

DIRECTORATE GENERAL BORDER ROADS

GENERAL REPAIR INSTRUCTION NO. 83

ON

REPAIR CONTENT AND TECHNIQUES FOR BASE OVERHAUL AXLE FRONT & AXLE REAR FOR 'B' VEHICLES

Introduction

The importance of care to be exercised while cleaning, stripping, finishing and preserving of components/assemblies during overhaul in the Workshop cannot be overemphasised. Stripping of components must be done with serviceable tools. Where SMTs are authorised or special tools are required, these must be used to avoid damage to components during repair/overhaul. After stripping the components undergo considerable handling during overhaul. Much damage can occur to these unless handling is done carefully.

Aim

2. The aim of this instruction is to lay down procedure for stripping, cleaning, repairing and reclamation for radiator fuel tanks and exhaust pipes for 'B' vehicles.

Details

3. The details are given as per Appendix 'A' to this Instruction,

HQ DGBR GRI NO. 83 DATED JUL 74

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REPAIR : CONTENT AND TECHNIQUES FOR BASE OVERHAUL OF RADIATOR, FUEL TANKS AND EXHAUST PIPE FOR 'B' VEHICLE

Srl No	Item	Stripping & Cleaning	Repair	Reclamation	Remarks
1	2	3	4	5	6
<u>AXLE FRONT</u> 1.	Axle front	Remove wheel from axle disconnect brake pipes, propeller shaft, steering linkages.			Steering U- joint knuckles should be retained together.
		Remove brake drum and hube, oil seals, bearings, brake components, king pips, stub axles. In case of 4x4 vehicles, remove steering knuckles (if fitted) and outer & inner shafts. Remove differential carrier assemble.			
2.	(a) Ream Axle	Clean axle beam in CS.	. Straighten cold if slightly bent. Replace if cracked King Pip & lock pin must be replaced if damaged. Build up king pin if worn by metal spraying (E).	If king pip hole becomes worn, bore out to larger size and force fit a MS bush to take the king pin	
(b)	Axle Housing	Clean CS followed by K (All OG paint layers must be removed).	If axle housing is sprung beyond limits, it should be replaced. Minor surface cracks should be repaired by electric welding and refinished.	Build up worn portion of road spring support bracket by metal spraying and re-machine.	Axle housing must be handled singly, in order to avoid damage to machinery parts.

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1	2	3	4	5	6
3.	Stub axle front & hit	K	Replace bushes in stub axle and lock in place. Replace broken studs in front hub. Repair damaged threads in stud holes by filling with bronze welding rod and re-tapping.		
4.	Steering knuckle assemble	K	Replace loose studs/bolts/rivets		
5.	Steering knuckle arm/steering arm	CS		If integral with arm, worn ball must be rebuilt by welding and machining. If ball & spigot is separate and found to be loose or worn, it must be replaced with a newly manufactured ball and spigot. The spigot must be forced fit into the steering arm and electrically welded from underside. The ball must be caso-hardened.	
6.	Drive Shaft (Outer & Inner)	K- Remove roughness or rust on universal joint, /Sockets by abrasive cloth.	Build up excessively worn splices and remaching (E), otherwise replace shaft. Replaces cracked shafts. Replace if universal joint		

1	2	3	4	5	6
7	Ball & Roller Bearings	Wash in clean petrol & dry by compressed air, Thinly lubricate with oil.	Replace if ball races or balls are rusty or covered with hairline cracks.		
8	Grease/Oil Seals	Remove from housing using suitable hydraulics or pneumatic force	Replace if unserviceable		
9.	Differential Gear Assys	Strip differential gear cover, differential gear, pinions, bearings and seals, clean in K Oil.	Check crown wheel ring gear rivets. If loose, replace with new rivets which must be squeezed cold to avoid warping of ring gear. Replace ring gear with new one, if worn or its teeth are broken. Ring gear will be used only with its matched pinions. Replace all spider or side gears if any one of them is damaged.	If matched pinions and ring gear are not available, they may be matched by lapping in suitable fixture using fine emery paste.	Differential crown wheel and pinions must be kept in pairs. Differential gears must be kept together.
10.	Gear Axle	Disconnect brake pipes, Remove wheels from axle. Disconnect propeller shafts. Remove brake drums, axle shafts. Differential gear cover, differential gear assembly, oil seal and bearings.			

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1	2	3	4	5	6
11	Axle Housing	Clean CS followed by K (All paint layers must be removed.	If axle housing is sprung beyond limits it should be replaced. Minor surface cracks should be repaired by electric welding and refinished.	Build up worn portion of road spring support bracket by metal spraying and remachine. Build up worn portions of oil seal seating by shrink- fitting of Mild steel sleeve and machining down to size or alternatively by metal spraying.	Axle housing must be handled singly in order to avoid damage to machined parts.
12 (a)	Differential Gear assy	Strip differential cover, differential gear, Pinions, bearings and seals. Clean in K. Oil	Check crown wheel ring gear rivets. If loose replace with new rivets which must be squeezed cold to avoid warping of ring gear. Replace ring gear with new one if worn or tooth are broken. Ring goat will be used only with its matched pinions. Replace all spider or side gears if any of them is damaged.	If matched pinions and ring gear are not available they may be matched by lapping in suitable fixture using fine emery paste.	Differential crown wheel and pinions must be kept in pairs. Differential gear must be kept together.
(b)	Drive Shaft	Clean in K	Build up worn splines by electric welding and machine (E). Replace excessively worn/cracked shafts.		
(c)	Ball & Roller Bearings	Wash in clean petrol & dry by compressed air. Thinly lubricate with oil.	Replace if ball races or balls are rustly or covered with hair line cracks.		
(d)	Grease/Oil Seals	Remove from housing using hydraulic or pneumatic force using suitable tools.		Replace leather with new one.	

CS : CAUSTIC SODA
 SB : SAND BLASTING
 AVAILABLE)

CTC : CARBEN TETRA CHORIDIP

SRR : SOLUTION RUST REMOVING
 K : KEROSONE OUL

E - EMERGENCY ONLY (WHEN
 REPLACEMENTS ARE NOT