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**Council of Scientific and Industrial Research
NATIONAL AEROSPACE LABORATORIES**

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Date: 08-Aug-2024

CORRIGENDUM/ADDENDUM

Tender No. NAL/PUR/NT/002/24

Tender ID: 2024_CSIR_200139_1

In continuation of CSIR-National Aerospace Laboratories for “Design, Fabrication, Testing and Supply of Flexible Nozzle (FN) Hydraulic Cylinder and accessories.”, The Pre-Bid Proceedings MOM, Drawings are as attached.

All Other clauses of the bidding document remain unchanged.

**Sd-
PPS/In-Charge(S&P)
For and on behalf of CSIR-NAL**

National Aerospace Laboratories

Bengaluru – 560037

Pre-Bid Minutes of Meeting (AMENDED)

Date: 18-07-2024
08-08

Venue: NTAF conference Hall

Agenda: Pre-bid meeting towards procurement of Design, Fabrication, Testing and Supply of Intermediate Flanged, Cast Iron Piston Ring Hydraulic cylinder with Accessories

Following T&PC and TSC members were present for the discussion & their comments are tabulated below

Chachin Vishal CV	Indentor
Dr. Ramesh Rajkumar	Project Leader
Dr. Gireesh Y	TSC – Chairman
Anand Rajeshwar Rao	TSC – Member
Bipin Kishore Bhengra	TSC – External Member
Kiran R	TSC – Member
Sathyamurthy K	TSC – Member
Dr. Somendu Jana	T&PC – Alt. Chairman
Dr. Ramesh Kumar M	T&PC – Chairman
Shoba C	Purchase

Tender ID: 2024_CSIR_200139

Tender No.: NAL/PUR/NT/002/2024

Item Description: Design, Fabrication, Testing and Supply of Intermediate Flanged, Cast Iron Piston Ring Hydraulic cylinder with Accessories

Sl. No	Queries/ Clarifications Sought	Clarification/Amendment
1.	Dimensions provided in Hydraulic Cylinder drawing A-0333-R1 are not clear	Clear drawing is attached

		Note: Revised drawing A-0333-R2 supersedes A-0333-R1, and shall be used for all further references
2.	Rod diameters are not in-line with SAE or NFPA standards	Rod diameters are to be maintained as per dimensions given in A-0333-R2. However, the vendor shall cross verify the dimension provided satisfies the design requirement.
3.	Piston ring – Material Guide line	Chapter 4, Clause 4.3, Table 1, B-2 modified as follows “Piston Ring – Low alloy fine grain Cast Iron of Split ring double seal design (without any backing ring or coating)
4.	Process that is to be adopted for generating threads in any component of hydraulic cylinder	Chapter 4, Clause 4.4.1.3 (e) modified as follows All threads of hydraulic cylinder shall be generated by thread forming process and shall be ensured with standard Go and No Go gauges, details of same are to be provided in inspection report
5.	Hydraulic oil temperature during Test	Chapter 4, Clause 4.5.2.2 (C) modified as follows “Fluid temperature for proof pressure & Static friction characteristics shall be nominal

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		working temperature. The temperature range for Internal leakage test shall be 45 deg. C \pm 5 deg. C and for Endurance test shall be 60 deg. C \pm 10 deg. C”
6.	Rod seal Maintainability	Rod seals shall be of modular design so that the seals can be replaced without dismantling the entire cylinder
7.	Breakaway pressure limit to be clarified	Frictional breakaway differential shall not exceed 30 psig (i.e. difference between rod and cap side frictional breakaway should be less than 30 psig)
8.	No load operation	Chapter 4, Clause 4.5.2.2 (j) modified as follows “All the hydraulic cylinders are to be subject to full-stroke operation under the no-load condition as per standards. The hydraulic cylinder is to operate stably without any abnormal phenomena such as vibration, creeping etc., piston rod is to be free from oil-ring-shaped traces at 2,000 psig for a minimum of 25 cycles.”

