

TECHNICAL BULLETIN

TB-0192

ILJIN LBS semaphore cover defect

Purpose

The purpose of this technical bulletin is to inform staff and/or contractors of an Iljin LBS defect occurring in coastal regions of our franchise area and the associated actions to remediate this issue.

Background

There have been two cases where, during switching operations, the semaphore cover has corroded and the spot welds have failed. Subsequently, the semaphore covers have fallen to the ground.

The following figures show a normal semaphore cover still attached and a corroded cover for comparison:



Figure 1 – Normal Iljin LBS condition (no defect)



Figure 2 – Semaphore cover corroded off

When this defect occurs, the switch is still safe to operate as the low gas mechanical lockout has not been activated. Another issue that has been observed is that the red low gas indicator sticker may have also fallen off the low gas mechanical lockout.

Contact: Andrew Tang

Phone: 9853 6714

Date: 15 June 2015

Authorised by: Jude Perera, Manager Primary Systems

51 Huntingwood Drive, Huntingwood NSW 2148

Telephone: 131 718 Fax: (02) 9853 6000

Postal Address: PO Box 811 Seven Hills NSW 1730.

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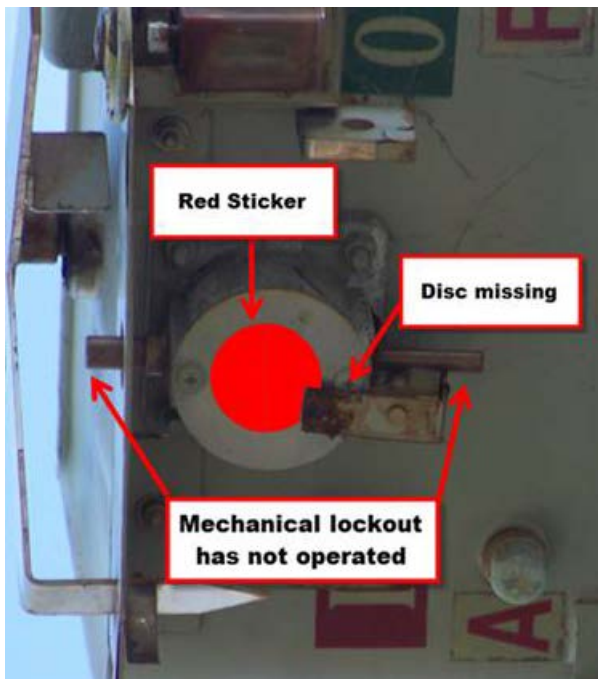


Figure 3 – Cover missing, showing low gas indication sticker (still operational)

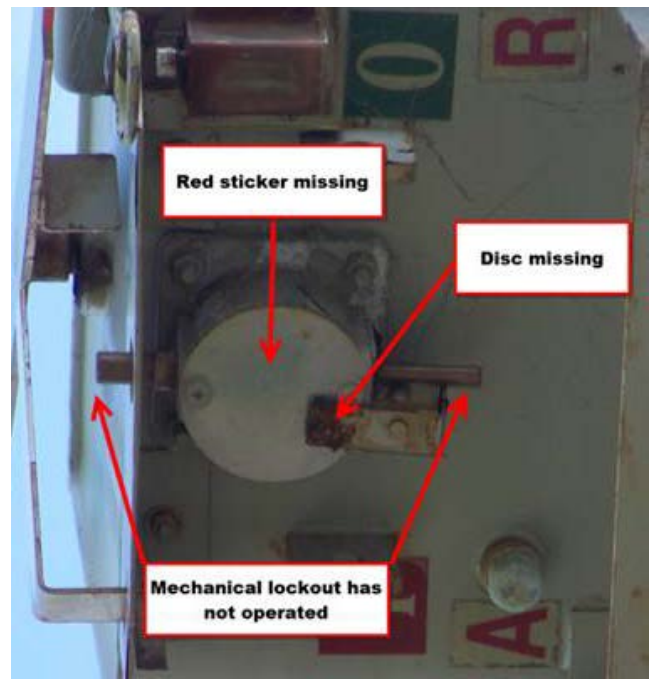


Figure 4 – Cover missing, red low gas indication sticker missing (still operational)

Actions

The following actions have been made in order to address this defect:

- The manufacturer (AK Power) was notified of the defective semaphore cover design and was asked to provide a solution.
- The manufacturer designed a retrofit kit to be installed on the existing defective semaphore cover brackets.
- The retrofit kits are available through stores with the stock code: **001565985**

The defect will be added to the MMI0001 OLI/GLI defect handbook during the next scheduled review with a 6 month defect priority.

If any Ijin LBS are found to have a missing semaphore cover a defect shall be raised with a 6 month defect priority.

The installation guide for the semaphore cover retrofit kit can be found in **Annexure 1**.

