TAG CORPORATION

...since 1972

Pioneers in the field of design, manufacture and testing of Insulator Hardware, Conductor and Earthwire Accessories for High Voltage Transmission Lines, Distribution Lines and Substations.

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About Us

TAG Corporation was started in 1972 primarily for the design, testing, manufacture and supply of hardware fittings and accessories for high voltage power transmission lines.

TAG supplies to power project authorities like Powergrid Corporation of India Ltd. as well as turnkey contractors like KEC International, Kalpataru Power transmission Limited, Larsen and Toubro and TATA Projects to name a few.

Over the last 40 years, TAG has established various manufacturing facilities as well as a state of the art testing department for designing and testing these materials. The TAG Group today possesses an area of about 56000 Sq. meters and a built up area of about 25000 Sq. meters. These facilities enable TAG to manufacture its exhaustive range of products completely in-house thereby conforming to strict manufacturing quality and delivery period requirements.

TAG Laboratories, a unique facility for the testing of hardware fittings, accessories and overhead conductors regularly tests for more than 60 conductor manufacturers from around the world.

Transmission Line Vibration

Hardware fittings and accessories need careful design in order to withstand the extreme vibration forces which are commonplace in transmission lines. Failure to control these vibration forces will result in damage of Fittings, Insulators and conductors.

Our spacer dampers have been carefully designed, manufactured and subjected to extensive testing to ensure the longevity of transmission lines.

Technology Partners

Hydro Québec

In 1994, TAG entered into a technical collaboration with Hydro Quebec, Canada for the design, manufacture and supply of spacer dampers. In 1997, Hydro Quebec, in appreciation of TAG's R&D and testing facilities formed a technical partnership with them.

Over a million Spacer Dampers have been successfully supplied and installed in Twin, Triple, Quadruple, Hexagonal and Octagonal configurations.

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Manufacturing Facilities

TAG possesses a comprehensive in-house manufacturing and tooling facility for manufacture of all the components required for transmission line Hardware and conductor accessories.

Aluminium Fabrication Unit

This unit manufactures grading rings, corona control rings, dead end clamps, jumpers etc. The shop is equipped with customized CNC Bending machines, Hydraulic Presses, TIG and MIG welding machines.

Annual Capacity: 2000 T

Armor Rod Fabricating Unit

This unit specializes in the manufacture of Helical Armor rods, and Retaining rods used in transmission lines. An in-house tooling facility facilitates catering to individual customer requirements.

Annual Capacity: 1500 T

Steel Fabrication Unit

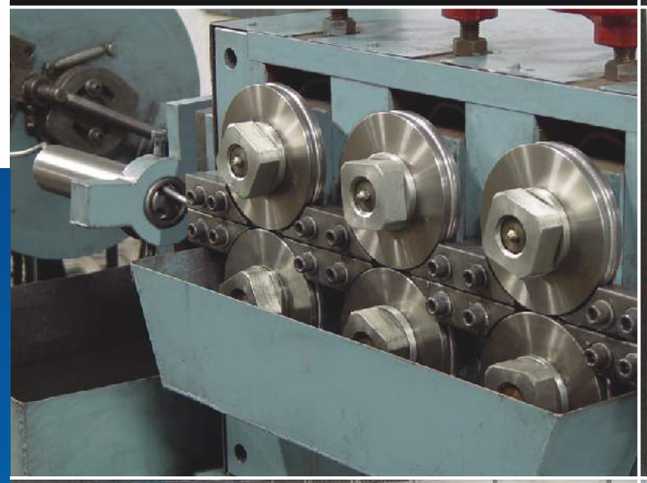
This unit manufactures all types of Yoke Plates, Sag Plates, Machined Forgings, Support Flats, Arcing Horns etc. required for all hardware fittings. It is equipped with CNC cutting machines, drilling machines, milling, turning, CNC bending and welding machines.

