

INSTITUTE FOR PLASMA RESEARCH

An Aided institute of department of Atomic Energy, Govt. of India)
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MINOR FABRICATION WORKS ENQUIRY

Office Copy

ENQUIRY NO :IPR/MFW/22-23/154

Date : 13-10-2022

Due Date : 09-11-2022 13:00 IST

Please send your offer in sealed envelope specifying Inquiry No, Date & Due Date, ALONG WITH your credentials for the following items:

Important Note:

Please note that e-mail quotations are not acceptable however you may send your queries (if any) to **kgotewal@ipr.res.in**

Please Ensure that your sealed quotation reaches this office not later than above mentioned due date and time.

Kindly go through the following document properly before Quoting which are available on the IPR web portal i.e., <http://www.ipr.res.in/documents/tenders.html/> attached here with.

1. Technical specification as enclosed.
2. Instruction to the bidders & terms and Condition (refer Form NO:**IPR-MFW-01-V1**)
3. Bidding format(refer Biddingformat MFW-Bid.pdf)

GST fro Goods and Services (IGST/CGST/SGST TAX BENEFITS): PLEASE REFER clause no:8 of Form No:**IPR-MFW-01-V1**

QUOTATION SHOULD BE ADDRESSED TO **KRISHAN KUMAR GOTEWAL** ONLY.

| Sr.No. | Description | Quantity | Rate |
|--------|--|----------|------|
| 1 | FABRICATION, ASSEMBLY AND SUPPLY OF COMPACT ROBOTIC SYSTEM (CRS) | 1 | No. |

Free Issue Material

| Sr.No. | Description | Quantity | Unit | Value |
|--------|-------------|----------|------|-----------|
| 1 | Motor | 3.00 | No. | 150000.00 |
| 2 | Encoder | 3.00 | No. | 13500.00 |

Note : Please quote with complete technical details (Technical Compliance sheet and product data sheet)

Encl:As per attachment

Sd/-
KRISHAN KUMAR GOTEWAL
Scientific Officer-F



SPECIFICATIONS DOCUMENT FOR FABRICATION, ASSEMBLY AND SUPPLY OF COMPACT ROBOTIC SYSTEM (CRS)

Signature and Stamp of Bidder with Date

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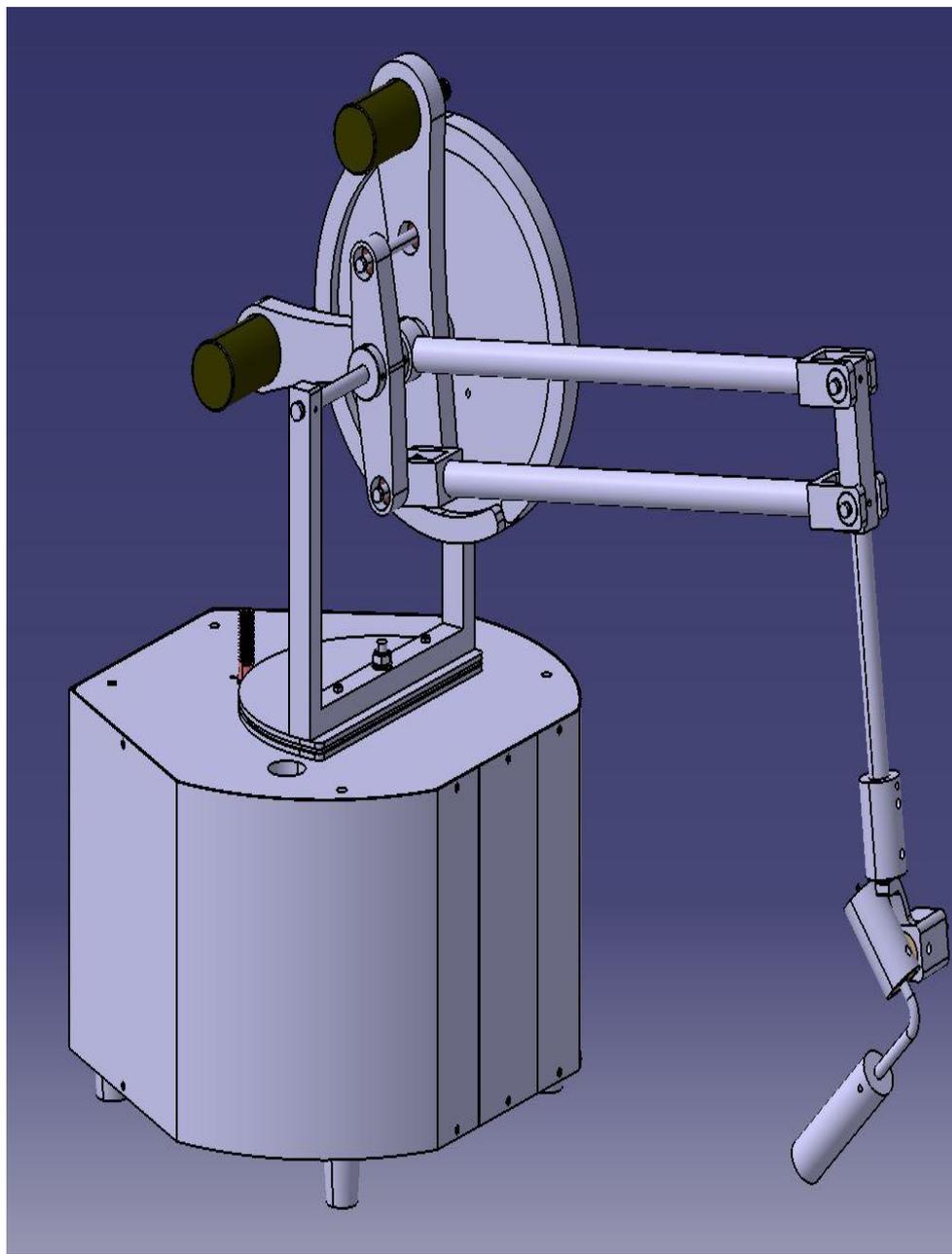
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Signature and Stamp of Bidder with Date

1.0 INTRODUCTION:

This tender document gives the specifications for supply, fabrication and assembly of, components and other mentioned sub-components as per the annexure for Compact Robotic System (CRS) with its support structure. The engineering CAD model of the CRS is as shown below for the purpose of introduction.

Fig.1: Assembled System



Note: Kindly refer to the drawings (annexure 1) and specifications annexure 2 for details of the components as well as the material of construction

SCOPE OF WORK

2.1 Scope of Work under the responsibility of the VENDOR/BIDDER

The scope of work for this tender document includes, but not limited to, the following activities:

| Sr. No. | Scope of Work |
|---------|--|
| 1. | Development of 3D CAD model along with fabrication drawings based on the engineering drawings supplied by IPR (in Annexure 1 of this tender) and seeking approval from IPR. |
| 2. | Vendor shall supply all necessary material test certificate from NABL accredited lab. |
| 3. | Vendor shall supply final bill of materials (BOM) for approval from IPR |
| 4. | The vendor shall be responsible for material and COTS procurement, high precision fabrication, testing and supply of the complete assembled system as per drawings (Annexure1) & specifications (Annexure2) attached in this tender. |
| 5. | Fabrication of all components in accordance with final drawings approved by IPR |
| 6. | Surface preparation, primer, spray painting and nickel-chrome/black oxide/equivalent coating of all components are in vendor scope. |
| 7. | Procurement and Supply of all integrated components, COTS and spares as per the BOM in Annexure 2. |
| 8. | Vendor may suggest any change required for ease of assembly and proper functioning of assembled system. Approval shall be taken from IPR for any deviation/change from provided specifications in drawings. |
| 9. | Any deviation from the specified material, dimensions and tolerances should be intimated to IPR for approval before proceeding with fabrication. |
| 10. | Design, development and manufacturing of tools, jigs, fixtures and other accessories required for manufacturing of components & assemblies and equipment required for FAT/SAT is in vendor scope. |
| 11. | Testing & Inspection of the materials, parts, components & sub-assembly at appropriate stages before the final assembly shall be done in presence of IPR representative. |
| 12. | All materials and components should be cleaned thoroughly before assembly to ensure the proper alignment. |

| | |
|-----|---|
| 13. | Vendor shall discuss the fabrication methodology, and shall share complete breakup of activities, facilities to be used and time schedule with IPR. Periodical review of work progress/status with IPR is mandatory. |
| 14. | Procurement of COTS items (SS wire, electrical cable, bearings and other mechanism components etc.) should be from original equipment manufacturer (OEM) or authorized agents/dealers. List of COTS items are in Annexure-2 and shall compliance with IS standards. |
| 15. | Factory acceptance tests (as per section 9.1 of this tender) shall be carried out by vendor in presence of IPR personnel. |
| 16. | Packaging and delivery of components to IPR with appropriate unloading instructions at IPR site. Transit insurance has to be taken by vendor. Along with this, vendor must take transit insurance for FIM items while collecting the FIM from IPR. |

