

Title: VEHICLE MAINTENANCE MANAGEMENT PROCEDURE			
Document #:	HGGC/VM/SOP-03	Rev #	01
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Vehicle Maintenance Management

1. PURPOSE:

- 1.1 The purpose of this procedure is to control and reduce vehicle operating costs by reducing the risk of breakdown, also provide standard for High Risk Maintenance Jobs i.e. Hot work, Work at height, Confined space, Cleaning and degassing.

2. SCOPE:

- 2.1 This system shall be applicable on all Product loading fleets, operating by the name of **M/S HAJI GUL GROUP OF COMPANIES.**

3. DEFINITIONS:

- 3.1 **PMP:** "Preventive Maintenance Plan"
- 3.2 **OEM:** "Original Equipment Manufacturer"
- 3.3 **VM:** "Vehicle Maintenance"
- 3.4 **LEL:** "Lower Explosive Limit"
- 3.5 **EPA:** "Environmental Protection Agency"
- 3.6 **GEL:** "Global Environmental Lab (Pvt.) Ltd".
- 3.7 **CORRECTIVE MAINTENANCE:** "Corrective maintenance is a maintenance task performed to identify, isolate, and rectify a fault so that the failed equipment, machine, or system can be restored to an operational condition within the tolerances or limits established for in-service operations"
- 3.8 **BREAKDOWN MAINTENANCE:** "Breakdown maintenance is maintenance performed on a piece of equipment that has broken down, faulty, or otherwise cannot be operated."
- 3.9 **PREVENTIVE MAINTENANCE:** "Preventive maintenance is, maintenance that is regularly performed on a piece of equipment to reduce the likelihood of it failing. It is performed while the equipment is still working so that it does not break down unexpectedly."

4. RESPONSIBILITIES:

- 4.1 Maintenance Manager shall be responsible to ensure that all maintenance works are being carried out as per available procedure.
- 4.2 Maintenance Manager shall ensure that PMP is being conducted as per schedule.
- 4.3 HSEQ and Maintenance Manager shall be responsible to conduct an audit of maintenance provider on annual basis, to remain fleet complaint regarding HSEQ requirements.
- 4.4 Driver of the vehicle shall be responsible to monitor his vehicle maintenance and shall be present with the vehicle at the time of maintenance.
- 4.5 HSEQ and Maintenance Manager shall be responsible to raise insurance claims if the maintenance of any vehicle can cover under the insurance policy.

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- 4.6 HSEQ and Maintenance Manager shall be responsible to keep vehicle complaint on legal, HSEQ, and client's standards

5. PROCEDURE:

There are 4 major sources to get information about the maintenance.

- 1. Inspections**
- 2. Driver Feedback**
- 3. PMP**
- 4. Accident/incident**

- 5.1 For all maintenance issues, which shall be highlighted during inspection, a repair order is being created by vehicle inspector/monitor driver/maintenance supervisor.
- 5.2 VTS team shall inform maintenance and operation team for the maintenance highlighted during journey closure as per driver feedback.
- 5.3 After that Maintenance Supervisor shall inspect vehicle and verify the issue which is highlighted by the driver and then create a repair order.
- 5.4 To carry out Preventive maintenance smoothly, Daewoo recommended plan will be followed. Workorder or repair order not required for preventive maintenance work.
- 5.5 Maintenance team then handover the vehicle to the vendor w.r.t the nature of maintenance required (if the maintenance can't be possible to rectify on base)
- 5.6 Upon receiving repair/maintenance cost from vendor, Maintenance Manager informs Manager (Operations) management to the required work.
- 5.7 After getting approval from Manager (Operations), Maintenance Manager shall request vendor to start the required repair & maintenance work on the equipment/vehicle.
- 5.8 Driver of the vehicle shall be responsible to monitor his vehicle maintenance and shall be present with the vehicle at the time of maintenance.
- 5.9 No alteration shall be allowed in any equipment of OEM with prior approval from Manager (Operations)
- 5.10 Manager (Operations) shall be responsible to discuss the alteration requirement from relevant client.
- 5.11 If client allow to do the alteration, then HSEQ Manager shall perform risk analysis for the alteration and develop the controls in order to minimize the risk as per the below hierarchy.
 - **Eliminate the risk**
 - **Substitute the risk with less hazardous risk**
 - **Use engineering controls in order to not in contact with hazard.**
 - **Use administrative controls in order to be in contact with hazard in a safe manner.**
 - **Use PPE as it's the last line of defence.**

5.12 PREVENTIVE MAINTENANCE:

- 5.12.1 PMP shall be developed with vehicle numbers identifying the need for preventive maintenance and considering the OEM recommendation as a priority.

