

*Real Lightning Rod
For Suppressing Lightning Stroke*

PDCE

Lightning stroke suppressing type lightning rod PDCE.

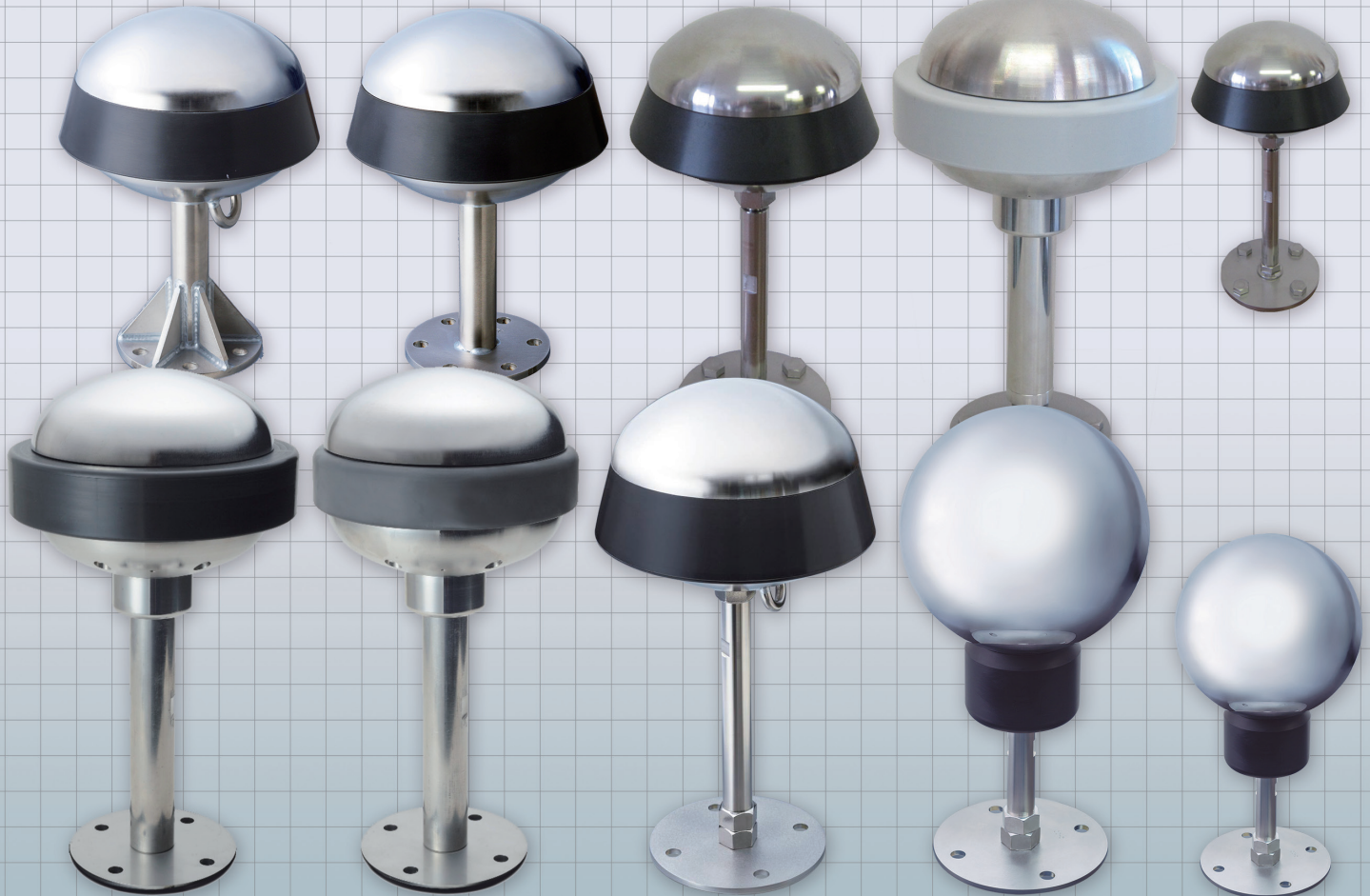
Supper - 316L A

Supper - 316L B

PDCE - Junior

PDCE - Magnum

PDCE - Baby



PDCE - HT300

Heat -Resistant up to 300°C

PDCE - HT500

Heat -Resistant up to 500°C

PDCE - 2020

ALB - Large

ALB - Small

Manufactured 100% in Japan
at JIS Q9001:2015 & ISO 9001:2015 certified facility

 **LSS** 株式会社 落雷抑制システムズ
Lightning Suppression Systems

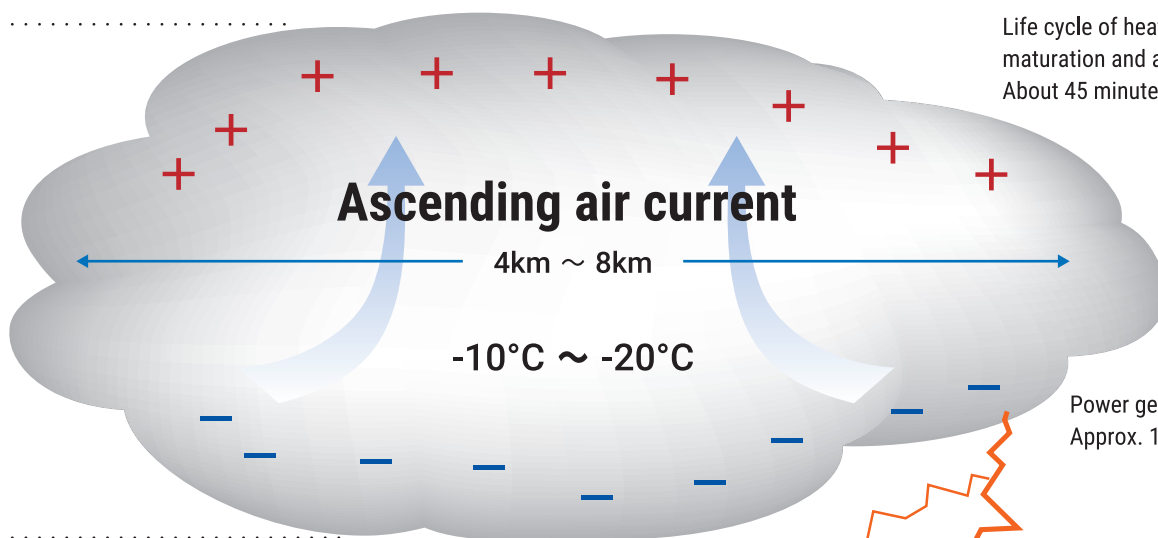
<http://www.rakurai-yokusei.jp>

Theory of Suppressing Lightning Stroke

(Lightning in Summer Season)

12,000m

Life cycle of heat generation, maturation and attenuation
About 45 minutes.



