



We manufacture

- Distribution Transformer up to 2500 KVA, 33 KV class
- Single Phase Transformers
- Power Transformers up to 10 MVA, 33 KV voltage class with OLTC
- Earthing Transformers up to 33 KV Class and 1000A for 30 Sec
- Dual Ratio Transformer up to 5000 KVA, 33KV Class
- Hermetically Sealed Transformers
- Step up Transformers & Generator Transformers
- Transformers for variable speed drives in oil field application up to 1000KVA with Multi Tap Secondaries
- Package Sub stations and Transformers with Bus Duct
- Dry type Transformer up to 5000 KVA, 11KV class

Company Introduction

KPEL, is certified for ISO 9001:2015, KPEL has complete quality management system to offer the best customer satisfaction. Nothing has a higher priority than quality in engineering, in manufacturing, in sales and in services.

KPEL established its Transformer manufacturing unit in 2003 at Hyderabad India. Its high-tech factory in Rudraram, Sangareddy Dist, (Telengana) with a wide spread area of 10 acres and with built up area of 80,000sq.ft, is fitted with state of art line to produce Transformers to meet the needs of public utilities organizations and of private industrial sectors in power distribution products that include,

- Three phase & Single phase Distribution & Power Transformers up to 10000 KVA of 33 KV class
 - Special Designed Transformers like Convertor Duty, Solar application, Earthing Transformer, Transformer suitable for VFD application, and K rated Transformers etc
- (Pad Mount, Pole Mount, Single Phase, Three Phase – we build all of them as exactly as required)



Factory Interior @ KPEL

KPEL has supplied over 1,00,000 (One Lakh) of Transformers which are satisfactorily operating across 14 states in India.

With over 15 years of manufacturing experience, you can be assured that we will deliver a high quality product that meets your needs.

Perhaps what sets us apart is our commitment to the highest standards of quality from process, service, and quality assurance to the final product. Quality is and will always reflect in what we offer.

KPEL Transformer design and manufacturing capacity is validated by type test of 5000 kVA at CPRI for Short Circuit, Impulse with stand and temperature rise test. We are proud to announce that our R&D Team has developed super low loss Amorphous CORE Transformers to cater as per Bureau of Energy Efficient star rated Transformers. These are with special designs and fittings to sustain load variations and to meet stringent customer requirements & standards.



KPEL is among the first companies to India to meet the highest 5-Star energy efficiency requirements of BEE.



KPEL is licensed to manufacture ISI marked Transformer up to EEL3.

Vision

It was KPEL's vision of becoming integrated global Transformer manufacturer of Energy Efficient Equipment for power distribution.

We at KPEL

Our manufacturing facilities and product range was expanded up to 10 MVA with 33 KV class. Our products comprehensively fulfills the requirements of local and international standards. At KPEL, R&D is a continuous process and department has consistently produced innovative concepts that have now become industry standards. Highly qualified and experienced technical personnel keep an eye upon the latest development in technology and the product to supply a prime quality product at competitive price. KPEL has in house facilities for conducting all routine tests as per IS and IEC standards and temperature rise test.

Design that enhances performance

KPEL has in house Design skills to customize a Transformer for particular specifications which enables the flexibility to offer transformers to wide variety markets in terms of Design.

Design activity is continuously reviewed as per ISO 9001 requirements during periodic internal and external audits.

