



Lift & Escalator Industry Association

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4<sup>th</sup> March 2007

To: All Members

cc: The Quality and Technical Committee (Code No. 719)  
The Maintenance Committee

Dear Member,

**SAFETY BULLETIN : OTIS**

Please find attached Safety Bulletin from Otis in connection with their OVF drives on units without brake switches fitted.

I trust that you will find this bulletin self-explanatory and be guided accordingly.

Yours faithfully

Robert N Lee  
Director, Technical Services



EMTA Awards Limited  
Approved Assessment Centre

ELA Member of the  
European Lift Association



Registered in England N° 3851206.  
Registered office as above.



Certificate N° 12368



POTENTIAL SAFETY HAZARD

UK Corrective Instruction

OVF 30 drives on units without brake switches fitted

SET : A1

No : 78-07-03

Page : 1/7

Date : 01/03/2007

Prepared by

Chris Patey-Ford - UK CRC Manager

Approved by

S McNally - Company Safety Manager

Approved by

M Fuller - Director of Field Operations Department

Approved by pp

G Smart - Financial Director

Approved by

D Michaud - Managing Director

**Technical Information Accessing System** (Maximum 8 keywords)

1. Brake

2. Switch

3. OVF30

4. Brake Switch

5.

6.

7.

8.

This CI must be completed on all listed units by 01/09/07

**Please enter Unit No's and Addresses of completed units and return a copy of this cover sheet to:**

Karl Headley  
Otis Ltd, 123 Abbey Lane  
Leicester  
LE4 5QX

Fax: +44 (0)116 261 2363

Unit Number	Site Address

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Source: Near Hit Report

#### 1. Problem:

On high torque AC motors without brake switches fitted, there is a possibility of not detecting the failure of an energised brake. This could result in the lift running with the brake engaged causing the excessive heating of the brake linings, which could result in the loss of brake friction.

#### 2. Cause:

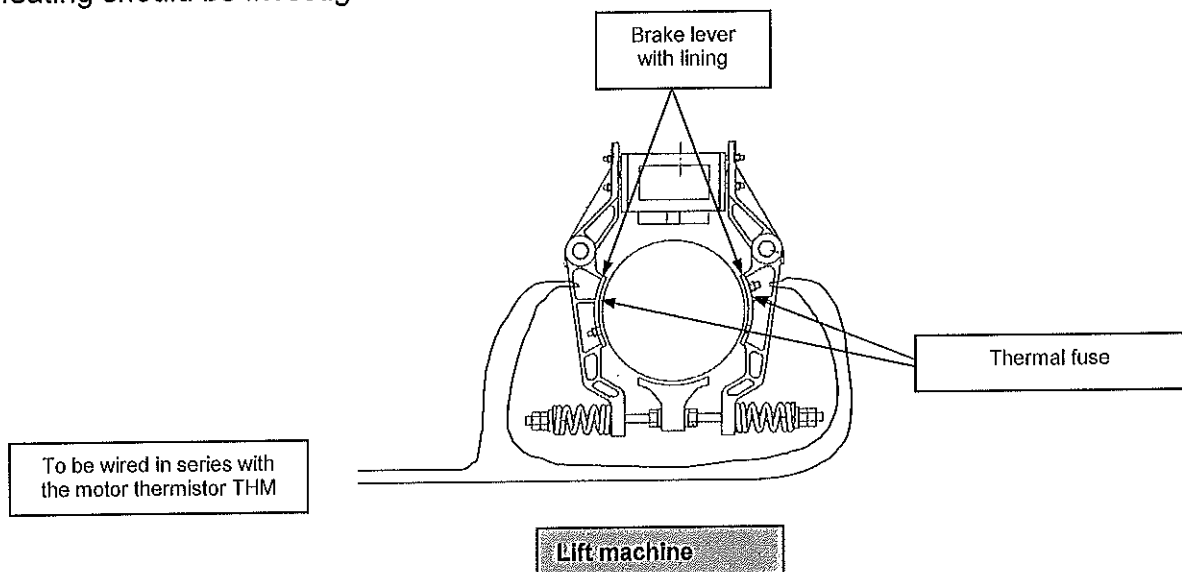
The increase of load current on the machine is too small for the drive current sensors to detect.

#### 3. Limitations:

This is only applicable to high torque ac machines with a gear ratio greater than 17:1 equipped with OVF 30 drives.

#### 4. Field Solution:

To fit thermal fuses to the brake shoes that will trip when the brake shoe temperature exceeds 71 C. This will render the lift out of service when it reaches its destination. The lift will be unable to go back into service until the thermal fuse is replaced before which the cause of the overheating should be investigated and rectified



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The thermal fuses are connected in series with the motor thermistor (THM). When activated it will render the lift out of service with the doors open

### Installation

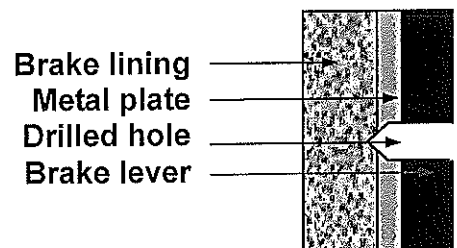
The following example is of a 13VTR machine, which shows the retrofit of the brake monitoring kit. In principle this is the same for all other machines.

- a) Main switch switched off and Locked and tagged out.
- b) Drill a hole 5,2-5,5 mm or 7,2-7,5 mm (according to depth) into brake shoe so that it only just penetrates the brake shoe lining (See picture 2).

