



ITI LIMITED
A Govt. Of India Undertaking
Dooravaninagar Bangalore
560016 GSTIN.: 29AAACI4625C1ZV

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Website: www.itilttd-india.com

Due Date 04-12-2021 15:00

ENQUIRY FOR PR M2121G003

Date 07-07-2021 09:03

Re-tendering Reference 1

Re-tendering Date 20-11-2021

Respected Sir Kindly quote your best prices and deliveries for the below mentioned components.

Sino	Item and Description	Quantity	Unit
1	DTC 660249/7 HEAT SINK ()	70.0000	Number of Units

NOTE :

1. OFFER THROUGH EMAIL WILL NOT BE CONSIDERED.
2. TERMS AND CONDITIONS AS PER ENCLOSURE.
3. OUR PAYMENT IS 60 DAYS CREDIT.
4. YOUR QUOTED PRICE SHALL BE ALL INCLUSIVE FOR ITI LTD.BANGALORE

Special Note: * KINDLY PROVIDE UDYAM REGISTRATION CERTIFICATE IF MSME REGISTERED ENTERPRISE

* KINDLY MENTION SUBJECT AS "QUOTATION FOR HEAT SINK"; RFQ # AS "M2121G003" & DUE DATE AS "22.07.2021" OVER ENVELOPE WITHOUT WHICH QUOTATION WILL NOT BE CONSIDERED FOR TENDERING

* KINDLY ACKNOWLEDGE THE RECEIPT OF ENQUIRY BY RETURN MAIL

* KINDLY CONFIRM WHETHER QUOTATION SUBMITTED BY PERSONAL DEPOSIT OR THROUGH ANY COURIER SERVICES (PROVIDE DOCKET REFERENCE)

* KINDLY PROVIDE DATASHEET / TECHNICAL COMPLIANCE / SPECIFICATION DOCUMENT ALONG WITH QUOTATION

* KINDLY SUBMIT SAMPLES ALONG WITH QUOTATION IF POSSIBLE

* KINDLY SUBMIT QUOTATION AS PER ITI DRAWING ATTACHED

* SINCE SUPPLIER UNABLE TO SUPPLY, THIS CASE RE-TENDERED

Deputy General Manager

Central Purchase,

ITI Limited,Dooravaninagar

Bangalore-560016

Thanking You.

Yours Faithfully,

For I.T.I Limited

Deputy General Manager - IMM



STANDARD

ANODIZING ON ALUMINIUM AND ALUMINIUM ALLOYS

SPEC.No . B 639

ISSUE No.6

12 OCT 2001

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1 SCOPE

This specification covers the process of anodizing on aluminium & aluminium rich alloy parts

1.1 Purpose

The anodizing of aluminium and aluminium rich alloys is primarily for protection against corrosion and to promote adhesion of organic protective coatings. It is not suitable for composite parts embodying other materials unless the latter are adequately "Stopped Off".

2 PROCESS

2.1 Degreasing

The parts shall be degreased as per specification B501G.

2.2 Cleaning

The parts shall be cleaned before treatment in the following sequence :

- a) Alkaline cleaning to specification B 501A Cl 2.2.
- b) Bright acid dipping as per specification B501A Cl 2.3.
- c) Emerying - using suitable grade emery.
- d) Alkaline cleaning to specification B 501A Cl 2.2.
- e) Bright acid cleaning as per specification B501A Cl 2.3.

2.3 Polishing

The parts shall be polished lightly as per specification B514C (less lacquering) if required to bring up lustre.

2.4 Cleaning

Immediately before anodic treatment, all parts shall be given a final washing in clean running water at room temperature.

2.5 Immersion of Parts for Treatment

The parts being treated shall be made the anode and, whenever practicable & shall be totally immersed in the electrolyte. Where total immersion is not practicable the portion to be treated subsequently shall overlap the portion treated previously.

