



COMPANY OVERVIEW

Manufacturer of Transformers

Pratik Electricals is run and managed by specialists whose expertise lies in the manufacturing and assembly of power and distribution transformers. Established in the year 1990, the organisation has more than 30 years of experience in the industry and is ISO 9001 : 2015 certified company . Equipped with the latest techniques and a state of the art manufacturing unit, our transformers comply with international standards and guidelines while keeping in mind the customer's requirements.

Our transformers have been type tested for dynamic and thermal capacity to withstand cut-off, impulse, temperature rise test, commotion level, tan delta and capacities at NABL Labs, CPRI and ERDA. Our products comprehensively fulfilled the requirements of local and international standard specifications and their stringent requirements.

Pratik Electricals commits itself to introduce and maintain a quality system that ensures quality products and services to total satisfaction of the customer. The quality control department controls and monitor all quality control documents and carries out its inspection at all strategic points in the production process. TQM (Total Quality Management) programme is in place, which is backed by strong in house R&D and a crew of service engineers for providing after sales services. At PE R&D is a continuous process and department has consistently produced innovative concepts that have now become industry standards. A highly qualified and experienced technical personnel keeps an eye upon the latest development in technology and the product to supply a prime quality product at competitive price.



OUR VISION

*PIONEERING EXCELLENCE IN
POWER CONVERSION :
ILLUMINATING PATHS TO
SUSTAINABLE ENERGY FUTURE!*

OUR MISSION

Our mission is to be a trusted partner for our customers by delivering innovative and efficient transformer solutions. We strive to exceed expectations through exceptional quality, reliable performance, and unwavering dedication to customer satisfaction.



“ COMMITMENT TO QUALITY & CUSTOMER SATISFACTION

At Pratik Electricals, these values are paramount. We have implemented a rigorous quality management system that ensures every transformer meets the highest standards of design, manufacturing, and performance. Our team of experts is dedicated to exceeding customer expectations through personalised service and comprehensive after-sales support. We believe in building long-term relationships with our customers, and their success is our ultimate aim.

OBJECTIVES



Passion and Commitment

We emphasize our dedication and enthusiasm for the field of electrical transformer manufacturing.

Best Practices

At PE we highlight our focus on safety, sustainability, and continuous improvement, indicating our commitment to industry standards and innovation.



Operational Excellence

Our goal is for achieving high standards in operations, which is crucial in manufacturing.

Customer Satisfaction

We also indicate awareness of the importance towards meeting customer needs and ensuring satisfaction with our products.





QUALITY ENVIRONMENT **AND SAFETY POLICY**

We ensure precision, reliability, and innovation in every stage of production. Seeking to contribute to a team dedicated to delivering superior quality and efficiency in electrical power distribution solutions. We at PE are passionate about implementing best practices in safety, sustainability, and continuous improvement to drive operational excellence and customer satisfaction.

We emphasize on qualities like precision, reliability, and innovation, and expresses our desire to contribute to a team focused on high-quality production and efficient operations. We perform all the necessary tests before dispatching any transformer to make sure that all the technical specifications are accurate. We are further committed to prevention of pollution in all forms of its operations and will always comply to meet all applicable legal requirements.

MANUFACTURING PROCESS

1) CORE ASSEMBLY

- ⚡ The basic raw material is COLD ROLLED GRAIN ORIENTED (CRGO) Silicon Steel.
- ⚡ It is in the form of thin sheets & cut to size as per design.
- ⚡ Generally, three different shapes of core laminations are used in one assembly.
- ⚡ Notching is performed to increase the magnetic path.
- ⚡ The laminations are put through the annealing process.
- ⚡ These laminations are assembled in such a manner that there is no air gap between the joints of two consecutive sheets.
- ⚡ The entire assembly is done on a frame commonly known as the core channel. These frames being used as clamping support of the core assembly.