2.2 IPR Responsibilities

| Sr. No. | Scope of Work |
|---------|--|
| 1. | Supply of engineering drawings (Annexure-1) and tentative BOM of COTS components (Annexure-2). |
| 2. | Review of CAD model and Approval of fabrication drawings supplied by the vendors. |
| 3. | Review and Approval of BOM as supplied by the vendors. |
| 4. | Review and Approval on selection of sub-components like bearings, end peripherals, other COTS as per assembly. |
| 5. | Periodic review of work progress. |
| 6. | Review and Approval of any deviation from the specified material, dimensions and tolerances and COTS specifications. |
| 7. | Witness of FAT (as per section 9.1 of this tender). |
| 8. | Site acceptance (as per section 9.2 of this tender) test will be done by IPR. Vendor may witness the tests. |

TECHNICAL REQUIREMENTS

3.1 The following important points have to be considered for smooth functioning of the system

| Sr. No. | Scope of Work |
|---------|---|
| 1. | All parameters shall be taken into account by vendor before fabrication to ensure smooth functioning of the system at all stages, i.e. the functioning of joints shall |

| | |
|----|--|
| | not be deviated even after assembly of motor along with SS wire arrangement. |
| 2. | In final assembled system, run out of the-shaft mounted on motor shaft and encoder shaft shall not be deviated from motor's and encoder's shaft run out definition range (refer the OEM's run out acceptance range). |
| 3. | All manufacturing/mating tolerances (in assembly) shall be as per OEM defined tolerances of COTS. |
| 4. | The vendor must ensure the parallelism and perpendicularity in the components as per the assembly and sub-assembly drawings. |
| 5. | Vendor has to ensure that in Encoder shaft assembly, load other than rotational should not pass on to encoder shaft. |
| 6. | Provision for controller mountings and suitable cut outs in the base of the system will be in vendor scope. Details of cut-out dimensions will be provided by IPR |
| 7. | Vendor will consider the Coatings at joints assembly while defining the tolerances |

DELIVERABLES:

The deliverables and tentative phase timing are mentioned as below

| Phase | Deliverable | Time |
|-------|---|---------------|
| 1. | Kick-Off Meeting (KOM) (Date of P.O) | T0 |
| 2. | Submission of fabrication drawings and bill of materials with specifications of COTS components by vendor | T0 + 03 Weeks |
| 3. | Approval on fabrication/assembly drawings and COTS components by IPR | T0 + 04 Weeks |
| 4. | Submission of material test certificates (MTC) by vendor | T0 + 05 Weeks |
| 5. | Approvals of MTC by IPR | T0 + 06 Weeks |
| 6. | Fabrication and Assembly of components | T0 + 12 Weeks |
| 7. | FAT of the components/system and approval by IPR's personnel at vendor site | |
| 8. | Delivery of system at IPR | T0 + 13 Weeks |
| 9. | Site Acceptance Tests (SAT) | T0 + 14 Weeks |

INSURANCE, PACKING AND SUPPLY OF PRODUCT

- Vendor shall pack the system with the proper packing material to avoid damages during transportation.
- Vendor must take insurance of FIM items while sending back to IPR.
- All components shall be cleaned and painted before packing and shipment.
- The transit insurance of fabricated components and shall be in the scope of vendor.
- Vendor shall load the system at vendor's works and unload at RH lab, IPR.

WARRANTY

Vendor shall give warranty of one year (1 year) from the date of final acceptance for the performance of the fabricated components. During this period if any fault occurs, the vendor shall rectify at no extra cost. The faults may be due to poor workmanship/welding/fabrication, faulty material, malfunctioning COTS components procured from OEMS, electronics items etc. During this warranty period, if any fault occurs/detected in system, vendor shall rectify the same at no extra cost. In the event vendor fails to fulfil his guarantee obligations, IPR shall have the right to remedy or to have remedied the defect/fault, in both cases to vendor's account.

LIST OF DRAWINGS

Refer Annexure 1.

MATERIAL DESCRIPTION

Refer Annexure 2 for bill of materials for COTS, and Annexure 1 and 2 for material of fabrication of individual components.

FIM (FREE ISSUE MATERIAL)

Refer Annexure 3, supplied by IPR.

ACCEPTANCE CRITERIA:

9.1 Factory Acceptance Tests (FAT)

- Physical dimensions check of individual components and their assembly compatibility. (*The run out accuracy of the shaft mounting assembly /machining surfaces complies with the ISO standard*)
- Run out, Coaxiality and other parameters of the assembly shall be checked before assembly and after assembly of SS wire. The all parameters shall be as per ISO standards to achieve the smoothness of the actuation.
- Functionality test for functioning of joints.
- All joint will be tested with motor for smooth movement. IPR personnel will assist the vendor to test the sub-assembly as well complete assembly of the system.

9.2 Site Acceptance Test (SAT)

- Visual inspection of system for damages.
- Dimensional and assembly compatibility check.
- Alignment of the assembled system as per Drawings.
- System Functionality test.

GENERAL TERMS AND CONDITIONS:

- Any deviation / discrepancy / change from the drawings shall be brought out in separate sheet by the vendor and approval should be sought from IPR.
- Vendor shall adhere to the deliverable schedule as given in this tender document.
- Fabrication of all the components shall be as per final fabrication drawings approved by IPR.
- All components shall be checked for the compatibility of the assembly.
- Procurement of all the tools, fixtures, jigs, equipment's, material, temporary blanks etc.; required for the fabrication, inspection and testing shall be in the scope of VENDOR.
- All the fabrication and assembly including all the components shall be carried out in accordance with applicable code or approved equivalent.
- IPR authority / representative shall have access to all manufacturing facilities, inspection and testing facilities, tools, drawings etc.; during all stages of manufacturing process.
- All the components shall be delivered only after shipment clearance from IPR.
- Delivery acceptance shall be issued by IPR authority / representative after acceptance tests and verification of dimensions, testing, etc.; to one's satisfaction of compliance with drawings, specifications and functional requirements.

Signature and Stamp of Bidder with Date

Annexure 2

General specifications for all components & Raw materials

| Sr.no. | Components (Part Name) | Reference in Annexure1 (Drawings Part no.) | Quantity in Nos. | Specifications and material details | Remarks |
|--------|---------------------------|--|---------------------|--|--------------------|
| 1. | Support Peg | 1 | 04 | Nylon or Equivalent | Machining /COTS |
| 2. | Bottom Plate | 2 | 01 | 10 micron flatness and SS 304 material with coating | Machining |
| 3. | Support Pillar | 3 | 04 | SS 304 material with coating | Machining |
| 4. | Top Plate | 4 | 01 | 10 micron flatness and SS 304 material with coating | Machining |
| 5. | Base Capstan | 5 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 6. | Link C | 6 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 7. | Threaded Coupler | 7 | 03 | Aluminium 6061 T6 with Coating | Machining |
| 8. | Center Support Shaft | 8 | 01 | SS 304 with Coating | Machining |
| 9. | Link 1 | 9 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 10. | Link 2 | 10 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 11. | Link 3 | 11 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 12. | Link 4 | 12 | 01 | Aluminium 6061 T6 with | Machining |

| | | | | | |
|-----|----------------------------|---|-------|--------------------------------------|-----------|
| | | | | Coating | |
| 13. | Link 5 | 13 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 14. | Drum C Link | 14 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 15. | Support Shaft | 15 | 04 | SS 304 with Coating | Machining |
| 16. | Top Encoder Mounting | 16 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 17. | Middle Encoder Link | 17 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 18. | Bottom Encoder Mounting | 18 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 19. | Angle Rod | 19 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 20. | Thumb Handle | 20 | 01 | Aluminium 6061 T6 with Coating | Machining |
| 21. | Cover Plain | 21 | 02 | SS Sheet Metal with Coating | Machining |
| 22. | Cover Profile | 22 | 02 | SS Sheet Metal with Coating | Machining |
| 23. | Base Support Shaft | 23 | 01 | SS 304 with Coating | Machining |
| 24. | Spacer | 24 | 04 | Aluminium 6061 T6 with Coating | Machining |
| 25. | Bearing 51100 | For Base Capstan and Top Plate | 1 | Standard Bearing 51100 | COTS |
| 26. | Bearing 628ZZ | For Bottom Encoder Mounting, | 1+1+1 | Standard Bearing 628ZZ | COTS |

| | | | | | |
|-----|--|--|-----------------|-----------------------------------|------|
| | | middle encoder mounting and Top Encoder mounting | | | |
| 27. | Dia. 10 mm External Circlip | For Center support Shaft | 02 | Standard | COTS |
| 28. | Bearing MR698ZZ | For Link 1, Link 2, Link 3 and Link 4 | 2+2+4+2 | Standard Bearing MR698ZZ | COTS |
| 29. | Bearing 6000ZZ | For Link 1, Link 2 and Link 4 | 1+1+1 | Standard Bearing 6000ZZ | COTS |
| 30. | Dia. 8 mm External Circlip | For Support Shaft | 04 | Standard | COTS |
| 31. | SS Multi-strands Wire | For assembly | Approx. 2 Meter | SS Multi-strands Wire Dia. -0.7mm | COTS |
| 32. | Suitable number of nuts and bolts/Allen bolts/decorative bolts | For assembly | NA | SS & As per assembly requirements | COTS |

Note-

- **The above BOM is just indicative. The vendor shall supply all the required items (and quantity) as per the scope of work/technical specifications in the tender.**
- **Nickel-chrome /Black oxide Coating has to be done on all fabricated components and are in vendor's scope.**
- **Motor encoder and bearing interface's tolerances has to be incorporated in fabrication drawings by vendor (As per Manufacturer definition)**

