**ACTIVITY: V-BELT REPLACEMENT**

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Objective : - Safe replacement of V–belts on V-belt drives

Scope : - All drives with V belt

Ref. : -

Responsibility: Engineer In charge & Maintenance / contract workmen on job

PPE s to be used: safety Helmet, Safety shoes, hand gloves and safety goggle, dust mask.

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

**Aspect- Impact**

Scrap generation Resource Depletion

Oil Spillage Land contamination

Oil traced waste Land contamination & Resource generation Depletion

**Hazards identified**

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

Cut injury from Entanglement , sharp edges.

Trapping in between earth moving machineries like wheel loaders, truck, back hoe, etc

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

Fall of person from platform/ height

Trapping between two objects

Hazards in material handling.

Burn injury during gas cutting and welding

Trapping of person inequipment

Fall of object on person

Impingement of fingers, hand while alignment of pump, motor,, bearing fixing/ adjustment, impeller fixing, foundation bolts tightening.

**Physical Hazard**

- Heat, 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, use of mobile phone at worksite.

**Electrical Hazard**

-Electric shock in welding / equipment / electrical cable

**Chemical hazard**

- Fire

* Fall of lime powder in eyes, nose, mouth.
* Gas poisoning

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

1. Take clearance from concerned production engineer/dept for changing the V belt
2. Take electrical shutdown of equipment using LOTO.
3. Remove coupling guard by loosening the bolts. Use good manila rope of ¾’’ to hold heavy guard or use a chain pulley block (2t/3t/5t) to lift and lower guard. Place the guard in a location which will not obstruct the job.

4.Inspect the V belt for its tension with by mild hammering on belt ( between pulleys). Also with thumb tension of belt can be checked by pressing one belt at centre between two pulleys and the belt should get pressed by ½ inch.

5.

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

2. Check alignment with piano wire or nylon rope/wire starnd.
3. Fix back the belt & motor guard & clear electrical shutdown. Take trial & give clearance.
4. In case there is no tension release arrangement for motor, loosen the motor foundation bolts for releasing the tension on V belt.

DO?s

* Wear all PPE’S while working.
* Ensure that proper housekeeping is done as per VL/IMS/PID1/MECH/WI/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:**  Area Engineer | **Reviewed & Issued By:**  Management Representative | **Approved By:**  Mechanical Head |
| **Signature** | **Signature:** | **Signature:** |
| **Review Date: 12.12.22** | **Review Date: 12.12.22** | **Review Date: 12.12.22** |