



DALMIA CEMENT (B) LIMITED – DALMIAPURAM



MECHANICAL DEPARTMENT

Issue No. 01	Rev. No: 00	Effective Date: 01.05.2016	SOP/Mines/17
Prepared By: Mr.Antony Josephraj / Mr. Balavignarajan		Approved By: HOD (Mines)	
SOP for change of engine assembly in Dumper			

SCOPE : change of engine assembly in Dumper

RESPONSIBILITY : Section Engineers

Accountability : Section Heads – Mechanical maintenance

PPE:

1. Safety goggles,
2. Safety helmet,
3. Safety shoe,
4. Cotton Gloves.

TOOLS:

1. Spanners set.
2. Special tools
3. Banyan cloth

Hazard:

Risks associated:

Fall of Engine;
Hit of Hammer in hand;
Slippery due to oil
Spray of Oil to eyes

Mitigating Measures

Lock the engine properly
trained to be engaged
wearing shoes and careful walk
using of goggles

1.0 Purpose:

Prevention of breakdowns and failures of the machine and keep the machine available to deliver the intended performance level.



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2.0 Inputs:

- Workshop
- Stores, spares & consumables
- OEM Manuals.
- Tools and Tackles

3.0 Park and Prepare for service safely

- Warn others of service work.
- Always park and prepare machine for service or repair properly
- Park machine on a level surface and lower equipment to the ground.
- Stop engine and remove key.

4.0 Turbocharger Maintenance work:

- Only skilled person should attend such jobs
- For carrying out any Repair & Maintenance work always wear safety shoes and helmet. Do not wear loose cloths.
- Keep all tools in good condition and learn the correct way to use them. Always don't use the repaired tools.
- Always keep the work area very clean and make sure that there is no unwanted material or oil on the work floor.
- Lower the work equipment to the ground for safety and stop the engine. Disconnect the cable from the negative (-) terminal of the battery.
- Disconnect all hoses, covers and remove fan guard
- Disconnect hydraulic pump wiring connectors



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at two places.

-
- Disconnect Hydraulic Pump
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- When raising or lifting components, be sure to use proper lifting equipment of ample strength and safety.
- When using forcing screws to remove any components, tighten the forcing screws uniformly in turn.
- Before removing any unit, clean the surrounding area and install a cover to prevent any dust or dirt from entering after removal
- Before starting any repair & maintenance work, Park machine on hard level ground
- Before disconnecting or removing components of oil, first check temperature, wait for cool and remove the pressure completely from the circuit.
- Wait for the oil to be cooled before carrying out any work on the oil circuits, because the oil in the circuit are hot when the engine stopped. So be careful not to get burned.
- When removing piping, stop the oil from the spilling out. If any oil drops on the floor, wipe it up immediately, Oil on the floor can cause any one to slip or can even start fires.
- When installing hoses make sure that they are not twisted, damaged tubes are dangerous. So be extremely careful when installing tubes for high-pressure circuits. Also check that the connecting parts are correctly installed
- When installing protective parts such as guards or parts, which rotate at high speed, be particularly careful to check that they are installed correctly. If nuts, bolts, or other parts are not tightened to the specified torque, it will cause looseness, damage to the tightened parts; and this will cause failure of the machine, or problems with operation. Always pay careful attention when tightening parts.



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- When aligning two holes, never insert fingers or hand be careful not to get fingers caught in a hole.
- When carrying out welding works always wear welding gloves, apron, glasses, cap and other clothes suited for welding work.
- Before starting any welding work in battery connection should be removed (mainly Earth connection to be removed)
- When removing components be careful not to brake or damage the wiring. Damaged wiring may cause electrical fires.
- .Use only genuine spare parts.
- Recommended torque to be given for change of engine assembly in Dumper
- Always use the ladders or steps when getting on or off the Dumper. Never jump on or off the Dumper.
- Before commissioning engine assembly manually rotate and check for free rotation
- After commissioning engine assembly, observe for an hour in running condition.
- Attach a “Do Not Operate” tag in an obvious place in the operator’s station. Securely support machine or attachment before working under it.

Emergency Shut- off:

1. If body injury is there, First aid will be given and inform to the Safety department or Call Emergency number.

Records/Annexure:

1. Refer Line clearance certificates.



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2. JSA as enclosed below.

Job Safety Analysis	Job: Turbo charger Preventive maintenance	Date: 10.10.2014	Analysis by: Section Engineer	Reviewed by: Section Head
Title of employee doing job:	Supervisor: Sec.Engr	Department: Mechanical	Section: All equipments	Approved by: Department Head
Req'd/recommended PPE:				
Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
Usage of hand tools	Injury to fingers / hands	Follow SOP for safe usage of hand tools	Not following SOP	Ensure right tools are used right job in right method
Handling the oils	Slippery of persons	Collect the oil in a bucket to avoid the spillage	Not following the system	Ensure the oil to be collected in the buckets and later it is to poured in the old oil barrels



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Working at Height	Fall from height	Follow work at height SOP	Not following procedure	Ensure SOP is followed before work is started
Using lifting tools & tackles	Fall from height/ hit injury to body parts	Ensure certified tools & tackles are used. Don't over load	Overloading	Ensure lifting tools are not overloaded