2) COIL WINDING

a) High Voltage (H.V) Coils :

- ⚡ H.V. Coils are the components of finished transformers. They are made on automatic layer setting winding machines.
- ⚡ A solid cylindrical former of predetermined diameter and length is being used as the limb over which is made.
- ⚡ Generally, round insulated wire of either copper (Cu) or Aluminium (Al) is used as basic raw material.
- ⚡ The coils are made in a number of layers.
- ⚡ The starting and finishing leads of each coil are terminated on either side of the coil.
- ⚡ These leads are properly sleeved and locked at a number of points.

b) Low Voltage Coils :

- ⚡ L.V. Coils are also one of the components of the transformer. The procedure of making a low voltage coil is generally the same as described in (a) above.
- ⚡ The shape of the basic raw material (Al or Cu) is rectangular.
- ⚡ The Test : The “Turn Test” is carried out on the coils as per the required specifications.



3) CORE COIL ASSEMBLY

- ⚡ The components produced in the coil winding and core assembly stages are then taken into the core-coil assembly stage.
- ⚡ The core assembly is vertically placed with the footplate touching the ground and the top yoke of the core is removed. The limbs of the core are tightly wrapped with cotton tape and then varnished.
- ⚡ A cylinder made out of insulating pressboard/ press pan paper is wrapped on all three limbs.
- ⚡ A low Voltage Coil is placed on the insulated core limbs.
- ⚡ Insulating blocks of specified thickness and number are placed both at the top and bottom of the L.V coil.
- ⚡ Cylinder made out of corrugated paper or plain cylinder with oil ducts is provided over L.V coil.
- ⚡ H.V. Coils are placed over the cylinder.
- ⚡ The gap between each section of H.V. Coils including top & bottom clearances is maintained with the help of oil ducts, as per the design/drawings.
- ⚡ The Top Yoke is refilled. The top core frame including core bolts and tie rods are fixed in position.
- ⚡ Primary and secondary windings are connected as per the requirements. Phase barriers between H.V. phases are placed as per requirement.
- ⚡ Connections to the tapping switch (if required) are made.
- ⚡ Finally, the core coil assembly is placed in the oven for drying.

4) TRANSFORMER TANK

- ⚡ ECS has a state-of-art in-house facility for manufacturing transformer tanks. All tanks are made of high-quality steel and can withstand vacuum as specified by the international standards and the customer.
- ⚡ All welds are tested, ensuring 100% leakproof of seams and mechanical strength. Transformers with Corrugated Fin-Type radiators are also manufactured. The fins are manufactured of mild steel. The fin height and length are according to the customer's specifications and fins can be plain or embossed. All transformer tanks are given a smooth finishing by using the seven-tank cleaning process.

5) PAINTING AND FINISHING PROCESS

Painting: The entire procedure of painting is done under two stages :

1) Cleaning of tanks

- ⚡ The cleaning of the tank is done normally by chipping/grinding.
- ⚡ The outside surface of the tank is cleaned using the seven-tank phosphate cleaning process.

2) Painting of tanks

- ⚡ After cleaning the tanks, a coat of hot oil resistance paint is applied to the internal surface of the tank.
- ⚡ The outside surface is painted with an epoxy powder coat or a coat of Red Oxide primer and subsequently with one coat of enamel paint as per the customer's requirement.

Finishing :

- ⚡ Fittings and accessories as per the customer's specification and drawing are checked.
- ⚡ Air Pressure test is subjected to avoid any leakage and seepage on all transformer.
- ⚡ Transformers are filled with oil up to the minimum level marking, wherever necessary.
- ⚡ Loose accessories like, earthing terminals, bimetallic connectors; dial-type thermometers are also checked for proper fittings.

6) TANK UP

The core-coil assembly and tank supplied by the fabrication department are then taken into the tank-up stage.

The procedure is :

The core-coil assembly is taken out of the oven and the insulation resistance test is carried out.

01

Only if the insulation resistance value is as per the specification, the assembly may be taken for tank-up.

02

The tanks, supplied by the fabrication department are brought to the tank-up department duly painted.

03

Fittings like drain valves, HV& LV Bushings, conservator, oil level indicator, and explosion vent are fitted in the tanks.

04

The Core-coil assembly is then placed into the tank and properly locked up.

