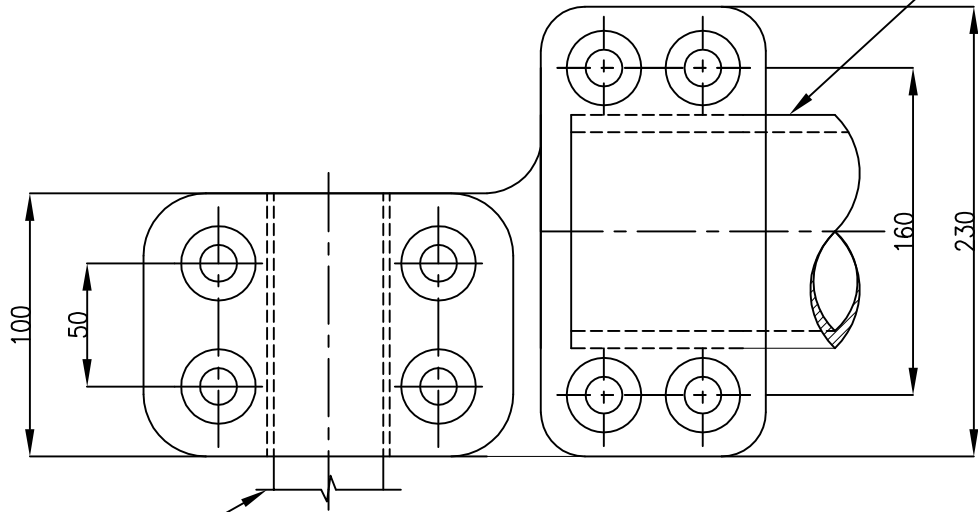


**PLAN**



**ELEVATION**

TERMINAL STUD OF  
ISO (40φ).CU

4.5" IPS.AL.TUBE  
(120 O/D; 96 I/D)

**MATERIAL LIST**

REF. NO	DESCRIPTION	MATERIAL	NO. OFF
1.	BODY PIECE	AL.ALLOY 4600(A6) TO IS:617-1994	1
2.	CLAMPING PIECE ON TUBE SIDE	-DO-	1
3.	CLAMPING PIECE ON STUD SIDE	-DO-	1
4.	M12x65 LONG BOLT, NUT WITH PL&SP WASHER	M.S.GALVD	8
5.	2mm THICK B.M SLEEVE	AL.CU	1

**NOTES:**

- REFERENCE TO I.S: 5561-2018
- THE INDICATED DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES
  - UP TO 50mm ±5%
  - FROM 51 TO 100mm ±4%
  - FROM 101 TO 300mm ±3%
  - ABOVE 300mm ±2%
- CURRENT RATING : 3150 AMPS FOR 35°C RISE OVER 50°C AMBIENT.
- CORONA EXTINCTION VOLTAGE :320KV (R.M.S)
- BOLT TIGHTENING TORQUE : M10-25Nm, M12-35Nm, M16-55Nm.
- RIV LEVEL: LESS THAN 1000uV AT 320KV(RMS) AT 1MHZ.
- SHORT TIME CURRENT RATING 50KA FOR 1SEC
- THE BOLTS,NUTS AND PLAIN WASHERS SHALL BE M.S.HOT DIP GALVD.  
AS PER I.S-2833 AND THE SPRING WASHERS SHALL BE ELECTRO GALVD.  
TO SUIT SERVICE CONDITION 3 OF I.S 1573.
- THE MINIMUM THICKNESS OF ANY CURRENT CARRYING PART OF THE CLAMP SHALL BE 10mm
- ALL SHARP CORNERS SHALL BE ROUNDED OFF
- SLIP STRENGTH : 110Kgs.
- RATED VOLTAGE : 400kV.

