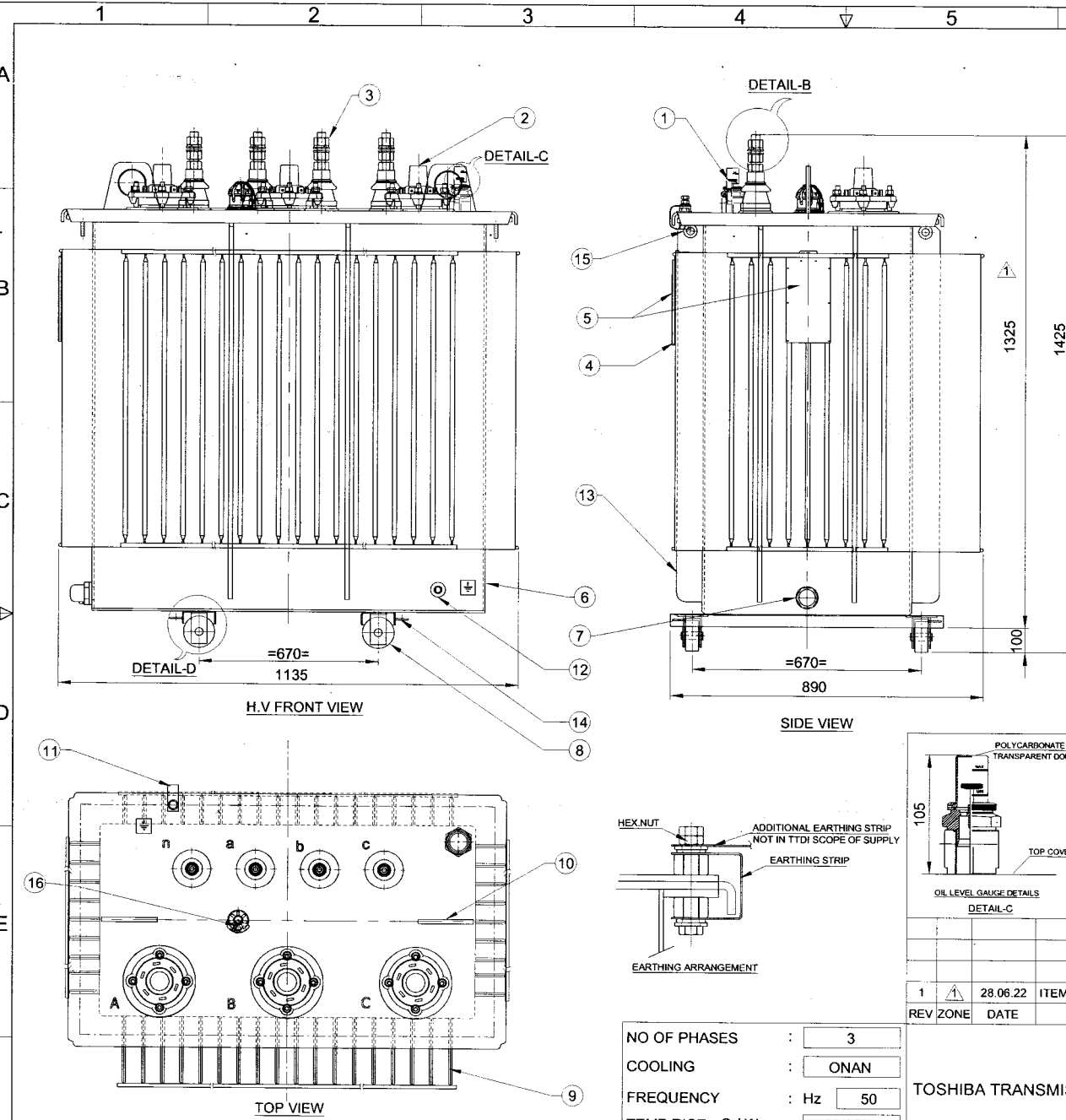


Product design meets OHSAS requirements (Ref: Work instructions DOC No. WI/UTD/ENGG/01). ALL DIMENSIONS ARE IN mm & WEIGHTS ARE IN kg UNLESS OTHERWISE SPECIFIED. FORMAT No. - Mech/003/RO

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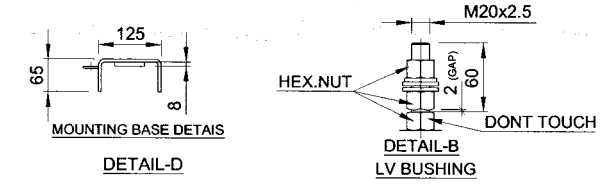
TOTAL WEIGHT OF TRANSFORMER (kg)	RATING KVA	VOLTAGE(V)		CURRENT(A)	
		PRIMARY	SECONDARY	PRIMARY	SECONDARY
1600	315	20500	410	8.871	443.574