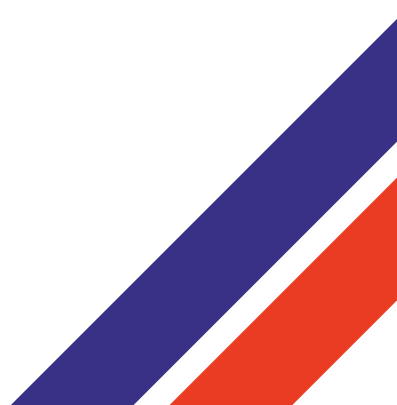
05

Pure filtered transformer oil is filled in the tank to immerse the assembly only.

06

Connections of primary and secondary to the terminal bushings are made. The operating handle for the ratio switch is fitted, wherever required.

07



7) TESTING

Once the transformer is tanked up and the tank sealed, then the testing of the transformer commences. The routine transformer tests carried out include

- 1) Transformer winding resistance measurement.
- 2) Transformer ratio test.
- 3) Transformer vector group test.
- 4) Measurement of impedance voltage/short circuit impedance (principal tap) and load loss (Short circuit test).
- 5) Measurement of no-load loss and current (Open circuit test).
- 6) Measurement of insulation resistance.
- 7) Dielectric tests of a transformer.
- 8) Tests on on-load tap-changer.
- 9) Oil pressure test on the transformer to check against leakages past joints and gaskets.

8) DELIVERY

Our delivery commitment ensures that every electrical transformer reaches our customers safely and on schedule. We prioritize efficient logistics and shipping arrangements to guarantee prompt delivery to any location worldwide. Each transformer is securely packaged to prevent damage during transportation, and we work closely with trusted shipping partners to ensure reliable and timely delivery. Our dedicated logistics team monitors each shipment closely, providing real-time updates and proactive communication to keep our customers informed every step of the way. At PE, we are committed to delivering transformers with the utmost care and efficiency, ensuring customer satisfaction from order placement to final delivery."



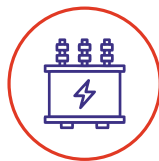
PRODUCTS & SERVICES

Pratik Electricals offers a comprehensive range of transformers and related services to cater to diverse customer needs in power transmission and distribution.



Distribution Transformers

We manufacture both oil-filled and dry-type distribution transformers, ranging from a capacity of 10 KVA to 5000 KVA. Our transformers are rigorously tested and certified to meet all applicable Indian and international standards, ensuring optimal performance and reliability.



Power Transformers

Pratik Electricals designs and manufactures power transformers for high voltage applications. Our capacity ranges from 5 MVA to 10 MVA, suitable for power generation stations and transmission substations. These transformers are equipped with advanced features and protection devices, delivering efficient and reliable power transfer.



Compact Substations

We offer pre-fabricated compact substations that integrate transformers, switchgear, and other necessary equipment within a single, secure housing. These compact units are ideal for industrial and urban applications, providing a space-saving and efficient solution for power distribution.



Special Purpose Transformers

In addition to standard transformers, Pratik Electricals caters to specialised needs with a variety of custom-designed transformers. Some examples of our special purpose transformers include :

- ⚡ Generator Transformers
- ⚡ Furnace Duty Transformers
- ⚡ Lighting Transformers
- ⚡ Earthing Transformers
- ⚡ Isolation Transformers
- ⚡ Special Transformers
- ⚡ Inverter Duty Transformers
- ⚡ Step up Transformer
- ⚡ Solar Transformer
- ⚡ Converter Duty Transformer



Repair Services

Our team of skilled technicians provides comprehensive repair services for distribution and power transformers with a capacity of up to 10 MVA. We offer a range of repair solutions to ensure your transformers continue to operate at peak performance.



Manufacturing Services

Pratik Electricals offers a variety of manufacturing services to support transformer projects of all sizes. These services include :

- ⚡ CRGO Lamination and Core Assembly
- ⚡ LV & HV Winding
- ⚡ Core Coil Assembly (up to 10 MVA)

By offering this comprehensive suite of products and services, Pratik Electricals positions itself as a complete resource for all your transformer needs.