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DATE 06/07/21



STANDARD

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b) Cathode

The cathode shall consist of:

- i) The tank itself. When rivetted tanks are used, contact shall be effected at several points. Lead sheets as per specifications IS : 405 (Part 1) : 1992 may be used as tank lining. They shall be secured to the cathode rails in such a manner as to prevent their movement due to agitation of the electrolyte.

2.6 Rinsing and Drying

Immediately after the treatment, the parts shall be rinsed in clean running water at room temperature, followed by washing in hot water at 50 to 60° C (except parts treated as an aid to inspection) and dried in a dust-free atmosphere.

2.7 Dyeing

Dyeing shall normally be done by immersing the parts in the relevant dye immediately after rinsing but without allowing the parts to dry. Any suitable inorganic or proprietary organic dyes may be used for dyeing the anodic film. The dyed parts shall be dried using blow air.

2.8 Sealing

The anodized parts (undyed parts) shall be sealed by immersion in one of the following solution for periods and temperature indicated against each :

2.8.1 Demineralised water or distilled water

- Temperature : 94 to 98°C
- Duration : 20 to 60 minutes
- pH : 6 to 6.5

2.8.2 Potassium dichromate or sodium dichromate 40 to 60 grams / litre in demineralised or distilled water (one litre)

- Temperature : 94 to 98°C
- Duration : 5 to 10 minutes
- pH : 5.5 to 6.5

The pH value of the solution shall be maintained by the addition of boric acid or acetic acid.

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2.9 Rinsing and Drying

After sealing, the parts shall be rinsed thoroughly in clean running water at room temperature (except in case of sealing by demineralised or distilled water) and then dried in a dust-free atmosphere.

2.10 Stripping of Anodic Coatings

Stripping solution shall be of any one of the following composition in distilled water :

- | | |
|--------------------------------|-------------|
| a) Phosphoric acid (S.G. 1.75) | 3.5 % V / V |
| Chromic acid (A.R.Quality) | 2.0 % W / V |

Note : This solution shall be used at boiling point.

- | | |
|--------------------|------------|
| b) Sulphuric acid | 10 % V / V |
| Potassium Fluoride | 4 % W / V |

Note : This solution shall be used at room temperature at aqueous condition.

- | | |
|--|------------|
| c) Sulphuric acid | 10 % V / V |
| Commercial hydrofluoric acid (50/60% HF) | 1 % V / V |

Note : This solution shall be used at room temperature at aqueous condition.

3 QUALITY OF FINISH

The films obtained shall, immediately after rinsing and drying, but before any sealing, be such that when dyed with Methyl Violet Blue, or any other suitable dye with vigorous rubbing with a damp cloth shall not produce any appreciable loss of colour. The dye shall be applied either by using violet endorsing ink on a rubber pad or by a copying pencil rubbed over the moistened anodised surface.

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STANDARD

ANODIZING ON ALUMINIUM AND ALUMINIUM ALLOYS

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4 Method for the Measurement of average thickness of anodic coatings

4.1 Test piece

The test piece shall, if possible, possess a total surface of not less than 32 sq. cm and shall be of such shape that the surface area of the coating is readily determinable.

4.2 Method

Weigh the clean and dry anodized test piece in gram to the nearest mg. and immerse in the stripping solution as given in clause 2.10 until constant weight is attained, which usually takes not more than 10 minutes. Wash the test-piece in hot, distilled water, dry and re- weigh.

The loss of weight shall be taken as the weight of the anodic coating.

4.3 Calculation

The average thickness shall be given by : $T = \frac{W}{ad}$

where T = Thickness of coating in cm,
w = weight of coating in gram,
a = Surface area of the cathode coating in sq. cm,
d = Density of coating in g / ml. (taken as 2.5).

Note : This method is not suitable for coatings sealed with organic materials which cannot be removed without damage to the film. In such cases a separately prepared test piece shall be taken.

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DATE *06/07/21*

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CHECKED	<i>[Signature]</i>	CEQ (D)
APPROVED	<i>[Signature]</i>	DCM (OV)

Ref: B 639 ISS No:5
Dated:15-12-1994+A1
and Review.



