JSW SCPL, BAWAL

STANDARD MAINTENANCE PROCEDURE

Removing and replacing the position transducer

STANDARD OPERATING PROCEDURE

SOP Title:	**ACB/VCB Maintenance**	**Date of Revision**	**3rd December, 2024**
Document Issue Date	**15th March, 2023**	**Revision No**	**02**

Document Issue and Revision History

Date	Revision Number	Change Summary
1ST February, 2023	01	Format Standardization
3rd December, 2024	02	JSW SOP/SMP Format Standardization

Prepared by	Ms. Asit Loeiya
Signature	
Position	Deputy Manager

Authorised by	Mr. Mohit Jain
Signature	
Position	Manager

Title:	ACB/VCB Maintenance	
Linked to Risk Assessment:	Yes	Location: Plant

1.PURPOSE:

To define the standard process for safely and effectively **removing and replacing the position transducer** on a hydraulic cylinder, ensuring continued accuracy in the hydraulic system's operation

2.SCOPE:

This SOP applies to all personnel who perform maintenance or replacement of the **position transducer** installed on hydraulic cylinders in industrial and operational settings. It includes the procedures for isolation, removal, installation of a new transducer, and post-installation testing.

4.RESPONSIBILITY:

The following employees are responsible to implement this procedure while working on **removing and replacing the position transducer**-

- Section In-charge
- Shift In charge/Supervisor

Reference

- 6Hi-mill Electrical manual

Definitions

4.PPE REQUIREMENT

PPE: Mandatory	PPE:	Special PPE:
Gloves	Safety Helmet Safety Shoes	Reflective Jacket

5.EMERGENCY ACTION:

IN EMERGENCY DAIL NUMBERS	
Security: 1599	**Ambulance: 1515**
Hospital: 1555	**Safety : 1546**
Telephone operator:	

Emergency Switch Location	Intercom Number	Emergency Response Team
Main Office		
CCL		
CGL-1		
Sub Station		
Mill & Pickling		
2 CGL-2 / Finishing		
RLNG GAIL Station		
ETP /ARP		

6.OH&S AND ENVIRONMENT HAZARDS	
OH&S Hazards:	**1. CONTROL MEASURES IN OPERATION:**
The most common hazards are: • Falls on Same Level • Slippery surface • Exposure to respiratory system • Electric Shock	**The control measures in Operation are:** • Wear arc flash-rated PPE (face shields, suits, gloves). • Ensure proper training for personnel in handling electrical hazards. • Perform regular maintenance checks to identify faulty equipment. • Use proper insulation and grounding.
Environment Hazards:	**Control Measures in Operation:**
• Land contamination	• **removing and replacing the position transducer**

6.PROCEDURE:

- Turn off power to the hydraulic system to ensure the system is completely de-energized.
- Use Lockout/Tagout (LOTO) procedures to ensure the system cannot be inadvertently activated during PT change.
- Release any stored hydraulic pressure from the hydraulic valve to avoid potential hazards when removing the position transducer.
- Verify that all hydraulic lines are depressurized, and that the system is fully isolated from both power and pressure.
- Remove all pipelines from the cylinder to ensure safe access to the position transducer.
- Lift the cylinder using a chain pulley and securely hold it on a stand to ensure stability during maintenance.
- Remove the fuse of the position transducer from the panel to disconnect the power supply.
- Carefully disconnect the wiring or electrical connectors from the position transducer, ensuring no damage to the wiring.
- Remove the position transducer from the cylinder and install the new position transducer, ensuring proper alignment and secure attachment.
- Reconnect the electrical wiring or connectors to the new position transducer, ensuring all connections are secure and free of corrosion.
- Fix the cylinder back to its correct position, ensuring it is securely mounted.
- Reconnect all hose pipes to the hydraulic cylinder, ensuring all connections are tight and leak-free.
- Restore power to the hydraulic system and remove Lockout/Tagout (LOTO) devices.
- Restore the power to the position transducer by reinserting the fuses.

- Perform a final operational check of the hydraulic system, ensuring that the cylinder operation is correct and that the position transducer is providing accurate feedback to the control system.

7.ENVIRONMENTAL INSTRUCTIONS / CONSIDERATIONS

Prevention of waste contamination of ground and water courses/ Arrest Spillages:

- Any **damaged or worn components**, such as contacts, seals, or insulating materials, should be properly disposed of in accordance with local environmental regulations.
- **Recyclable materials**, such as metals or plastics, should be separated from hazardous waste for recycling.
- **Avoid spillage** of these substances during maintenance and use appropriate **spill containment procedures** if needed.

Dealing with waste:

- When cleaning finishes, always ensure that wastes are not left on floor but cleaned up immediately with water if it is reusable and not left for someone to clean.
- Always leave the area clean after work completion.

8.DOCUMENTATION & ENCLOSURES:

- No enclosures

In the event of an emergency such as, you feel unwell; proceed to a safe area and Immediately contact/report to your supervisor.

9.SAFETY RULE REMINDERS

The following rules must always be adhered to when carrying out these tasks:

1. **ALWAYS** Maintain high standard of housekeeping at workplaces.
2. **ALWAYS** ensure you are always wearing the full appropriate Personal Protective Equipment that are required for the activity.
3. **ALWAYS** use 3 points of contact when climbing into or out of any piece of plant equipment / ladders.
4. **ALWAYS** stick to the designated walkways to and from work area.
5. **Never** work or travel below suspended load.

UNUSUAL CIRCUMSTANCES OR DEVIATION FROM NORMAL ROUTINE DETAILED IN THIS WORK INSTRUCTION MAY REQUIRE AN ALTERNATIVE METHOD OF WORK TO BE CONSIDERED AND A NEW RISK OR EXISTING RISK ASSESSMENT AMENDED TO REFLECT THE CHANGE. THE ASSESSMENT MAY BE A FORMAL WRITTEN ASSESSMENT AS PER THE PERMIT TO WORK REQUIREMENT. IF IN DOUBT REGARDING THE ABOVE CONTACT YOUR SUPERVISOR FOR FURTHER GUIDANCE.

Prepared By:	**Approved By:**
Date:	Date:

Record of significant changes:

Note of Significant change	Approved by	Date
Initial Release	**HOD**	

TRAINING ATTENDANCE SHEET / RECORD:

SR	NAME	DESIGNATION	SIGN
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TRAINER :……
DATE & TIME :……..

PLEASE NOTE: By signing this form, you sign to agree that you understand the method of work prescribed in this document and agree to always adhere. You are aware about the risk & safe work instructions/procedures for doing this type of activity, also explained to you in your local language. **Do not sign the form if you are not sure about the risks & any aspect of the SOP**– Ask your Supervisor for additional information.