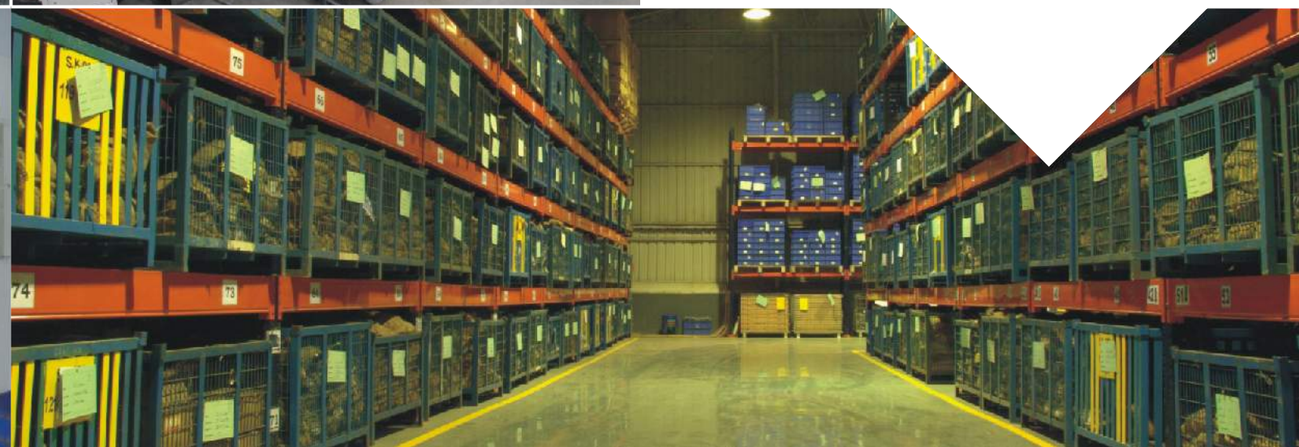
Annual capacity: 8000 T

Rubber Moulding Unit

This rubber mixing and moulding unit was commissioned in 1980 primarily for the manufacture of damping elements, liners, cushioned grips for spacer dampers, suspension clamps and line spacers respectively. The synthetic compounds used in spacers and spacer dampers were developed under the technical advice of DU PONT.

Annual Capacity: 250 T





Steel Forging Unit

Commissioned in 1976, this unit is equipped with two drop hammers of capacity 2000 kgs and 1000 kgs. All forgings undergo various operations like heat treatment, shot balsting, MPI Testing and Microstructure analysis. All operations are done in-house to ensure TAG's strict quality control.

Annual capacity: 3500 T

Tool Room

The heart of TAG's tool room are its 4 axis machining centers. Dies for Aluminum die casting, rubber moulding, drop forging, punching as well as jigs and fixtures are manufactured here. The tool room is also equipped with CNC machines, Spark Erosion machines and engraving machines.

Aluminium Die Casting Unit

This die casting facility is equipped with automatic die casting machines, electric furnaces and trimming presses to manufacture top class Aluminium alloy castings. Fettling and shot blasting is done on the castings to achieve required finish.

Annual capacity: 4500 T

Hot Dip Galvanizing Plant

Galvanizing of all components are carried out in its own State of the art Galvanizing plant equipped with a multi stage bath system unit and is supported by pollution control equipment, an effluent treatment plant and over head material handling systems. The plant ensures responsible disposal of its effluents.

Annual Capacity: 9000 T

All facilities are backed by an Integrated Material Management System.

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Testing Facilities

Established in 1975 for the testing of transmission line hardware fittings and accessories, this unique facility also tests conductors for manufacturers around the world.

High Voltage Laboratory

This facility, a first of its kind for a hardware manufacturer, was set up to test the electrical properties of hardware and accessories such as RIV, Corona and Voltage distribution. Equipped with high voltage transformers, coupling capacitors, artificial rain equipment, sphere gaps and supporting accessories, this lab also carries out RIV and Corona tests on conductors.

Mechanical Laboratory

Components are tested rigorously here to ascertain line-worthiness. This lab is equipped with a 5T, 30T, 100T and 200T tensile testing beds. In addition to tensile tests, stress-strain and creep tests are carried out on conductors in a climate controlled environment.