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5.12.2 There is an inspection checklist covering preventive maintenance based on OEM recommendations and trend analysis of previous maintenance history.

- **Checklist A: monthly**

5.12.3 Maintenance Manager shall be responsible to prepare annual PMP and the same shall be shared with Operation team, in order to run smooth operation.

5.12.4 Operation team shall be responsible to provide vehicle for preventive maintenance as per pre-defined schedule.

5.12.5 Maintenance Manager shall be responsible to share progress about the preventive maintenance in monthly meeting.

5.13 BREAKDOWN MAINTENANCE:

5.13.1 Maintenance Manager shall be authorized to approve breakdown/on-route maintenance costing up-to 100, 000 PKR.

5.13.2 Maintenance Manager shall arrange in-route breakdown maintenance from vendor i.e. ATS, as per agreement.

5.13.3 If vehicle is at remote area and approved vendor (ATS) could not be possible to reach in an acceptable time, Maintenance Manager shall be authorized to allow the driver of vehicle to arrange maintenance himself or from the nearest possible mechanical workshop.

5.13.4 Maintenance Manager shall inform Manager (Operations) about the breakdown maintenance and the arrangement for the rectification of vehicle.

5.13.5 Maintenance Manager shall make continuous contact with on-site person (driver) in order to be aware about the repair & maintenance work.

5.13.6 Driver should not leave the vehicle unattended.

5.13.7 Once vehicle is able to reach base, maintenance team will inspect the work done on vehicle and inspect the whole vehicle for remedial faults which can be necessary to rectify before next trip.

5.13.8 Maintenance team shall record the breakdown maintenance and the work done on vehicle for audit and analysis purpose.

5.14 JOB COMPLETION:

5.14.1 After completion of repair & maintenance work, maintenance supervisor/monitor driver/vendor (if required) shall take a test drive to ensure that the fault has been rectified and the vehicle is ready to use.

5.14.2 Once vehicle receive from repair & maintenance work is being completed the VM team shall inspect the whole vehicle to ensure the quality of work.

5.14.3 In case of poor quality of work, maintenance manager shall revert the vehicle to vendor/maintenance supervisor for re-work.

5.14.4 Clause no. 5.14 (2 & 3) shall be repeated until the satisfactory work will be done.

5.15 MAINTENANCE TREND ANALYSIS:

5.15.1 Maintenance manager shall be responsible to conduct monthly base analysis on vehicle maintenance and shall develop trend.



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5.15.2 After getting hands on maintenance trend, Maintenance Manager shall share the analysis with all the head of departments i.e. HSEQ Manager, Operation Manager on monthly+ basis.

5.15.3 Next, every Manager shall take action in his/her vicinity to reduce maintenance costs.

5.16 HIGH RISK MAINTENANCE JOBS:

5.16.1 For all High Risk maintenance jobs, including Hot work, degassing, confined space works, and work at height, the Maintenance Manager shall contact the Maintenance vendor and describe the work to be done on equipment/vehicle.

5.16.2 For all High Risk maintenance job, required work permit shall be issued.

5.16.3 Work permit shall cover the below elements, as a general requirement:

- **The permit shall be issued for during working hours. However, confined space entry permit can be extended for 1-2 hours.**
- **Display of work permit prominently at site shall be mandatory.**
- **The Permit issuing authority shall ensure that the standby person understands his duty.**
- **The work permit shall be invalid if the conditions mentioned are not respected and upon expiry of the timing given in the work permit.**
- **It is MANDATORY to sign the work permit by either party.**
- **Addition/Alteration on the permit except those made by the Permit Issuer renders the permit invalid.**

5.16.4 Maintenance Manager request operation team to send the vehicle to vendor.

5.16.5 Maintenance Manager shall be responsible to ensure that the vendor shall take the below mention precaution, as a minimum requirement to do the job safely.