<p>9.</p>	<p>Hydraulic cylinder mounting & Loads during Endurance test</p>	<p>Chapter 4, Clause 4.5.2.2 (k) modified as follows</p> <ul style="list-style-type: none"> • Mounting orientation – Vertical • Stroke – Full stroke • Mounting plan – Flange mounted, Flange details as per drawing A 148 • Speed – Speed of operation shall be between 12 to 20 sec per stroke. <p>“Endurance test is to be carried out on a separate cylinder (prototype: J.st 13, Ref. A-0333-R2) in line with relevant standard before initializing actual production. If cylinder failure is seen before total number of expected cycles (50,000 Cycles), then the failed component is to be redesigned and test is to be repeated again. Endurance test shall be carried out at two different load conditions</p> <p><u>Load Condition case 1:</u> 25,000 cycles against a load of 3,000 lbs. At the end of each stroke hydraulic cylinder shall be pressurised to 2,000 psig</p>
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		<p>Load condition case 2: 25,000 cycles against 90% of design load. At the end of each stroke test hydraulic cylinder shall be pressurised to 2,000 psig. And also at the end of retracted stroke hydraulic cylinder shall be evaluated for drift for duration of 10sec. Post successful completion of endurance test the hydraulic cylinder is to be inspected for deformations, damages & shall be subjected to NDT, inspection reports shall be provided to TPI for approval & NAL for review”</p>
10.	Hydraulic oil temperature during High temperature Test & No of cycles	<p>Temperature Range: 75 to 80 deg. C Chapter 4, Clause 4.5.2.2 (I) modified as follows “This test is to be carried out on prototype cylinder, when the temperature of hydraulic oil at hydraulic cylinder inlet is 75 to 80 deg. C, the hydraulic cylinder is to work continuously without external leakage in each of faying face within 10 min of operation at high temperature under load and no-load</p>



		condition for a minimum of 25 cycles”
11.	Hydraulic oil temperature during Low temperature Test & No of cycles	Temperature Range: 20 deg. C, ± 5 deg. C Chapter 4, Clause 4.5.2.2 (m) modified as follows “This test is to be carried out on the prototype cylinder, when the temperature of the hydraulic oil at the hydraulic cylinder inlet is $20^{\circ}\text{C} \pm 5$ deg. C. The hydraulic cylinder is to run normally without any abnormal phenomena such as seizure, vibration or creeping within 10 min operation at low temperature for a minimum of 25 cycles”
12.	Site Acceptance test – Scope	Entire Site Acceptance test is in the scope of the vendor, i.e. vendor shall plan for all the subsystem requirement for carrying out the tests
13.	Hydraulic cylinder oil grade details for shipping	Cylinder shall be filled with Indian Oil servosystem 32, NAS 7 or better
14.	Disclosure of Part level drawings and inspection report	Drawings and Inspection reports at part level shall be preferably submitted

15.	Scope of vendor during Installation and Commissioning	Installation and Commissioning activity not in vendor scope
16.	Third Party - Design clearance	Shall be complied as per tender document
17.	Tentative Delivery schedule	<p>Chapter 4, Clause 4.11 modified as follows</p> <p>“The total time for completing the entire scope of work and supply including procurement, fabrication, inspection, assembly, testing and supply at site is nine months from the date of P.O. Tentative breakup of schedule is as follows</p> <ul style="list-style-type: none"> • T_0: P.O. acceptance • $T_0 + 1$ month: Design clearance for Endurance test cylinder and Endurance test setup & Plan • $T_1 = T_0 + 3$ months: Successful demonstration of Endurance test • $T_1 + 6$ months: Completion of entire scope of work and final delivery
18.	Painting - DFT	Vendor shall maintain DFT between 140 to 180 microns

19.	NDT on weld joints	To be complied as per chapter 4 of tender document
20.	Prior experience	<i>Chapter 6, Criteria-1 (c) Stands cancelled. Shh</i>
21.	Prior experience	Chapter 6, Criteria-1, (b) modified as follows “The Bidder’ should have designed, manufactured and supplied at least 500 number(s) (herein after referred as ‘The Qualifying Quantity’) of ‘The Product’, in the last five years ending on ‘The Relevant Date’
22.	Payment Terms	Shall be Clarified by Purchase NAL


Dr. Ramesh Rajkumar
 Project Leader


Chachin Vishal CV
 Indentor

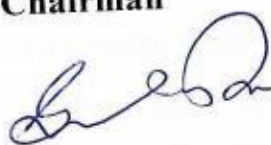

Anand Rajeshwar Rao
 TSC Member



Sathyamurthy K
 TSC Member


Bipin Kishore Bhengra
 TSC Member


Kiran R
 TSC Member


Dr. Gireesh Y
 TSC Chairman


Dr Somendu Jana
 TPC Alt.Chairman/Member


Dr. M. Ramesh Kumar
 Chairman TPC
 05/01/24

ANNEXURE II
PART B

CSIR – NATIONAL AEROSPACE LABORATORIES
BENGALURU


COMMERCIAL QUERIES & CLARIFICATION

Tender ID: 2024_CSIR_200139_1

Tender No.: NAL/PUR/NT/002/2024

Item Description: Procurement of Hydraulic Cylinder with Accessories

Sl. No.	Query / Clarification Sought	Clarification / Amendment
01	Payment Terms: The firms who attended the Pre-Bid Conference requested to consider for Milestone payments	Releasing payment on Milestone basis shall be decided at the time of award of Contract
02	The firms who attended the Pre-Bid Conference requested to extend the due date for submission of bids	The due date for submission of bids is extended up to 22 August 2024, 10. 00 a.m. The Technical Bids will be opened on 23 August 2024


