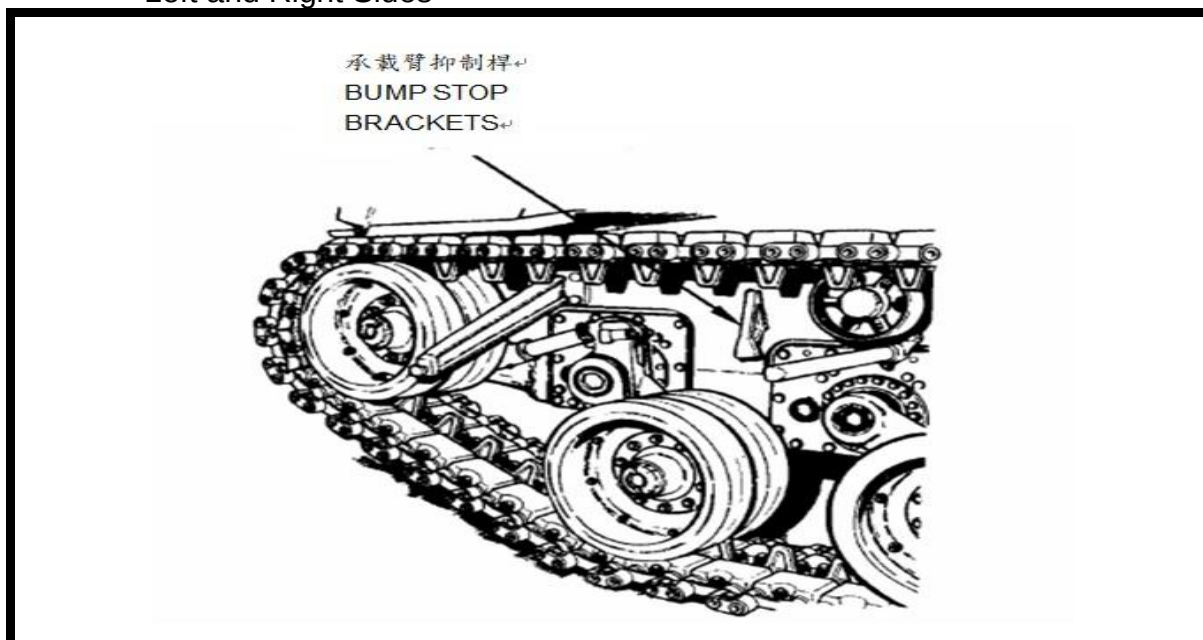
2. 檢查流程/Procedure :

檢查承載臂抑制桿是否斷裂、損壞，如有上述情事，請通知現場維護。
Inspect for broken, damaged or missing bump stop brackets. Notify field maintenance if bump stop brackets are broken or missing.

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON

圖 14、左、右側承載臂(前方)抑制桿(焊接型)/ Bump Stop Bracket, Welded, Front, Left and Right Sides



(二十)項次81-左、右側承載臂抑制桿(前方)(安裝型)/ **Bump Stop Bracket Left and Right Side Front(圖15)**

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

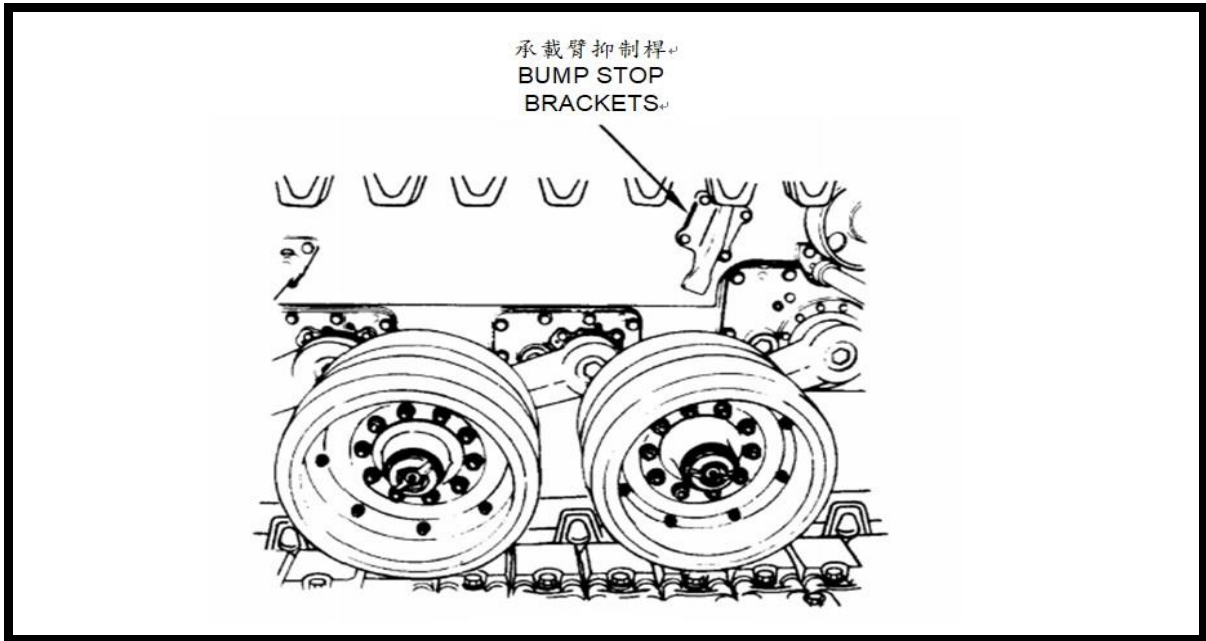
檢查承載臂抑制桿是否斷裂、損壞，或未安裝妥當如有上述情事，請通知現場維護。

Inspect for broken, damaged or missing bump stop brackets and mounting hardware. Notify field maintenance if bump stop brackets and hardware are broken or missing.

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON

圖 15、左、右側承載臂抑制桿(前方)(安裝型)/ Bump Stop Bracket Left and Right Side Front



(二十一)項次82-左、右支輪組件(前方)/ **Support Roller Assembly Left and Right Front(圖16)**

1. 負責乘員/Crewmember :

乘員/ **CREWMEMBER**

2. 檢查流程/Procedure :

警告

輪轂可能非常得熱。觸摸輪轂可能造成燒傷。

Hubs can be very hot. Use care when touching hubs. You can be burned.

(1). 檢查黃油嘴是否損壞或遺失。

Inspect for missing or damaged grease fitting.

(2). 檢查支輪本體及軸損壞或有裂縫。

Inspect support roller and spindle support for cracks and damage.

(3). 檢查輪軸支架是否鬆動或缺少固定銷。

Check spindle support for loose or missing retaining pin.

(4). 檢查支輪輪轂蓋是否鬆動、損壞、黃油洩漏。

Inspect support roller hub cap for cracks, damage, grease leakage, or loose fit.

(5). 觸摸方式以測試輪轂必須不熱。過熱表示輪轂內缺黃油或軸承

故障。通知現場維護。

Touch-test hub to make sure hub is not hot. A hot hub may be an indicator of lack of lubrication or a failed bearing. Notify field maintenance.

3. 以下狀況停用/**Not Fully Mission Capable if:**

(1). 有裂縫或遺失支輪。

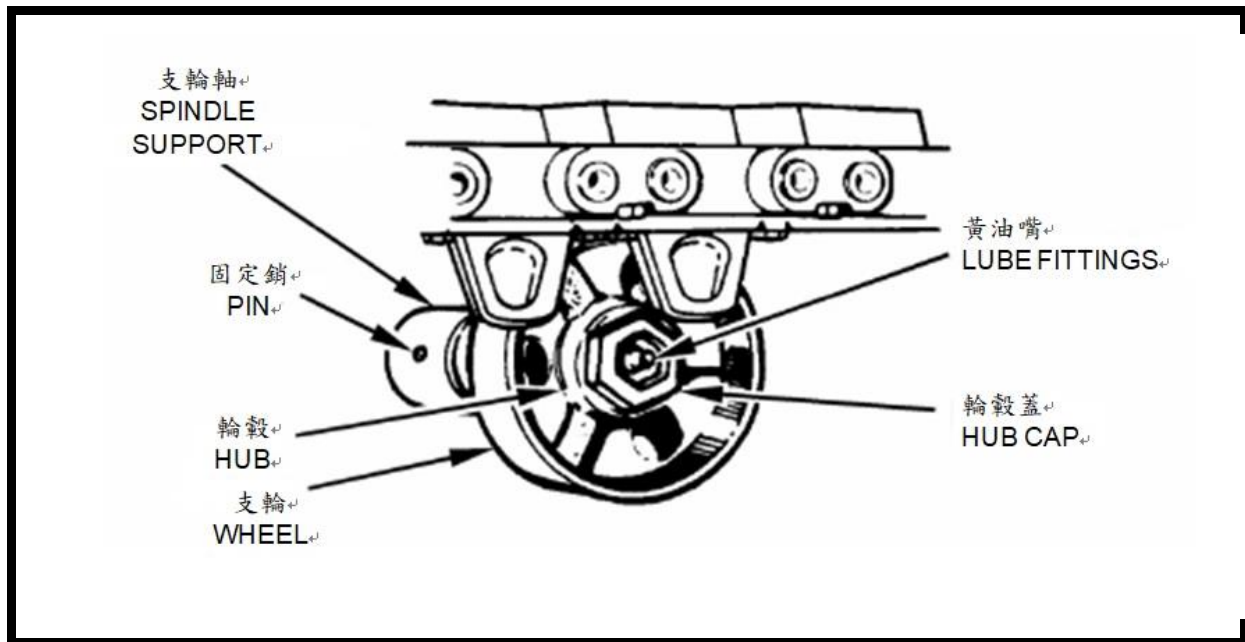
Cracks or support roller missing.

(2). 支輪輪轂過熱。

Support roller hub assembly overheated.



圖 16、左、右支輪組件(前方)/ Support Roller Assembly Left and Right Front



(二十二)項次83-#1, #2, #3, #4, #5, #6, 側裙內側(全履帶)履帶組件/ #1, #2, #3, #4, #5, and #6 Skirt Areas Track Assembly (圖17) (圖18)(圖19) (圖20) (圖21) (圖22)

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

- (1). 檢查履帶組件是否有缺損、彎曲、的中央導齒、固定螺栓及螺帽，如發現鬆動請依據(WP 0509)施予適當扭力。
Inspect shoe assemblies for missing, bent or broken center guides and loose or missing nuts/bolts. If found loose, apply proper torque (WP 0509).
- (2). 檢查中央導齒尖端下1英吋處，其側面厚度需介於1/2英吋~1 1/4英吋間。
Check center guides wear for 1/2-inch to 1-1/4 inch thick measured at a point one inch down from the tip.
- (3). 檢查終端連結器是否磨損、遺失或破裂，連接器厚度需大於3/16英吋。
Check for excessive wear, worn, missing or cracked end connectors. End connector wear thickness 3/16-inch.
- (4). 檢查終端連結器是否有遺失、鬆動或未正確安裝的楔型塊、楔型螺栓。如發現鬆動，請依據(WP 0504)施予適當之扭力。
Check end connectors for missing, loose or improperly seated wedges or wedge bolts. If found loose, apply proper torque (WP 0504).
- (5). 檢查履帶銷是否彎曲或斷裂。
Check for bent, cracked or broken track pins.
- (6). 檢查履帶板及爬齒是否磨損。
Check track pads for wear.

(7). 檢查履帶板與承載輪接觸之膠面是否破損至履帶銷管裸露。
Check for exposed or damaged tubes on roadwheel path.

(8). 檢查履帶銷管襯套斷裂或卡死導致履帶版於法水平懸掛。
Inspect for dead (broken) track shoes. A dead track shoe appears to be out-of-line.

註記

如果發現終端結器或中央導齒於車輛停止時鬆動，請依據(WP 0504)或(WP 0502)施予適當扭力。

If end connectors or center guides are found to be loose at halts, apply proper torque (WP 0504) or (WP 0502).

3. 以下狀況停用/Not Fully Mission Capable if:

(1). 2個或多個連續之中央導齒缺損。

Two or more consecutive center guides missing.

