CHNT

Oil-immersed Transformer (10kV-750kV)

Special Transformer

- Converter Transformer, Rectifier Transformer, Furnace Transformer

Brief Introduction

About CHINT Electric

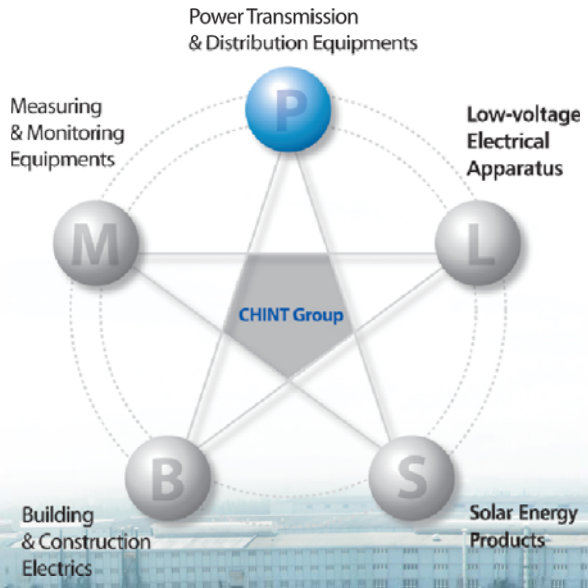
CHINT Electric is a subsidiary of CHINT Group Corporation. With an investment of 450 million USD, CHINT Electric possesses 4300 employees and 5 manufacturing business units with manufactory area of 900,000m^2 located in Shanghai, which is one of the world's largest power transmission & distribution equipments manufactory centers.

New Orders

Around 750 million USD in the year of 2013

Employee

4,300 employees



Product Range

- Power Transformer up to 750kV
- Distribution Transformer up to 35kV
- Dry-type Transformer up to 35kV
- Reactor up to 220kV
- GIS up to 252kV
- HV Circuit Breaker & Disconnector up to 252kV
- VCB 12~40.5kV
- MV & LV Switchgear Panel, Prifabricated Substation up to 40.5kV
- LV Terminal Box, Bus Bar Duct
- Surge Arrester & Insulator up to 500kV, CT & PT up to 220kV
- Power Distribution Automation System
- Cable up to 36kV
- Capacitor
- Turn-key Solution

About CHINT Group

- CHINT is the leading player in the Power Transmission & Distribution industry and Low-voltage electrics industry in China. Founded in 1984 by a few local entrepreneurs and currently hiring 29,000 employees worldwide.
- National Employment Advanced Corporate (China State Council, 2012)
- Ranked in The 2011 BCG 100 New Global Challengers (The Boston Consulting Group, 2011)
- CHINT Low-voltage Electrics launched IPO at the Shanghai Stock Exchange of China (2010)
- No.2 in China Electricity Industry's Top 10 Most Competitive Enterprises (China Machinery Industry Information Institute, 2009)
- No.3 in China Electricity Industry(China Machinery Industry Information Institute, 2009)
- No.240 in Top 500 Chinese-Companies (China Enterprise Federation, 2009).
- No.1 in Power T&D and the controlling devices (China Machinery Summit, 2009)
- Ranked in Top 100 Best Employers in China (China Entrepreneurs Summit, 2008)
- No.15 in Top 100 Private & Public Companies in China (Forbes, 2006)
- National Quality Management Award(2004) (One of top honours for manufacturing companies in China)
- Worldwide business operation with 2,000 sales offices, agents, distributors, and local partners in China, and distributors & local partners in over 105 countries. International branches or regional offices set up in USA, UAE, Italy, Russia, etc.
- CHINT stretches its business to a new frontier of solar energy by setting up a branch company specialized in the solar energy products development.
- The R&D center of CHINT is recognized as the National Level R&D Center run by the companies, which means the R&D level of CHINT Group has reached the leading position in the industry of China.

Sales References

With a worldwide presence in over 127 countries such as, Italy, Germany, Estonia, USA, Russia, Japan, Australia, Saudi Arabia, Poland, Ukraine, Mongolia, Kazakhstan, Pakistan, Myanmar, Indonesia, Thailand, Algeria, Morocco, Congo, Tanzania, Mali, Zambia, Kenya, South Africa, Ghana, Nigeria, Colombia, etc, CHINT Electric provides reliable and high-qualified products and solutions to clients engaged in different businesses.

Utility User

Application: *cooperation with National Electricity Companies in over 50 countries for power generation, transmission and distribution.*

Europe

- *Alliander N.V.-Netherlands*
  Products: Power transformer.
- *EAC-Cyprus*
  Products: Cable.
- *Eesti Energia-Estonia*
  Products: Power transformer.
- *EMS-Serbia*
  Products: Power transformer.
- *ENEL-Italy*
  Products: Distribution transformer, cable.
- *Fingrid-Finland*
  Products: Distribution transformer.
- *HS ORKA HF-Iceland*
  Products: Power transformer.
- *PPC-Greece*
  Products: Power transformer, cable.
- *NEC-Bulgaria*
  Products: VCB.

Latin America

- *CELEC S.P.-Ecuador*
  Products: Power transformer.
- *CNEL-Ecuador*
  Products: Power transformer.
- *ELCOSA-Honduras*
  Products: Power transformer.
- *Enersis-Chile*
  Products: Power transformer, surge arrester, insulator, SF_6 circuit breaker.
- *ENDESA-Chile*
  Products: Power transformer, surge arrester, insulator, SF_6 circuit breaker.
- *ICE-Costa Rica*
  Products: Power transformer.
- *PREPA-Puerto Rico*
  Products: Surge Arrester.

Asia-pacific

- *EVN-Vietnam*
  Products: Switch disconnector, power transformer, etc.
- *BPC-Bhutan*
  Products: Surge arrester.
- *Kamoki-Pakistan*
  Products: Substation turn-key project.
- *MEPE-Myanmar*
  Products: Reactor, Power transformer.
- *NEA-Nepal*
  Products: Substation turn-key project.
- *NTDC-Pakistan*
  Products: Substation turn-key project.
- *QESCO-Pakistan*
  Products: Surge arrester.
- *TEPCO-Japan*
  Products: Power transformer, circuit breaker, disconnector and CT&PT.

Africa

- *EEPCO-Ethiopia*
  Products: HV Circuit breaker, disconnector, earthing switch, surge arrester, insulator, CT.
- *ENE-Angola*
  Products: GIS.
- *JIRAMA-Madagascar*
  Products: Reactor.
- *KENGEN-Kenya*
  Products: Surge arrester.
- *KPLC-Kenya*
  Products: Cut-out fuse, surge arrester, insulator.
- *PHCN-Nigeria*
  Products: Transformer protection & control panel.
- *RECO-Rwanda*
  Products: Distribution transformer, etc.
- *REGIDESO-Burundi*
  Products: Power transformer, distribution transformer.
- *SBEE-Benin*
  Products: Power transformer.
- *SNEL-D.R. Congo*
  Products: Power transformer.
- *SONABEL-Burkina Faso*
  Products: Power transformer, reactor.
- *TANESCO-Tanzania*
  Products: Substation turn-key project.
- *VRA-Ghana*
  Products: MV switchgear, DC panel, disconnector.
- *ZESCO-Zambia*
  Products: CT-VT metering unit.

Middle-east

- *NEC-Sudan*
  Products: Power transformer.
- *NEPCO-Jordan*
  Products: Power transformer, earthing transformer.
- *ONEC-Oman*
  Products: Power transformer.
- *PEC-Yemen*
  Products: Substation turn-key project.
- *PEDEEE-Syria*
  Products: Insulator, surge arrester, substation turn-key project.
- *PEEGT-Syria*
  Products: Insulator.
- *TEIAS-Turkey*
  Products: Surge arrester, insulator.
- *WARD-Lebanon*
  Products: SF_6 circuit breaker, disconnector, surge arrester, insulator.

CIS

- *ENA-Armenia*
  Products: HV circuit breaker, switch disconnector, etc.

More >>>

Global Operation in Over 127 Countries

Industrial End User

Application: *widely applicable for mining, iron-steel, cement, metallurgy, chemical, railway, petroleum, paper, power generation industries, etc.*

Mining Industry

- *BHP Billiton-Australia*
  Products: CT& PT, distribution transformer, etc.
- *Rio Tinto-Australia*
  Products: Distribution transformer, CT.
- *FMG-Australia*
  Products: Power transformer.

Iron-steel Industry

- *JFE Steel-Japan*
  Products: Disconnector.
- *Bao Steel-China*
  Products: Power transformer, MV switchgear panel.

Cement Industry

- *Serebryabskiy Cement Plant-Russia*
  Products: HV capacity compensation device, HV capacitor.
- *Viet Quang Cement Plant-Vietnam*
  Products: Power transformer, HV circuit breaker, disconnector, MV&LV switchgear panel.

Petroleum & Gas Industry

- *Chevron-USA*
  Products: Switchgear panel, distribution transformer.
- *PDVSA-Venezuela*
  Products: Power transformer, distribution transformer.
- *CNPC-China*
  Products: Power transformer, GIS, MV switchgear panel.

Power Rental Industry

- *Aggreko-UK*
  Products: Power transformer.
- *APR Energy-USA*
  Products: Power transformer, HV circuit breaker, disconnector, CT, PT.

Paper Industry

- *VISY-Australia*
  Products: Switchgear panel
- *UPM-Finland*
  Products: MV switchgear panel.

Chemical Industry

- *Saint Gobain-France*
  Products: Power transformer, MV switchgear panel, cable, busduct.
- *INVISTA-USA*
  Products: Distribution transformer, switchgear panel, DC panel.

Power Generation

- *TATA Power-India*
  Products: Power transformer.
- *SIBAYAK Geothermal Power Plant-Indonesia*
  Products: MV&LV switchgear panel, surge arrester, insulator, CT, VCB.

Commercial & Civil Construction

- *Shangri-la Hotel-Philippine*
  Products: Distribution transformer.
- *Kiev Boryspil International Airport-Ukraine*
  Products: GIS.

Shipbuilding Industry

- *Fincantieri-Italy*
  Products: Power transformer.

More >>>

Engineering & Contracting

- *EIFFAGE-France*
  Products: Power transformer, reactor.
- *FLUOR-USA*
  Products: Power transformer.

More >>>

Turn-key Project

- *Kamoki-Pakistan*
  Projects: 230kV substation EPC.
- *Saint Gobain-France*
  Projects: 35kV substation EPC.
- *PEC-Yemen*
  Projects: 132kV and 33kV substation EPC.
- *NEA-Nepal*
  Projects: 132kV and 33kV substation EPC.
- *SMCO-D.R. Congo*
  Projects: 220kV substation EPC.
- *TANESCO-Tanzania*
  Projects: 35kV and 66kV substation EPC.
- *NTDC-Pakistan*
  Projects: 220kV substation EPC.

More >>>

Sales References

Transformer

CHINT Electric transformers are widely adopted by Utility Users from Italy, Finland, Estonia, Serbia, Greece, Iceland, Ecuador, Costa Rica, Myanmar, Chile, Venezuela, Honduras, Vietnam, Rwanda, D.R. Congo, Benin, Burkina Faso, Burundi, Sudan, India, etc.; Industrial End Users like BHP Billiton, Fincantieri, FMG etc. and Engineering Companies like EIFFAGE, Fluor and so on.

Utility User

- EMS-Serbia
- Eesti Energia-Estonia
- Alliander N.V-Netherlands
- Public Power Corporation S.A. (PPC)-Greece
- Regie de Production et de Distribution d'eau et d'electrcite (REGIDESO)-Burundi
- Public Establishment for Electricity Generation and Transmission (PEEGT)-Syria
- Société Nationale d'électricité du Burkina Faso (SONABEL)-Burkina Faso
- Corporación Eléctrica del Ecuador (CELEC)-Ecuador
- Corporación Nacional de Electricidad (CNEL)-Ecuador
- Instituto Costarricense de Electricidad (ICE)-Costa Rica
- Electricidad De Cortes S De R L De C V (ELCOSA)-Honduras
- Tanzania Electric Supply Company (TANESCO)-Tanzania
- Societe National d'Electricite Zaire (SNEL)-D.R. Congo
- Myanmar Electric Power Enterprise (MEPE)-Myanmar
- Societe Beninoise d'Electricite et d'Eau (SBEE)-Benin
- Public Electricity Corporation (PEC)-Yemen
- National Electricity Corporation (NEC)-Sudan
- National Electric Power Company (NEPCO)-Jordan
- Nepal Electricity Authority (NEA)-Nepal
- Enersis-Chile
- KUN Hydro-power Station-Myanmar
- Hydro-power Station-Myanmar
- ENDESA-Chile

Industrial End User

- BHP Billiton-Australia
- Saint Gobain-France
- Fortescue Metals Group (FMG)-Australia
- AGGREKO-UK
- Fincantieri-Italy
- TATA Power-India
- De Beers-South Africa

Engineering & Contracting

- EIFFAGE-France
- FLUOR-USA

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※ Note: Contact us for more detailed sales references.

