

<b>OBSTA</b> <small>Division</small> <b>CLAUDE</b>  <b>Reims plant</b>	TECHNIQUE		SPE n°	TE.21.BA.153	<u>ind.</u> D
	SPECIFICATION		Edité le 07 juin 2002 Remplace doc N° TE.21.BA.153.C		
<b>SUJET : 90 kV - 100 kV - 115 kV - 132 kV - 160 kV</b> <b><u>BALISOR EQUIPMENT ASSEMBLY</u></b>			Page N° 1 de 7 pages Concerne : CB.ODT.		
Etabli par :	visa :	Approuvé par :	visa :		
Y.PORET		JM.HUVET			

## INTRODUCTION:

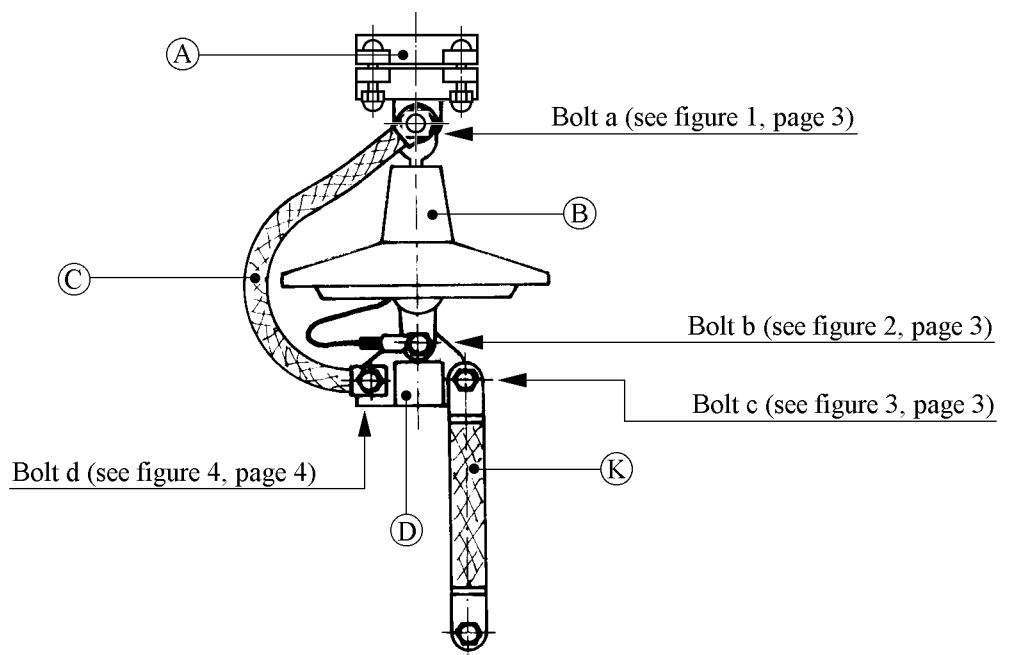
- This specification covers warning devices for transmission lines with a voltage between **90 kV** and **210 kV**.
- The five devices, **BALISOR B90 - B100 - B115 - B132 - B160**, are assembled identically whether the line is on the ground or is already installed.
- Installers shall under no circumstances change any of the component parts of a **BALISOR** during assembly and shall take care that all subassemblies are original "**OBSTA**" parts in compliance with appropriate "**OBSTA**" drawings. Subassemblies consist of parts assembled in "**OBSTA**" plants and identified on the drawings and documents by the same letters (A - B - C -, etc).

