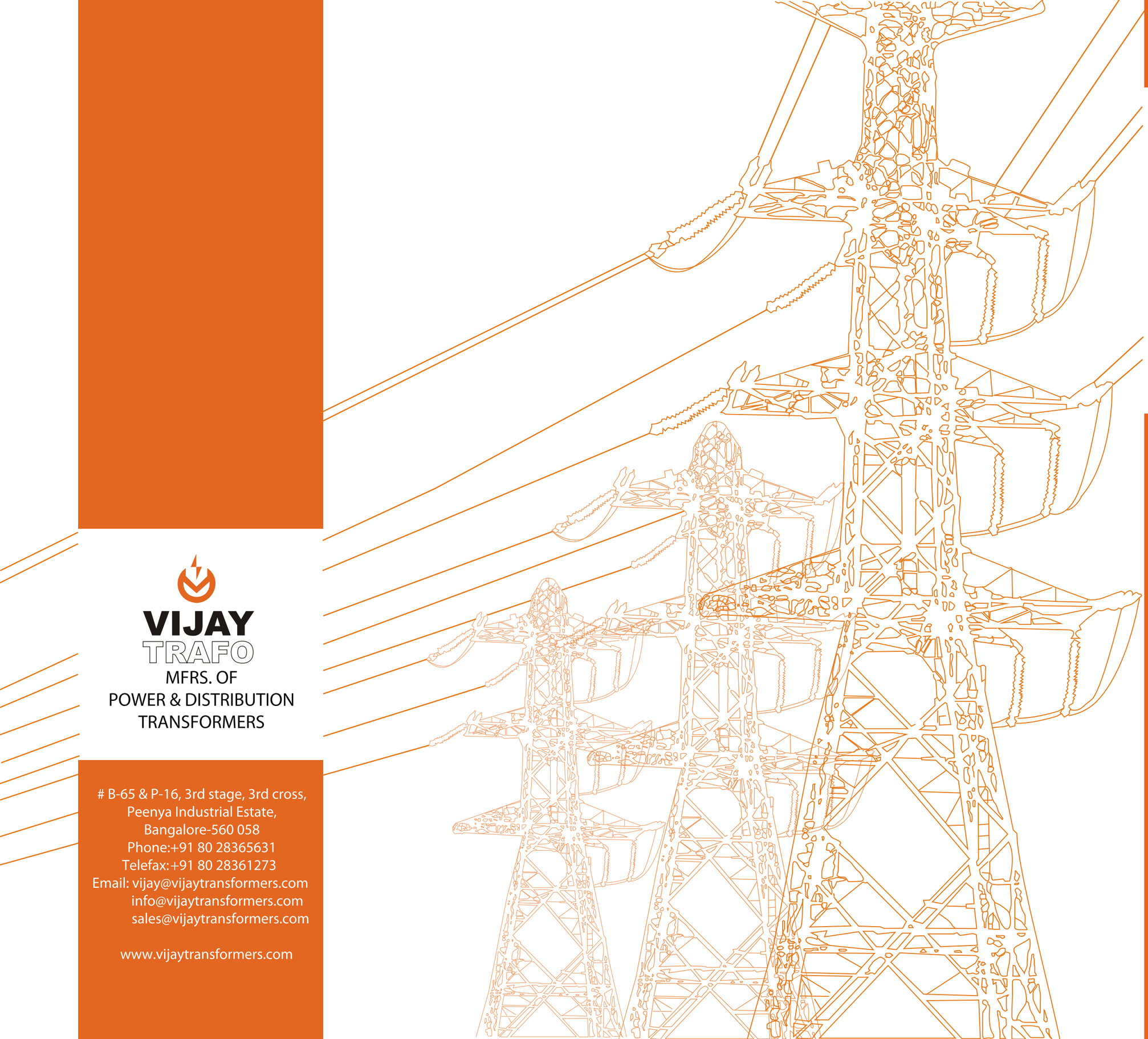

VIJAY TRAFO

MFRS. OF
POWER & DISTRIBUTION
TRANSFORMERS

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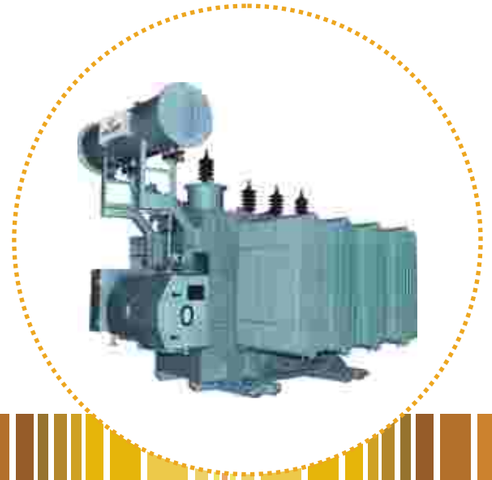
VIJAY TRAFO