(2). 厚度不足1/2英吋。

Worn to less than 1/2inch.

(3). 1個或多個終端連結器遺失、破裂、厚度小於3/16英吋。

One or more end connectors missing, cracked, or worn to less than 3/16inch thickness.

(4). 1個或多個楔型塊遺失或未正確位置。

One or more wedges missing or improperly seated.

(5). 1只或多只履帶銷彎曲或斷裂。

One or more cracked or broken track pins.

(6). 如果單側履帶爬齒磨耗高度達50%(含)以上。

If track pads are worn to metal grouser height (50% or more on one side).

(7). 膠面脫落導致單一履帶版2只履帶銷管裸露。

If binocular tubes are damaged on roadwheel path.

(8). 1組或多組履帶板損壞。

One or more dead (broken) track shoes.

圖 17、#1, #2, #3, #4, #5, #6, 側裙內側(全履帶)履帶組件/ #1, #2, #3, #4, #5, and #6 Skirt Areas Track Assembly

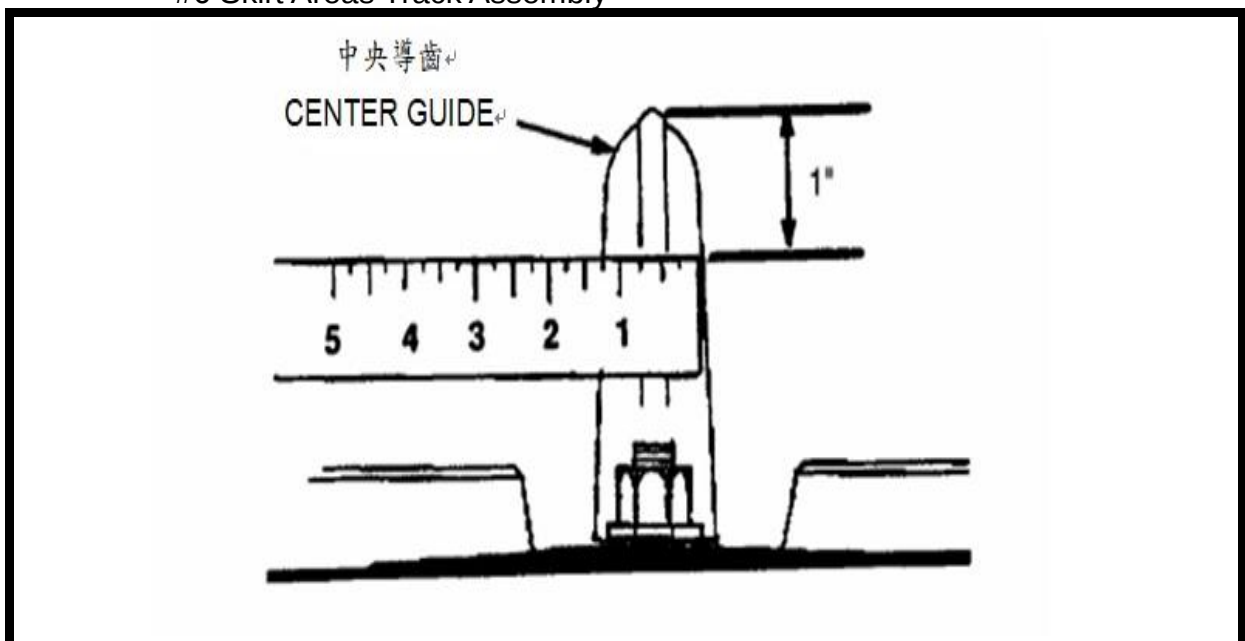




圖 18、#1, #2, #3, #4, #5, #6, 側裙內側(全履帶)履帶組件/ #1, #2, #3, #4, #5, and #6 Skirt Areas Track Assembly

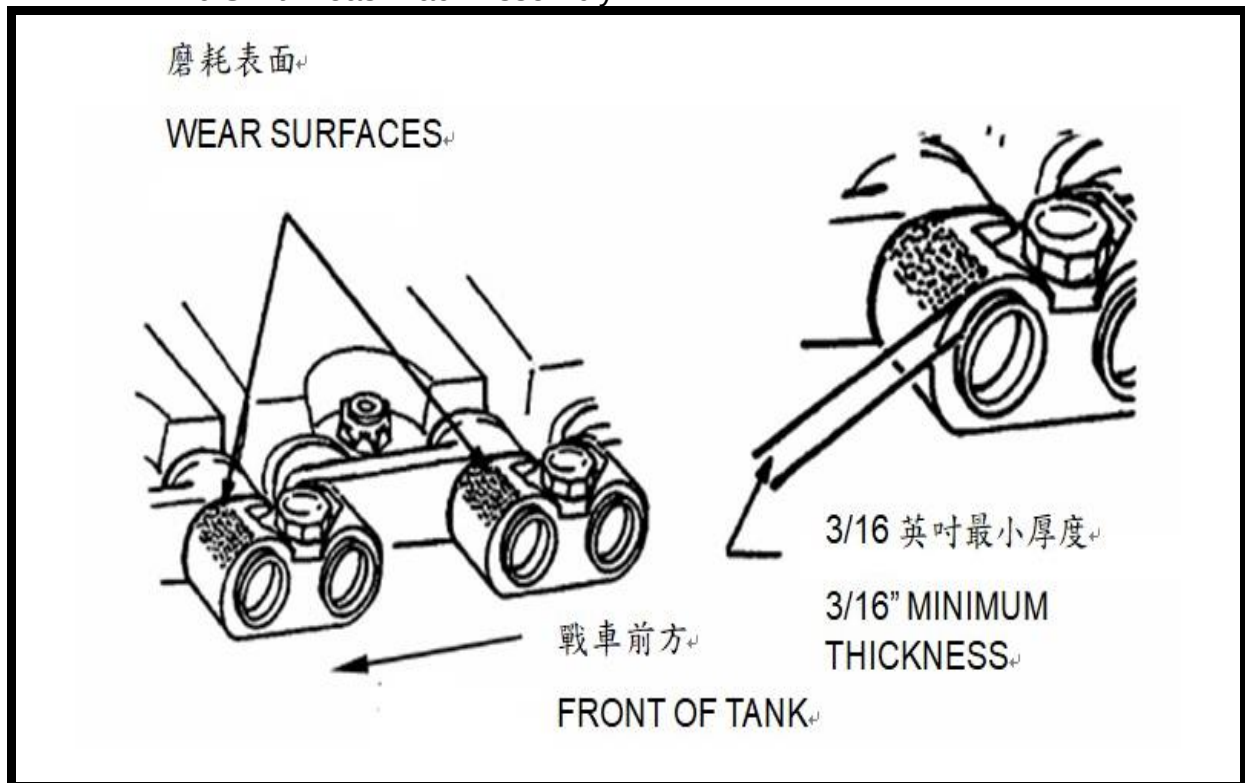


圖 19、#1, #2, #3, #4, #5, #6, 側裙內側(全履帶)履帶組件#1, #2, #3, #4, #5, and #6 Skirt Areas Track Assembly

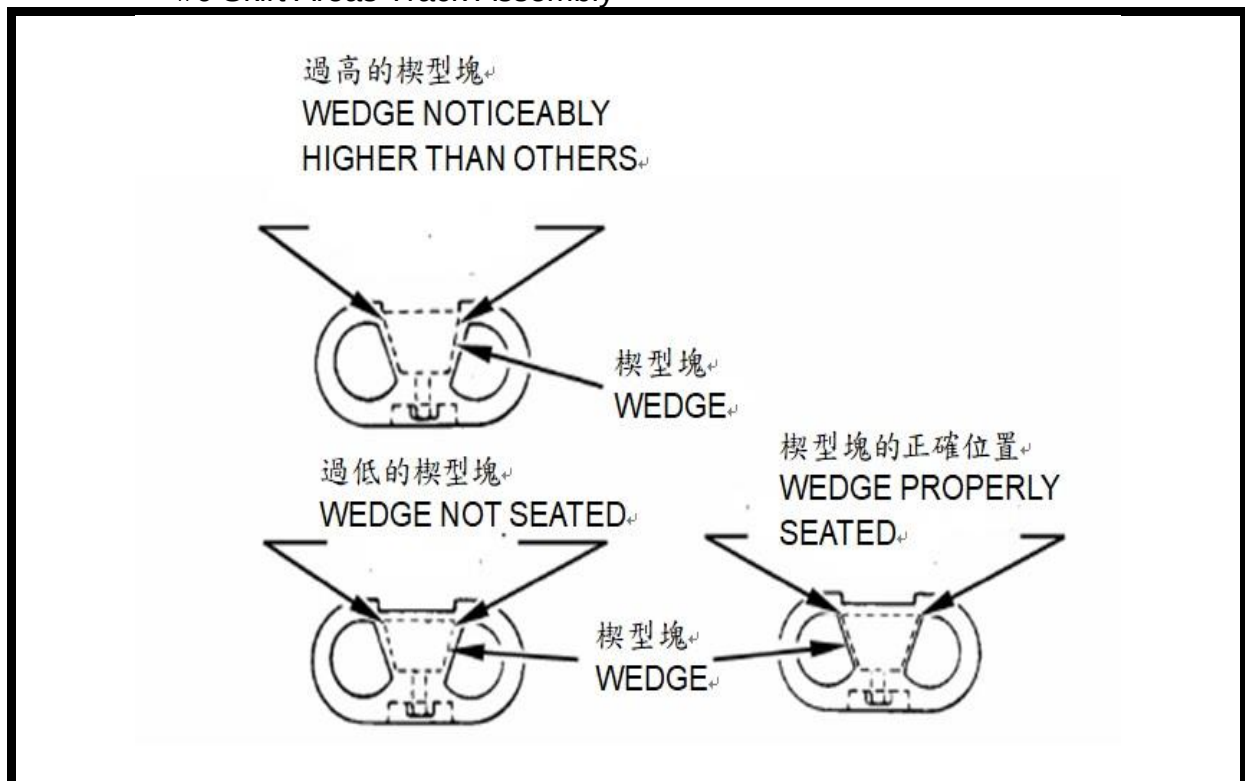


圖 20、#1, #2, #3, #4, #5, #6, 側裙內側(全履帶)履帶組件/ #1, #2, #3, #4, #5, and #6 Skirt Areas Track Assembly

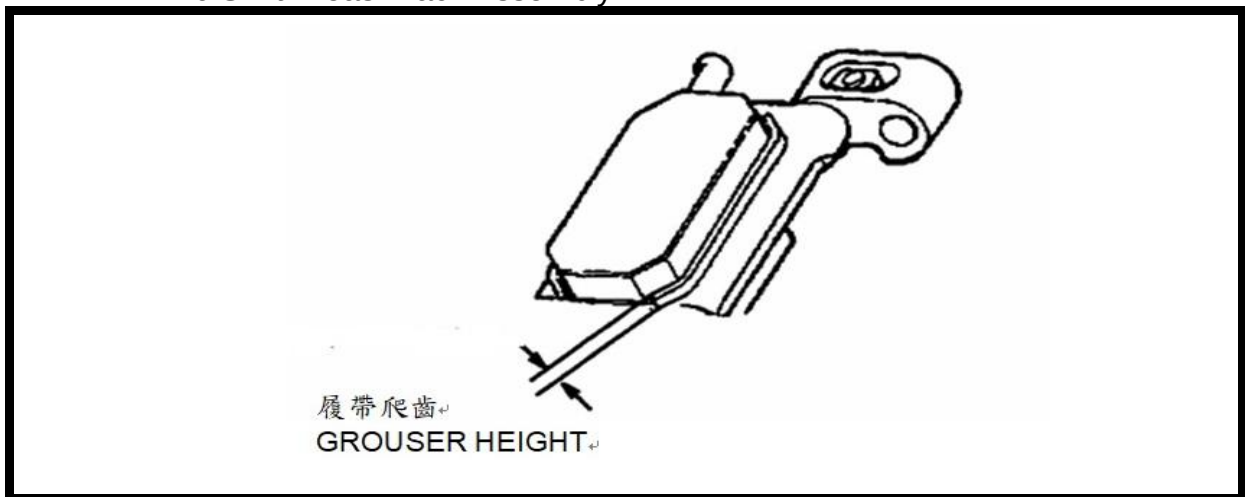


圖 21、#1, #2, #3, #4, #5, #6, 側裙內側(全履帶)履帶組件/ #1, #2, #3, #4, #5, and #6 Skirt Areas Track Assembly