Annexure 3

General details of free issue materials

| Sr.no. | Components (Item Name) | Quantity in Nos. | Total Cost in Rupees | Remarks |
|--------|---------------------------|---------------------|-------------------------|-----------------------------|
| 1. | Motor | 3 | 150000.0 | Free Issue Material(FIM) |
| 2. | Encoder | 3 | 13500.0 | Free Issue Material(FIM) |

Note-

Motor and Encoder are the Free Issue material and will be supplied by IPR. Transit insurance have to be taken by vendor for all FIM

VENDOR RESPONSE SHEET

(MUST BE SUBMITTED ALONG WITH THE BID)

| | |
|--|---|
| I/We have read the complete tender document and Annexures for the drawings and bill of materials | <input type="checkbox"/> Agreed / <input type="checkbox"/> Not-Agreed |
| I/We agree to the scope of work mentioned in the tender | <input type="checkbox"/> Agreed / <input type="checkbox"/> Not-Agreed |
| I/We agree to all terms and conditions mentioned in the tender | <input type="checkbox"/> Agreed / <input type="checkbox"/> Not-Agreed |

(Stamp and Sign of Bidder)

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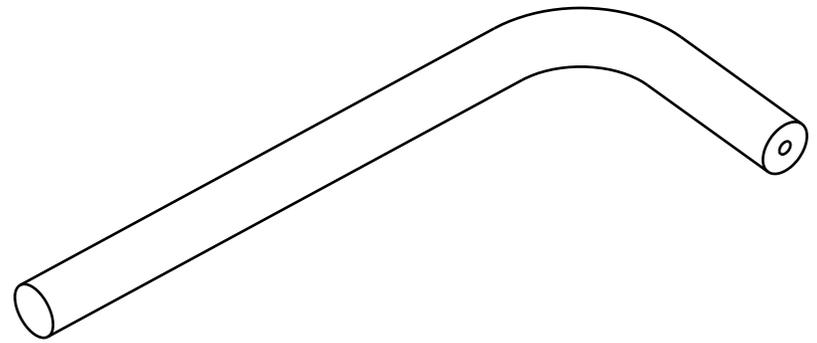
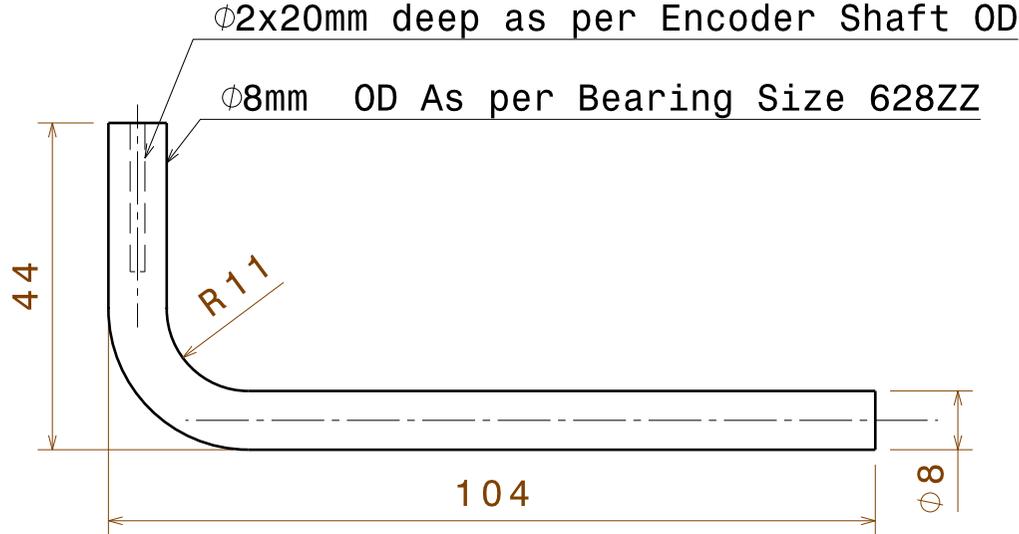
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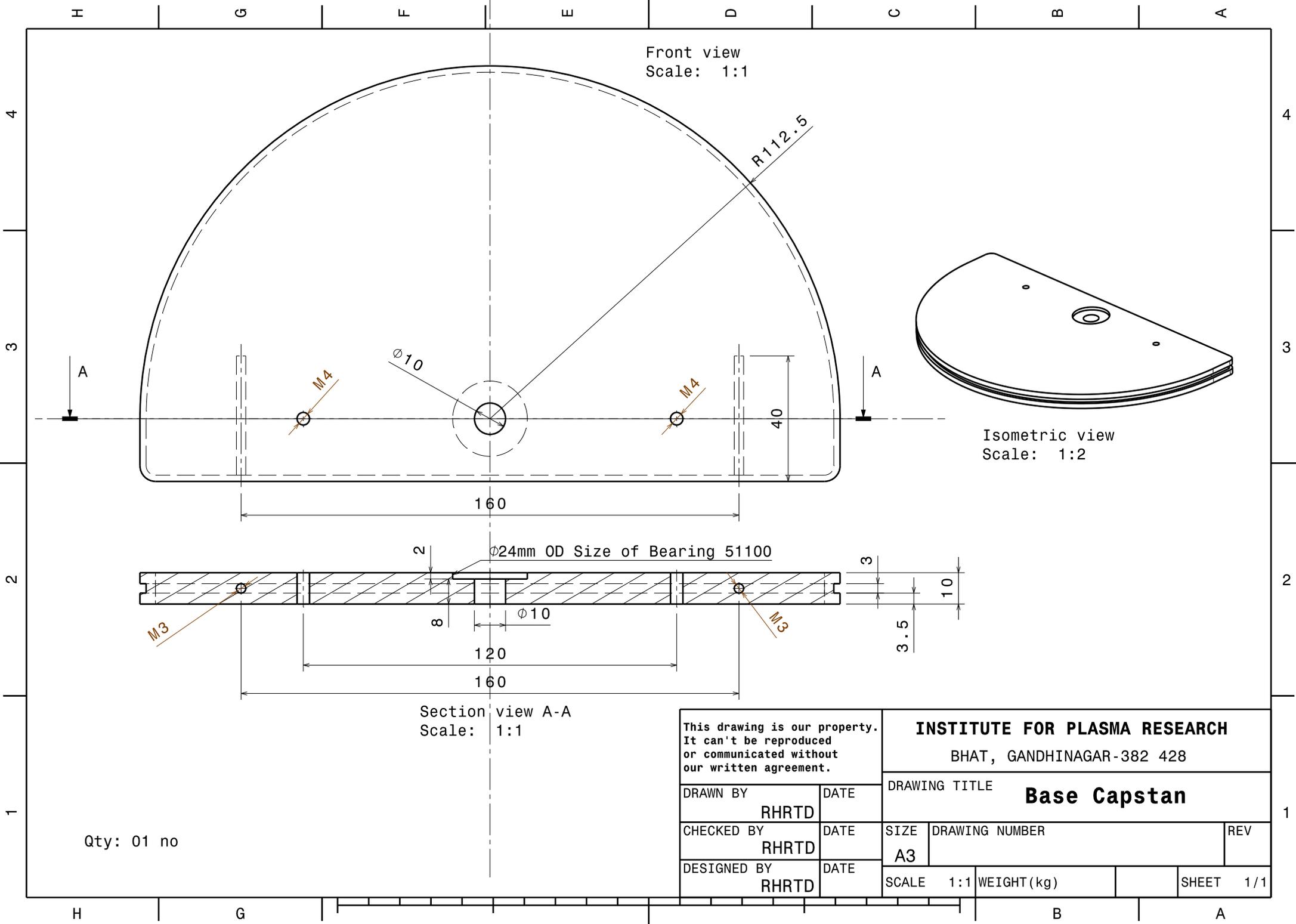
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Front view
Scale: 1:1

Isometric view
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Section view A-A
Scale: 1:1