**Installers shall rigorously respect the following order of assembly.**

## ASSEMBLY:

### 1. PREPARATION OF SUBASSEMBLIES:

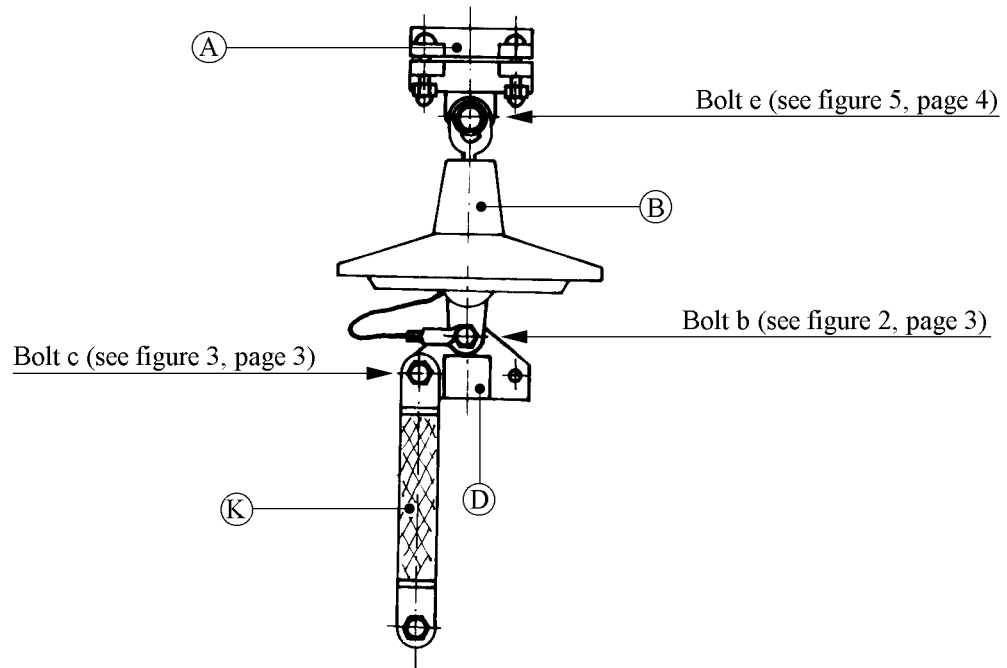
#### 1.1. Assembly of clamp, insulator, shunt-braid, end-holder, flexible-connector.



**NOTE:** Lock lock-nuts a, b, c and d during assembly to the torque specified after each figure.

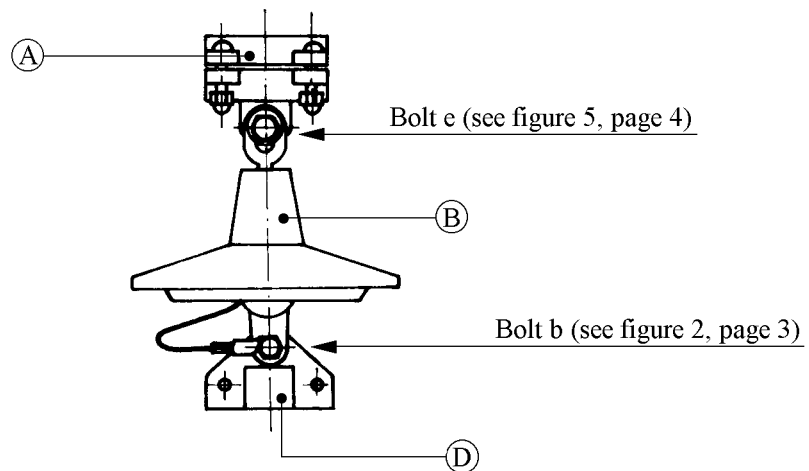
<b>OBSTA</b> <small>— 2002</small> <b>Reims Plant</b>	<b>90 kV - 100 KV - 115 kV - 132 kV - 160 kV</b> <b>BALISOR EQUIPMENT ASSEMBLY</b>	<b>SPE n°</b>	<b>TE.21.BA.153</b>	ind. <b>D</b>
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**1.2. Clamp, insulator, end-holder, flexible-connector assembly.**



**NOTE:** Lock lock-nuts b, c and e during assembly to the torque specified after each figure.

**1.3. Clamp, insulator, end-holder assembly.**



**NOTE:** Lock lock-nuts b and e during assembly to the torque specified after each figure.

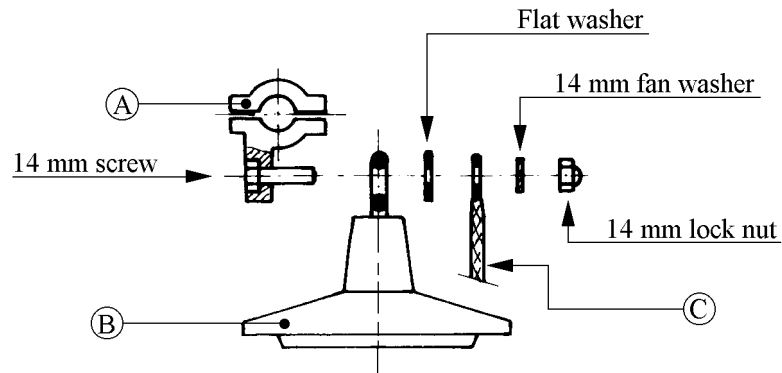
Prepare:

- 7 of the subassemblies for a "BALISOR B90"
- 6 for a "BALISOR B100"
- 5 for a "BALISOR B115"
- 4 for a "BALISOR B132"
- 3 for a "BALISOR B160".

