

वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्
Council of Scientific & Industrial Research
राष्ट्रीय वांतरिक्ष प्रयोगशालाएं
National Aerospace Laboratories



CSIR - NAL Estd. 1959
ISO 9001 : 2015
Certified Organization

INVITATION FOR BIDS/NIT

Tender No. NAL/PUR/CSMST/087/20-Y

Dated: 23-Jul-2020

CSIR- National Aerospace Laboratories (NAL), Bengaluru, India is one of the premier laboratories under Council of Scientific and Industrial Research (CSIR), an autonomous body under Department of Scientific and Industrial Research, Government of India, New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organization. It is internationally known for its excellence in Scientific Research in Aerospace Engineering.

The Director, CSIR-NAL invites online quotation for procurement of the following item(s) for day to day research work.

Sl.No.	Description of Items	Unit	Quantity
1	Fabrication and supply of Master Model and GFRP Mould for Hansa Cowling top, Cowling bottom and Bottom Wing Fairing. Please refer Annexure for detailed specification.	Set	1

Single / Double Bid	Single
Bid Security (EMD) (in INR)	Bid Security Declaration should be enclosed with quotation
Performance Security	Nil

01. Tender Documents may be downloaded from Central Public Procurement Portal <https://www.etenders.gov.in>. Aspiring Bidders who have not enrolled/ registered in e- procurement should enroll/ register before participating through the website <https://www.etenders.gov.in>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.
02. Tenderers can access tender documents on the website (For searching in the NIC site <https://www.etenders.gov.in>, kindly go to Tender Search option, select tender type and select ' Council of Scientific and Industrial Research' in organization tab and select NAL-Bengaluru-CSIR in department type Thereafter, Click on "Search" button to view all CSIR-NAL, Bengaluru tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website <https://www.etenders.gov.in> as per the schedule given in the next page.
03. Either the Indian Agent on behalf of the Foreign principal or the Foreign principal can bid directly in a tender but not both. However, the offer of the Indian Agent should also accompany the authorization letter from their principal. To maintain sanctity of tendering system, one Indian Agent cannot represent two different Foreign principals in one tender.
04. Unsolicited / conditional / unsigned tenders (Quotations) **shall not** be considered. Quotations received after the due date and time **shall be summarily rejected**.
05. The Bidder shall comply the terms and conditions of the tender, failing which, the offer shall be liable for rejection.
06. The Director, CSIR- National Aerospace Laboratories., Bengaluru reserves the right to accept any or all the tenders either in part or in full or to split the order without assigning any reasons there for.


Raman Kumar
(Section Officer S&P)

पी बी सं. 1779, एचएएल एयरपोर्ट रोड , कोडिहल्ली, बेंगलुरु - 560 017, भारत,
P B No 1779, HAL Airport Road, Kodihalli, Bengaluru - 560 017, INDIA
फोन / Phone : (का./ Off) : +91 - 80 - 2508 6040 - 45, फैक्स / FAX : +91-80-2526 9611



<http://www.nal.res.in>



purchasek@nal.res.in



SCHEDULE CUM CRITICAL DATE SHEET

1	Name of Organization	CSIR-National Aerospace Laboratories, Bengaluru	
2	Tender Reference No	NAL/PUR/CSMST/087/20-Y dated: 23-Jul-2020	
3	Tender Type (Open/Limited/EOI/Auction/Single)	Open Tender	
4	Type/Form of Contract (Work / Supply / Auction / Service / Buy / Empanelment / Sell)	Supply	
5	No of Covers (One/Two/Three/Four)	One	
6	Tender Category (Services/Good/Works)	Goods	
7	Allow Resubmission (Only in online mode within scheduled period)	Yes	
8	Allow Withdrawal (Only in online mode within scheduled period)	Yes	
9	Allow Offline Submission	No	
10	Work Item Title	Fabrication and supply of Master Model and GFRP Mould for Hansa Cowling top, Cowling bottom and Bottom Wing Fairing.	
11	Work Description	Fabrication and supply of Master Model and GFRP Mould for Hansa Cowling top, Cowling bottom and Bottom Wing Fairing.	
12	Delivery Schedule	30 days from the date of purchase order	
13	Product Category (Civil Works / Electrical Works / Fleet Management / Computer Systems)	R & D Equipment	
14	Is Multi Currency Allowed	Yes	
15	a) Tender Publishing Date -	27-Jul-2020	1800 Hrs
	b) Document Download Start Date-	27-Jul-2020	1800 Hrs
	c) Bid Submission Start Date-	27-Jul-2020	1800 Hrs
	d) Bid Submission End Date-	10-Aug-2020	1000 Hrs
	e) Bid Opening Date-	11-Aug-2020	1100 Hrs
16	Bid Validity Days	90 days	
17	Address for communication	Stores and Purchase Officer CSIR-National Aerospace Laboratories, HAL Airport Road, Kodihalli, Bengaluru - 560017	
18	Inviting Officer	Director, CSIR-NAL	
19	Contact No	25086040, 25086041	
20	E-mail Address	purchasek@nal.res.in	
21	Detailed specification of item	Refer Invitation for bids / NIT	
22	Tender Terms & Conditions & Instruction for online bid submission	The prospective bidders are requested to refer to the Standard Tender Document available on NAL Internet (www.nal.res.in) under the icon Tender-Purchase before formulating and submitting their bids	