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| DRAWING TITLE Base Capstan | | | |
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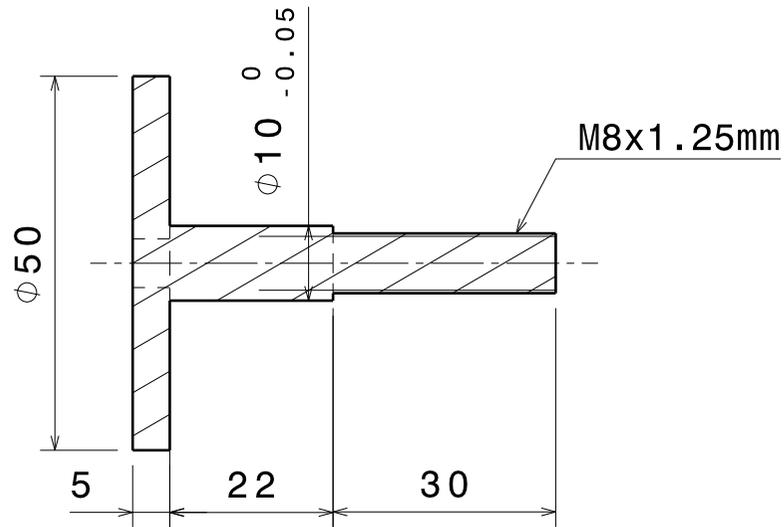
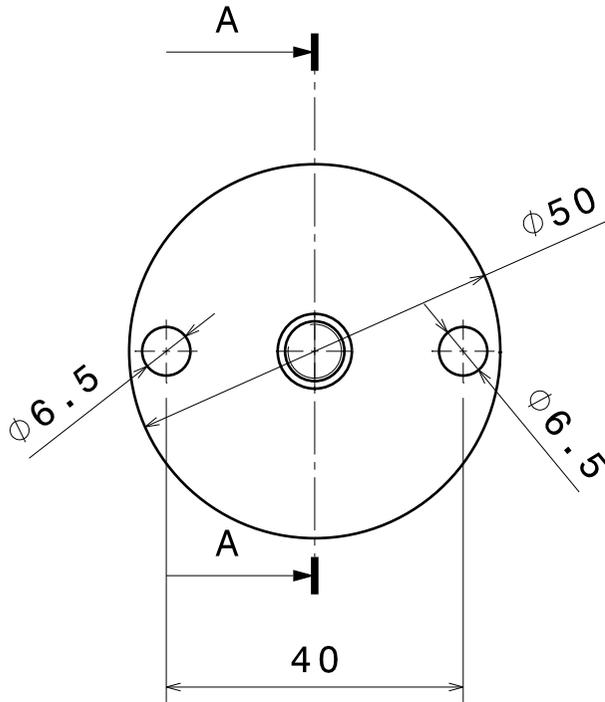
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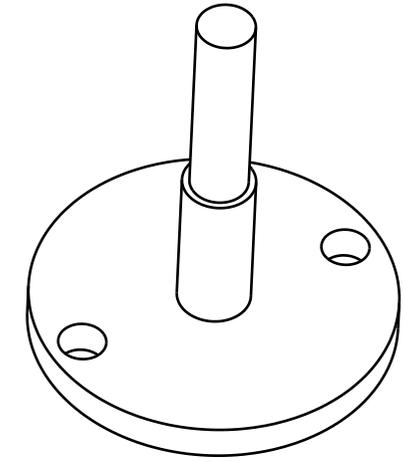
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Section view A-A
Scale: 1:1



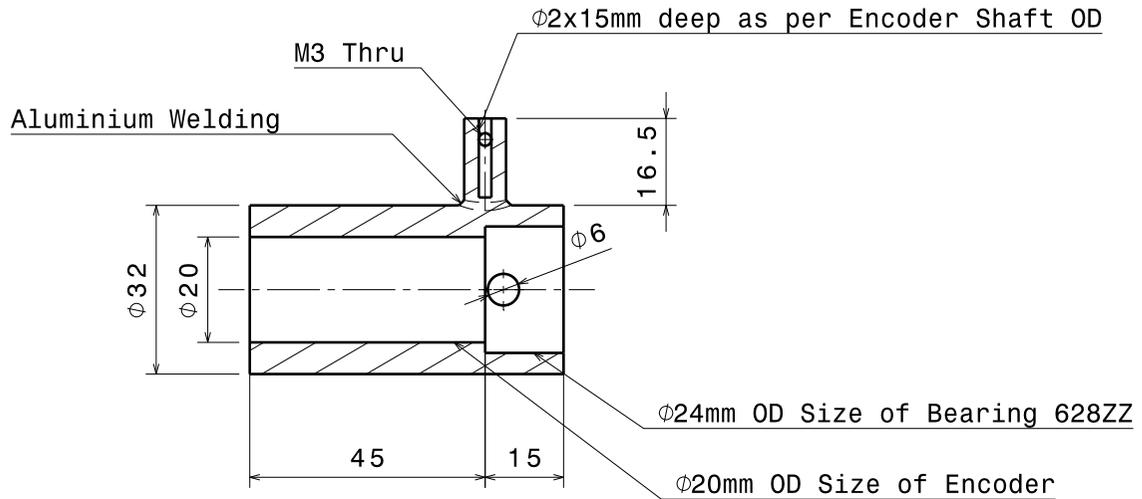
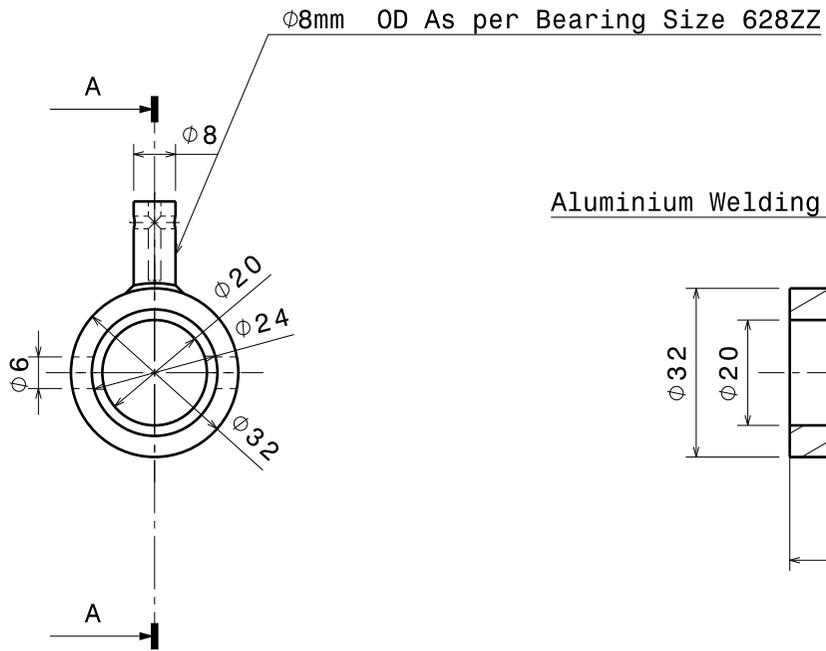
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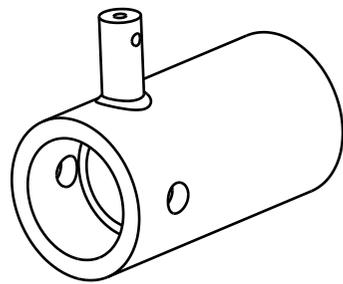
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| CHECKED BY RHRTD | | DATE | | | | |
| DESIGNED BY RHRTD | | DATE | | SIZE A4 | DRAWING NUMBER | REV |
| | | SCALE 1:1 | | WEIGHT (kg) | | SHEET 1/1 |

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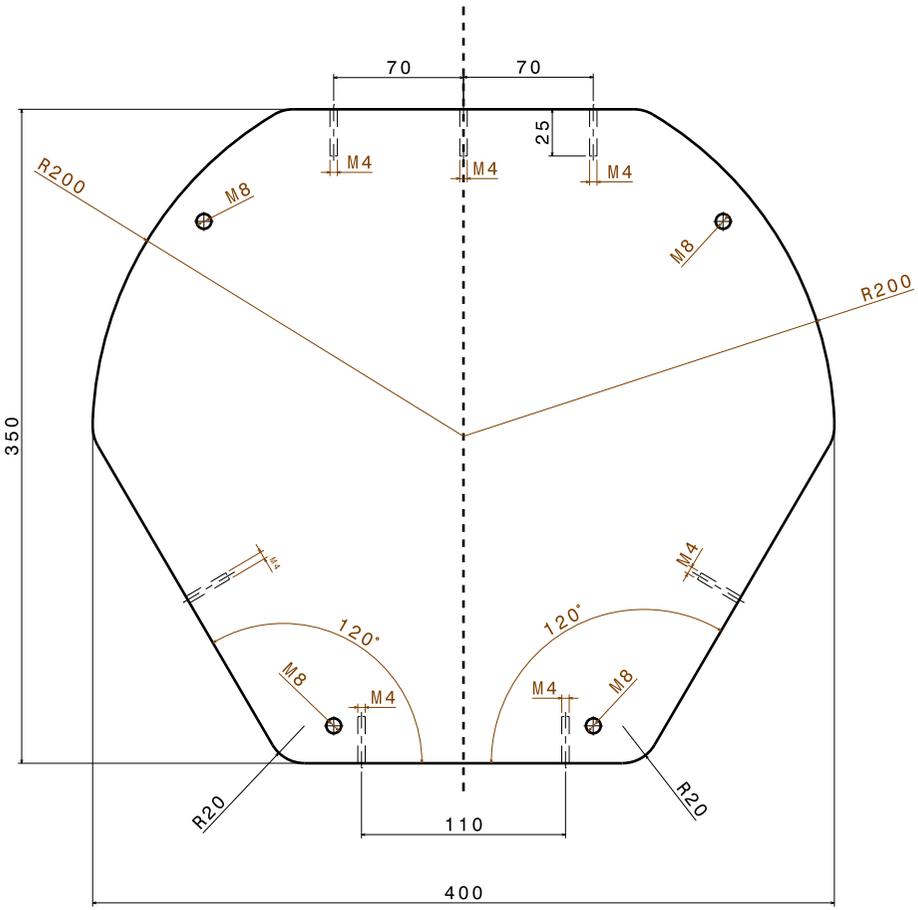
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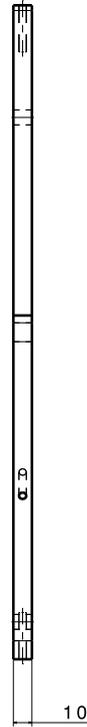
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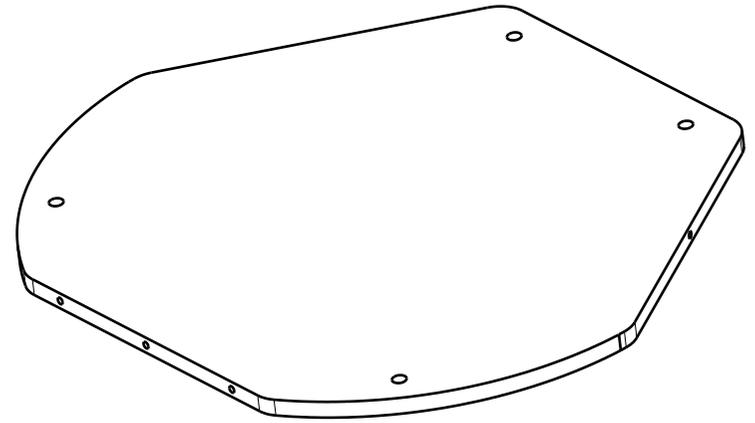
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| CHECKED BY RHRTD | | DATE | | SIZE A3 | DRAWING NUMBER |
| DESIGNED BY RHRTD | | DATE | | SCALE 1:1 | WEIGHT (kg) |
| | | | | SHEET | 1/1 |