To assure the right depth, it should be marked on the drill (picture 1)  
This has to be done very carefully.

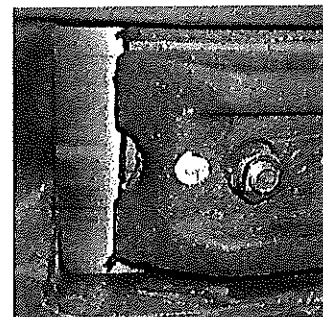


Pic 1: Depth



Pic 2: Drilled hole

- c) Put some thermal conduction paste into the hole.  
(Picture 3)

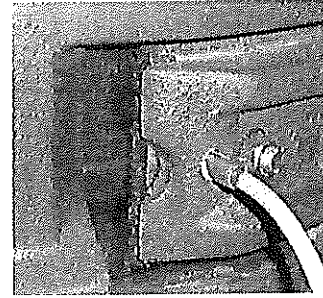


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**Pic 3: Thermal conduction paste**

- d) Put the thermal fuses with rotating movement into the holes (See picture 4) to prevent the trapping of air.



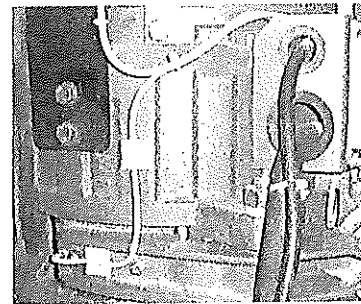
**Pic 4: Thermal fuse**

- e) Wiring instructions:



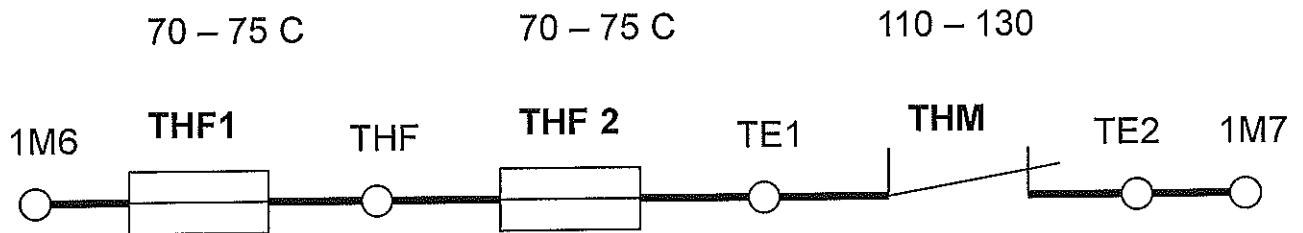
The leads of the thermal fuses have to be fastened to the machine using adhesive clips (picture 5).

To fix the adhesive clips, the positions have to be clean of grease and dust. The adhesive clips near the thermal fuse must not put unnecessary pressure onto the Thermal fuse. The cable is to be fastened with a cable tie to prevent movement.



**Pic 5**

- f) The thermal fuses have to be connected in series with the motor thermistor (THM) in the connection box on the machine. The connections of the thermistor (THM) are marked as TE1 and TE2. Connect in series the thermal fuses to TE1. See typical wiring diagram below. Check on site wiring diagrams for connections

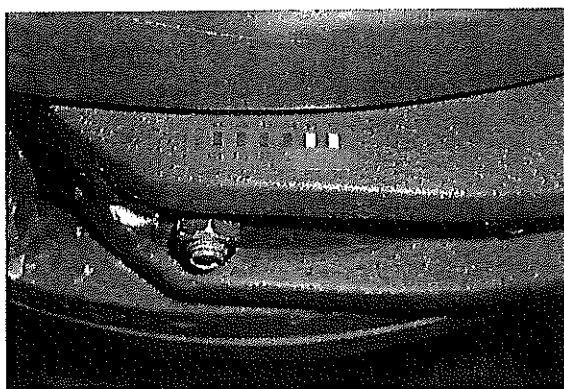


g) In addition a 6-step temperature sensor should be fixed near the brake linings  
(See picture 6)

In normal operation none of the temperature fields should have changed to a dark state  
(See picture 6).

Unless in exceptional high usage lifts

Decoloured fields (>44 degrees C) indicates  
Possible brake problems. This has to be  
checked (see picture 7)



Pic 7



Pic 6

### **Important !**

**If the thermal fuses have triggered they have to be exchanged and the cause investigated. Spare thermal fuses and this instruction should to be left with the units.**

### Test of thermal fuse

- a) Remove the connection between the two thermal fuses wired in series (THF).
- b) Switch on main switch.
- c) Enter a call. Lift must not move. If it does, the wiring has to be checked.
- d) Switch off and lock and tag out.
- e) Reconnect the two thermal fuses in series.
- f) Switch on main switch.
- g) Check again the lift in normal operation.

### 5. Material Required:

Order Kit GAA27111K1 from  
Otis Ltd  
Stores dept  
123 Abbey Lane  
Leicester  
LE4 5QX

### 6. Tools Required:

Normal hand kit  
Drill and drill bits ranging from 5 to 8 mm

### 7. Special Instructions:

Contact Engineering Support in Otis Leicester if you require modified site wiring diagrams to be provided.. A charge will be made for this.

**OTIS**  
**GROUP**

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## 8. Field Work Procedures

*The works must be conducted by a trained lift engineer working in compliance a Safe Method of Work developed from a suitable and sufficient Risk Assessment. has been developed.*

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