Table of Contents

※ Note: 1. All the data included are only examples for your reference.
2. Customized and more-efficient transformer is available according to your requirements.

1. General

1.1 Application

10kV-750kV transformers are mainly made of iron core and windings, which are placed in the oil tank that filled with insulating oil. It is mainly used for power plant, power transmission and distribution station as the equipment of power transformation.

1.2 Type and Rating

- Product types: single phase or three phases,
  Two windings or three windings,
  on-load or no-load voltage tap changer,
  autotransformer,
  natural cooling, air cooling, forced-air cooling or water cooling,etc.
- Capacity range: 50kVA-650MVA
- Frequency: 50/60Hz

1.3 Standard: IEC 60076-1:2000, IEC 60076-2:1993, IEC 60076-3:2000, IEC 60076-5:2006, IEC 60137:2003; ANSI, IEEE, AS, etc.

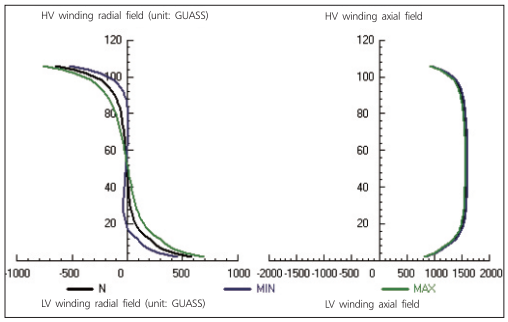
1.4 Operating Condition

- Suitable for indoor and outdoor application.
- Ambient temperature: +40℃~-30℃
- Relative humidity: ambient air relative humidity should be below 93%.
- Altitude：≤1000m
- Max wind speed: ≤35 m/s
- Earthquake acceleration: horizontal acceleration ≤0.3g
  vertical acceleration ≤0.15g
- Special conditions: customized products are available.

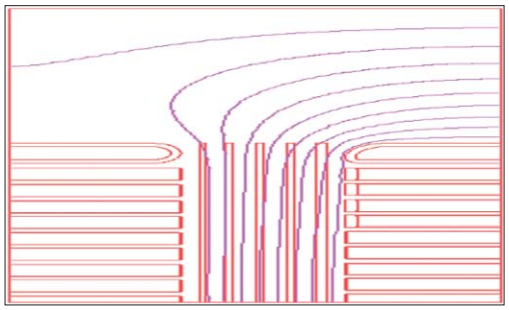
2. Technical Feature

2.1 High Reliability

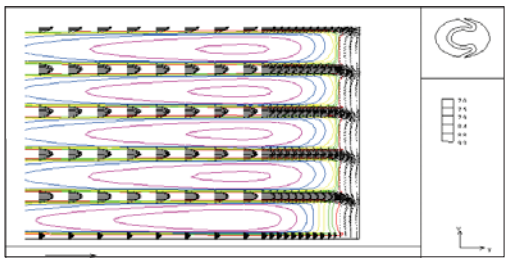
- Insulation strength: Through the method of finite elements analysis, analyze the interior electric field on different transformer for the purpose that there is no over-centralized area of field density in the interior of transformer. At the same time,by the adoption of insulating materials and optimizing electrode shape, make no partial discharge design, and through the effective analysis on transformer wave process,ensure that the transformer can withstand various over-voltages such as, lightning impulse over-voltage.
- Short circuit strength: through the analysis of leakage magnetic field of transformer, the electromagnetic force can be well controlled in the Structure design, and together with equipment and suitable materials, the requirement of short circuit strength can be sufficiently satisfied. Our design method has been testified through short circuit test on products at different voltage levels, which also testifies that our products have enough strength against short circuit.
- Temperature rise: The temperature distribution can not get effectively controlled may result in the aging of transformer insulation. There is no over-centralized temperature area in the transformer interior and the insulation life has been ensured through the analysis of oil flow and temperature field in transformers.
- The reliability of products has been greatly improved.



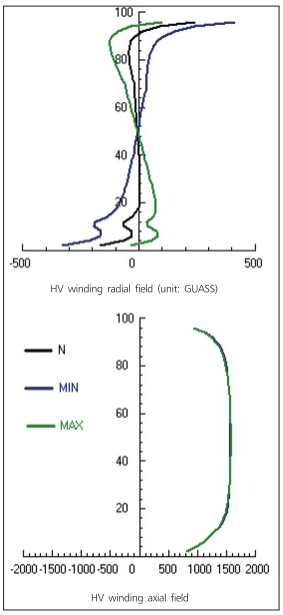
• Numerical analysis and calculation of transformer's field and short-circuit power



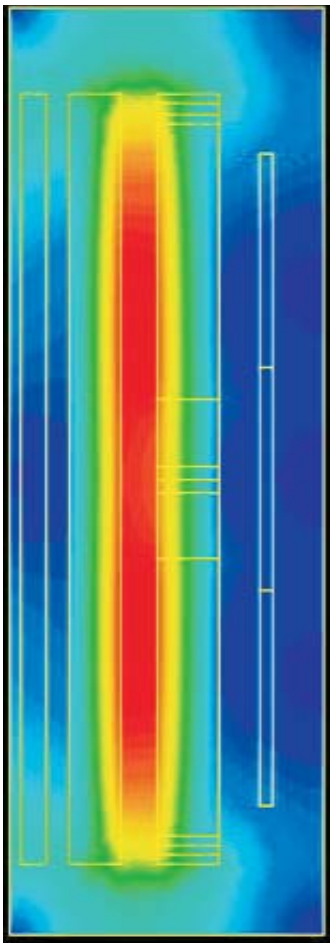
• Field distribution of main line and end



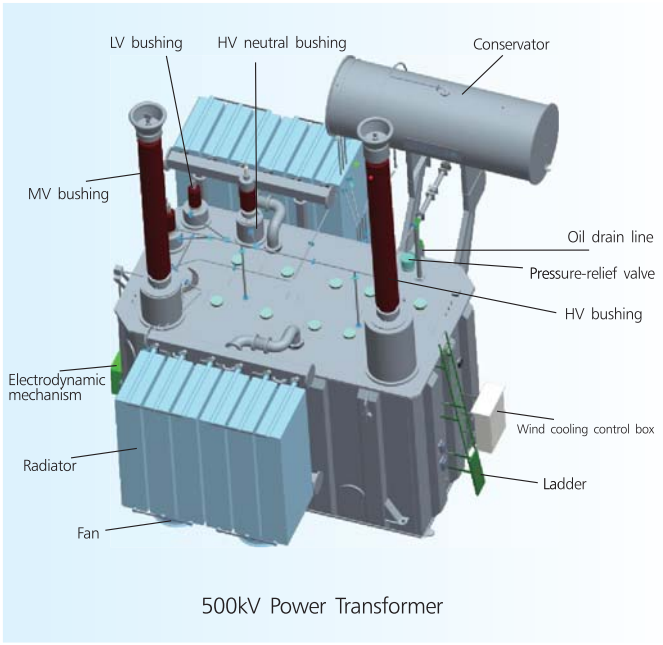
• Temperature rise distribution and oil flow distribution figure between winding pies



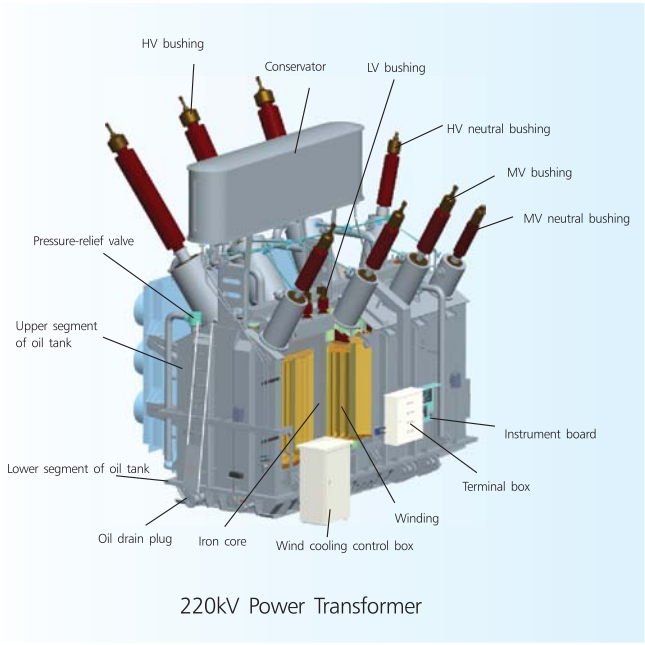
• Numerical analysis and calculation of transformer's field and short-circuit power



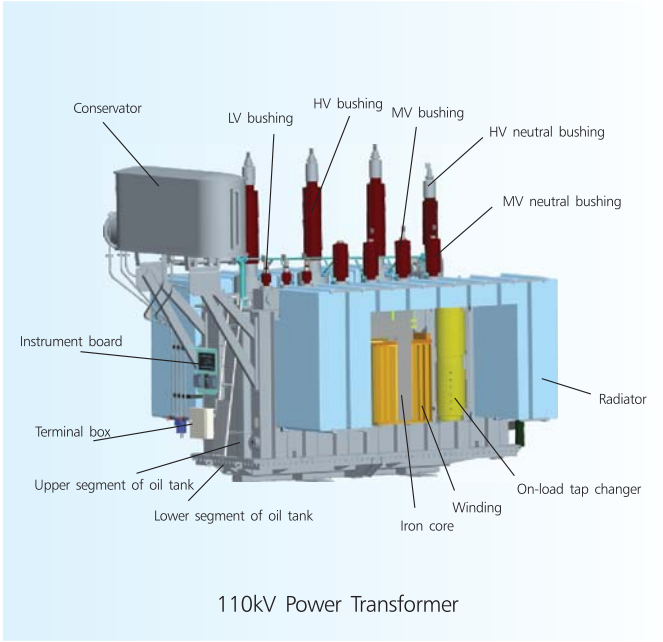
• Leakage field distribution



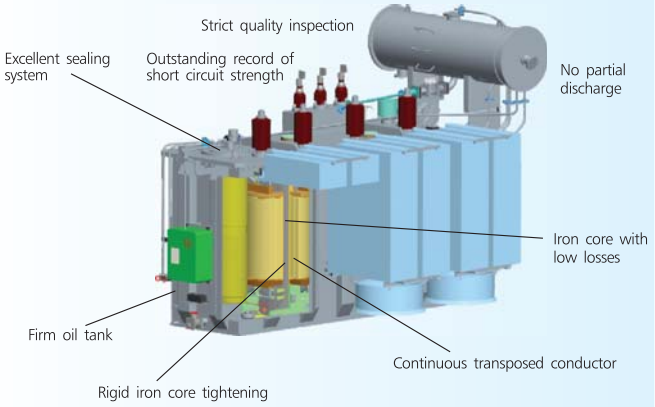
500kV Power Transformer



220kV Power Transformer



110kV Power Transformer



35kV Power Transformer

2.2 Low Power Loss And Low Operation Cost

- The transformer has relatively low losses through the optimized design, the detailed analysis of leakage magnetic field and the losses distribution. The maintenance cost has decreased through the Customer-oriented design.

2.3 Customer-oriented Design

- Based on the 3D design method to simulate feeders, operation filed and terminal box arrangement are in full consideration of operating conveniences, which meets the requirements on cost lowering and customization, as well.

3. Structural Feature

3.1 Iron Core

- The iron core is made of cold rolled, granular-oriented, low-loss and high magnetic conductive silicon steel sheet, which is of multi-step completely tilted structure to reduce the loss and noise.
- Iron core with fixed clamps optimizes the design so as to ensure mechanical strength and to reduce leakage losses.
- Adoption of PET banding structure ensures the clamp force of core column and lowers the noise.

• ⒶⒷ Stacking of iron core

• High-quality silicon steel sheet

• Iron core

• ⒸⒹ Six steps of seam

3.2 Winding

- HV winding adopts entanglement or inner screened continuous type with phase insulation structure to ensure insulating strength.
- MV/LV windings adopt high strength or adhibit- transposition conductor, forced cooling to reduce the temperature rise and enhance capability of short circuit withstand.