Power generation capacity
Approx. 150,000 kW.

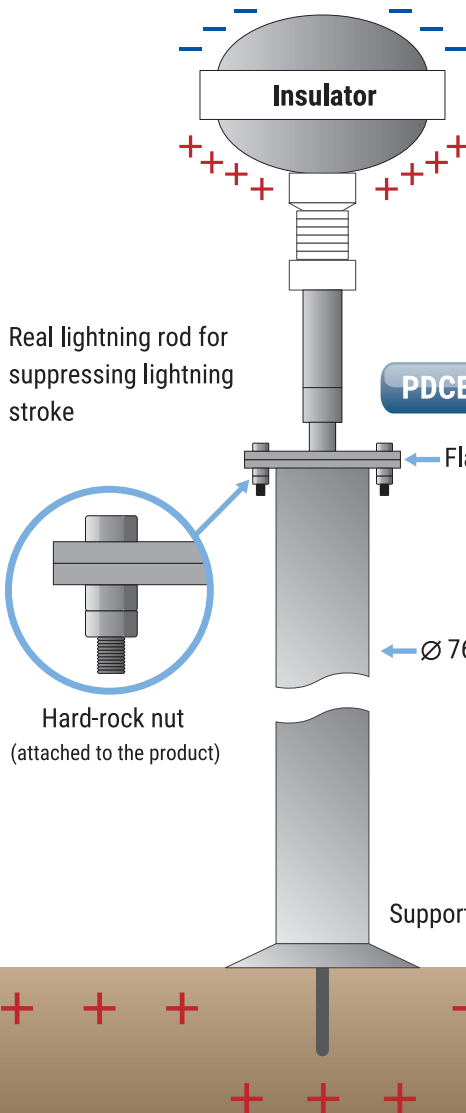
7,000m

Effect of PDCE

1. Top surface has Negative charge thus can not be the target of Negative charge from the cloud
2. Round smooth surface of the bottom make STROKE emission difficult

Process of lightning stroke

1. Preceding discharge (from a thunder cloud)
2. STROKE emission from the top of Lightning rod toward the cloud bottom (from the lightning rod)
3. Formation of discharge path
4. Flowing of high current



Real lightning rod for suppressing lightning stroke

PDCE lightning rod

Conventional lightning rod

Negative charge of the bottom portion of the lightning is induced, and the earth's surface stores the positive charge.