<b>OBSTA</b> <i>Reims Plant</i>	<b>90 kV - 100 KV - 115 kV - 132 kV - 160 kV</b> <b>BALISOR EQUIPMENT ASSEMBLY</b>	<b>SPE n°</b>	<b>TE.21.BA.153</b>	ind. <b>D</b>
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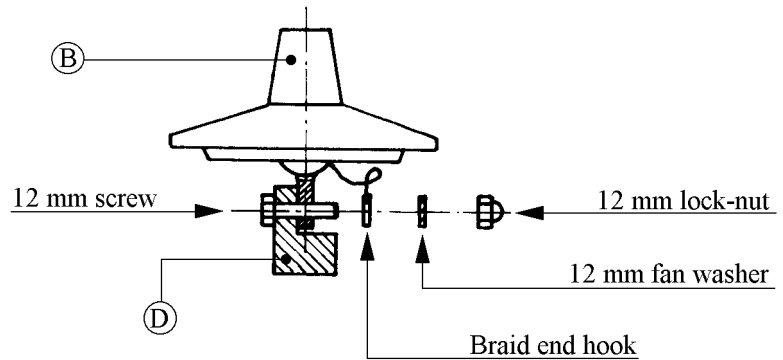
**1.4. Securing points a, b, c, d and e.**

**1.4.1. FIGURE 1: Bolt a**



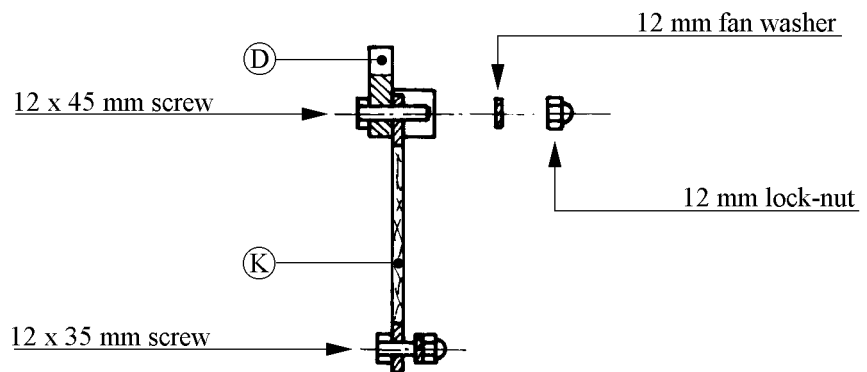
**NOTE: Tighten 14 mm lock-nut to torque: 40 - 60 m.N**

**1.4.2. FIGURE 2: Bolt b**



**NOTE: Tighten 12 mm lock-nut to torque: 20 - 30 m.N**

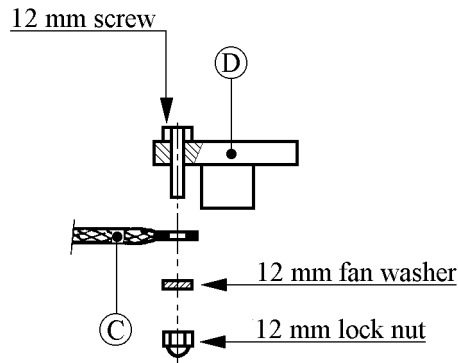
**1.4.3. FIGURE 3: Bolt c**



**NOTE: Tighten 12 mm lock-nut to torque: 20 - 30 m.N**

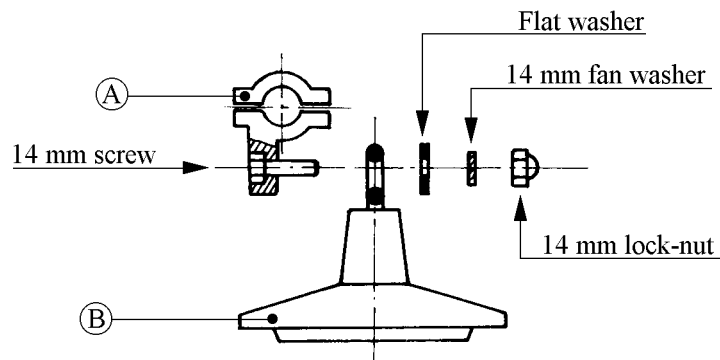
<b>OBSTA</b> <i>Reims Plant</i>	<b>90 kV - 100 KV - 115 kV - 132 kV - 160 kV</b> <b>BALISOR EQUIPMENT ASSEMBLY</b>	<b>SPE n°</b>	<b>TE.21.BA.153</b>	<b>ind.</b> <b>D</b>
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1.4.4. FIGURE 4: Bolt d