Electrical Laboratory

In addition to carrying out DC resistance tests on conductors and accessories, this lab is equipped with a 6000 Amp transformer for carrying out magnetic power loss and heat cycle tests on compression dead end clamps, mid-span joints etc.

Chemical Analysis Laboratory

In this Laboratory, raw materials and in process materials can be tested for their chemical composition with a spectrum analyzer and a high resolution microscope. The coating thickness of galvanized materials can also be measured in this lab.

Vibration Laboratory

TAG's vibration testing facility is complete with towers and terminals for conducting vibration test on I-Suspension, V-Suspension and Tension strings for Twin, Triple, Quadruple, Hexagonal and Octogonal bundles as well as Spacers, Dampers, Vibration Dampers and Conductors. The outdoor 85 meter test span accommodates Hardware strings up to 1200 kV Octogonal bundles while the indoor 35 meter test span is ideal for testing accessories of various configurations.

Rubber Testing Facility

As the synthetic rubber compound selected and used for the manufacture of rubber components require long life on transmission lines without losing their properties, TAG has installed an extensive testing facility for determining tensile strength, elongation, electrical resistance, heat aging and ozone resistance of the synthetic rubber components.

Performance Test Line

This 800m line has been set up to study the effect of wind induced vibration on transmission lines and to test the effectiveness of spacer dampers in controlling the same. The position of the line has been carefully chosen so as to be near normal to the direction of the wind for the majority of the year. Wireless sensors and a state of the art data acquisition system provide accurate results and real time monitoring.

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R&D Laboratory

TAG R&D Laboratory, approved by the department of Science and Technology has all necessary testing facilities to measure accurately - force, displacement, acceleration and frequency on various fittings under test. Further, chemical composition of metals, micro structure and vibration analysis can also be carried out.

TAG has also installed a wind tunnel to vibrate various conductors at normal wind speeds experienced by the transmission lines so that the self damping capacity can be ascertained.

Some of the other major achievements to come out of this lab are:

- Independent development of an improved Four Resonant Damper Development of Neoprene lined clamps in spacers to combat vibrations in transmission lines in consultation with Dupont, UK.
- Development of extremely low power loss fittings for 400kV systems.
- Development of Spacer Dampers in collaboration with Hydro Quebec, Canada for Twin, Triple, Quadruple, Hexagonal and Octagonal Bundles.
- Design and Development of high strength hardware fittings up to 1320 kN for Power Grid Corporation of India.
- Design and Development of 800 kV DC Hardware Fittings & Spacer Dampers for Hexagonal Bundle.
- Design and Development of Hardware fittings and Spacer Dampers for 1200kV Octagonal Bundle.
- Establishment of a full scale performance test line for carrying out tests on Spacer Dampers in live wind conditions.

Milestones

- 1973 Established in-house tool room & Aluminium casting unit.
- 1974 First 400kV Hardware manufacturer in India (UPSEB).
- 1975 Established TAG Laboratories & developed 4R Dampers indigenously.
- 1976 Established in-house forging shop.
- 1977 Established in-house high voltage testing laboratory. Developed Armor grip spacers.
- 1978 Developed socket ended forged components.
- 1979 Established M.S. fabrication shop & galvanizing shop.
- 1980 Established vibration testing & rubber mixing and moulding facilities.
- 1981 Established in-house Aluminium extrusion facility.
- 1982 Installed wind tunnel to study “Aeolian” vibration.
- 1986 Successfully tested HVDC fittings at FGH Laboratories, Germany.
- 1994 Entered into collaboration with Hydro-Quebec, Canada for manufacturing spacer dampers.
- 1996 Successfully executed order for Accessories to the first 800kV UPSEB transmission line.
- 1998 Entered into a technical partnership with Hydro Quebec, Canada for development of various fittings.
- 2000 Successfully executed order for complete fittings and Accessories for 500kV HVDC TALCHER II project.
- 2002 Successfully executed first 800kV order for Tehri – Meerut Line.
- 2004 Increased production four-fold
- 2007 Development of 320 kN & 420 kN Disc Insulator Hardware Fittings.
- 2008 Development of 800 kV DC Hardware Fittings & Spacer Damper for Hexagonal Bundle.
- 2009 Development of 1200 kV Hardware Fittings & Spacer Damper for Octagonal Bundle.
- 2010 First Manufacturer to successfully carry out Performance tests on Twin, Triple, Quadruple and Hexagonal Spacer Dampers.
- 2011 Design and manufacture of 765 KV Hexagonal Hardware Fittings and Accessories.
- 2012 Established a full scale performance test line for Spacer Dampers

