

powerbox[®]

Transformer

WG Series



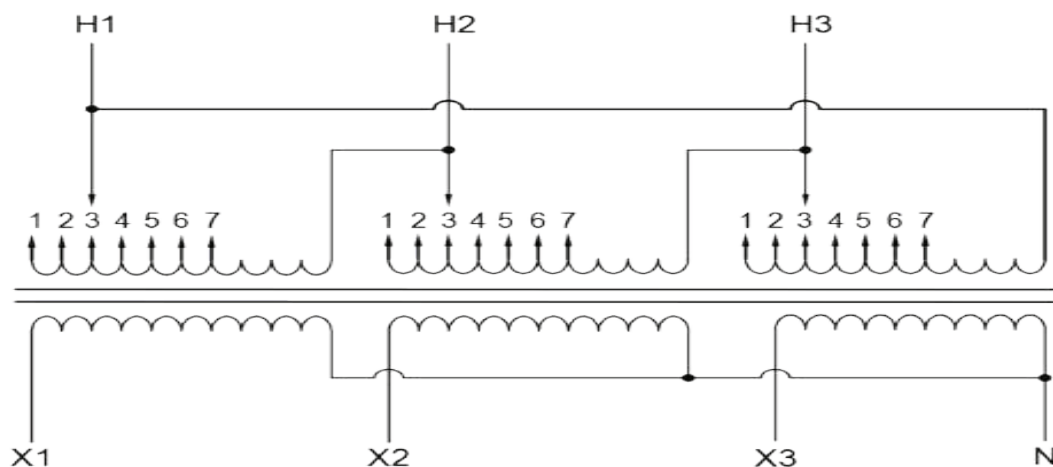
**CERTIFICATION
INTERNATIONAL**

**ISO 9001:2015
CERTIFIED COMPANY**

SPECIFICATIONS

Rating	: Up to 1000 KVA
Input Voltage	: 230 V A.C to 4160 V A.C
Output Voltage	: 110 V A.C to 480 V A.C
Winding Connections	: H.V: Delta, L.V: Wye with neutral
Taps H.V. Coil	: 2 X 2.5% above normal, 4 X 2.5% below normal
Insulation Class	: Class H (180°C)
Duty	: General Purpose Transformers, K-Rated Transformers
Forced Cooling	: Cooling fans can be provided to enhance rating
BILL	: 10 KV
Degree of Protection	: IP 41 (indoor) IP 56 (outdoor)
Enclosure materials	: 100 % Galvanized Materials
Sheet Metal Thickness	: 2.0 mm
Paint Finish	: Powder coated finish with pure polyester paint
Painted Coated Thickness	: 80 microns (minimum)
Paint Texture	: Wrinkled Smooth
Color	: RAL 9002 – Beige RAL 7001 – Gray

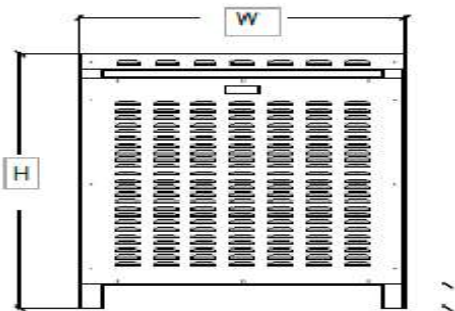
DELTA- WYE CONNECTION



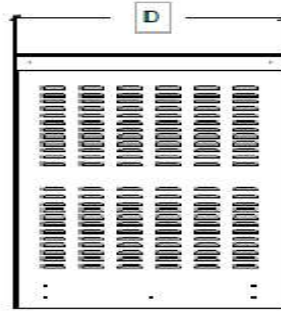
POWERBOX TRANSFORMER DIMENSIONS

3 Phase Copper Conductor				
KVA	Dimension (mm)			Approx. Weight
	H	W	D	KGS
5	550	400	300	100
10	600	450	350	130
15	650	500	400	150
25	700	550	450	190
37.5	800	650	500	240
50	850	650	550	330
75	900	650	550	400
100	950	750	600	480
112.5	950	750	600	530
150	1000	750	650	600
175	1050	800	700	650
200	1100	900	700	750
225	1150	950	750	800
250	1200	1000	800	850
300	1250	1000	800	950
350	1300	1050	850	1050
400	1350	1050	900	1200
500	1450	1100	950	1500
600	1500	1150	1000	1750
750	1600	1200	1050	2000
1000	1700	1400	1150	2500