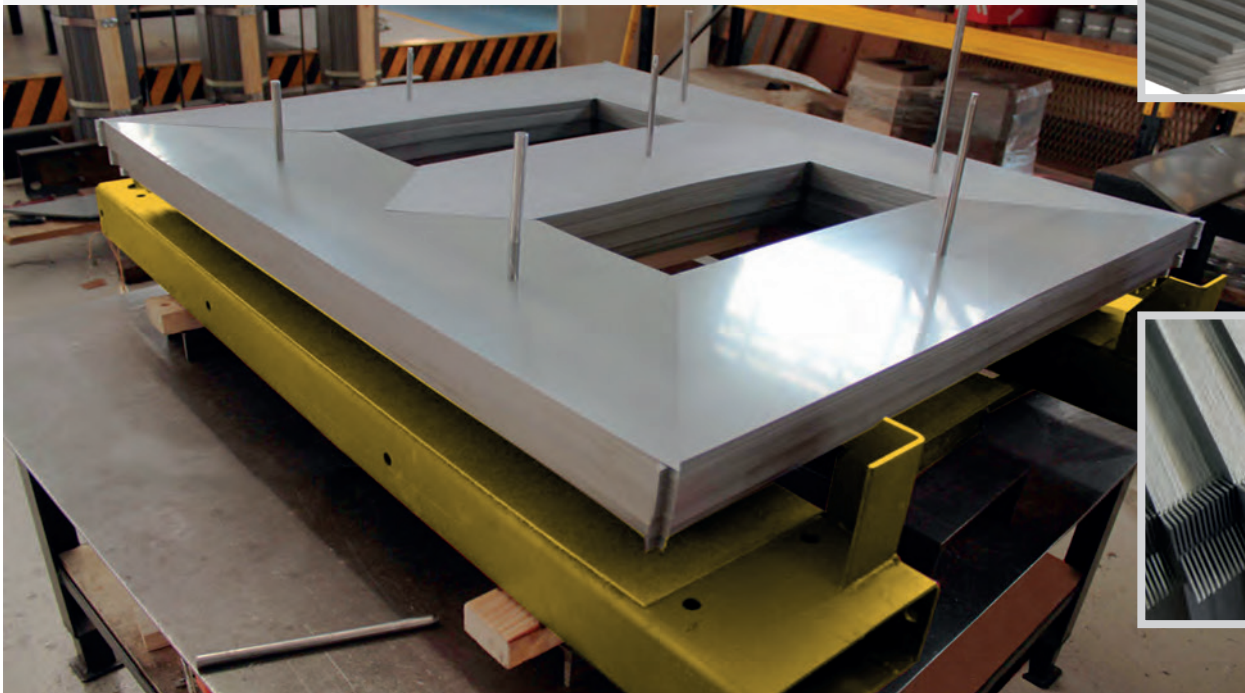
KPEL utilizes latest design automation tools including 3D modeling. Our design software optimizes by running thousands of iterations and selecting the lowest cost design enabling us to offer the lowest total cost of Transformer to our customers.

KPEL has following unique features that distinguishes it from other conventional Designs.

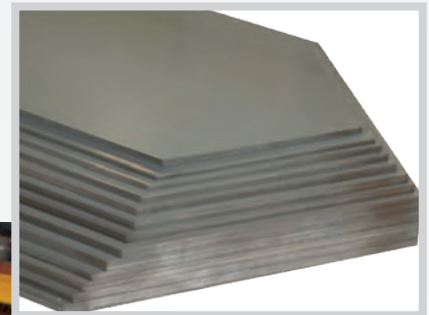
CRGO Core laminations with step LAP

Use of step lap core design which results in reduced magnetizing current, noise level and no load losses.

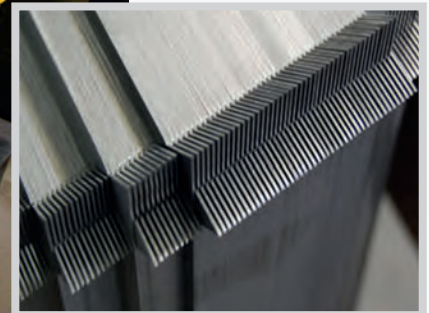
CORE is constructed from laminations of cold rolled grain oriented (CRGO), low loss Electrical steel, featuring excellent magnetic properties. Slit coils conforming to international standards are sourced from reputed mills. The individual stampings are coated on both sides with insulating material that is both oil and temperature resistant. The laminations are assembled in jigs taped and clamped in such a way so as to reduce vibration and inherent noise to a minimum.



Core Stacking in Process



Step Lap
Lamination
Cut on CNC Core
Cutting Line



Step lap
lamination
built core



Automated Amorphous Core Cutting & Stacking Line



Coils of AMDT



Core Coil Assembly of AMDT

Amorphous Core Transformers

Amorphous Metal Distribution Transformers (AMDT) from KPEL represents the ultra-low loss design solution, delivering the highest efficiencies. Amorphous metal - A technological advantage amorphous metal (AM) enables a significant reduction in no-load losses as compared to CRGO.

KPEL has in house automated amorphous core manufacturing line and is among handful of companies with such capability.

Losses in Amorphous core material

Amorphous core material (AM) offers both reduced hysteresis loss and eddy current loss because this material has a random grain and magnetic domain structure which results in high permeability, which ensures a narrow hysteresis curve compared to conventional CRGO material. Eddy current losses are reduced by the high resistivity of the Amorphous material, and the thickness of the film.