ALUMINIUM ALLOY SECTION
MEDIUM STRENGTH

SPEC. No. D 2009
ISSUE No. 3
DATE:25-01-2007

STANDARD

1. SCOPE

This specification covers the requirements of Aluminium Alloy Sections suitable for structural work which require medium mechanical strength.

2. REFERENCE

1. IS 733 - 1983 Specification for wrought aluminium & aluminium alloy bars, rods & sections.
2. IS 1608 -1995 Mechanical testing of metals -Tensile testing.

2.1 EQUIVALENTS.

This specification is in line with IS designation 63400. WP condition of IS 733-1983.

3. GENERAL CHARACTERISTICS

The material shall be uniform in composition & temper. sound, homogeneous & free from physical defects or flaw both externally & internally. The extruded sections shall be uniform in cross-section, straight & true & free from twists, seams or damaged ends. The surface shall be bright & free from extrusions marks, pittings, blisters & strains.

4. REQUIREMENTS

4.1 CHEMICAL COMPOSITION (IS 733-1983 Designation 63400)

ELEMENT	PERCENTAGE	
	Min.	Max.
Copper	-	0.1
Magnesium	0.4	0.9
Silicon	0.3	0.7
Iron	-	0.6
Manganese	-	0.3
Zinc	-	0.2
Titanium	-	0.5
Chromium	-	0.5
Aluminium	Remainder	

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ALUMINIUM ALLOY SECTION
MEDIUM STRENGTHSPEC. No. D 2009
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D**4.2 PHYSICAL CONDITION**

The material shall be supplied in solution -heat treated & subsequently precipitation treated (WP) condition.

4.3 MECHANICAL PROPERTIES

Size(mm)	Tensile Strength kg/mm ²	Elongation%Min on 50 m GL/ $5.65\sqrt{S_0}$	Test Method
Upto & incl.150	18.5	7	IS 1608 -1995
Above 150 upto & Incl. 200	15	6	

5 DIMENSION & DIMENSIONAL TOLERANCES

The dimensions of the material shall be as specified in the purchase order or relevant drawing. Unless otherwise specified in the purchase order or relevant drawing, the applicable general dimensional tolerances shall be ± 0.15 mm.

5.1 TOLERANCE FOR STRAIGHTNESS & TWIST

All sections shall be supplied in a straightened condition & reasonably free from twist. The tolerance for straightness & twist shall be as follows :

Diameter of circumscribing circle (mm)	Deviation from straightness / twist(mm / m of length) max.,
Upto & incl. 25.0	2.1
Above 25.0	1.7

5.2 ANGULAR TOLERANCE

The tolerances on angles of sections measured at the extremities of the section shall be as follows:

Thickness of thinnest leg (mm)	Deviation from angle specified Plus / Minus
Above upto	
- 5.0	2°
5.0 19.0	1.5°
19.0 -	1°



ALUMINIUM ALLOY SECTION
MEDIUM STRENGTH

SPEC. No. D 2009
ISSUE No. 3
DATE:25-01-2007

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5.3 TOLERANCE ON LENGTH :

For all sizes of sections the length tolerance shall be + 25 ' - 0 mm.

6 DESIGNATION

Each size of material shall be designated as per 15 digit code STDS-DRX,
Example :0.5X25X1000 mm strip shall be designated as : DR S2 D2009 E5 D2 A1.

7 PACKING AND MARKING

7.1 PACKING

The material shall be suitably packed so as to avoid any damage during transit, handling & storage .

7.2 MARKING

Each bundle / case containing the materials shall be marked with the following details.

1. Ordering code
2. Purchase order No.
3. Net & gross weight.
4. Manufacturers name & trade mark.
5. Any other relevant information.