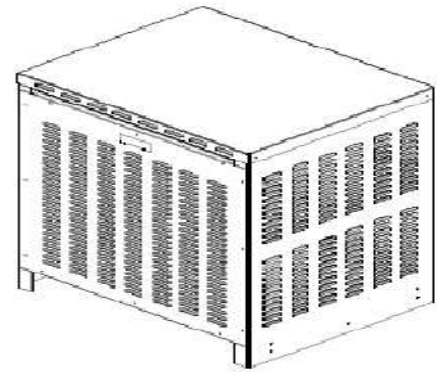
3 Phase Aluminum Conductor				
KVA	Dimension (mm)			Approx. Weight
	H	W	D	KGS
5	550	400	300	85
10	600	450	350	100
15	650	500	400	120
25	750	550	450	150
37.5	850	650	500	180
50	900	650	550	250
75	950	650	550	340
100	1000	750	600	400
112.5	1000	750	600	440
150	1050	750	650	500
175	1100	800	700	560
200	1150	900	700	610
225	1200	950	750	680
250	1250	1000	800	750
300	1300	1000	800	780
350	1350	1050	850	860
400	1400	1050	900	1050
500	1500	1100	950	1200
600	1550	1150	1000	1350
750	1650	1200	1050	1600
1000	1750	1400	1150	2100



FRONT VIEW



SIDE VIEW



ISOMETRIC VIEW

MATERIALS USED IN MANUFACTURING POWERBOX TRANSFORMER



Grain - Oriented Silicon Steel Core

Special Steel tailored to produce certain magnetic properties, such as small hysteresis area (small energy dissipation per cycle, or low core loss) and high permeability.



Resin/Polyester Impregnated Glass Cloth

Twisted strands of fiberglass woven at right angles to one another. As cloth has the highest glass - to - resin ratio and strength of all fiberglass materials. A fiberglass tape is usually a narrow, cloth strip with woven edges that prevents unraveling.



Windings (Copper/Aluminium, Round/Flat Wire)

Flat Wires and Copper strips are rectangular/square shaped wires that have been rolled from round wires or extruded stocks to precision tolerances. They are also commonly referred as electromechanical strips.



Dog Bone

Made from fiberglass reinforced thermoset polyester that provide excellent physical strength, excellent dielectric properties, excellent heat resistance and high strength to weight ratios. It serves as a transformer spacer stick and is used for better electrical insulation purposes.



Insulating Varnish

Fast drying, insulating enamels characterized by outstanding oil and chemical abrasion resistance. Providing a smooth and glossy surface which sheds dirt readily. It may also be used for treating windings and mechanical components, used as an oil proof finish for field coils, starters, and inside walls of control boxes. It also has excellent flexibility and water resistance.



Bobbin

Permanent container for the wire acting to form the shape of the coil (and ease assembly of the windings into or onto the magnetic core). The bobbin is made of resin - impregnated fiber glass.



Silicon Varnished Glass Cloth

Made of fiberglass cloth impregnated with silicone varnish class H (180°C). It has excellent heat resistance, elasticity, good fungus, cold and oil resistance. And also used as coil insulation for H - Grade motors and electric appliances.



Powermat Busbar Insulator

Made of polyester compound. It is a high strength, dimensional accuracy and corrosion resistant material used to support the coil to set a distance to the terminal between the bracket and core and coil. This is for dry type transformers with lower kVA.



Nomex

Is related to nylon, but have aromatic backbones hence they are more rigid and durable. It has excellent thermal, chemical and radiation resistance for a polymer material.

