



MECHANICAL

Issue No. 01	Rev. No: 02	Effective Date: 17.10.2017	SOP/MEC/003
Issued By: M.R		Approved By:	
SOP-JSA for TORQUE SUPPORT REPLACEMENT			

SOP FOR VRM TORQUE SUPPORT REPLACEMENT

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

Responsibility : Fitter

Accountability : Section Engineer.

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

Mitigating Measures

Falling of Men

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
 - f) Hydraulic tension unit



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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 nitrogen cylinder of torque support by loosening the flange bolt

6 Place one more chain block opposite side to remove the torque support pin with cap by placing the two eye bolts on flange of torque support pin

7 Remove the flange bolt and flange of torque support pin with cap

8 Check the condition of pin and cap

9 Change the damaged pin/cap (cap has to be removed from pin by rotating the cap)

10 Put the new torque support pin with cap by using chain block

11 put the nitrogen cylinder of the torque support pin 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:

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

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Job Safety Analysis	Job: Torque support removal	Date: 15 – 06 - 2012	Analysis by: Section Engineer	Reviewed by: Section Head
Title of employee doing job: Fitter	Supervisor: Section Engineer	Department: Mechanical	Section: Raw Mill	Approved by: HOD

Req'd/recommended PPE: Safety helmet, Safety shoe, Safety goggles, Safety Belt & Asbestos Gloves.

Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
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	Raw Mill Inspection	Name and Tag for the Equipment	361MD 2 MILL MAIN DRIVE MOTOR	361SR1 CLASSIFIER	361FN3 RAW MILL FAN	361AD1 AUXILIARY DRIVE CHAIN TO BE DE-LINKED	Rollers Position Landed & Pressure Zero at Panel				
		Name and Tag for the Equipment	331BC 1 MILL FEED BELT	371FN3 BOOSTER FAN	361LD4 HOT GAS INLET LOUVER DAMPER (IN CLOSED CONDITION)						
		Name and Tag for the Equipment	361SD 2 HOT GAS INLET SHUT-OFF DAMPER (IN CLOSED CONDITION)	361LD5 RAW MILL FAN OUTLET LOUVER DAMPER (IN CLOSED CONDITION)	Triple flap gate						



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