Quality

With the help of these comprehensive and well equipped testing facilities, TAG Corporation, an ISO 9001: 2008 company ensures that all components manufactured and supplied conform to strict quality and process parameters be it the raw materials used in the manufacture of rubber components and forgings or final assembly of the product before despatch.

CERTIFICATE

TAG Corporation

ISO 9001 : 2008

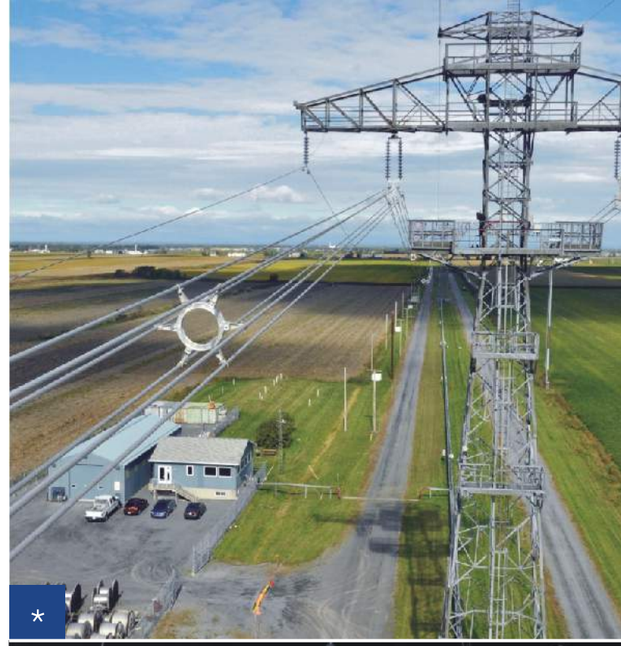
TAG CORPORATION

Quality Policy

TAG CORPORATION is committed to the complete satisfaction of its customers by manufacturing defect free products and delivering the same at the right time with total involvement of the whole organization and by adopting continual improvement processes.

R.T.Churi
Managing Director

R.V. Gopalan
Director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In conformance with its strict quality policy, TAG has successfully tested its components in various laboratories around the world like....

*IREQ (Canada)
STRI (Sweden)
CESI (Italy)
NGK (Japan)
KEMA (Holland)
FGH (Germany)
**Bazet (France)
ZKU (Czech Republic)
Wuhan Labs (China)
CEPRI (China)
CPRI (India)
IISc (India)
EDF (France)
IIT (India)
BHEL (India)
SERC (India)