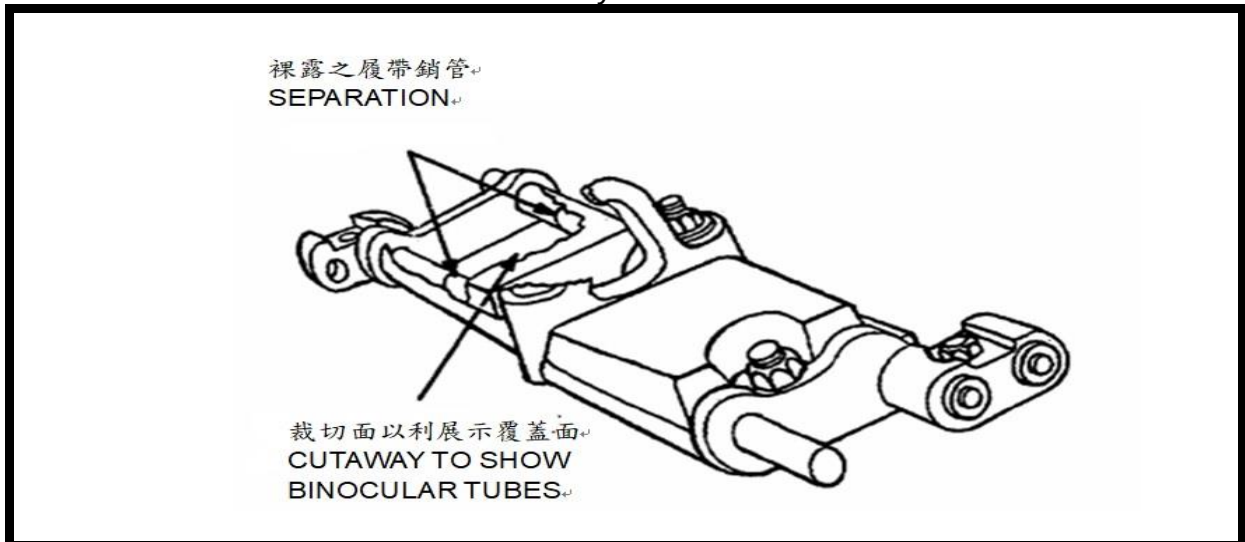
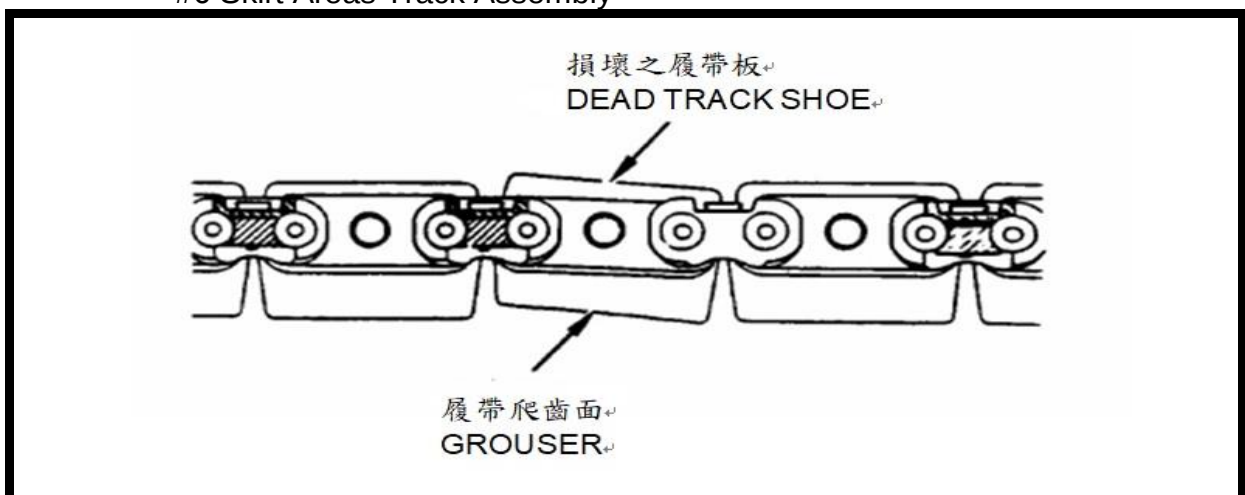


圖 22、#1, #2, #3, #4, #5, #6, 側裙內側(全履帶)履帶組件/ #1, #2, #3, #4, #5, and #6 Skirt Areas Track Assembly





(二十三)項次84-履帶側裙及鉸鍊(左側、右側#3和#4側裙)/ **Skirts and Hinges Left and Right Side #3 and #4 Skirts**

1. 負責乘員/Crewmember :

乘員/ **CREWMEMBER**

2. 檢查流程/Procedure :

警告

如果兩片側裙同用一鉸鍊時，則不同時打開兩片側裙，此舉可能使側裙斷裂並且容易使人員受傷。

鉸鍊位於#1及#2側裙、#3及#4側裙、#5及#6側裙之間。

Do not open two skirts at the same time if they have the same hinge line. Skirt could break off and injure you. Hinge lines are between skirts 1 and 2, 3 and 4, and 5 and 6.

(1). 打開側裙邊之前，檢查#3及#4裙邊是否有破裂或鉸鍊折斷或缺

少鉸鍊銷。

Inspect #3 and #4 skirts for cracked or broken hinges or missing hinge pins before opening skirts.

(2). 檢查#3及#4裙邊是否有裂縫和損壞

Inspect #3 and #4 skirts for cracks, damage or missing skirt.

(3). 打開#2和#3側裙。檢查檔泥板破損、破裂、損壞。

Open #2 and #3 skirts. Inspect for broken, cracked or damaged fender brace.

3. 以下狀況停用/Not Fully Mission Capable if:

(1). 鉸鍊、鉸鍊銷及插銷遺失或斷裂。

Broken or missing hinges, pins, or clips.

(2). 側裙遺失。

Ballistic skirts missing.

(二十四)項次85-#2, #3, #4, #5, #6, 側裙區域承載輪組/ **#2, #3, #4, #5 and #6 Skirt Areas Roadwheel Assemblies Left and Right Side(圖23)(圖24)**

1. 負責乘員/Crewmember :

乘員/ **CREWMEMBER**

2. 檢查流程/Procedure :

(1). 檢查承載輪是否變形、破損、遺失。

Check for bent, broken, or missing roadwheel.

(2). 檢查承載輪固定螺栓與螺帽是否遺失、鬆動，並給予適當扭力。

Check for any loose or missing mounting bolts or nuts. If found loose, apply proper torque.

(3). 檢查磨耗板及固定螺帽是否鬆動或遺失或磨損。

Check for loose, missing, cracked, or gouged wear plates and mounting nuts.

(4). 檢查承載輪是否變形或膠面分離，如果膠面與鋼圈分離或大面

剝落則更換承載輪。依據(WP 0495)。

Check roadwheel for chunking or separation. If rubber is chunked or separated, replace roadwheel (WP 0495).

(5). 檢查輪轂內外側是否洩漏。

Inspect inner and outer roadwheel hub for leaks.

- (6).檢查輪轂蓋內黃油容量、其標準應與栓蓋平齊，如檢查為不足或(乳化)進水，請通知現場維護。

Inspect for oil level at hub caps. Level should be to the bottom of the hole for the plug. If oil is milky, (water is present), notify field maintenance.

警告

輪轂可能非常得熱。觸摸輪轂可能造成燒傷。

Hubs can be hot. Use care when test-touching hubs. You can be burned.

註記

車輛停止時用手逐一檢查輪轂，是否有一或數個輪轂溫度異常過高。

At halts perform hub touchtest with hand. Check for one hotter than the others.

- (7).檢查承載輪臂上是否有黃油洩漏。

Inspect upper end of roadwheel arms for leaks at housings.

- (8).檢查承載輪臂是否有變形或深鑿。

Check roadwheel arms for bends or deep gouges.

3. 以下狀況停用/Not Fully Mission Capable if:

- (1).遺失承載輪。

Missing roadwheel.

- (2).同一承載輪上缺少3個(含)以上之螺帽與螺栓。

Three or more mounting nuts missing on same roadwheel hub.

- (3).膠圈與鋼圈密合處產生1英吋(含)以上之間隙，輪圈膠面覆蓋於

金屬圈上之面積低於75%或膠面破損導致行進間有怦怦聲。

Separation of a continuous 1 inch or more of rubber contact from metal surface around 75% or more of roadwheel and/or chunking of rubber on both roadwheels mounted on same road arm severe enough to cause thumping.

- (4).達3級滲漏。

Class III leak identified.

圖 23、 #2, #3, #4, #5, #6, 側裙區域承載輪組/#2, #3, #4, #5 and #6 Skirt Areas Roadwheel Assemblies Left and Right Side

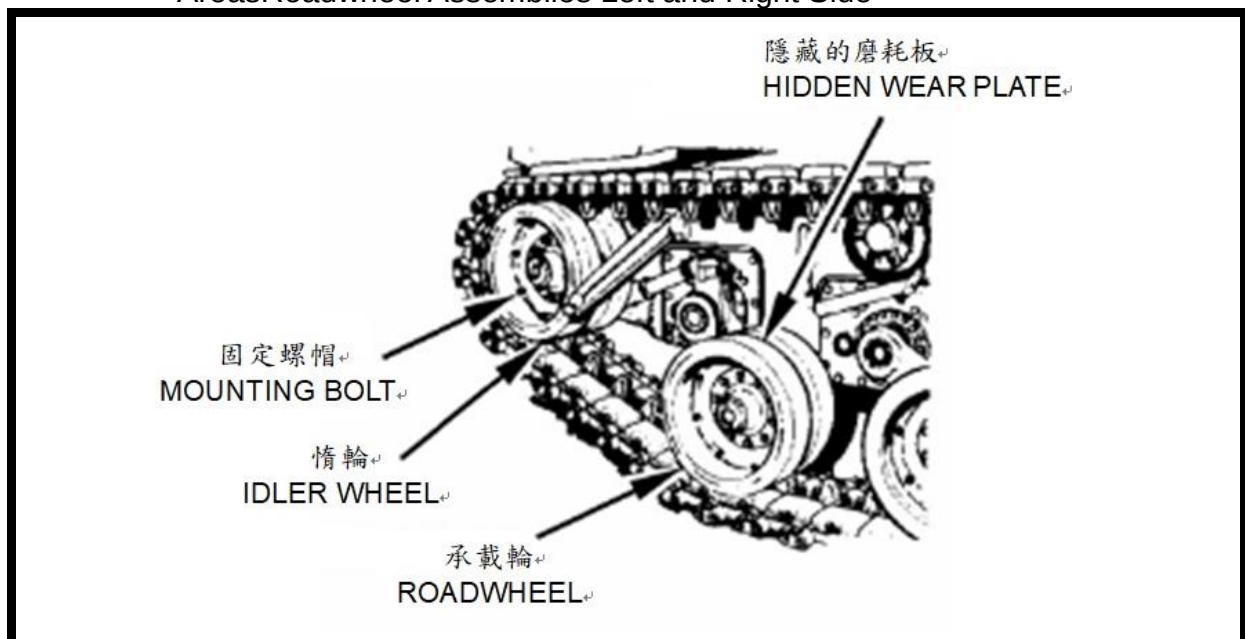
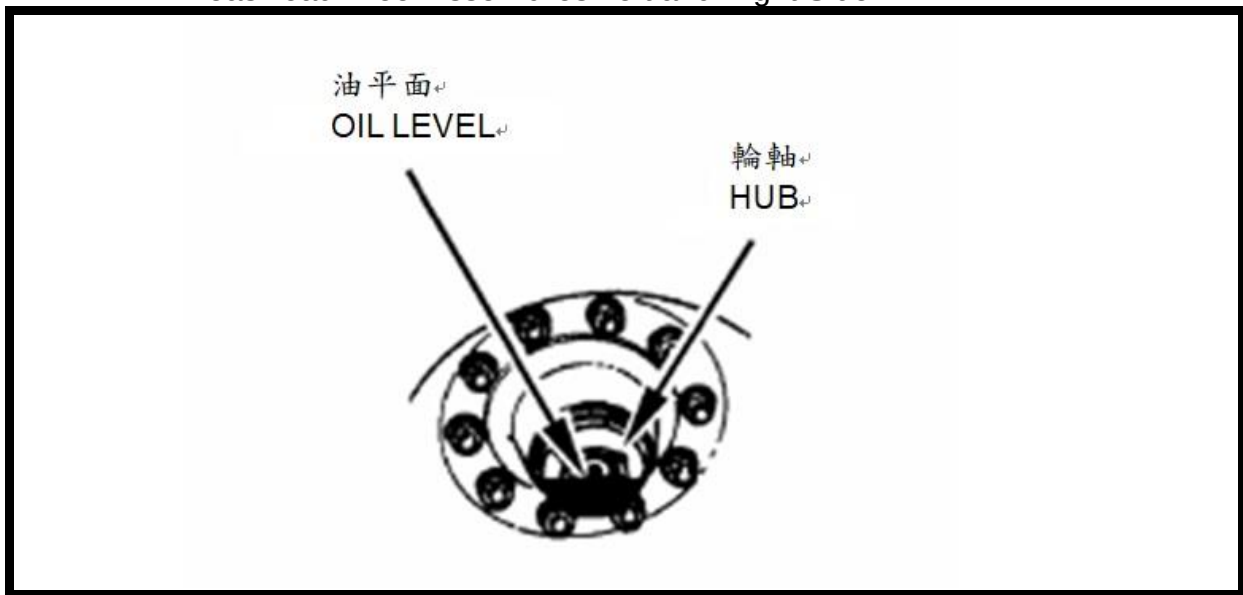