NTPC DRG. No.	REV.
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PROJECT:	1 X 660MW PANKI THERMAL POWER EXTENSION PROJECT
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MANUFACTURER:	PREMIER POWER PRODUCTS (CALCUTTA) PVT.LTD CHENNAI-INDIA
---------------	--

OWNER:	UTTAR PRADESH RAJYA VIDYUT UTPADAN NIGAM LTD.
--------	---

REVIEW CONSULTANT:	NTPC LTD. (A GOVERNMENT OF INDIA ENTERPRISE)
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CONSULTANT:	DEVELOPMENT CONSULTANTS PVT. LTD. KOLKATA
-------------	--

EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LTD.
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BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA	DEPT CODE M	NAME A.A.S.PILLAI	DATE 17.08.20
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TITLE:	SUPPLY -CLAMPS & CONNECTORS: 400kV, 50ka FOR 1S, 3150A, ISOLATOR(HCB) CONNECTOR SUITABLE FOR AL TUBE 4.5" IPS AL. TUBE (RIGID TYPE)
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SCALE	DRAWING NO.	PPP-G-5052
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DEPT. SIGN	SHEET	OF	REV.
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JOB NO.	
STATUS	
DISTRIBUTION	

REV.	DATE	ALTD	CHD	APPD
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CLAMP NO: 2AR	
NTPC Doc. No.	Document Description
9962-001-TB-572-PVE-C-136	400kV CLAMPS & CONNECTORS - DRAWINGS
9962-001-TB-572-PVE-W-167	400kV CLAMPS & CONNECTORS - TYPETEST REPORTS

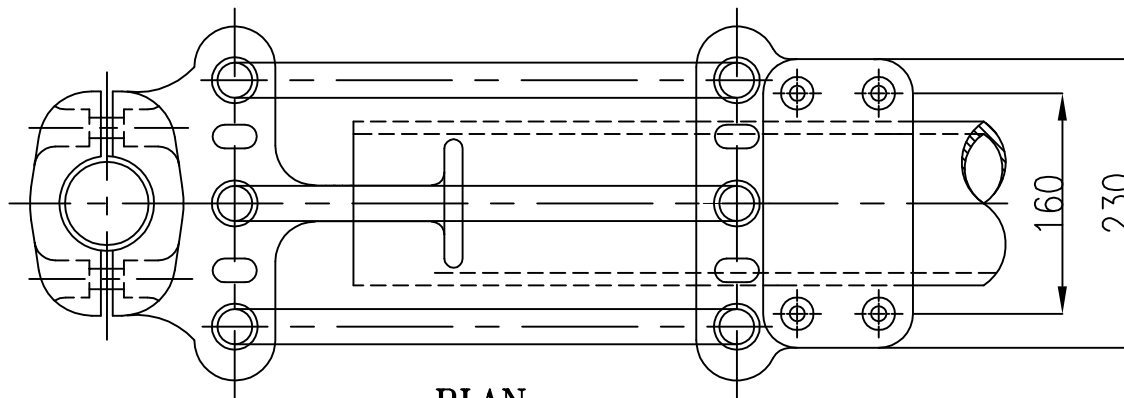
The Manufacturer shall be responsible for the accuracy of the dimensions and tolerances indicated on this drawing. The Manufacturer shall be responsible for the accuracy of the dimensions and tolerances indicated on this drawing.