• Ⓔ Ⓕ Windings after production

• Winding under production

• UHV winding

• Winding made of transposed conductor

• Ⓖ Ⓗ Atypical insulator

• Transposed conductor

3.3 Active-parts Assembly

- Cold pressing ensures cleanness of the body active parts and the reliability of leads.
- Adoption of whole assembled phase insulation so as to reduce the assembly time and effectively guarantee the dimension and shape of the insulation structure.
- HV lead adopts specially molded insulation parts for protection which effectively guarantees its insulating strength and reduces partial discharge.

• Core re-forming

• Transformer body after assembly

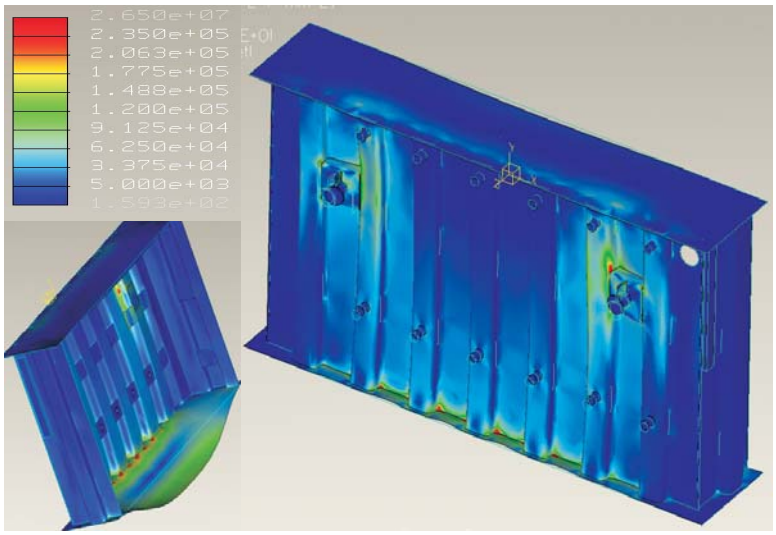
• Transformer body compressing device with synchronized control

• Cold pressure connection

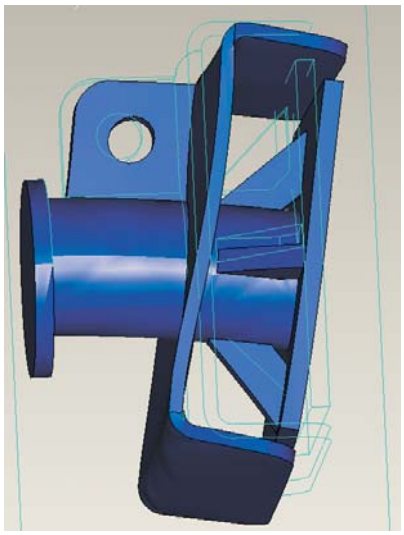
• Air-conditioning dust-free assembly room

3.4 Oil Tank

- Three-dimension finite element strength analysis and Pro-E mold is adopted, which have reinforced the mechanical strength.



• Pressure distribution and deformation



• Deformation of lifting lug

- Adopting of welding automatic submerged arc-welding and ultrasonic of fluorescence leakage test to guarantee leakage-free. The surface coating is strictly controlled.

• 220kV Bell type oil tank under welding

• " PT(color) " inspection

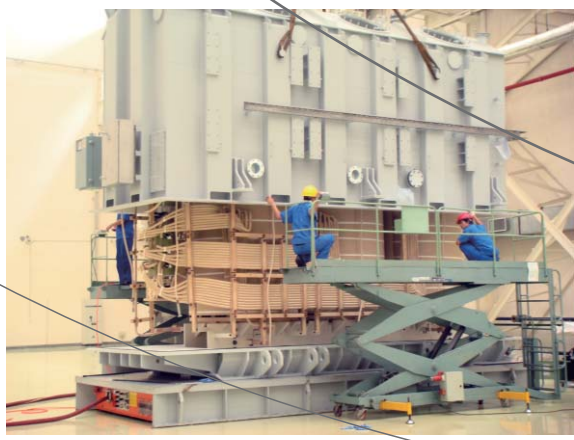
• " UT(Ultrasonic) " inspection

3.5 Assembly and routine test

- High qualified components to ensure good performances.
- After assembly, strict pre-delivery test according to standard, with exquisite testing technique and equipments to provide high quality and reliable product.
- Effective positioning structure to guarantee the fastness of the body during transportation or in service.

• Tidy up

• Lift up



• Assembly

• After assembly

• Transformer in assembly with accessories

4. Workshop Overview

• ⒶⒷⒸ Overview of workshops

Workshop Overview

CHINT Electric is equipped with workshops of 40,000 m^2 and an annual production capacity of 30,000 MVA. The whole production procedures, including the winding, oil tank welding, surface treatment, active parts assembly, final assembly and routine test of transformers up to 750kV could be realized. The main workshops are in the conditions of full enclosed, air-conditioned,constant temperature and humidity.

CHINT Electric is planning to establish new workshops and test lab for 1000kV transformer with 1000MVA power production, which will be the a transformer R&D base with annual production capacity of 60000MVA.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• ⒹⒺ 14,000 m^2 workshop for machining welding

• Airshower room

• ⒻⒼ Air-conditioning dust-free assembly room

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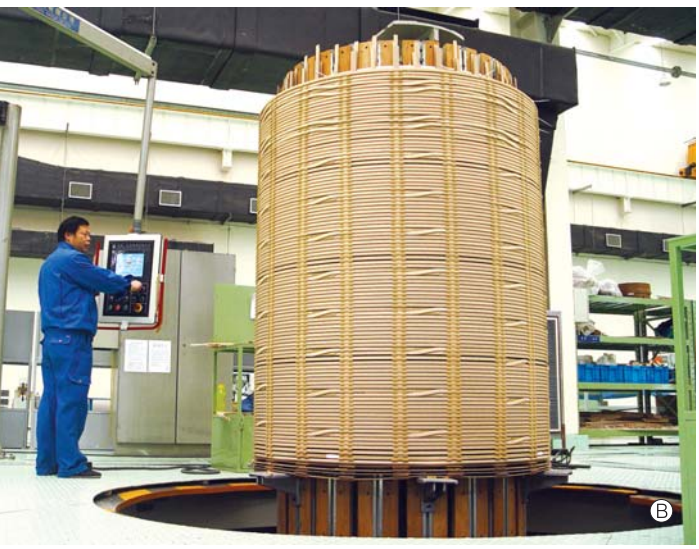
5. Manufacturing and Testing Facility

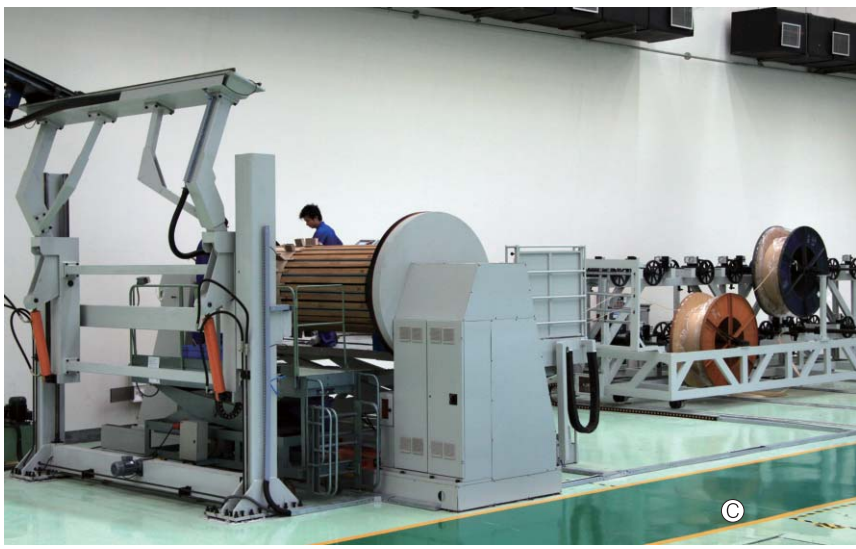
CHINT Electric always takes technical innovation and partners' satisfaction as our top priority to supply improved solutions continuously, with five percent of annual sales revenue investment in R&D.

Manufacturing Facility

To improve the production capacities and capabilities, CHINT Electric has equipped with first-class manufacturing facilities from home and abroad.

• ⒶⒷⒸ Winding machine with tightening structure and frequency speed conversion (both vertical and horizontal type)





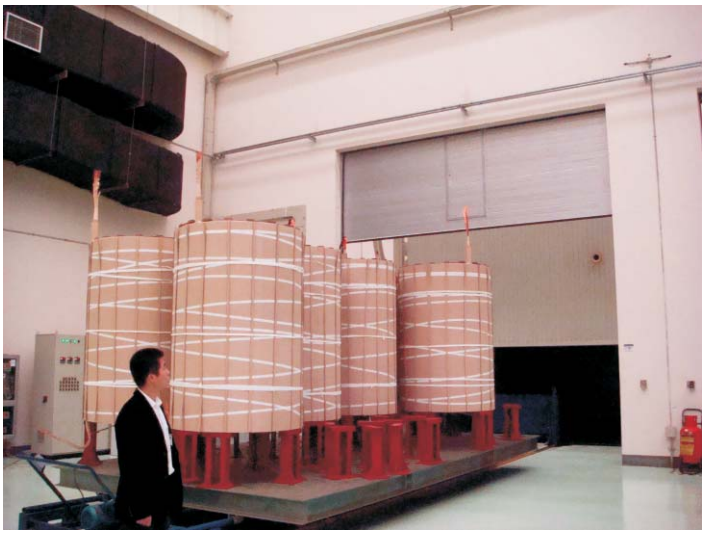
Manufacturing and Testing Facility

• Shearer made in Belgium

• Tilting platform for iron core

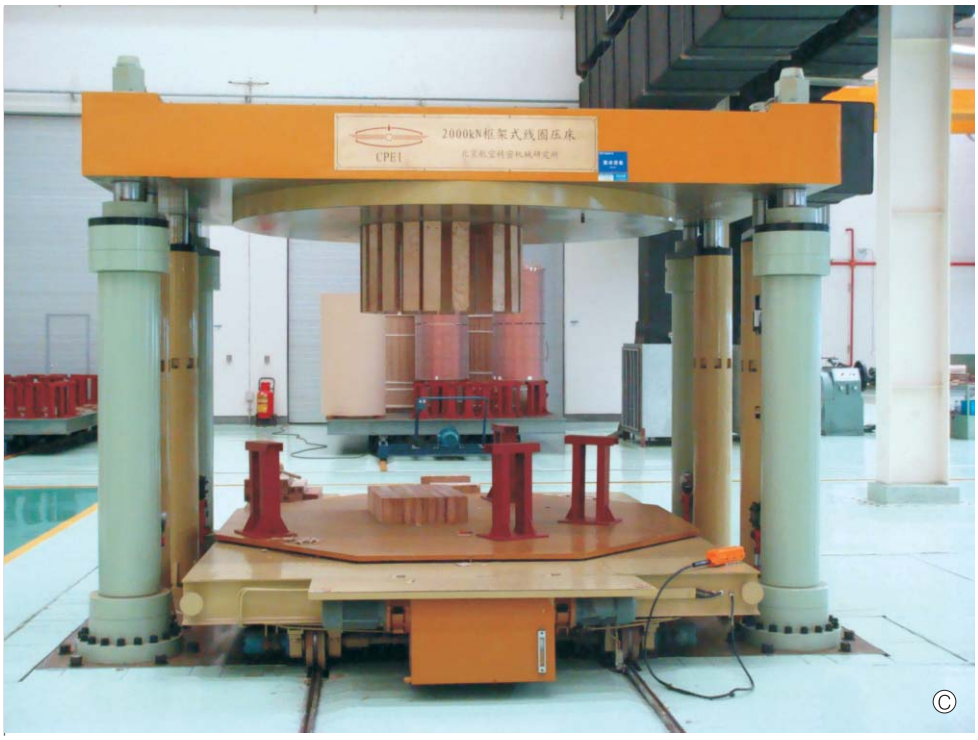
Manufacturing and Testing Facility

• Ⓐ Ⓑ Digital processing center for insulation parts



• Vapor-phase drying (VPD) Process(Oil drying)

Manufacturing and Testing Facility



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• ⓒ ⓓ Regulating pressure machine for windings

• Vapor-phase drying (VPD) Process (Active parts drying)