圖 24、 #2, #3, #4, #5, #6, 側裙區域承載輪組/#2, #3, #4, #5 and #6 Skirt Areas Roadwheel Assemblies Left and Right Side



(二十五)項次86-扭力桿/ Torsion Bars

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

- (1). 檢查2~6承載臂內之扭力桿須以翹棒逐一翹起2~6承載輪，如無法以人力翹起表示該輪內之扭力桿正常，反之表示斷裂，如有斷裂請通知現場維護。

To test torsion bars at roadwheel arm positions 2 thru 6, use crow bar to pry up on roadwheels. If roadwheel cannot be lifted, torsion bar is good. If roadwheel can be lifted, the torsion bar may be broken. Notify field maintenance.

- (2). 檢查第1輪與第7輪承載臂內之扭力桿，需以目視法檢查車身是否向該側傾協，或該輪之履帶懸空表示該扭力桿斷裂，如有斷裂請通知現場維護。

At roadwheel arm positions 1 and 7, look for tilt of tank or lifting of roadwheel and track off ground. Tilting of tank or lifted roadwheel/track may be an indicator of a broken torsion bar. Notify field maintenance.

3. 以下狀況停用/Not Fully Mission Capable if:

任何扭力桿斷裂與遺失。

Any missing or broken torsion bars.

(二十六)項次87-#5和#6側裙區之履帶側裙及鉸鍊(左側、右側側)/ #5 and #6 Skirt Areas Skirts and Hinges Left and Right Side

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

警告

如果兩片側裙同用一鉸鍊時，則不同時打開兩片側裙，此舉可能使側裙斷裂並且容易使人員受傷。

鉸鍊位於#1及#2側裙、#3及#4側裙、#5及#6側裙之間。

Do not open two skirts at the same time if they have the same hinge line. Skirt could break off and injure you. Hinge lines are between skirts 1 and 2, 3 and 4, and 5 and 6.

(1).打開側裙邊之前，檢查#5及#6裙邊是否有破裂或鉸鍊折斷或缺少鉸鍊銷。

Inspect #5 and #6 skirts for cracked or broken hinges or missing hinge pins before opening skirts.

(2).檢查#5及#6裙邊是否有裂縫和損壞

Inspect #5 and #6 skirts for cracks and damage.

註記

打開#4及#5裙邊

(3).檢查擋泥板支撐架是否破裂與損壞。

Inspect for broken, cracked or damaged fender support.

(4).檢查擋泥板破裂與損壞。

Inspect for broken, cracked or damaged fender brace.

3.以下狀況停用/Not Fully Mission Capable if:

(1).任何扭力桿斷裂與遺失。

Any missing or broken torsion bars.

(2).鉸鍊、銷、R型插銷損壞或遺失。

Broken or missing hinges, pins, or clips.

(3).側裙遺失。

Skirt missing.

(4).擋泥板支撐架損壞。

Broken fender support.

(二十七)項次88-左、右支輪組件(後方)/ **Support Roller Assembly Left and Right Rear(圖25)**

1.負責乘員/Crewmember :

乘員/ CREWMEMBER

2.檢查流程/Procedure :

警告

輪轂可能非常得熱。觸摸輪轂可能造成燒傷。

Hubs can be very hot. Use care when touching hubs. You can be burned.

(1).檢查黃油嘴是否損壞或遺失。

Inspect for missing or damaged grease fitting.

(2).檢查支輪本體及軸損壞或有裂縫。

Inspect support roller and spindle support for cracks and damage.

(3).檢查輪軸支架是否鬆動或缺少固定銷。

Check spindle support for loose or missing retaining pin.

(4).檢查支輪輪轂蓋是否鬆動、損壞、黃油洩漏。

Inspect support roller hub cap for cracks, damage, grease leakage, or loose fit.



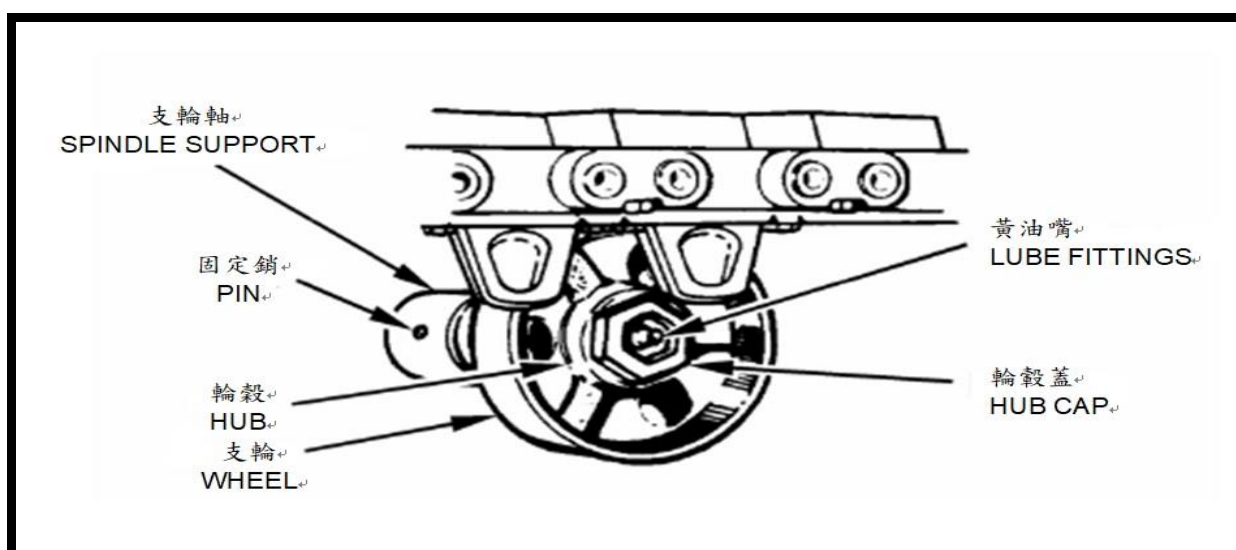
- (5).觸摸方式以測試輪轂必須不熱。過熱表示輪轂內缺黃油或軸承故障。通知現場維護。

Touch-test hub to make sure hub is not hot. A hot hub may be an indicator of lack of lubrication or a failed bearing. Notify field maintenance.

3. 以下狀況停用/Not Fully Mission Capable if:

- (1).有裂縫或遺失支輪。
Cracks or support roller missing.
- (2).支輪輪轂過熱。
Support roller hub assembly overheated.
- (3).固定銷鬆脫或遺失
Retaining pin loose or missing.

圖 25、左、右支輪組件(後方)/ Support Roller Assembly Left and Right Rear



(二十八)項次89-左、右(#1、#2)之承載輪減震器(後方)/ Shock Absorber Left and Right Rear(圖26)

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

- (1).檢查減震器觀測計的油量位置是否合適，指示球必須位於視線表的中間或頂部之間。如油量過低或有乳化現象(含水)，請通知現場維護。
Check shock absorber sight gages for proper oil level. Indicator ball should be between middle and top of sight gage. If oil is milky, water is present. Notify field maintenance.
- (2).檢查減震器外殼是否有鬆動現象，安裝螺栓是否缺損。
Inspect shock absorber housing for loose, missing or broken mounting bolts.
- (3).檢查減震器外殼是否洩漏，如果洩漏通知現場維護。
Inspect shock absorber housing for leaks. If leaking notify field maintenance.
- (4).在減震器外殼上進行觸摸測試。

Perform touch-test on shock absorber housing.

註記

以手背觸碰減震器外殼。如該外殼比其他減震器外殼還冷，較冷外殼中之減震器可能損壞，通知現場維護。

Touch shock absorber housing with back of hand. If housing is colder than other shock absorber housings, shock absorber in cold housing may be broken. Notify field maintenance.

3. 以下狀況停用/Not Fully Mission Capable if:

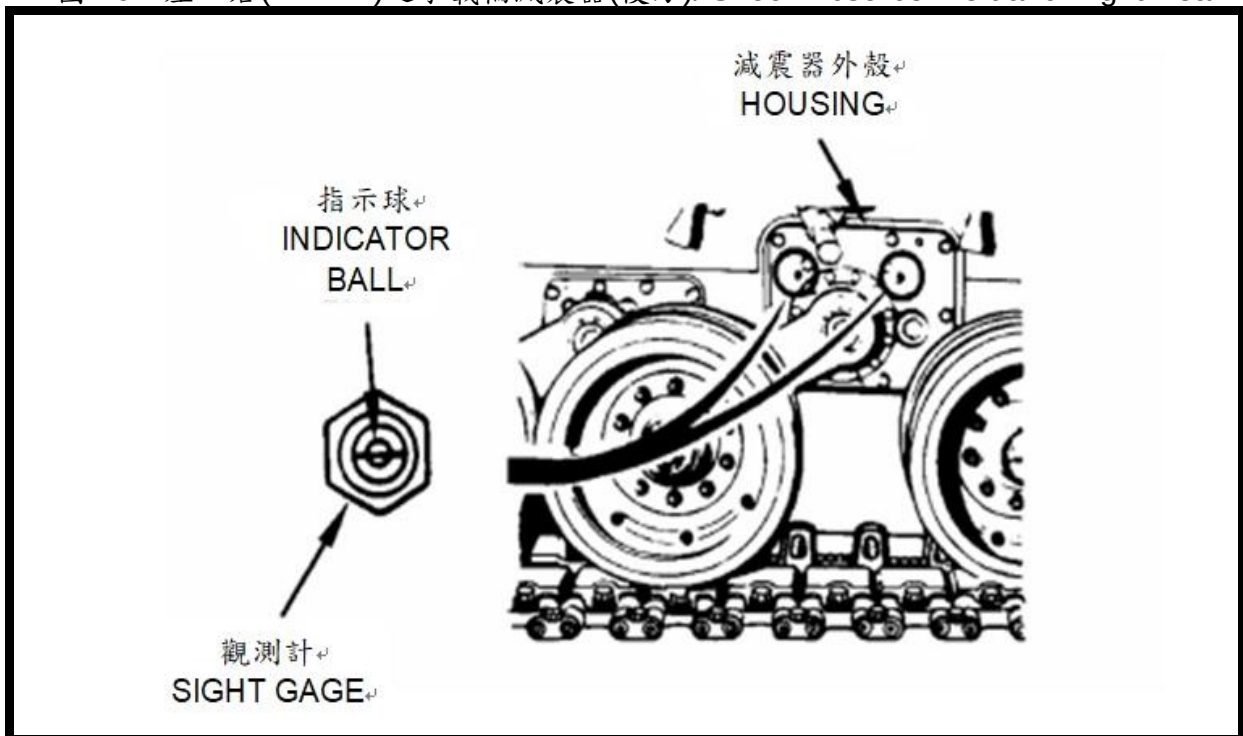
(1). 兩個(含)以上減震器無作用。

Two or more shock absorbers broken.