MATERIAL LIST

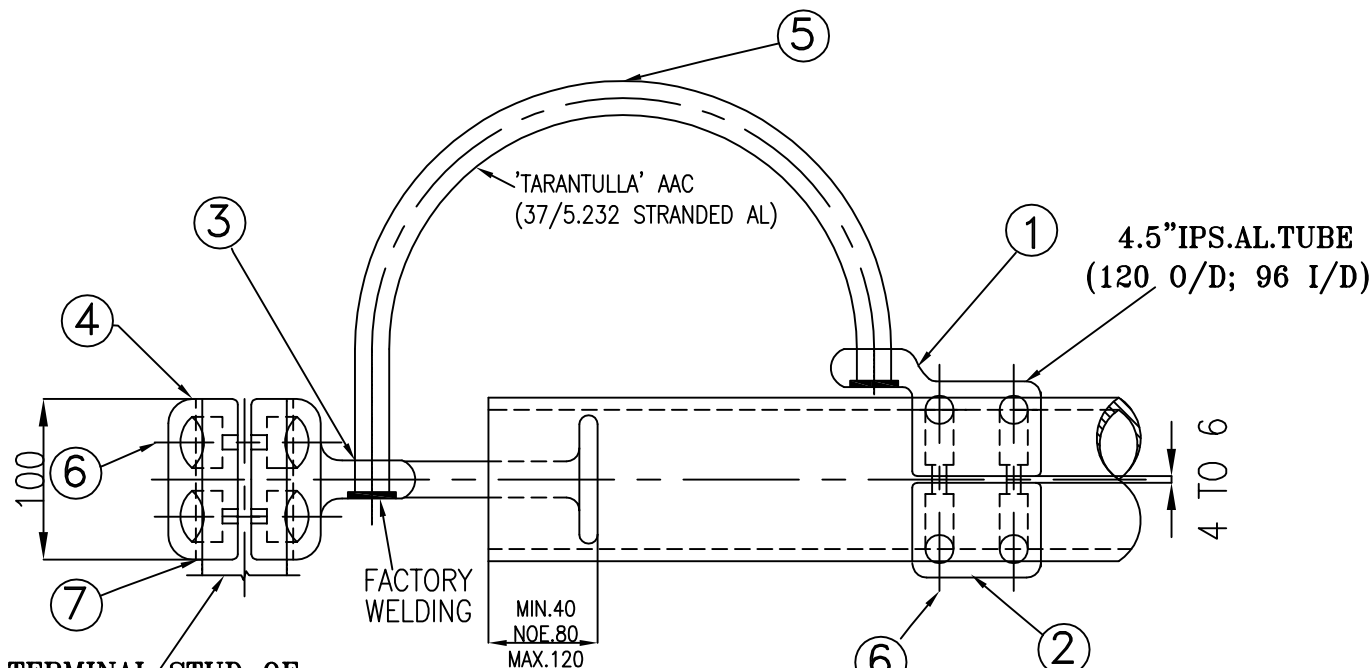
REF. NO	DESCRIPTION	MATERIAL	NO. OFF
1.	BODY PIECE ON BUSBAR SIDE	AL.ALLOY 4600(A6) TO IS:617-1994	1
2.	CLAMPING PIECE ON BUSBAR SIDE	-DO-	1
3.	BODY PIECE ON TERMINAL CONNECTOR.	-DO-	1
4.	CLAMPING PIECE ON TERMINAL SIDE	-DO-	1
5.	TARANTULLA CONDUCTOR	ALUMINIUM	3
6.	M12x65 LONG BOLT WITH NUT PL&SP WASHERS	M.S.GALVD	8
7.	2mm THICK B.M SLEEVE	AL.CU	1

NOTES:

- REFERENCE TO I.S: 5561-2018
- THE INDICATED DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES
  - UP TO 50mm ±5%
  - FROM 51 TO 100mm ±4%
  - FROM 101 TO 300mm ±3%
  - ABOVE 300mm ±2%
- CURRENT RATING : 3150 AMPS FOR 35°C RISE OVER 50°C AMBIENT.
- CORONA EXTINCTION VOLTAGE :320KV (R.M.S)
- BOLT TIGHTENING TORQUE : M10-25Nm, M12-35Nm, M16-55Nm.
- RIV LEVEL: LESS THAN 100µV AT 320KV(RMS) AT 1MHZ.
- SHORT TIME CURRENT RATING 50KA FOR 1SEC
- THE BOLTS,NUTS AND PLAIN WASHERS SHALL BE M.S.HOT DIP GALVD. AS PER I.S-2633 AND THE SPRING WASHERS SHALL BE ELECTRO GALVD. TO SUIT SERVICE CONDITION 3 OF I.S 1573.
- THE MINIMUM THICKNESS OF ANY CURRENT CARRYING PART OF THE CLAMP SHALL BE 10mm
- ALL SHARP CORNERS SHALL BE ROUNDED OFF
- SLIP STRENGTH : 110Kgs.
- RATED VOLTAGE : 400kV.