MFRS. OF
POWER & DISTRIBUTION
TRANSFORMERS

An ISO 9001
Certified Company

- Power & Distribution Transformers
- Air-Cooled Transformers
- Booster Transformers
- Isolation Transformers
- Furnace Transformers
- Converter Duty Transformers
- Generator Transformers
- High Current Rectifier Transformers

VIJAY TRAFO



About Us

VIJAY TRAFO, a legacy of over 20 years of innovation

VIJAY TRAFO is a leader in Distribution, Power and Special Type of Transformer technology that enable Power Utility and industrial customers to improve their performance while lowering environmental impact.

In almost every place where people live and work, you will find at least one transformer. But as long as it keeps working and supplying power to the escalator in the department store, the hotel lift, the office computer, the oven in the local bakery or the petrochemical plant, no one gives it a second thought.

As one of the leading engineering companies, VIJAY TRAFO helps its customers to use electrical power effectively and to increase industrial productivity in a sustainable way.

Technical Data

Standard features

Single-phase transformers - hermetically sealed oil filled transformers

Three-phase transformers - hermetically sealed type or provided with conservator and breather

- High and low voltage bushings in accordance with IS:3347 standards / as per customer's requirements
- Lifting lugs
- Earthing terminals
- Rating and terminal marking plate
- Air release plug
- Oil level indicator
- Filter valve

Fittings and Accessories

Completely self protected with expulsion fuse, LV breaker and surge arrestors

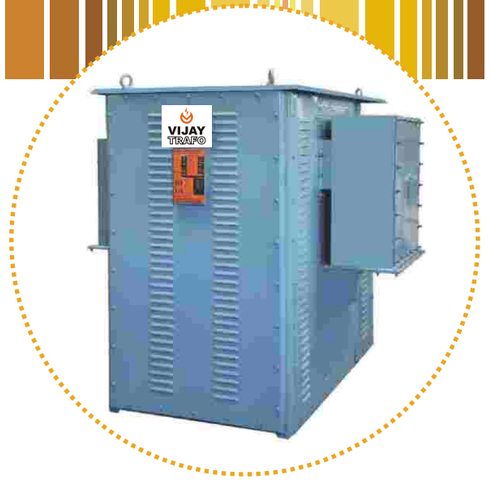
- Thermometer pocket
- Oil filing pipe and drain valve
- Conservators

VIJAY TRAFO - the leading manufacturer of Transformers

Across India and Other Asian Countries, VIJAY TRAFO transformers provide over last two decades of faultless service in solutions for urban, industrial and rural applications.

In Two units spread across BANGALORE, VIJAY TRAFO manufactures oil type distribution, power and special type transformers for indoor applications, outdoor applications, application in the wind and solar segment and Dry type transformers for special applications.

- Oil level indicator
- Tap changer (on-load or off-load)
- Arcing horns
- Pressure release device
- Terminal connectors
- Cable Boxes / Bus Duct with disconnecting chambers
- Integrated pole mounting brackets / base channels on tank
- Skid base with rollers



CERTIFICATE TÜV NORD

Quality & Standards

All aspects of product quality are ensured by integrated quality systems in the manufacturing process. Environment friendly processes are followed to ensure minimum footprint.

The manufacturing facilities are certified for ISO 9001-Quality Systems. Our aim is to deliver your distribution transformers fast, on time and conform to your specifications.

Applicable standards

Applicable standards: IS : 1180 / IS : 2026 / IEC : 60076 / ANSI C57.12.20 or customer specific standards Three phase rectangular tank: 25 to 3,500 KVA, Pole / plinth mounted Distribution Transformers with Off Circuit Tap Switch (OCTC) OR On Load Tap Changer (OLTC).

Three phase rectangular tank: 4 MVA to 25 MVA, plinth mounted Power Transformers with Off Circuit tap Switch OR On Load tap Changer and also Special Type Transformers viz. Converter Duty Transformers, Inverter Duty Transformers, High Current Rectifier Transformers, Furnace Duty Transformers, Auto Transformers, Isolation Transformers etc.

