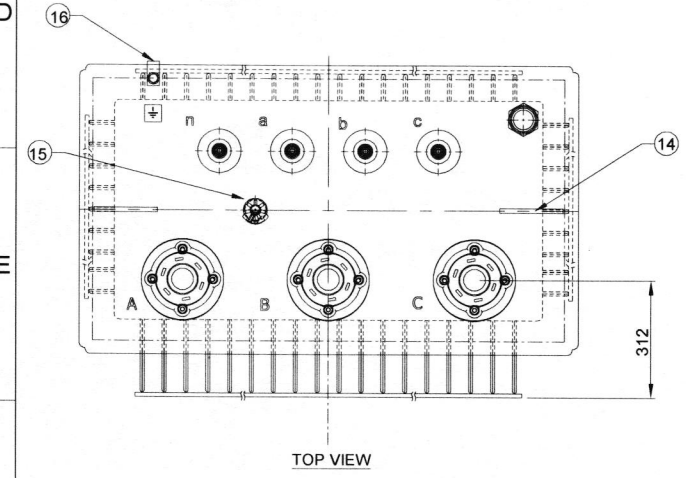
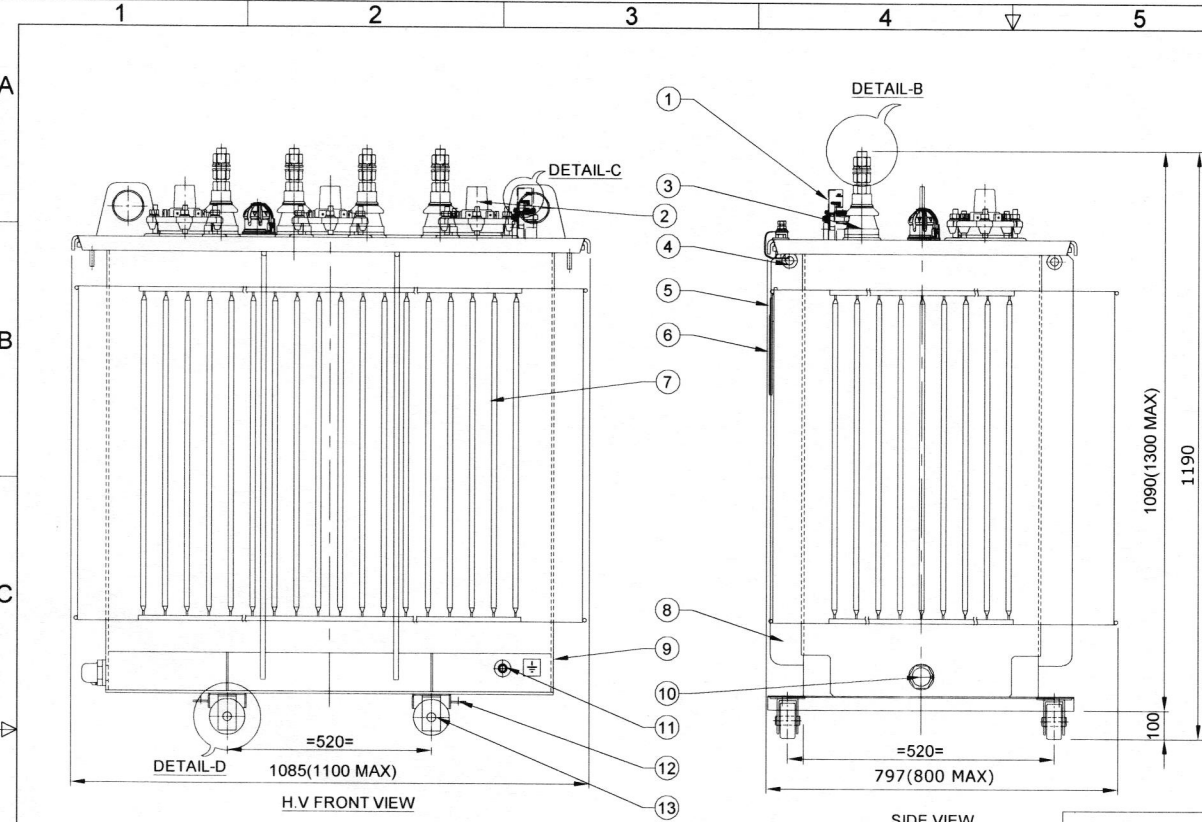
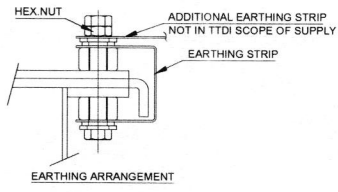


