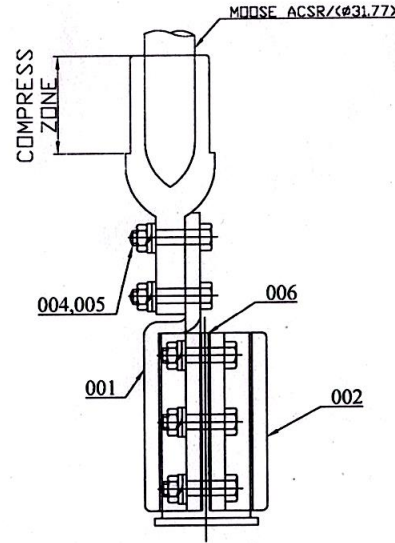
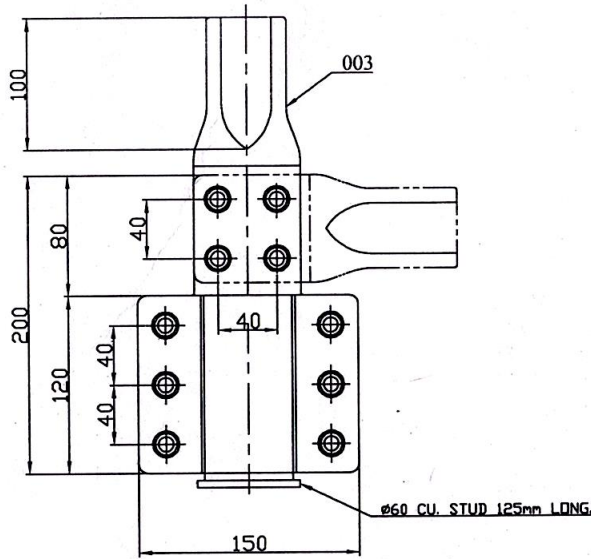
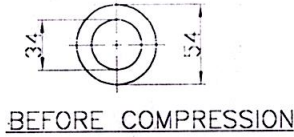




**BHARAT HEAVY ELECTRICALS LIMITED, JHANSI**  
**TRANSFORMER ENGINEERING DEPARTMENT**  
**ANNEXURE-TERMINAL CONNECTOR**

- i. The bushing shall be equipped with suitable terminals for connector as specified herein.
- ii. Each terminal (including the neutral) shall be distinctly marked on both the primary and secondary side in accordance with the diagram of connection supplied with the transformers.
- iii. Vertical/horizontal/universal type bi-metallic, rigid connector for bushing stud shall be provided.
- iv. Clamp and connector shall be made from Cold forged Aluminum Alloy Plate i.e Extruded Aluminium Clamp and Connector shall be processed through Cold forging for 220 KV,132 KV, 72.5KV, 52KV & 36KV Bushing and Casting type connector for 400KV class bushing.
- v. The Nuts & Bolts associated with equipment of connector pieces shall be MS Hot dip galvanized. Quality of Nuts & bolts shall conform to relevant IS of latest edition.
- vi. Minimum thickness at any point of current carrying part of any clamp & connector shall not be less than 12mm.
- vii. From outermost hole edge to nearest edge of any clamp & connector the distance shall not be less than 10mm.
- viii. The current density of Aluminium/Copper shall be considered as 0.75/1.75A/sq.mm.
- ix. Minimum thickness of Bimetal in bimetallic connection shall be 2mm.
- x. Approved vendor for Clamp & Connector are mentioned in WBSETCL portal.



S. NO.	DESCRIPTION	MATERIALS	NO.
001	CLAMP	FC GRADE ALUM. FORGED (EXTRUDED) (99% PURE)	1
002	KEEPER	FC GRADE ALUM. FORGED (EXTRUDED) (99% PURE)	1
003	JUMPER (TAP CLAMP)	FC GRADE ALUM. FORGED (EXTRUDED) (99% PURE)	1
004	BOLT & NUT 10 $\phi$	MILD STEEL HDG Gr. 5.6	10
005	SPRING WASHER	SPRING STEEL	10
006	BIMETAL STRIP	TINNED COPER(2mmTHK.)	1

