



**DALMIA CEMENT (B) LIMITED – CEMENT PLANT
ARIYALUR
ELECTRICAL MANUAL**



Issue No. 00	Rev. No: 02	Effective Date: 07.07.2017	ELEC/SOP/007
Issued By: M.R		Approved By: HOD - ELECTRICAL	
SOP for HT Motors Maintenance			

Scope : Describing HT Motors Maintenance procedure to Electricians

Responsibility : Electrical Engineer

Accountability : Section Head

PPE:

1. Nose mask
2. Goggles
3. Electrical safety Gloves
4. Cotton Gloves
5. Safety shoes
6. Safety helmet

Tools:

1. Wire brush
2. Hand Blower
3. Waste Cloth
4. Suitable spanner
5. Hammer
6. Insulated Screw driver
7. Discharge rod

Hazards:

Risk Associated
Electrical Shock
Minor body injury

Mitigating Measures
Tested Electrical Rubber Hand Gloves
Safety shoes, gloves, helmet, goggles

Training needs:

1. Electrical shock recovery Training
2. Emergency preparedness
3. Fire fighting
4. First aid including CPR training



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Procedure:

1. Take the LOTO for the particular Motor as per ELEC/SOP/001.
2. Clean the Motor with Wire Brush / Hand Blower / Cloth, while cleaning use PPEs like Nose mask, goggles and hand Gloves.
3. Open the Stator, Rotor and Slip ring Cover While opening handle the covers firmly.
4. Discharge the Stator, Rotor terminals with discharge rod.
5. Clean the Stator Terminal Box, Rotor Terminal Box, Star Connection Terminal Box, Cooling Fans & Cooling Tubes with wire brush / hand blower /cloth, while cleaning use PPEs like Nose mask, goggles and hand Gloves.
6. Clean the Slip Ring Chamber, Carbon Brushes & Holders with hand blower and cloth, while cleaning use PPEs like Nose mask, goggles and hand Gloves.
7. Check the tightness of power and control terminations.
8. Check the Condition of Carbon Brushes, Measure the Length of Carbon Brushes.
9. Replace the Carbon Brushes, if worn out.
10. Check the Spring Tension of the Carbon Brush Holders properly.
11. Check the Condition of Insulators in all the Terminal Box and Slip Ring & Carbon Brush Holders.
12. Check the Insulation Resistance, Winding Resistance and Inductance of the Motor winding.
After checking the Insulation resistances again discharge the motor terminals with discharge rod.
13. Close the all Motor Terminal box cover and box up with Silicon Paste to restrict the dust entry.
14. Check the oil level in the bearings. Top up if the level is less than the normal indicated level.
For makeup oil level, use proper instrument and avoid spillage of oil in the ground.



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15. In case of any oil spillage while working, it is to be collected and returned store for recycling as per SOP / ELEC / 022.
16. Clean the LPB and Check the Control Wiring Tightness, while cleaning use PPEs like Nose mask, goggles and hand Gloves.
17. Check the Motor and LPB Body earthing.
18. Check the Condition of LPB Actuators and Contacts.
19. Close the LPB Door Properly.
20. Clear the LOTO as per ELEC/SOP/002 and Check the Healthiness of the motor with CCR.
21. Take Trial if Possible and record all Check point in the concern Check list.

Emergency / Emergency Shut OFF:

1. If electrical shock injury or body injury is there, give First aid and inform to the Safety department or Call Emergency number 3108/9865152222/9750963761.

Records/Annexure:

1. Refer LOTO permit.
2. JSA as enclosed below.



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JOB SAFETY ANALYSIS :(JSA)

Job Safety Analysis	Job: LT panel maintenance	Date:	Analysis by:	Reviewed by:
Title of employee doing job: Electrician	Supervisor: Section Engineer	Department: Electrical	Section:	Approved by:
Reqd./recommended PPE: Nose mask, Goggles, Electrical safety Gloves, Cotton Gloves, Safety shoes, Safety helmet				
Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
Put on PPE, Take Permit				
Cleaning of motor	Eye irritation,	Wear goggles	Damaged goggles/non standard goggles/ Not wearing goggles/ Heavy dust accumulated	Periodic replacement/Training
	Respiration problem	Wear Nose mask	Damaged nose mask/ Not wearing mask/ Heavy dust accumulated	Periodic replacement /Training
	Body injury	Wear safety helmet, safety shoes , hand gloves	Tools and material may fall on human body	Without PPE don't perform the job
Discharge the motor terminals by open the motor door, Check the tightness of Power and control terminals	Electrical shock	Use Tested Electrical Rubber Hand gloves	Damaged Gloves/ Not checked before use	Periodic replacement/To check for damage before use
	Body injury	Use proper tools	Nonstandard /damaged tools	Training for tools handling/ Periodic replacement
		Wear safety helmet, safety shoes , hand gloves	Tools and material may fall on human body	Without PPE don't perform the job



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Check the motor carbon brushes, Clean the motor cooler cooling Tubes Clean the LPB and check the tightness of control wiring	Eye irritation,	Wear goggles	Damaged goggles/non standard goggles/ Not wearing goggles/ Heavy dust accumulated	Periodic replacement/Training
	Respiration problem	Wear Nose mask	Damaged nose mask/ Not wearing mask/ Heavy dust accumulated	Periodic replacement /Training
	Body injury	Use proper tools	Nonstandard /damaged tools	Training for tools handling/ Periodic replacement
		Wear safety helmet, safety shoes , hand gloves	Tools and material may fall on human body	Without PPE don't perform the job
Check the bearing oil level and top up if required	Body Injury	Use proper tools	Nonstandard /damaged tools	Training for tools handling/ Periodic replacement
	Oil spillage	Use proper instrument, collection tray for spillage	Non use of trays / funnels Oil may contaminate ground	Training for tools handling/ Periodic replacement/ Aspect Impact awareness
Check the insulation resistance, winding resistance, inductance Again discharge the motor Close the terminal box cover	Electric shock	Use Tested Electrical Rubber Hand gloves	Damaged Gloves / Not checked before use	Periodic replacement/ To check for Damage before use
		Use good condition of meter and test lead	Faulty meters	Lead can be checked
Check the motor Door earthing, close the door properly. Clear permit	Body Injury	Use proper tools	Nonstandard /damaged tools	Training for tools handling/ Periodic replacement
		Wear safety helmet, safety shoes , hand gloves	Tools and material may fall on human body	Without PPE don't perform the job



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