Product design meets OHSAS requirements (Ref: Work instructions DOC No. WI/110/ENG/01). ALL DIMENSIONS ARE IN mm & WEIGHTS ARE IN kg UNLESS OTHERWISE SPECIFIED. FORMAT No.: Mech003/R0

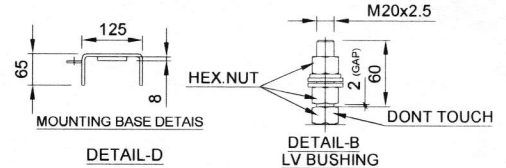
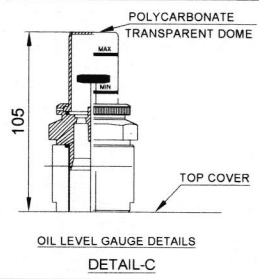
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TOTAL WEIGHT OF TRANSFORMER (kg)	RATING KVA	VOLTAGE(V)		CURRENT(A)	
		PRIMARY	SECONDARY	PRIMARY	SECONDARY
1210	200	20500	410	5.633	281.634



NO OF PHASES :	3
COOLING :	ONAN
FREQUENCY :	Hz 50
TEMP. RISE O / W :	60/65°C
CONNECTION GROUP :	Dyn11
SPECIFICATION :	IEC 60076 & EN50588

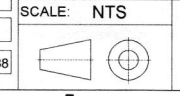


- NOTE:-
- FINISH PAINT SHADE: RAL 7035 (LIGHT GREY).
  - OVERALL DIMENSIONS & WEIGHTS ARE SUBJECTED TO ±10% TOLERANCE,
  - THE POSITION, LOCATION, DESIGN OF FITTINGS & ACCESSORIES MAY SLIGHTLY VARY DURING MANUFACTURING.
  - COMPLETE TRANSFORMER WITHSTANDS LOWER LIMIT OF AMBIENT TEMPERATURE -40°C.
  - ROLLERS SHALL BE SUPPLIED IN LOOSE CONDITION.
  - RATING PLATE SHALL BE PROVIDED ONLY ON LV SIDE.
- TIGHTENING TORQUE :-
- HV BUSHING STEM(OUTSIDE) M12- 13Nm.
  - LV BUSHING STEM(OUTSIDE) M20- 50Nm.
  - HV BUSHING FIXING STUD M12 - 15Nm.
- TERMINAL MARKING AND EARTHING SYMBOL SHALL BE PAINTED WITH BLACK COLOUR.
  - OIL LEVEL MARKING SHALL BE VISIBLE FROM TANK SHORTER SIDE
  - GAP (2mm) SHOULD MAINTAIN BETWEEN TWO ADJACENT NUTS AS PER DETAIL-A & DETAIL-B
  - LASHING EYES PROVIDED FOR TRANSPORT PURPOSE, LASHING EYES SHALL BE REMOVED AFTER REACHING DESTINATION/BEFORE INSTALLATION
  - TRANSFORMER SEALING : SEALING TEMP. AT ZERO GAUGE PRESSURE(AT TOP) : 6°C  
OIL TO BE INJECTED PER EACH ONE DEGREE RISE : 0.18 Lts  
Ex: AT ACTUAL SEALING TEMP. OF 30°C, ADDITIONAL OIL TO BE INJECTED(30-6)x0.18 = 4.3 Lts.  
PRESSURE VALUE FOR OIL LEAKAGE TEST - 0.1kg/cm2.
  - OIL LEVEL INDICATION IS BASED ON FLOAT BUT NOT BASED ON VISIBILITY OF OIL DUE TO TYPE OF OIL LEVEL GAUGE MECHANISM.

S.NO	DESCRIPTION	QTY.
16	EARTHING STRIP BETWEEN TANK AND TOP COVER	1
15	TAP SWITCH	1
14	LIFTING LUGS FOR LIFTING OF TRANSFORMER	2
13	BI-DIRECTIONAL ROLLERS	4
12	TOWING EYES	4
11	EARTHING TERMINALS	2
10	OIL DRAINING CUM SAMPLING DEVICE	1
9	NAME OF THE MANUFACTURER (MONOGRAM)	1
8	VERTICAL STIFFENER	-
7	CORRUGATION PANEL	-
6	RATING PLATE	1
5	RATING PLATE FIXING	1
4	LASHING EYES	4
3	L.V. BUSHINGS(1kV/630A)	4
2	H.V BUSHINGS(24kV/250A)	3
1	OIL FILLING PIPE WITH VERTICAL FLOAT OLG	1

REV	ZONE	DATE	MODIFICATION	MODIFIED	CHECKED	APPRD.