The laminations comprise thin ribbons and the thickness of the sheet is about 1/10 th that of the CRGO, i.e. approximately 0.025 to 0.030 mm. Amorphous Core Transformers offer a 70 to 80% reduction in no-load losses compared to Transformers using CRGO core material. KPEL draws immense cost advantage due to its in house Amorphous core facilities.

Amorphous Metal Distribution Transformers (AMDT), are REPAIRBLE as equally as CRGO Transformers, and easily serviced by our skilled service team at site or at our works.



Amorphous Core Cutting & Stacking in Process



Disc wound Coils



Foil wound Coils

Windings

Windings are designed for thermal, electrical and mechanical stresses. Typical pictures of types of windings generally adopted.

LV Foil Wound Coils

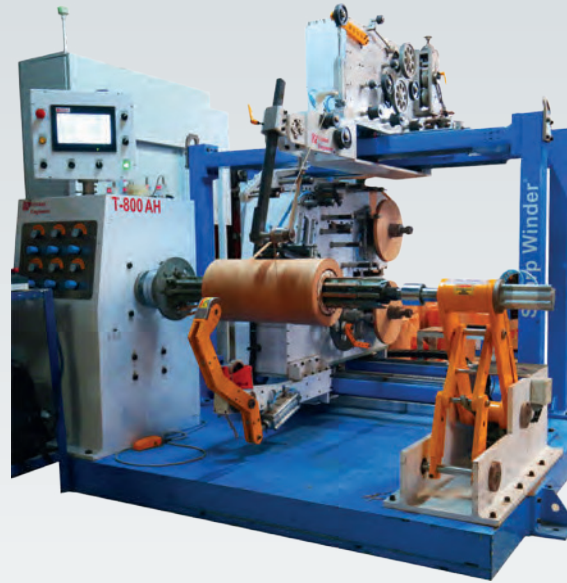
The art of winding can be dramatically advanced by the foil windings. (Copper / Aluminum sheet), especially for high currents and low voltage windings. These windings are designed with a special diamond dotted paper insulation between layers. Foil windings are best preferred to reduce the axial forces under fault conditions results in better ability to withstand a short circuit force/current. The greater winding efficiency of foil allows a 50% increase in the power output of a given core when compared to round/rectangular conductors. In the alternative, Transformer can put out the same power without overheating. The lower core cost of this Transformer will offset the higher cost of foil winding.

HV Coils

High voltage coils are generally with round / rectangular strips with PVA covered or with paper covered insulations. Windings or coils are made from high quality electrolytic grade copper / aluminum conductors sourced from reputed manufacturers. The windings are concentric circular or elliptical or rectangular in shape based on the design. Various types of design constructions namely layer, crossover, disc, etc are adopted.

