



K-LINE INSULATORS LIMITED
TORONTO, ONTARIO, CANADA

Catalogue T-LP

TRANSMISSION SILICONE INSULATORS

Line Post

69 kV to 230 kV



ISO9001
SAI GLOBAL
FILE No. 000117

Transmission Silicone Insulators Line Post

Today transmission lines are required to be more aesthetically pleasing and are routed through narrow right-of-ways or along roadways. At lower transmission voltages (e.g., 115 kV and 69 kV) these lines are routed through urban areas and along roadways similar to distribution circuits to supply substations and larger customers. In some situations these lines share the same route and poles with distribution circuits. With **K-LINE INSULATORS LIMITED (KLI)** silicone rubber Transmission Line Post Insulators an aesthetic compact line design can be easily achieved with a substantial savings in the life cycle cost.

KLI silicone rubber Transmission Line Post Insulators are manufactured and tested in accordance with industry wide standards, CSA, ANSI and IEC.

K-LINE INSULATORS LIMITED Quality System is registered to ISO 9001 Quality Systems.

PERFORMANCE BENEFITS

The performance benefits of **KLI** Transmission Line Post Insulators are listed below.

- Improves Reliability (by mitigating interruptions and outages due to vandalism, pole fires, and flashovers in all types of environments)
- Eliminates or Reduces Maintenance (such as washing and less trouble calls) and is compatible with existing installation
- Improves Power Quality (lower RI and TVI)
- Energy Efficiency (reduced losses due to lower leakage currents)
- Safety (light weight for handling and installation)
- Service Life (consistent performance over its service life)
- Life Cycle Cost (savings over ceramic insulators)

APPLICATION

Transmission Line Post Insulators are used on overhead transmission lines operating at and above 60 kV. These insulators are commonly installed either vertically or horizontally on metal or wooden structures to support the conductor. Also, these insulators are used to support high voltage conductor jumpers or leads.

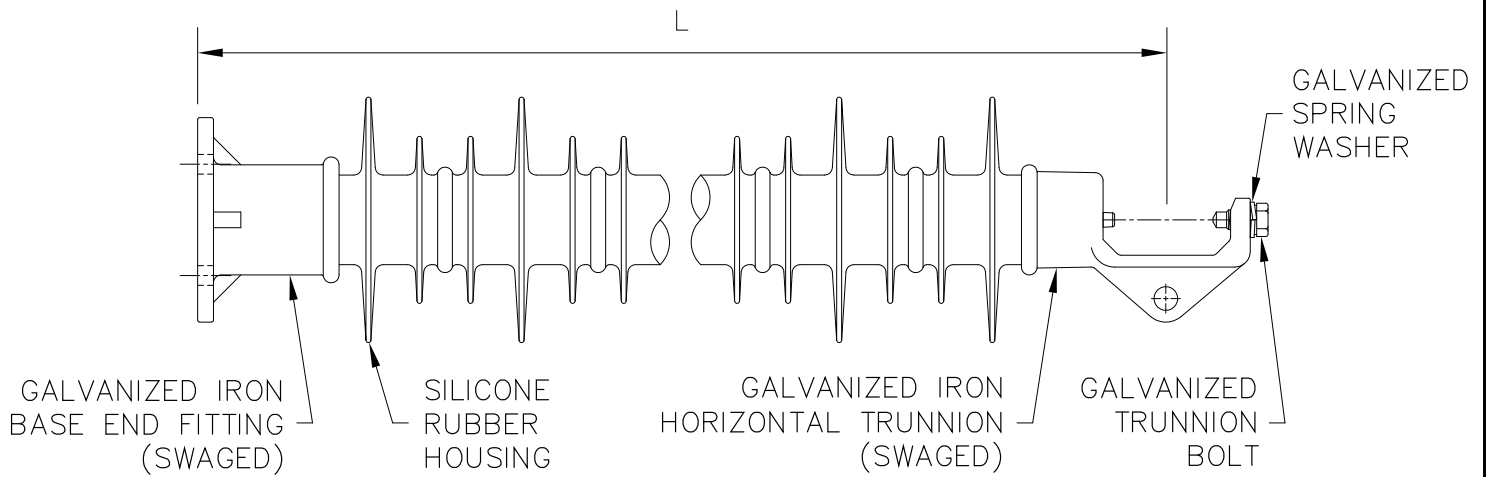
CORE ROD

The core rod of the insulator is made of a high quality, epoxy resin, E-Glass fiberglass rod that has been specially formulated for electrical and mechanical applications.