(2). 達三級滲漏

Any Class III leak.

圖 26、左、右(#1、#2)之承載輪減震器(後方)/ Shock Absorber Left and Right Rear



(二十九)項次90-左、右側承載臂(後方)抑制桿(焊接型)/ **Bump Stop Bracket, Welded, Rear, Left and Right Sides(圖27)**

1. 負責乘員/Crewmember :

乘員/ **CREWMEMBER**

2. 檢查流程/Procedure :

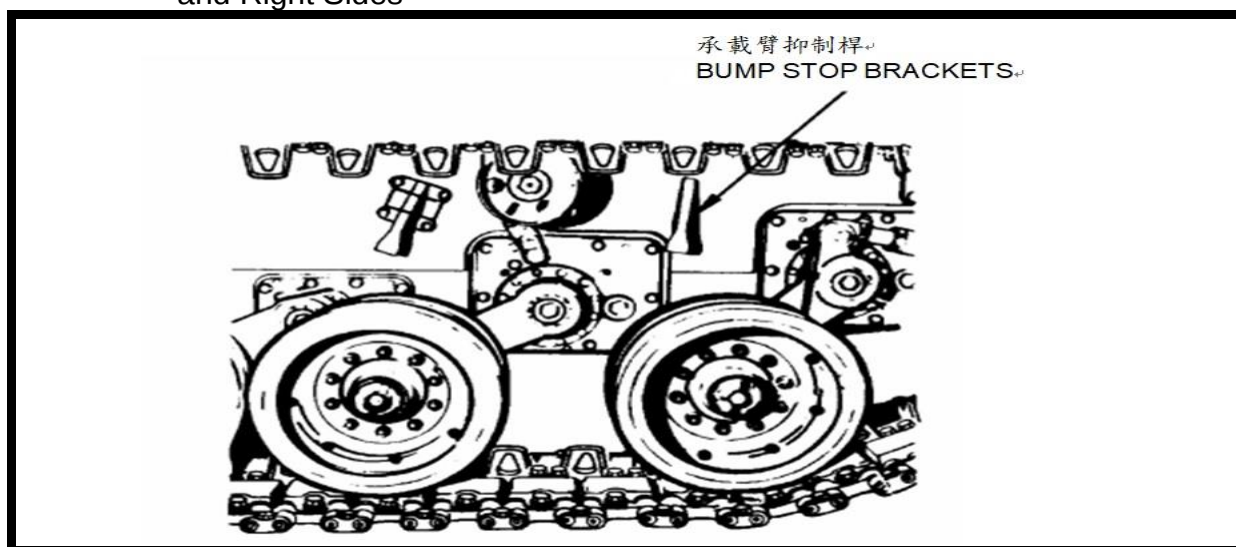
檢查承載臂抑制桿是否斷裂、損壞，如有上述情事，請通知現場維護。
Inspect for broken, damaged or missing bump stop brackets. Notify field maintenance if bump stop brackets are broken or missing.

3. 以下狀況停用/Not Fully Mission Capable if:

無/**NON**



圖 27、左、右側承載臂(後方)抑制桿(焊接型)/ Bump Stop Bracket, Welded, Rear, Left and Right Sides



(三十)項次91-左、右側承載臂抑制桿(後方)(安裝型)/ Bump Stop BracketLeft Side Rear(圖28)

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

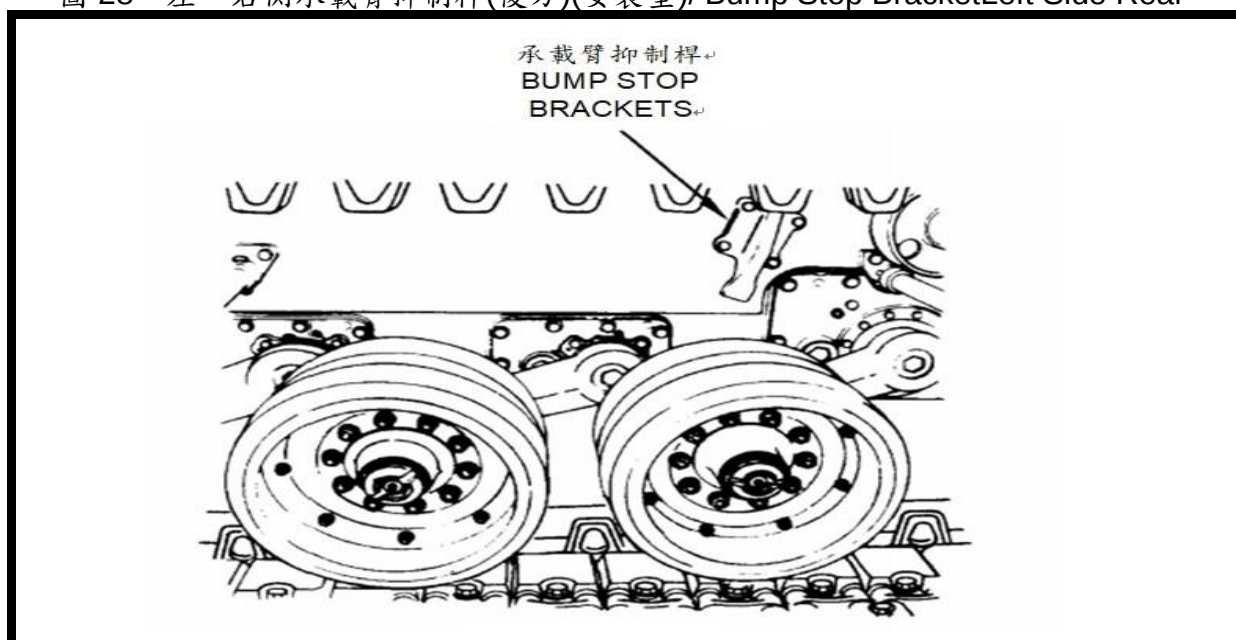
檢查承載臂抑制桿是否斷裂、損壞，或未安裝妥當如有上述情事，請通知現場維護。

Inspect for broken, damaged, or missing bump stop brackets and mounting hardware. Notify field maintenance if bump stop brackets and hardware are broken or missing.

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON

圖 28、左、右側承載臂抑制桿(後方)(安裝型)/ Bump Stop BracketLeft Side Rear



(三十一)項次92-左、右側主動輪含輪轂組件/ **Hub and Sprocket Assembly Left and Right(圖29)**

1. 負責乘員/**Crewmember**：

乘員/ **CREWMEMBER**

2. 檢查流程/**Procedure**：

註記

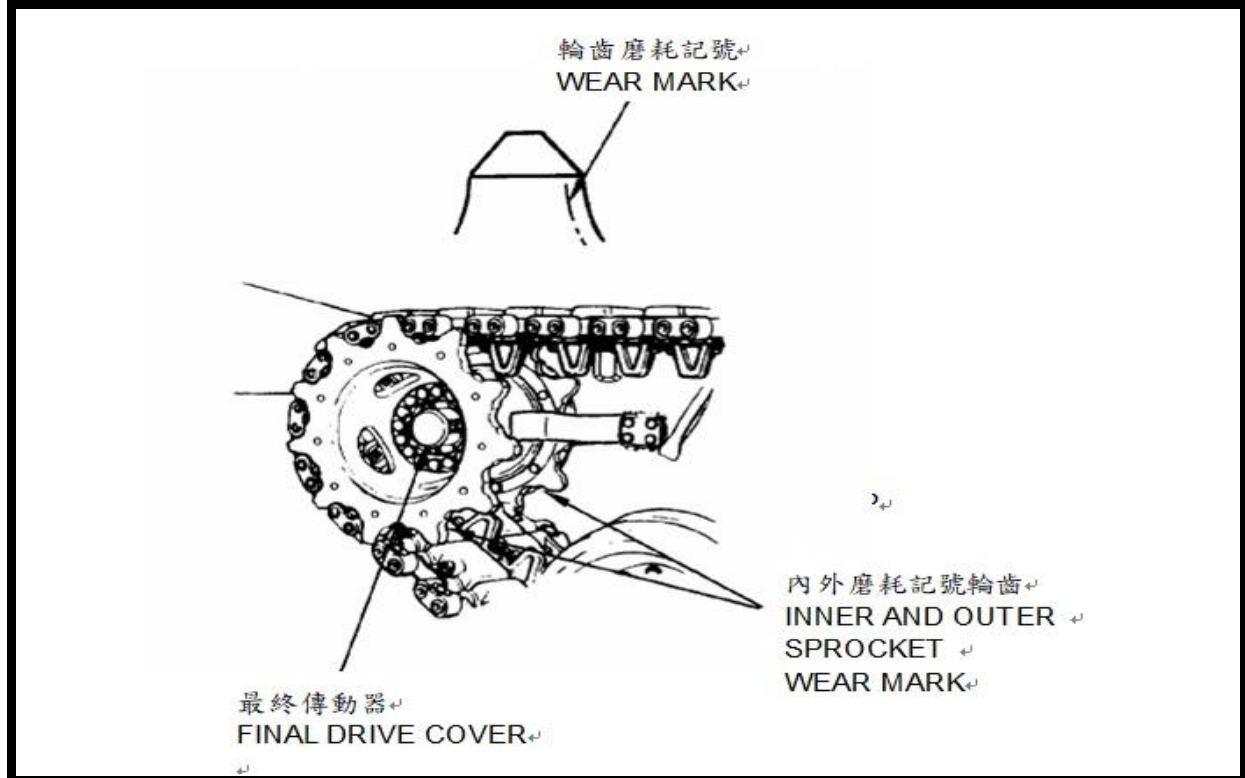
車輛停止時如果發現螺栓鬆動，則將其擰緊。還要通知現場維護，並檢查適當之扭力。

If a bolt is found loose at halts, tighten it. Also notify field maintenance for inspection and application of proper torque.

- (1). 檢查主動輪安裝螺栓是否鬆動，損壞或缺損。
Check for loose, broken, or missing sprocket mounting bolts.
 - (2). 檢查最終驅動器蓋是否有螺栓鬆動、遺失及斷裂。
Check final drive cover for loose, missing, or broken bolts.
 - (3). 檢查輪轂栓是否缺失、鬆動或損壞。
Check for missing, loose, or broken hub bolts.
 - (4). 檢查輪轂是否有裂縫和邊緣有鋒利的凹槽。
Inspect hub for cracks and sharp edged gouges.
 - (5). 檢查內外主動輪齒是否有磨損、斷裂及鑿孔。
Inspect inner and outer sprocket for cracked, worn, gouged, or broken teeth.
 - (6). 檢查輪齒磨耗痕跡。如果在有磨耗記號之輪齒上發現異常磨耗或磨耗超過記號。請通知現場維護。
Check sprocket wear marks. If teeth are worn at any point to the back edge of the marks, or display unusual wear pattern or cupping, notify field maintenance.
 - (7). 檢查最終驅動器蓋是否有裂縫。如果破裂，通知現場維護。
Inspect final drive cover for cracks. Notify field maintenance, if cracked.
 - (8). 如果有配備軌道固定板，請檢查其本體是否彎曲變形、其固定螺帽及螺栓是否缺件
If equipped, check track retainer plate for bends, cracks and missing bolts.
3. 以下狀況停用/**Not Fully Mission Capable if:**
- (1). 兩個(含)以上螺栓鬆動及缺件。
Two or more mounting bolts missing.
 - (2). 輪轂螺栓鬆動及遺失。
Hub bolts are loose or missing.
 - (3). 主動輪齒變形或折斷、磨耗超過標記線。
Sprocket teeth bent or broken, worn to wear mark, and/or cupping.
 - (4). 主動輪齒變形或折斷、磨耗超過標記線。
Sprocket is worn to wear mark, bent or broken and/or cupping.