Controller of Finance & Accounts


Controller of Stores & Purchase

Tender Id: 2024_CSIR_200139

**PROCEEDINGS OF THE PRE-BID CONFERENCE HELD ON 18th JULY 2024 TOWARDS
DESIGN, FABRICATION, TESTING AND SUPPLY OF INTERMEDIATE FLANGED CAST
IRON PISTON TING HYDRAULIC CYLINDER WITH ACCESSORIES**

The Pre-bid Conference was held and the following T&PC members attended the meeting:-

Sl. No.	Name and Designation	Role
1.	Chachin Vishal CV	President,
2.	Dr. Gineesh	TSC - Chairman
3.	Dipin Kishore Sherga	TSC - member
4.	Anand R Rao	TSC - member
5.	Kiran R	TSC - member
6.	Satyamurthy K	TSC - Ext. member
7.	Somendra Tara Dr.	T&PC - Alt. Chairman
8.	Ramesh Kumar M Dr.	T&PC - Chairman
9.	Shoba C	Purchase.

The list of Prospective bidders who attended the Pre-bid Conference is as per **Annexure-I**.

At the Outset, the Chairman welcomed all the Members and the representatives of the Bidders and briefed in general the scope of the Project. The Indenting Officer read out the clarification sought by the bidders and the replies there to is as detailed in **Annexure-II (Part A: Technical Clarification and Part B: Commercial, if any)**.

The representatives present were satisfied with the replies given and it was informed that the corrections/ additions/ clarifications given, as discussed during the Pre-Bid Conference would be hosted on the CPP portal/ website of CSIR-NAL and all prospective bidders are required to take cognizance of the proceedings of the Pre-Bid Conference before formulating and submitting their bids, as stipulated in bidding Documents.

The meeting ended with a vote of thanks to the Chair.


CoSP
Convener-TPC


CoFA
Member-Finance & Accounts



AC
Member-Admin


Member


18/7/24
Member


Member


IO/Convener(TSC)


Chairman 05/8

NATIONAL AEROSPACE LABORATORIES
BENGALURU - 560 037

Annexure-I

Pre-bid conference attendance sheet - T&PC members

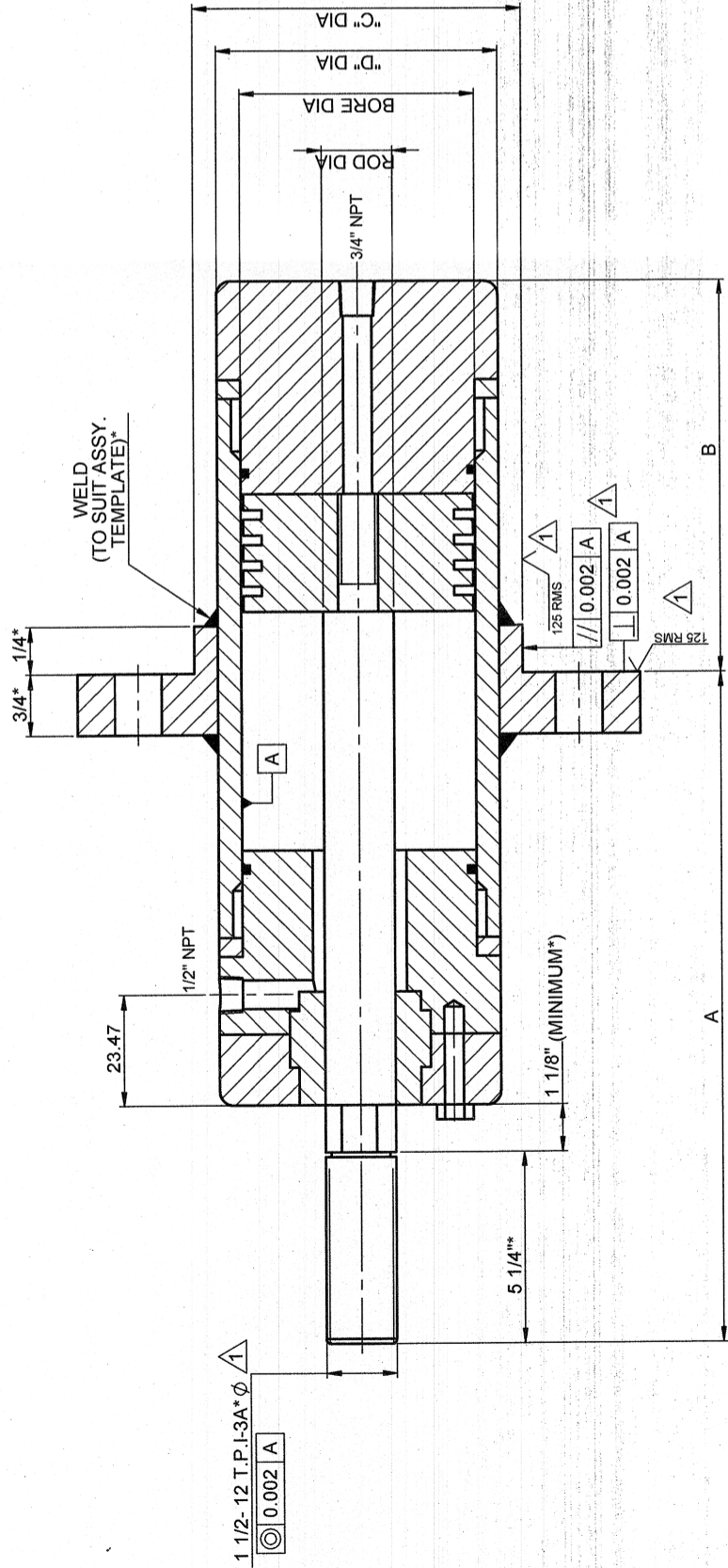
Tender ID: 2024-CSIR-200139-1
Tender No.: NAL/BUR/WT/002/2024 Date: 18-7-24
Venue: NAF Conference Hall