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Manufacturing and Testing Facility

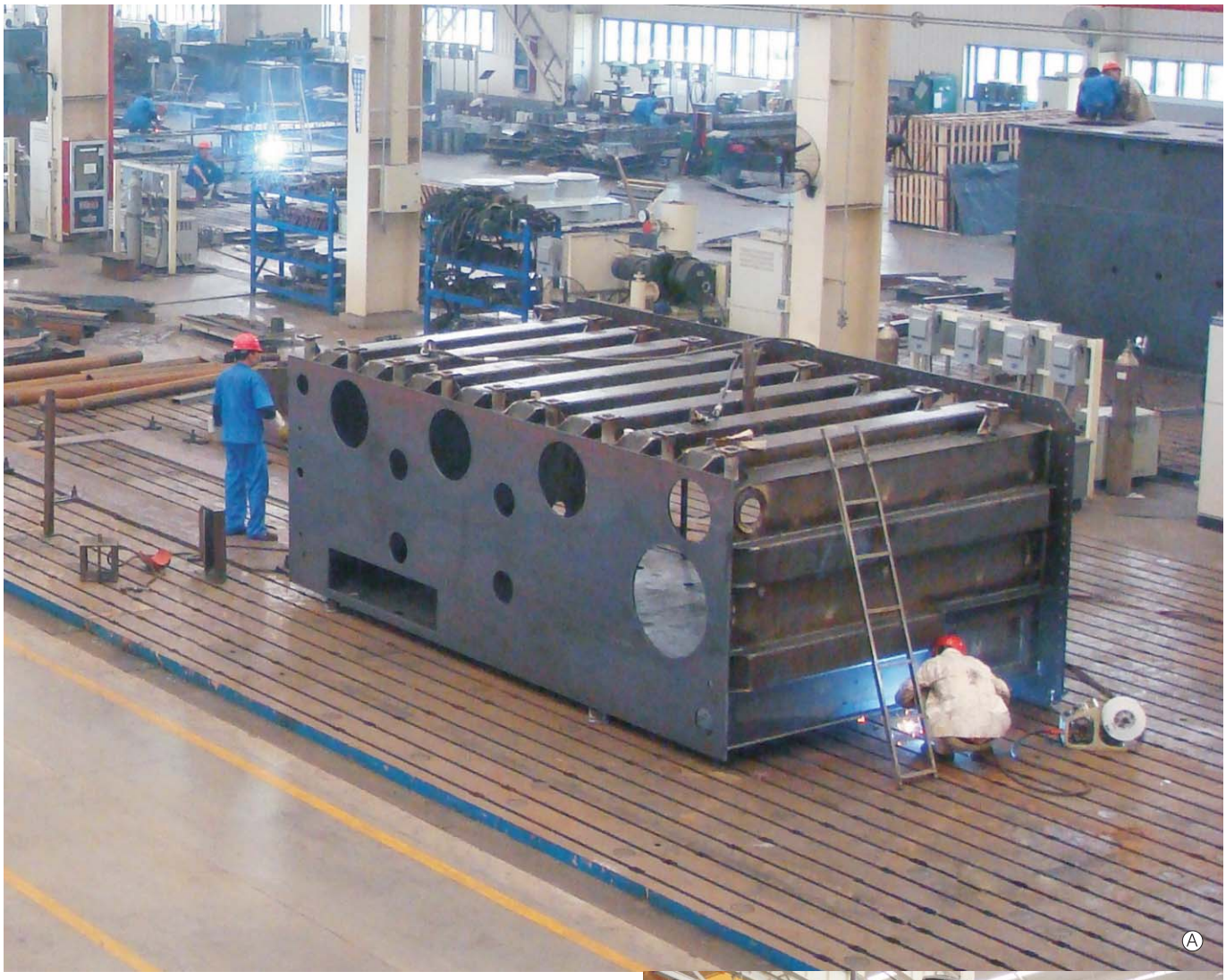
• 500 ton hydraulic bending machine

• CNC plasma cutting machine

• Water rotation lacquer spraying room

• 260 ton air cushion vehicle

Manufacturing and Testing Facility



• Sand blasting room

• ⒶⒷ 24m×12m welding platform

Manufacturing and Testing Facility

• Ⓐ Ⓑ 700 ton oil storing and processing system

• Ⓒ Ⓓ 200 ton gantry crane

• Micafil oil filter

Manufacturing and Testing Facility

Testing Facility

CHINT Electric has equipped with first-class testing facilities and labs to execute the routine tests and type tests.

• Oil test

• 110kV testing station

• Power analyzer

• Impulse voltage generator

• 500kV transformer under testing

• Product under testing

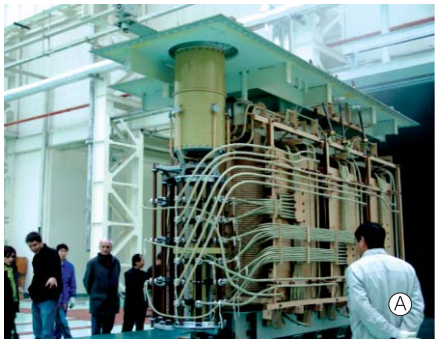
• 50Hz/60Hz generators

6. Maintenance and Parts Supply Business

Experience in transformer maintenance makes CHINT Electric capable of maintenance business of power transformers up to 750kV.

Customized oil tank, iron core, iron core clamping parts and insulation parts of transformers up to 750kV could also be offered.

- Ⓐ Repairing rectiformer for China Bao Steel Company
- Ⓑ Repairing furnace transformer for China Han Steel Company



- Ⓒ Active part
- Ⓓ Oil tank

- Welding of 220kV oil tank

- 500kV oil tank

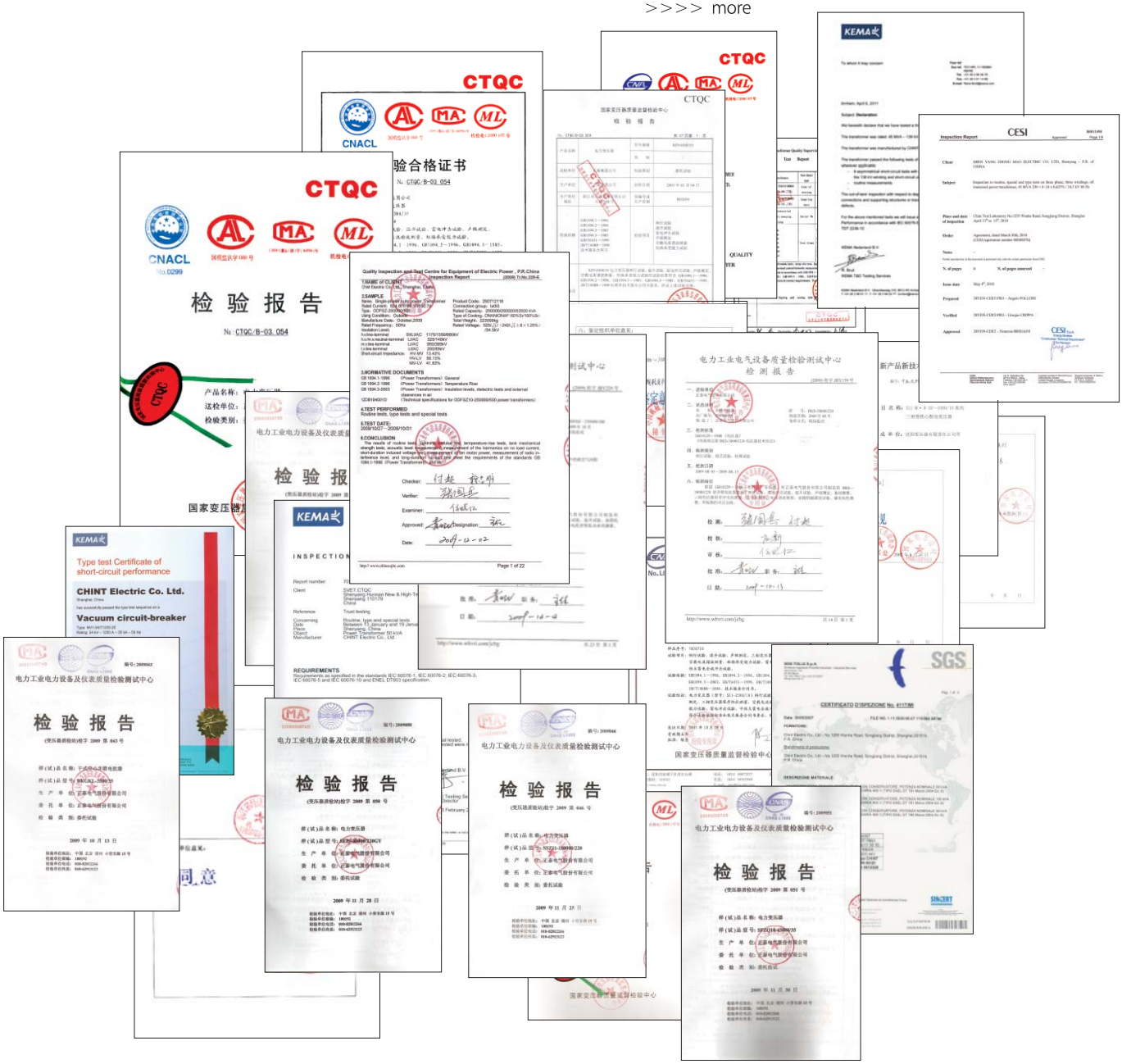
- Training in workshop

7. Product Certificate

- The quality assurance program of CHINT Electric is designed and implemented to guarantee its strict quality control standards. The company has been certified and operated under ISO9001, ISO14001 and OHSAS 1800. The products comply with IEC, ANSI, IEEE, AS,etc.
- CHINT Electric's transformers are evaluated by STL (Short-Circuit Testing Liaison) laboratories such as KEMA, CESI, and other international certification like PCT (GOST), TUV; and tested by CNAS (ilac-MRA member in China) laboratories such as CTQC, SEPTDTC, etc.

- 150kV, 80MVA power transformer CESI certified;
- 138kV, 45MVA power transformer KEMA certified;
- 230kV, 45MVA power transformer CESI certified;
- 500kV, 250MVA power transformer tested by CTQC;
- 220kV, 240MVA tested by CTQC;
- 220kV, 180MVA tested by CNAS & CTQC;
- 110kV, 100MVA tested by CTQC;
- 20 kV, 100kVA KEMA certified;
- 15 kV, 50kVA KEMA certified;

>>>> more



8. Ordering Information

On ordering, please provide the following product-related technical requirements: Product type, single-phase or three-phase, the winding number, rated voltage of each windings, rated frequency, rated power, insulation level, voltage combination and tapping changer type, connecting group, short-circuit impedance, no-load loss, no-load current, load loss, cooling method, service conditions, execute standards and other special requirements.

9. Data Sheet of Typical Products

330~500kV Power Transformer

330kV two-winding power transformer

Model	Rated capacity (kVA)	Rated voltage and tapping range		Vector group	No load current %	No load losses kW	On load losses kW	Impedance voltage (%)
		HV	LV					
SFP11-150000/330	150000	363±2×2.5%	10.5~20	Ynd11	0.3	90	400	14-15
SFP11-400000/330	400000	363±2×2.5%	10.5~20	Ynd11	0.15	185	820	14-15

330kV three-winding power transformer

Model	Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load current %	No load losses kW	On load losses kW	Impedance voltage (%)		
		HV	MV	LV					HV-MV	HV-LV	MV-LV
SFPSZ11-150000/330	150000	330±8×1.25%	110~121	10.5~35	YNyn0d11	0.3	95	440	14~15	24~26	7~9
SFPSZ11-240000/330	240000	330±8×1.25%	110~121	10.5~35	YNyn0d11	0.25	135	625	14~15	24~26	7~9
SFPSZ11-360000/330	360000	330±8×1.25%	110~121	10.5~35	YNyn0d11	0.15	185	850	14~15	24~26	7~9
OSFPSZ11-150000/330	150000	330±8×1.25%	110~121	10.5~35	YNa0d11	0.3	50	335	11~12	34~36	22~24
OSFPSZ11-240000/330	240000	330±8×1.25%	110~121	10.5~35	YNa0d11	0.25	70	480	11~12	34~36	22~24
OSFPSZ11-360000/330	360000	330±8×1.25%	110~121	10.5~35	Yna0d11	0.15	95	645	11~12	34~36	22~24

400kV power transformer

Model	Rated capacity (kVA)	Rated voltage and tapping range		Vector group	No load current %	No load losses kW	On load losses kW	Impedance voltage (%)
		HV	LV					
SFFZ11-60000/420	60000	420±8×1.25%	6.3~10.5/6.3~10.5	Ynyn0yn0+d11	0.5	45	270	12~14
SFZ11-438000/420	438000	420±8×1.25%	10.5~20	Ynd11	0.15	175	815	12~18

500kV two-winding power transformer

Model	Rated capacity (kVA)	Rated voltage and tapping range		Vector group	No load current %	No load losses kW	On load losses kW	Impedance voltage (%)
		HV	LV					
DFP11-240000/500	240000	500/√3±2×2.5%	10.5~20	Ii0	0.2	110	420	14~16
SFP11-480000/500	480000	550±2×2.5%	10.5~20	Ynd11	0.2	190	950	14~16

500kV three-winding power transformer

Model	Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load current %	No load losses kW	On load losses kW	Impedance voltage (%)		
		HV	MV	LV					HV-MV	HV-LV	MV-LV
ODFPSZ11-250000/500	250000	500/√3	242/√3±8×1.25%	10.5~66	Ia0i0	0.2	70	370	11~12	34~38	20~24
ODFPSZ11-334000/500	334000	550/√3	242/√3±8×1.25%	10.5~66	Ia0i0	0.15	95	485	11~12	34~38	20~24

※ Note: 1. All the data included are only examples for your reference.
2. Customized and more-efficient transformer is available according to your requirements.

