

**RESTRICTED**

**ELECTRONICS AND MECHANICAL  
ENGINEERING REGULATIONS**  
(Auth AI 25/73)

**WHEELED VEHICLES  
VW/N 527/3  
No 2**

**LY 5/7.5 TON STALLION 4X4 GS MK-III (EURO-1) VEHICLES**

***Modification Instructions***

**Fitment of MICO Fuel Injection Pump in place of Zexel Fuel Injection Pump in  
Ashok Leyland MK-III (EURO -1) Vehicles**

**INTRODUCTION**

1. A total of 1400 Nos of Ashok Leyland Stallion MK - III (EURO - 1) vehicles fitted with Zexel Fuel Injection Pump (Ref Fig No 1) of imported origin, were inducted into Army in the year 2000. Subsequently, M/s Ashok Leyland, Chennai introduced MICO Fuel Injection Pump (Ref Fig No 2) in Ashok Leyland Stallion MK-III (Euro-1) vehicles in place of Zexel Fuel Injection Pump.

2. This modification EMER provides necessary details of modification kit required for fitment of MICO Fuel Injection Pump in place of Zexel Fuel Injection Pump in Ashok Leyland Stallion MK-III (EURO-1) vehicles.

**Items Affected**

3. The Zexel Fuel Injection Pump part No X 7805200 is the affected component.

**Category of Modification**

4. Category of this modification is 'D' and is to be carried out on as and when required basis.

**Action by**

5. Actions to be taken by user/wksp/ordnance are enumerated below :-

(a) ***User Unit***

(i) Demand kit for modification from Ordnance based on this EMER as given in **Appendix 'A'**.

(ii) On receipt of stores, submit work order on dependent workshop for carrying out the modification.

(b) ***EME (Army Base Wksp / Corps Zone Wksp / Fd wksp).***

(i) On receipt of work order and modification stores, carryout the modification as per procedure given at para 8.

(ii) Make an entry in the vehicle logbook for modification carried out.

(iii) Segregate stores removed from the vehicle into serviceable and unserviceable category. Return stores to Ordnance Depot (as per para 6 below).

(c) ***Ordnance.*** Provision and issue modification kit at the scale of one kit per vehicle on receipt of demand from units.

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**Stores Removed and their Disposal**

6. The list of stores to be removed and returned to Ordnance Depot are given as under :-

Ser No	Part No	Nomenclature	Qty
1	X7805200	Fuel Injection Pump (209 FIP)	01
2	X7805300	Injector	06
3	B7015816	S/A of pipe through feed	01
4	B7015802	S/A of pipe oil block to pump	01
5	F3175511	Bolt banjo (on to FIP)	01
6	B8220107	S/A of pipe boost compensator	01
7	B8220101	S/A pipe injector No 1	01
8	B8220102	S/A pipe injector No 2	01
9	B8220103	S/A pipe injector No 3	01
10	B8220104	S/A pipe injector No 4	01
11	B8220105	S/A pipe injector No 5	01
12	B8220106	S/A pipe injector No 6	01
13	22501-1020	Cover timer	01
14	22611-2300	Flange coupling	01
15	F7153814	Bracket Fuel Injection Pump (FIP) rear support	01
16	52300-5520	Stainer assy	01

**Stores Required**

7. The stores required as modification kit are listed in **Appendix 'A'**.

**Details of Modification Procedure**

8. Details of modification procedure for fitment of MICO Fuel Injection Pump in place of Zexel Fuel Injection Pump is given as under :-

(a) Park vehicle in a suitable place and tilt cabin (Apply hand brake while gear lever is to be in neutral position and is solator switch in 'OFF' position).

(b) Remove engine flywheel and punch new timing mark at 11 degree BTDC (ie 40.7mm from 1/6 mark).

(c) Erase old mark at 9 degree, refit flywheel, clutch, gearbox and propeller shaft.

(d) Rotate engine flywheel and align 1/6 mark to pointer in the flywheel housing (No 1 cylinder to be in compression).

(e) Remove the following items :-

- (i) Pipe, nozzle leakage.
- (ii) Injector pipes (06 Nos).
- (iii) Pipe through feed.
- (iv) Pipes fuel filter to Fuel Injection Pump (2 Nos).
- (v) Pipe oil block to pump.
- (vi) Pipe booster compensator.

(f) Disconnect accelerator linkage and 'Aren's control'.

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(g) Remove Zexel Fuel Injection Pump from engine.

(h) Grind boss on cylinder block, at Zexel Fuel Injection Pump rear bracket mounting area, to approx 3mm (Ref Fig No 3).

(j) Assemble MICO Fuel Injection Pump with timing cover (part No F1137522), Flange coupling (part No F143791), Injection timer (part No X7425000) and old gear from Zexel Fuel Injection Pump. Punch timing mark on pointer coupling. This has to be done on a MICO test bench (Ref Fig No 4).

(k) Rotate engine flywheel and align 11 degree timing mark with pointer.

(l) Mount MICO Fuel Injection Pump in the engine with timing mark in flange coupling aligning 'V' groove in timing cover. Ensure timing mark in Fuel Injection Pump and flywheel are matching after Fuel Injection Pump fitment. Fuel Injection Pump should be supported at rear with new bracket (part No X0407910).

(m) Remove Zexel injectors and fit MICO injectors with new copper washer.

(n) Refit fuel /lubricant/air pipes, accelerator linkage and 'Aren's control' (pipes common to Zexel/MICO and unique items from the kit to be used).

(o) Replace both primary and secondary fuel filters.

(p) Switch 'ON' Isolator switch, bleed fuel lines, start engine and check for leak/performance of vehicle.