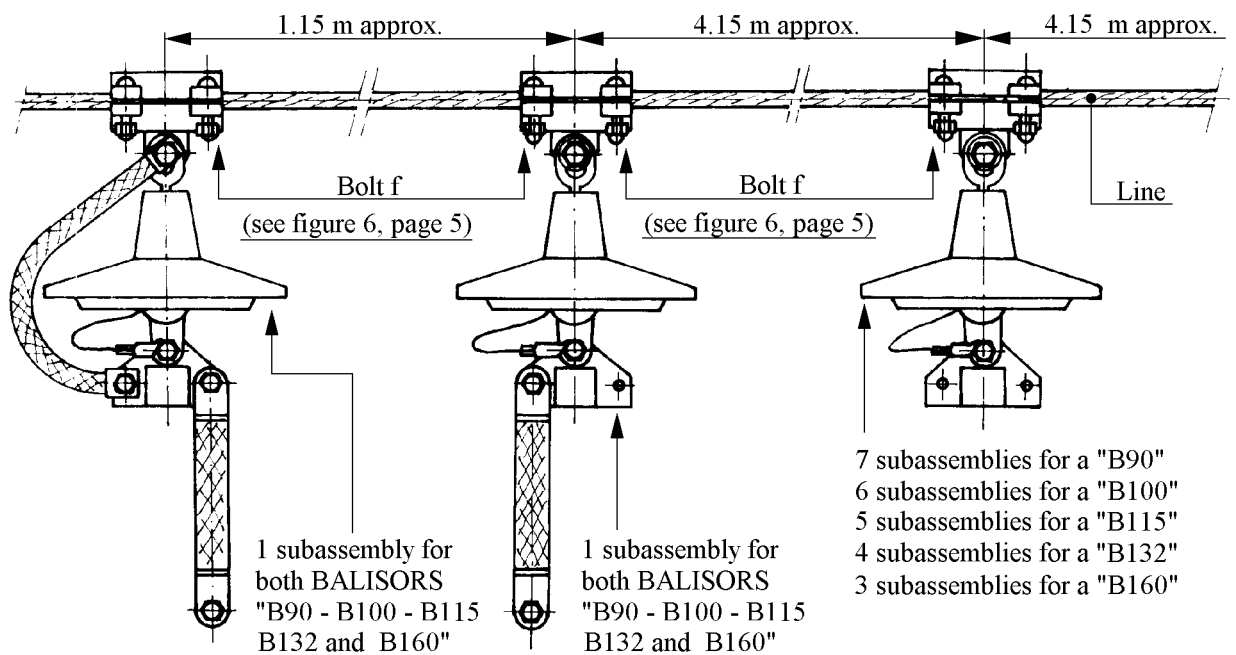
**NOTE: Tighten 12 mm lock-nut to torque: 20 - 30 m.N**

1.4.5. FIGURE 5: Bolt e



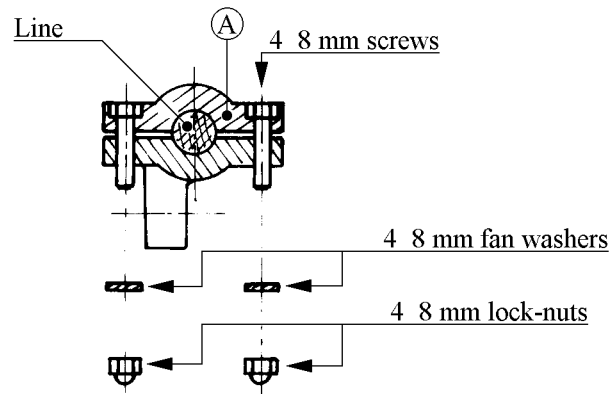
**NOTE: Tighten 14 mm lock-nuts to torque: 40 - 60 m.N**