Time: 10:30 Am.

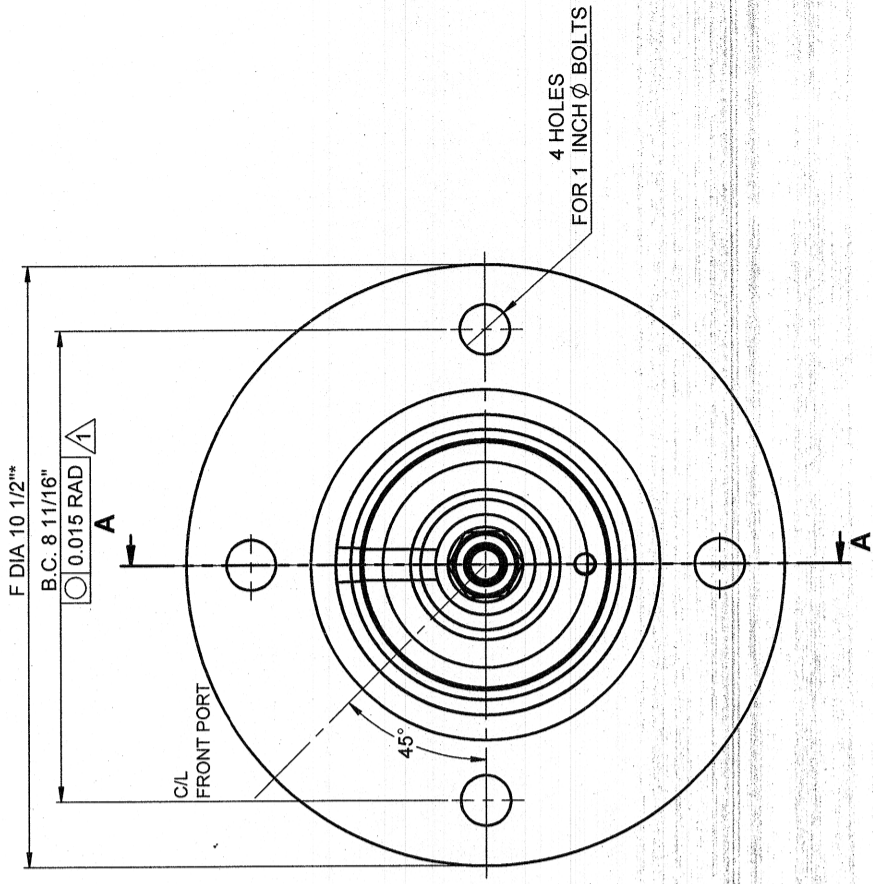
PRE-BID CONFERENCE TOWARDS DESIGN, FABRICATION, TESTING AND SUPPLY OF
INTERMEDIATE FLANGED CAST IRON PISTON TING HYDRAULIC CYLINDER WITH
ACCESSORIES

