


REQUEST FOR QUOTATION - ONLINE BIDDING

	BHARAT HEAVY ELECTRICALS LIMITED Electronics Division PB No. 2606, Mysore Road Bangalore - 560026 INDIA	RFQ NUMBER: NKRE000659 RFQ DATE : 07.12.2022	Due Date/Day: 19.12.2022 MON Time : 13:00 HRS
MMI:PU:RF:003			
Please submit your lowest quotation subject to our terms and conditions attached for the material mentioned below. "Quotation to be submitted in E Procurement portal only"		(for all correspondence) Purchase Executive : Nilmani Kumar Phone : 26998663 Fax : E-mail: nilmanikumar@bhel.in	

SI No.	Description	Qty	Unit	Delivery qty	Delivery Date
1	TI0668102292 2W45-65 capacitor minus bar 325228-1067 * HSN/SAC : 3921 Doc No.- 36680802062 Rev - 01 Doc No.- ED0673699 Rev - 00 Doc No.- ED55687 Rev - 00 2W45-65 Capacitor Minus Bus Bar as per Drg No 36680802062-Rev01 Raw mat: IS 1897 Half Hard ETP Grade	1,620	NO	1,620	30.01.2023
2	TI0668102306 2W45-65 capacitor plus bar 325228-1068 * HSN/SAC : 3921 Doc No.- 36680802063 Rev - 00 Doc No.- ED0673699 Rev - 00 Doc No.- ED55687 Rev - 00 2W45-65 capacitor Plus Bus Bar as per Drg No 36680802063-Rev00 Raw mat: IS 1897 Half Hard ETP Grade	1,620	NO	1,620	30.01.2023
3	TI0668102667 Bus bar (7) 410960 assembly 388018-1239 * HSN/SAC : 3921 Doc No.- 36680800648 Rev - 00 Doc No.- ED0673699 Rev - 00 Doc No.- ED55687 Rev - 00 Inspection / Test Report Bus bar (7) 410960 assembly as per Drg No 36680800648-Rev00 Raw mat: IS 1897 Half Hard ETP Grade	180	NO	180	30.01.2023
4	TI0668102721 Busbar-Capacitor-left 388018-1270 * HSN/SAC : 3921 Doc No.- 36680800649 Rev - 01 Doc No.- ED0673699 Rev - 00 Doc No.- ED55687 Rev - 00 Inspection / Test Report Busbar-Capacitor-left 388018-1270 as per Drg No 36680800649-Rev01	180	NO	180	30.01.2023

NOTES: 1. This RFQ is governed by: a) INSTRUCTIONS TO BIDDERS/SELLERS and GENERAL CONDITIONS OF CONTRACT FOR PURCHASE available at http://edn.bhel.com (RFQ-PO Terms & Conditions) b) Any other specific Terms and Conditions mentioned. of offers are required to furnish authorization letter for the same. 2. Tender Result can be viewed in the website. * The HSN/SAC no mentioned against the line items in the RFQ are indicative only.	For and On behalf of BHEL. Nilmani Kumar Control Equipment
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REQUEST FOR QUOTATION - ONLINE BIDDING

	BHARAT HEAVY ELECTRICALS LIMITED Electronics Division PB No. 2606, Mysore Road Bangalore - 560026 INDIA	RFQ NUMBER: NKRE000659 RFQ DATE : 07.12.2022	Due Date/Day: 19.12.2022 MON Time : 13:00 HRS
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SI No.	Description	Qty	Unit	Delivery qty	Delivery Date
	Raw mat: IS 1897 Half Hard ETP Grade				
5	TI0668103116 Busbar capacitor right 388018-1506 * HSN/SAC : 3921 Doc No.- 36680800652 Rev - 00 Doc No.- ED0673699 Rev - 00 Doc No.- ED55687 Rev - 00 Inspection / Test Report Busbar capacitor right 388018-1506 as per Drg No:36680800652-Rev00 Raw mat: IS 1897 Half Hard ETP Grade	180	NO	180	30.01.2023

Total Number of Items - 5

1.
2.

NOTES:

1. This RFQ is governed by:
 - a) INSTRUCTIONS TO BIDDERS/SELLERS and GENERAL CONDITIONS OF CONTRACT FOR PURCHASE available at <http://edn.bhel.com> (**RFQ-PO Terms & Conditions**)
 - b) Any other specific Terms and Conditions mentioned. of offers are required to furnish authorization letter for the same.
 2. Tender Result can be viewed in the website.
- * The HSN/SAC no mentioned against the line items in the RFQ are indicative only.