RELIABILITY AND PERFORMANCE

Pratik Electricals hereby warrant that the transformers supplied by us shall have no defect arising from the design, materials or workmanship that may develop under normal use of the transformers in the conditions prevailing at the site of installation. This warranty does not cover accessories like porcelain bushings and its metal parts and breather.

This warranty will be valid if the installation and maintenance of the transformers is not done as per our “Manual of installation, operation and maintenance” provided with the transformer. From the date of purchase order we will deliver the product within 3 to 4 weeks less time .The guarantee of the individual transformer to be supplied shall be for 24 (Twenty Four) months from the date of delivery against any delivery manufacturing defect on account of improper design, bad workmanship or poor quality of raw material used etc. and any such defects occurring within the above period will be repaired/replaced by us free of cost.

COMPETITIVE ADVANTAGES

Pratik Electricals stands out in the transformer industry through its commitment to several key strengths :



Extensive Experience

With over 30 years of experience, we possess a deep understanding of transformer design, manufacturing, and application. This expertise allows us to deliver reliable and efficient solutions that meet the evolving needs of the market.



Unwavering Quality

Our commitment to quality is unwavering. We have implemented a rigorous quality management system that adheres to the highest national and international standards. This ensures every transformer we produce meets stringent performance and safety requirements.



In-House Innovation

At Pratik Electricals, we believe in continuous improvement. Our dedicated research and development team is constantly exploring new technologies and materials to enhance transformer performance, efficiency, and sustainability.



Customer Focus

We prioritise customer satisfaction. Our after-sales services are comprehensive, ensuring you receive the support you need to keep your transformers operating optimally. This customer-centric approach fosters long-term relationships and builds trust.



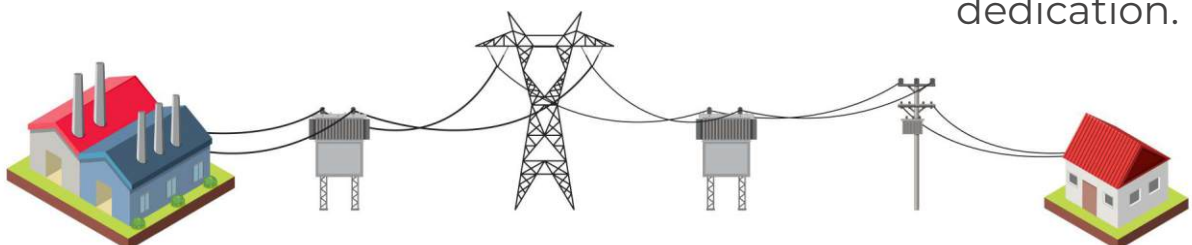
Diverse Product Portfolio

We offer a wide range of transformers and related services, catering to diverse customer requirements in power transmission and distribution. This comprehensive offering allows us to be a one-stop shop for all your transformer needs.



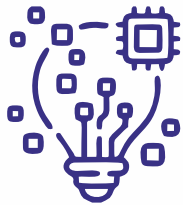
Skilled Workforce

Our team is our greatest asset. We employ highly skilled and qualified engineers, technicians, and personnel who are passionate about transformer technology. Their expertise ensures every stage of the process, from design to manufacturing and after-sales service, is carried out with precision and dedication.



COMMITMENT TO THE FUTURE

Pratik Electricals is not just a leader in the present, but also a company dedicated to shaping the future of the transformer industry. Here's how we are committed to progress :



Embracing Technological Advancements

We recognize the importance of staying ahead of the curve. We actively embrace technological advancements and integrate them into our processes to ensure our transformers remain at the forefront of efficiency, reliability, and innovation.

Culture of Collaboration

We foster a collaborative environment where our team members can share ideas and expertise. This collaborative spirit fuels innovation and allows us to develop even more effective transformer solutions for our customers.



Redefining Standards

Our vision is to redefine the standards in power transmission. Through continuous improvement and a commitment to excellence, we strive to set new benchmarks for performance, reliability, and sustainability within the industry.

Delivering Efficient & Sustainable Solutions

We understand the growing need for sustainable practices. Our focus on research and development extends to exploring eco-friendly materials and designs that optimise energy efficiency and minimise environmental impact. By delivering efficient and sustainable solutions, we contribute to a greener future.





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