NO OF PHASES : 3  
 COOLING : ONAN  
 FREQUENCY : Hz 50  
 TEMP. RISE O / W : 60/65°C  
 CONNECTION GROUP : Dyn11  
 SPECIFICATION : IEC : 60076-1

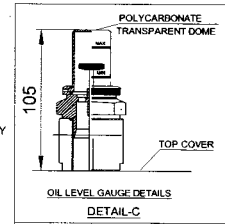
- NOTE:-**
- FINISH PAINT SHADE: RAL 7035 (LIGHT GREY).
  - OVERALL DIMENSIONS & WEIGHTS ARE SUBJECT TO ±10% TOLERANCE,
  - THE POSITION, LOCATION, DESIGN OF FITTINGS & ACCESSORIES MAY SLIGHTLY VARY DURING MANUFACTURING.
  - COMPLETE TRANSFORMER WITHSTANDS LOWER LIMIT OF AMBIENT TEMPERATURE -40°C.
  - ROLLERS WILL BE PROVIDED AS SPARE ITEM & SHALL BE SUPPLIED IN LOOSE CONDITION.

**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 & 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) : 12°C OIL TO BE INJECTED PER EACH ONE DEGREE RISE : 0.25 Lts  
 Ex: AT ACTUAL SEALING TEMP. OF 30°C, ADDITIONAL OIL TO BE INJECTED (30-12)x0.25 = 4.5 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	TAP SWITCH	1
15	LASHING EYES	4
14	TOWING EYES	4
13	VERTICAL STIFFENER	-
12	EARTHING TERMINALS	2
11	EARTHING STRIP BETWEEN TANK AND TOP COVER	1
10	LIFTING LUGS FOR LIFTING OF TRANSFORMER	2
9	CORRUGATION PANEL	-
8	BI-DIRECTIONAL ROLLERS (Ø125x40)	4
7	OIL DRAINING CUM SAMPLING DEVICE	1
6	NAME OF THE MANUFACTURER (MONOGRAM)	1
5	RATING PLATE	2
4	RATING PLATE FIXING	2
3	L.V. BUSHINGS(1KV/630A)	4
2	H.V BUSHINGS(PLUG-IN 24KV/250A)	3
1	OIL FILLING PLUG WITH VERTICAL FLOAT OLG	1
	<b>S.NO</b>	<b>DESCRIPTION</b>
		<b>QTY.</b>



1	28.06.22	ITEM NO. 4 & 5 QUANTITY ADDED	K. Sri Raju
REV ZONE	DATE	MODIFICATION	APPRD.
			NAME

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

**SCALE: NTS**

**OUTLINE GENERAL ARRANGEMENT OF 315 kVA, 20.5/0.41 KV TRANSFORMER**

PRJ.NO. 08861C
DRG.NO. 3 OG 93315
SHT.NO. 1 OF 1 R 1

<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 : 08861C	Customer: Re-Tech Oy, Finland.			
kVA : 315	kV :20.5/0.41	Phase : 3	Freq. : 50Hz	Cooling : ONAN

Sl. No.	Description	UNIT	315 kVA
1)	Make		Toshiba Transmission & Distribution Systems (India) Pvt. Ltd
2)	Type		Hermitically Sealed
3)	Phases	No.	Three
4)	Rating	kVA	315 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% in steps 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	324 (MAX)-Tier-2
	Load Losses at 75 ° C	Watt	2800 (MAX)-Tier-2
14)	Impedance Voltage	%	4% (+/- IEC Tolerance Applicable)
15)	Percentage Resistance	%	0.89
16)	Regulation at:		
	Full Load UPF	%	0.96
	Full Load 0.8 PF	%	3.08
17)	Efficiency at 0.8 PF:		

<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	%	98.78
	¾ Full Load	%	99.01
	½ Full Load	%	99.19
18)	Terminal Arrangement:		
	HV		Bare Bushings – Plug-in-24kV/250A
	LV		Bare Bushings – Porcelain-1kV/630A
19)	Actual Overall Dimensions:		
	Length	mm	1135
	Width	mm	890
	Height	mm	1325(without rollers)*
20)	Overall Weight		
	Total Weight	Kg.	1600
21)	Noise Level	LwAdB(A)	49
<b>Applicability of Optional Fittings For above mentioned Actual Overall Dimensions</b>			
22)	Provision for Rollers		Yes
23)	Pole Mounting consoles		No
24)	HV flags/connector/lug		No
25)	LV 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.