**TOSHIBA**  
TOSHIBA TRANSMISSION & DISTRIBUTION SYSTEMS (INDIA) PVT. LTD.  
DISTRIBUTION TRANSFORMERS DIVISION



OUTLINE GENERAL ARRANGEMENT OF  
200 kVA, 20.5/0.41 kV TRANSFORMER

DESIGNED	NAME	DATE
DRAWN		
CHECKED		
APPROVED		
PRJ.NO.	08811 A	
DRG.NO.	3 OG 93266	
SHT.NO.	1 OF 1 R 1	

HERMETICALLY SEALED COMPLETELY FIELD - (TIER-2) WITH TAP SWITCH

<b>TOSHIBA</b>	Toshiba Transmission & Distribution Systems (India) Pvt.Ltd. Distribution Transformers Division	Engineering
		Unit-10

GUARANTEED TECHNICAL PARTICULARS				
THREE PHASE DISTRIBUTION TRANSFORMER				
Work order No : 8811A		Customer: Re-Tech Oy, Finland		
kVA : 200	kV :20.5/0.41	Phase : 3	Freq. : 50Hz	Cooling : ONAN
Sl. No.	Description	UNIT	200 kVA	
1)	Make		Toshiba Transmission & Distribution Systems (India) Pvt. Ltd	
2)	Type		Hermitically Sealed	
3)	Phases	No.	Three	
4)	Rating	kVA	200 kVA	
5)a)	Rated Voltage:			
	HV	V	20500	
	LV	V	410	
b)	Highest voltage for equipment			
	HV	kV	24	
	LV	kV	1	
c)	HV Tapping Range		+5% to -5% insteps of 2.5%	
6)	Frequency	Hz	50	
7)	Vector Group		Dyn11	
8)	Insulation Level			
	HV	kV peak	125	
	LV	kV peak	Not Applicable	
9)	Power Frequency Level			
	HV	kV rms	50	
	LV	kV rms	3	
10)	Winding material		Aluminum	
11)	Core Material		CRGO	
12)	Temperature Rise:			
	Oil	° C	60	
	Winding	° C	65	
13)	Losses			
	No Load Losses at rated Voltage and Frequency	Watt	225 (MAX)-Tier-2	
	Load Losses at 75 ° C	Watt	2016.66 (MAX)-Tier-2	
14)	Impedance Voltage	%	4% (+/- IEC Tolerance Applicable)	
15)	Percentage Resistance	%	1.01	
16)	Regulation at:			
	Full Load UPF	%	1.08	
	Full Load 0.8 PF	%	3.16	
17)	Efficiency at 0.8 PF:			

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<b>TOSHIBA</b>		<b>Toshiba Transmission &amp; Distribution Systems (India) Pvt.Ltd. Distribution Transformers Division</b>		<b>Engineering</b>
				<b>Unit-10</b>
	Full Load	%	98.62	
	¾ Full Load	%	98.88	
	½ Full Load	%	99.10	
18)	Terminal Arrangement:			
	HV		Bare Bushings – Plug in-24kV/250A	
	LV		Bare Bushings – Porcelain-1kV/630A	
19)	Actual Overall Dimensions:			
	Length	mm	1085	
	Width	mm	797	
	Height	mm	1090 (without rollers)*	
20)	Overall Weight			
	Total Weight	Kg.	1210	
21)	Noise Level	LwAdB(A)	45.33	
<b>Applicability of Optional Fittings For above mentioned Actual Overall Dimensions</b>				
22)	Provision for Rollers		Yes	
23)	Pole Mounting consoles		No	
24)	HV bushing flags/connector/lug		No	
25)	LV bushing flags/ connector/lug		No	
26)	HV Tapping/Tap Switch		Yes	

Note:

1. Actual overall dimensions and weights are subjected to +/-10% Tolerance.
2. All the efficiencies and regulations are calculated at the nominal values of NLL, LL AT 75 Deg C and % Z at 75 Deg C.
3. \* With Rollers transformer height will increase by 100mm.
4. Paint: Class C4 corrosion protection paint will be provided.