Scope of Work - Fabrication and supply of Hansa tools listed below:**1. Cowling Top**

Master Model - T3N-52200M

GFRP Mould - T3N-52200T

(with Fabrication and Integration of Reference pads, Locating bushes, locating pins as per drawing)

2. Cowling Bottom

Master Model - T3N-52190M

GFRP Mould - T3N-52190T

(with Fabrication and Integration of Block 1, Block 2, Block 3 LH, Block 3 RH, Block 4 RH, Block 4 LH, Reference pads, Locating bushes and Locating pins as per drawing)

3. Bottom Wing Fairing

Master Model - T3N-52230M

GFRP Mould - T3N-52230T

(with fabrication and integration of Reference pads as per drawing)

Sl. No. 1. Cowling Top**a. Master Model- T3N-52200M**

1. Follow wood router CNC machining method for fabrication of Master Model.
2. Engrave (width 0.5 mm and depth 0.5mm) boundary marking of part boundary and BL 00 A/C symmetry line on the master model as per the CAD model.

b. GFRP Mould- T3N-52200M

(with fabrication and integration of Reference pads, Locating bushes, Locating pins as per drawing)

1. The process adopted for mould/tool generation can be wet lay-up with Glass CSM of 300GSM, CSM of 600GSM, Woven mat of 300GSM of suitable number of layers to obtain the mould skin thickness of 8mm.
2. The mould LH layup to be done with flange on Top Master Model, in the order of Surface gel coat, Surface mat, GCSM of 300GSM, GCSM of 600GSM, Woven mat of 300GSM Surface mat. (use combination of CSM of 300GSM, 600GSM and Woven mat to maintain the skin thickness),
3. After curing mould LH, mould RH layup to be performed on Master model with respect to Mould LH as above order.



4. Use plywood of 12mm thick with one layer of Glass CSM on both sides, for backup transverse ribs and longitudinal ribs for moulds LH and RH, attach to the mould as specified in the drawing.
5. Connect mould LH and RH, before removing from the master model, use location bushes, location pins and fasteners as specified in the drawing.
6. Locate and fasten reference pads as per drawing.
7. Mark (width 0.5 mm and depth 0.5mm) part boundary and BL00 A/C symmetry line as specified in the drawing.

Sl. No. 2. Cowling Bottom

a. Master Model - T3N-52190M

1. Follow wood router CNC machining method for fabrication of Master Model.
2. Engrave (width 0.5 mm and depth 0.5mm) boundary marking of part boundary, location of the Blocks (1, 2, 3LH, 3RH, 4LH, 4RH) and BL 00 A/C symmetry line on the master model as per the CAD model.

b. GFRP Mould - T3N-52190T

(with fabrication and integration of Reference pads, Locating bushes, Locating pins, Block 1, Block 2, Block 3 LH, Block 3 RH, Block 4 RH, Block 4 LH, Special nuts)

1. The process adopted for mould/tool generation can be wet lay-up with Glass CSM of 300GSM, CSM of 600GSM, Woven mat of 300GSM of suitable number of layers to obtain the mould skin thickness of 8mm.
2. Material for fabrication of BLOCKS: REN SHAPE BM 5460 or PRO LAB65
3. The mould LH layup to be done with flange on Top Master Model, in the order of Surface gel coat, Surface mat, GCSM of 300GSM, GCSM of 600GSM, Woven mat of 300GSM Surface mat. (use combination of CSM of 300GSM, 600GSM and Woven mat to maintain the skin thickness),
4. After curing mould LH, mould RH layup to be performed on Master model with respect to Mould LH as above order.
5. Use plywood of 12mm thick with one layer of Glass CSM on both sides, for backup transverse ribs and longitudinal ribs for moulds LH and RH, attach to the mould as specified in the drawing.
6. Insert location bushes as specified in the drawing (to be fabricate as per the drawing)
7. Connect LH and RH moulds, before removing from the master model, use location bushes, location pins and fasteners as specified in the drawing.



8. Locate and fasten the Reference pads as per drawing.
9. Mark/ Engrave (width 0.5 mm and depth 0.5mm) the location of the Blocks in the Mould to attach the blocks, part boundary and BL00 A/C symmetry line as specified in the drawing.
10. Locate and fasten the blocks inside the mould with as specified suitable special nuts (to be fabricated as per drawing) and bolts, as positional tolerance specified in the drawing.

Sl. No. 3. Bottom Wing Fairing

a. Master Model - T3N-52230M

1. Follow wood router CNC machining method for fabrication of Master Model.
2. Engrave (width 0.5 mm and depth 0.5mm) boundary marking of part boundary on the master model as per the CAD model.

b. GFRP Mould - T3N-52230T

(with fabrication and integration of Reference pads as per drawing)

1. The process adopted for mould generation can be wet lay-up with Glass CSM of 300GSM, CSM of 600GSM, Woven mat of 300GSM of suitable number of layers to obtain the mould skin thickness of 8mm.
2. The mould layup to be done with flange on Master Model, in the order of Surface gel coat, Surface mat, GCSM of 300GSM, GCSM of 600GSM, Woven mat of 300GSM Surface mat. (use combination of CSM of 300GSM, 600GSM and Woven mat to maintain the skin thickness).
3. Use plywood of 12mm thick with one layer of Glass CSM on both sides, for backup transverse ribs and longitudinal ribs for moulds, attach to the mould as specified in the drawing.
4. Fabricate, locate and fasten Reference pads as per drawing.