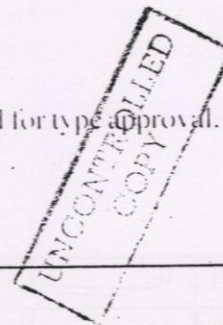
8 TYPE APPROVAL

8.1 SAMPLE FOR TYPE APPROVAL

The supplier shall submit free samples for type approval purpose. The size and quantity of the material shall be as per ITI specification D 3800. The requirements as called for in clause 3 & 4 shall be checked for type approval.

8.2 TYPE APPROVAL TESTS

The requirements as called for in clause 3 to 5 shall be checked for type approval.





ALUMINIUM ALLOY SECTION
MEDIUM STRENGTH

SPEC. No. D 2009
ISSUE No. 3
DATE:25-01-2007

STANDARD

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9 BATCH ACCEPTANCE

9.1 SAMPLING PLAN FOR BATCH ACCEPTANCE

The sampling plan for batch acceptance as given in quality system documents pertaining to the unit shall be followed for batch acceptance.

9.2 BATCH ACCEPTANCE TESTS

The requirement as given in clause 3 to 7 shall be checked for batch acceptance.

10 REJECTION OF SUPPLIES

M/s. ITI LIMITED., have the right to reject any material which does not conform to this specification and to return any material which subsequently proves faulty in manufacture.

11 DEPARTURE FROM SPECIFICATION

Any departure from this specification must be agreed to in writing by the company before prior to the execution of the order.

12 ACCEPTANCE

The acceptance of this specification without any comment shall be taken to indicate that the supplier agrees to comply with the condition herein contained.

HISTORY OF REVISION:

Reviewed & Issue Advanced. 15 digit codification incorporated.

PREPARED		AE-STDS	Ref : D 2009 Iss. No.2 Dated : 26-03-1997	Page 4 / 4
CHECKED		AE(VRC)		
APPROVED		CE(QV)		

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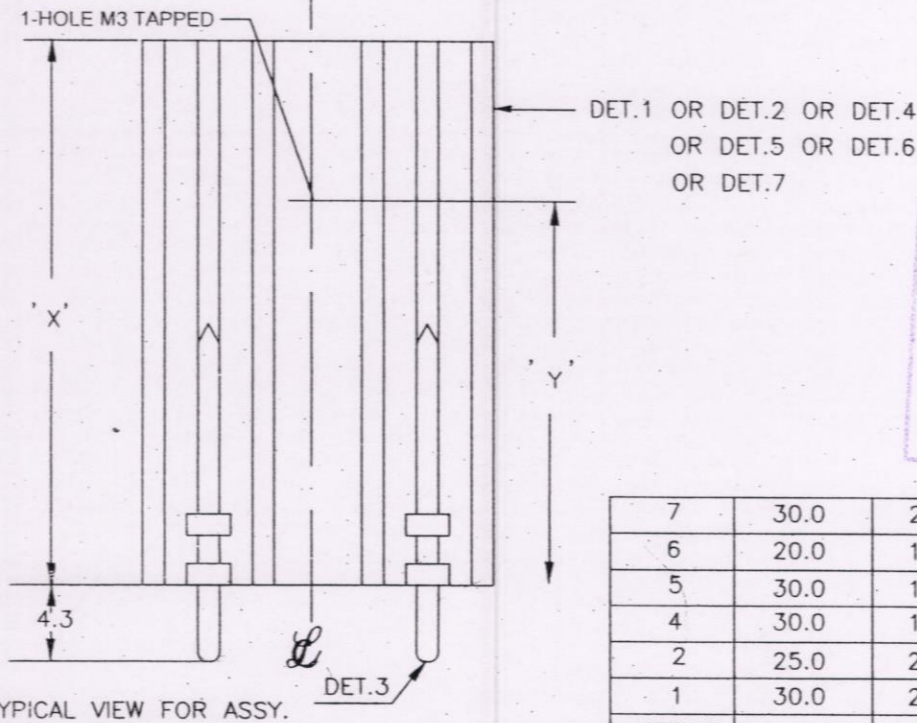
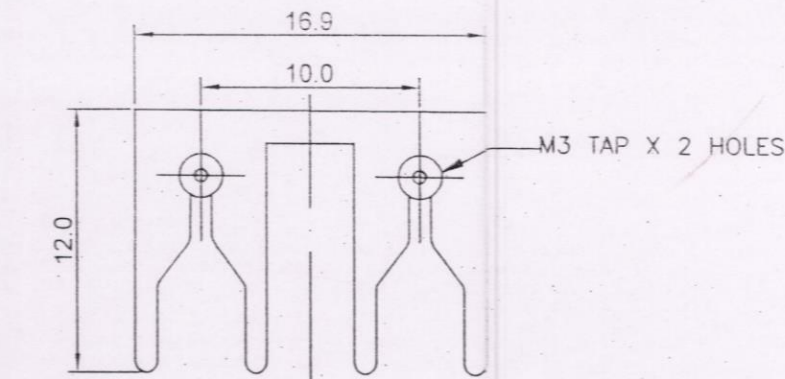
SHEET :- 1 OF 2