TRANSFORMER MANUFACTURING EQUIPMENTS

TRANSFORMER REWINDING MACHINE



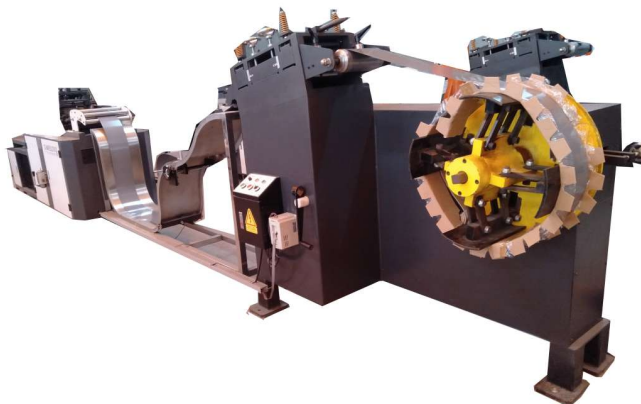
CORE ASSEMBLER



CNC - CUTTING & PUNCHING MACHINE



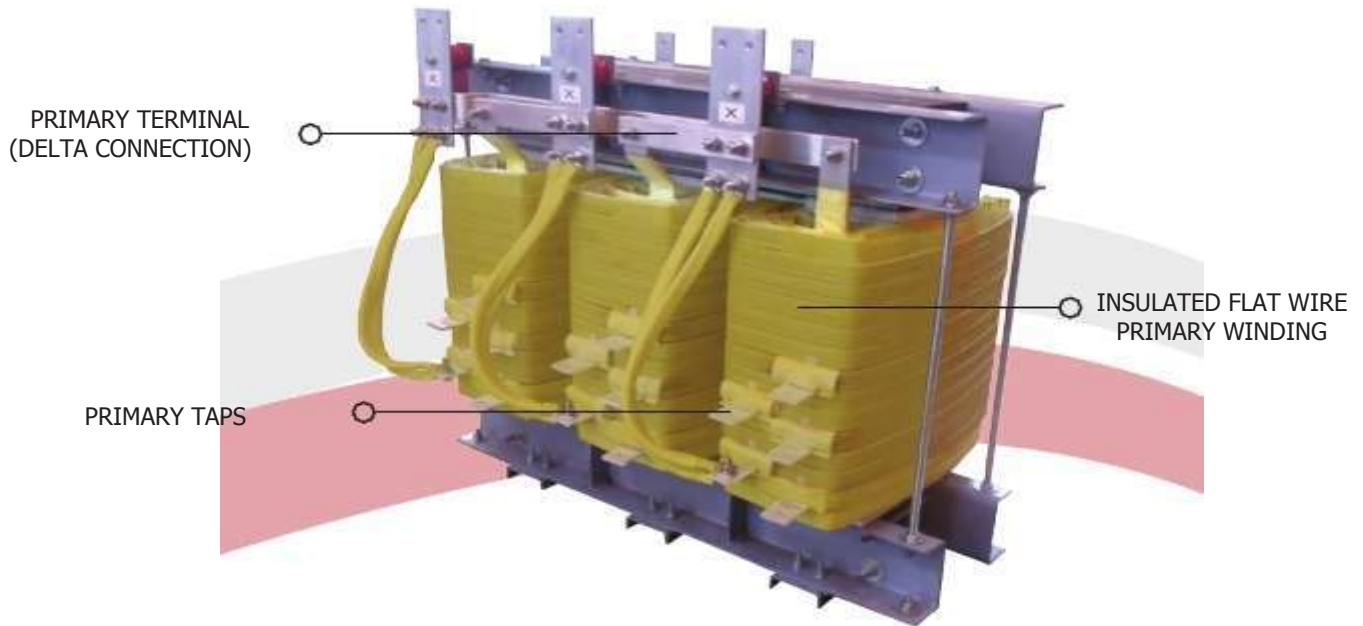
CNC - BENDING MACHINE



CNC-CORE CUTTER MACHINE

COMPONENTS

H.V SIDE



L.V SIDE



ISO 9001:2015 CERTIFICATE



Certificate of Registration

This is to certify that

Total Power Box Solution, Inc.