General instruction:

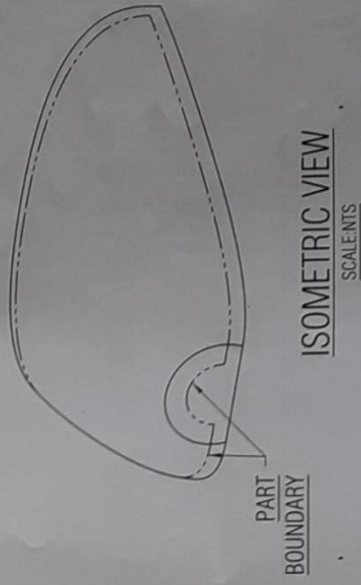
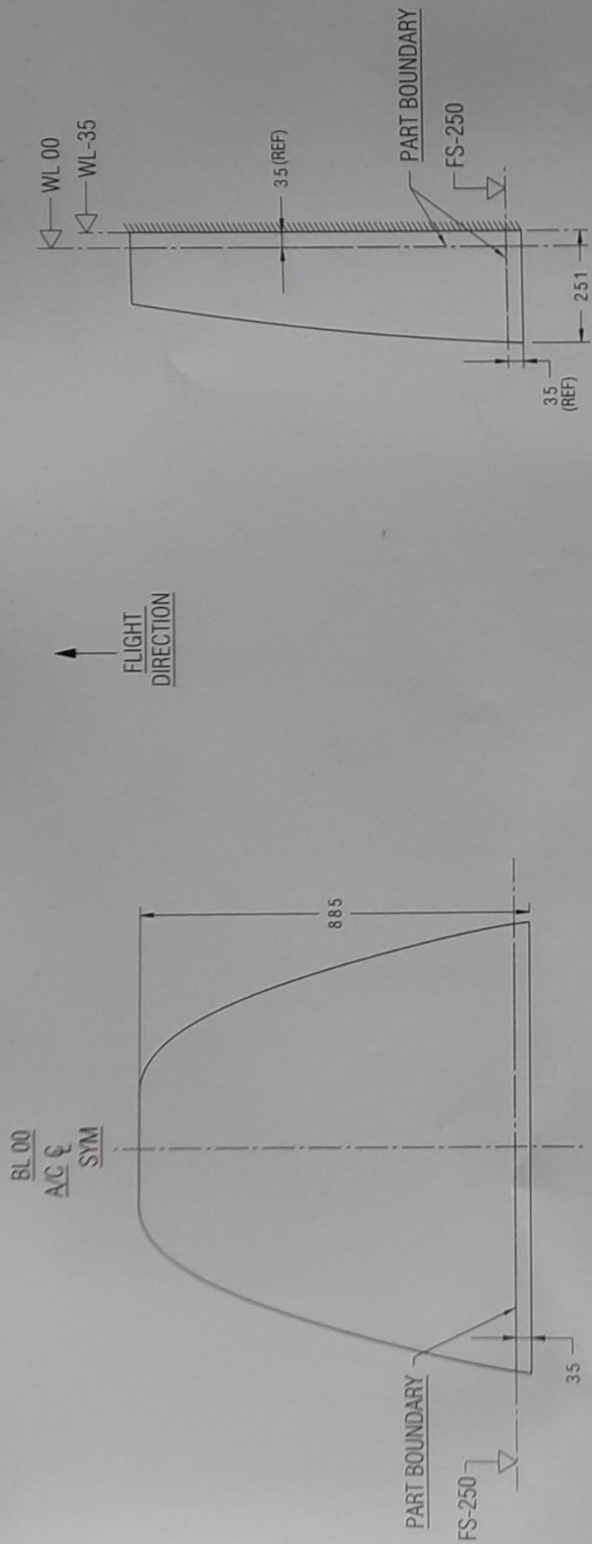
1. The actual CAD model will be provided to the selected/qualified vendor only. (for CNC machining)
2. Master model material: Sal wood
3. Follow wood router CNC machining method for fabrication of Master Model.
4. The drawing provided along with the RFQ is not a final drawing, it is only for quote/estimation.
5. Bottom supporting base plate/frame to be provided for easy handling of the Master model for handling in the work place, transportation and for storage.
6. The reference flanges must be as per the drawing for vacuum bagging activity in the Moulds.
7. General Dimensional tolerance on tool/Mould is ± 1 mm/m, surface waviness ± 0.25 mm (as per Hansa tolerance document)
8. The resin system for fabrication of mould is LY556+HY951

Note:

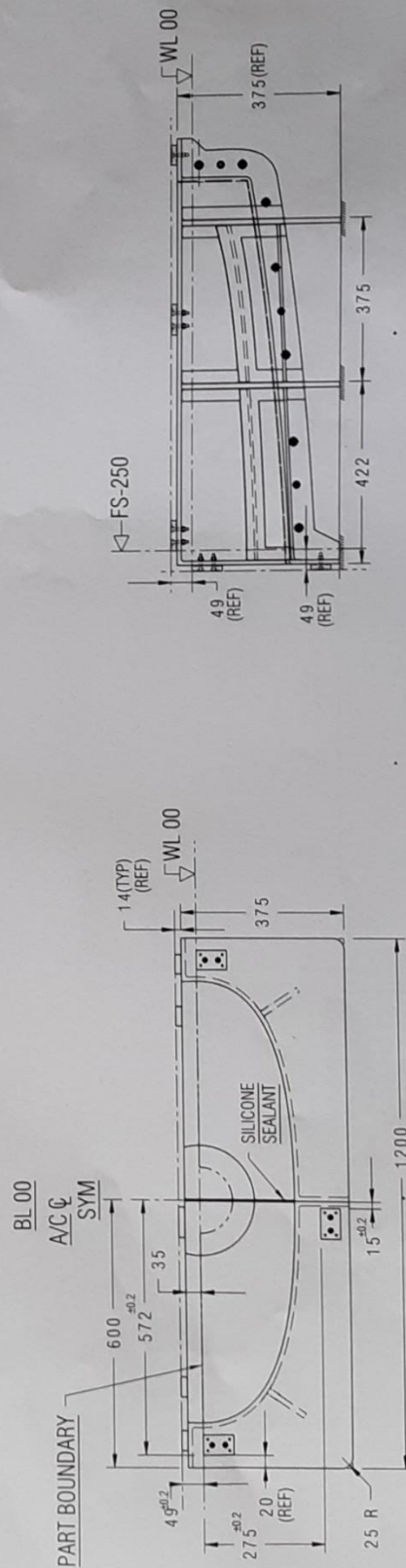
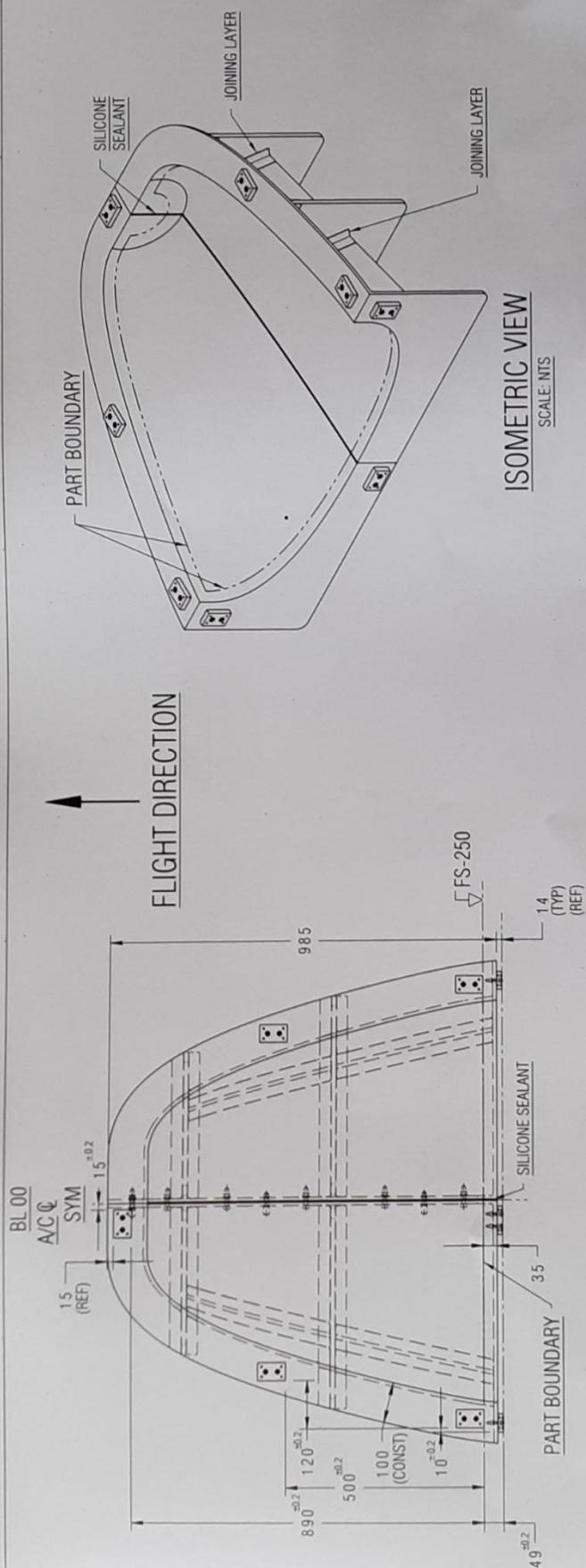
1. After fabrication of the Master Model, vendor must call CSIR-NAL for inspection and take clearance for fabrication of the respective mould.
2. Delivery to NAL Stores, Kodihalli, Bangalore - 560017.