Vacuum Impregnated Dry Type Transformers upto 3,500 KVA, 33 KV Voltage Class, Cast Resin Dry Type Transformers upto 2,000 KVA, 11 KV Voltage Class.

VIJAY TRAFO

VIJAY POWER transformers performance reliability

- Automated, state-of-the-art manufacturing processes with wound core design
- Short circuit proof - use of epoxy dotted paper and curing of coils in a special press
- Long life - special process of oil-filling under vacuum ensures void free core coil assembly
- Leak proof - 100 percent transformers tested for oil leakage test

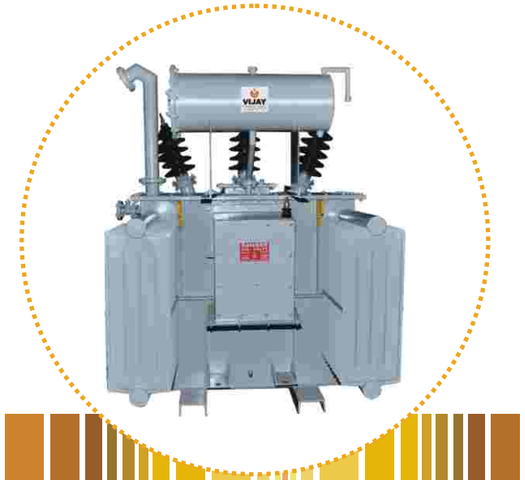
Ensure performance efficiency with minimal losses

- Use of best-in-class materials - core made from prime grade imported CRGO
- Advanced technology - wound core design with single coil windings and step lap core construction
- Low magnetizing current
- Low no-load and load losses
- Low noise levels

2,500 KVA, 33 KV/433 V

3 Phase Distribution Transformer

- Helical / Spiral type LV winding
- Multilayer / Disc / Section type HV Winding
- OCTC / OLTC
- Tap switch on HV side
- Breather, Buchholz relay
- Pressed steel radiators
- Polyurethane liquid paint on tank and radiators



10 MVA, 33/11KV

3 phase Power Transformer

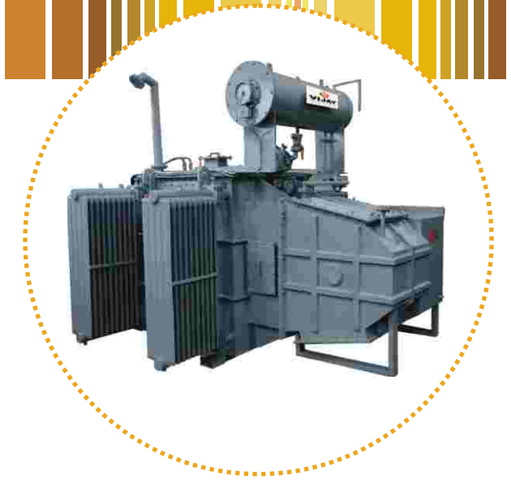
- Helical / Spiral type LV winding
- Multilayer / Disc / Section type HV Winding
- OCTC / OLTC
- Tap switch on HV side
- Radiators with Fan
- FCC (Fan Control Cubicle)
- NCT (Neutral Current Transformer)

Our Products

100 KVA, 11/0.433KV

3 Phase, 3 Star Rated, Distribution Transformer

- Aluminum wound Low Loss as per BEE guideline and also as per Power Utilities
- Tank cover mounted core coil assembly
- Top mounted HV and LV bushings
- Conservator and pressed steel radiators
- Low loss and low temperature rise design
- Polyurethane liquid paint on tank and radiators



630 KVA, 11 KV/433 KV

3 Phase Distribution Transformer

- Breather, Buchholz relay
- Pressed steel radiators
- Polyurethane liquid paint on tank and radiators
- Helical / Spiral type LV winding
- Multilayer / Disc / Section type HV Winding
- OCTC / OLTC

State-of-the-art manufacturing facilities and processes

The VIJAY TRAFO, BANGALORE facilitates for manufacturing of distribution, Power and Special type of transformers in a clean and dust-free environment with ideal humidity and ventilation levels and standards and processes as per Local / international standards..

