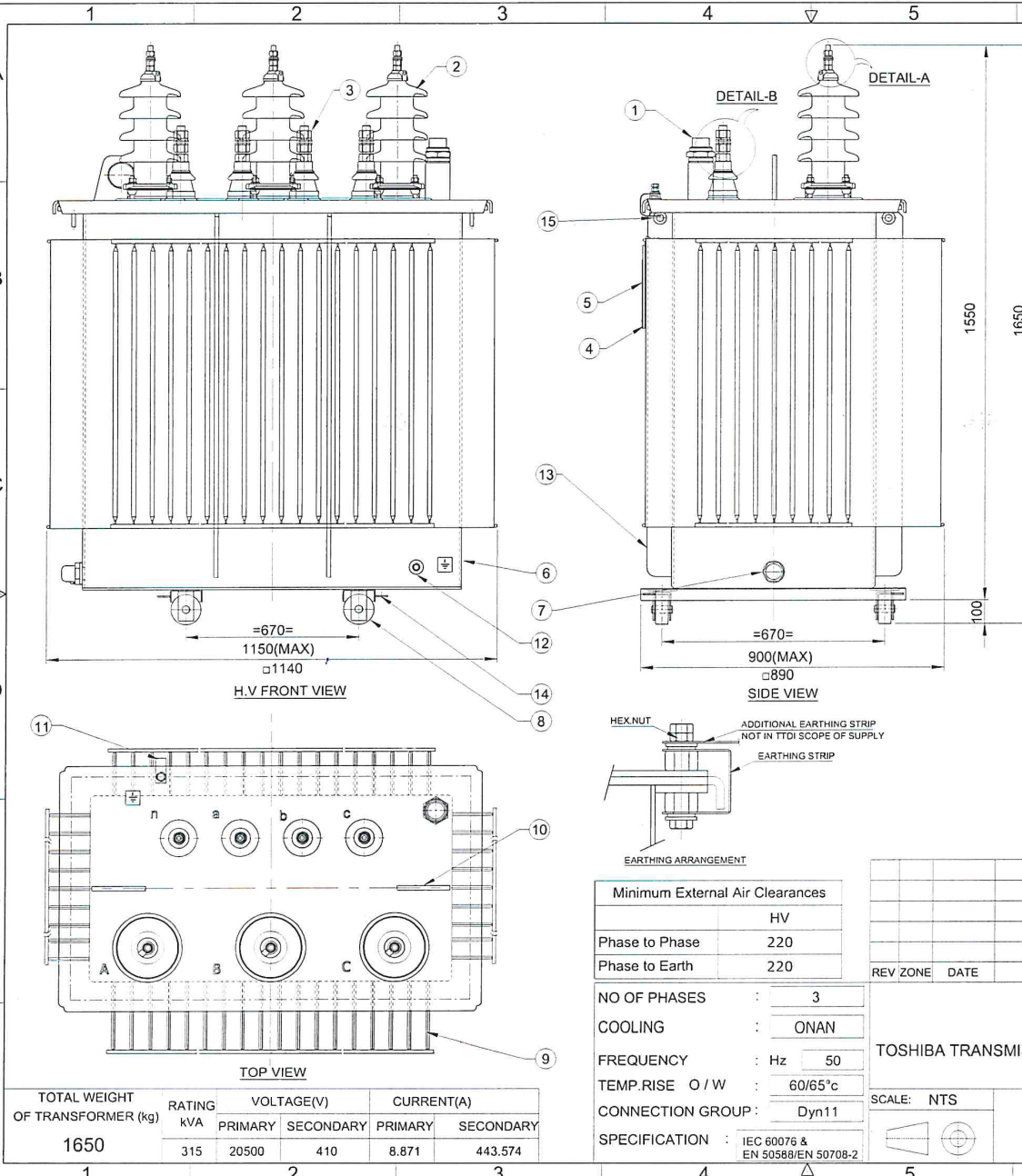
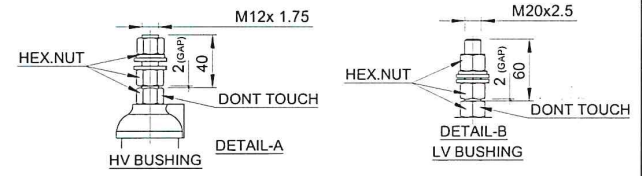


