**SOP FOR**

1. **PURPOSE: Safe V belt replacement for optimum performance**
2. **SCOPE:** **Blast furnace Accessories**.
3. **RESPONSIBILITY: Shift Engineer & workmen on job.**
4. **PROCEDURE: V BELT REPLACEMENT JOB .**

**Work No.1  : V-Belts replacement and Belts tensioning .**

### Aspect- Impact

|  |  |
| --- | --- |
| Scrap generation | Resource Depletion |
| Oil Spillage | Land contamination |
| Oil traced waste generation | Land contamination & Resource Depletion |

Hazards identified

**Mechanical hazard**    -  Trapping of Hand / fingers in between V-belt and pulley

                                     Cut injury from Entanglement , sharp edges

                                      Fall of material, equipment, hammer, tools, slinged items, bolts

                                    Fall of person from platform

                                     Trapping between two objects

                                    Hazards in material handling.

                                   Burn injury during gas cutting and welding

                                   Trapping of person /equipment

                                   Fall of object on person

**Physical Hazard**        - Noise, pressure, temperature

                                 - Fall of chips/ in eyes / ear / body

                                 - Slipping due to accumulation of graphite/ poor house      keeping

                                 -  Back Pain due to sudden or heavy load like motor/ heavy pulley etc

**Human behavior**      -  workmen nature, alcoholism, casual approach & non usage   of correct tools & PPE, back pain, horse play

**Electrical Hazard**      - Electric shock in welding / equipment

**Chemical hazard**- Fire

                                     - Fall of lime powder in eyes, nose, mouth

Work No.1 : V-Belts replacement /Belts tensioning

1. Take clearance from concerned production engineer for changing/tightening the V belt

2. Take electrical shutdown of equipment.

3. work permit to be taken only for Gas area .

3. Remove coupling guard by loosening the bolts. Use good manila rope of ¾’’ to hold heavy guard or use a chain pulley block to lower. Place the guard in a location which will not obstruct the job.

4.Inspect the V belt for its tension with tension meter or by mild hammering on

    belt ( between pulleys).

5. Move the motor forward by loosening the tensioning screw of motor base frame / adjustable base to release the tension. Ensure V belt is completely tension free.

6. Fix new V belt (all to be replaced at a time) and tighten the tensioning arrangement.

7. Check the deflection (tension )~~with tension meter~~ by thumb pressing and mild hammering.

Deflection

Force

Span length

Deflection should be 1/64” per inch of span.

8. Check alignment with piano wire or nylon rope.

9. Fix back the belt & motor guard & clear electrical shutdown. Take trial & give   clearance after closing the workpermit.

DO?s

·         Wear all PPE?S while working.

·         Ensure that proper housekeeping is done as per WI/MAINT/91.

·         Release the tension of V-belt completely

·         Loosen the foundation bolts of motor fully.

·         Loosen the V-belt tensioner bolts/ jack bolt on motor foundation fully.

DON?Ts

·         Guide the V-belt on pulley by hand.

·         Try to put the V-belts without releasing V-belt tension, without loosening foundation bolts of motor, and bolts of V-belt tensioner on foundation frame of motor.

**Amendement Record**

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| --- | --- | --- | --- |
| **Date** | **Manual Section Ref. & Para** | **Brief details of Revision** | **New Rev.** |
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| --- | --- | --- |
| **Prepared By:**  Digital head VAB | **Reviewed & Issued By:**  Management Representative | **Approved By:**  Mechanical and Asset Integrity Head VAB |
| **Signature:** | **Signature:** | **Signature:** |
| **Review Date: 15.07.2023** | **Review Date: 15.07.2023** | **Review Date: 15.07.2023** |