



## DALMIA CEMENT (B) LIMITED – ARIYALUR



### MECHANICAL

Issue No. 02	Rev. No: 00	Effective Date: 01.11.2019	SOP/MEC/170
Issued By: M.R		Approved By: HOD-Mechanical	
SOP FOR PRIMARY CRUSHER BREAKER BAR CAP REPLACEMENT			

**Scope** : SOP - Primary crusher 3Tooth Cap replacement

**Responsibility** : Section Engineer – Mech

**Accountability** : Section Manager - Mech

**PPE:**

1. Safety Helmet,
2. Safety steel toe shoe,
3. Hand Gloves Cotton/Leather
4. Safety goggles.
5. Nose mask.

**Tools:**

1. Chipping machine
2. Drill bit
3. Wire Brush
4. Hand blower
5. Pneumatic wrench
6. 65 mm deep socket
7. Cutting set
8. EOT Crane

**Hazards:**

**Risks associated**

Body injury  
Cut injury  
Caught in-between

**Mitigating Measures**

Safe and health tools and tackles  
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**Training needs:**

1. Emergency preparedness
2. Hot work procedure
3. Dismantling & Assembly procedure



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1. Take confined space and combined permit with the line clearance. Use LOTO system
2. Permits and line clearance paper should be with the people who are working in the site.
3. Use PPE's while working
4. Take the shutdown of Crusher, Apron feeder and bottom belt conveyor
5. Hook the confined space token in designated place and open the door.
6. Use the Ladder to approach the breaker bar cap fixed location
7. Inspect and mark the Damaged Breaker bar Cap in Rotor.
8. Lock the wedge piece b/w rotors and also in side combs.
9. Clean the coating in Breaker bar cap by shipping machine with drill bits.
10. Clean the Cap bolts area coating by using drill bits and wire brush.
11. Remove the breaker bar cap nut by using pneumatic wrench with 65 mm deep socket
12. After the dismantling of damaged Breaker bar cap lift the new Breaker bar cap by the help of EOT crane.
13. Tight the Breaker bar cap by Pneumatic wrench with using of 65 mm deep socket.
14. Check the tightness once again.
15. Take out confined space token and ensure that nothing inside crusher
16. Close the door and take the trial.



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### Emergency / Emergency Shut OFF:

If body injury is there, First aid will be given and inform to the Safety department or Call Emergency number 3108/9865152222

### Records/Annexure:

1. JSA is enclosed below.
2. Isolation Matrix.

### JOB SAFETY ANALYSIS :( JSA)

Job Safety Analysis		Job: Primary crusher Breaker bar cap replacement	Date: 08 – 04 - 2020	Analysis by Section Engineer	Reviewed by: Section Head
Title of employee doing job : Section engineer		Supervisor: Section Engineer	Department: Mech	Section: LS CRUSHER	Approved by: HOD-Mechanical
Reqd./recommended PPE's : Safety Helmet, Safety shoe, Hand Gloves, Safety goggles. Nose mask.					
Sequence of Basic Job Steps		Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
Open the inspection door		Body injury	Use only proper spanners to avoid slip / shear of bolt and nut during un screwing.	Spanners may slip and hit hands while un screwing. Bolt may shear/cut due to load	Check the condition of the bolt / nut and spanners.



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Caught in between	Leg injury	First lock the two rotors with stoppers	Stoppers may be in damage condition.	Check the condition of stoppers
Struck up of drill bit while cleaning the sticky material.	Body injury	Use only certified drilling machines to avoid slip / shear of drill bit during cleaning.	Drill bit may have struck up and hit hands while cleaning. Drill bit may shear / cut during load	Check the condition of the drill bit / handle.
Hand Blower operation	Eye injury & Dust inhalation	Use only certified Hand blowers.	Power Cable damage	Check the condition of cable and certification to use.
Using the Cutting machine	Hand injury	Use only certified cutting sets	Cutting set fail	Check the condition of Hoses, cutting torch, Flash back arrester, Blankets, Pressure Quage
Pneumatic wrench operation	Hand injury	Use only certified pneumatic wrench	hoses damages	Check the condition of hoses and certification to use.
Close the inspection door	Body injury	Use only proper spanners to avoid slip / shear of bolt and nut during screwing.	Spanners may slip and hit hands while screwing. Bolt may shear/cut due to load	



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SL No	Activity	Isolation Type						
		Electrical Energy				Other Energy		
1	<b>Primary crusher In-situ casting repairingn</b>	Tag /Name of the Equipment	Apron feeder 211AF1 Drive	Primary Crusher 211CR1 Drive	Unloading Hopper Barricaded	Rotor to be locked		
			Belt conv 211BC1 Drive					