Product design meets OHSAS requirements (Ref: Work instructions DOC No.WIU10/ENGG01). ALL DIMENSIONS ARE IN mm & WEIGHTS ARE IN kg UNLESS OTHERWISE SPECIFIED.
FORMAT No.: Mesh/003/R0

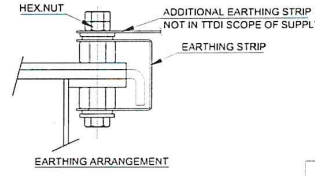
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- NOTE:-**
1. FINISH PAINT SHADE: RAL 7035 (LIGHT GREY).
 2. " " ACTUAL OVERALL DIMENSIONS & WEIGHTS ARE SUBJECT TO ±10% TOLERANCE, PROVIDED THAT THE TOLERANCE IS NOT EXCEEDED THE MAX.VALUE DEFINED.
 3. THE POSITION, LOCATION, DESIGN OF FITTINGS & ACCESSORIES MAY SLIGHTLY VARY DURING MANUFACTURING.
 4. COMPLETE TRANSFORMER WITHSTANDS LOWER LIMIT OF AMBIENT TEMPERATURE -40°C.
 5. ROLLERS WILL BE PROVIDED AS SPARE ITEM & SHALL BE SUPPLIED IN LOOSE CONDITION.
 6. 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.
7. TERMINAL MARKING AND EARTHING SYMBOL SHALL BE PAINTED WITH BLACK COLOUR.
 8. OIL LEVEL MARKING SHALL BE VISIBLE FROM TANK SHORTER SIDE
 9. GAP (2mm) SHOULD MAINTAIN BETWEEN TWO ADJACENT NUTS AS PER DETAIL-A & B
 10. LASHING EYES PROVIDED FOR TRANSPORT PURPOSE. LASHING EYES SHALL BE REMOVED AFTER REACHING DESTINATION/BEFORE INSTALLATION



S.NO	DESCRIPTION	QTY.
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	1
4	RATING PLATE FIXING	1
3	L.V. BUSHINGS(1kV/630A)	4
2	H.V BUSHINGS(24kV/250A-P2)	3
1	OIL FILLING PIPE WITH VERTICAL FLOAT OLG	1



Minimum External Air Clearances	
	HV
Phase to Phase	220
Phase to Earth	220

NO OF PHASES	: 3
COOLING	: ONAN
FREQUENCY	: Hz 50
TEMP.RISE O / W	: 60/65°C
CONNECTION GROUP	: Dyn11
SPECIFICATION	: IEC 60076 & EN 50588/EN 50708-2

REV	ZONE	DATE	MODIFICATION	MODIFIED	CHECKED	APPRD.

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**

DESIGNED	NAME	DATE
Amul		20.4.21
DRAWN	NAME	DATE
Amul		20.4.21
CHECKED	NAME	DATE
Amul		20.4.21
APPROVED	NAME	DATE
Amul		20.4.21

PRJ.NO. E-11158-4
DRG.NO. 3 OG 86670
SHT.NO. 1 OF 1 R 0

TOTAL WEIGHT OF TRANSFORMER (kg)	RATING KVA	VOLTAGE(V)		CURRENT(A)	
		PRIMARY	SECONDARY	PRIMARY	SECONDARY
1650	315	20500	410	8.871	443.574

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

**GUARANTEED TECHNICAL PARTICULARS
THREE PHASE DISTRIBUTION TRANSFORMER**

ENQUIRY No : 11158-4	Customer: KKM POWER Oy, Finland (CARUNA)				
kVA : 315	kV :20.5/0.41	Phase : 3	Freq. : 50Hz	Cooling : ONAN	Doc No: EGT 44452

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		Not Applicable
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:		

TOSHIBA	Toshiba Transmission & Distribution Systems (India) Pvt.Ltd. Distribution Transformers Division		Engineering
			Unit-10
	Full Load	%	98.78
	¾ Full Load	%	99.01
	½ Full Load	%	99.19
18)	Terminal Arrangement:		
	HV		Bare Bushings – Porcelain-24kV/250A-P2
	LV		Bare Bushings – Porcelain-1kV/630A
19)	Actual Overall Dimensions:		
	Length	mm	As per GA drawing 3 OG 86670
	Width	mm	
	Height	mm	
20)	Overall Weight		
	Total Weight	Kg.	1650
21)	Noise Level	LwAdB(A)	49
Applicability of Optional Fittings For above mentioned Actual Overall Dimensions			
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		No

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. With HV flags transformer overall height will increase.
5. Paint: Class C4 corrosion protection paint will be provided.