Cavite Light Industrial Park, Phase 2, Block 4, Lot 3 & 4, Barangay Maguyam, Silang, Cavite, Philippines

operates a management system which has been assessed as conforming to

ISO 9001:2015

for the scope of activities

Design, development, manufacture and assembly of electrical distribution and control equipment (switchgears, panelboards, motor controllers, electrical transfer switches, capacitor banks, busway systems, cable trays and wire trays, and telecommunication cabinets/data racks).

Certificate No: **CIP/4617/12/01/790**

Issue Date: **19 September 2018**

Valid Until: **06 February 2021**

subject to adherence to the agreed ongoing audit programme, successful endorsement of certification following each audit and compliance with CI Regulations.

Date of Original Issue : **07 February 2012**

A handwritten signature in black ink, appearing to read 'Renato V. Navarrete'.

Renato V. Navarrete
Chairman and President





Total Power Box Solution Inc.

TCH.FRM.002

DRY TYPE TRANSFORMER THREE PHASE DATA

Rev. No.: 03

Effective Date :August 11, 2017

KVA:	PHASE/FREQUENCY :	TEMP. RISE:
PRIMARY VOLTAGE:	PRIMARY FULL LOAD AMP.:	JOB ORDER:
SECONDARY VOLTAGE:	SECONDARY FULL LOAD AMP.:	SERIAL NUMBER:
PHASE CONNECTION :	INSULATION CLASS:	DATE TESTED:
BRAND:	CUSTOMER:	

TRANSFORMER TURN RATIO TEST (TTR)

TAPS	PRIM (H)	SECONDARY (X)	THEORETICAL RATIO	AS FOUND RATIO			REMARKS
				PHASE 1	PHASE 2	PHASE 3	
1							
2							
3							
4							
5							
6							
7							

TRANSFORMER INSULATION TEST (MEGGER TEST)

PRIMARY – SECONDARY	INPUT VOLTAGE	DURATION	OHMS	REMARKS
H1 – X1	1 KV	1 min.		
H2 – X2	1 KV	1 min.		
H3 – X3	1 KV	1 min.		
PRIMARY – GROUND	INPUT VOLTAGE	DURATION	OHMS	REMARKS
H1 – GROUND	1 KV	1 min.		
H2 – GROUND	1 KV	1 min.		
H3 – GROUND	1 KV	1 min.		
SECONDARY – GROUND	INPUT VOLTAGE	DURATION	OHMS	REMARKS
X1 – GROUND	1 KV	1 min.		
X2 – GROUND	1 KV	1 min.		
X3 – GROUND	1 KV	1 min.		