Projection rod

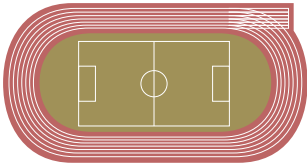
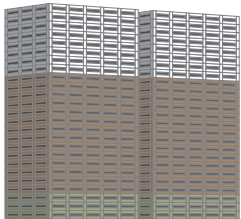
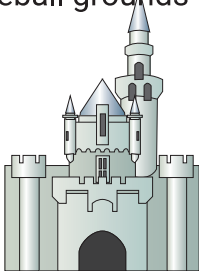
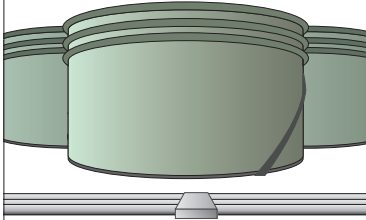
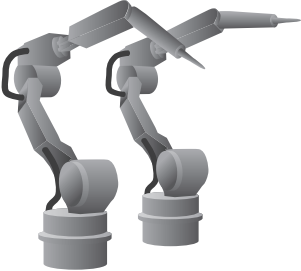
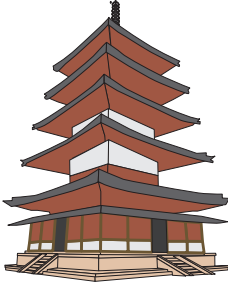
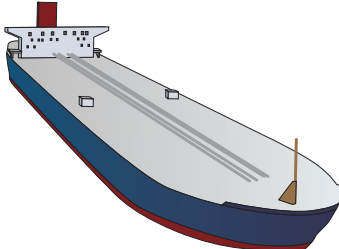
It is called a lightning rod, however, it is the "lightning rod" that "induces" lightning stroke.

It is a rod that was invented in the early era of oil lamps, about 250 years ago that means 130 years before the electricity has been started to use.

Support pipe

Where is It Used?

Service level lowers due to power failures and there can be damage to the machinery after a direct hit of lightning.

Traffic	Buildings	Open Areas	Towers / others
Airport facilities Radar antenna, ILS antenna Apron lights , Hangar Airport fuel storage facility  The airport works for 24 hours even when there are no departures and arrivals of aircrafts.	Hospitals  Power failure at hospitals affect human life	School playgrounds / parking lots, soccer grounds  Many lightning accidents occur in large open areas.	Wireless antenna Fishing radio communication Mobile phone base stations Broadcasting office Radio communications for disaster prevention and emergency response  Wireless supports the society.
Harbor facilities Gantry crane  Height of the large-size crane reaches 100m.	Offices, hotels, mansions  There are plenty of electrical devices that easily get damaged by lightning stroke.	Amusement parks / baseball grounds  To enjoy these environments, they need to be safe.	Outdoor surveillance cameras Prevention of lightning stroke on outdoor equipment 
Railroad Signal station, Transformer station Railway crossing  Train services will stop if the lightning hits the signal station and transformer station.	Data center  Data center supports today' s society.	Golf courses  Let' s stop the play at the time of lightning.	Energy / chemical industries For explosion protection measures 
Highway Lighting at service areas and parking areas.  Appropriate brightness is guaranteed by the lighting facility even during midnight.	Factories  Manufacturing equipment also works on a network.	Wooden buildings Important -cultural properties  The first thing we need to know is wooden buildings should not be hit by lightning.	Ships  Lightning stroke is generated on the sea as well.

PDCE Specifications

	Diameter	Height	Weight
<i>PDCE - Baby</i>	120mm	240mm	2Kg
<i>PDCE - Junior</i>	200mm	330mm	5Kg
<i>Supper - 316L A</i>	200mm	265mm	6Kg
<i>Supper - 316L B</i>	200mm	265mm	6Kg
<i>PDCE - HT500</i>	240mm	405mm	13Kg
<i>PDCE - HT300</i>	220mm	405mm	11Kg
<i>PDCE - Magnum</i>	240mm	405mm	9Kg
<i>PDCE - 2020</i>	230mm	390mm	7.8kg

	Diameter	Height	Weight
<i>ALB - Large</i>	200mm	390mm	5.5Kg
<i>ALB - Small</i>	120mm	235mm	2.2Kg

Common items

1. Effective range is the same as that of a conventional lightning rod.
2. It is always not 100 % effective as we are dealing with nature.
In rare cases, lightning hits the PDCE itself.
3. The PDCE product is replaced with a new product free of charge if damaged due to a direct hit of lightning.
4. If the PDCE gets damaged and falls resulting in damaging other objects, PL Insurance will cover the damage up to 300 million Yen (lightning damage is not included). Japan domestic only.
5. Does not require a power supply.
6. Chemicals, salts and radioactive materials are not used.

PDCE-HT300/PDCE-HT500

PDCE must be used within ordinary temperature. For high temperature environment above 300 degree centigrade, please use HT300 up to 300°C or HT500 up to 500°C.

Standards on Protection against Lightning

JIS Z 9290-1 Part I: General principle

JIS Z 9290-3 Part III: Physical hindrance to structure and risk to human life

JIS Z 9290-4 Part IV: Electrical and electronic systems within structure

Development / Manufacturing / Distributors

Lightning Suppression Systems

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2-2-1 Minato Mirai, Nishi-ku, Yokohama 220-8144 JAPAN
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<http://www.rakurai-yokusei.jp>
e-mail info@rakurai-yokusei.jp

Cabinet Office, Disaster Prevention Promotion Council
Recommended by Disaster Prevention Safety Association



Sales agencies