PLAN



ELEVATION

TERMINAL STUD OF ISO(40φ).Cu

NTPC DRG. No.	REV.
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PROJECT:	1 X 660MW PANKI THERMAL POWER EXTENSION PROJECT
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MANUFACTURER:	PREMIER POWER PRODUCTS (CALCUTTA) PVT.LTD CHENNAI-INDIA
---------------	--

OWNER:	UTTAR PRADESH RAJYA VIDYUT UTPADAN NIGAM LTD.
--------	---

REVIEW CONSULTANT:	NTPC LTD. (A GOVERNMENT OF INDIA ENTERPRISE)
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CONSULTANT:	DEVELOPMENT CONSULTANTS PVT. LTD. KOLKATA
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EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LTD.
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JOB NO.	
STATUS	
DISTRIBUTION	

BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA	DEPT CODE M	NAME A.A.S.PILLAI	DATE 17.08.20
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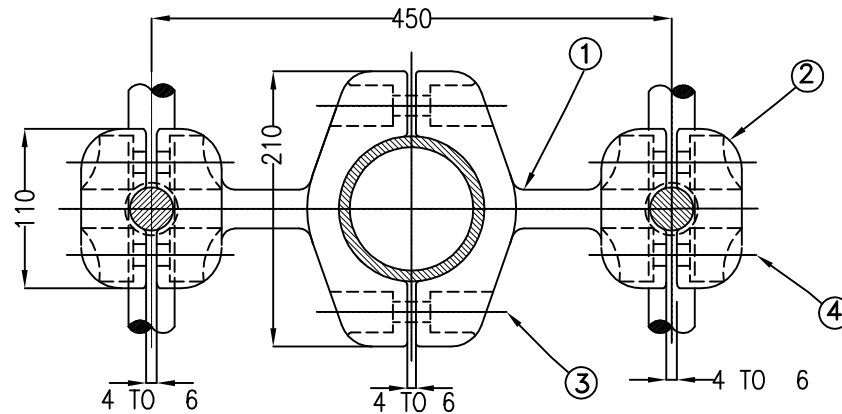
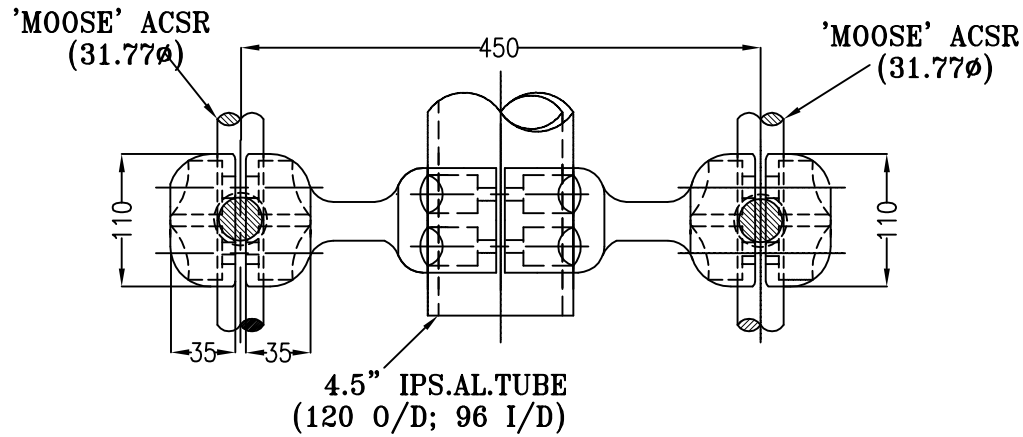
CLAMP NO: 2AE	
NTPC Doc. No.	Document Description
9962-001-TB-572-PVE-C-136	400kV CLAMPS & CONNECTORS - DRAWINGS
9962-001-TB-572-PVE-W-167	400kV CLAMPS & CONNECTORS - TYPETEST REPORTS

TITLE:	SUPPLY -CLAMPS & CONNECTORS: 400kV, 50KA FOR 1S, 3150A, ISOLATOR(HCB) CONNECTOR SUITABLE FOR AL TUBE 4.5" IPS AL. TUBE (EXPANSION TYPE)
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SCALE	DRAWING NO. PPP-G-5053
DEPT. SIGN	SHEET OF REV.

