



**DALMIA CEMENT (B) LIMITED – CEMENT PLANT
ARIYALUR
INSTRUMENTATION MANUAL**

Issue No. 02	Rev. No: 00	Effective Date: 01.11.2019	SOP/INST/008
Issued By: M.R		Approved By: HOD - INSTRUMENTATION	
SOP for checking of Belt conveyor safety devices.			

Scope: To check the Belt conveyor safety devices.

Responsibility: Instrumentation technician.

Accountability: Instrumentation - Section Engineer.

PPE:

- Safety helmet
- Safety shoe
- Mask
- Goggles
- Insulated Hand gloves
- Safety belt

Tools required:

- Multimeter
- Tester
- Insulated Screw Driver
- Hand Blower

Hazard Analysis:

Risks associated

Electrocution

Mitigating Measures

Use Insulated hand glove



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Procedure:

A) Zero Speed Switch

- 1 Use proper PPEs
- 2 Carry all the necessary tools in a tool bag.
- 3 If the height is more than 1.5meters, use safety belt.
- 4 Switch off the Control MCB in the Local push button station.
- 5 Clean the controller and the sensor with brush.
- 6 Ensure sufficient gap between proxy & target to get the pulses.
- 7 Switch ON the MCB in the Local push button station.
- 8 Check the voltage by using multimeter with insulated probes.
- 9 Start the belt conveyor & ensure the functioning of Zero speed switch.

B) Pull Chord Switch

1. Use proper PPEs
2. Carry all the necessary tools in a tool bag.
3. If the height is more than 1.5 meters, use safety belt.
4. Isolate the power supply by removing the fuse in the Local push button station/Pull chord/Belts way signal interfacing JB.
5. Open the pull cord cover with proper tools.
6. Blow the instrument by wearing dust mask and goggles.



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7. Ensure the PCS mechanism assembly mounting screw tightness and check the operation of pull chord by operating manually.
8. Check the limit switch contact of pull chord switch with MultiMeter.
9. ON Power supply by inserting the fuse in the Local push button station/Pull chord/Belts way signal interfacing JB.
10. Ensure the Operation of the Pull chord

C) Belt Sway Switch

1. Use proper PPEs
2. Carry all the necessary tools in a tool bag.
3. If the height is more than 1.5meters, use safety belt.
4. Isolate the power supply by removing the fuse in the Local push button station/Pull chord/Belts way signal interfacing JB.
5. Open the belts way switch cover with proper tools.
6. Blowering the instrument by wearing dust mask and goggles.
7. Ensure the BSS mechanism assembly mounting screw tightness and check the operation of Belts way by operating manually.
8. Check the limit switch contact of belts sway switch with multimeter.
9. ON Power supply by connect the fuse in the Local push button station/Pull chord/Belts way signal interfacing JB.
- 10 . Check the voltage by using multimeter with insulated probes.



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11. Ensure the Operation of the Belt Sway Switch.

Emergency / Emergency Shut OFF:

1. If any unconsciousness from electrocution is there, give First aid and inform to the Safety department or Call Emergency number 3108/9865152222/9750963761.

Records/Annexure:

1. JSA as enclosed below.

JOB SAFETY ANALYSIS:(JSA)

Job Safety Analysis	Job: CHECKING OF BELT CONVEYOR SAFETY SWITCHES	Date:20.09.2017	Analysis by:	Reviewed by:
Title of employee doing job: INST - TECHNICIAN	Supervisor: SECTION ENGINEER	Department: INSTRUMENTATION	Section: CRUSHER & STACKER RECLAIMER,RAWMILL,COALMILL,PYRO,CEMENT MILL &PACKING PLANT	Approved by:
Req'd/recommended PPE: SAFETY HELMET, SAFETY SHOES, GOGGLES, DUST MASK, HAND				



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GLOVES

Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
A)ZERO SPEED CHECKING				
1.SWITCH OFF THE CONTROL MCB IN THE LOCAL PUSH BUTTON STATION	LIVE SUPPLY WILL BE AVAILABLE INSIDE THE LPB TERMINAL BLOCKS.	ENSURE THE SUPPLY IS SWITCHED OFF.	RESULT IN ELECTROCUTION	USE INSULATED HAND GLOVES
2.OPEN THE ZERO SPEED CONTROLLER BOX & CLEAN THE CONTROLLER & SENSOR WITH BRUSH.	DUST MAY COME OUT OF THE JUNCTION BOX	WEAR GOOGLES,HAND GLOVES & NOSE MASK BEFORE BLOWERING	COUGHING,EYE IRRITATION MAY OCCUR	USE GOOGLES, DUST MASK AND HAND GLOVES
3. SWITCH ON THE CONTROL MCB IN THE LOCAL PUSH BUTTON STATION & CHECK THE VOLTAGES BY USING MULTIMETER WITH INSULATED	LIVE SUPPLY IS EXPOSED AT THE MEASURING POINT NEAR THE PROBE.	ENSURE THE PROBE IS PROPERLY INSULATED	RESULT IN ELECTROCUTION.	USE INSULATED HAND GLOVES



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PROBES				
B&C)BELT SWAY / PULL CHORD SWITCH CHECKING 1.SWITCH OFF THE CONTROL MCB IN THE LOCAL PUSH BUTTON STATION 2. OPEN THE BELT SWAY/PULL CHORDSWITCH COVER & CLEAN LIMIT SWITCH WITH BRUSH & TIGHTEN THE TERMINAL BLOCKS. 3. SWITCH ON THE CONTROL MCB IN THE LOCAL PUSH BUTTON STATION & CHECK THE VOLTAGES BY USING MULTIMETER WITH INSULATED	LIVE SUPPLY WILL BE AVAILABLE INSIDE THE LPB TERMINAL BLOCKS.	ENSURE THE SUPPLY IS SWITCHED OFF.	RESULT IN ELECTROCUTION	USE INSULATED HAND GLOVES
	DUST MAY COME OUT OF THE JUNCTION BOX	WEAR GOOGLES,HAND GLOVES & NOSE MASK BEFORE BLOWERING	COUGHING, EYE IRRITATION MAY OCCUR	USE GOOGLES, DUST MASK AND HAND GLOVES
	LIVE SUPPLY IS EXPOSED AT THE MEASURING POINT NEAR THE PROBE	ENSURE THE PROBE IS PROPERLY INSULATED	RESULT IN ELECTROCUTION	USE INSULATED HAND GLOVES



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PROBES.