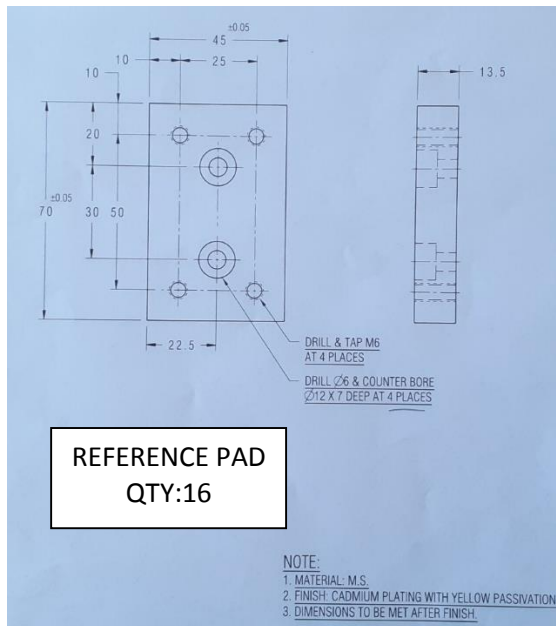
Acceptance Test Procedure (ATP)

1. Master Model dimensional check & surface waviness / smoothness check
2. Mould dimensional check & surface waviness / smoothness check



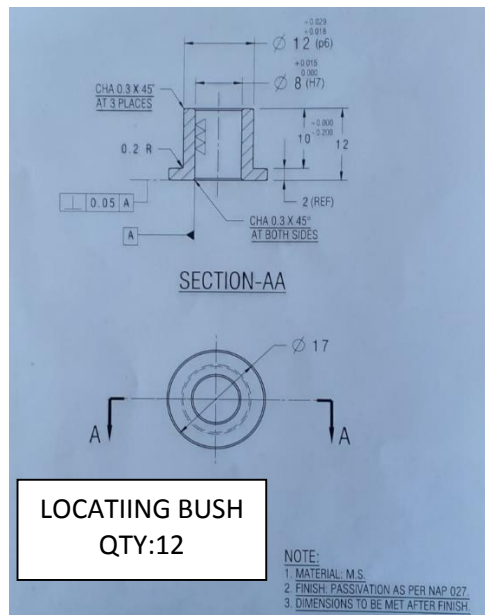
PROJECT: HANSA NG	TITLE: COWLING TOP MASTER MODEL	NUMBER: T3N-52200M	SCALE: NTS DATE: 23/06/2020
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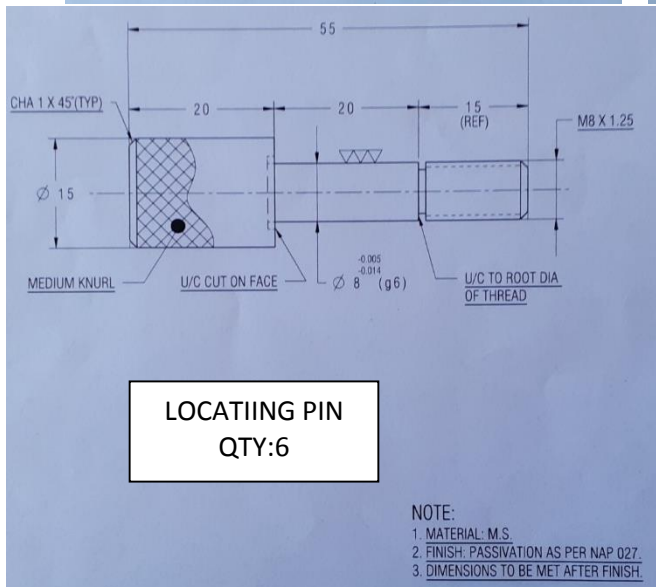
REFERENCE PAD
QTY:16

NOTE:
1. MATERIAL: M.S.
2. FINISH: CADMIUM PLATING WITH YELLOW PASSIVATION
3. DIMENSIONS TO BE MET AFTER FINISH.



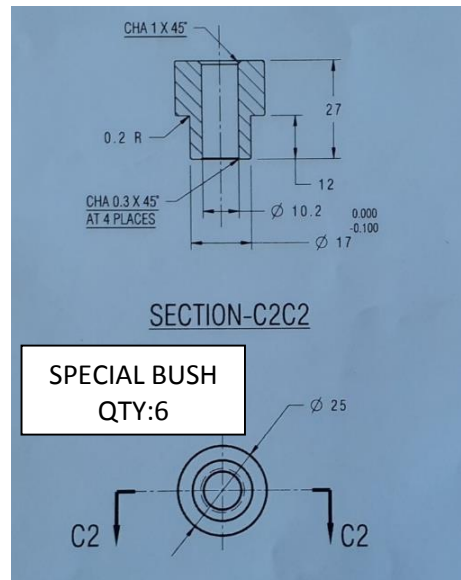
LOCATING BUSH
QTY:12

NOTE:
1. MATERIAL: M.S.
2. FINISH: PASSIVATION AS PER NAP 027.
3. DIMENSIONS TO BE MET AFTER FINISH.