**2. ASSEMBLY OF LINE SUSPENSION SUBASSEMBLIES:**



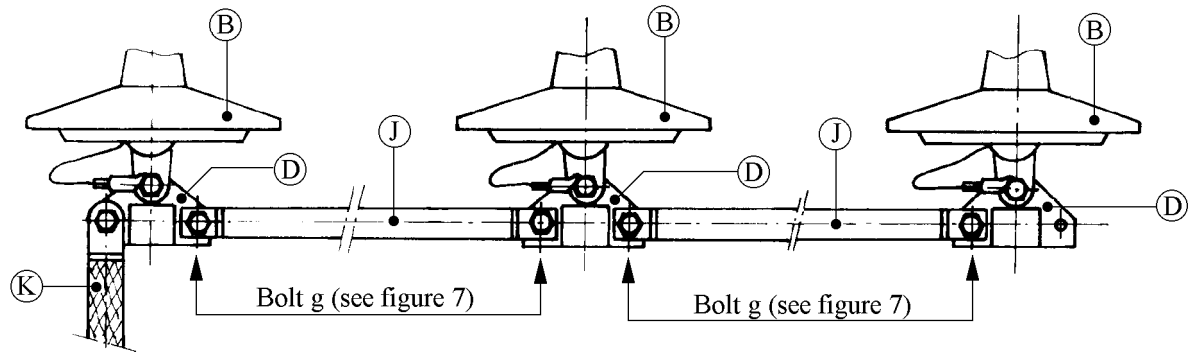
<b>OBSTA</b> <i>Reims Plant</i>	<b>90 kV - 100 KV - 115 kV - 132 kV - 160 kV</b> <b>BALISOR EQUIPMENT ASSEMBLY</b>	<b>SPE n°</b>	<b>TE.21.BA.153</b>	<b>ind.</b> <b>D</b>
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**FIGURE 6: Bolt f**



**IMPORTANT:** Do not lock the nut-locks of bolt f during assembly in order to allow any necessary longitudinal movement of the subassemblies on the line.  
 Lock them after assembly of the auxiliary tubing and the lamp.

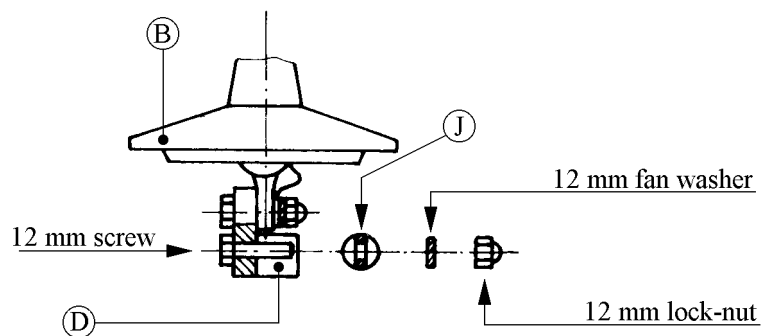
**3. ASSEMBLY OF AUXILIARY TUBING:**



**NOTE:**

- 7 auxiliary tubings are required for a BALISOR B90.
- 6 auxiliary tubings are required for a BALISOR B100.
- 5 auxiliary tubings are required for a BALISOR B115.
- 4 auxiliary tubings are required for a BALISOR B132.
- 3 auxiliary tubings are required for a BALISOR B160.