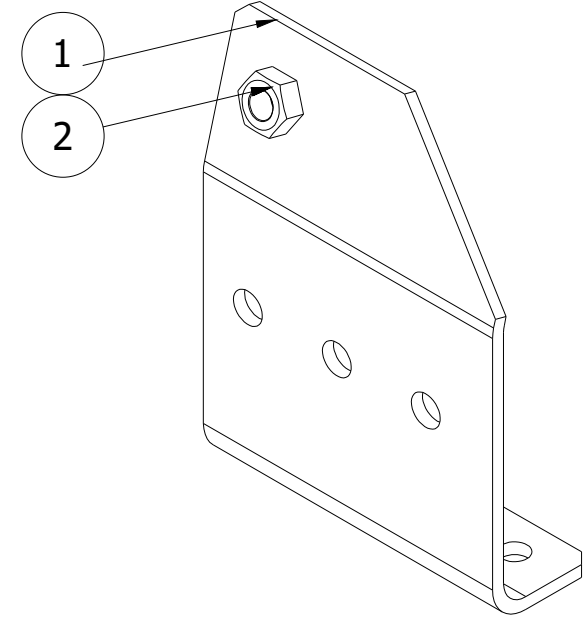
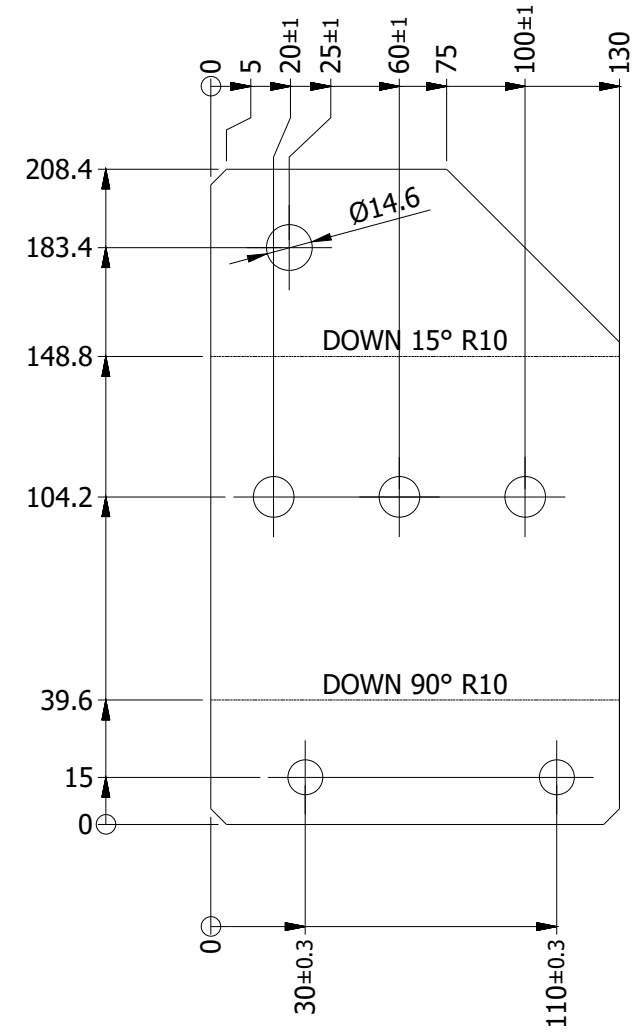
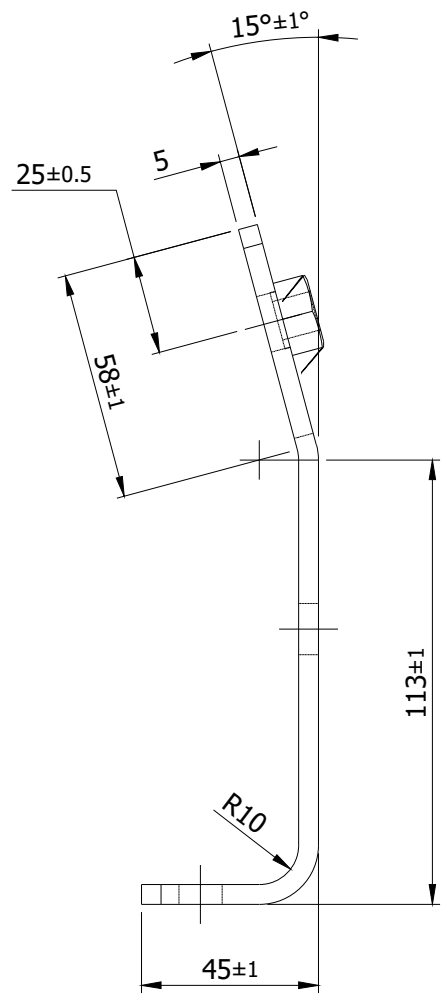
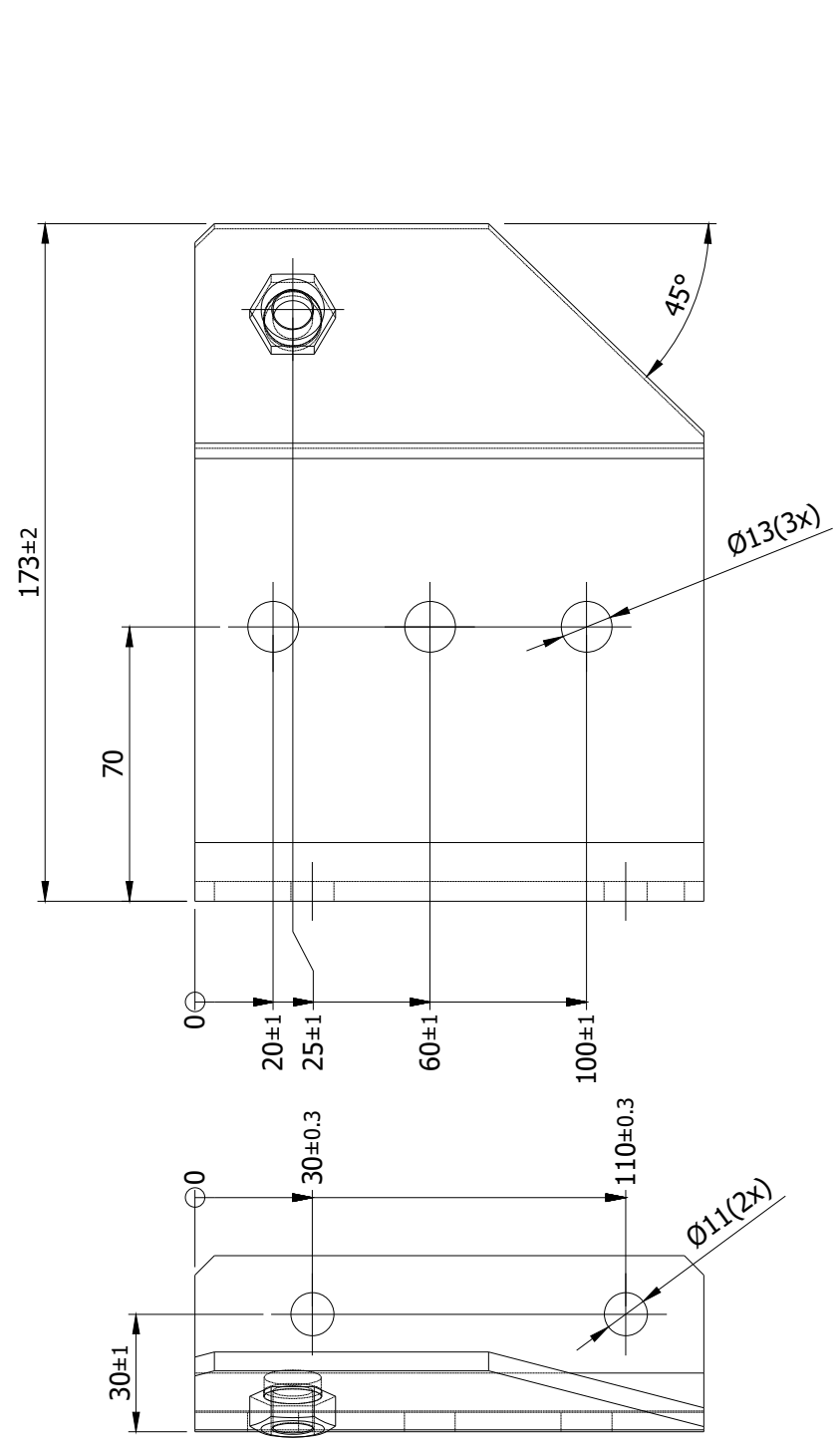
For and On behalf of BHEL.

