LEIA
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1 March 2010

To: All Members

Dear Member

OTIS SAFETY WARNING NOTICES

Please find attached Safety Warning Notices from Otis Ltd, the original notice we sent out on their behalf in 2007 and have now been updated.

Please do not hesitate to contact us if we can be of further assistance.

Yours sincerely

pp

Derek Smith
Technical Director

OTIS

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Lift & Escalator Industry Association
Devonshire Street,
London.

For the Attention of Derek Smith, Technical Director.

Re: Otis Product Safety Warning Notice – 001.

Dear Sir,

Some time ago Otis issued a safety warning notice to LEIA with regard to problems encountered on gear machine brakes manufactured by Evans Lifts.

It has come to our attention that there still appears to be some confusion regarding these brakes and that there are continued incidents with machines in service.

Otis has examined the original guidance document and elaborated it. Whilst the original document was not in error we would request that LEIA withdraw it and publish this new version in order to raise awareness again of the issues.

Yours Faithfully,

Ian Jones
Codes and Standards Manager.

OTIS	LEIA Product Warning **Evans Machine Brake**	Ref : 001	
		Page :	1/7
		ISSUE 27/03/2007	UPDATE 17/03/2009

Description of problem

Machine brakes manufactured by Evans Lifts up to the late 1980's operate on the basis of a single solenoid holding the brake in the open position.

Within the solenoid is a brass plunger which extends to push the two brake arms into the open position.

When incorrectly adjusted or subject to excessive wear this plunger can expand due to the continuous hammer action of the brake solenoid on the brake arms, with the result in the brake failing in the open position.

It is therefore imperative that these brakes are subject to regular service and inspection in order that their correct operation is assured.

The following instruction gives details on how to dismantle, inspect and re-assemble the brake solenoid mechanism.

Glossary

Figure 1 shows the Evans brake.

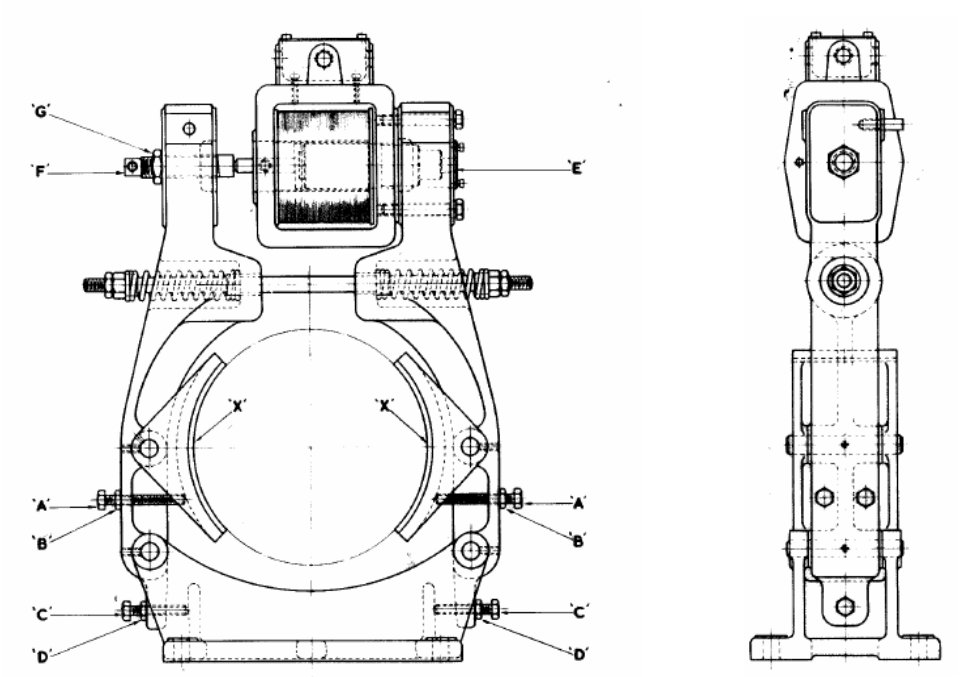


Figure1.

Author	Checked
Ash Rajput - FOD	Brad Ryan – FOD
Distribution : LEIA for Public Information	CANCEL & REPLACE: All previous versions