**NOTES:-**

1. CLAMPS OFFERED CONFORM TO IS-5561
2. FERROUS PARTS WILL BE HOT DIP GALVANISED AS PER IS-2633
3. RATED VOLTAGE - SUITABLE UP TO 245 KV
4. CONTINUOUS CURRENT RATING - (WITHOUT JUMPER)-1250 AMPS
5. SHORT TIME CURRENT RATING SHALL BE 31.5KA FOR 3 SEC.
6. MAXIMUM TEMPERATURE RISE SHALL BE 35°C ABOVE 50°C AMBIENT.
7. THICKNESS OF CLAMP & KEEPER - 12MM
8. REF. OGA DRAWING NO. : 14620050235
9. CONNECTOR SHALL BE FREE FROM CRONA DISCHARGE.
10. CONNECTOR TO BE SUITABLE FOR UNIVERSAL TAKE OFF.
11. DIMENSION IN MM TOLERANCE  $\pm 5\%$  (MIN  $\pm 1MM$ )

MAKE: M/s WBSETCL APPROVED VENDOR

INVENTORY NO.	REV	DATE	ALTERED	REV	DATE	ALTERED	REV	DATE	ALTERED
	ZONE		CHECKED	ZONE		CHECKED	ZONE		CHECKED
			APPROVED			APPROVED			APPROVED

ADDITIONAL INFORMATION									
73073A17200									
STATUS OF DRAWING									
U									
DISTRIBUTION OF PRINTS									
TRE	PPC	DAY 1&2	DAY 3,4&5	DAY 6&7	DAY 8	DAY 9	UN	Other	
									0
REV	DATE	ALTERED	PSR1	REV	DATE	ALTERED	LNUN	REV	DATE
00		CHECKED	APPROVED KSHI			CHECKED			

PO NO.:- CEP/WBSETCL/160MVA Trf/BHEL /22-23/47 DATED 21.02.2023

TYPE OF PRODUCT OR 160 MVA 220/132/33 KV ONAN/ONAF/OF AF COOLED AUTO TRANSF.

NAME OF CUSTOMER/PROJECT M/S:- WBSETCL KOLKATA

BHARAT HEAVY ELECTRICALS LTD. JHANSI	DRN	NAME	SIGN	DATE	NO. OF VAR
	CRP	PSR1		31/03/2023	
	APPD	LNUN		17/04/2023	

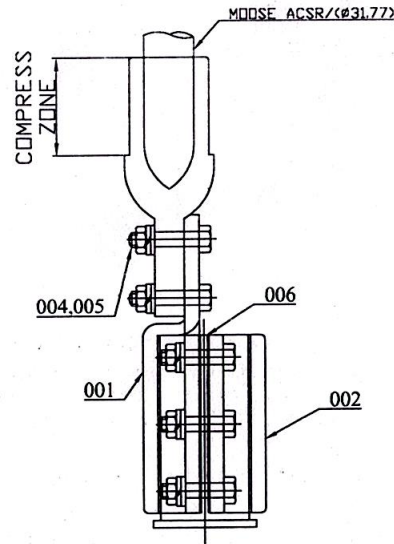
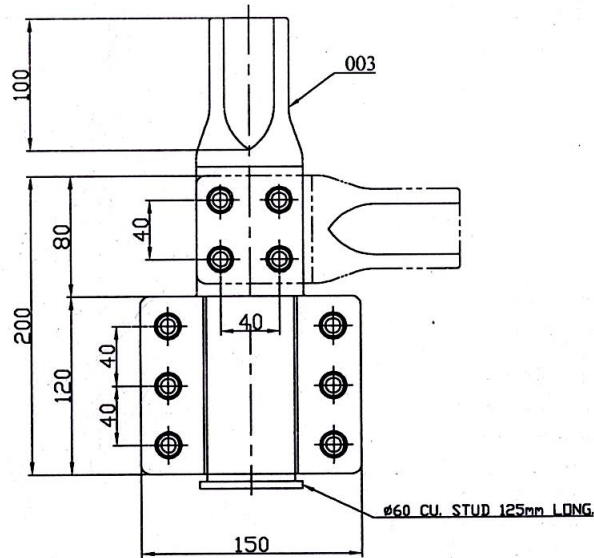
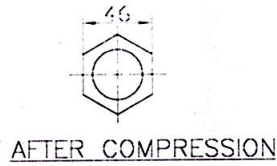
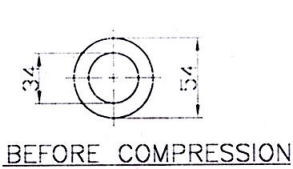
DEPT-TRE UN. TOL. DIM. C/M/F SCALE WEIGHT (KG) REF. TO ASSY. NO. ITEM NO. NO. OF ITEM