圖 29、左、右側主動輪含輪殼組件/ Hub and Sprocket Assembly Left and Right



(三十二)項次93-後擋泥板左、右兩側/ **Rear Mud Guard Left and Right**

1. 負責乘員/Crewmember :

乘員/ **CREWMEMBER**

2. 檢查流程/Procedure :

檢查擋泥板缺損、及金屬附件損壞。

Check for missing, broken, or damaged hardware and condition of mud guard.

3. 以下狀況停用/Not Fully Mission Capable if:

無/**NON**

(三十三)項次94-車外燈/ **Exterior Lights**

1. 負責乘員/Crewmember :

乘員/ **CREWMEMBER**

2. 檢查流程/Procedure :

(1). 檢查是否有損壞。

Check for damage.

(2). 檢察功能是否正常。

Check operation.

3. 以下狀況停用/Not Fully Mission Capable if:

無/**NON**

(三十四)項次95-排氣隔閘門/ **Exhaust Grille Doors**

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

(1). 檢查排氣隔閘門金屬件是否遺失、損壞、破裂。
Check grille doors for missing, broken, or damaged hardware.

(2). 檢查排氣隔閘門是否遭污垢及泥土、碎屑堵塞。
Check for mud, dirt, and debris that may clog grille doors.

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON

(三十五)項次96-兩個尾燈光/ Tow EyesRear

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

檢查尾燈光是否損壞。
Inspect tow eyes for damage.

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON

(三十六)項次97-後脫鉤/ Pintle(圖30)

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

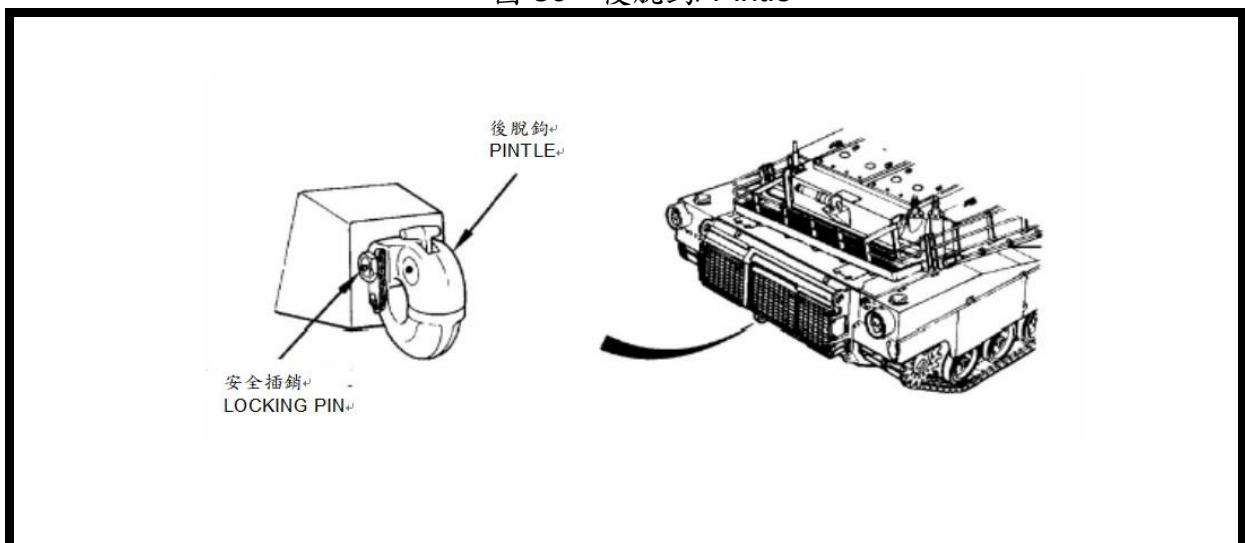
2. 檢查流程/Procedure :

檢查後脫鉤是否損壞，鎖定插銷是否存在。
Check pintle for damage and presence of locking pin.

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON

圖 30、後脫鉤/ Pintle





(三十七)項次98-後排水閥/ **Rear Drain Valve**

1. 負責乘員/**Crewmember** :

乘員/ **CREWMEMBER**

2. 檢查流程/**Procedure** :

(1).確保排水閥可正常開啟。

Ensure drain valve is open.

(2).看車體下方是否有大量的液體殘留。如果於車體下方發現大量液體殘留，則實施故障隔離並識別洩漏源頭。

Look under tank for puddles or large spots of fluid/oil. If fluids/oils are found under the tank, fault isolate to identify the source of the leak.

3. 以下狀況停用/**Not Fully Mission Capable if:**

任何3級滲漏。

Any Class III leaks.

(三十八)項次99-兩個前燈光/ **Tow EyesFront**

1. 負責乘員/**Crewmember** :

乘員/ **CREWMEMBER**

2. 檢查流程/**Procedure** :

檢查尾燈光是否損壞。

Inspect tow eyes for damage.

3. 以下狀況停用/**Not Fully Mission Capable if:**

無/**NON**

(三十九)項次100-前排水閥/ **Front Drain Valve**

1. 負責乘員/**Crewmember** :

乘員/ **CREWMEMBER**

2. 檢查流程/**Procedure** :

註記

確保排水閥可正常開啟。

Ensure drain valve is open.

看車體下方是否有大量的液體殘留。如果於車體下方發現大量液體殘留，則實施故障隔離並識別洩漏源頭。

Look under tank for puddles or large spots of fluid/oil. If fluids/oils are found under the tank, fault isolate to identify the source of the leak.

3. 以下狀況停用/**Not Fully Mission Capable if:**

任何3級滲漏。

Any Class III leaks.

(四十)項次108-蒸氣壓維系統單元(VCSU)/ **Vapor Compression System Unit (VCSU)(圖31)**

1. 負責乘員/**Crewmember** :

乘員/ **CREWMEMBER**

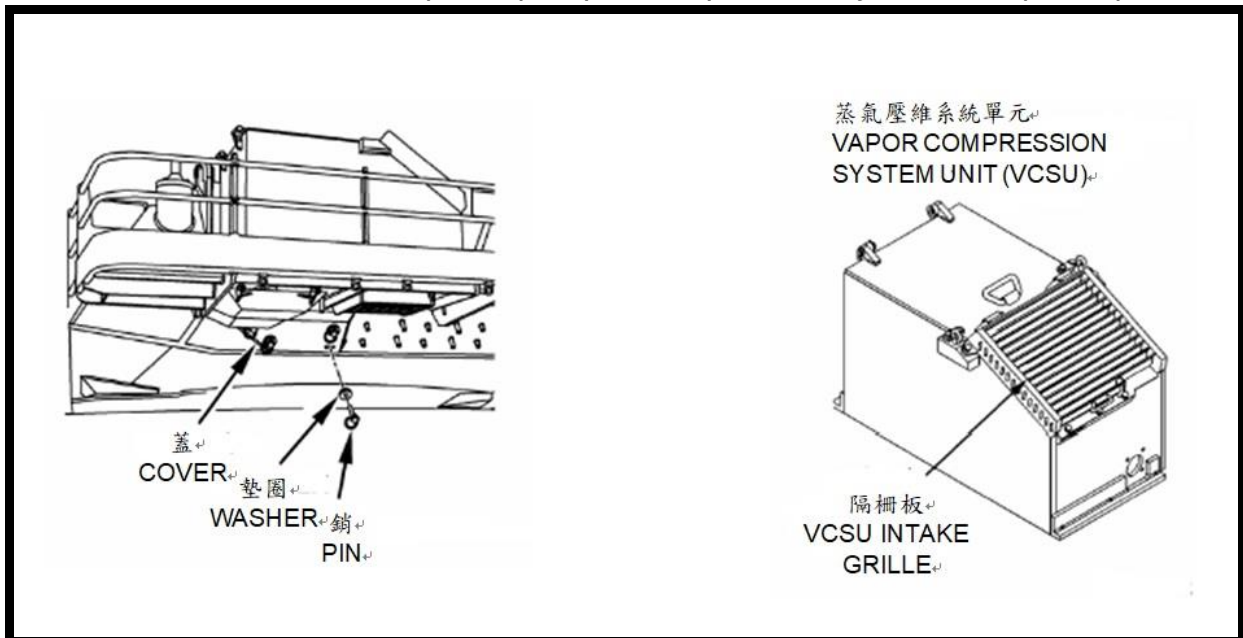
2. 檢查流程/Procedure：

- (1). 清潔VCSC百葉窗外的污垢、樹葉和其他物質。
Clean dirt, leaves, and other material out of VCSU louvers.
- (2). 檢查VCSC底部是否有液壓或冷卻液洩漏。如發現滲漏，請現場維護。
Check underside of VCSU for hydraulic or coolant leaks. If leaks are found, notify field maintenance.
- (3). 拆下銷，墊圈、較低的防彈罩。檢查是否洩漏。重新安裝蓋子，墊圈和銷釘。
Remove pin and washer. Lower ballistic cover. Inspect for leaks. Reinstall cover, washer, and pin.

3. 以下狀況停用/Not Fully Mission Capable if:

任何液體滲漏。
Any class hydraulic leak

圖 31、蒸氣壓維系統單元(VCSU)/ Vapor Compression System Unit (VCSU)



(四十一)項次109-空氣處理機(AHU)/ Air Handling Unit (AHU)(圖 32)

1. 負責乘員/Crewmember：

乘員/ CREWMEMBER

2. 檢查流程/Procedure：

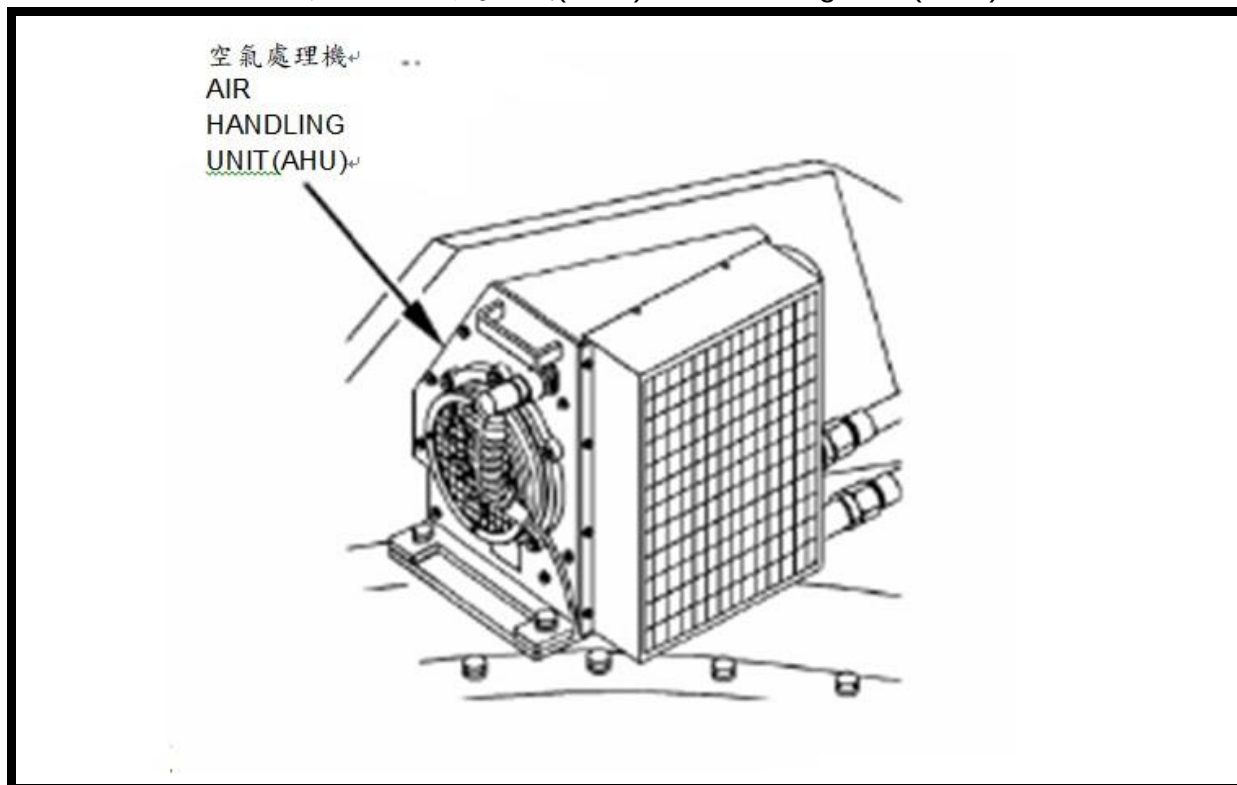
檢查液壓及冷卻液是否洩漏，如果發現洩漏情事，請通知現場維護。
Check for hydraulic or coolant leak. If leaks are found, notify field maintenance.