Nilmani Kumar
Control Equipment

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	36680800648	BUSBAR (7)410960	1
2	TI0668110260 / 46680800363	M12-HEX INSERT CLINCH NUT	1

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NOTE:-
NICKLE PLATING (MIN 10 MICRONS) AS PER ED55687
PROCESS FOR CLEANING AS PER ED0673699
ITEM 02 (INSERT NUT) MAY BE INSERTED AFTER PLATING
REMOVE SHARP EDGES

QTY.	ITEM No.	DESCRIPTION	DRAWING NO.	ITEM No.	MATERIAL CODE	UT.Wt. (kgs)
		5THK. x 130 x 208.4 Half Hard Copper Strip		DR0668081546	IS:1897	
				VARIANT	MATERIAL SPECN.	QTY.

CARD TYPE 2 ← → CARD TYPE 1

MATERIAL CODE : TI0668102667

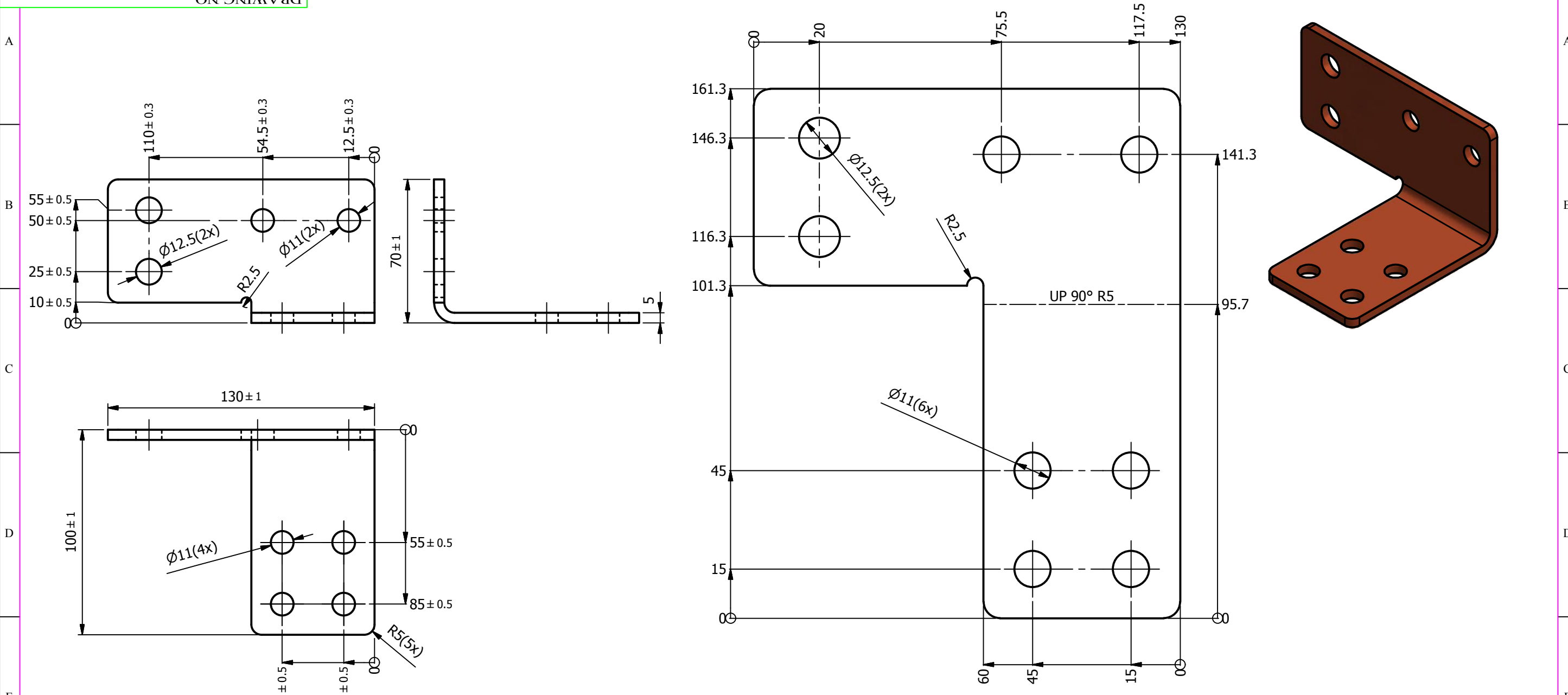
	BHARAT HEAVY ELECTRICALS LIMITED. ELECTRONICS DIVISION, BANGALORE			DRN	NAME	SIGN.	DATE	No. OF
	CKD	ASHWATH			CHANDRAPPA		13.03.2014	
	APPD	SCS					13.03.2014	

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHECKED			CHECKED			CHECKED
		APPROVED			APPROVED			APPROVED

DEPT. TE	FOR UNSPECIFIED-TOLERANCES REFER ED 0230499	SCALE	WEIGHT(Kg)	REF. TO ASSY. DRG.	ITEM NO.	No. OF
CODE 445						
TITLE				DRAWING NO.		REV.
BUSBAR (7) 410960 ASSEMBLY				3 668 08 00648		00
				SHEET NO. 01	NO. OF SHEETS 01	

DRAWING NO. 3 668 08 00652

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NOTE:-
NICKLE PLATING (MIN 10 MICRONS) AS PER ED55687
PROCESS FOR CLEANING AS PER ED0673699
REMOVE SHARP EDGES

MATERIAL CODE : TI0668103116

		5 THK x 130 x 161.3 Lg Half Hard Copper Strip			DR0668081546	
					IS:1897	
QTY.	ITEM No.	DESCRIPTION	DRAWING NO.	ITEM No.	MATERIAL CODE	UT.Wt. (kgs)
				VARIANT	MATERIAL SPECN.	QTY.

