



**DALMIA CEMENT (B) LIMITED**  
**DALMIAPURAM**  
**CPP ELECTRICAL DEPARTMENT**



Issue No. 01	Rev. No: 00	Effective Date: 01.04.2016	SOP/CPP/09
Issued By: M.R		Approved By: HOD - CPP	
SOP for GRINDING/DRILING MACHINE SERVICE & SPARE REPLACEMENT WORK			

**Scope** : Describe the procedure for servicing & spare replacement work in the  
Grinding /Drilling machine

**Responsibility** : Electrical Technician

**Accountability** : Electrical Engineer

**PPE:**

1. Goggles
2. Electrical safety Gloves
3. Safety shoes
4. Safety helmet

**Tools:**

1. Multimeter
2. Cutting plyer.
3. Insulated Screw driver
4. Suitable spanner for Dismantle the Machine.
5. Cir clip plyer
6. Hammer

**Hazards:**

**Risk Associated**

Electrical Shock  
Minor body injury  
Flash over  
Equipment damage

**Mitigating Measures**

Electrical Safety Gloves  
Safety shoes, gloves, helmet, goggles  
Power Isolation

**Training needs:**

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



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**Procedure:**

1. Disconnect the Power cable & remove the cable termination from the machine by using suitable tools.
2. Remove the grinding wheel with appropriate tool in case of Grinding Machine.
3. Remove the drill bit & check with appropriate tools in case of drilling machine.
4. Remove the Carbon brush cover & carbon brushes from the holder in case of single phase machines.
5. Remove the End cover of the machine both sides.
6. Remove the cooling fan fitted in the rotor if circlip as provided first remove the circlip by using circlip pleyer.
7. If the cooling fan fitted outside of the end cover, before remove the end cover remove the cooling fan first.
8. Check the switch & field coil of the rotor if the winding resistance & IR value is in good condition if it is ok then check the rotor commentator physical condition if it is ok, check the brush holder & carbon brush length.
9. If the field coil is fail replace the same with new one by using suitable tools.
10. If the Armature is fail remove the cog wheel & gear mechanism after remove the circlips by using circlip player.
11. After remove the gear mechanism removes the bearings by using bearing puller.
12. Remove the armature & replace the new one.
13. After placing the armature refit the bearings cog wheel & gear mechanism.
14. Apply the lubricant in the gear mechanism.
15. Refit the carbon brush holder & check the insulation value between winding & body.
16. If the IR Value & freeness of the rotor is found ok, refit the cooling fans & carbon brushes.
17. Refit the covers & drill check in case of drilling machines.



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18. Connect the power cable as per the connection diagram.

19. Apply the power & check the vibrations if all the physical & electrical parameters are in with in the limit Record all Check point in the concern Check list.

**Emergency / Emergency Shut OFF:**

1. If electrical shock injury or body injury are there, give First aid and inform to the Safety department or Call Emergency number 222/9865155288/9865177444.

**Records/Annexure:**

1. Refer work permits certificates.
2. JSA as enclosed below.



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**JOB SAFETY ANALYSIS:(JSA)**

<b>Job Safety Analysis</b>	Job: Fixing & relocation of welding PDB	Date:	Analysis by:	Reviewed by:
Title of employee doing job: Electrician	Supervisor: Section Engineer	Department: Electrical	Section:	Approved by:
Req'd/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 Panels	Eye irritation,	Wear goggles	Damaged goggles/non standard goggles	Periodic replacement
	Respiration problem	Wear Nose mask	Damaged nose mask	Periodic replacement
	Body injury	Wear safety helmet, safety shoes , hand gloves	Tools and material may fall on human body	Without PPE don't perform the job
Removal &Termination of the cables	Electrical shock	Use Electrical safety gloves	Damaged Gloves	Periodic replacement.
	Body injury	Use proper tools	Nonstandard /damaged tools	Training for tools handling/ Periodic replacement
Short /open the machine terminals by open the cover, Check the tightness of terminals		Wear safety helmet, safety shoes , hand gloves	Tools and material may fall on human body	Without PPE don't perform the job
	Body Injury	Wear safety helmet, safety shoes , hand gloves	Nonstandard /damaged tools	Without PPE don't perform the job
			Tools and material may fall on human body	Training for tools handling/ Periodic replacement
Check the machine earthing, close the cover properly				Without PPE don't perform the job