Front view
Scale: 1:1



Left view
Scale: 1:1



Isometric view
Scale: 1:1

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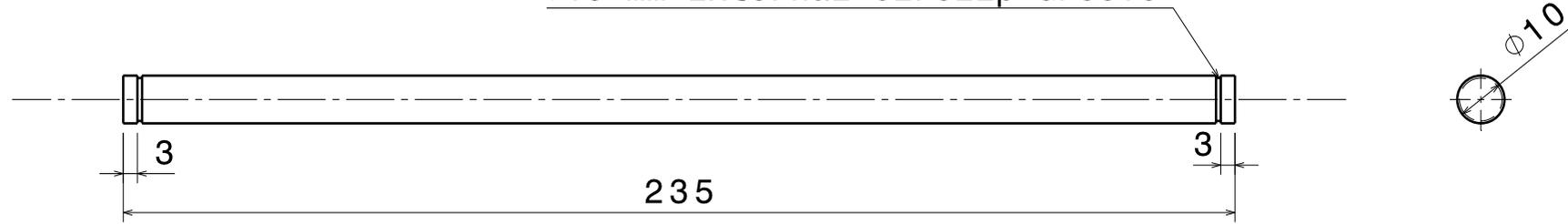
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| CHECKED BY: RHRD | DATE | | SIZE | A0 | DRAWING NUMBER |
| DESIGNED BY: RHRD | DATE | | SCALE | 1:1 | WEIGHT(kg) |
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Ø10 mm External Circlip Groove

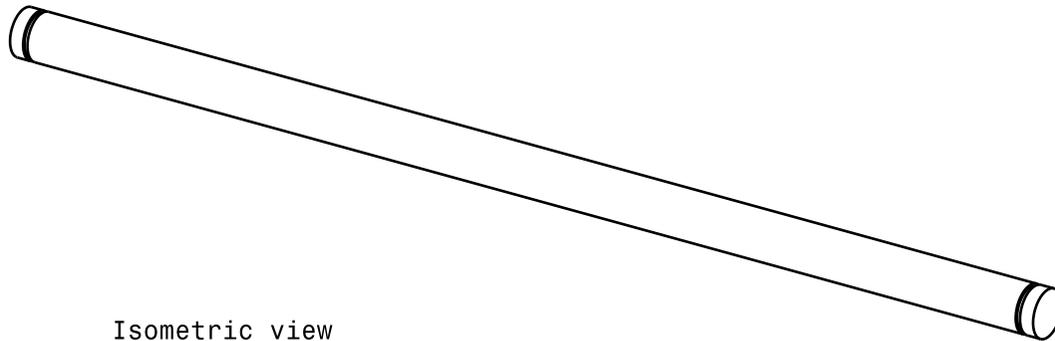


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Isometric view
Scale: 1:1

Note: Ø10 mm OD should be machined as per Bearing ID
Size 6000ZZ

Qty: 01 no

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BHAT, GANDHINAGAR-382 428

DRAWING TITLE

Center Support Shaft

DRAWN BY
RHRTD

DATE

CHECKED BY
RHRTD

DATE

SIZE
A3

DRAWING NUMBER

REV

DESIGNED BY
RHRTD

DATE

SCALE 1:1

WEIGHT (kg)

SHEET 1/1

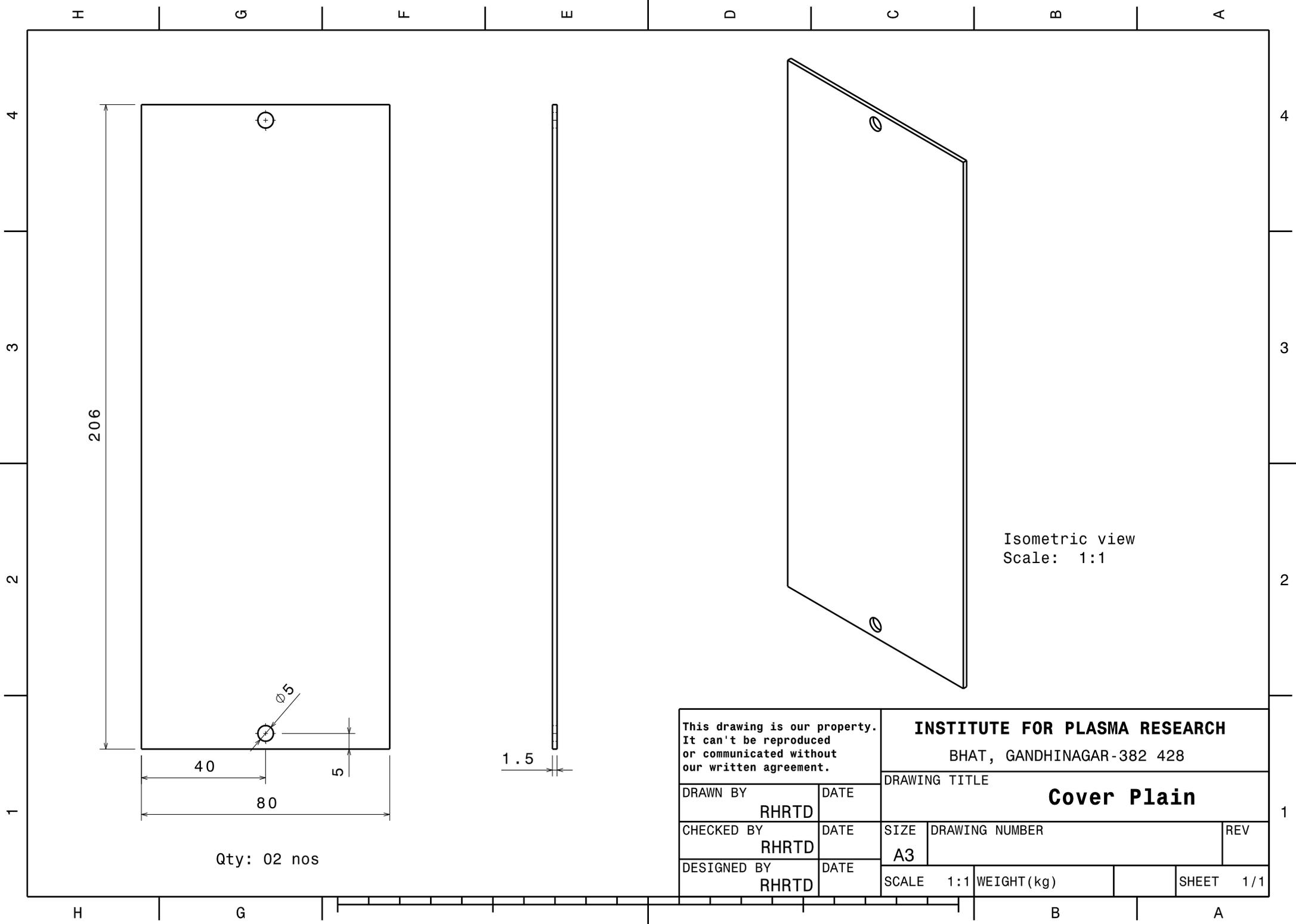
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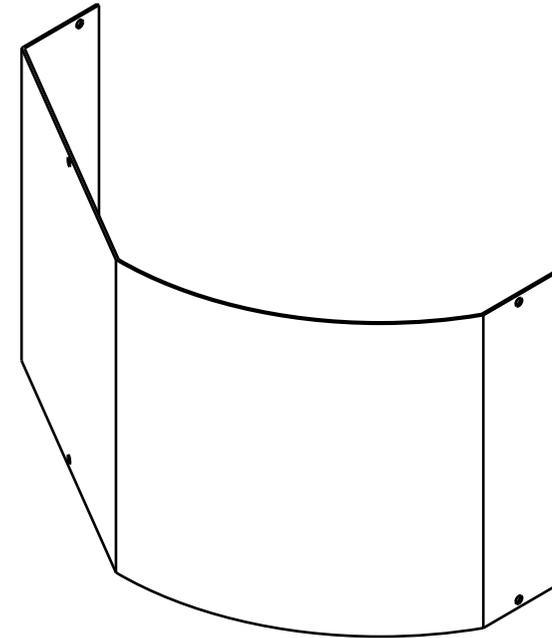
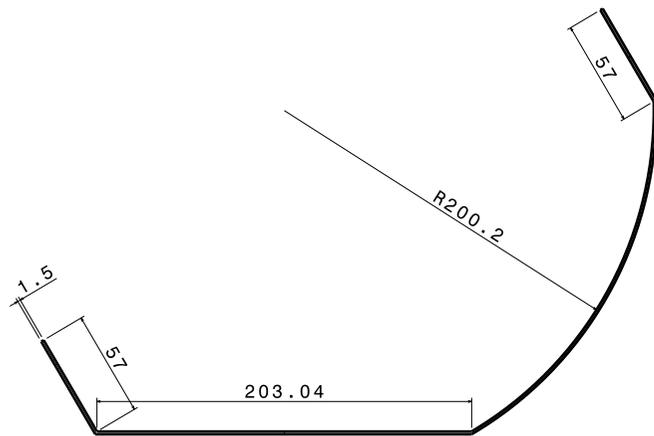
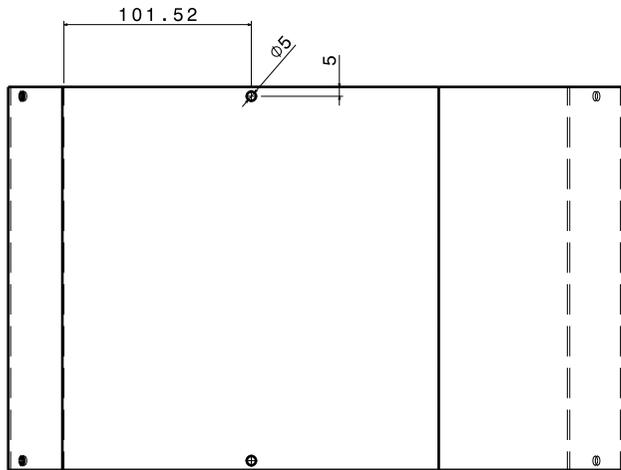
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| DRAWN BY RHRTD | | DATE | Cover Plain | | |
| CHECKED BY RHRTD | DATE | SIZE A3 | DRAWING NUMBER | | REV |
| DESIGNED BY RHRTD | DATE | SCALE 1:1 | WEIGHT(kg) | SHEET 1/1 | |