CARD TYPE 2

CARD TYPE 1

REF. DRG.NO.

SIGN & DATE

INVENTORY NO.

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHECKED			CHECKED			CHECKED
		APPROVED			APPROVED			APPROVED

BHARAT HEAVY ELECTRICALS LIMITED. ELECTRONICS DIVISION, BANGALORE	DRN	NAME	SIGN.	DATE	No. OF	
	CKD	CHANDRAPPA		13.03.2014	4	
	APPD	ASHWATH		14.03.2014		
DEPT. TE	FOR UNSPECIFIED-TOLERANCES	SCALE	WEIGHT(Kg)	REF. TO ASSY. DRG.	ITEM NO.	No. OF
CODE 445	REFER ED 0230499					
TITLE				DRAWING NO.		REV.
BUSBAR CAPACITOR RIGHT				3 668 08 00652		00
SHEET NO. 01			NO. OF SHEETS 01			

3 668 08 02062
DRAWING NO.

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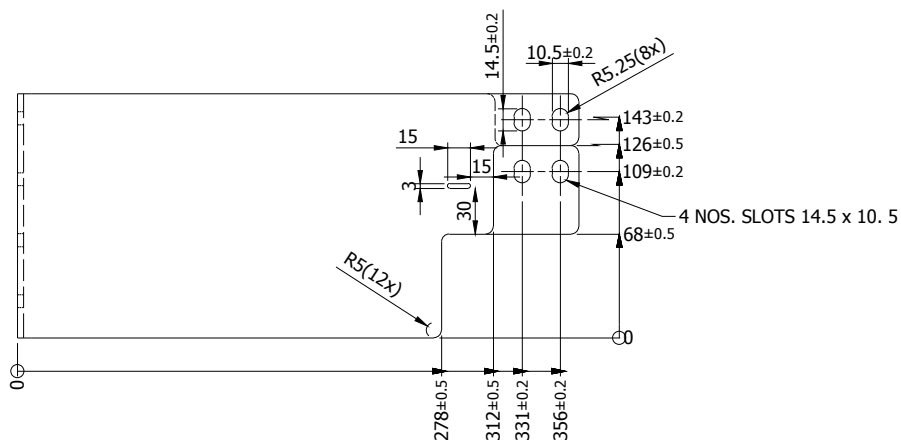
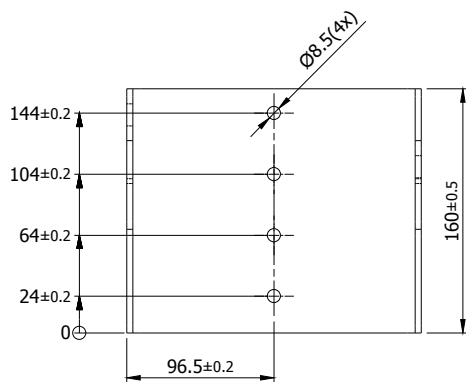
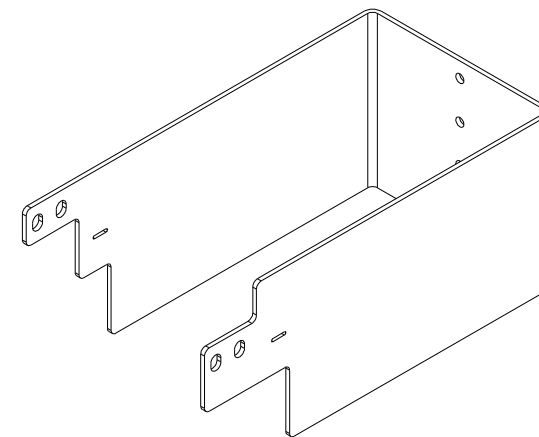
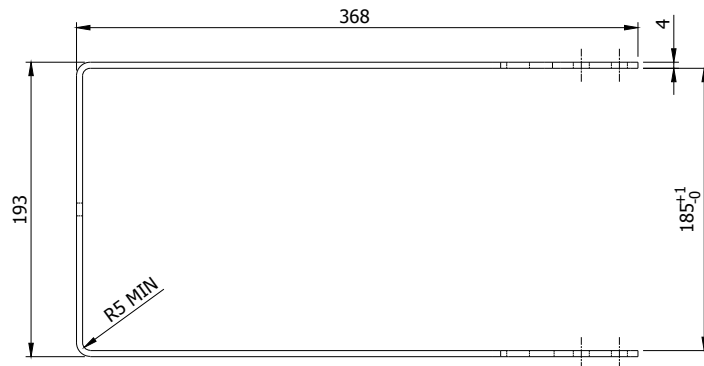
REF. DRG. NO.

SIGN & DATE

INVENTORY NO.

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QTY.	ITEM No.	DESCRIPTION	DRAWING NO.	ITEM No.	MATERIAL CODE	UT. Wt. (kgs)
				VARIANT	MATERIAL SPECN.	QTY.

