**WORK INSTRUCTIONS FOR BLEEDER VALVE OPERATION**

**Criteria: Opening and Closing of bleeder valve**

**Responsibility:** Furnace In charge & Control Room Engineer

**Identified Hazards:**

**Mechanical Hazards:**

1. Mech Falling /impact
2. BF Gas poisoning
3. Nonuse of PPE
4. Improper house keeping
5. Inadequate local lighting
6. Human error, Human behavior

**Aspect for the Activity :**

* Use of electrical energy
* Gas leakage

**Electric winch operation**

To open electrically:

1. Ensure that Jaw clutch lever is always in engage position with drum assembly.
2. Ensure Brake assembly should always be in release condition.
3. Ensure Pinion handle for manual winch drive should be in dis-engaged position. & Properly locked with pin provided for locking.
4. Ensure both the winch manual drive handles are not kept engaged & put on the hooks provided on the body of winch
5. Ensure the power supply available on starter
6. For opening bleeder press the hoisting button, operate till the mark on wire rope comes near the pulley or till open limit switch is operated.
7. Once the bleeder is open tighten the brake assembly manually.
8. Bleeder to be locked by ratchet/pawl manual locking.
9. Disengage the ratchet/pawl manual locking before closing bleeder using brake assembly
10. Dis-engage the Jaw clutch to make winch ready to close the bleeder using brake assembly.
11. Always use PPE’s before starting the job.

.**Do Not:**

* + Operate the winch with manual drive handles in position
  + Operate winch with pinion engaged
  + Close bleeder with Jaw clutch engaged.
  + Try to electrically close the bleeder with brake assembly in tight position.

**To open manually:**

1. Dis-engage Jaw clutch fully
2. Engage pinion lever for manual drive fully & lock the lever with pin provided, ensure with naked eyes.
3. Fix two driving handles both the sides if required or can be operated by putting only one handle from outside & hand tighten the bolt by hand.
4. Engage ratchet / pawl manual locking arrangement, to ensure handle does not operate in other direction if hand is removed.
5. For opening of the bleeder rotate the handle till the mark on the wire rope comes near the pulley minimum three persons should be involved in the activity.
6. Once bleeder is opened as required, tighten the brake assembly
7. Be careful while manual operation.

**Do Not:**

* + Close the bleeder with handles in position
  + Open the bleeder with Jaw clutch engaged.
  + Over travel of the winch

**To close:**

1. Ensure Jaw clutch is dis-engaged while closing the bleeder.
2. Ensure pinion is disengaged while closing the bleeder and ensure lock pin is put for the locking lever. Examine visually to ensure.
3. Dis-engage ratchet / pawl,
4. Remove both driving handles.
5. Push the electrical push button in OFF position.
6. Loosen the brake assembly, by rotating the brake handle in anti-clockwise direction.
7. Once it is closed, engage Jaw clutch to open the winch electrically.

**Don’t:**

Close with Jaw clutch in engaged condition.

* Close with Pinion in engaged condition.
* Close with driving handles on the winch.
* Close with stop button.
* Nobody should in way of the rope while performing this activity.

**Procedure for working on bleeders**

**Responsibility: Shift In-charge**

**Identified Hazards:**

1 Mech falling /impact

2. Fall of material from height

1. Unauthorized operation or repair of any equipment is a punishable offence.
2. Ensure that the work permit has taken by the concerned for working on bleeders.
3. Ensure that EV- 1 is kept opened and then disabled by removing the fuses.
4. Ensure furnace top fire to be uniformly lit over the cross section. EV1 is kept open, before signing the work permit.
5. No Clearance should be given for working on bells, equalization valves, when the work on bleeder is in progress.
6. Stop the cleaning job in dust catcher, during bleeder trials or if one bleeder has to be kept close.
7. As soon as bleeder work is completed work permit should be cleared, so that other jobs can be started.
8. Blowpipe can’t be removed when work is in progress, on bleeder.
9. While removing & fixing the tuyeres or tuyere coolers, jobs on bleeder should be kept suspended & people should be removed from bleeder platform.

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| **Date: 15.07.2022** | **Date: 15.07.2022** | **Date: 15.07.2022** |

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