MATERIAL LIST

REF. NO	DESCRIPTION	MATERIAL	NO. OFF
1.	BODY PIECE	AL.ALLOY 4600(A6) TO IS: 617 -1994	2
2.	CLAMPING PIECE	-DO-	2
3.	M12x65 LONG BOLT WITH NUT,PL&SP WASHER	M.S.GALVD	12



NOTES:

- REFERENCE TO IS: 5561-2018
- THE INDICATED DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES
  - UP TO 50mm  $\pm 5\%$
  - FROM 51 TO 100mm  $\pm 4\%$
  - FROM 101 TO 300mm  $\pm 3\%$
  - ABOVE 300mm  $\pm 2\%$
- CURRENT RATING : 2000 AMPS FOR 35°C RISE OVER 50°C AMBIENT.
- CORONA EXTINCTION VOLTAGE :320KV (R.M.S)
- BOLT TIGHTENING TORQUE : M10-25Nm, M12-35Nm, M16-55Nm.
- RIV.LEVEL: LESS THAN 1000uV AT 320KV(RMS) AT 1MHZ.
- SHORT TIME CURRENT RATING 50KA FOR 1SEC
- THE BOLTS,NUTS AND PLAIN WASHERS SHALL BE M.S.HOT DIP GALVD.  
AS PER I.S-2633 AND THE SPRING WASHERS SHALL BE ELECTRO GALVD.  
TO SUIT SERVICE CONDITION 3 OF I.S 1573.
- THE MINIMUM THICKNESS OF ANY CURRENT CARRYING PART OF THE CLAMP SHALL BE 10mm
- ALL SHARP CORNERS SHALL BE ROUNDED OFF
- SLIP STRENGTH : 110Kgs.
- RATED VOLTAGE : 400kV.

NTPC DRG. No.	REV.
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PROJECT:	1 X 660MW PANKI THERMAL POWER EXTENSION PROJECT
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MANUFACTURER:	PREMIER POWER PRODUCTS (CALCUTTA) PVT.LTD CHENNAI-INDIA
---------------	--

OWNER:	UTTAR PRADESH RAJYA VIDYUT UTPADAN NIGAM LTD.
--------	---

REVIEW CONSULTANT:	NTPC LTD. (A GOVERNMENT OF INDIA ENTERPRISE)
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CONSULTANT:	DEVELOPMENT CONSULTANTS PVT. LTD. KOLKATA
-------------	--

EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LTD.
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BHARAT HEAVY ELECTRICALS LTD	DEPT CODE	NAME	DATE
TRANSMISSION BUSINESS GROUP	M	A.A.S.PILLAI	17.08.20
NOIDA		A.A.S.PILLAI	

TITLE:	SUPPLY -CLAMPS & CONNECTORS: 400kV, 50kA FOR 1S, 2000A TEE CONNECTOR SUITABLE FOR 4.5" IPS AL. TUBE TO TWIN MOOSE ACSR WITH 450mm SUB CONDUCTOR SPACING.
--------	--

DEPT. SIGN	SCALE	DRAWING NO.	PPP-G-5070
		SHEET	OF
		REV.	

CLAMP NO: 25	
NTPC Doc. No.	Document Description
9962-001-TB-572-PVE-C-136	400kV CLAMPS & CONNECTORS - DRAWINGS
9962-001-TB-572-PVE-W-167	400kV CLAMPS & CONNECTORS - TYPETEST REPORTS