CARD TYPE 2

CARD TYPE 1

NOTE:-
NICKLE PLATING (MIN 10 MICRONS) AS PER ED55687
PROCESS FOR CLEANING AS PER ED0673699
SURFACE SCRACHES ARE TO BE AVOIDED TO THE MAXIMUM EXTENDED POSSIBLE.
REMOVE SHARP EDGES

BHARAT HEAVY ELECTRICALS LIMITED. ELECTRONICS DIVISION, BANGALORE	DRN	NAME	SIGN.	DATE	No. OF
	CKD	TKM		22.03.2019	
	APPD	Devanand V		22.03.2019	
DEPT. TE	FOR UNSPECIFIED-TOLERANCES REFER ED 0230499	SCALE	WEIGHT(Kg)	REF. TO ASSY. DRG.	ITEM NO.
CODE 445					No. OF

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHECKED			CHECKED	01	05.08.19	CHECKED
		APPROVED			APPROVED			APPROVED

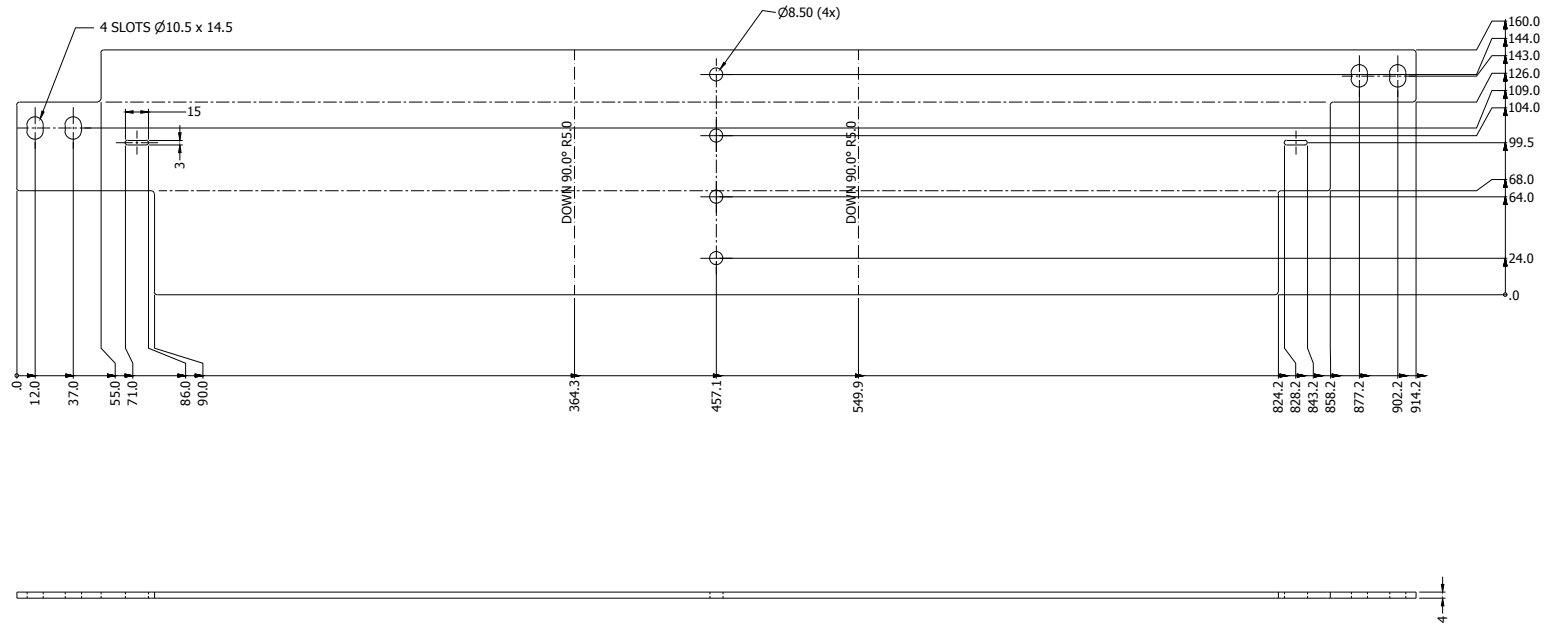
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" 4 NOS SLOTS 14.5 X 10.5 "

TITLE	DRAWING NO.	REV.
2W45-65 CAPACITOR MINUS BAR	3 668 08 02062	01
SHEET NO. 01	NO. OF SHEETS 02	

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DRAWING NO. 3 668 08 02062



4THK x 160 x 914.2 Lg Half Hard Copper Strip		DR0668081465		
		IS:1897		
ITEM NO.	DESCRIPTION	DRAWING NO.	ITEM NO. MATERIAL CODE	UNT. Wt.(kg)
			VARIANT MATERIAL SPECN.	QUANTITY

CARD TYPE 2

CARD TYPE 1

TYPE OF PRODUCT OR
NAME OF CUSTOMER/PROJECT

	BHARAT HEAVY ELECTRICALS LIMITED, ELECTRONICS DIVISION, BANGALORE		DRN	NAME	SIGN.	DATE	No. OF VAR
			CKD	TKM		23.03.2019	
			APPD	Devanand V		23.03.2019	

REV.	DATE	ALTERED CHECKED APPROVED	REV.	DATE	ALTERED CHECKED APPROVED
01	05.08.19				

DEPT. TE	FOR UNSPECIFIED-TOLERANCES REFER ED 0230499	SCALE 1 : 2	WEIGHT(Kg)	REF. TO ASSY. DRG.	ITEM NO.	No. OF ITEM
CODE 445						