220kV Power Transformer

31500kVA~360000kVA two-winding transformer with NVTC (HV neutral is indirect grounding)

Rated capacity (kVA)	Rated voltage and tapping range HV	LV	Vector group	No load current %	Impedance voltage %	No load losses kW	On load losses kW
31500	220±2×2.5% 242±2×2.5%	6.3,6.6,10.5,11	YNd11	0.70	12~14	35	135
40000				0.70		41	157
50000				0.65		49	189
63000				0.65		58	220
90000		10.5,13.8,11		0.55		77	288
120000				0.55		94	345
150000				0.50		112	405
180000		11,13.8,15.75		0.46		128	459
240000				0.42		160	567
300000		15.75,18		0.38		189	675
360000				0.38		217	774

31500kVA~240000kVA three-winding transformer with NVTC (HV neutral is indirect grounding)

Rated capacity (kVA)	Rated voltage and tapping range HV	MV	LV	Vector group	No load current %	Impedance voltage % Step up	Step down	No load losses kW	On load losses kW
31500	220±2×2.5%,242±2×2.5%	69,121	6.3,6.6, 10.5,11, 35,38.5	YNyn0d11	0.70	HV~MV: 22~24 HV~LV: 12~14 MV~LV: 7~9	HV~MV: 12~14 HV~LV: 22~24 MV~LV: 7~9	40	162
40000					0.63			48	189
50000					0.56			56	225
63000					0.56			66	261
90000			10.5,11,13.8, 35,38.5		0.49			86	351
120000					0.49			106	432
150000			11,13.8,15.75, 35,38.5		0.42			125	513
180000					0.42			142	585
240000					0.35			176	720

31500kVA~240000kVA transformer with NVTC (HV neutral is indirect grounding)

Rated capacity (kVA)	Rated voltage and tapping range HV	LV	Vector group	No load current %	Impedance voltage %	No load losses kW	On load losses kW
31500	220±2×2.5%	63,66,69	YNd11	0.89	12~14	38	151
40000				0.89		45	176
50000				0.82		53	211
63000				0.82		63	247
90000				0.75		83	323
120000				0.75		102	387
150000				0.68		122	453
180000				0.68		138	513
240000				0.61		171	635

Power Transformer up to 750kV

31500kVA~240000kVA Autotransformer with NVTC (HV neutral is indirect grounding)

Rated Capacity (kVA)	Rated voltage and tapping range HV	MV	LV	Vector group	Step-up set No load loss kW	On load loss kW	No load current%	Step-down set No load loss kW	On load loss kW	No load current%	Short-circuit Impedence% Step-up	Step-down
31500	220±2×2.5%, 242±2×2.5%	121	6.6,10.5, 11,35, 37,38.5 / 10.5,11 13.8,15.75 18,35,37, 38.5	YNa0d11	25	117	0.57	22	99	0.5	HV~MV 12~14 HV~LV 8~12 MV~LV 14~18	HV~MV 8~10 HV~LV 28~34 MV~LV 18~24
40000					29	144	0.57	26	121	0.5		
50000					34	170	0.5	30	144	0.43		
63000					40	201	0.5	36	171	0.43		
90000					50	276	0.43	46	234	0.36		
120000					62	340	0.43	56	288	0.36		
150000					73	405	0.36	66	342	0.33		
180000					84	463	0.36	76	387	0.33		
240000					99	595	0.33	89	504	0.25		

31500kVA~180000kVA Two-winding transformer with OLTC (HV neutral is indirect grounding)

Rated Capacity (kVA)	Rated voltage and tapping range HV	LV	Vector group	No load current%	Short-circuit Impedence%	No load loss kW(9)	On load loss kW(9)
31500	220±8× 1.25%	6.3,6.6 10.5,11 35,37,38.5 / 10.5,11 35,37,38.5	YNd11	0.77	12~14	38	135
40000				0.63		45	157
50000				0.56		54	189
63000				0.56		63	220
90000				0.49		80	288
120000				0.49		99	346
150000				0.42		116	405
180000				0.42		135	468

31500kVA~240000kVA Autotransformer with OLTC (HV neutral is indirect grounding)

Rated Capacity (kVA)	Rated voltage and tapping range HV	MV	LV	Vector group	No load loss kW	On load loss kW	No load current %	Capacity Allocation %	Short-circuit Impedence %
31500	220±8× 1.25%	115	6.3 6.6 10.5 11 35 37 38.5 / 10.5 11 35 37 38.5	YNa0d11	25	108	0.56	100/100/50	HV~MV 8~10 HV~LV 28~34 MV~LV 18~24
40000					30	132	0.56		
50000					36	157	0.49		
63000					42	189	0.49		
90000					51	247	0.42		
120000					64	308	0.42		
150000					73	365	0.35		
180000					85	419	0.35		
240000					104	540	0.3		

63000kVA~180000kVA Autotransformer with OLTC (HV neutral is indirect grounding)

Rated Capacity (kVA)	Rated voltage and tapping range HV	MV	LV	Vector group	No load loss kW	On load loss kW	No load current %	Capacity Allocation %	Short-circuit Impedence %
63000	220±8× 1.25%	115	6.3,6.6 10.5,11 35,37,38.5 / 10.5,11 35,37,38.5	YNa0d11	42	189	0.49	100/100/50	HV~MV 8~10 HV~LV 28~34 MV~LV 18~24
90000					51	247	0.42		
120000					64	308	0.42		
150000					85	365	0.35		
180000					104	419	0.35		

※ Note: 1. All the data included are only examples for your reference.
2. Customized and more-efficient transformer is available according to your requirements.

110kV Three Phase On-load Power Transformer

6300kVA～120000kVA two-winding transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load current %	Impedance voltage %	No load losses kW	On load losses kW
	HV	Tapping range %	LV					
6300	110,121	±2×2.5%	6.3,6.6, 10.5,11	YNd11	0.77	10.5	9.3	36
8000					0.77		11.2	45
10000					0.72		13.2	53
12500					0.72		15.6	63
16000					0.67		18.8	77
20000					0.67		22	93
25000					0.62		26	110
31500					0.6		30.8	133
40000					0.56		36.8	156
50000					0.52		44	194
63000					0.48		52	234
75000					0.42	12～14	59	278
90000					0.38		68	320
120000					0.34		84.8	397

6300kVA~100000kVA three-winding transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load current %	Impedance voltage %		No load losses kW	On load losses kW
	HV	MV	LV			Step up	Step down		
6300	110±2×2.5%,121 ±2×2.5%	35,38.5	6.3,6.6, 10.5,11	YNyn0d11	0.82	HV~MV: 17.5～18.5 HV~LV: 10.5 MV~LV: 6.5	HV~MV: 10.5 HV~LV: 17.5～18.5 MV~LV: 6.5	11.2	47.0
8000					0.78			13.2	56.0
10000					0.74			15.8	66.0
12500					0.70			18.4	78.0
16000					0.66			22.4	95.0
20000					0.65			26.4	112.0
25000					0.6			30.8	133.0
31500					0.6			36.8	157.0
40000					0.55			43.6	189.0
50000					0.55			52.0	225.0
63000					0.50			61.6	270.0
75000					0.50			70.2	307.7
80000					0.50			73.7	323.0
100000					0.50			87.1	381.8

6300kVA~100000kVA two-winding transformer with OLTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load current %	Impedance voltage %	No load losses kW	On load losses kW
	HV	Tapping range %	LV					
6300	110	±8×1.25%	6.3,6.6, 10.5,11	YNd11	0.8	10.5	10	36
8000					0.8		12	45
10000					0.74		14.2	53
12500					0.74		16.8	63
16000					0.69		20.2	77
20000					0.69		24	93
25000					0.64		28.4	110
31500					0.64		33.8	133
40000					0.58		40.4	156
50000					0.58		47.8	194
63000					0.52		56.8	234
75000					0.63		64.7	266.7
80000					0.63		67.9	297.9
100000					0.63		80.3	330.9

6300kVA~100000kVA three-winding transformer with OLTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load losses kW	On load losses kW	No load current %	Impedance voltage %
	HV	MV	LV					
6300	110±8×1.25%	35, 37 38.5	6.3,6.6, 10.5,11	YNyn0d11	12.0	47	0.95	HV~MV: 10.5 HV~LV: 17.5~18.5 MV~LV: 6.5
8000					14.4	56	0.95	
10000					17.1	66	0.89	
12500					20.2	78	0.89	
16000					24.2	95	0.84	
20000					28.6	112	0.84	
25000					33.8	133	0.78	
31500					40.2	157	0.78	
40000					48.2	189	0.73	
50000					56.9	225	0.73	
63000					67.7	270	0.67	
75000					77.2	307.7	0.84	
80000					81.0	323	0.84	
100000					95.7	381.8	0.84	

Note 1: For transformer with O.L.T.C, temporarily provide step-down structure product
2: Distribution of HV/MV/LV coil capacity is（100/100/100）%
3: Vector group label can be YNd11y10 according to requirements
4: Maximum current tap at －10% tap position
5: According to customer demand, voltage value or tapping position of MV can be different from those in the above tables.

6300kVA~100000kVA two-winding transformer (LV is 35kV) with NVTC

Rated capacity (kVA)	Rated voltage and tapping range		Vector group	No load losses kW	On load losses kW	No load current %	Impedance voltage %
	HV	LV					
6300	110±2×2.5% 121±2×2.5%	35, 37, 38.5	YNd11	10.0	39	0.84	10.5
8000				12.0	47	0.84	
10000				14.0	55	0.78	
12500				16.4	66	0.78	
16000				19.6	81	0.72	
20000				23.2	99	0.72	
25000				27.4	116	0.67	
31500				32.4	140	0.67	
40000				38.6	164	0.61	
50000				46.2	204	0.61	
63000				54.6	245	0.56	
75000				62.2	279.2	0.70	
80000				65.3	293.1	0.70	
100000				77.2	346.5	0.70	

Note 1: Maximum current tap at －5% tap position
2: Step-up transformer should adopt the non-tap structure. It can set tap according to running requirements.

※ Note: 1. All the data included are only examples for your reference.
2. Customized and more-efficient transformer is available according to your requirements.