JOB NO.	
STATUS	
DISTRIBUTION	

REV.	DATE	ALTD	CHD	APPD

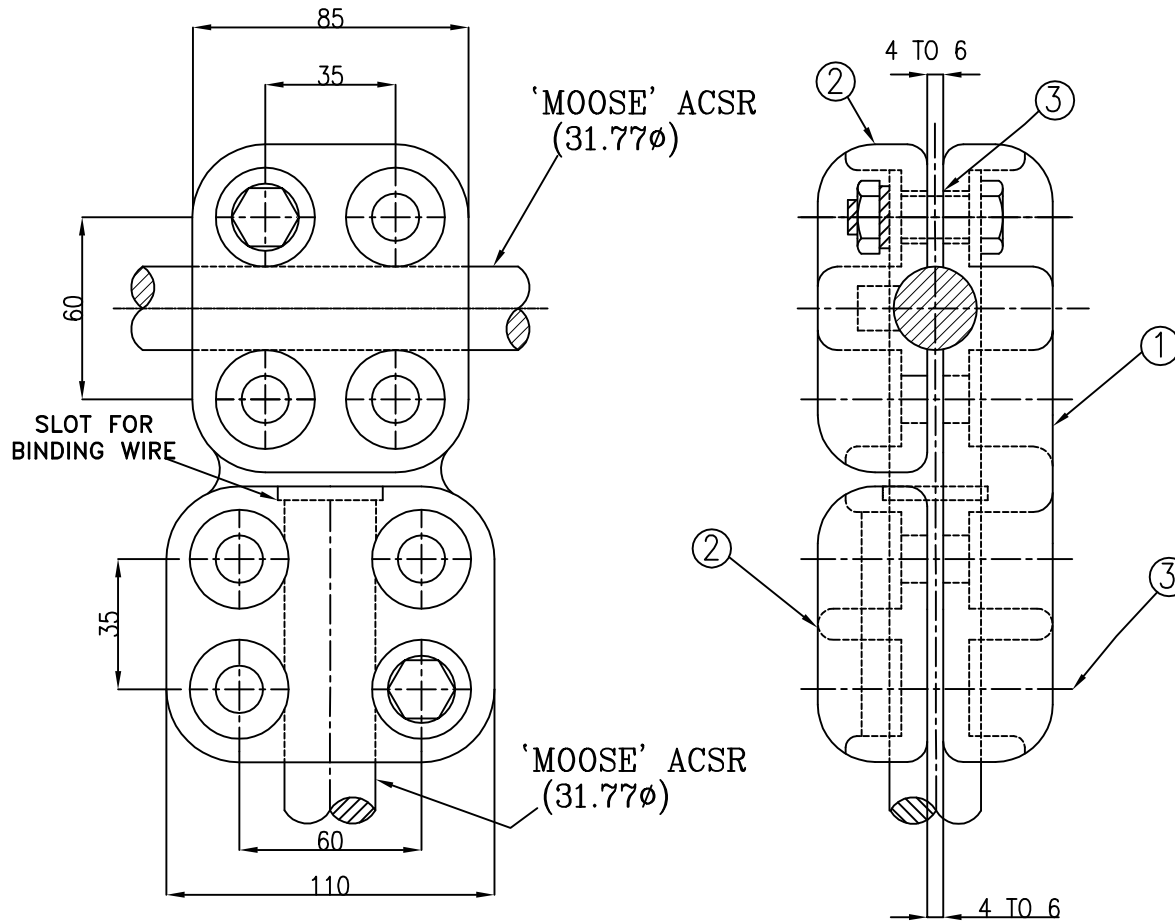
4	7	6	3
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MATERIAL LIST

REF. NO	DESCRIPTION	MATERIAL	NO. OFF
1.	BODY PIECE	AL.ALLOY 4600(A6) TO IS: 617 -1994	1
2.	CLAMPING PIECE	-DO-	2
3.	M12x50 LONG BOLT WITH NUT, PL&SP WASHER	M.S.GALVD	8

NOTES:

- REFERENCE TO I.S: 5561-2018
- THE INDICATED DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES
  - I) UP TO 50mm ±5%
  - II) FROM 51 TO 100mm ±4%
  - III) FROM 101 TO 300mm ±3%
  - IV) ABOVE 300mm ±2%
- CURRENT RATING : 1000 AMPS FOR 35°C RISE OVER 50°C AMBIENT.
- CORONA EXTINCTION VOLTAGE :320KV (R.M.S)
- BOLT TIGHTENING TORQUE : M10-25Nm, M12-35Nm, M16-55Nm.
- RIV.LEVEL: LESS THAN 1000uV AT 320KV(RMS) AT 1MHZ.
- SHORT TIME CURRENT RATING 50KA FOR 1SEC
- THE BOLTS,NUTS AND PLAIN WASHERS SHALL BE M.S.HOT DIP GALVD.  
AS PER I.S-2839 AND THE SPRING WASHERS SHALL BE ELECTRO GALVD.  
TO SUIT SERVICE CONDITION 3 OF I.S 1573.
- THE MINIMUM THICKNESS OF ANY CURRENT CARRYING PART OF THE CLAMP SHALL BE 10mm
- ALL SHARP CORNERS SHALL BE ROUNDED OFF
- SLIP STRENGTH : 110Kgs.
- RATED VOLTAGE : 400kV.