HOUSING AND SHEDS

The housing (includes sheath and sheds) of the insulator is one piece, high temperature vulcanized, injection molded silicone rubber that is chemically bonded to the core rod. This ensures that the interface between the rubber and rod is impenetrable against moisture ingress. **KLI** uses its own proprietary silicone rubber formula in the manufacture of its insulators. The formulation has silicone rubber as the base polymer material with additives to enhance its performance in wet and contaminated environments.

TRANSMISSION LINE POST INSULATOR



TECHNICAL DATA

Catalog Number	Voltage Class	Section Length	Dry Arcing Distance	Leakage Distance	Positive Critical Impulse Flashover	Low Frequency Flashover		Specified Cantilever Load (SCL)	Maximum Design Cantilever Load (MDCL)	Specified Tensile Load (STL)*
		L				Dry	Wet			
		kV				mm (in)	mm (in)			
KL69ASH13	69	775 (30.5)	617 (24.3)	1544 (60.8)	380	250	225	27.1 (6090)	13.5 (3045)	22.2 (5000)
KL69ASH16		899 (35.4)	737 (29.0)	1890 (74.4)	450	290	260	24.0 (5410)	12.0 (2705)	22.2 (5000)
KL69ASH19		1022 (40.3)	861 (33.9)	2238 (88.1)	520	340	295	21.1 (4750)	10.6 (2375)	22.2 (5000)
KL115ASH22	115	1147 (45.2)	986 (38.8)	2583 (101.7)	590	385	330	18.2 (4085)	9.1 (2043)	22.2 (5000)
KL115ASH25		1271 (50.0)	1115 (43.9)	2931 (115.4)	665	430	365	15.2 (3415)	7.6 (1707)	22.2 (5000)
KL138ASH28	138	1395 (54.9)	1234 (48.6)	3277 (129.0)	735	475	410	13.8 (3100)	6.9 (1550)	22.2 (5000)
KL138ASH31		1519 (59.8)	1361 (53.6)	3622 (142.6)	805	520	450	12.3 (2775)	6.2 (1388)	22.2 (5000)
KL161ASH34	161	1643 (64.7)	1481 (58.3)	3970 (156.3)	875	555	470	10.8 (2440)	5.4 (1220)	22.2 (5000)
KL161ASH37		1767 (69.5)	1610 (63.4)	4315 (169.9)	955	600	495	9.4 (2105)	4.7 (1053)	22.2 (5000)
KL230ASH22X2	230	2289 (90.1)	2032 (80.0)	5166 (203.4)	1205	740	565	8.0 (1791)	4.0 (896)	22.2 (5000)
KL230ASH25X2		2537 (99.9)	2281 (89.8)	5862 (230.8)	1350	820	605	7.2 (1608)	3.6 (804)	22.2 (5000)
KL230ASH28X2		2766 (108.9)	2540 (100.0)	6553 (258.0)	1505	905	650	6.5 (1469)	3.3 (735)	22.2 (5000)

230kV Post Insulators have a Ø300mm (Ø12") Corona Ring

*Note: The specified tensile load (STL) of the Two Hole Drop Eye is 66.7 kN (15,000 lbs) and the Vertical Trunnion is 22.2 kN (5000 lbs).

BASE END FITTINGS

K-LINE Transmission Line Post Insulators are available in four base mounting configurations: Bolt Circle Base, Gain Base, Curved Bendable Gain Base, or Flat Bendable Gain Base.

Corrosion protection of the steel or iron end fittings is provided by hot-dip galvanizing to CSA G164 or ASTM A153 specifications. Both the Curved and the Flat Bendable Gain Bases are available in aluminum or steel.