Transformer design

The transformers are designed on specialized software for:

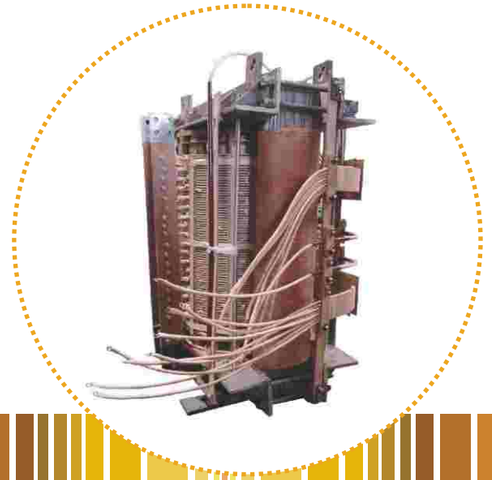
- Cost optimization over lifetime, based on material cost and loss capitalization as specified by customers
- Verification of design for rated short circuit and impulse withstand strength carried out by design software

VIJAY TRAFO technology Centers at BANGALORE is available to work for specific transformers requirements depending on customer needs.

Core design

The core for shell type transformers are manufactured using wound core design, while for the core type transformers the lamination stacking is done. The result is minimal core losses, low noise levels and increased automation in manufacturing processes.

VIJAY TRAFO



Coil winding

Windings and insulation

The windings are made of copper or aluminum and these are manufactured to withstand short circuit forces. State-of- the-art precision equipment is used for accurate dimension control and tightness. The winding coils are processed in a special purpose press developed by VIJAY TRAFO, to cure the resin on the insulation paper for imparting high short circuit strength.

Core and coil assembly

Use of unique designs and special insulating materials make VIJAY TRAFO distribution transformers reliable, efficient and compact. The complete core coil assembly is dried in an oven to remove the moisture from insulation.

Transformer tank

Tanks are constructed from mild steel. Welded joints are tested for air pressure, ensuring leak-proof tank joints. Rollers can be provided and these are suitable for either longitudinal or transverse movement.

Transformers and grid losses

With their widespread application and continuously energized state, transformer losses make up for a considerable portion of the total losses incurred in distribution systems

Even a minor increase in transformer efficiency would lead to significant energy savings

Two types of transformer losses are commonly evaluated for loss reduction: core or no-load losses and coil or load losses. Transformer no-load losses can be reduced by using superior grade magnetic core steel materials(CRGO) or optimizing their geometries. However, this may increase load losses and vice versa

Transformer loss reduction is therefore an optimization process involving physical, technological, and economical factors tempered by life-cycle performance analysis

VIJAY TRAFO transformers are designed to maximize efficiency after Evaluating initial cost of transformer and life-cycle costs including losses

Accurate process control

Tanks are carefully pre-treated by blast cleaning or chemical cleaning. The tanks are either powder coated or polyurethane liquid painted to improve corrosion resistance and aesthetics as per customers' requirements.

Tanks are filled with mineral oil in the vacuum chamber ensuring excellent dielectric properties. The oil filling system is controlled by programmable logic controllers for accurate process control. The electrical and chemical properties of mineral oil are checked for compliance with IS/IEC standards.

Transformer Testing

The transformers are individually tested in accordance with IS/ IEC standards and routine tests include

- Measurement of voltage ratio and check of vector group.
- Measurement of winding resistance.
- Measurement of insulation resistance.
- Power frequency over voltage test and Induced over voltage test
- Measurement of impedance voltage and load losses.
- Measurement of no load losses and no load current.
- Type tests and special tests can be carried out on request.

Additional Feauters

- VIJAY TRAFO Transformers are practically leak proof
- 100 percent transformers are pressure tested with advanced and fully automated set up
- Over 20 designs successfully type tested at NABL accredited laboratory

Choosing the right transformer

Transformer size is determined by KVA of the load.

- Load voltage or secondary voltage is the voltage needed to operate the load.
- Line voltage or primary voltage is the voltage from the source.
- Single-phase has two lines of AC power.
- Three-phase has three lines of AC power, each line 120° out of phase with the other two.
- KVA is Kilo Volt Ampere.

To determine the size of transformer you need to use the following formulae

- Single-phase transformers
  $$\frac{\text{Volts x Amps}}{1{,}000} = \text{KVA}$$
- Three-phase transformers
  $$\frac{\text{Volts x Amps x 1.732}}{1{,}000} = \text{KVA}$$

The KVA of the transformer should be equal to or greater than the KVA of the load to handle present requirements and to account for future expansion.

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