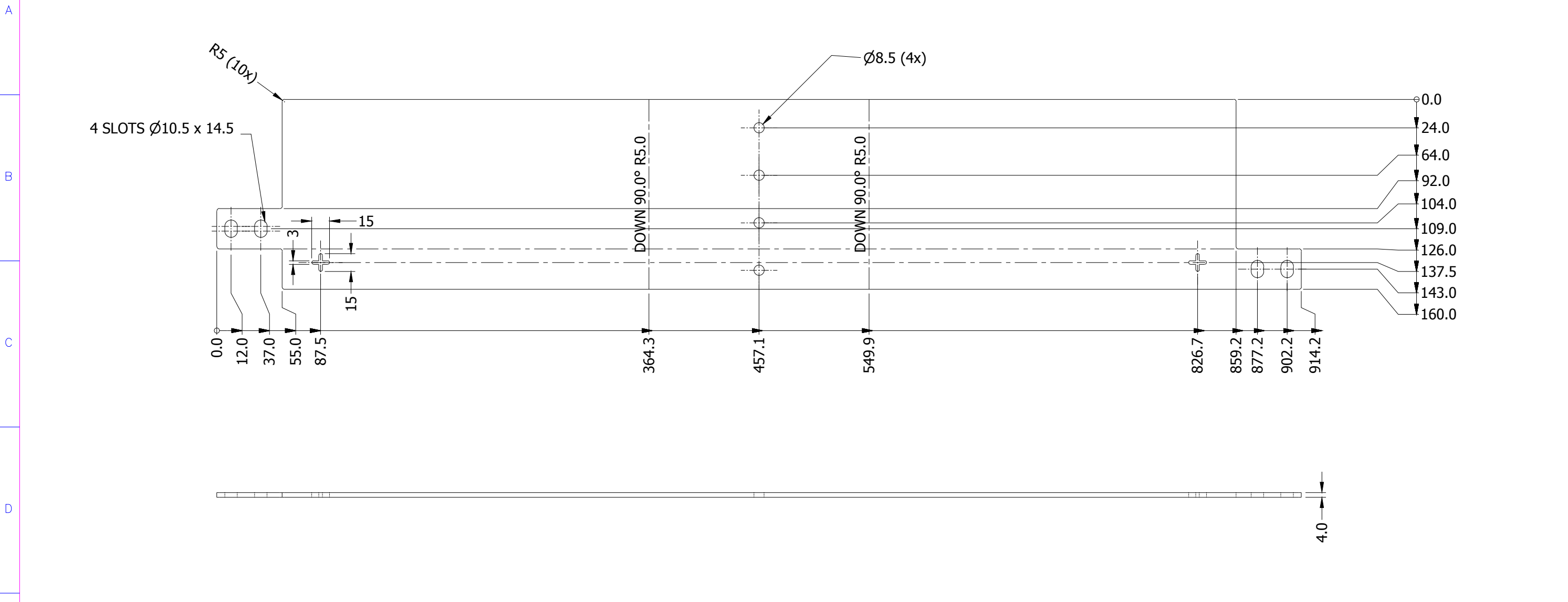
SHEET NO 1 UPDATED					
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TITLE	DRAWING NO.	REV.
2W45-65 CAPACITOR MINUS BAR	3 668 08 02062	01
SHEET NO. 02	NO. OF SHEETS 02	

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DRAWING NO. 3 668 08 02063



ITEM NO.	DESCRIPTION	DRAWING NO.	ITEM NO.	MATERIAL CODE	UNT. Wt.(kg)
	4THK x 160 x 914.2 Lg Half Hard Copper Strip			DR0668081465	
			VARIANT	MATERIAL SPECN.	QUANTITY
				IS:1897	

CARD TYPE 2

CARD TYPE 1

TYPE OF PRODUCT OR
NAME OF CUSTOMER/PROJECT

DRN	NAME	SIGN.	DATE	No. OF VAR
	T K Murthy		22.03.2019	
CKD	TKM		23.03.2019	
APPD	Devanand V		23.03.2019	

DEPT. TE	FOR UNSPECIFIED-TOLERANCES REFER ED 0230499	SCALE	WEIGHT(Kg)	REF. TO ASSY. DRG.	ITEM NO.	No. OF ITEM
CODE 445		1 : 2				

TITLE	DRAWING NO.	REV.
2W45-65 CAPACITOR PLUS BAR	3 668 08 02063	00
SHEET NO. 02	NO. OF SHEETS 02	

REV.	DATE	ALTERED	REV.	DATE	ALTERED	REV.	DATE	ALTERED
		CHECKED			CHECKED			CHECKED
		APPROVED			APPROVED			APPROVED

1 2 3 4 5 6 7 8

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PLANT STANDARD
 BHEL
 ELECTRONICS DIVISION
 A4 - 15

ED 067 36 99
 REV NO 06
 PAGE 0 OF 3

REVISION HISTORY SHEET

REV NO	DATE	NATURE OF CHANGE	REASONS	PREPARED BY	APPROVED BY
00	09/01/92	Supersedes CN46012	-	NMD, MAS, SHG	NJ
01	03/03/93	Revised	-	SHG	NJ
02	12/04/93	Totally Revised	-	SHG	NJ
03	21/04/98	REAFFIRMATION	-	CCR	NS
04	25/08/03	Reaffirmation	-	CCR	SM
05	07/02/18	Reaffirmation	-	BKD	NV
06	07/01/22	Revised	C1.5.2,10.0	M S KABIR	Sanjay R Godbole

APPROVED:
SRG

PREPARED: MSK ISSUED: DATE:
 ENGG SERV. 15-02-22.

PROCESS FOR CLEANING AND PREPARATION OF METAL SURFACES PRIOR TO ELECTROPLATING.

- 1.0 GENERAL: This standard details the processes the preparation of metal parts prior to electroplating, with particular reference to ferrous, copper and copper alloy parts.
 Note: Parts fabricated by riveting, spot welding, etc. where difficulty will be experienced in removing the entrapped electrolytes, should not be electroplated.
- 2.0 SCOPE: This standard gives information about cleaning of parts prior to electroplating of ferrous items like panel, C -profile, hardware, bracket and copper and its alloys and also gives the information on process of cleaning and material used for cleaning.
- 3.0 MATERIALS:
- | Materials. | CPS No./Available Form. |
|---|-------------------------|
| 3.1 Trichloroethylene (Tech.) | : AA56706 |
| 3.2 Sulphuric Acid (Technical) | : AA54101 |
| 3.3 Nitric Acid (Technical) | : AA54102 |
| 3.4 Hydrochloric Acid (Tech.) | : AA54103 |
| 3.5 Potassium Cyanide | : AA55609 |
| 3.6 Sodium Cyanide | : AA55610 |
| 3.7 Inhibitor for sulphuric acid | : ED55199 |
| 3.8 Alk cleaner for steel | : ED55196 |
| 3.9 Alk cleaner for copper and its alloys | : ED55194 |
| 3.10 Electronic cleaner for steel | : General |
- 4.0 EQUIPMENTS:
- 4.1 Vapor degreasing plant: Any standard plant for the purpose.
- 4.2 Alkaline degreasing vat : Mild steel tank provided with steam Coils or Electric heaters to heat the bath
- 4.3 Acid pickling vats : Rubber/PVC/FRP/Lead lined M.S. tanks.