66kV Power Transformer

6300kVA~63000kVA two-winding transformer with OLTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	Impedance voltage %	No load losses kW (9)	On load losses kW (9)	No load losses kW (10)	On load losses kW (10)	No load losses kW (11)	On load losses kW (11)
	HV	Tapping range %	LV								
6300	63,66,69	±8×1.25	6.3,6.6,10 5,11	YNd11	9	10	36	9.4	34	8.3	34
8000						12	42.8	11.1	40.4	9.8	40.4
10000						14.2	50.4	13.1	47.6	11.6	47.6
12500						16.8	59.9	15.4	56.5	13.6	56.5
16000						20.2	73.5	18.4	69.4	16.3	69.4
20000						24	89.1	21.8	84.2	19.2	84.2
25000						28.4	105.3	25.6	99.5	22.6	99.5
31500						33.7	126.9	30.3	119.9	26.8	119.9
40000						40.3	149	36.1	140.7	31.9	140.7
50000						47.6	184.5	42.6	174.3	37.6	174.3
63000						56.2	222.3	50.3	210	44.4	210

630kVA~63000kVA two-winding transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	Impedance voltage %	No load losses kW (9)	On load losses kW (9)	No load losses kW (10)	On load losses kW (10)	No load losses kW (11)	On load losses kW (11)
	HV	Tapping range %	LV								
630	63,66,69	±5	6.3,6.6,10.5 ,11	Yd11	8	1.6	7.6	1.4	7.1	1.3	7.1
800						1.9	9	1.7	8.5	1.5	8.5
1000						2.3	10.4	2	9.9	1.8	9.9
1250						2.7	12.6	2.4	11.9	2.1	11.9
1600						3.2	14.9	2.9	14	2.6	14
2000						3.8	17.6	3.4	16.6	3	16.6
2500						4.5	20.7	4	19.6	3.5	19.6
3150						5.3	24.3	4.8	23	4.2	23
4000						6.3	28.8	5.6	27.2	5	27.2
5000						7.4	32.4	6.6	30.6	5.9	30.6
6300		±2×2.5		YNd11	9	9.2	36	8.5	34	7.5	34
8000						11.2	42.8	10.2	40.4	9	40.4
10000						13.2	50.4	12.1	47.6	10.7	47.6
12500						15.6	59.9	14.2	56.5	12.5	56.5
16000						18.8	73.5	17.1	69.4	15.1	69.4
20000						22	89.1	20.2	84.2	17.9	84.2
25000						26	105.3	23.9	99.5	21.1	99.5
31500						30.8	126.9	28.4	119.9	25.1	119.9
40000						36.8	149	34	140.7	30	140.7
50000						44	184.5	40.1	174.3	35.4	174.3
63000						52	222.3	47.7	210	42.1	210

※ Note: 1. All the data included are only examples for your reference.
2. Customized and more-efficient transformer is available according to your requirements.

SZ9(M), SZ10(M), SZ11(M)-1000-31500/35
Three-phase Oil-immersed Transformer With OLTC

SZ9(M)-1000~31500/35 Three-phase oil-immersed transformer with OLTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load losses (kW)	On load losses (kW)	Impedance voltage (%)	No load current (%)	Weight (kg)				Outline dimension (mm)	Trail distance (mm)
	HV	Tapping range	LV						Body	Oil	Gross	Tran-sport	L×W×H	
1000					1.7	13.0		1.1	1930	1240	4600	3650	2850×1930×2430	1070×1070
1250					2.0	15.0		1.1	2200	1320	4950	3800	2900×1950×2450	1070×1070
1600	35				2.4	18.0		1.0	2550	1400	5300	3980	2950×1980×2490	1070×1070
2000					2.9	20.0		1.0	2775	1560	5965	4925	3010×2065×2540	1070×1070
2500				Yd11	3.4	21.8	6.5	1.0	3300	1750	6950	5683	3035×2265×2610	1070×1070
3150					4.1	26.0		0.9	3770	1970	7900	6075	3160×2095×2640	1070×1070
4000			6.3		4.9	30.7	7.0	0.9	4520	2260	9110	7090	3295×2325×2890	1070×1070
5000		±3×2.5	6.6		5.8	36.0		0.68	5620	2980	11825	9500	3900×3000×3050	1070×1475
6300			10.5		7.0	39.0		0.68	6700	3340	13400	10350	3920×3020×3090	1070×1475
8000			11		9.84	44.0	7.5	0.6	8620	3670	16070	12500	4400×3200×3160	1475×1475
10000	35				11.6	51.0		0.6	9900	4000	18500	15400	4450×3520×3500	1475×1475
12500	38.5				13.68	60.5		0.56	11340	4365	21590	17800	4500×3600×3700	1475×1475
16000				YNd11	16.46	74.0		0.54	14300	5400	22800	20100	4950×4100×3750	1475×1475
20000					19.46	87.14	8.0	0.54	15000	6100	30700	22800	5000×3930×3840	1475×1475
25000					23.4	104		0.5	19750	9300	38400	33800	5650×4150×3900	1475×1475
31500					27.5	123.1		0.45	23500	11500	45300	38800	5880×4300×3950	2040×1475

SZ10(M)-1000～31500/35 Three -phase oil-immersed transformer with OLTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load losses (kW)	On load losses (kW)	Impedance voltage (%)	No load current (%)	Weight (kg)				Outline dimension (mm)	Trail distance (mm)
	HV	Tapping range	LV						Body	Oil	Gross	Tran-sport	L×W×H	
1000					1.5	12.3		1.1	2030	1290	4785	3795	2905 X 1970 X 2480	1070 X 1070
1250					1.8	14.2		1.1	2310	1370	5150	3950	2960 X 1990 X 2500	1070 X 1070
1600	35				2.2	17.0	6.5	1.0	2680	1460	5510	4130	3010 X 2020 X 2540	1070 X 1070
2000					2.6	19.2		1.0	2910	1620	6195	5120	3070 X 2105 X 2590	1070 X 1070
2500				Yd11	3.1	20.6		1.0	3465	1820	7230	5910	3095 X 2310 X 2660	1070 X 1070
3150					3.7	24.6		0.9	3960	2050	8215	6310	3225 X 2140 X 2700	1070 X 1070
4000			6.3		4.4	29.0	7.0	0.9	4750	2350	9475	7375	3355 X 2375 X 2950	1070 X 1070
5000			6.6		5.2	34.0		0.8	5690	3010	11925	9600	3950×3050×3100	1070 X 1070
6300		±3×2.5	10.5		6.3	36.6		0.8	6750	3370	13500	10400	3970×3070×3140	1070 X 1070
8000			11		8.8	40.4	7.5	0.7	8670	3700	16170	12600	4450×3250×3210	1475 X 1475
10000	35				10.4	47.8		0.7	9970	4030	18600	15500	4500×3570×3550	1475 X 1475
12500	38.5				12.3	56.6		0.6	11410	4395	21690	17900	4550×3650×3750	1475 X 1475
16000				YNd11	13.5	70.0		0.6	14370	5430	22900	20200	5000×4150×3800	1475 X 1475
20000					17.8	83.0	8.0	0.5	15090	6130	30800	22900	5050×3980×3890	1475 X 1475
25000					20.8	98.5		0.5	19820	9350	38500	33900	5700×4200×3950	1475 X 1475
31500					24.5	117.0		0.45	23370	11530	45400	38900	5700×4350×4000	2040 X 1475

SZ11(M)-1000～31500/35 Three-phase oil-immersed transformer with OLTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load losses (kW)	On load losses (kW)	Impedance voltage (%)	No load current (%)	Weight (kg)				Outline dimension (mm)	Trail distance (mm)
	HV	Tapping range	LV						Body	Oil	Gross	Tran-sport	L×W×H	
1000					1.3	11.1		1.1	2125	1365	5060	4015	2965 X 2010 X 2530	1070 X 1070
1250					1.6	14.2		1.1	2420	1450	5445	4180	3015 X 2030 X 2550	1070 X 1070
1600	35				1.9	17.0	6.5	1.0	2805	1540	5830	4378	3070 X 2060 X 2590	1070 X 1070
2000					2.3	19.2		1.0	3050	1720	6560	5410	3130 X 2150 X 2640	1070 X 1070
2500				Yd11	2.7	20.6		1.0	3630	1925	7645	6250	3160 X 2355 X 2715	1070 X 1070
3150					3.2	24.6		0.9	4150	2165	8690	6680	2865 X 2180 X 2750	1070 X 1070
4000			6.3		3.9	29.0	7.0	0.9	4970	2490	10020	7810	3425 X 2420 X 3010	1070 X 1070
5000		±3×2.5	6.6		4.6	34.0		0.8	5720	3030	11975	9650	3980×3080×3130	1070 X 1070
6300			10.5		5.5	36.6		0.8	6780	3400	13560	10460	4000×3100×3170	1070 X 1070
8000	35		11		7.7	40.4	7.5	0.7	8720	3730	16230	12630	4470×3100×3170	1475 X 1475
10000	38.5				9.1	47.8		0.7	9990	4050	18640	15540	4520×3590×3570	1475 X 1475
12500					10.8	56.6		0.6	11430	4415	21710	17920	4570×3070×3770	1475 X 1475
16000				YNd11	12.0	70.0		0.6	14390	5450	22910	20220	5030×4170×3840	1475 X 1475
20000					16.0	83.0	8.0	0.5	15110	6150	30840	22940	5070×4000×3910	1475 X 1475
25000					18.0	98.0		0.5	19840	9370	38540	33940	5720×4220×3970	1475 X 1475
31500					21.0	117.0		0.45	23390	11550	45440	38910	5930×4370×4030	2040 X 1475

※ Note: 1. All the data included are only examples for your reference.
2. Customized and more-efficient transformer is available according to your requirements.

S9(M), S10(M), S11(M)-1000～31500/35 Three-phase oil-immersed transformer with NVTC

S9(M)-1000~31500/35 Three-phase oil-immersed transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load losses (kW)	On load losses (kW)	Impedance voltage (%)	No load current (%)	Weight (kg)				Outline dimension (mm)	Trail distance (mm)
	HV	Tapping range	LV						Body	Oil	Gross	Tran-sport	L×W×H	
1000					1.48	12.2		1.0	1880	970	3780	3080	2400 X 1620 X 2490	820 X 820
1250					1.76	14.7	6.5	0.9	2070	1010	4080	3320	2420 X 1720 X 2470	820 X 820
1600	35				2.13	17.6		0.85	2480	1090	4660	3830	2465 X 1830 X 2520	820 X 820
2000			3.15		2.61	19.4		0.75	2830	1200	5300	4330	2545 X 1880 X 2600	1070 X 1070
2500		±5	6.3	Yd11	3.15	20.7		0.75	3410	1330	6170	5060	2610 X 2050 X 2670	1070 X 1070
3150			10.5		3.87	24.3	7.0	0.7	3900	1520	7100	5710	2700 X 2090 X 2690	1070 X 1070
4000					4.64	28.8		0.7	4730	1750	8620	7020	2770 X 2300 X 2800	1070 X 1070
5000					5.49	33.0		0.6	5600	1950	9950	7860	2865 X 2425 X 2870	1070 X 1070
6300					6.60	36.9	7.5	0.6	6860	2320	11580	9460	3090 X 2285 X 3150	1475 X 1475
8000					9.00	40.5		0.55	8090	2500	14120	11500	3230 X 3050 X 3280	1475 X 1475
10000	35		3.15		10.6	47.7		0.55	9860	2850	16480	13500	3380 X 3150 X 3370	1475 X 1475
12500	38.5		3.3		12.6	56.7		0.5	10930	3250	18340	14890	3550 X 3190 X 3430	1475 X 1475
16000		±2×2.5	6.3	YNd11	15.3	69.3		0.5	13450	3750	22410	18350	3910 X 3350 X 3580	1475 X 1475
20000			6.6		18.1	83.7	8.0	0.5	14200	5700	28800	23500	3950 X 3400 X 3620	1475 X 1475
25000			10.5		21.5	99.0		0.5	19650	7130	35600	28000	4950 X 4550 X 3850	1475 X 1475
31500			11		25.7	118.8		0.4	26000	12200	42100	36000	5020 X 4700 X 3950	2040 X 1475

S10(M)-1000~31500/35 Three-phase oil-immersed transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load losses (kW)	On load losses (kW)	Impedance voltage (%)	No load current (%)	Weight (kg)				Outline dimension (mm)	Trail distance (mm)
	HV	Tapping range	LV						Body	Oil	Gross	Tran-sport	L×W×H	
1000	35	±5	3.15 6.3 10.5	Yd11	1.32	11.48	6.5	1.0	1980	1020	3970	3235	2440 X 1645 X 2540	820 X 820
1250					1.57	13.86		0.9	2180	1060	4280	3490	2470 X 1750 X 2550	820 X 820
1600					1.90	16.58		0.85	2610	1145	4890	4020	2515 X 1870 X 2550	820 X 820
2000					2.32	18.28		0.75	2980	1260	5565	4550	2600 X 1920 X 2650	1070 X 1070
2500					2.80	19.55		0.75	3580	1400	6480	5320	2670 X 2090 X 2750	1070 X 1070
3150	35 38.5	±2×2.5	3.15 3.3 6.3 6.6 10.5 11	YNd11	3.44	22.95	7.0	0.7	4095	1590	7455	5995	2755 X 2130 X 2750	1070 X 1070
4000					4.12	27.20		0.7	4970	1840	9050	7370	2830 X 2350 X 2855	1070 X 1070
5000					4.88	31.20	7.5	0.6	5880	2050	10450	8255	2930 X 2480 X 2930	1070 X 1070
6300					5.84	34.85		0.6	7200	2450	12160	9935	3150 X 2330 X 3220	1475 X 1475
8000					8.00	38.25		0.55	8500	2630	14830	12075	3295 X 3110 X 3345	1475 X 1475
10000					9.44	45.05		0.55	10350	3000	17310	14180	3450 X 3210 X 3440	1475 X 1475
12500					11.20	53.55	8.0	0.5	11500	3400	19260	15635	3620 X 3255 X 3500	1475 X 1475
16000					13.60	65.45		0.5	14130	3940	23530	19270	3980 X 3420 X 3650	1475 X 1475
20000					16.08	79.05		0.5	14910	5990	30240	24675	4030 X 3470 X 3690	1475 X 1475
25000					19.12	93.50		0.5	20650	7490	37380	29400	5050 X 4640 X 3930	1475 X 1475
31500					22.80	112.2		0.4	27300	12810	44205	37800	5120 X 4800 X 4030	2040 X 1475