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON



圖 32、空氣處理機(AHU)/ Air Handling Unit (AHU)



(四十二)項次110-最終傳動器外殼及油塞/ Final Drive Plugs and Housing

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

- (1). 檢查最終傳動器本體及油塞是否漏油。
Check final drives for oil leaks at drain plug and check plug.
- (2). 檢查安裝螺栓是否鬆動或遺失。
Look for loose or missing mounting bolts.

3. 以下狀況停用/Not Fully Mission Capable if:

- (1). 達3級滲漏。
Class III leak is identified.
- (2). 安裝螺栓鬆動與遺失。
Mounting bolts are loose or missing.

(四十三)項次111-電瓶/ Batteries

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

- (1). 電瓶內電瓶液是否過低，如過低請將缺失改正。
Check water level in batteries. If water level is low, service batteries.
- (2). 清潔並檢查電瓶。

Clean and inspect batteries.

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON

(四十四)項次113-發動機艙排水口/ **Engine Compartment Drain Ports**

1. 負責乘員/Crewmember :

乘員/ **CREWMEMBER**

2. 檢查流程/Procedure :

將排水口周邊區域的汙泥及碎屑清除。

Clean mud and other debris out of drain ports and surrounding area.

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON

(四十五)項次114-車體液壓系統/ **Hull Hydraulics**

1. 負責乘員/Crewmember :

乘員/ **CREWMEMBER**

2. 檢查流程/Procedure :

檢查車體液壓系統。

Inspect hull hydraulics.

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON

(四十六)項次115-引擎排氣密封圈/ **Engine Exhaust Seal(圖33)**

1. 負責乘員/Crewmember :

乘員/ **CREWMEMBER**

2. 檢查流程/Procedure :

慎重

引擎排氣密封圈失效及遺失可能導致發動機及設備損壞。

Failure to replace damaged or missing exhaust seal may result in damage to equipment or engine compartment.

(1). 打開後隔柵門(WP 0524)

Open rear grille doors (WP 0524).

(2). 檢查排氣密封圈每一側，如果任何一側缺少上方之織物達1/2以上或(頂部、底部缺少7/8英吋X14.5英吋之範圍；2.2釐米X37釐米之範圍)；(頂部、底部缺少7/8英吋X10英吋之範圍；2.2釐米X25.4釐米之範圍)或左、右側有金屬網狀物露出，請通知現場維護。

Inspect every side of seal, if more than half of the fabric is missing on any side (7/8 in. by 14.5 in. (2.2 cm x 37 cm) for the top or bottom side, 7/8 in. by 10 in. (2.2 cm x 25.4 cm) for left or right side exposing the inner wire mesh core, notify field maintenance.

(3). 檢查密封件任一側是否有內部金屬網狀物損壞或遺失，如果有



請通知現場維護。

Inspect every side of seal for any inner wire mesh core missing or damaged, notify field maintenance.

- (4).檢查密封圈任何固定孔是否有掉落，如果有請通知現場維護。

Inspect for any securing eyelet(s) that are torn away from any side of seal, notify field maintenance.

慎重

正確關閉後隔柵門以防止車輛損壞。

Close and torque rear doors correctly to prevent vehicle damage.

- (5).後隔柵門，依據(WP 0525)

Close rear grille doors (WP 0525).

3. 以下狀況停用/Not Fully Mission Capable if:

- (1).如果缺少織物達1/2以上或在任一側露出金屬網狀物。

If more than half of the fabric is missing exposing inner wire mesh core on any side of seal.

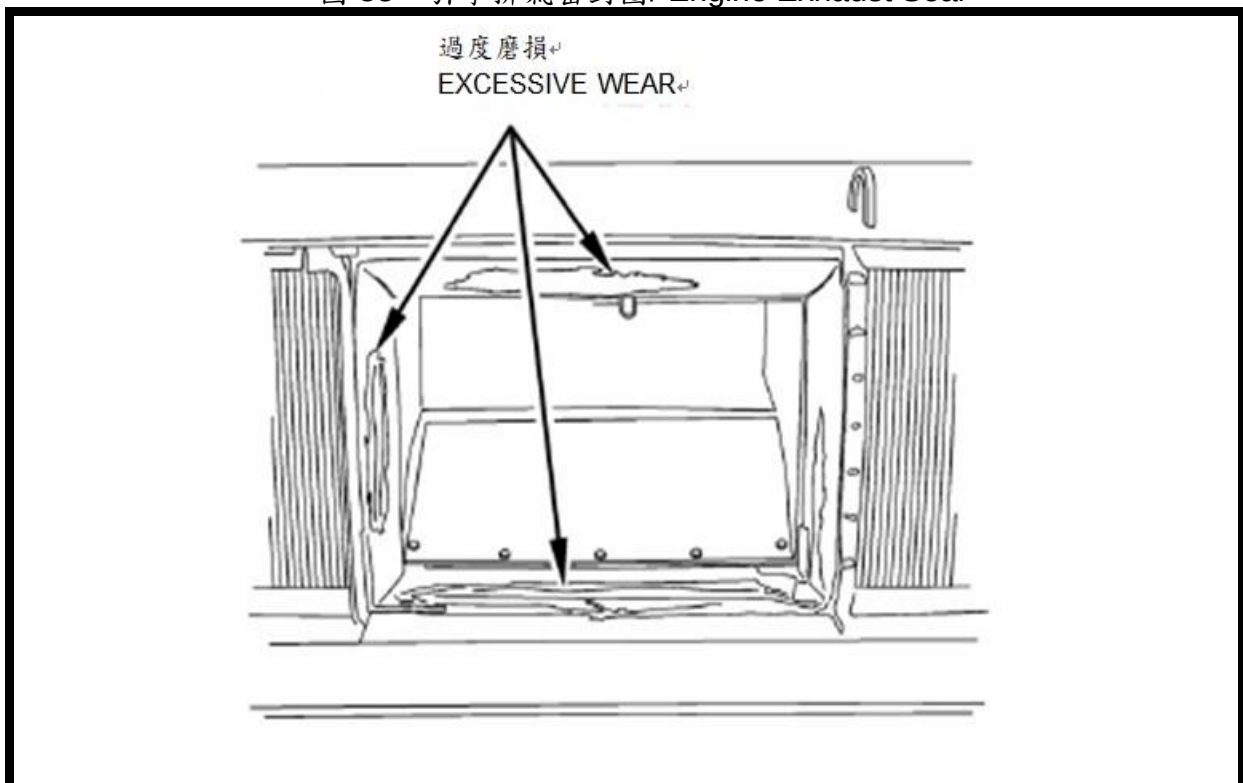
- (2).任何一側內部金屬網狀物損壞或遺失。

If any inner wire mesh core missing or damaged on any side of seal.

- (3).如果有任何一側密封圈固定孔掉落。

If any securing eyelet(s) are torn from any side of seal.

圖 33、引擎排氣密封圈/ Engine Exhaust Seal



(四十七)項次116-人員加熱器/ Personnel Heater

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

警告

- 爆炸性及易燃材料不要存在人員加熱器管線上，僅授權時可放置彈藥。

Explosive/flammable materials are a fire hazard. Do not store aerosol cans, cleaning solvent, fuel, etc., anywhere inside tank. Stow ammunition in authorized stowage areas only.

- 如發現燃油洩漏，請勿使用加熱器，並通知專業保養人員維護。
- If fuel leaks are found, do not use heater. Notify field maintenance.

- (1).檢查人員加熱器安裝夾是否鬆動。

Check heater for loose mounting clamps.

- (2).檢查所有管道和軟管是否有斷裂或裂縫。

Check all tubes and hoses for cracks and breaks.

- (3).檢查排氣管是否有有腐蝕及燒蝕孔。

Check exhaust tube for corrosion and burn holes.

- (4).檢查燃油管、配件、油泵是否洩漏。

Check fuel lines and fittings and fuel pump for leaks.

3.以下狀況停用/Not Fully Mission Capable if:

任何油料洩漏

Any fuel leaks found.

(四十八)項次117-空氣感知器/ Air Induction System(圖34)

1.負責乘員/Crewmember :

乘員/ CREWMEMBER

2.檢查流程/Procedure :

註記

如果PJS正在運行時，請勿將PJS油箱上的進氣系統拆開。

Do not take air induction system apart on PJS tank if PJS is operating.

維修空氣感知器，請依據(WP 0461)

Service air induction system (WP 0461).

3.以下狀況停用/Not Fully Mission Capable if:

- (1).過濾擾流板有無法使用的孔洞達10個(含)以上。

Precleaner-baffle has 10 or more unserviceable tubes.

- (2).過濾擾流板焊接點破損及鉚釘遺失。

Precleaner-battle has broken welds or rivets broken or missing.

- (3).過濾器元件、過濾器排氣軟管、密封件與墊圈遺失或損壞。

Filter element, precleaner air exhaust hose, or seals/gaskets missing or damaged.

- (4).氣箱壓力通風系統有破裂或裂痕。

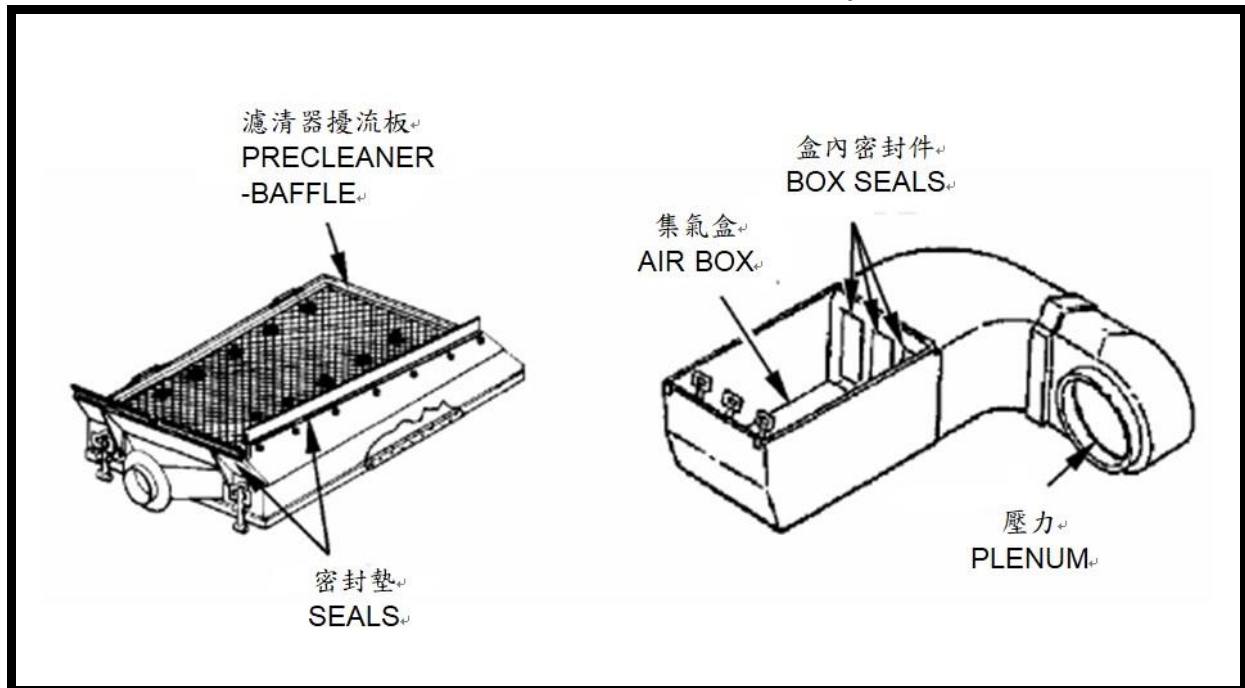
Air box plenum has broken welds or cracks.