APPROVED:
 SRG

PREPARED: MSK ISSUED: DATE:
 ENG SERV. 15-02-22.

- 4.4 Cyanide dip vat : M.S. tanks.
- 4.5 Rinsing tank : Rubber/PVC/FRP/Lead lined

5.0 COMPOSITION OF SOLUTIONS AND OPERATING CONDITIONS:

5.1 ALKALINE DEGREASING SOLUTION:

	Solution/Operating condition.	Composition.
5.1.1	Alk cleaner for steel	:
5.1.2	Alk cleaner for copper and brass	:
5.1.3	Elc. cleaner for steel	:

5.2 ACID PICKLING SOLUTIONS:

	Solution/Operating condition.	Composition.
5.2.1	Hydrochloric Acid Pickling Solution:	
	Hydrochloric Acid	: 410 - 490 ml/litre
	Inhibitor	: 0.1 - 0.5 % of the acid used
	Temperature & Time	: Shop Temp. & trial and error.
5.2.2	Sulphuric Acid Pickling Solution:	
	Sulphuric Acid	: 100 - 125 ml/litre
	Inhibitor for sulphuric	: 0.1 - 0.5% of the acid used
	Temperature & Time	: 60 to 70 deg. & trial and error.

- 5.3 Cyanide Dip Solution:
Sodium Cyanide: 25 - 35 g/litre.

6.0 PROCESS FOR FERROUS PARTS:

- 6.1 Solvent Degreasing: Excess grease, oil or cutting lubricants shall be removed by vapour degreasing using trichloroethylene.
- 6.2 Pickling: If rust found on the surface of the article sulphuric or hydrochloric acid pickling may be done with the solution as per Cl. 5.2.1 or 5.2.2.
- 6.3 Rinsing: After pickling, the parts shall be rinsed in clean cold running water (chlorinated water should not be used).
- 6.4 Electrolytic Cleaning : Parts shall be made as anode and dipped for 2 minutes at a voltage of 8 - 10 v.

Note: Threaded parts such as screws nuts and bolts should not be done in this process.

6.5 Rinsing: Parts shall be rinsed in cold running water thoroughly.

6.6 Cyanide Dip: Parts shall be dipped in cyanide bath of Cl. 5.3 before cyanide Zinc plating.

7.0 PROCESS FOR COPPER AND COPPER ALLOYS:

7.1 Solvent Degreasing: Excess grease, oil or cutting lubricants shall be removed by vapour degreasing using trichloroethylene.

7.2 Pickling: If oxide, are found on the surface of the article sulphuric acid pickling may be done with the solution as per Cl. 5.2.2.

7.3 Rinsing: After pickling, the parts shall be rinsed in clean cold running water (chlorinated water should not be used).

7.4 Cyanide Dip: Parts shall be dipped in Sodium cyanide solution made as per Cl. 5.3 and rinsed thoroughly. If the parts are carried to acid plating bath parts must be dipped in sulphuric acid, rinse in cold running water before taking up plating.

8.0 PLATING PROCESS FLOW CHART:

Ferrous	Copper & Copper Alloys
Vapour degreasing	Vapour degreasing
Jigging/ wiring	Jigging/ wiring
Acid pickling	Acid pickling } (If reqd)
Rinsing	Rinsing }
Electrolytic cleaning	
Rinsing	
Cyanide Dip	Cyanide Dip
Rinsing	Rinsing
Plating	
	Plating
	Rinsing

9.0 Maintenance of Solutions:

9.1 Vapour Degreasing: Vapour degreasing plant should be cleaned (removal of sludge) at least once in a month.

10.0 Outsource:

Detail process control report alongwith the supplied material in each lot to be submitted by the supplier for ferrous and non-ferrous item as per process requirement.

PROCESS FOR NICKEL PLATING ON FERROUS,
COPPER AND COPPER ALLOY COMPONENTS

- 1.0 GENERAL:
This standard details the process to be followed for nickel plating ferrous, copper & copper alloy components to protect them against corrosion and tarnish.
- 2.0 APPLICATION:
For use on components, fasteners, washers etc.
- 3.0 NATIONAL STANDARDS/REFERENCE STANDARDS:
Assistance has been taken from BHEL Corporate standards AA0673606 for preparing this standard.
- 4.0 MATERIALS:
- Nickel salt - As per our plant standard ED55689
 - Nickel brightener - Type 293 of 1) M/s Plate well
 - Nickel additive - Type 292 Process & Chemical
OR equivalent by
 - 2) M/s Canning Mitra Pheonix
 - 3) M/s Grauer & Weil (I) Ltd
 - Nickel carbonate - As per IS;1809
 - Activated carbon
 - Nickel Anode - As per FIG 1.
- 5.0 EQUIPMENT:
- 5.1 Plating tank: The tank shall be constructed using mild steel line with Rubber/PVC/FRP. The tank shall be provided with an insulated frame on top fitted with insulators for holding the anode and cathode rods.
- 5.2 Barrel: The plating barrel shall be made of polypropylene material and shall be driven at 5 to 6 rpm.
- 5.3 Rinsing tank: The cold water rinsing tank shall be made of mild steel tank lined with Rubber/FRP/PVC.

REVISIONS : APPROVED:
N. JAYAPATHI.

PREPARED: ISSUED: DATE:
K. P, SHG STDS. GROUP. 18-01-94.