1 HOT WORK:

- When work involves actual or potential sources of ignition, it is considered as hot work for Example welding, burning, cutting, riveting, grinding, and drilling, and work involving the use of pneumatic hammers and chippers, non-explosion proof electrical equipment (lights, tools, cameras, etc.) and internal combustion engines etc.
- Check atmosphere for LEL percentage.
- If LEL is greater than 0% then permit shall not be issued.
- It shall be the responsibility of the job performer to clean up the work area and notify the authorized person when the job is completed.
- Ensure work area/site is equipped with emergency shut down button.
- Flammable/Combustible materials and products shall be removed from working area.
- Gas detector(s) in place
- Protective screen in place (Flame-proof, spark-proof)
- Extinguishers is in place (Extinguisher suitable for type of fire)
- A person is radially present to monitor any emergency.
- Area barricaded and unauthorized entry prohibited

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- Confined space is defined as space which has one or more of the following characteristics:
 - i. Contains or has the potential for a hazardous atmosphere;
 - ii. Contains a material that has the potential to engulf an entrant;
 - iii. Contains any other recognized safety or health hazard, such as unguarded machinery, exposed live wires, or heat stress,
 - iv. Space not necessarily designed for people,
 - v. Space not large enough for workers to enter and perform certain jobs.
 - vi. Has limited or restricted means for entry or exit and is not designed for continuous occupancy.
 - vii. Confined spaces include, but are not limited to, tanks, vessels, silos, pits, manholes, tunnels, equipment housings, ductwork etc.
- Confined Space permit is mandatory for any operation requiring work inside a confined atmosphere, after a Cleaning-Degassing permit has been obtained
- This permit can only be issued after prior measurements and verification of the atmosphere with a gas detector
- Entry into a tank is prohibited if the concentration of O₂ in the air is less than 20.5% or greater than 23%
- Entry into a tank is prohibited if the measurement made with the gas detector at the manhole entrance is > 10% of the LEL.
- Entry into a tank is prohibited If concentration of Toxic Gases are noticed inside the tank.
- No personnel shall be authorized to enter a tank if works are being carried out on the roof of the tank

3 DEGASSING:

- This work permit is mandatory for any cleaning-degassing operation and for the preliminary lowering phase of jacks on floating screens or roofs.
- The work permit is cancelled if the recordings made by the explosive-meter (gas detector) exceed:
 - i. 10% of the LEL for the cleaning-degassing phase
 - ii. If Concentration of Toxic Gases are noticed inside the tank
 - iii. If Oxygen % is less than 20.5% or greater than 23%
- This permit is valid for the specified area and specified time.

4 WORK AT HEIGHT:

- Any work above 2m is considered as work at height. This work needs to be controlled through Work at Height permit:
 - i. Accessing heights using a forklift is strictly forbidden and disciplinary measures apply in case of violation
 - ii. If scaffolding/ ladder/ platform is used, they need to be inspected and approved before use along with work at height permit.
- This work permit is valid for One Day (08 hrs or one shift) provided that the operating conditions do not change. If there is any change in the operating conditions, a new permit will be issued.

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- Safe means of access provided using standard ladder
- Provision has been provided to counter falling hazard by Fall-stop device, Safety harness, lifeline, etc.
- Provision-Personnel with tool box carrying hook
- Checked load bearing capacity of anchoring point
- Ensure that the working area is well lit.
- Area barricaded and unauthorized entry prohibited

5.17 ENGINE OIL CHANGE

5.17.1 Engine oil provides lubrication, which allows the parts to work together effectively without overheating or seizing, an oil change consist of removing the old oil from the engine of vehicle and replace it with fresh oil. The engine oil filter is usually also changed at the time of engine oil change; The oil filter helps remove contaminants from engine's oil that can accumulate over time as the oil keeps engine clean. Clean motor oil is important because if the oil were left unfiltered for a period of time, it could become saturated with tiny, hard particles that can wear surfaces in your engine, following steps shall involve in oil changing activity.