- (5).壓力通風箱密封從頂部表面凹槽底部的凹陷達到3/16英吋(4.8毫米)或更大。

Plenum box seals depression from top surface of seals to bottom of groove is greater than 3/16-inch (4.8mm).



圖 34、空氣感知器/Air Induction System



(四十九)項次118-乘員核生物化學系統/ **Crew Compartment Nuclear Biological Chemical System(圖35)**

1. 負責乘員/**Crewmember**：

乘員/ **CREWMEMBER**

2. 檢查流程/**Procedure**：

(1). 操作NBC系統。

Operate NBC system.

(2). 檢查2個固定夾及管道靴是否有裂縫、破損或漏氣，如果有損壞，

請通知現場維護。

Check two clamps and NBC duct boot for cracks, breaks, or air leaks. Notify field maintenance if damage is found.

(3). 檢查2個固定夾及非金屬管道是否有裂縫、破損或漏氣，如果有

損壞，請通知現場維護。

Check two clamps and nonmetallic tube from NBC tube assembly for cracks, breaks, or air leaks. Notify field maintenance if damage is found.

(4). 檢查NBC管件波紋管是否有裂縫，破損或漏氣。通知現場維護

更換NBC管件。

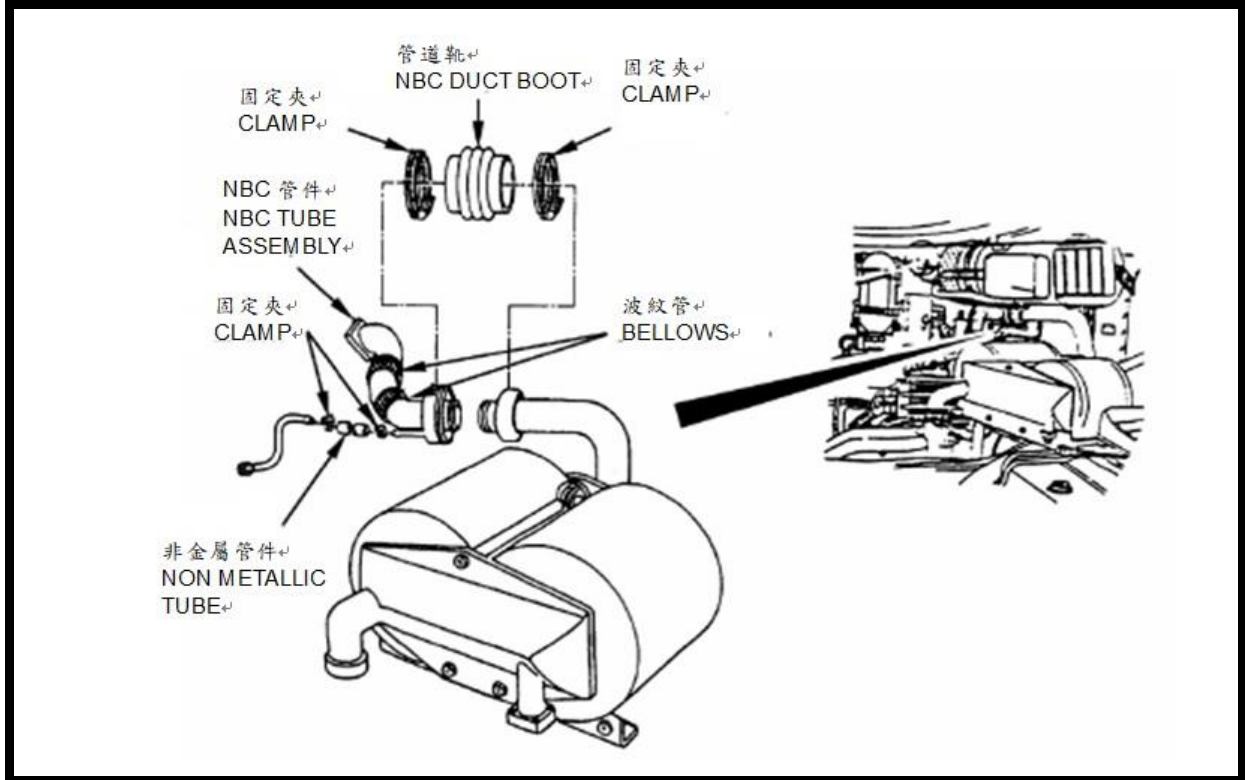
Check NBC tube assembly bellows for cracks, breaks, or air leaks. Notify field maintenance for replacement of NBC tube assembly.

3. 以下狀況停用/**Not Fully Mission Capable if:**

管線組件有破、斷裂或有漏氣現象。

Tube assembly bellow cracked, evidence of breaks, and/or air leaks.

圖 35、乘員核生物化學系統/Crew Compartment Nuclear Biological Chemical System



(五十)項次120-視軸武器/ Boresight Armament

1.負責乘員/Crewmember：

乘員/ CREWMEMBER

2.檢查流程/Procedure：

進行視軸檢查(WP 0570)。

Perform boresight check (WP 0570).

3.以下狀況停用/Not Fully Mission Capable if:

主砲無法進行軸視。

Unable to boresight main gun.

(五十一)項次121-煙霧彈發射器/ Smoke Grenade Launcher(圖36)

1.負責乘員/Crewmember：

乘員/ CREWMEMBER

2.檢查流程/Procedure：

檢查煙霧彈發射器，電纜、線束的安裝情況，檢查是否有破損現象。

維修放電器請依據(Vol 2 WP 0313)

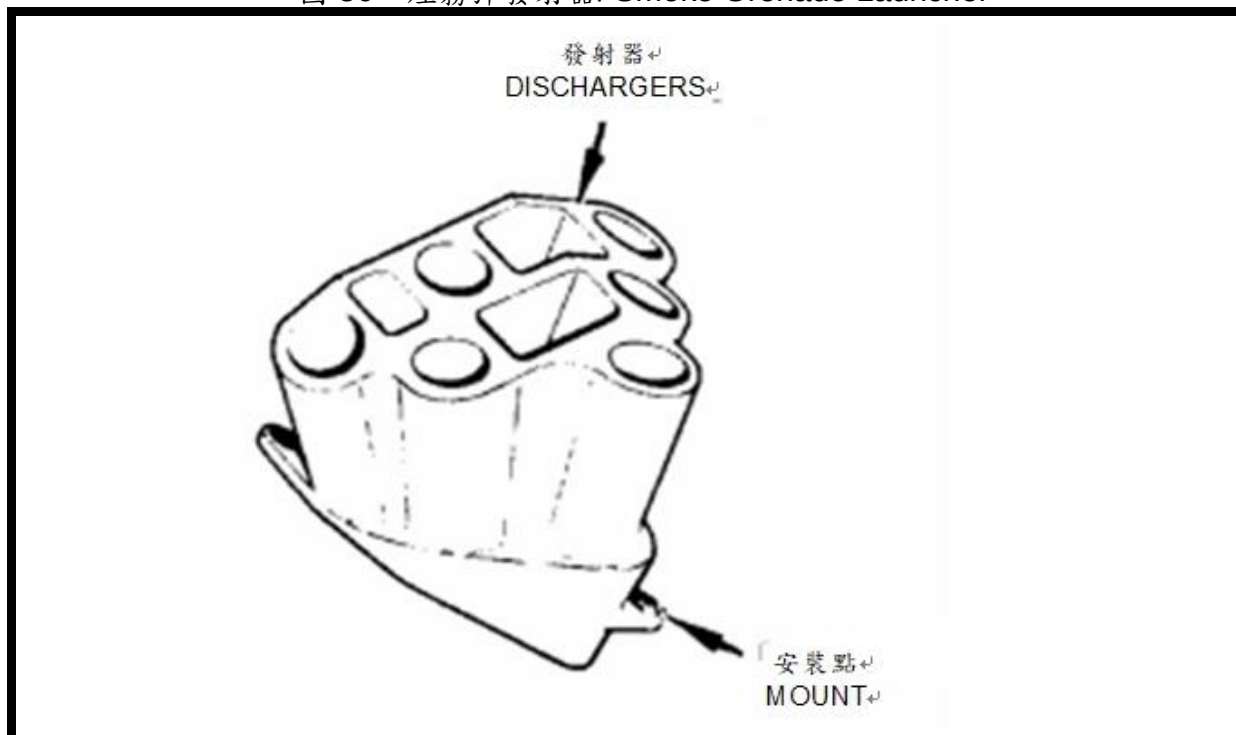
Check mounting of grenade dischargers, cables, and harness. Check for damage. Service dischargers (Vol 2, WP 0313).

3.以下狀況停用/Not Fully Mission Capable if:

無/NON



圖 36、煙霧彈發射器/ Smoke Grenade Launcher

**(五十二)項次122-橫向機構/ Traverse Mechanism****1. 負責乘員/Crewmember :**乘員/ **CREWMEMBER****2. 檢查流程/Procedure :**

檢查橫向機構支柱是否有腐蝕或損壞及潤滑跡象請依據
(LO9-2350-388-13)。

Inspect traverse mechanism struts for corrosion or signs of damage and lubricate (LO 9-2350-388-13).

3. 以下狀況停用/Not Fully Mission Capable if:無/**NON****(五十三)項次123-車內彈藥艙/ Hull Ammunition Compartment****1. 負責乘員/Crewmember :**乘員/ **CREWMEMBER****2. 檢查流程/Procedure :**

檢查車內彈藥艙是否有濕氣。如果發現潮濕，請更換乾燥劑袋。請
依據(WP 0557 第16項)。

Inspect hull ammunition compartment for signs of moisture. If dampness or moisture is found, replace desiccant bags (WP 0557, Item 16).

3. 以下狀況停用/Not Fully Mission Capable if:無/**NON****(五十四)項次124-砲塔系統部件/ Turret Race Assembly**

1. 負責乘員/Crewmember :

乘員/ CREWMEMBER

2. 檢查流程/Procedure :

潤滑砲塔旋轉軸承。依據(LO9-2350-388-13)

Lubricate turret support bearings (LO 9-2350-388-13).

3. 以下狀況停用/Not Fully Mission Capable if:

無/NON

伍、結論

裝備為戰力泉源，除藉正確執行預防保養以鞏固部隊戰力，妥善的裝備更是鞏固戰力的基石，隨著裝備日新月異且各項系統也越趨複雜化，由其每日預防保養檢查是各項保養中最基礎但也最重要的；在此次翻譯新式裝備M1A2戰車之操作手冊發現，雖然該裝備不論在底盤操控系統、動力系統、武器系統等皆比現有之M60A3戰車更為先進，但唯一不變的是新式裝備未因擁有更精密的自我診斷系統而放棄保養中最基礎的每日檢查保養，反而更加精確分工讓全車乘員都有自己需要檢查的項目、並逐項逐動的落實檢查，以發揮裝備最大戰力及減少因裝備損壞肇生之人員傷亡，希望藉由此篇譯文可讓裝配M1A2戰車之部隊成員於獲得裝備前可先行了解新式裝備所需保養之項目及要領，期能達到「保養重於保修、保修重於購置」之最終目標。



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