Sl. No.	Name	Role	Signature
1.	Charchin Vishal CV	President	Charchin
2.	Dr. Gireesh	TSC - Chairman	Gireesh
3.	Bipin Kishore Bhengra	TSC - member	
4.	Anand Rajeshwar Rao	TSC - member	
5.	Kiran R	TSC - member	Kiran R
6.	Satyamkanti K. D	TSC - member	Satyamkanti
7.	Soumendu Jana Dr.	Alt-Chairman	Soumendu 18/07/24
8.	Ramesh Kumar M Dr.	T&PC Chairman	
9.	Shoba C	Purchase	Shoba

02
REV: 03
DRAWING NO: A-0333-V



SECTION A-A



VIEW A-A

JACK SATION	NO. REQ'D	BORE DIA.*	ROD DIA.*	STROKE REQ'D*	A	A+ STROKE*	B*	C*	D	B.C.*	PORT SIZE ROD END	PORT AT END CAP
3	2	4	1 - 3/4	5	21	26	5/8	6.999 / 6.998	5 - 1/4	8 - 11/16	1/2 NPT	3/4 NPT
5	2	4	"	11 - 1/4	24 - 5/8	35 - 7/8	3 - 1/4	"	"	"	"	"
7	2	4	"	19 - 1/2	29 - 7/8	49 - 3/8	6 - 1/4	"	"	"	"	"
9	2	4	"	27 - 3/4	33 - 1/4	61	11 - 1/8	"	"	"	"	"
10	2	4	"	29 - 1/4	32 - 3/4	62	13 - 1/8	"	"	"	"	"
11	2	4	"	32 - 1/4	32 - 1/8	64 - 3/8	16 - 3/4	"	"	"	"	"
12	2	4	"	33 - 1/4	31 - 5/8	64 - 7/8	18 - 1/4	"	"	"	"	"
1	2	5	1 - 3/4	2 - 1/2	10 - 7/8	13 - 3/8	10	"	6 - 1/4	8 - 11/16	"	"
2	2	5	"	3 - 1/2	19 - 1/8	22 - 5/8	2 - 3/4	"	"	"	"	"
4	2	5	"	7 - 3/4	18 - 7/8	26 - 5/8	7 - 1/4	"	"	"	"	"
6	2	5	"	15 - 1/4	24 - 1/2	39 - 3/4	9 - 1/8	"	"	"	"	"
8	2	5	"	23 - 3/4	30	53 - 3/4	12 - 1/8	"	"	"	"	"
13	2	5	"	33	31 - 1/8	64 - 1/8	20 - 1/4	"	"	"	"	"
14	2	5	"	30 - 1/2	27 - 3/4	58 - 1/4	21 - 1/3	"	"	"	"	"
15	2	5	"	23 - 1/4	28 - 7/8	52 - 1/8	12 - 3/4	"	"	"	"	"
16	2	5	"	16	26 - 1/4	42 - 1/4	8 - 1/8	"	"	"	"	"
17	2	5	"	8 - 1/2	12 - 1/2	21	14 - 3/8	"	"	"	"	"

REV. NO	ZONE	DESCRIPTION	CHECKED	APPROVED	DATE
2	C-5	DIMENSION VALUE IN COLUMN 'C' CHANGED			
1	B-2 F-2 B-6 D-6 E-8	NOTE: 2 & 3 ADDED GD & T ADDED DIMENSION ADDED GD & T ADDED GD & T ADDED			

ALL DIMENSIONS ARE INCHES.

NOTE:

1. WORKING PRESSUR : 2000 psig
PROOF PRESSURE : 3000 psig
END CUSHONING : NONE
TYPE : DOUBLE ACTING SINGLE ROD END
MOUNTING : INTERMEDIATE FLANG MOUNTING
2. THE * MARK DENOTES CONSTRAINED PARAMETERS.
3. REVISION 1 IS DONE WITH REFERENCE TO DRG M-0333, 20700, 20708

NTAF
National Aerospace Laboratories
NITAEKANTAN WIND TUNNEL CENTRE, BELUR, BANGALORE - 560 037.

DESIGNED: VASU BALLARY
DRAWN: PARTHIBAN M
CHECKED: CHACHIN
APPROVED: KIRAN R

PROJECT No. _____
SCALE: 1 : 1
DRAWING No. **A-0333**
REV. No. **02**

DIMENSION DATA FOR
HYDRAULIC JACKS FOR
INDIA WIND TUNNEL