OPEN CIRCUIT TEST PER PHASE @ PRIMARY

PHASE	INPUT VOLTAGE	EXCITING CURRENT	NO LOAD LOSS	SECONDARY OUT PUT VOLTAGE

OPEN CIRCUIT TEST 3 PHASE @ PRIMARY

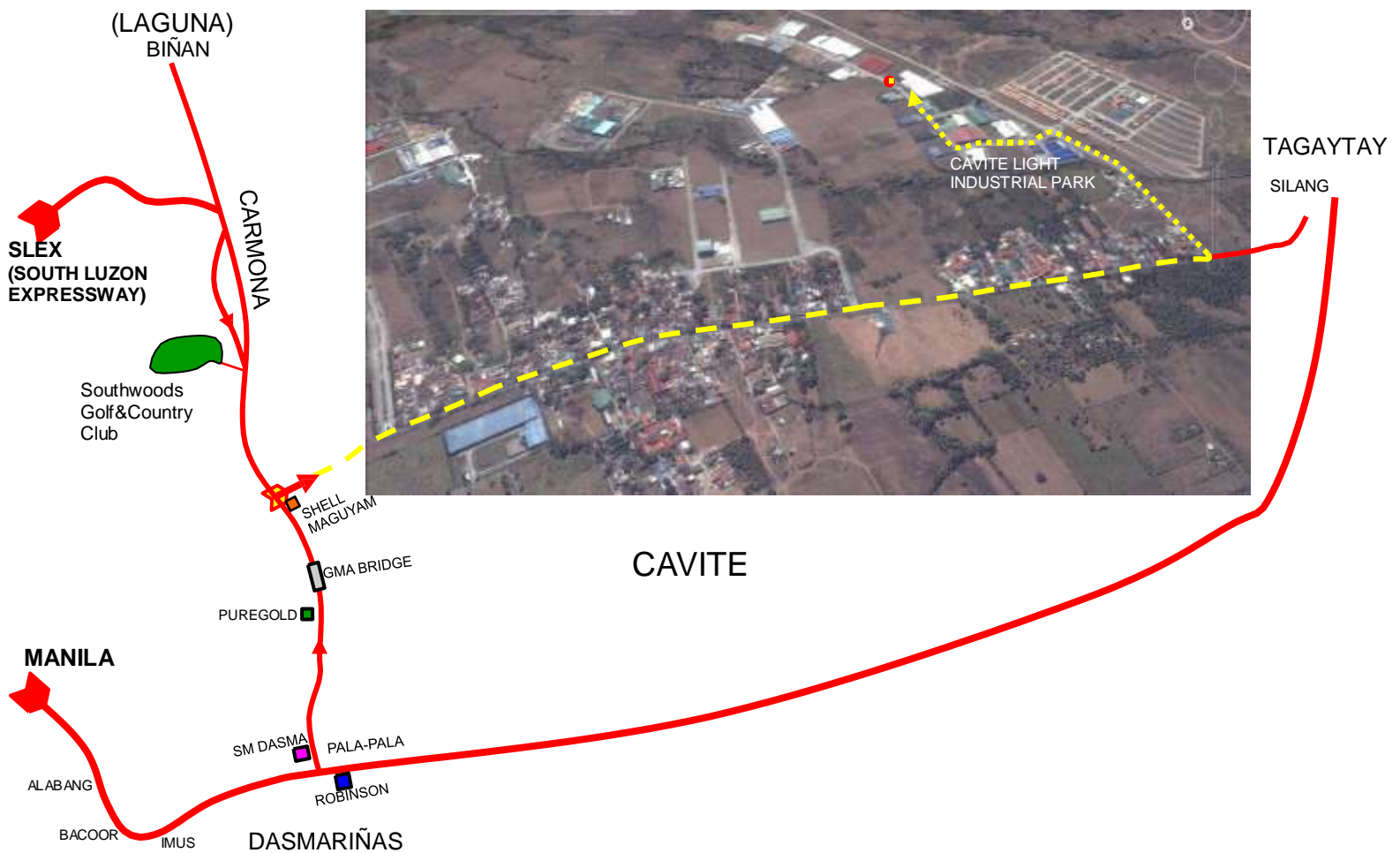
PHASE	INPUT VOLTAGE	EXCITING CURRENT	SECONDARY OUTPUT VOLTAGE

IMPEDANCE TEST (SHORT CIRCUIT TEST)

INDUCED PRIMARY FULL LOAD CURRENT / PHASE	
INDUCED VOLTAGE	
% IMPEDANCE	
LOAD LOSS	

TESTED BY: _____ QC TECHNICIAN	CHECKED BY: _____ SUPERVISOR	APPROVED BY: _____ MANAGER
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MANUFACTURING PLANT LOCATION



POWERBOX is conveniently located just about 45 minutes south of Manila. Coming from Makati, take the South Luzon Expressway and exit at Carmona. Turn right and after passing Southwoods, turn left at the first corner Shell station. Then, just follow the Maguyam Road. POWERBOX is at the third Technopark on the left.

Alternatively, coming from Makati, exit at Alabang and follow the Zapote-Bacoor route all the way to SM Dasma/ Pala-Pala and turn left (going to GMA and Carmona). Turn right at the corner Shell station after crossing the GMA Bridge and follow the Maguyan Road going to CLIP. It's just after Sterling and Meridian Technoparks.

www.powerboxsolutions.com

The information contained herein is subject to change without prior notice due to continuing research and development.