6.0 COMPOSITION OF ELECTROLYTE:

6.1 The electrolyte shall be of the following composition and operating conditions as specified below.

Nickel salt	- 320 to 350 gm/ltr.
Nickel brightener (initial)	- 0.4 to 0.8 ml./ltr.
Nickel additive	- 4 to 8 ml./ltr.
Temperature	- Ambient Temperature
pH of solution	- 4 to 4.8
Current density	- 2-5 Amp/dm ²
Voltage	- 10 to 12 V
Density	- 21 to 26 Be

6.2 Preparation of electrolyte:

- 6.2.1 The barrel/tank shall be filled with 2/3 rd of water and then heated to nearly 50 deg.centigrade.
- 6.2.2 The required amount of Nickel salt then be added to the bath in small quantities with continuous stirring.
- 6.2.3 After complete dissolution, the electrolyte shall be brought upto the working level by adding water and subsequently stirring thoroughly.
- 6.2.4 Maintenance of bath: The density of the electrolyte shall be within the prescribed limit of 21 to 26 Be. For increasing the density by 1 Be, nickel salt at the rate of 14 gm/ltr shall be added.
- 6.2.5 Purification of electrolyte: Raise the pH to 4.0 by adding Nickel carbonate before adding activated carbon, agitate vigorously for 2 hours, allow to settle, preferably over-night, in a separate tank and finally filter it through activated Carbon bed in to the plating tank.
- 6.2.6 Removal of metallic impurities: When necessary the electrolyte shall be purified by 'plating out' at 0.1 to 0.2 Amps/dm² on corrugated stainless steel or mild steel dummy cathodes at pH 5.5 to 6.6. The 'plating out' shall be continued until the deposit is no longer dark or rough.

6.2.7 Addition of brighteners: Apart from the initial additions, for every 1000 Amps.Hours of operation. brighteners and other additioners are to be added to the electrolyte at the following rate.

Composition	Salt	Additive	Brightener	Supplier's Name
I	Superglo	100 ml.	150 to 200 ml.	M/s Grauer & Weil (I) Ltd.
II	Nickel 80V	-	200 to 300 ml.	M/s Canning Mitra Phoenix
III	Nickgleam	50 to 100 ml	150-200 ml.	M/s platewl Process Chemicals

7.0 PROCESS:

- 7.1 Cleaning :All articles to be nickel plated shall be cleaned as per plant standards ED-0673699, process for cleaning and preparation of metal surface prior to electroplating.
- 7.2 Rinsing All articles shall be rinsed thoroughly in running cold water.
- 7.3 Pre acid cleaning Before dipping in the plating bath all articles shall be dipped in 5% sulphuric acid bath followed by rinsing in running water.
- 7.4 Articles shall be plated at specified current density for a duration depending upon the deposition of required.
- 7.5 After plating the articles shall be cleaned thoroughly in cold running water.
- 7.6 After rinsing the articles shall be dried in centrifugal drier or by air blow.

8.0 MAINTENANCE OF ANODE

- 8.1 Ratio of anode to cathode surface shall not be less than one. Anodes shall have anode bags made of polyester cotton.

8.2 Before putting new anodes into the plating tank, they shall be cleaned in degreasing tank as per plant standard ED 0673699 clause no.3,4 & 5 only degreasing.

8.3 The surface of anode shall be cleaned periodically using with brush for uniform erosion and good throwing power.

9.0 PRECAUTIONS:

9.1 Solution shall be kept covered when not in use.

9.2 Chemical that may be necessary to be added shall be dissolved in a part of the original solution before adding into vat/barrel and additional shall be done by pouring through a filter.

9.3 Any metal that may be deposited on any part of the Vat/Barrel shall be removed.

9.4 Any article that become lodged in any part of the Vat/Barrel shall be removed.

10.0 INSPECTION:th

10.1 SAMPLING: A minimum of 1% of each batch of tank/barrel load shall be checked for clause 10.2 .

10.2 Surface condition:Plated surfaces shall appear as a smooth and consimous film over the base metal and shall be from defects, such as pits, stains, blisters, unplated areas and other superficial blemishes visible to the unaided eye.

10.3 Adhesion test: (Appendix-H of IS-1068) Saw piece off plated article ,hold it in a vice and apply a coarse file to the outer edge in such a manner as to raise the deposit. File with direction from the basis metal to the coating at an angle of approximately 45 Deg to the coated surface. There shall be no separation between the coating and the basis metal nor between the layers of a multiple coating.

10.4 Thickness: The thickness of the deposit shall be determined by testing sample pieces tested in accordance with IS-3203, 'method of testing local thickness of electro plated coatings once in a month. The samples shall be plated under similar conditions as per 6.0.

NICKEL ANODE FOR AUTO NICKEL PLANT

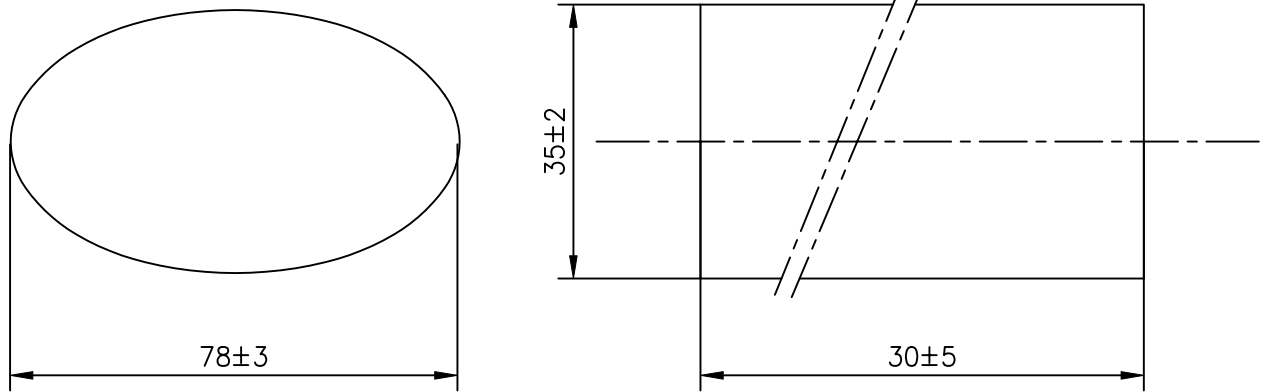


FIG 1

THE ANODE SHALL CONFORM TO OXIDE TYPE
OF IS : 1958-1967