ISSUE APP

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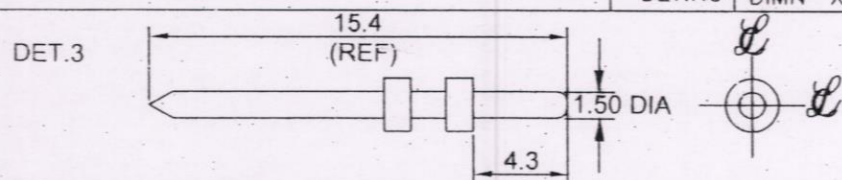
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SHEET 2 ADDED
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HB

7 03-08-18 CNG



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6	20.0	15.0
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2	25.0	22.5
1	30.0	22.5
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SOURCE OF SUPPLY.
TYPE NO. PI 49
LINEAR SYSTEM INC.
607, 62ND CROSS
5TH BLOCK RAJAJINAGAR,
BANGALORE-560010

NOTE : - 1. THE ITEM TO BE PROCURED AS AN ASSEMBLY

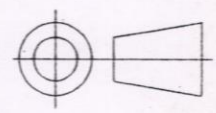
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5	-	1	-	-	-	DET.5	HEAT SINK	ALUMINIUM	D2009	BLACK ANODISED	B639
4	-	-	1	-	-	DET.4	HEAT SINK	ALUMINIUM	D2009	BLACK ANODISED	B639
3	2	2	2	2	2	DET.3	PIN	BRASS	B286	TIN PLATED	
2	-	-	-	1	-	DET.2	HEAT SINK	ALUMINIUM	D2009	BLACK ANODISED	B639
1	-	-	-	-	1	DET.1	HEAT SINK	ALUMINIUM	D2009	BLACK ANODISED	B639
SL NO	5	4	3	2	1	CODE.	DESCRIPTION.	MATL.	SPEC.	FIN.	SPEC.
	ASSY./QTY.										