S11(M)-1000~31500/35 Three-phase oil-immersed transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load losses (kW)	On load losses (kW)	Impedance voltage (%)	No load current (%)	Weight (kg)				Outline dimension (mm)	Trail distance (mm)
	HV	Tapping range	LV						Body	Oil	Gross	Tran-sport	L×W×H	
1000	35	±5	3.15 6.3 10.5	Yd11	1.16	11.48	6.5	1.0	2070	1070	4160	3390	2500 X 1690 X 2590	1070 X 1070
1250					1.37	13.86		0.9	2280	1110	4490	3650	2520 X 1790 X 2590	1070 X 1070
1600					1.66	16.58		0.85	2730	1200	5130	4220	2560 X 1910 X 2620	1070 X 1070
2000					2.03	18.28		0.75	3120	1320	5830	4770	2650 X 1955 X 2700	1070 X 1070
2500					2.45	19.55		0.75	3750	1465	6790	5560	2720 X 2135 X 2780	1070 X 1070
3150	35 38.5	±2×2.5	3.15 3.3 6.3 6.6 10.5 11	YNd11	3.01	22.95	7.0	0.7	4290	1680	7810	6280	2800 X 2180 X 2800	1070 X 1070
4000					3.61	27.20		0.7	5200	1930	9490	7720	2880 X 2390 X 2910	1070 X 1070
5000					4.27	31.20	7.5	0.6	6160	2150	10950	8650	2980 X 2520 X 2990	1070 X 1070
6300					5.11	34.85		0.6	7550	2550	12740	10410	3215 X 2380 X 3275	1475 X 1475
8000					7.00	38.25		0.55	8900	2750	15540	12650	3360 X 3170 X 3280	1475 X 1475
10000					8.26	45.05		0.55	10850	3140	18130	14850	3515 X 3280 X 3500	1475 X 1475
12500					9.80	53.55	8.0	0.5	12020	3580	20180	16380	3690 X 3320 X 3570	1475 X 1475
16000					11.90	65.45		0.5	14795	4125	24650	20185	4065 X 3490 X 3730	1475 X 1475
20000					14.07	79.05		0.5	15620	6270	31680	25850	4110 X 3550 X 3770	1475 X 1475
25000					16.73	93.50		0.5	21615	7840	39160	30800	5150 X 4730 X 4000	1475 X 1475
31500					19.95	112.2		0.4	28600	13420	46310	39600	5220 X 4890 X 4110	2040 X 1475

※ Note: 1. All the data included are only examples for your reference.
2. Customized and more-efficient transformer is available according to your requirements.

S9(M), S10(M), S11(M)-50～3150/35-0.4
Three-phase Oil-immersed Transformer

S9(M)-50～3150/35 Technical parameter of dual-winding distribution transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range HV	Tapping range	LV	Vector group	No load losses (W)	On load losses (W)	Impedance voltage (%)	No load current (%)	Weight (kg) Body	Oil	Gross	Outline dimension(mm) L×W×H	Trail distance (mm)
50					220	1220		2.0	246	265	710	1100 X 875 X 1715	550 X 550
100					310	2030		1.8	382	336	960	1190 X 915 X 1780	550 X 550
125					350	2390		1.8	485	410	1200	1220 X 1040 X 1780	550 X 550
160					370	2840		1.7	520	430	1350	1240 X 1070 X 1810	550 X 550
200					440	3330		1.6	615	477	1400	1380 X 780 X 1875	660 X 660
250					520	3960		1.4	683	500	1560	1540 X 880 X 1820	660 X 660
315					620	4770		1.4	835	568	1840	1440 X 800 X 1975	660 X 660
400				Yyn0	740	5760		1.3	1020	655	2090	1660 X 825 X 1995	660 X 660
500	35	±5	0.4	or	880	6930	6.5	1.3	1166	725	2390	1710 X 865 X 2030	660 X 660
630				Dyn11	1050	8280		1.3	1415	797	2835	1630 X 1235 X 2070	660 X 660
800					1250	9900		1.1	1632	845	3240	1655 X 1415 X 2120	820 X 820
1000					1480	12200		1.0	2080	965	3980	1860 X 1435 X 2220	820 X 820
1250					1770	14700		0.9	2330	1110	4520	1890 X 1640 X 2260	820 X 820
1600					2140	17600		0.8	2900	1200	5350	2050 X 1720 X 2390	1070 X 1070
2000					2500	20700		0.7	3180	1330	5760	2400 X 1900 X 2410	1070 X 1070
2500					2980	24500		0.7	3410	1400	6550	2500 X 1930 X 2700	1070 X 1070
3150					3600	29500		0.7	4450	1800	8350	2600 X 2100 X 2800	1070 X 1070

S10(M)-50～3150/35 Technical parameter of dual-winding distribution transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range HV	Tapping range	LV	Vector group	No load losses (W)	On load losses (W)	Impedance voltage (%)	No load current (%)	Weight (kg) Body	Oil	Gross	Outline dimension(mm) L×W×H	Trail distance (mm)
50					200	1150		2.0	260	275	740	1120 X 890 X 1750	550 X 550
100					280	1920		1.8	400	350	995	1220 X 940 X 1820	550 X 550
125					310	2260		1.8	510	430	1250	1250 X 1060 X 1820	550 X 550
160					330	2680		1.7	550	450	1405	1270 X 1095 X 1850	550 X 550
200					390	3150		1.6	645	495	1460	1410 X 795 X 1915	660 X 660
250					460	3740		1.4	720	520	1625	1575 X 905 X 1860	660 X 660
315					550	4510		1.4	880	590	1915	1470 X 820 X 2020	660 X 660
400				Yyn0	660	5440		1.3	1070	680	2175	1695 X 845 X 2040	660 X 660
500	35	±5	0.4	or	780	6550	6.5	1.3	1225	760	2485	1745 X 885 X 2070	660 X 660
630				Dyn11	930	7820		1.3	1485	830	2950	1665 X 1260 X 2115	660 X 660
800					1120	9350		1.1	1715	880	3370	1690 X 1450 X 2160	820 X 820
1000					1320	11480		1.0	2185	1005	4140	1900 X 1465 X 2265	820 X 820
1250					1570	13860		0.9	2450	1160	4700	1930 X 1680 X 2310	820 X 820
1600					1900	16580		0.8	3045	1250	5570	2090 X 1755 X 2440	1070 X 1070
2000					2230	19550		0.7	3340	1390	5990	2450 X 1940 X 2460	1070 X 1070
2500					2650	23140		0.7	3580	1460	6810	2550 X 1970 X 2755	1070 X 1070
3150					3200	27870		0.7	4670	1870	8685	2660 X 2150 X 2900	1070 X 1070

S11(M)-50～3150/35 Technical parameter of dual-winding distribution transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load losses (W)	On load losses (W)	Impedance voltage (%)	No load current (%)	Weight (kg)			Outline dimension(mm)	Trail distance (mm)
	HV	Tapping range	LV						Body	Oil	Gross	L×W×H	
50					170	1150		2.0	270	295	785	1160 X 920 X 1800	550 X 550
100					240	1920		1.8	420	370	1060	1250 X 960 X 1870	550 X 550
125					270	2260		1.8	535	455	1320	1280 X 1090 X 1870	550 X 550
160					290	2680		1.7	575	475	1485	1310 X 1130 X 1900	550 X 550
200					340	3150		1.6	680	530	1540	1450 X 820 X 1970	660 X 660
250					400	3740		1.4	755	550	1720	1620 X 930 X 1910	660 X 660
315					480	4510		1.4	920	625	2030	1510 X 840 X 2075	660 X 660
400				Yyn0	580	5440		1.3	1125	720	2300	1750 X 870 X 2095	660 X 660
500	35	±5	0.4	or	680	6550	6.5	1.3	1285	800	2630	1795 X 910 X 2140	660 X 660
630				Dyn11	820	7820		1.3	1560	880	3120	1720 X 1295 X 2180	660 X 660
800					980	9350		1.1	1795	930	3570	1740 X 1490 X 2230	820 X 820
1000					1160	11480		1.0	2290	1065	4380	1960 X 1510 X 2330	820 X 820
1250					1380	13860		0.9	2565	1220	4980	1990 X 1730 X 2380	820 X 820
1600					1660	16580		0.8	3190	1320	5885	2155 X 1810 X 2510	1070 X 1070
2000					1950	19550		0.7	3500	1465	6340	2520 X 1995 X 2530	1070 X 1070
2500					2320	23140		0.7	3750	1540	7210	2630 X 2030 X 2840	1070 X 1070
3150					2800	27870		0.7	4895	1980	9190	2730 X 2210 X 2940	1070 X 1070

※ Note: 1. All the data included are only examples for your reference.
2. Customized and more-efficient transformer is available according to your requirements.

S9(M), S10(M), S11(M)-30～3150/10
Three Phase Oil-immersed Distribution Transformer With NVTC

S9(M)-30～3150/10 Technical parameter of three-phase oil-immersed distribution transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load losses (W)	On load losses (W)	Impedance voltage (%)	No load current (%)	Weight (kg)			Outline dimension(mm)	Trail distance (mm)
	HV	Tapping range	LV						Body	Oil	Gross	L×W×H	
30					130	600		2.1	145	80	286	995 X 524 X 1047	400 X 400
50					170	870		2.0	205	90	375	1030 X 580 X 1055	400 X 400
63					200	1040		1.9	240	98	460	1067 X 604 X 1085	400 X 400
80					250	1250		1.8	285	114	520	1110 X 545 X 1240	550 X 550
100					290	1500		1.6	335	131	587	1154 X 592 X 1200	550 X 550
125					340	1800		1.5	395	140	724	1164 X 572 X 1157	550 X 550
160					400	2200	4.0	1.4	470	169	795	1210 X 710 X 1273	550 X 550
200					480	2600		1.3	565	194	920	1250 X 749 X 1252	550 X 550
250	6				560	3050		1.2	650	214	1080	1315 X 781 X 1340	550 X 550
315	6.3	±5		Yyn0	670	3650		1.1	775	260	1322	1445 X 515 X 1382	660 X 660
400	10	±2×2.5	0.4	Dyn11	800	4300		1.0	920	278	1442	1365 X 788 X 1435	660 X 660
500	10.5				960	5150		1.0	1050	323	1740	1650 X 838 X 1470	660 X 660
630	11				1200	6200		0.9	1260	462	2295	1640 X 970 X 1635	820 X 820
800					1400	7500		0.8	1565	540	2695	1845 X 1027 X 1800	820 X 820
1000					1700	10300	4.5	0.7	1705	626	3035	2049 X 1162 X 1829	820 X 820
1250					1950	12000		0.6	2065	671	3460	2012 X 1222 X 1865	820 X 820
1600					2400	14500		0.6	2505	835	4140	2110 X 1292 X 1945	820 X 820
2000					2850	19500		0.6	2675	955	4930	2050 X 2040 X 2225	1070 X 1070
2500					3000	21000	5.5	0.6	3740	1030	6140	2160 X 2120 X 2350	1070 X 1070
3150					3550	24300		0.4	4520	1510	8050	2580 X 2210 X 2620	1070 X 1070