Isometric view
Scale: 1:1

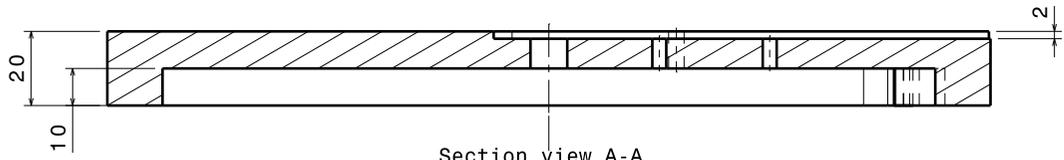
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Note: Please Refer Bottom plate drawing for the location of Dia 5mm Holes.

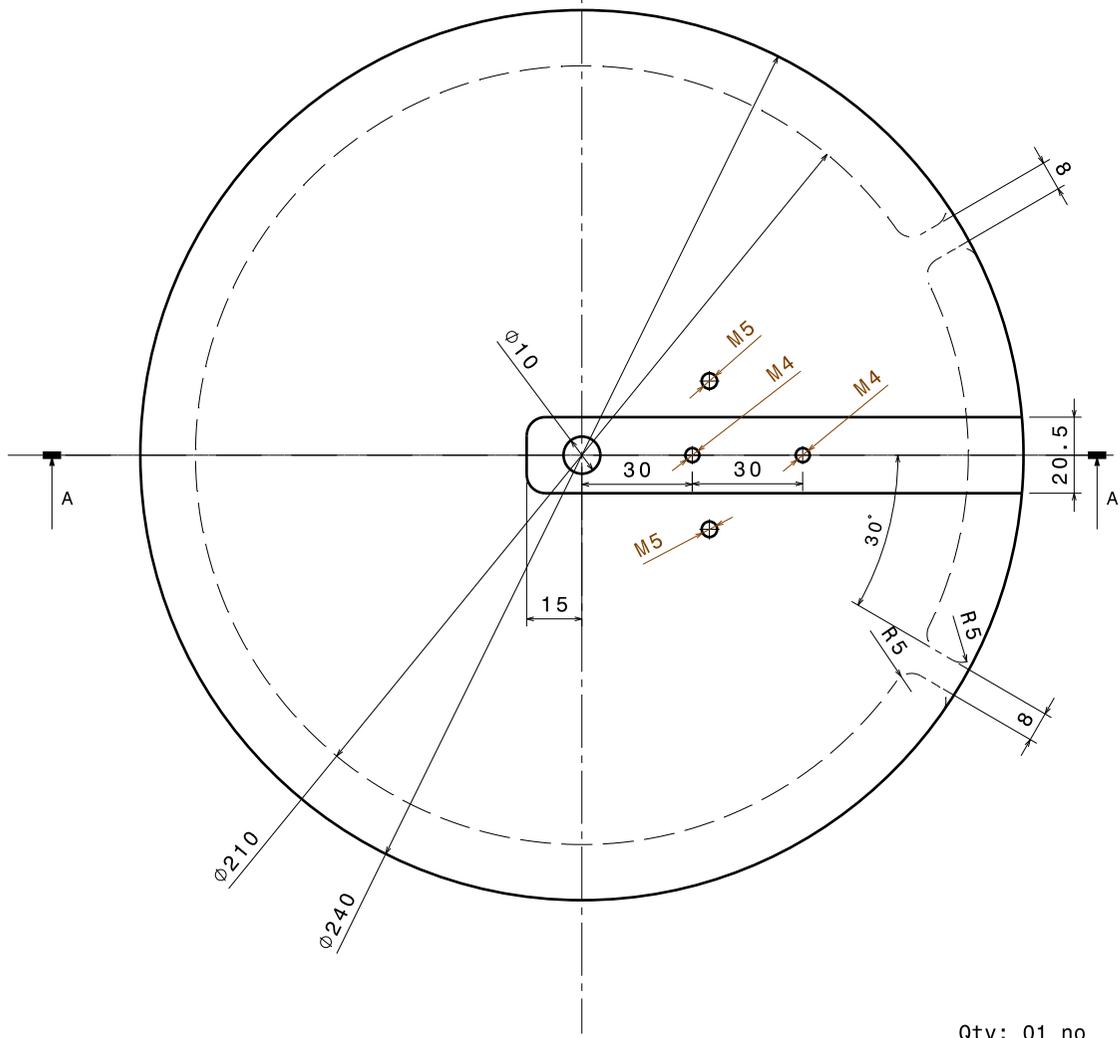
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| DRAWN BY: RHRTD | DATE | | DRAWING TITLE Cover Profile | | |
| CHECKED BY: RHRTD | DATE | | | | |
| DESIGNED BY: RHRTD | DATE | | | | |
| | | | SIZE A0 | DRAWING NUMBER | REV |
| | | | SCALE 1:1 | WEIGHT (kg) | SHEET 1/1 |

H G F E D C B A

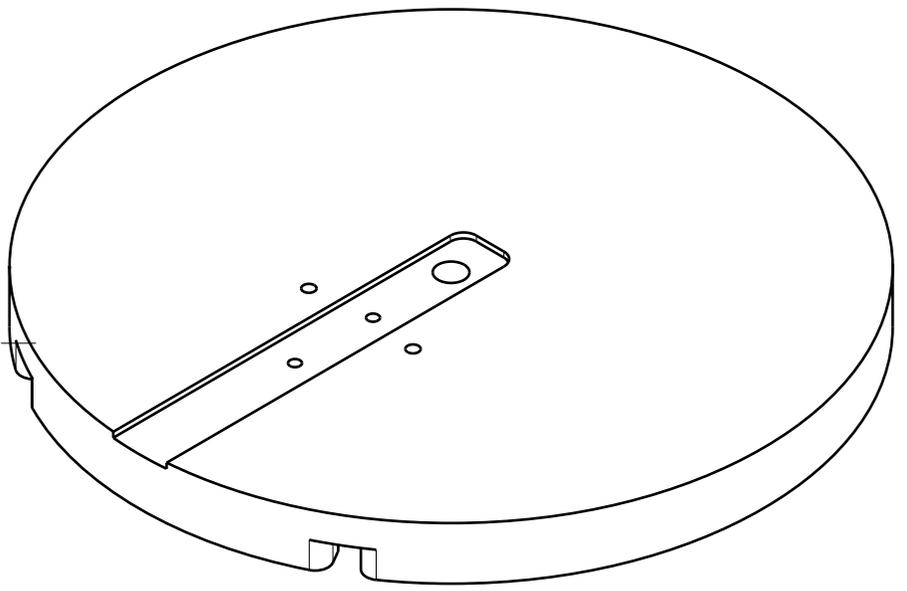
8 7 6 5 4 3 2 1



Section view A-A
Scale: 1:1



Qty: 01 no



Isometric view
Scale: 1:1

| | | | | | |
|---|------|--|-------------------------------------|-------|-----|
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| DRAWN BY RHRTD | | DATE | DRAWING TITLE Drum C Link | | |
| CHECKED BY RHRTD | DATE | SIZE A2 | DRAWING NUMBER | | REV |
| DESIGNED BY RHRTD | DATE | SCALE 1:1 | WEIGHT(kg) | SHEET | 1/1 |