ALL DIMNS. ARE IN 'mm'
TOLERANCES TO RULING NO 16
REF:-MSU-ES
W.O.:- NTDD-170(52)
U.O.:- PCA5997/A1

STOCK LIST

HEATSINK ASSEMBLY
TRANSMISSION EQUIPMENT

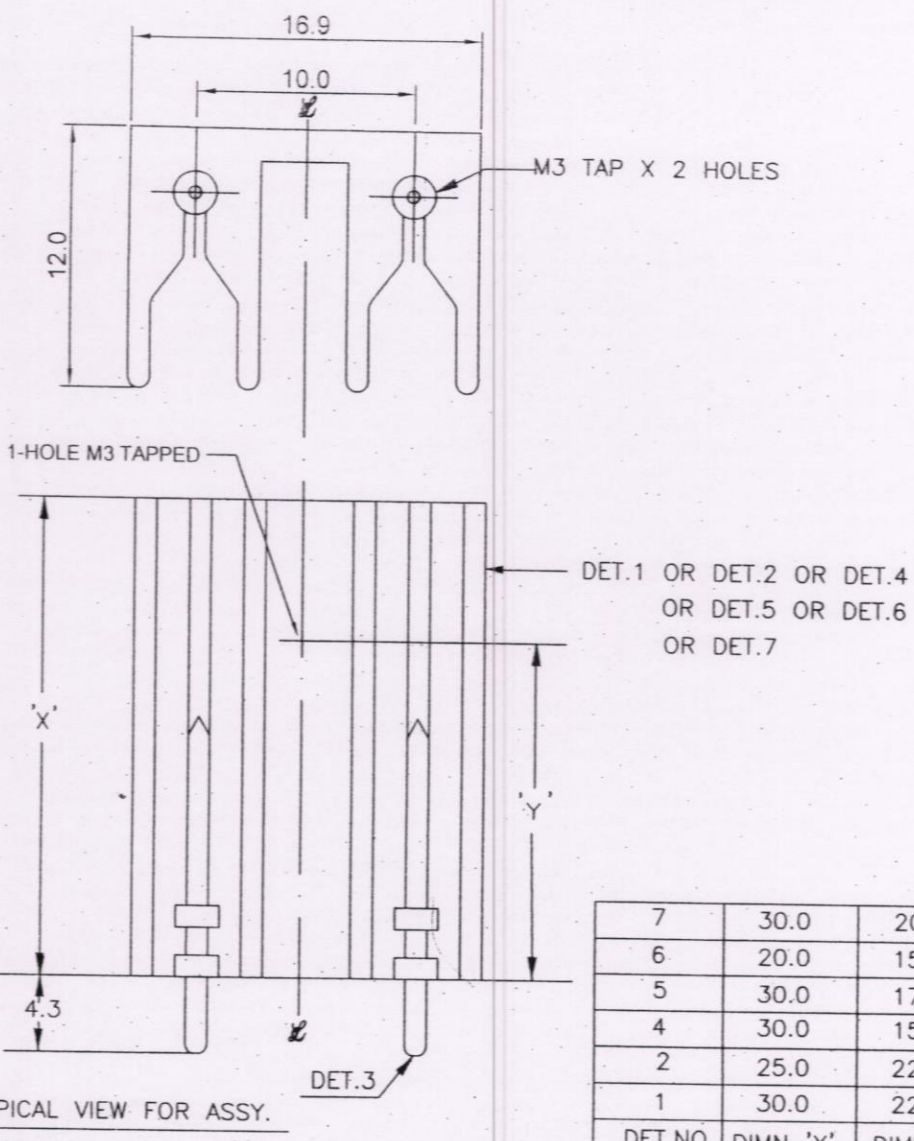
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DTC660214	



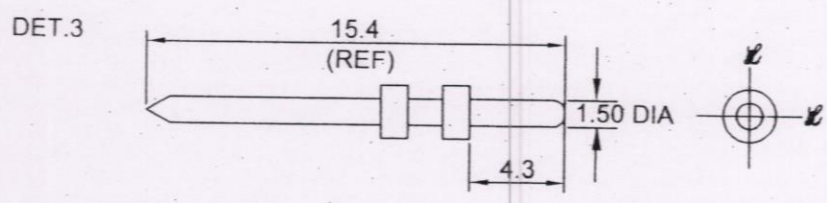
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CODE.	DESCRIPTION.	MATL.	SPEC.	FIN.	SPEC.	SHEET :- 2 OF 2
DTC 660214/7	HEAT SINK	ALUMINIUM	D2009	BLACK ANODISED	B59	



TYPICAL VIEW FOR ASSY.