**Inspection and Testing**

9. Ensure electrical connections are secured properly and then connect battery terminals. Start the engine and carry out fine tuning. The Fuel Injection Pump needs perfect calibration to ensure its correct functioning.

**Authority**

10. Financial Sanction as per Master General of Ordnance branch letter No B/81180/SEMC/MGO/EM (Pol)/(ii) dt 01 Dec 2010.

**E N D**

*(72464/Stallion/AE-7)  
(D-3401/Tech Pubs)*

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**Appendix 'A'**  
**(Para 5(a)(i) and para 7 refers)**

**Stores Required : Modification Conversion Kit**  
**PART NO:P-0958251**

<i>Ser No</i>	<i>Part No</i>	<i>Nomenclature</i>	<i>Qty</i>
1	X7417100	Fuel Injection Pump (209 FIP)	1
2	X7414800	Injector	6
3	F1761300	Copper washer for the above	6
4	F1761300	S/A of pipe through feed	1
5	B8282903	S/A of pipe oil block to pump	1
6	F3147415	Bolt banjo (on to FIP)	1
7	B7007705	S/A of pipe oil compressor to timer	1
8	F3575511	Bolt banjo (on to compressor)	1
9	F3575611	Bolt banjo (on to cover timer)	1
10	X7435600	Washer soft (for banjo bolt)	10
11	B7762003	S/A of pipe boost compensator	1
12	X3539311	Bolt banjo	2
13	X4902830	Washer shaft (for banjo bolt)	4
14	B7775502	S/A of pipe injector No 1	1
15	B7775503	S/A of pipe injector No 2	1
16	B7775504	S/A of pipe injector No 3	1
17	B7775505	S/A of pipe injector No 4	1
18	B7775506	S/A of pipe injector No 5	1
19	B7775507	S/A of pipe injector No 6	1
20	F1137522	Cover, timer	1
21	F3769515	Stud-ref std	4
22	F4946210	Washer plain	4
23	F4946310	Washer special	4
24	F3538815	Nut-ref std	4
25	F2702450	'O' ring for cover plate seal	1
26	X7425000	Injection timer	1
27	X3502711	Timer bolt	4
28	X4904810	Washer for the above	4
29	F1437911	Flange coupling	1
30	X0407910	Bracket Fuel Injection Pump rear support	1
31	F3501900	Bolt for rear support bracket	2
32	F3588215	Nut for rear support bracket	1
33	F4922700	Washer spring for the above	3
34	F4945410	Washer plain for the above	3
35	X3965600	Stainer assy	1
36	X7435600	Washer soft for the above	2

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Appendix 'B'  
(Ref para 1)



AIR COMPRESSOR

INLET  
MANIFOLD

ZEXEL FIP S/A  
ON ENGINE

FUEL FEED PUMP

ENG SUMP

~~FIG NO 1: ZEXEL FIP~~



AIR COMPRESSOR

INLET  
MANIFOLD

MICO FIP S/A  
ON ENGINE

GOVERNOR ASSY

FUEL FEED PUMP

ENG SUMP

FIG NO 2 : MICO FIP

Issue 1, May 2011

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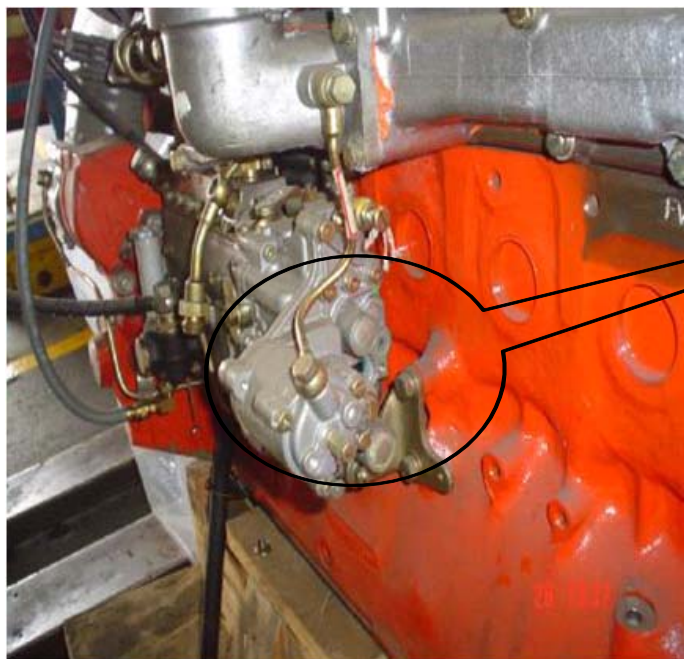
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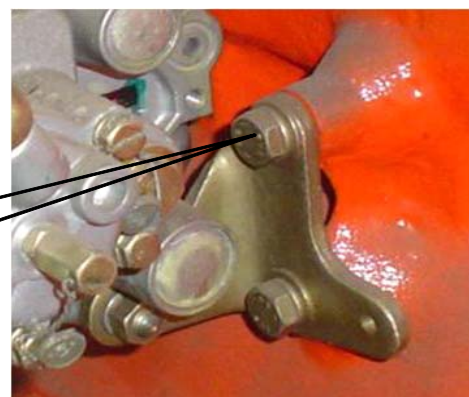
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**Appendix 'B'  
(Ref para 8 (h) and 8(j))**

**ZEXEL FIP**



**FIG NO 3 : ZEXEL FIP**



**ABOVE 2 BOSSES  
TO BE GRINDED  
BEFORE FIXING  
MICO FIP**



**FIG NO 4 : MICO FIP**

**MICO FIP**



**MOUNTING  
ARRANGEMENT FOR  
MICO FIP**

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