CODE-406 1 462 00 5 0235

TITLE BI-METALLIC TERMINAL CONNECTOR FOR H.V. BUSHING

DRAWING NO. 34620050666 REV. 00

SHT NO 1 NO OF SHT 1



S.NO.	DESCRIPTION	MATERIALS	NO.
001	CLAMP	FC GRADE ALUM. FORGED (EXTRUDED) (99% PURE)	1
002	KEEPER	FC GRADE ALUM. FORGED (EXTRUDED) (99% PURE)	1
003	JUMPER (TAP CLAMP)	FC GRADE ALUM. FORGED (EXTRUDED) (99% PURE)	1
004	BOLT & NUT 10Ø	MILD STEEL HDG Gr. 5.6	10
005	SPRING WASHER	SPRING STEEL	10
006	BIMETAL STRIP	TINNED COPER(2mmTHK.)	1

NOTES:-

1. CLAMPS OFFERED CONFORM TO IS-5561.
2. FERROUS PARTS WILL BE HOT DIP GALVANISED AS PER IS-2633
3. RATED VOLTAGE - SUITABLE UP TO 145 KV
4. CONTINUOUS CURRENT RATING - (WITHOUT JUMPER)-1250 AMPS
5. SHORT TIME CURRENT RATING SHALL BE 31.5KA FOR 3 SEC.
6. MAXIMUM TEMPERATURE RISE SHALL BE 35°C ABOVE 50°C AMBIENT.
7. THICKNESS OF CLAMP & KEEPER - 12MM
8. REF. OGA DRAWING NO. : 14620050235
9. CONNECTOR SHALL BE FREE FROM CRONA DISCHARGE.
10. CONNECTOR TO BE SUITABLE FOR UNIVERSAL TAKE OFF.
11. DIMENSION IN MM TOLERANCE ±5% (MIN ±1MM)

MAKE: M/s WBSETCL APPROVED VENDOR

PO NO.:- CEP/WBSETCL/160MVA Trf/BHEL /22-23/47 DATED 21.02.2023

TYPE OF PRODUCT OR 160 MVA 220/132/33 KV ONAN/ONAF/OF AF COOLED AUTO TRANSF.

NAME OF CUSTOMER/PROJECT M/S:- WBSETCL KOLKATA

DISTRIBUTION OF PRINTS		Bharat Heavy Electricals Ltd. Jhansi						
TRE	PPC	DAY 142	DAY 3,445	DAY 647	DAY 8	DAY 9	LNU	Other
								0

REV	DATE	ALTERED	PSR1	UN. TOL.	SCALE	WEIGHT (KG)	REF. TO ASSY. NO.	ITEM NO	NO. OF ITEM
00	19/04/2023	CHECKED LNU					1 462 00 5 0235		
		APPROVED KSH1							

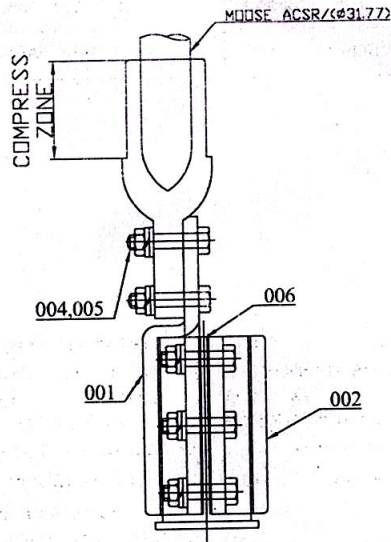
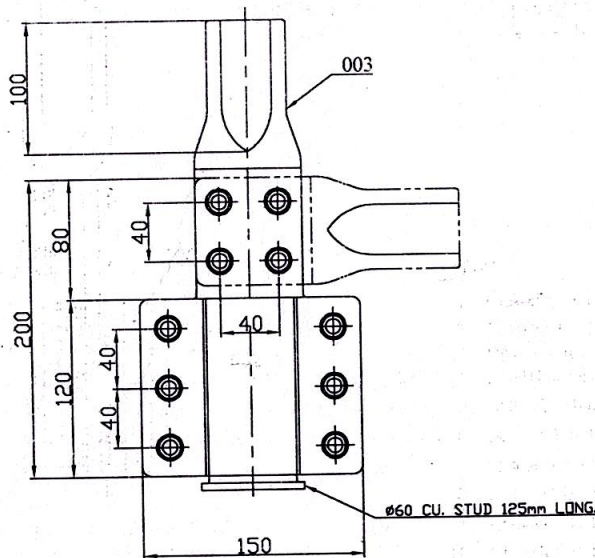
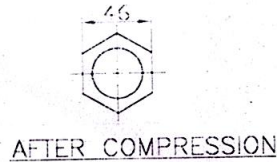
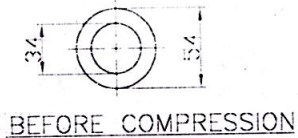
TITLE: BI-METALLIC TERMINAL CONNECTOR FOR I.V. BUSHING