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607,62ND CROSS
5TH BLOCK RAJAJINAGAR,
BANGALORE-560010

NOTE : -1. THE ITEM TO BE PROCURED AS AN ASSEMBLY

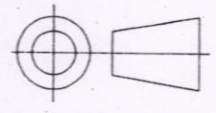
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REF:-MSU-ES
W.O.:- NTDD-170(52)
U.O.:-PCA5997/A1

STOCK LIST

HEATSINK ASSEMBLY

TRANSMISSION EQUIPMENT

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DTC660214

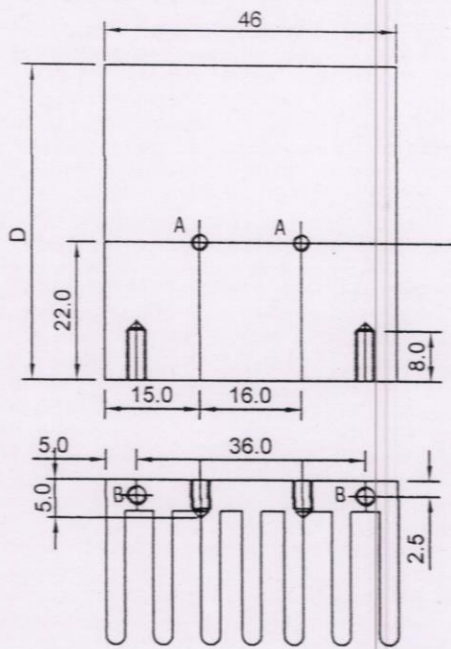


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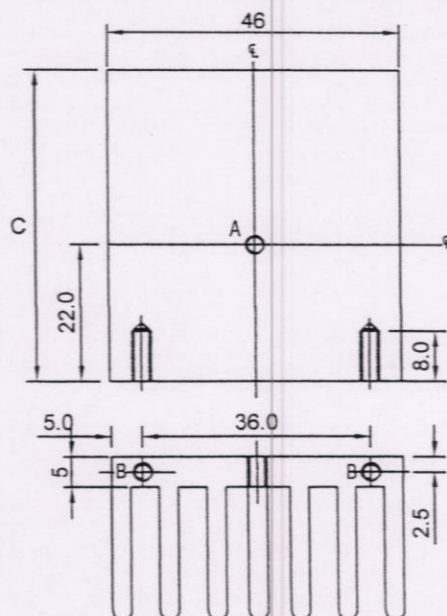
CODE DTC660249/ 1,4& 5	MATL. LENGTH TO BE CUT FROM DTC 660255/1	SPEC.	FIN. ANODIZED BLACK	SPEC. B639B	SHEET :-1
DTC660249/2,3,6&7	LENGTH TO BE CUT FROM DTC 660255/1		ANODIZED BLACK	B639B	3 25-11-11



DET-1,4&5 2-HOLES 'A' M2.5 TAPPED
2-HOLES 'B' M3 TAPPED

TABLE-A

5	35.0
4	40.0
1	50.0
DET.NO.	DIM'D'



1-HOLES 'A' M2.5 TAPPED
2-HOLES 'B' M3 TAPPED

DET-2, 3,6 & 7

TYPE: LS1 182 A

NOTES:- 1. ALL SHARP CORNERS ARE TO BE SALIGHTLY ROUNDED

BCOT: 91561(D) DET.3 ADDED & REDRAWN Msr	4	05-05-16	MSR
BCOT: 91600(D) DET.4 ADDED AND DIMENSIONS MENTIONED IN TABLE-A RRB KSS CNG	5	26-07-17	CNG
BCOT: 91608(D) DET.5 ADDED AND DIMENSIONS MENTIONED IN TABLE-A RRB KSS CNG	6	02-03-18	CNG
BCOT: 91646(D) DET.6 ADDED AND DIMENSIONS MENTIONED IN TABLE-B GS KSS CNG	7	03-01-2020	CNG
BCOT: 91675(D) DET.7 ADDED AND DIMENSIONS MENTIONED IN TABLE-B GS KSS CNG	8	21-09-2020	CNG
BCOT: 91677(D) DRG. REVISED & REDRAWN S. K. R.	9	12-10-2020	CNG