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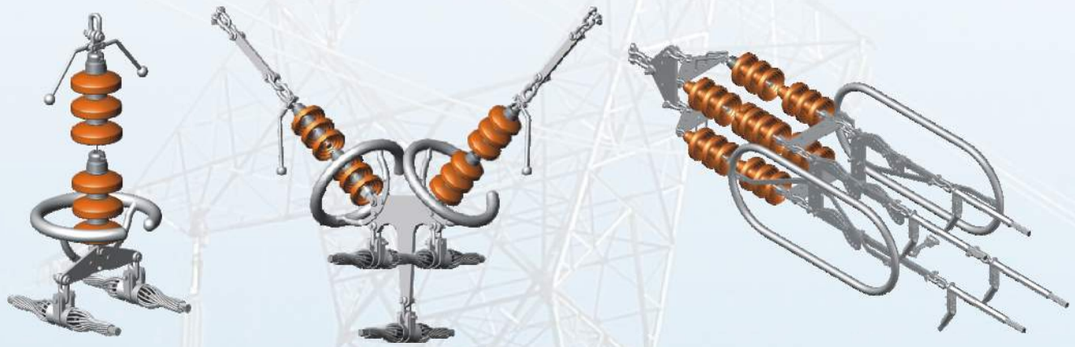
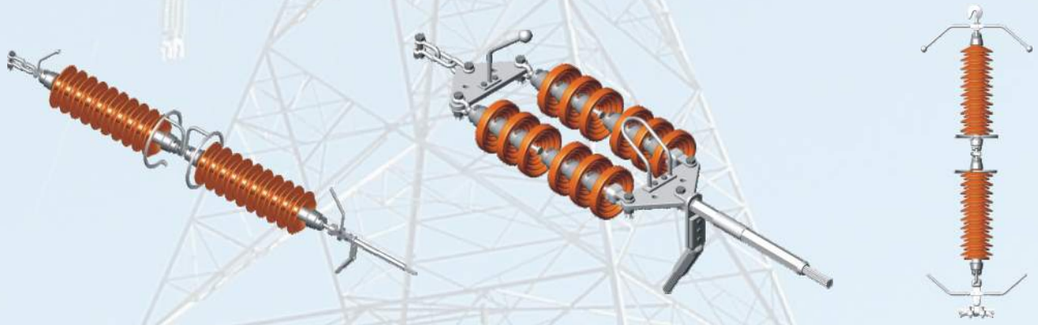
Products