Standard manufacturing practices

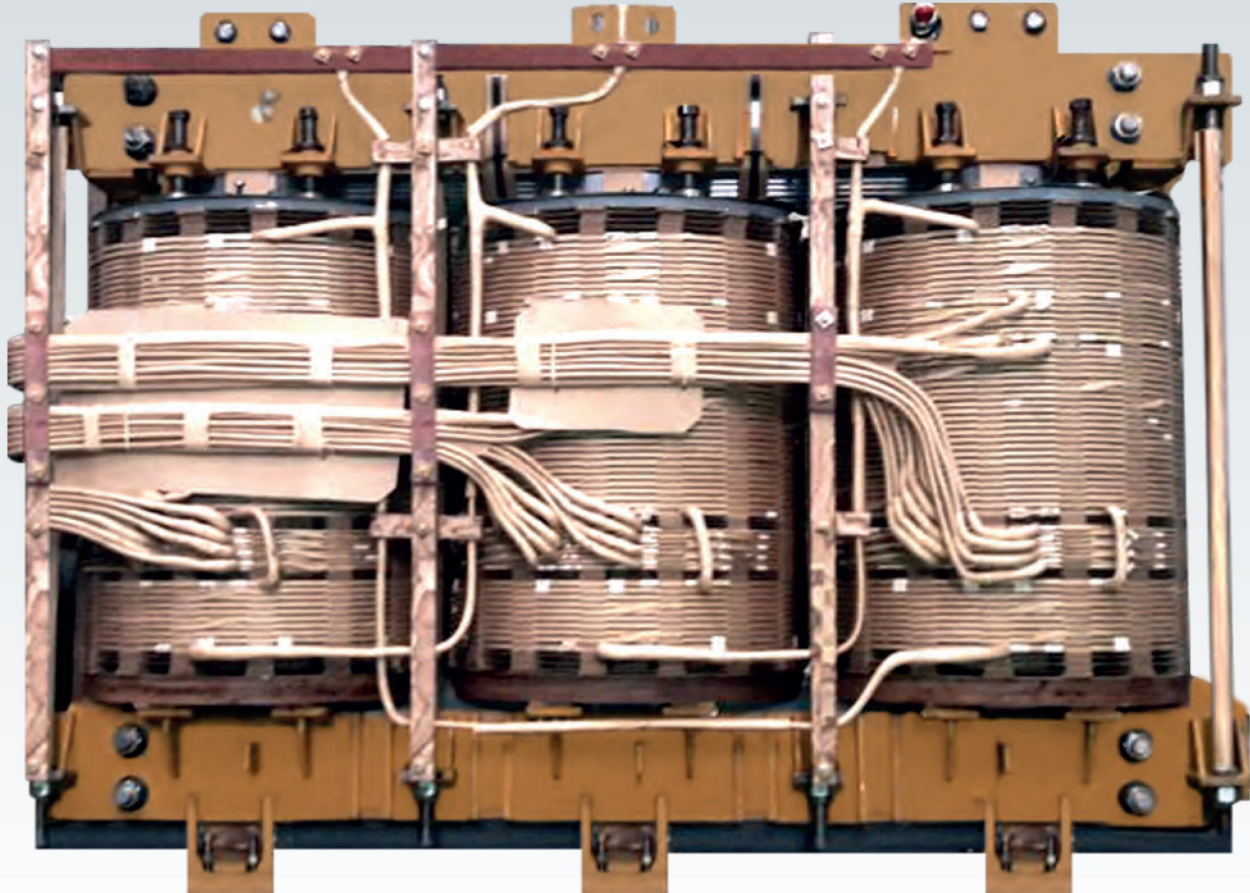
- KPEL use only pre- compressed board material for insulation
- Axial and radial banding for sturdiness
- Interleaved disc winding for 33 KV CLASS Transformers
- Layer type of winding for LV and HV coils for better Impulse voltage distribution
- Proper distribution of clamping force for better clamping of windings
- Pre shrinkage of coil, smooth control of shrinkage force
- No further shrinkage of windings under short circuit forces in the system
- For Core coil assembly, Pre compressed Press board material / supreme grade insulating material is used
- Silver coated tap switches for high current transformers and linear tap switches
- Taps at winding middle for better ampere turn distribution and increased short circuit withstand



Automated Winding Machine



Static Compression of windings



Defined routing of tap and line leads for better voltage distribution.

Heat drying vacuum oven

The core and coil assembly with respective connections is dried in vacuum oven for a pre determined oven cycle based on insulation structure, at a vacuum level up to 1 torr @100 C temperature, which eliminates complete moisture from insulation material. And also use of Micro Processor based Temperature for controller to record Temperature v/s Time, for improvement of Insulation resistance values.



Vacuum Oven

Tanking and Testing

The dried core coil assembly is boxed up in a pre fabricated M.S. Tank which is painted with a hot Transformer oil resistant paint, the tanks are fabricated with mild steel procured from reputed firms.

Tanks are electrically welded with adequate sheet thickness and suitable stiffeners are provided to withstand operational and sudden pressures. Cooling is achieved by pressed steel radiators.

Tanks are shot blasted before applying a primer coat of paint. External surface can also be Zinc sprayed on request. And Sprayed with two coats of Grey weather resistant, epoxy finish paint highly resistant to chemicals and oil. Transformers can be Hermitically Sealed or Breathing type with conservator.

The finished Transformer is offered for routine testing as per relevant standards. All the transformers are routine tested with relevant standard / customer specifications are conducted. All the transformer are Pressure Tested at a positive pressure of 6 PSI for a period of 16 hours and the job is finished and kept ready for dispatch after application of final painting as per requirement.



Test Lab

Our product Range

- Distribution & Power Transformers up to 10000KVA, 33 KV Class (Including single/three phase)
- Special Transformers
- Solar application Transformers
- K-Rated Transformers
- Inverter/convertor duty Transformers
- Energy Efficient Amorphous core Transformers
- Testing Transformers
- Earthing / Neutral Grounding Transformers
- VPI Transformers
- Multi Tap Transformers
- Package sub station

Why KPEL

We are providing Quality & wide range of KPEL Transformers. Our product is broadly admired by clientele due to their top performance, robust construction, and excellent after sales services.