1. Gather the essential supplies i.e. New Oil, New Oil Filter, Oil changing tool.
2. Get a wrench that fits drain oil plug, an oil filter, an oil filter wrench, a bucket to catch the oil, slide underneath vehicle.
3. Locate the oil pan and loosen the bolt located on the end of the oil pan.
4. Drain the oil from the oil pan and clean the bolt with a rag and screw in back in with your fingers (use gloves).
5. Take the wrench and tighten it another quarter to half rotation to make sure that the bolt is tightened enough and not so tight that it is going to damage the rubber seal.
6. Use the oil filter wrench to unscrew the oil filter which is to the right of the oil pan.
7. Place underneath a container before completely unscrew the filter in order to catch the remaining oil in filter.
8. Dispose-off old filter and screw new filter back by the same process.
9. Take fresh oil and rub it around the corner of filter to ensure that there is a good seal once the new filter is screwed in.
10. Tighten the filter with hands then take the oil filter wrench and tighten another quarter.
11. Gather the tools and gets-off under the vehicle.
12. Start vehicle at-least for 10mins, then check oil level with dipstick, refill oil if needed.
13. Do not forget to release the parking brake before driving vehicle.

5.18 TYRE MANAGEMENT:**5.18.1 NEW VEHICLE TYRE ISSUE:**

1. Maintenance Manager shall request Manager (Operations) for tires.
2. After approval from Manager (Operations), Maintenance Manager shall arrange the delivery from the vendor.
3. After completion new vehicle handover to the operation with complete details.

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4. Records shall be maintained by maintenance manager regarding new tyres.

5.18.2 TYRE ISSUE:

1. During inspection, if monitor driver/vehicle inspector finds that the tyre/s condition is/are not satisfactory or below the pre-defined standard, then he shall inform operation.
2. Tyre Inspection shall carry out on monthly basis. (for 48KL Truck)
3. Tyre inspection shall be each month (for 24KL Truck)
4. Maintenance Manager shall be responsible to record the Tyre inspection data as per requirement.
5. Operation Manager will request the Maintenance Manager to issue the tyre/s with the following details;
 - **Vehicle #**
 - **KM driven**
 - **Driver name**
 - **Tyre Condition/thread condition/thread depth**
6. Maintenance Manager shall be responsible to ensure that the tyre completed its mileage up-to 120,000 KM as per HGGC standard w.r.t manufacturer recommendation.
7. If tyre is not completed 120,000 KM, then without acceptable reason, tyre shall not be issued.
8. Maintenance Manager shall be responsible to maintain tyre inventory and Tyre Trend sheet.

5.18.3 TYRE RECOMMENDATION & QUALITY CHECK:

1. Tyre mileage recommendation is 120,000 KM
2. Front wheel minimum threat depth is 4MM
3. Tyre threat depth limit on other position is 3MM
4. No cuts allow on tyre
5. Installation of a Refurbished tyre in the vehicle is strictly prohibited.
6. Check new tyre manufacturing date.

5.19 HAZARDOUS WASTE TREATMENT:

- 5.19.1 All the hazardous waste i.e. hoses, tyres, used oils and oil filters are dispose-off to the EPA approved company e.g. GEL
- 5.19.2 Maintenance Manager request HSEQ Manager to raise a request, once the hazardous waste is collected in a quantity to the related vendor for dispose-off.
- 5.19.3 HSEQ Manager shall send request to the vendor to collect the waste.
- 5.19.4 HSEQ Manager shall ensure that the all hazardous waste has been disposed-off and certificate of disposal has been taken from vendor
- 5.19.5 Maintenance manager shall be responsible to keep maintain hazardous waste record.
- 5.19.6 Hose pipes shall be replaced after 6 years (PATROM Standard)
- 5.19.7 Hose pipe testing shall be done annually to ensure no leakage / bend.



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6. RECORDS:

1	Maintenance Job Card	HGGC/VM/FM001	1 Year
2	List Of Interested Parties	HGGC/VM/LIP01	1 Year
3	PMP (P. Mover & Bowser)	HGGC/VM/PLN01	1 Year
4	3 rd Party Vetting Report (bi-annual)	3 rd Party	½ Year
5	3 rd Party Vetting Report (annual)	3 rd Party	1 Year
6	Maintenance History Data	Dashboard	1 Year
7	Vehicle Insp. Checklist (monthly)	HGGC/VM/CHK01	1 Year
8	Waste Management Form	HGGC/VM/FM002	1 Year
9	Tyre Trend Sheet	HGGC/VM/CHK09	1 Year

Prepared by:

Designation	Department	Date	Signature
Manager (Operations)	Operations	Jan 01 st , 2022	

Reviewed by:

Designation	Department	Date	Signature
Manager (HSEQ)	HSEQ	Jan 01 st , 2025	

Approved by:

Designation	Department	Date	Signature
CEO	All	Jan 01 st , 2025	

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