



MECHANICAL

Issue No. 02	Rev. No: 00	Effective Date: 01.11.2019	SOP/MEC/187
Issued By: M.R		Approved By: HOD-Mechanical	
SOP-TORQUE SUPPORT REPLACEMENT			

**SOP FOR TORQUE SUPPORT BUFFER REPLACEMENT**

**Scope** : This SOP is applicable to Safe working of Torque support buffer replacement..

**Responsibility** : **Section Engineer Mech**

**Accountability** : **Section Incharge Mech**

**PPE:**

1. Safety helmet,
2. Safety shoe
3. Safety Belt
4. Mask.
5. Asbestos Gloves.

**Tools:**

1. Chain block (5 Ton)-2 Nos
2. Belt Sling
3. Hammer
4. Box Spanner set
5. Ring Spanner set
6. Cutting set
7. Welding m/c with cable
8. Hydraulic jack 100 ton

**Hazards:**

Risks associated

Falling of Men

Mitigating Measures

Wear Safety belt

**Training needs:**

1. Emergency preparedness
2. Fire Fighting
3. Hydraulic jack operation

**Procedure:**

1. Take the line clearance for the following.

- a) Mill feed RAL
- b) Mill main drive
- c) Classifier drive
- d) Mill booster fan
- e) Mill fan



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- f) Hydraulic tension unit
- g) Inlet damper for hot gas entry
- 2. Before unscrewing the mill manual inspection door the following parameters to be checked.
  - a) The temperature inside the mill to be maintained less than 45°.
  - b) The roller position should be ZERO. Ensure from CCR.
- 3 .Open the mill manual inspection door, scrapper chamber manual door, classifier manual inspection door and torque support buffer cap inspection door.
- 4. Lock the pressure Frame by angle to maintain the gap between the pressure frame and mill torque support side housing to make the people to work safely by using hydraulic jack
- 5 . Keep the chain block above the torque support to remove the Buffer (Nitrogen) cylinder of torque support by loosening the flange bolt
- 6 . Release the nitrogen pressure in Buffer cylinder
- 7 . Remove the flange bolt and remove the buffer cylinder
- 10. Lift the new New buffer cylinder by using chain block
- 11. Put the nitrogen cylinder of the torque support by tightening the flange bolt.
- 12. Remove the Locking angle by using hydraulic jack arrangement.
- 13. Check the Nitrogen pressure of the Torque support.
- 14. Close all the doors of the mill
- 15. Clear LC for start the Mill.

**Emergency / Emergency Shut OFF:**

If any injury takes place, provide First aid and inform to the Safety department or Call Emergency number 3108/9865152222.

**Records/Annexure:**



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1. Refer Line clearance certificates.
2. JSA as enclosed below.

<b>Job Safety Analysis</b>	Job: Torque support buffer replacement	Date:21.04.2020	Analysis by: Section Engineer	Reviewed by: Section Head	
Title of employee doing job: Section in charge	Supervisor: Section Engineer	Department: Mechanical	Section:Cement Mill	Approved by: HOD	
Req'd/recommended PPE: Safety helmet, Safety shoe, Safety goggles, Safety Belt & Asbestos Gloves.					
<b>Sequence of Basic Job Steps</b>	<b>Potential Hazards</b>	<b>Recommended Safe Job Procedure</b>	<b>What Could Go Wrong</b>	<b>Corrective Action</b>	



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Position of the chain blocks for removing the Torque support nitrogen cylinder housing and putting the same	Leg and hand injury	Use correct lifting Tackles Teflon/wire rope slings	Chain block may slip and fall while removing and inserting the belt	1. Check the condition of the ropes and slings  2. Check the correct size of slings to operate/actual capacity and ensure certificate of clearance.	
Lock the pressure frame by welding the angle by using hydraulic jack	Leg injury	Use proper lifting tools to lift the material	Material may slip during tag welding	Ensure the person Lifting the material as per lifting procedure	
Removing the flange bolt of nitrogen cylinder housing and flange bolt and flange of torque support pin and cap.	Leg and hand injury.	Use proper standard tool for removing the bolt.	Material may slip	Ensure the person using proper PPE	



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S L N O	Activity	Tag / Name of the Equipment									
		Isolation Type									
		Electrical Energy					Other Energy				
1	Cement Mill Inspection	Name and Tag for the Equipment	561MD 2 / Mill Main Motor	561SR1 / Classifier	561FN1 / Mill Fan	561AD2/ Auxiliary drive Chain not to be connected	Rollers Position Landed & Pressure Zero at Panel				
		Name and Tag for the Equipment	561RA 1 / Mill feed RAL	561FN4 / Booster fan	561SD2 / Hot Air Shut-off Damper(In closed condition only)						
		Name and Tag for the Equipment	K21 RA4								