KPEL utilize focus factory concept which leads to great experience in specific products giving a very high level of consistency in design, manufacture and test.

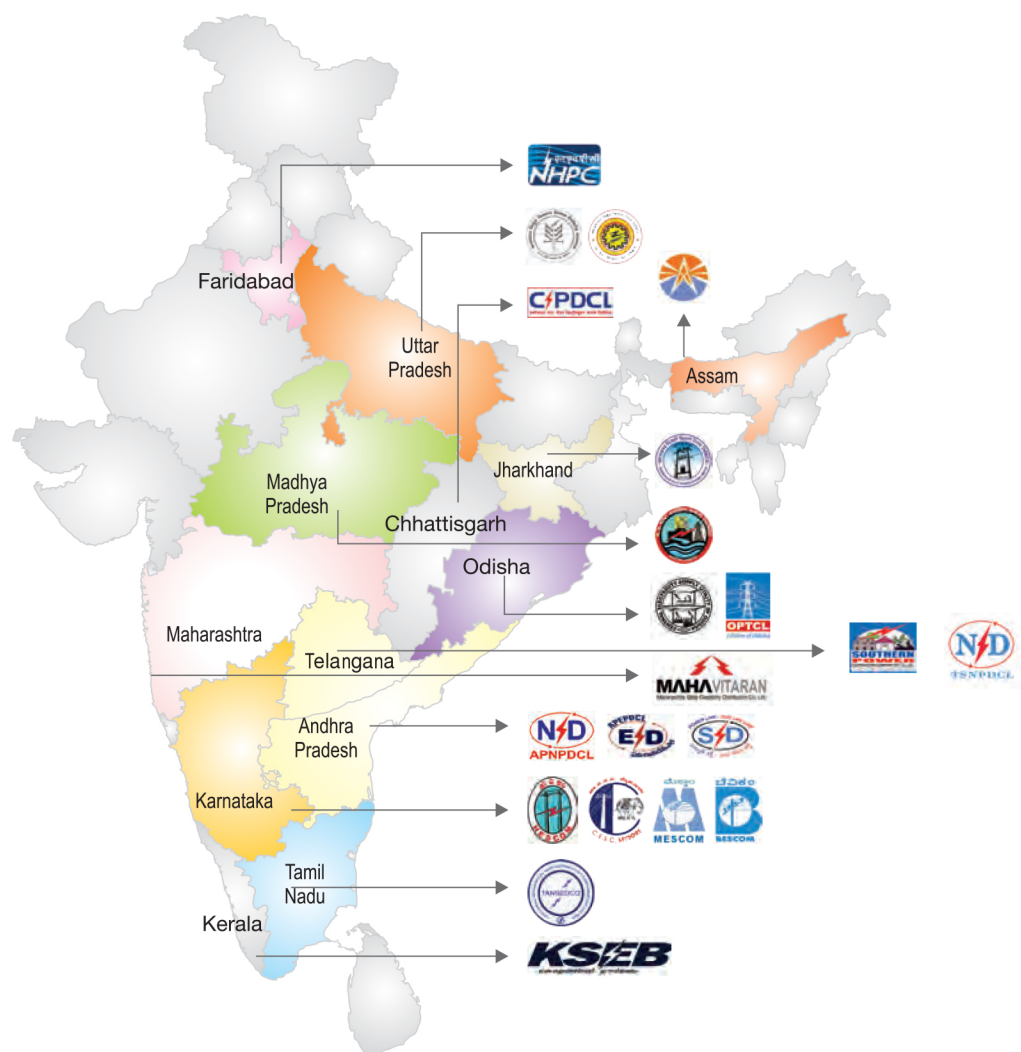
KPEL utilizes best in class manufacturing and quality processes to ensure that our transformers will meet the most stringent requirements.

Most importantly our design team is interactive with users / customers / consultants for understanding the technical requirement & transformers are designed and constructed to meet or exceed the requirements for general applications, and suggest most relevant customized product.

Features

- Use high technology
- Easy to use
- Sturdy specification
- Strong design
- Low maintenance
- Longer working life
- Made as per industry norms
- High performance
- User friendly design
- Longer service life

Our Presence





Unitized sub station



Line of Productions



Interior view of our plant