



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

Issue No. 02	Rev. No: 00	Effective Date: 01.11.2019	SOP/INST/014
Issued By: M.R		Approved By: HOD - INSTRUMENTATION	
SOP for Checking of Pneumatic Diverting Gate			

Scope: To check the Diverting gate.

Responsibility: Instrumentation technician.

Accountability: Instrumentation - Section Engineer.

PPE:

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

Tools required:

- Spanner sets
- Multimeter
- Screw driver

Hazard Analysis:

Risks associated

Mitigating Measures

Sudden movement of piston

Remove from the direction opposite to the Piston moving direction

Electrocution

Use of insulated hand gloves



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Procedure:

- 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 Ensure the signal interlocks and block the interlock if necessary.
- 5 Ensure the air pressure to the incoming of solenoid valve
- 6 Open the junction box and limit switches box with proper tools.
- 7 Bowering of junction box and limit switch box by wearing dust mask and goggles.
- 8 Manually operate the solenoid valve and check/observe the operation.
- 9 Check the limit switch contacts by using multi meter with insulated probes.
- 10 Incase any problem with the solenoid valve or Limit switches, close the incoming air line to the solenoid valve through manual valve and once again manually operate the solenoid valve for draining the compressor air from cylinder fully.
- 11 Change the faulty solenoid valve or Limit switch.
- 12 Close the junction box and limit switches box with proper tools.
- 13 Open the incoming airline of the solenoid valve slowly and observe any leakages through solenoid valves.
- 14 Check the diverting gate by manually operating it from the solenoid valve.
- 15 Ensure its Operation.
- 16 Ensure solenoid valve air filter should be clean.
- 17 Ensure solenoid valve operation from CCR (REMOTE MODE) after maintenance.
- 18 Confirm the signal in CCR.
- 19 Retrieve the blocked condition.
- 20 Give the clearance to operation.



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JOB SAFETY ANALYSIS :(JSA)

Job Safety Analysis	Job: CHECKING OF DIVERTING GATE	Date: 20.09.2017	Analysis by: Section Engineer	Reviewed by: Section Head
Title of employee doing job: INST - TECHNICIAN	Supervisor: SECTION ENGINEER	Department: INSTRUMENTATION	Section: All Section	Approved by: HOD
Req'd/recommended PPE: SAFETY HELMET, SAFETY SHOES, GOGGLES, DUST MASK, HAND GLOVES				
Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
1.OPEN THE JUNCTION BOX & BLOWER THE TERMIALAL BLOCKS & LIMIT SWITCHES	DUST MAY COME OUT OF THE JUNCTION BOX & LIMIT SWITCHES	WEAR GOOGLES, HAND GLOVES & NOSE MASK BEFORE BLOWERING	COUGHING, EYE IRRITATION MAY OCCUR	USE GOOGLES, DUST MASK AND HAND GLOVES
2. CLOSE THE ICOMING AIR LINE OF THE DIVERTING GATE	AFTER AIRLINE CLOSE, CHANCES OF DIVERTER OPERATION.	OPERATE THE SOLENOID VALVE MANUALLY ONCE FOR DRAINING THE COMPRESSOR AIR AND ISOLATE THE SOLENOID COIL SUPPLY.	IJNURY MAY OCCUR	ENSURE THE ISOLATION AND USE PROPER PPE'S AND STAND IN DIRECTION OPPOSITE TO THE PISTON MOVEMENT
3.CHECK THE LIMIT SWITCHES & SOLENOID COIL BY USING MULTIMETER	LIVE SUPPLY IS EXPOSED AT THE MEASURING POINT THROUGH THE PROBE.	ENSURE THE PROBE IS PROPERPLY INSULATED	RESULT IN ELECTOCUTION	USE INSULATED HAND GLOVES
4. OPEN THE INCOMING AIR LINE TO THE SOLENOID VALVE & CHECK FOR ITS OPERATION.	SUDDEN MOVEMENT OF PISTON ROD FROM THE CYLINDER DURING MANAUL /CCR OPERATION	KEEP THE SOLENOID VALVE IN AUO MODE AND STAND BESIDE THE DIVERTER FOR SAFE CHECKING	BODY INJURY MAY OCCUR	USE PROPER PPE'S AND STAND AWAY FROM THE PISTON MOVEMENT