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# **Chapter 5**

## **Composite Insulator Design**

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### **5.2 Main Parameters for Design**

**By Orient Power**

Technical drawing of a bolt and nut assembly. The drawing shows a bolt with a hexagonal head and a nut. Dimensions are given in millimeters (mm). The bolt has a total length of 100 mm, a head diameter of 16 mm, and a thread length of 60 mm. The nut has a height of 16 mm and a thread length of 16 mm. The drawing includes a list of parts and their quantities.

**Legend:**

- 1 - Bolt
- 2 - Nut
- 3 - Washer
- 4 - Locking plate
- 5 - Locking plate
- 6 - Locking plate
- 7 - Locking plate
- 8 - Locking plate
- 9 - Locking plate
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- 97 - Locking plate
- 98 - Locking plate
- 99 - Locking plate
- 100 - Locking plate

**Parts List:**

Part No.	Part Name	Quantity
1	Bolt	1
2	Nut	1
3	Washer	1
4	Locking plate	1
5	Locking plate	1
6	Locking plate	1
7	Locking plate	1
8	Locking plate	1
9	Locking plate	1
10	Locking plate	1
11	Locking plate	1
12	Locking plate	1
13	Locking plate	1
14	Locking plate	1
15	Locking plate	1
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82	Locking plate	1
83	Locking plate	1
84	Locking plate	1
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86	Locking plate	1
87	Locking plate	1
88	Locking plate	1



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- ✧ Core is the internal insulating part of a composite insulator, and it is intended to carry the mechanical load.
- ✧ Sheds are insulating parts, projecting from the housing or sheath, intended to increase the leakage distance.
- ✧ End fitting transmit the mechanical load to the core.

- ✧ Rated voltage
- ✧ Section length
- ✧ Arcing distance
- ✧ Creepage distance
- ✧ Rated failing load
- ✧ End fitting designation
- ✧ Power frequency withstand voltage
- ✧ Impulse withstand voltage

Calculate the shed diameter and shed spacing and see whether to choose alternative sheds or equal sheds to meet the arcing distance and Creepage distance and to suit the section length.

More composite insulator information can be found in Orient power website.