1200kV, 800kV and 765kV Hardware

500kV and 400kV Hardware



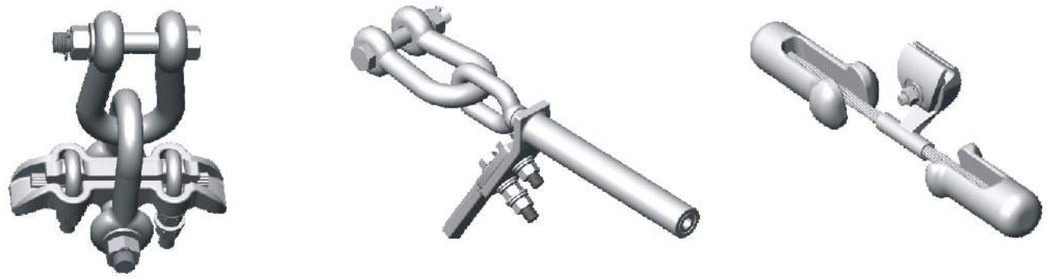
230kV Hardware



132kV Hardware

Conductor Accessories

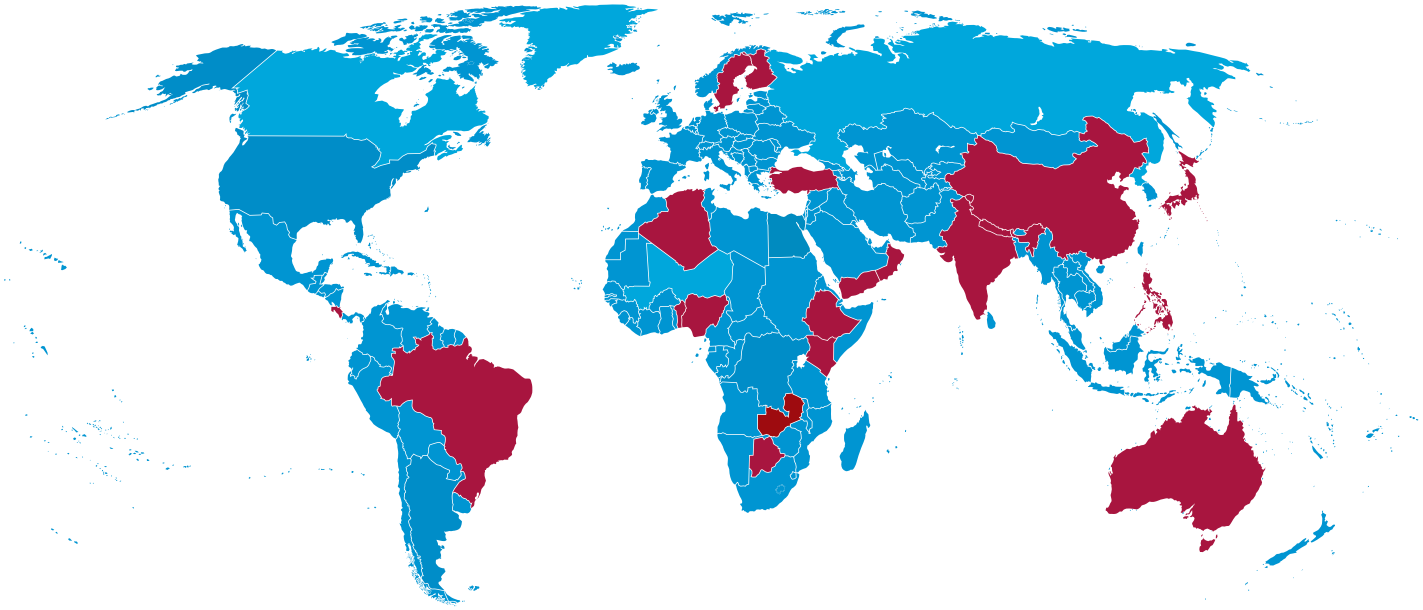
Earthwire Accessories



Customers

Testing Division

SONELGAZ, Algeria
POWER LINK , Queensland, Australia
BOTSWANA POWER CORPORATION, Botswana
ABENCOR SUMINISTROS - S.A., Brazil
DONGGUAN GEONENG ELECTRIC CO.LTD, China
INSTITUTO COSTARRIECENSE DE ELECTRICIDAD, Costa Rica
ETHIOPIAN ELECTRIC POWER CORPORATION, Ethiopia
FINGRID, Finland
J-POWER SYSTEM CORPORATION, Japan
KENYA ELECTRICITY TRANSMISSION COMPANY LTD, Kenya
NIGER DELTA POWER HOLDING COMPANY OF NIGERIA, Nigeria
TRANSMISSION COMPANY OF NIGERIA, Nigeria
OMAN ALUMINIUM PROCESSING INDUSTRIES LLC, Oman
NGPC PHILIPHINES, Philiphines
MINISTRY OF ENERGY AND WATER, Republic Of Benin
SVESKA KRAFTNAT, Sweden
TURKISH POWER TRANSMISSION LTD, Turkey
PEC, Yemen
ZESCO, Zambia



Product Division

POWER GRID CORPORATION OF INDIA LIMITED
ANDHRA PRADESH ELECTRICITY BOARD
MADHYAPRADESH ELECTRICITY BOARD
MAHARASTRA ELECTRICITY BOARD
NATIONAL THERMAL POWER CORPORATION
ORISSA ELECTRICITY BOARD
TAMILNADU ELECTRICITY BOARD
UTTAR PRADESH ELECTRICITY BOARD
WEST BENGAL ELECTRICITY BOARD
TRANSMISSION COMPANY OF NIGERIA
ADITYA BIRLA INSULATORS LIMITED
ASTER PVT LIMITED
EMC LIMITED
GAMMON INDIA LIMITED
HYUNDAI ECC LIMITED
ICOMM TELE LIMITED
ISOLUX DE MEXICO
JYOTI ENGINEERS & CONTRACTORS PVT LIMITED
KENYA ELECTRICITY TRANSMISSION COMPANY LTD.
JYOTI STRUCTURES LIMITED
KALPATARU POWER TRANSMISSION LIMITED
KEC INTERNATIONAL LIMITED
LANCO INFRATECH LIMITED
LARSEN & TOUBRO LIMITED
SHYAMA POWER INDIA LIMITED
TATA POWER COMPANY LIMITED
TATA PROJECTS LIMITED

TAG CORPORATION

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