

ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION

No.OP2/462(18)/03-MED

O/o VC & Managing Director  
Mushirabad : Hyderabad

CIRCULAR NO.18/2003-MED, DT.09.06.2003

SUB:MAINTENANCE:- Introduction of BS.II (Euro-II)  
Vehicles in HCR Region - Instructions issued on  
maintenance - Reg.

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The new vehicles fitted with BS.II(Euro-II) compliant Engines are being supplied to HCR in view of the implementation of BS.II norms in twin cities of Hyderabad & Secunderabad from 1.4.2003. These vehicles are manufactured by M/s.Ashok Leyland. The salient features of these engines are as follows:-

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Engine Model	HA 6DTI 2D (HINO)
Net Power	97KW(132PS) @ 2400 rpm
Torque	42.0(KGM) @ 1600/1800 rpm
Pump Assy.	Distributor FIP Type VE
Injection timing	1.2 mm FIP plunger lift at TDC
Feed Pump	Engine mounted
Injectors	F 002 C7Z 109
Nozzle no.	1095
Opening pressure	250 - 258 Bar
Configuration No. of holes X Hole size X spray angle	5 * 0.225 * 152
Fuel filters	1.1 Ltrs. Both Micro Paper Filter inserts
Add on module	KSB, MPC Unit
Euro II damper	Unique with olive green color

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- Turbo charging & inter cooling to achieve higher specific power outputs enhance combustion and reduce emissions
- Higher Injection line pressures to achieve soot free combustion (To reduce particulates)
- Modified combustion bowl and nozzle to optimize combustion
- Optimized valve events for better fuel efficiency
- Cylinder head swirl variations controlled and port flow improved
- Modified intake manifold to enhance engine breathing
- Higher Injection pressures (750 to 800 bar) necessitate VE type distributor pumps
- VE pumps are supplied by MICO
- Wider FIP drive gear (from 20 to 23 mm) as the drive torque is more
- The fuel outlets at Distributor head of the FIP would be identified with alphabets of A-B-C-D-E-F
- Unlike In-line pump, VE pump is filled virtually with diesel, and lubricated by diesel only (In-line pump is partly lubricated by engine oil and partly by diesel)
- Cleanliness of diesel is of prime importance to avoid any component wear
- Modified uniform cross section (box type) inlet manifold introduced. This is better suited for TC engines
- 520 mm dia 6 bladed fan with viscous clutch

#### LUBRICANTS:-

Since this engine conforms to Euro-II, special grade Engine Oil with the following specifications has to be used.

Lub Oil Specification: : AP2 CG 4 15W40 + MB 228.3

Approved Brands:

Gulf : Gulf super fleet special 15W40

ELF : ELF performance Trophy DX 15W40

The lubricants cited above are different from the multi grade 15W40 engine oil used in Euro-1 vehicles. Hence care should be taken to ensure use of the above approved brands only.

PREVENTIVE MAINTENANCE SCHEDULE FOR BS.II(EURO.II) ENGINES

The following maintenance schedules is recommended for BS.II Engine.

- Oil drain with filter change @ 1000 KMs and thereafter every 10000 KMs
- Fuel filter change(1.1 liter paper coil type dual filters)
- To be changed @ 1000 KMs & thereafter every 20000 KMs to be staggered in such a way to avoid both element changing at the same time as follows.
- Primary element initially at: 10000 KMs and thereafter at every 20000 K.Ms.
- Secondary element initially at: 20000 K.Ms and thereafter at every 20000 K.Ms
- Cylinder head tightness @ 1000 KMs & every 20000 K.Ms.
- Injector opening pressure check @ 20000 KMs and every 60000 KMs
- Tappet clearance check @ 1000 KMs and every 20000 KMs.
- Primary(outer element) only needs to be cleaned and secondary element(Inner/Safety element)should never be cleaned in case of Air Cleaners
- Cleaning frequency of primary element is decided by the restriction indicator

- Replace the primary filter element after two cleanings (Cleaning once the red band appears).

The Part Nos. of important consumables are as follows:-

- Engine oil filter element - P 31 015 40 - common
- Fuel filter element - P 13 016 40 - Common but 2 Nos. paper coil type
- Air cleaner element - Safety - F 82 113 00
- Air Cleaner element- Outer - F82 112 00
- Fan belt - F 00 312 50 -common with Hino EO & E1

The unique spare parts list for Hino Euro-II engines is enclosed in the ANNEXURE with part Numbers. The Dy.CMEs of the Region are advised to co/ordinate with the WM and COS for stocking the above unique spare parts based on the fleet strength.

To start with important consumables like Filters (Diesel and Engine Oil), Air Filters should be immediately procured and supplied to the Depots.

In view of the special construction features of BS.II Engines with Distributor type FIP and the need to meet the emission norms it is advised to procure approved brands of Engine Oils as cited above and coil type fuel filters of MICO make only.

All the DMs of HCR are advised to follow the instructions cited above on BS.II Engines.

Dy.CMEs & DVMS of HCR are advised to ensure implementation of above instructions.

COS:HZ is instructed to procure the important consumables viz., Engine Oil, Mico fuel, Filter Elements and supply to the Depots based on the fleet strength in co-ordination with Dy.CMEs immediately.

EXECUTIVE DIRECTOR (ENGG)