ELEVATION

ENDVIEW

NTPC DRG. No.	REV.
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PROJECT:	1 X 660MW PANKI THERMAL POWER EXTENSION PROJECT
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MANUFACTURER:	PREMIER POWER PRODUCTS (CALCUTTA) PVT.LTD CHENNAI-INDIA
---------------	--

OWNER:	UTTAR PRADESH RAJYA VIDYUT UTPADAN NIGAM LTD.
--------	---

REVIEW CONSULTANT:	NTPC LTD. (A GOVERNMENT OF INDIA ENTERPRISE)
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CONSULTANT:	DEVELOPMENT CONSULTANTS PVT. LTD. KOLKATA
-------------	--

EPC CONTRACTOR:	BHARAT HEAVY ELECTRICALS LTD.
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BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA	DEPT CODE M	NAME A.A.S.PILLAI	DATE 17.08.20
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TITLE:	SUPPLY -CLAMPS & CONNECTORS: 400kV, 50KA FOR 1S, 1000A, TEE CONNECTOR SUITABLE FOR SINGLE MOOSE ACSR TO SINGLE MOOSE
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DEPT. SIGN	SCALE	DRAWING NO. PPP-G-5068	SHEET OF REV.
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JOB NO.	
STATUS	
DISTRIBUTION	

REV.	DATE	ALTD	CHD	APPD
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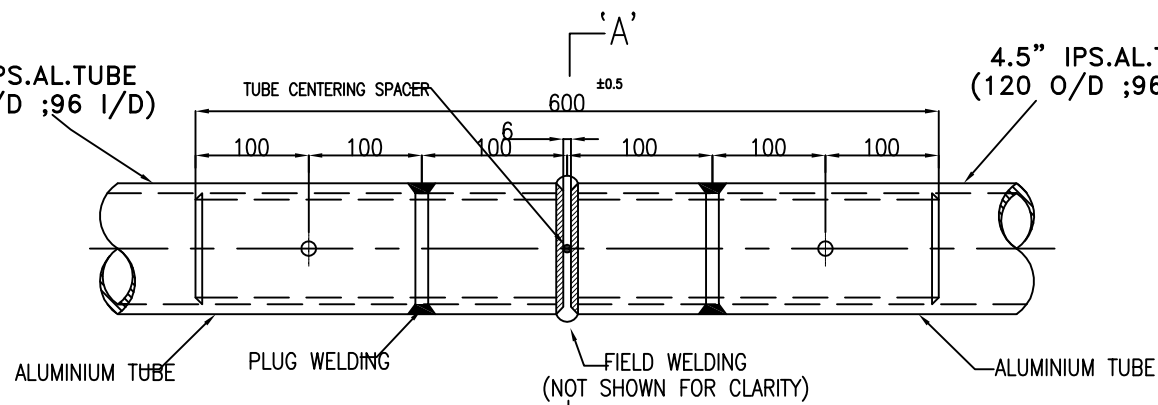
CLAMP NO: 21	
NTPC Doc. No.	Document Description
9962-001-TB-572-PVE-C-136	400kV CLAMPS & CONNECTORS - DRAWINGS
9962-001-TB-572-PVE-W-167	400kV CLAMPS & CONNECTORS - TYPETEST REPORTS

# MATERIAL LIST

REF. NO.	DESCRIPTION	MATERIAL	NO. OFF.
1.	WELDING SLEEVE	AL.ALLOY GR.-63401 WP AS PER IS : 5082	1
2.	ALUMINUM PIN	ALUMINUM	4

4.5" IPS.AL.TUBE  
(120 O/D ;96 I/D)

4.5" IPS.AL.TUBE  
(120 O/D ;96 I/D)