S10(M)-30～3150/10 Technical parameter of three-phase oil-immersed distribution transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load losses (W)	On load losses (W)	Impedance voltage (%)	No load current (%)	Weight (kg)			Outline dimension(mm)	Trail distance (mm)
	HV	Tapping range	LV						Body	Oil	Gross	L×W×H	
30	6 6.3 10 10.5 11	±5 ±2×2.5	0.4	Yyn0 Dyn11	110	600	4.0	2.1	155	82	315	1026 X 638 X 1047	400 X 400
50					150	870		2.0	222	101	423	1068 X 656 X 1060	400 X 400
63					180	1040		1.9	260	111	512	1090 X 676 X 1110	400 X 400
80					200	1250		1.8	300	126	566	1115 X 691 X 1245	550 X 550
100					230	1500		1.6	360	146	626	1178 X 706 X 1225	550 X 550
125					270	1800		1.5	410	158	742	1170 X 719 X 1180	550 X 550
160					310	2200		1.4	490	180	847	1215 X 760 X 1315	550 X 550
200					380	2600		1.3	570	207	980	1265 X 770 X 1290	550 X 550
250					460	3050		1.2	670	237	1130	1415 X 770 X 1385	550 X 550
315					540	3650		1.1	790	270	1352	1460 X 798 X 1440	660 X 660
400					650	4300		1.0	945	298	1510	1470 X 794 X 1493	660 X 660
500					780	5150		1.0	1080	328	1790	1664 X 858 X 1535	660 X 660
630					920	6200	4.5	0.9	1280	474	2330	1660 X 933 X 1495	820 X 820
800					1120	7500		0.8	1520	549	2560	1642 X 1023 X 1755	820 X 820
1000					1320	10300		0.7	1810	631	2960	2108 X 1162 X 1880	820 X 820
1250					1560	12000		0.6	1990	687	3575	2162 X 1222 X 1945	820 X 820
1600					1880	14500		0.6	2530	840	4140	2167 X 1232 X 1925	820 X 820
2000					2410	19500	5.5	0.6	2940	1080	5490	2050 X 2190 X 2220	1070 X 1070
2500					2670	21000		0.6	3795	1115	6205	2160 X 2200 X 2350	1070 X 1070
3150					3170	24300		0.4	4685	1530	8250	2580 X 2260 X 2630	1070 X 1070

S11(M)-30～3150/10 Technical parameter of three-phase oil-immersed distribution transformer with NVTC

Rated capacity (kVA)	Rated voltage and tapping range			Vector group	No load losses (W)	On load losses (W)	Impedance voltage (%)	No load current (%)	Weight (kg)			Outline dimension(mm)	Trail distance (mm)
	HV	Tapping range	LV						Body	Oil	Gross	L×W×H	
30	6 6.3 10 10.5 11	±5 ±2×2.5	0.4	Yyn0 Dyn11	100	600	4.0	2.1	165	84	344	1060 X 640 X 1050	400 X 400
50					130	870		2.0	240	112	452	1110 X 660 X 1070	400 X 400
63					150	1040		1.9	285	124	565	1110 X 690 X 1115	400 X 400
80					180	1250		1.8	320	139	611	1120 X 700 X 1250	550 X 550
100					200	1500		1.6	384	153	665	1205 X 720 X 1255	550 X 550
125					240	1800		1.5	426	161	770	1180 X 730 X 1200	550 X 550
160					280	2200		1.4	505	192	900	1215 X 760 X 1350	550 X 550
200					340	2600		1.3	582	221	1040	1260 X 790 X 1330	550 X 550
250					400	3050		1.2	690	246	1180	1415 X 775 X 1430	550 X 550
315					480	3650		1.1	805	280	1380	1460 X 798 X 1500	660 X 660
400					570	4300		1.0	970	317	1580	1470 X 800 X 1550	660 X 660
500					680	5150		1.0	1115	334	1835	1664 X 858 X 1600	660 X 660
630					810	6200	4.5	0.9	1305	485	2370	1680 X 973 X 1725	820 X 820
800					980	7500		0.8	1480	549	2630	1842 X 940 X 1910	820 X 820
1000					1150	10300		0.7	1590	641	2913	2060 X 1162 X 1950	820 X 820
1250					1360	12000		0.6	1920	703	3470	2012 X 1222 X 1930	820 X 820
1600					1640	14500		0.6	2550	843	4155	2217 X 1292 X 2045	820 X 820
2000					1980	19500	5.5	0.6	3200	1134	5600	2050 X 2170 X 2220	1070 X 1070
2500					2350	21000		0.6	3850	1200	6290	2160 X 2260 X 2350	1070 X 1070
3150					2800	24300		0.4	4850	1550	8450	2580 X 2310 X 2650	1070 X 1070

※ Note: 1. All the data included are only examples for your reference.
2. Customized and more-efficient transformer is available according to your requirements.

Special Transformer

CHINT Electric designs and manufactures special transformers when customer's equipments need a unique voltage according to international standards. The transformers widely apply to industries of mining, electrochemical, aluminum, copper, electroplating, excitation, iron and steel smelting, calcium carbide, organic silicon smelting, alloy, etc.

35kV Oil-immersed Converter Transformer

Application: for converting the voltage of the power system into the voltage required by the rectifier and then into DC power supply in three-phase, 35kV, 50/60Hz power system. Applicable for electrochemical processing, electrolysis, electroplating, magnetic excitation and drawing in metallurgical and chemical industry.

Ratings:
- Capacity ≤20000kVA.

Rectifier Transformer

Application: applicable for regulating rectifier for aluminum electrolysis power supply in series voltage 1200V, series current 320kA electrolysis system.

Ratings:
- Capacity ≤ 10000kVA for voltage 10-35kV.
- Capacity ≤ 150000kVA for voltage 110-220kV.

Furnace Transformer

Application: for converting the voltage of power system into the voltage required by furnaces in three-phase, 35kV, 50/60Hz power system. Applicable for smelting iron and steel, calcium carbide, crystalline silicon and ferro alloy.

Ratings:
- Capacity ≤10000kVA for voltage 10kV (three-phase)
- Capacity ≤50000kVA for voltage 35kV and 110kV (three-phase)
- Capacity ≤12500kVA for voltage 35kV (single-phase)
- Capacity ≤27000kVA for voltage 110kV (single-phase)

Available Product Range from CHINT Electric:

≥500kV


500kV Power Transformer


500kV Rod Composite Insulator


468kV Porcelain Metal Oxide Surge Arrester used for Substation


750kV Power Transformer

252kV


GW7-252 HV Switch Disconnector


GW22-252kV Switch Disconnector


GW23-252kV Switch Disconnector


252kV GIS


LW43-252 Circuit Breaker


220kV Power Transformer


220kV SF_6 tank metal oxide surge arrester (without gap)(GIS)


220kV Rod Composite Insulator


220kV Outdoor SF_6 HV Current Transformer


220kV Outdoor Oil-Immersed HV Current Transformer

110kV


LW36-126 Outdoor SF_6 Circuit Breaker


GW4-126 AC HV Switch Disconnector


126kV Mini GIS


126kV Mini GIS


ZF21-126kV GIS


110kV SF_6 tank metal oxide surge arrester (without gap) (GIS)


110kV Power Transformer

40.5kV


KYN61-40.5(Z) Metalclad Enclosed Withdrawable Switchgear


ZN85 Indoor Solid Sealed Polar Pole Vacuum Circuit Breaker


XGN77-40.5(Z) Cubicle Fixed AC Metal-enclosed switchgear


NYBM(P)77-40. 5-0. 69 HV/LV Prefabricated Substation


NFZR77-40. 5D HV AC Vacuum Load Switch-Fuse Combined Equipment Specialised for Wind Power


ZGS11 American Type Transformer Specialised for Wind Power


Outdoor SF_6 Circuit Breaker


ZW7-40.5 Outdoor HV AC Vacuum Circuit Breaker


GW4-40.5 Outdoor AC Switch Disconnector


YB29-40.5/12 Prefabricated Substation

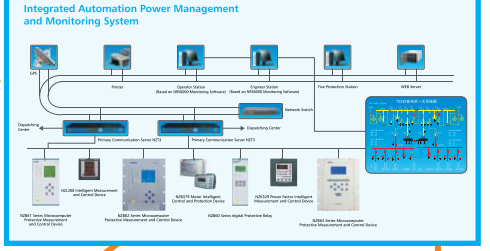

Skid-type Box Transformer


TBBS (6-35kV) Substation Type Auto-switched HV Shunt Capacitor Equipment


MSVC Magnetic Control Reactor Type HV Static Reactive Compensator


35kV Oil-immersed Transformer with OLTC in SZ9 series


27. 5kV Surge Arrester & Insulator Used for Electric Railway 35kV Porcelain Metal Oxide Surge Arrester Used for Substation



12kV


KYN28A-12(Z) Metalclad Enclosed Withdrawable Switchgear


KYN28A-24(Z) Metalclad Enclosed Withdrawable Switchgear


XGN15-12 (SF6) Fixed Type Metalclad Enclosed Loop Switchgear


HXGN15A-12 Fixed Type Metalclad Enclosed Loop Switchgear


XGN2-12 Box-type Fixed AC Metal-enclosed switchgear


XGN36-12 Box-type Fixed AC Metal-enclosed switchgear


NG7 Cubicle Gas Insulated Switchgear (C-GIS)


TBBF(6-10kV) HV Shunt Capacitor Complete Equipment


12kV Indoor Embedded Pole Vacuum Circuit Breaker


12kV Indoor HV AC Vacuum Circuit Breaker


12kV Indoor HV AC SF_6 Switch-fuse Combined Equipment


12kV Indoor HV AC Vacuum Load Switch-fuse Combined Equipment


12kV Outdoor HV AC Vacuum Circuit Breaker


12kV Outdoor Shunt Type HV AC Vacuum Load Breaker Switch (Electric Dog)


12kV Outdoor Shunt Type HV AC Vacuum Circuit Breaker (Electric Dog)


Outdoor HV Permanent Magnet Vacuum Circuit Breaker


12kV Outdoor HV AC Droping Fuse


HV Shunt Capacitor Compensation Equipment


TBBF(X) HV Shunt Capacitor Complete Equipment


S9-S11 Series Three-phase Oil-immersed Regulating Distribution Transformer without Excitation


S9-S11 Series Three-phase Oil-immersed Full-sealed Distribution Transformer without Excitation


SC(B) series Epoxy Resin Dry-type Transformer


SCBH15 Amorphous Transformer


SBH15 Amorphous Oil-immersed Transformer


YB6 series Prefabricated Substation


YBM(P)29 HV/LV Prefabricated Substation


10kV Indoor Casting Current Transformer
10kV Indoor Casting Voltage Transformer


Outdoor Oil-immersed Energy Metering Box


12kV AC Three-phase Combined Over-voltage Protector With Composite Jacket and Gap

0.38-0.6kV


NGC8 LV Withdrawable Switchgear


NGC1~3 LV Withdrawable Switchgear


NGG1 LV Fixed Switchgear


NGZ2 series Power Supply Switchgear


NGZ3 DC Power Supply Switchgear


PZ series Lighting and Control Box


NTSC(0.4-1kV) Dynamic Filtering Compensator


BAM/BFM Full-film HV Shunt Capacitor


BAMH Assembled HV Shunt Capacitor


XKGKL Dry Type Air-core Current-limiting Reactor CKGKL Dry Type Air-core Reactor


BKS, BKD HV Oil-immersed Shunt Reactor


NCM1 Coarctation Insulated Control Bus-bar


XQJ series Cable Bracket


Cable

International Business:

Attributed to our reliable quality and perfect after-sales service, CHINT Electric has been relied on and entrusted with by many of our clients around the world.
We will continue to supply best products and try hard to win more compliments through our best service.

For inquiries, further interests for products cooperation, partnership, international alliance,investment discussion with us, please contact the following representatives.

Area	Representative	Tel	E-mail
Asia–Pacific	Selina Peng	(+86) 21 6777 7777 ext.80917	pengxuan@chint.com
Latin America	Bill Han	(+86) 21 6777 7777 ext.80911	hanzl@chint.com
North America	Xufeng Jiang	(+86) 21 6777 7777 ext.80990	jxfeng@chint.com
Europe	York Zhi	(+86) 21 6777 7777 ext.80925	zhiy@chint.com
Africa & Middle East	Logan Liu	(+86) 21 6777 7777 ext.89006	lwgen@chint.com
Russia–Speaking Countries	Andrey Tao	(+86) 21 6777 7777 ext.80965	taozc0331@chint.com

Chint Electric Co., Ltd.

No.3255 Sixian Road, Songjiang District, 201614,
Shanghai, China
Tel: (+86)–21–6777 7777 ext. 89955
Fax: (+86)–21–6777 7722
E–mail: chintengineering@chint.com
Http://en.chintelectric.com en.chint.com