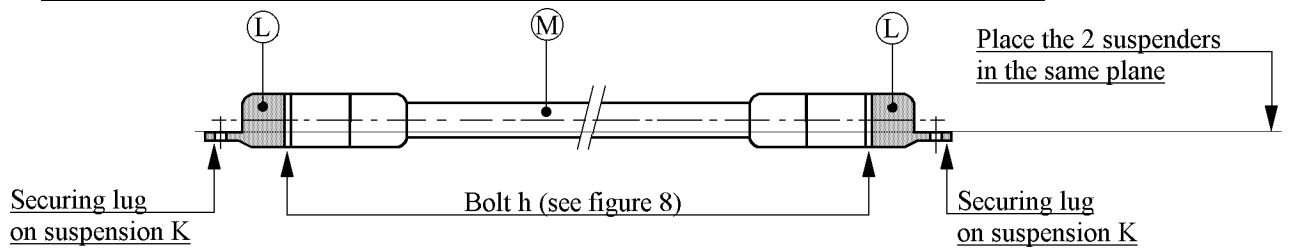
**FIGURE 7: Bolt g**



**NOTE: Tighten 12 mm lock-nut to torque: 20 - 30 m.N**

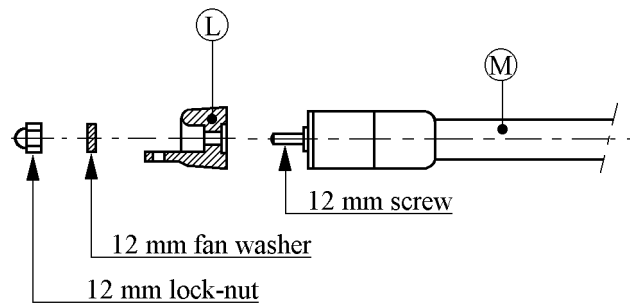
<b>OBSTA</b> <i>Reims Plant</i>	<b>90 kV - 100 KV - 115 kV - 132 kV - 160 kV</b> <b>BALISOR EQUIPMENT ASSEMBLY</b>	<b>SPE n°</b>	<b>TE.21.BA.153</b>	<b>ind.</b> <b>D</b>
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**4. PREPARATION OF THE LAMP (Assembly of lamp end suspenders):**



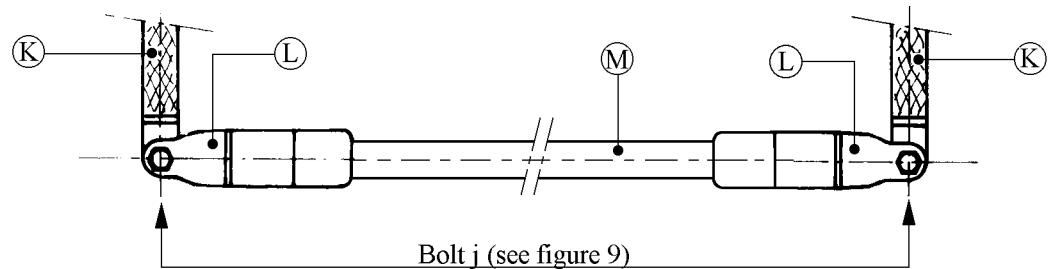
**IMPORTANT:** Make sure during assembly of suspenders L that their securing lugs are in the same plane.

**FIGURE 8: Bolt h**

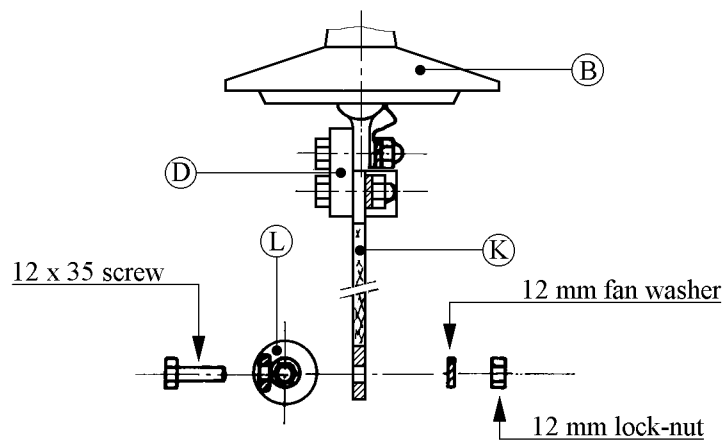


**NOTE: Tighten 12 mm lock-nut to torque: 20 - 30 m.N**

**5. ASSEMBLY OF LAMPS ON THEIR FLEXIBLE-CONNECTORS:**



**FIGURE 9: Bolt j**



**NOTE: Tighten 12 mm lock-nut to torque: 20 - 30 m.N**

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## **6. FINAL INSTALLATION OF WARNING DEVICE:**

- After assembly of the auxiliary tubing and the lamp, it may prove necessary to slightly change the spacing of the clamps on the line (9 clamps for the BALISOR B90, 8 clamps for the BALISOR B100, 7 clamps for the BALISOR B115, 6 clamps for the BALISOR B132 and 5 clamps for the BALISOR B160).
- Because their screws and nuts were not locked when they were attached to the line, they can be moved longitudinally to their required spacing (see drawing page 4).
- When the clamps are correctly positioned, it is essential that the line be raised in the air when securing the clamps to the cable with 8 lock-nuts (4 for each clamp).

The purpose of this is to make sure that the warning device is solid with the H. V. line.

**NOTE: Tighten 8 mm lock-nuts to torque: 10 - 15 m.N**