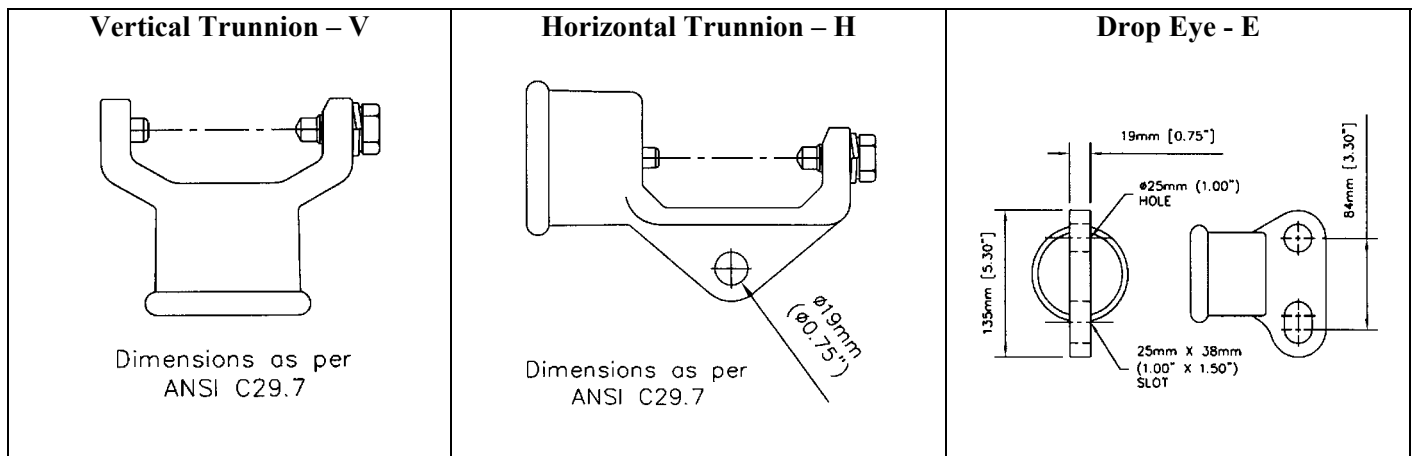
The standard base end fittings available are listed and detailed in the table below. For other special base end fittings contact **KLI**.

<p style="text-align: center;">Bolt Circle Base</p> <p style="text-align: center;">4 - $\phi 18\text{mm}$ ($\phi 0.69$" HOLES ON 127mm (5.00" BOLT CIRCLE DIA.</p>	<p style="text-align: center;">Gain Base – G</p> <p style="text-align: center;">$\phi 178\text{mm}$ ($\phi 7.01$" POLE</p> <p style="text-align: center;">$\phi 236\text{mm}$ ($\phi 9.30$" POLE</p>
<p style="text-align: center;">Curved Bendable Gain Base Steel – B Aluminum – B3</p> <p style="text-align: center;">$\phi 178\text{mm}$ ($\phi 7.01$" POLE</p> <p style="text-align: center;">$\phi 236\text{mm}$ ($\phi 9.30$" POLE</p>	<p style="text-align: center;">Flat Bendable Gain Base Steel – BF8 Aluminum – B3F8</p> <p style="text-align: center;">$\phi 178\text{mm}$ ($\phi 7.01$" POLE</p> <p style="text-align: center;">$\phi 203\text{mm}$ ($\phi 8.00$" POLE</p>

LINE END FITTINGS

KLI Transmission Line Post Insulators are available with one of the following fittings: Vertical Trunnion, Horizontal Trunnion or Drop Eye. The Vertical and Horizontal Trunnions accommodate a bolted conductor clamp. The Drop Eye is designed for a conductor suspension clamp. The Horizontal Trunnion and Drop Eye end fittings have an additional eye for the attachment of other devices during installation or maintenance activities. All end fittings are made of galvanized iron or steel.

The line end fittings are radially swaged on to the core rod to provide the mechanical performance and to reduce the stress concentration. This along with our proprietary design ensures a watertight seal between the rubber and end fitting. This special silicone rubber to metal end fittings sealing process along with the sheath bond to the fiberglass rod prevents moisture ingress. For other special line fittings please contact KLI.



ORDERING INFORMATION

For ordering, the catalog number of the specific insulator is formulated as shown below:

Cat. No. KL115ASH 25

Voltage Class

No. of sheds

Base End Fitting Designation (See Base End Fittings)

Line End Fitting Designation (See Line End Fittings)



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