



STANDARD OPERATING PROCEDURE

Maintenance and Inspection of Electrically Operated Solenoid Valve

Document ID	SOP/SIN/029
Version	00
Effective Date	
Validity	

Details	Prepared by	Reviewed by	Approved by
Name	Umesh Patel	Jitendra Behera	Jitendra Sinha
Designation	Asst. Mgr. Instrument	Dy-Mgr. Instrument	DGM- Engineering
Signature with Date			

Crop Protection Chemicals
Coromandel International Limited

Check this is the latest version of the document before use


<div>Coromandel</div> 	Integrated Management System Procedure				
	Document type	Standard Operating Procedure			
	Document No.	SOP/SIN/029	Revision No.	00	Page 2 of 5
	Version No.	00	Revision Date	-	
	Department	Instrumentation			
Title	Maintenance and Inspection of Electrically Operated Solenoid Valve				


Table of Contents

1.0	PURPOSE	3
2.0	SCOPE.....	3
3.0	RESPONSIBILITY.....	3
3.1	Asst. Manager/Sr. Officer Instrument and instrument technician	3
3.2	Area owner (Production)	3
3.3	Section Head Instrument	3
4.0	DEFINITION	3
5.0	PROCEDURE	3
5.1	Frequency: Six Months.	3
5.2	Health & safety:.....	3
5.3	Tools Requirement:	4
5.4	Flow of activities	4
6.0	FORMS AND RECORDS.....	4
7.0	ABBREVIATIONS	4
8.0	REFERENCES	5
9.0	REVISION HISTORY.....	5

Prepared by

Reviewed by

Approved by

<div>Coromandel</div> 	Integrated Management System Procedure				
	Document type	Standard Operating Procedure			
	Document No.	SOP/SIN/029	Revision No.	00	Page 3 of 5
	Version No.	00	Revision Date	-	
	Department	Instrumentation			
Title	Maintenance and Inspection of Electrically Operated Solenoid Valve				

1.0 PURPOSE

The purpose of this procedures is to ensure that preventive maintenance and physical Inspection internally/externally of an electrically operated solenoid valve (SOV) is conducted safely and effectively.

2.0 SCOPE

This procedure is applicable for the Integrity check, servicing, preventive maintenance, inspection, and record keeping of all electrically operated solenoid valve in Coromandel International Ltd. Sarigam unit.

3.0 RESPONSIBILITY

3.1 Asst. Manager/Sr. Officer Instrument and instrument technician

- Responsible for
 - Timely doing the preventive maintenance and inspection of electrically operated SOV safely as per given frequency.
 - Ensure the checklist properly filled with co-ordination of process person.

3.2 Area owner (Production)

- Responsible for
 - Give process clearance to do the preventive maintenance and inspection of particular SOV (as per scheduled tag name) safely.
 - Ensure the job is doing as per sop and verify the checklist of SOV.

3.3 Section Head Instrument

- Accountable for
 - Reviewing the above job and if any deviation found then correct it within minimum time period.

4.0 DEFINITION

Solenoid Valve(SOV): A solenoid valve is an electromechanical device in which the solenoid uses an electric current to generate a magnetic field and thereby operate a mechanism which regulates the opening of fluid flow in a valve.

5.0 PROCEDURE

5.1 Frequency: Six Months.

5.2 Health & safety:

The most significant health and safety risk during Physical inspection is Electrical shock or injury by high pressure air/Nitrogen. Before repairing a SOV, always disconnect the power source and depressurize the system. In addition, the following personal protective equipment (PPE) should be worn during maintenance activities:


Safety Shoes.

Helmet.

Prepared by

Reviewed by

Approved by

<div>Coromandel</div> 	Integrated Management System Procedure				
	Document type	Standard Operating Procedure			
	Document No.	SOP/SIN/029	Revision No.	00	Page 4 of 5
	Version No.	00	Revision Date	-	
	Department	Instrumentation			
Title	Maintenance and Inspection of Electrically Operated Solenoid Valve				

Safety goggle.

Work Gloves.

Organic Mask.

Pressure suit if required.

Special PPE which would be recommended by process person.

5.3 Tools Requirement:

Required spanners

Multimeter

Required Screwdrivers and other required tools

Required spares like gaskets, Diaphragm, spring and O-rings etc.

5.4 Flow of activities

- Take cold work permit and pipe line opening permit from the shift/area in-charge to inspect/maintenance of SOV.
- Switch off the power supply to the timer panel and depressurized the process line.
- Open the diaphragm casing by using proper tools.
- Check the diaphragm condition, whether it rupture or not.
- If found the diaphragm ruptured, then replace it immediately. (In Mancozeb plant, if found one diaphragm ruptured then replace all diaphragm at a time.)
- If found ok or replace the diaphragm, then refit the diaphragm casing and tighten the bolts properly.
- Check the coil status by checking the resistance according to coil rating by using multimeter.
- Check the cable gland status whether it is proper or not. If it not proper then correct it immediately.
- If there is any defects found in valve body, repair it or replace it.
- Check the plunger and spring, whether it is ok or not. If it is not ok or spring tension is weak then replace it.
- After inspection or job completion, power on the timer panel and maintain the 5's of that area.
- Filled up the checklist (SGM/IND/F023-00) and signed including all witness.
- Hand over the SOV to the shift/area in-charge to take it in operation.
- Close all the permits.
- Note the job in shift record book and attach the signed checklist in preventive record file.

6.0 FORMS AND RECORDS

SGM/IND/F023-00 for preventive maintenance or inspection checkpoints of SOV

7.0 ABBREVIATIONS


SOV : Solenoid valve

PPE : Personal Protective Equipment

Prepared by

Reviewed by

Approved by

<div>Coromandel</div> 	Integrated Management System Procedure				
	Document type	Standard Operating Procedure			
	Document No.	SOP/SIN/029	Revision No.	00	Page 5 of 5
	Version No.	00	Revision Date	-	
	Department	Instrumentation			
Title	Maintenance and Inspection of Electrically Operated Solenoid Valve				

Inst : Instrumentation

e.g. : Example

SOP : Standard Operating Procedure

Dept : Department

8.0 REFERENCES

IM No. : IM/V/0021, Rev. 1, Rotex Article for solenoid valve installation and maintenance guide.

9.0 REVISION HISTORY

Date	Ver./Rev. no.	Reason for Revision	Author	Designation
	00 / 00	New SOP developed as per the updated SOP format	Umesh Patel	Asst. Mgr. Instrumentation

Prepared by

Reviewed by

Approved by