Annexure 1

(next page)

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Manual

Retrofitting Semaphore Cover on 22kv Iljin Gas Switch

Safety is the main priority and should be assessed before any work is commenced. The safety standards and protocols of the utility conducting the work should be maintained. The following safety considerations are outlined as a guide only:

Pre-Start Considerations

- 1) Job Safety Analysis
- 2) Working Live
- 3) Nearby electrical equipment
- 4) Safe Approach distance
- 5) Condition Assessment of all equipment
- 6) Overhead and Underground service requirements
- 7) Work environment and environmental conditions
- 8) Access to work site
- 9) Traffic / pedestrian management
- 10) Safety observe

Personal Consideration

- 1) Mind set for task
- 2) Completed JSA and meeting
- 3) Individual roles and responsibilities
- 4) Visual inspection of switch for issues
- 5) Plant pre start checklist
- 6) PPE correct & applied
- 7) Working at heights procedures
- 8) Manual Handling techniques
- 9) Live Line Procedures

1. Purpose

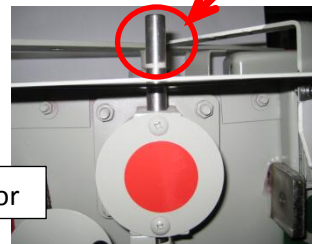
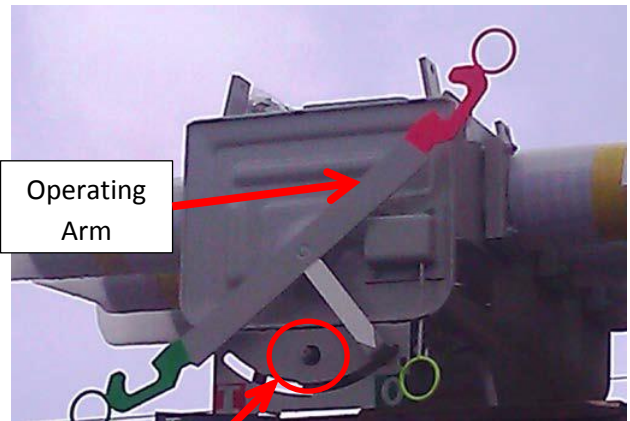
This procedure outlines the actions needed to retrofit semaphore covers on 11 and 22kv Iljin Gas Switches.

2. Confirm the State of the Gas Switch

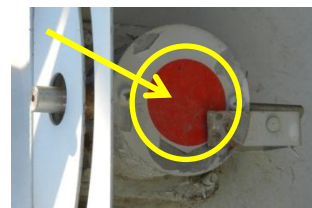
Confirm that the switch **has not locked out due to low gas pressure**. This can be done by:

1. Assessing the position of the rod (circled in red in the adjacent figure). In this example, the rod has protruded by approximately 100mm and is preventing the movement of the operating arm. In this case, the switch **has locked out due to a low gas**.
2. Assessing the position of the bracket that the semaphore cover is normally attached to (circled in yellow in adjacent figure). In this example, the bracket is facing towards the switch indicator and is thus considered to be operational.

If the switch is considered faulty, report this back to the control room and **do not** install the semaphore cover.



If the operating arm of the switch is impeded by the protruding rod (circled in red), the switch **has locked out due to a low gas** and cannot be operated.



If the bracket (circled in yellow) is facing the indicator as shown in this figure, the switch is considered operational.

installING the RETROFIT semaphore cover

The replacement semaphore cover is shown in the picture on the right. Two split pins will be included in the assembly.



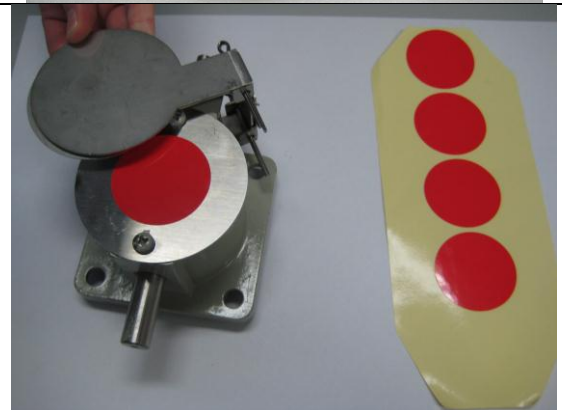
Mount the replacement semaphore cover on the back of the existing semaphore bracket / arm as shown in the adjacent figure.



Place the split pins through the existing holes in the replacement cover as indicated in the adjacent figure.



In the event that the red indicator has come off the device, replacement stickers are provided. Place the red sticker onto the device as shown in the adjacent photo.



Using approved pliers, bend the pointed ends of the split pins to flare them out to ensure they stay in place. This completes the installation.