DRAWING NO. 34620050667

REV. 00

SHT NO 1 NO OF SHT 1

INVENTORY NO.  
 SIGN AND DATE  
 REF. DRG. NO.



S. NO.	DESCRIPTION	MATERIALS	NO.
001	CLAMP	FC GRADE ALUM. FORGED (EXTRUDED) (99% PURE)	1
002	KEEPER	FC GRADE ALUM. FORGED (EXTRUDED) (99% PURE)	1
003	JUMPER (TAP CLAMP)	FC GRADE ALUM. FORGED (EXTRUDED) (99% PURE)	1
004	BOLT & NUT 10Ø	MILD STEEL HDG Gr. 5.6	10
005	SPRING WASHER	SPRING STEEL	10
006	BIMETAL STRIP	TINNED COPPER(2mmTHK.)	1

**NOTES:-**

1. CLAMPS OFFERED CONFORM TO IS-5561
2. FERROUS PARTS WILL BE HOT DIP GALVANISED AS PER IS-2633
3. RATED VOLTAGE - SUITABLE UP TO 52 KV
4. CONTINUOUS CURRENT RATING - (WITHOUT JUMPER)-1250 AMPS
5. SHORT TIME CURRENT RATING SHALL BE 31.5KA FOR 3 SEC.
6. MAXIMUM TEMPERATURE RISE SHALL BE 35°C ABOVE 50°C AMBIENT.
7. THICKNESS OF CLAMP & KEEPER - 12MM
8. REF. OGA DRAWING NO. : 14620050235
9. CONNECTOR SHALL BE FREE FROM CRONA DISCHARGE.
10. CONNECTOR TO BE SUITABLE FOR UNIVERSAL TAKE OFF.
11. DIMENSION IN MM TOLERANCE ±5% (MIN ±1MM)

MAKE: WBSETCL APPROVED VENDOR

INVENTORY NO.	ZONE	REV	DATE	ALTERED	REV	DATE	ALTERED
				CHECKED			CHECKED
				APPROVED			APPROVED

ADDITIONAL INFORMATION 73073A17200									
STATUS OF DRAWING U									
DISTRIBUTION OF PRINTS									
TRE	PPC	DAY 1&2	DAY 3,4&5	DAY 6&7	DAY 8	DAY 9	LNJ	Other	
									0
REV	DATE	ALTERED	PSR1						
00	19/04/2022	CHECKED	LNJ						
		APPROVED	KSHI						

PO NO.:- CEP/WBSETCL/160MVA Trf/BHEL /22-23/47 DATED 21.02.2023									
TYPE OF PRODUCT OR 160 MVA 220/132/33 KV ONAN/DNAF/DFAF COOLED AUTO TRANSF.									
NAME OF CUSTOMER/PROJECT M/S:- WBSETCL KOLKATA									
BHARAT HEAVY ELECTRICALS LTD. JHANSI					DRN	NAME	SIGN	DATE	NO. OF VAR
					PSR1			31/03/2023	
					LNJ			17/04/2023	
					KSHI			19/04/2023	
DEPT-TRE	UN. TOL. DIM. C/W/F	SCALE	WEIGHT (KG)	REF. TO ASSY. NO.	ITEM NO	NO. OF ITEM			
CODE-406				1 462 00 5 0235					
TITLE BI-METALLIC TERMINALCONNECTOR FOR L.V. BUSHING					DRAWING NO. 34620050668		REV. 00		
					SHT NO 1		NO OF SHT 1		