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DATE: 05/07/2021

TABLE-B

7	26.0
6	40.0
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TOLERANCES TO RULING NO 16
REF:- SCADA
W.O:- NSND-013 (152)
U.O:- PCA 6691/A1

HEAT SINK
TRANSMISSION EQUIPMENT

DRN. RRB	ENG.	KSS
TRD. /		
CHD.	APP.	CNG

DTC 660249

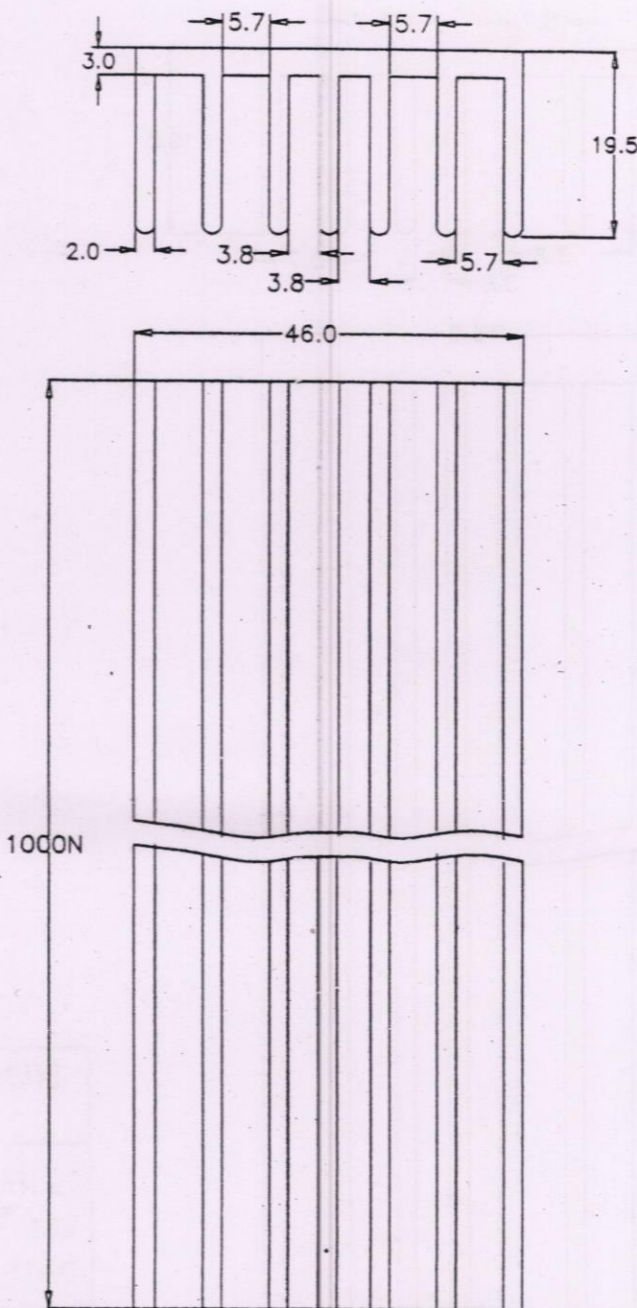


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BANGALORE-16.

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CODE DTC 660255/1	MATL. AL.ALLOY AS PURCHASED 6063 GRADE	SPEC.	FIN.	SPEC.	SHEET:- 1 OF 1
					ISSUE
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DATE 06/07/21

TYPE: LSI 182 A

ALL DIMENSION ARE IN "mm"

ALL DIMENSIONS
IN 'mm'

TOLERANCES TO
RULING NO 16

REF:-SCADA

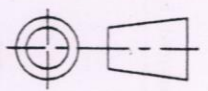
W.O:- NSND-013
(158)

U.O:- PCA 6692/A1

HEAT SINK

TRANSMISSION EQUIPMENT

DRN. <i>Nagendra</i>	ENG.	<i>[Signature]</i>
TRD. —	APP.	<i>[Signature]</i>
CHD.		



DTC660255



ITI LIMITED
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