Inspection Instruction

1. Remove the two screws holding instruction end plate 'E'. See Figure 1 & 2.

Figure 2

2. Remove solenoid plunger. See Figure 3.

Figure 3

3. Remove solenoid plunger sleeve. See Figure 4.

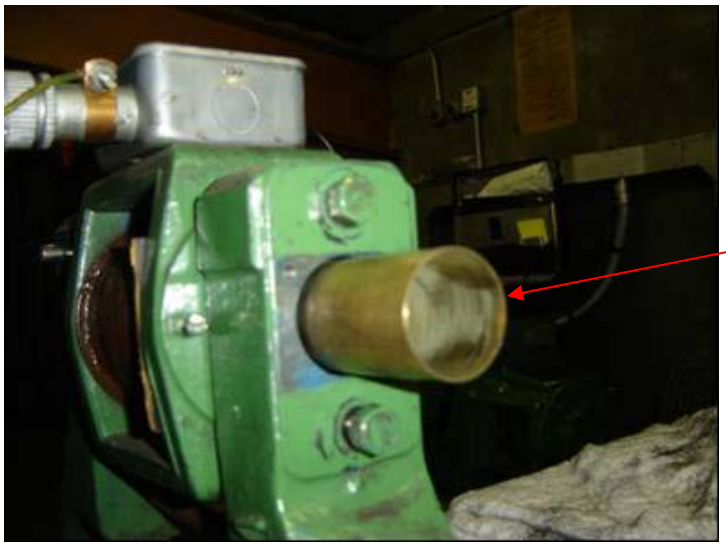


Figure 4

4. Remove the two bolts holding the brake coil housing to the brake arm. See Figure 5.

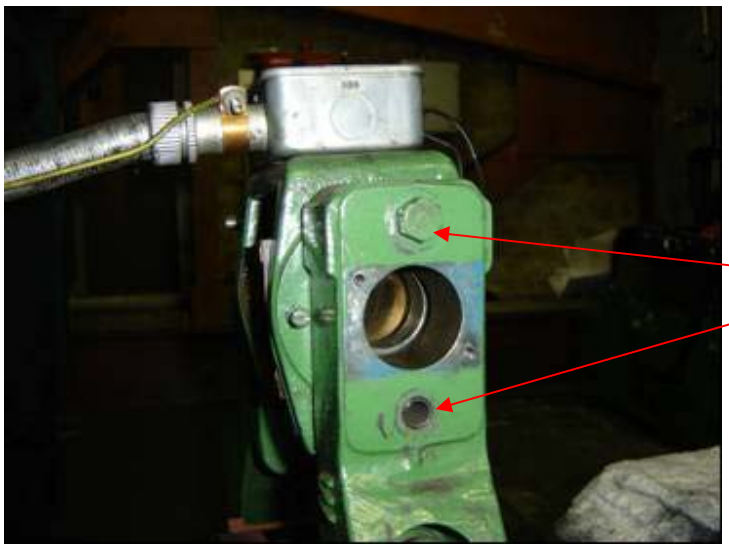


Figure 5

5. When the two bolts holding the coil housing to the brake arm are removed, it will be possible to move the brake coil housing. See Figure 6.

Figure 6

6. Once the brake coil housing is removed from the brake arm, remove the brass bullet housing screw. It will now be possible to remove the bullet housing. See Figure 7.

Figure 7

7. Check the condition of the brass bullet.
If there are signs of excessive wear or mushrooming, that may affect the safe operation of the brake then it must be replaced before the lift can be returned to service.
Also inspect the brass bullet housing and the steel plunger to ensure that no damage has been caused, in particular as a result of the steel plunger contacting the bullet housing due to the top hat section of the bullet becoming unsatisfactory worn, also inspect the plunger brass sleeve.
If there is any evidence of damage, replacement parts should be obtained from Lift Components Ltd quoting the machine type and brake size.
Figures 8 & 9 show the brass bullet and housing. Figure 10 typical damaged parts.

Figure 8

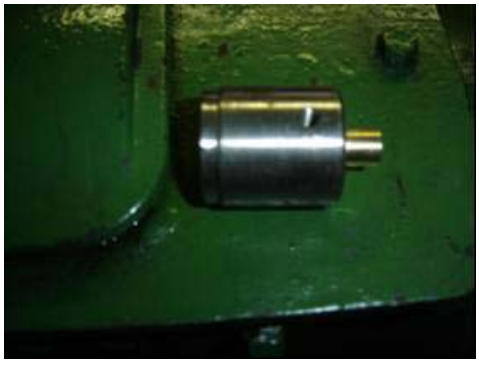
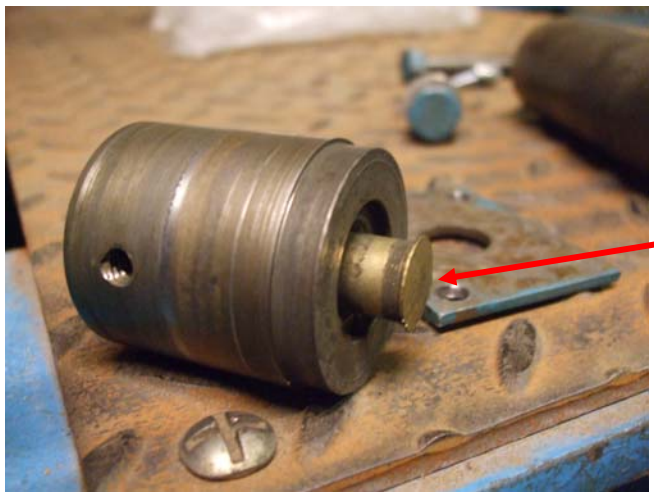


Figure 9



Typical signs of damage. Note the mushroomed plunger

Figure 10

Process for re-assembly

1. Clean the brake & magnet moving parts & lubricate before re-fitting.

2. Set up solenoid plunger movement (air gap) in accordance with instruction on end plate 'E' by adjusting stop screw 'F', and tighten lock nut 'G'. See Figure 1.

3. Take care not to over tighten the coil screws, only finger tight and tighten lock nut. The coil holding bolts should be checked as the coil has a tendency to move if too loose (rotate) and this can cause the bolts to wear though the card insulation and on to the coil winding.
Insulate, renew or rotate the coil to a different spot on the card and re-grip. See Figure 11.

Figure 11

Further recommendations

Due to the age of this type of brake it does not fulfil the requirements of the dual brake mechanism described in the latest EN81-1 standard.

Failure of a single component can cause the brake to remain open and result in uncontrolled movement of the lift car at landings with open doors.

For this reason EN81-80 “Improvement in Safety of Existing Lifts” recognises this as a high risk hazard and recommend the brake be replaced with one complying with the latest EN81-1 standard.