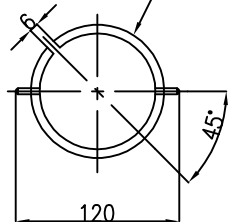


**ASSEMBLY**

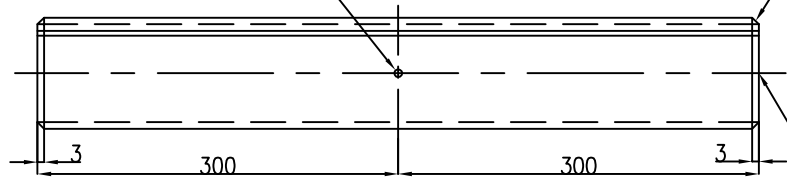
O.D 96 (±1.0)  
I.D 85 (±1.0)

6±0.5 DIA.ALUMINUM PIN

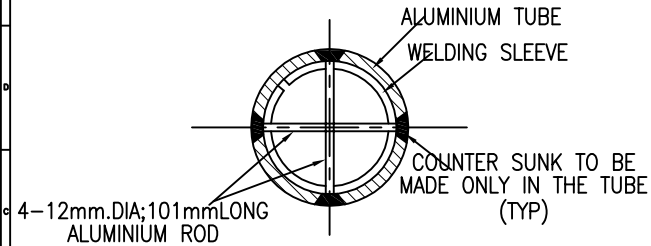
45° CHAMFERING



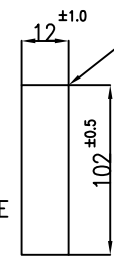
**END VIEW**



**ELEVATION**








**SECTION-AA'**



**ALUMINUM PIN**

**NOTES:**

- REFERENCE TO I.S: 5561-2018
- THE INDICATED DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES
  - I) UP TO 50mm ±5%
  - II) FROM 51 TO 100mm ±4%
  - III) FROM 101 TO 300mm ±3%
  - IV) ABOVE 300mm ±2%
- ALL SHARP CORNERS SHALL BE ROUNDED OFF

NTPC DRG. No.		REV.
PROJECT:	1 X 660MW PANKI THERMAL POWER EXTENSION PROJECT	
MANUFACTURER:	 <b>PREMIER POWER PRODUCTS (CALCUTTA) PVT.LTD</b> CHENNAI-INDIA	
OWNER:	 <b>UTTAR PRADESH RAJYA VIDYUT UTPADAN NIGAM LTD.</b>	
REVIEW CONSULTANT:	 <b>NTPC LTD.</b> (A GOVERNMENT OF INDIA ENTERPRISE)	
CONSULTANT:	 <b>DEVELOPMENT CONSULTANTS PVT. LTD.</b> KOLKATA	
EPC CONTRACTOR:	 <b>BHARAT HEAVY ELECTRICALS LTD.</b>	
BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP NOIDA		DEPT CODE M
NAME A.A.S.PILLAI		DATE 17.08.20
CHD A.A.S.PILLAI		APPD A.A.S.PILLAI
<b>TITLE:</b> SUPPLY -CLAMPS & CONNECTORS: 400kV,WELDING SLEEVE SUITABLE FOR 4.5" IPS AL. TUBE.		
DEPT. SIGN		SCALE DRAWING NO. <b>PPP-G-5075</b> SHEET OF REV.

CLAMP NO: 29	
NTPC Doc. No.	Document Description
9962-001-TB-572-PVE-C-136	400kV CLAMPS & CONNECTORS - DRAWINGS
9962-001-TB-572-PVE-W-167	400kV CLAMPS & CONNECTORS - TYPETEST REPORTS

JOB NO.	
STATUS	
DISTRIBUTION	

REV.	DATE	ALTD	CHD	APPD

Prepared by: Mr. P. S. Srinivasan, Sr. Engineer, Design, Transmission Division, NTPC Ltd., Noida.  
 Checked by: Mr. S. K. Singh, Sr. Engineer, Design, Transmission Division, NTPC Ltd., Noida.  
 Approved by: Mr. R. K. Singh, Sr. Engineer, Design, Transmission Division, NTPC Ltd., Noida.