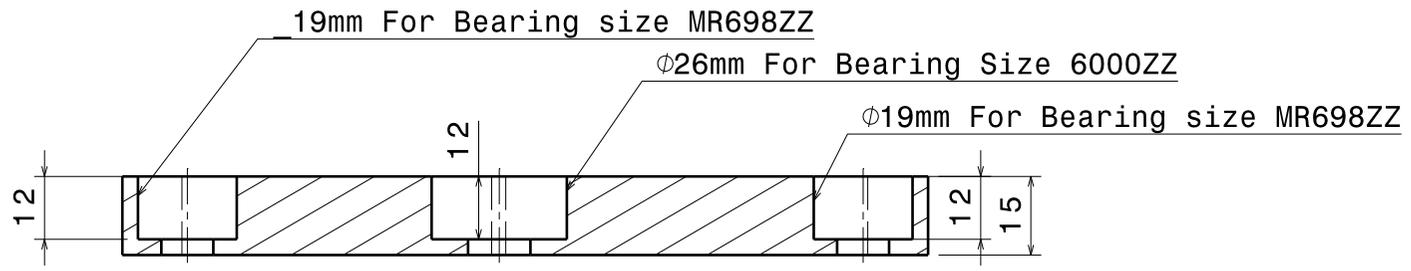
H G F E D C B A

1

H G F E D C B A

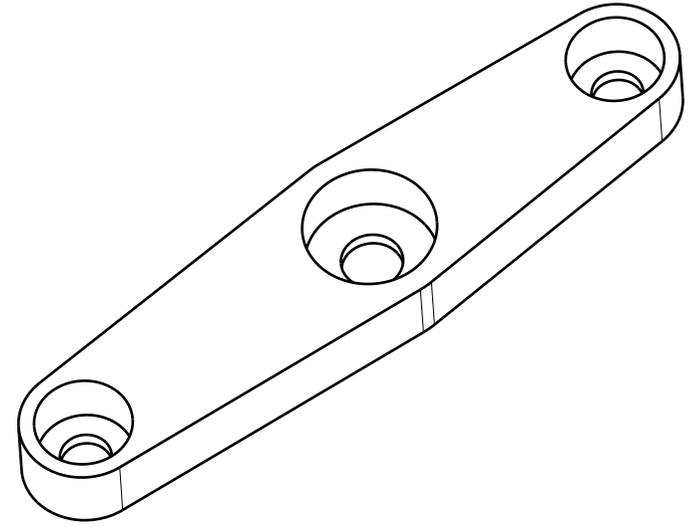
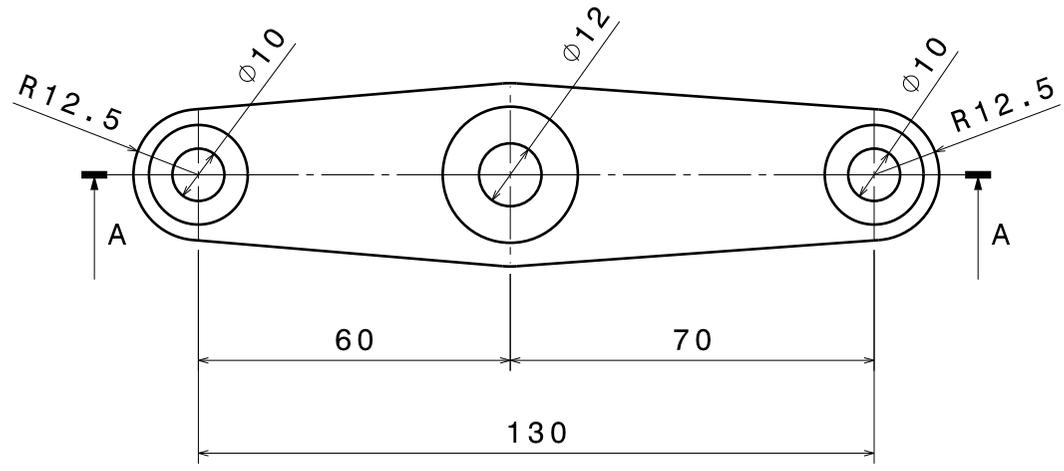
4

4



3

3



2

2

Qty: 01 no

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BHAT, GANDHINAGAR-382 428

DRAWING TITLE
Link 1

DRAWN BY
RHRTD

DATE

CHECKED BY
RHRTD

DATE

SIZE
A3

DRAWING NUMBER

REV

DESIGNED BY
RHRTD

DATE

SCALE 1:1

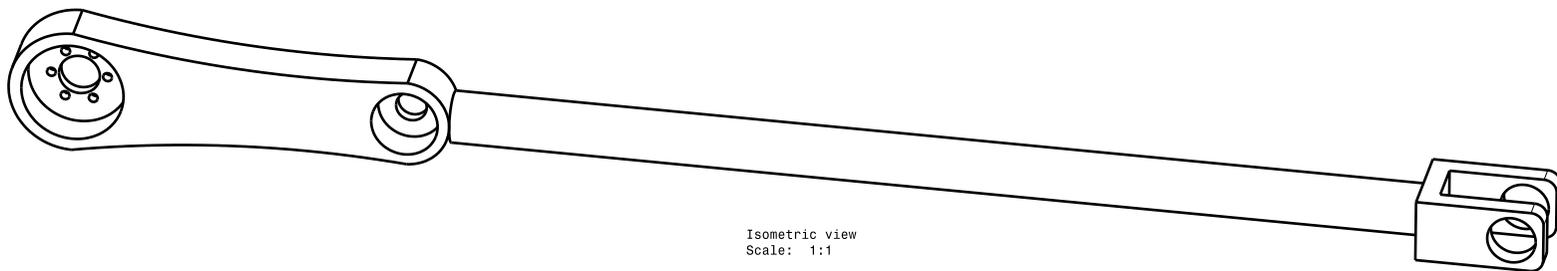
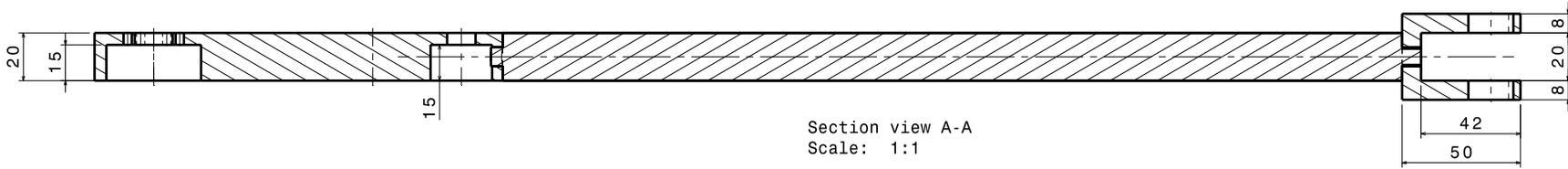
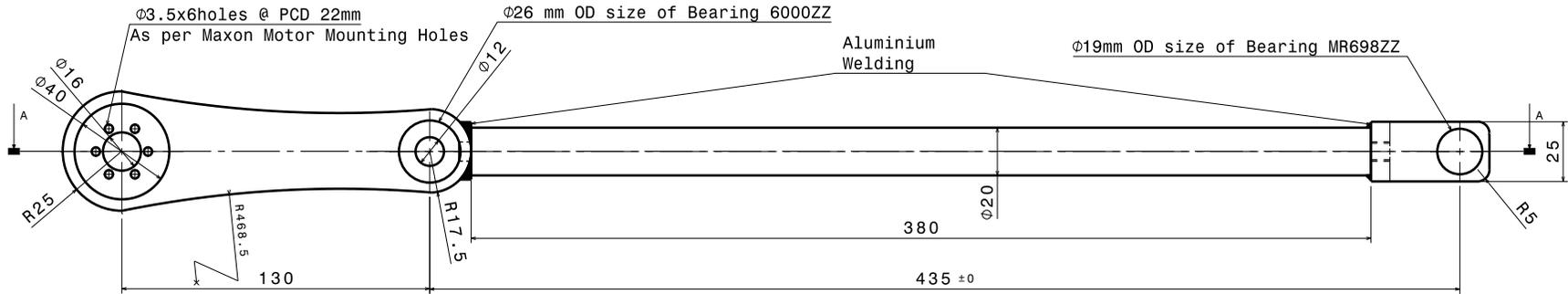
WEIGHT(kg)