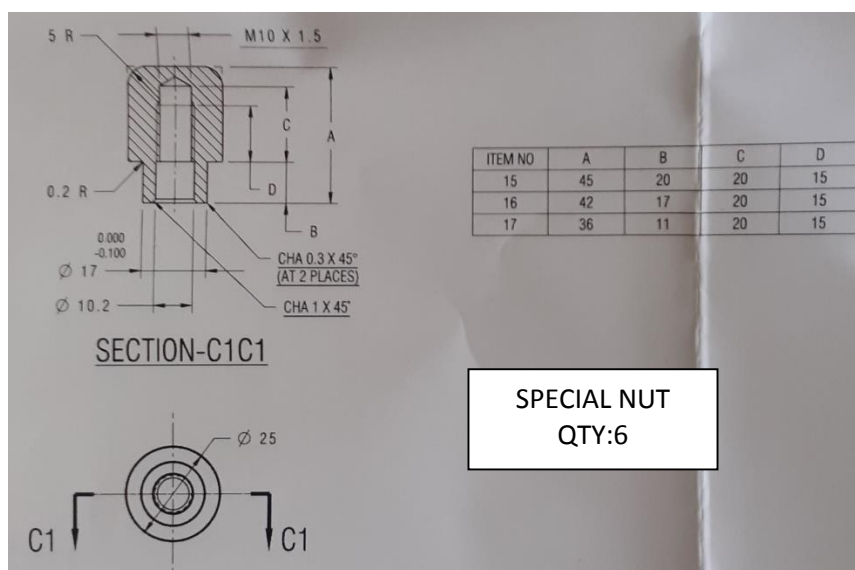


LOCATING PIN
QTY:6

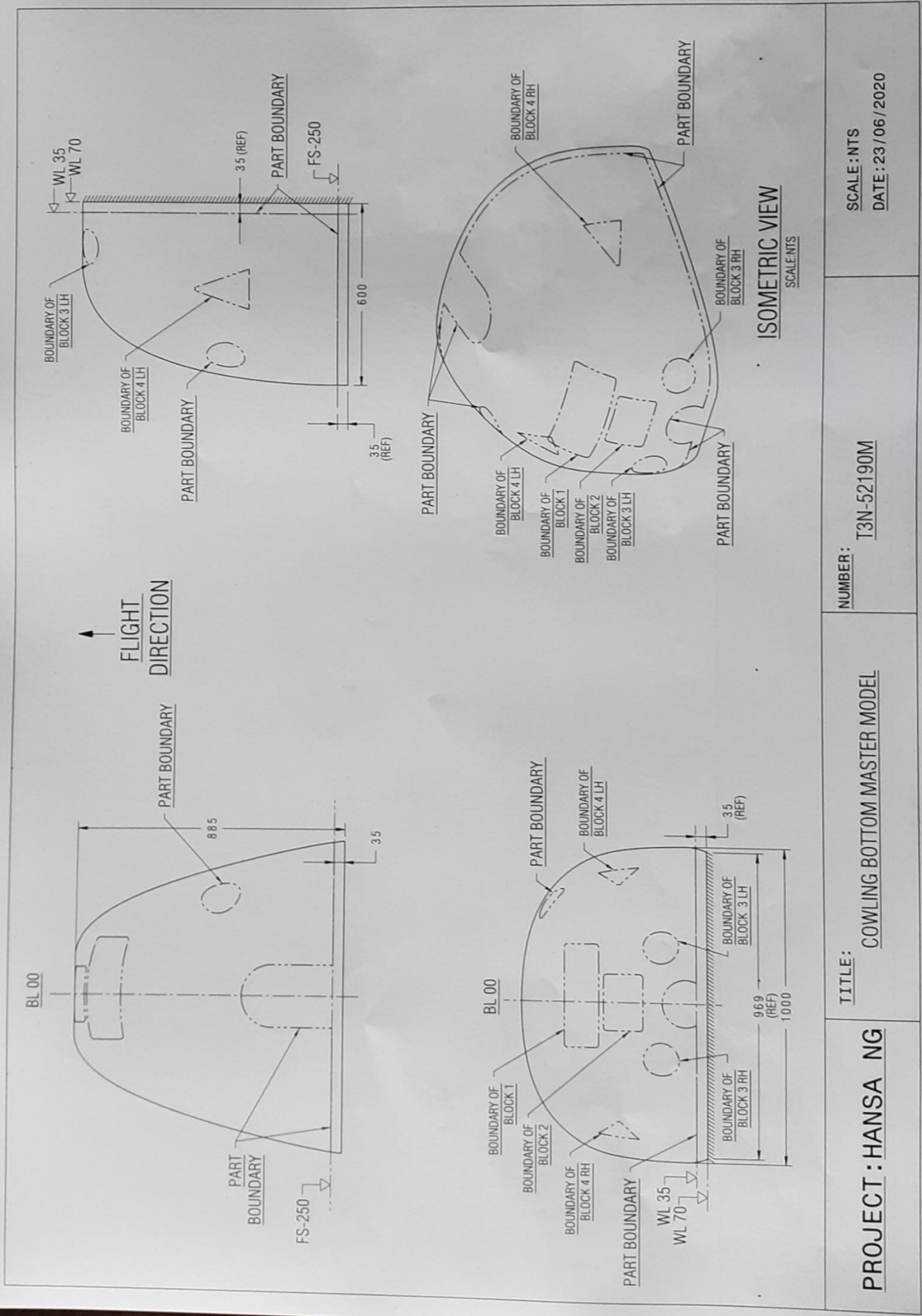
NOTE:
1. MATERIAL: M.S.
2. FINISH: PASSIVATION AS PER NAP 027.
3. DIMENSIONS TO BE MET AFTER FINISH.

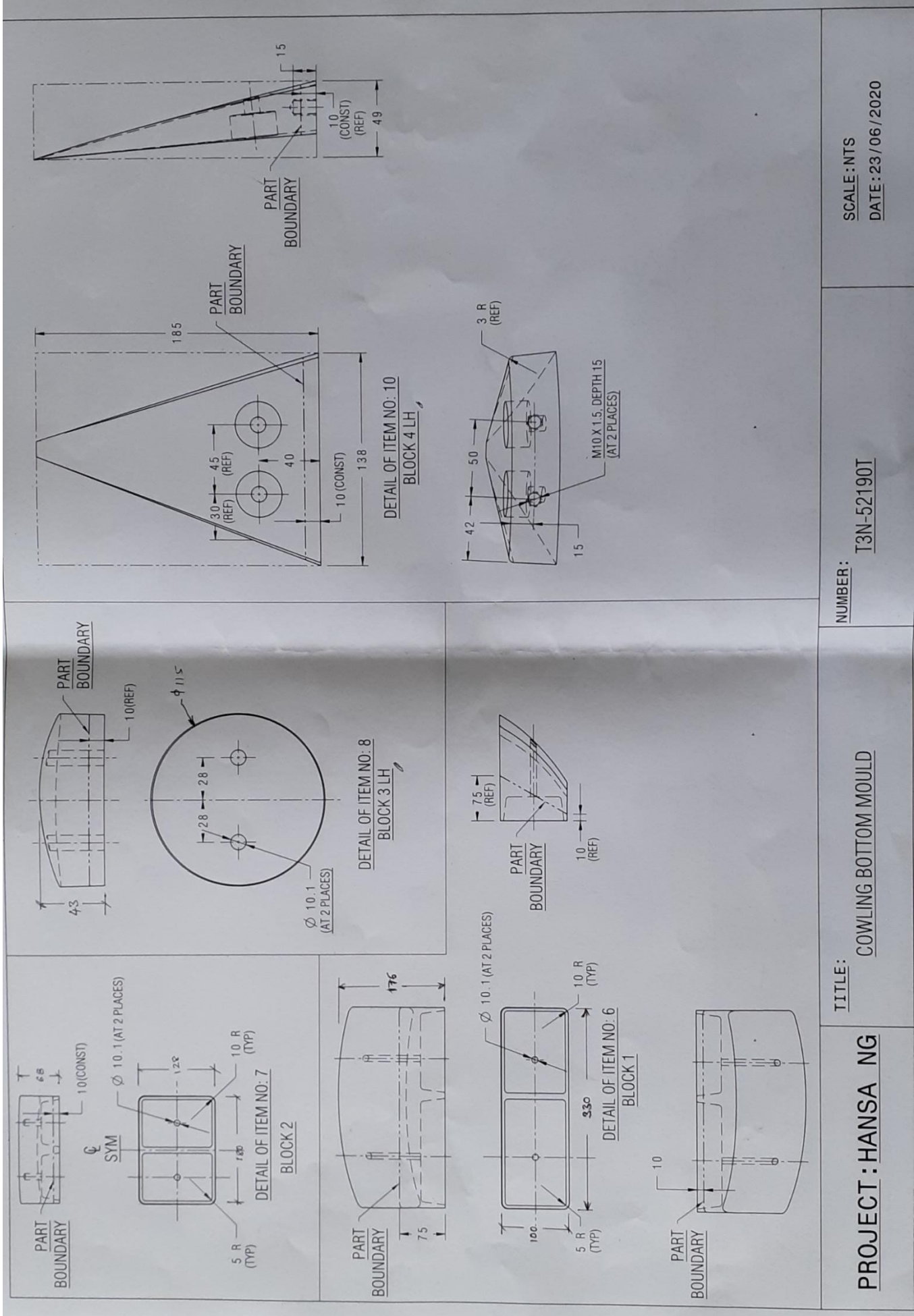


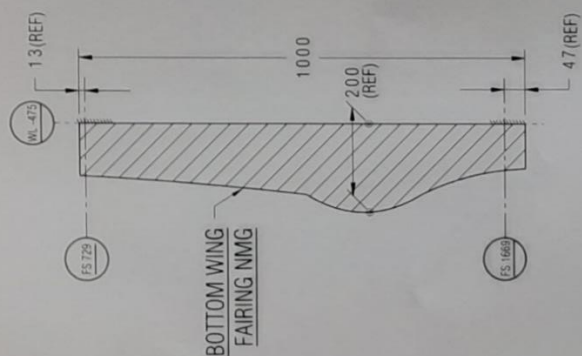
SPECIAL BUSH
QTY:6



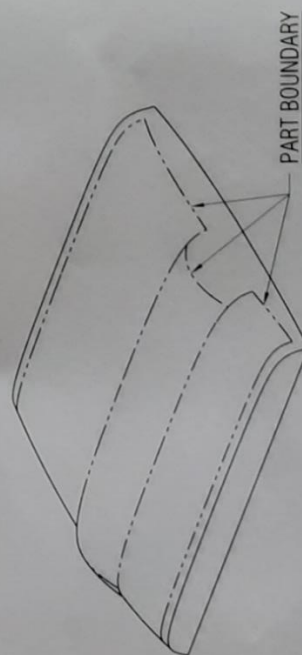
SPECIAL NUT
QTY:6





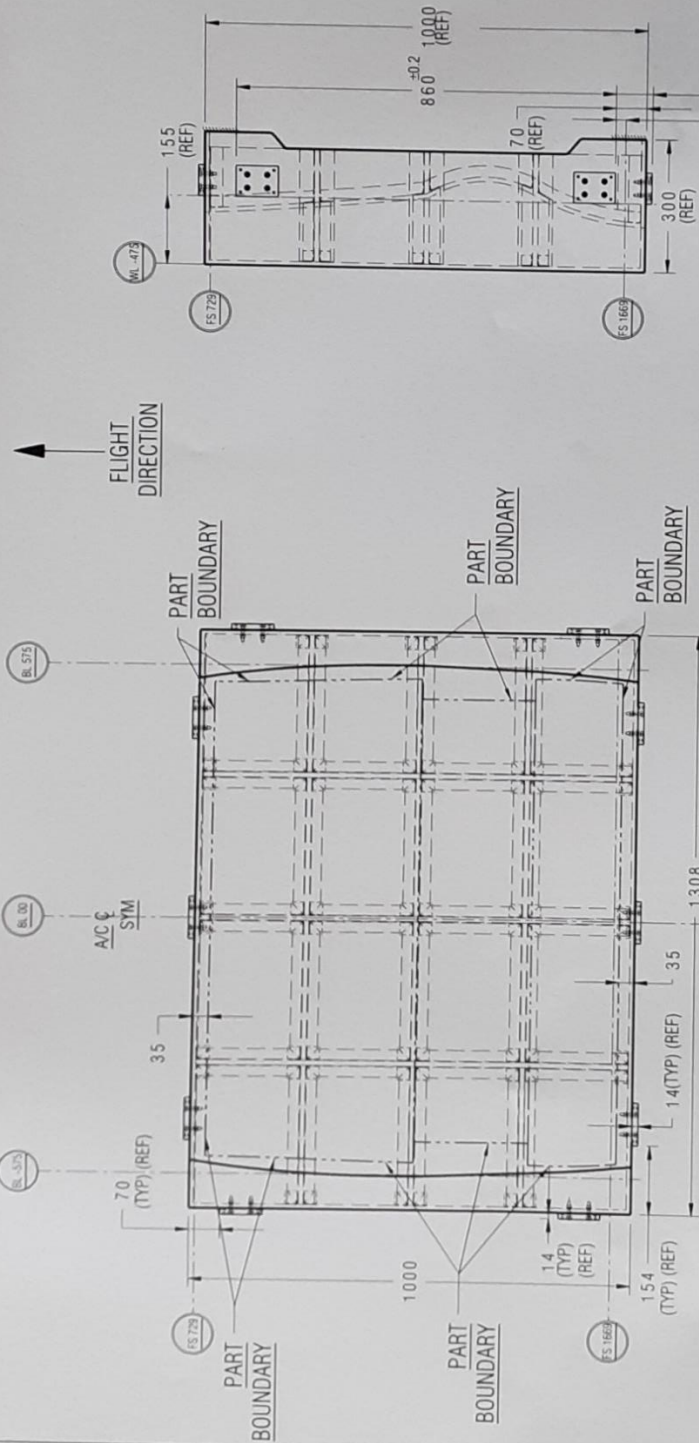


SECTION-AA

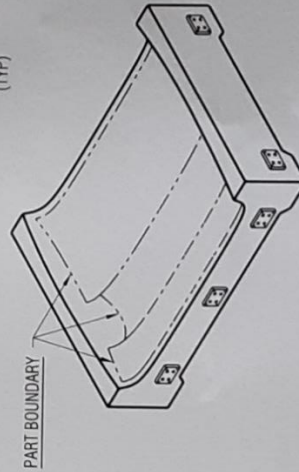


ISOMETRIC VIEW
SCALE:NTS

PROJECT : HANSA NG	TITLE : BOTTOM WING FAIRING MASTER MODEL	NUMBER : T3N-52230M	SCALE : NTS DATE : 23 / 06 / 2020
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REFERENCE PAD
QTY:10



ISOMETRIC VIEW
SCALE:NTS

PROJECT : HANSA NG	TITLE: BOTTOM WING FAIRING MOULD	NUMBER: T3N-52230T	SCALE: NTS DATE: 23/06/2020
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Tender No.:

BID-SECURING DECLARATION FORM

Date: _____

Bid No. _____

To (insert complete name and address of the purchaser)

I/We. The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

(a)	have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or
(b)	having been notified of the acceptance of our Bid by the purchaser during the period of bid validity
	(i) fail or refuse to execute the contract, if required, or
	(ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown)
in the capacity of (insert legal capacity of person signing the Bid Securing Declaration).

Name: (insert complete name of person signing the Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of : (insert complete name of Bidder)

Dated on _____ day of _____ (insert date of signing)

Corporate Seal (where appropriate)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)