SHEET 1/1

H G B A

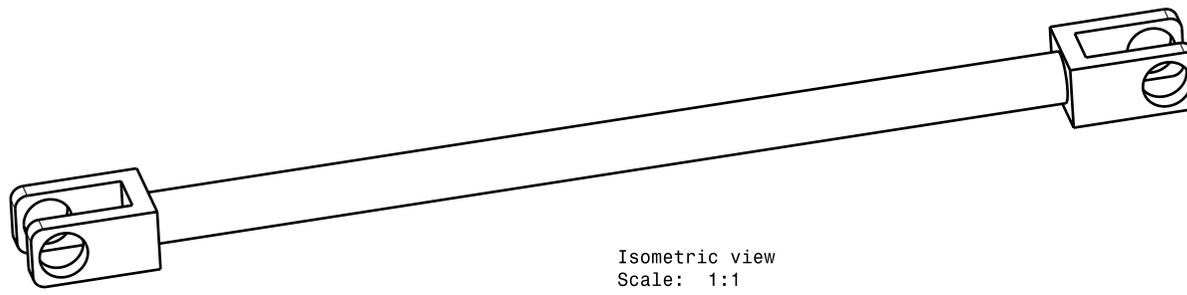
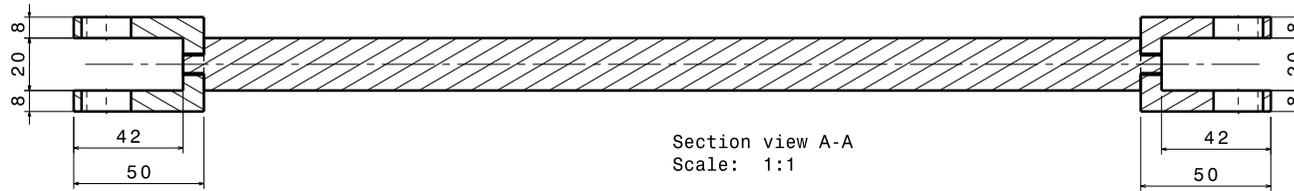
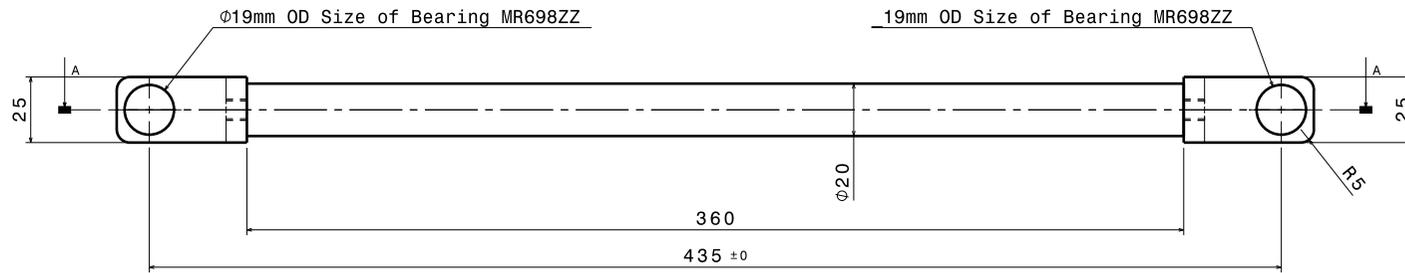
1

1



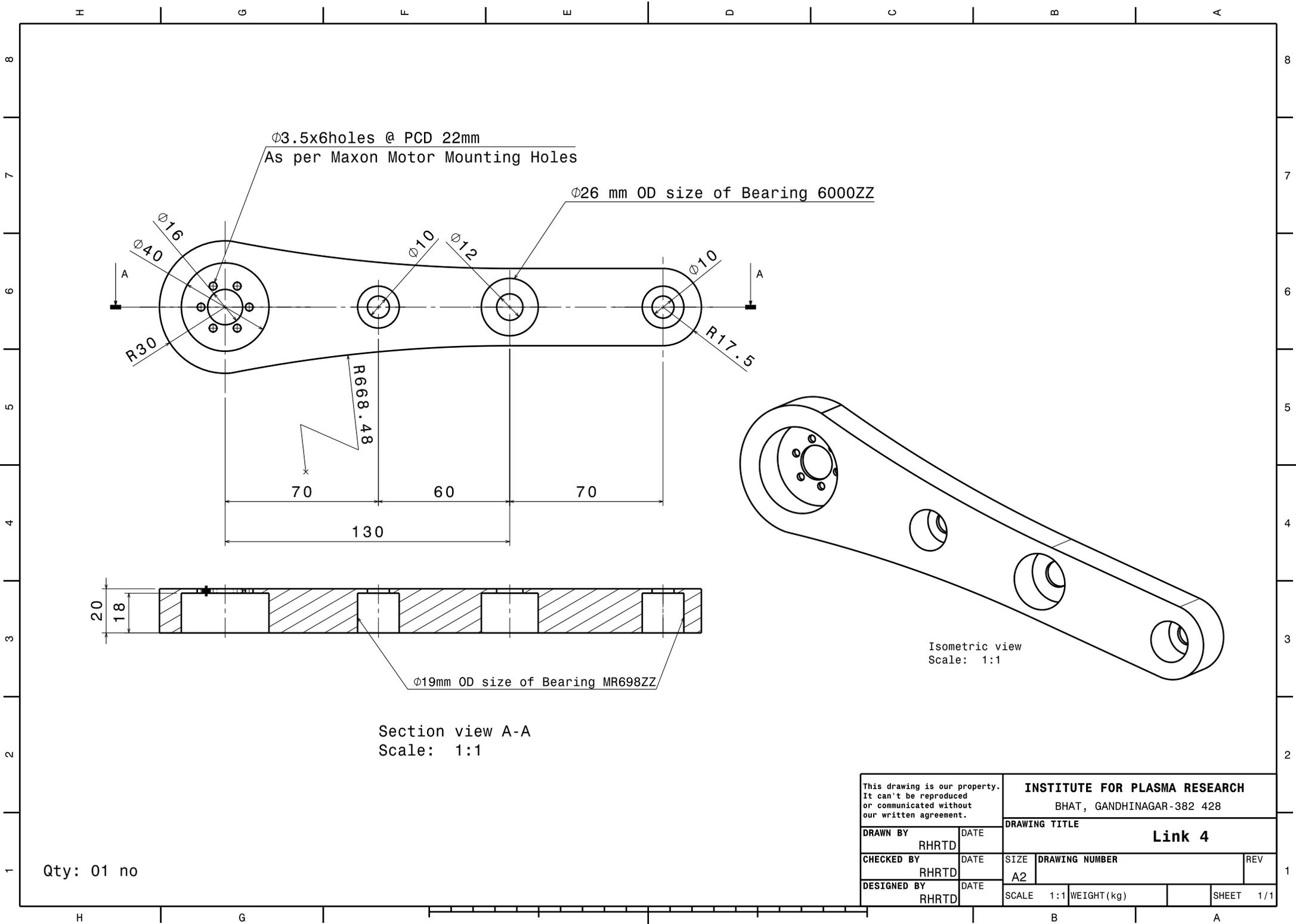
Qty: 01 no.

| | | | |
|---|--|--|----------------|
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| DRAWN BY RHRD | | DRAWING TITLE | |
| CHECKED BY RHRD | | Link 2 | |
| DESIGNED BY RHRD | | SIZE A1 | DRAWING NUMBER |
| SCALE 1:1 | | WEIGHT(kg) | SHEET 1/1 |



Qty: 01 no

| | | | | | |
|---|-------|------|---|----------------|-------------|
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| DRAWN BY | RHRTD | DATE | DRAWING TITLE | | |
| | | | Link 3 | | |
| CHECKED BY | RHRTD | DATE | SIZE | DRAWING NUMBER | REV |
| | | | A1 | | |
| DESIGNED BY | RHRTD | DATE | SCALE | 1:1 | WEIGHT (kg) |
| | | | | | SHEET 1/1 |



Ø3.5x6holes @ PCD 22mm
As per Maxon Motor Mounting Holes

Ø26 mm OD size of Bearing 6000ZZ

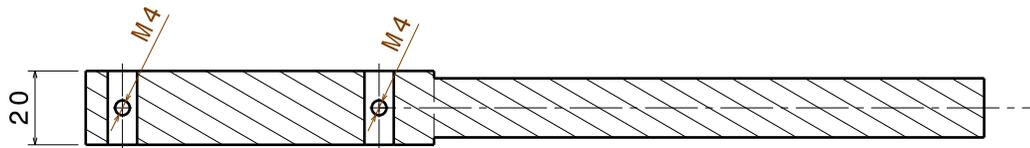
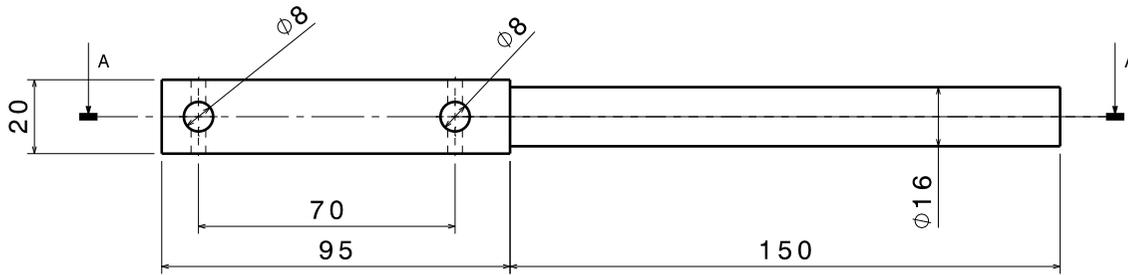
Isometric view
Scale: 1:1

Section view A-A
Scale: 1:1

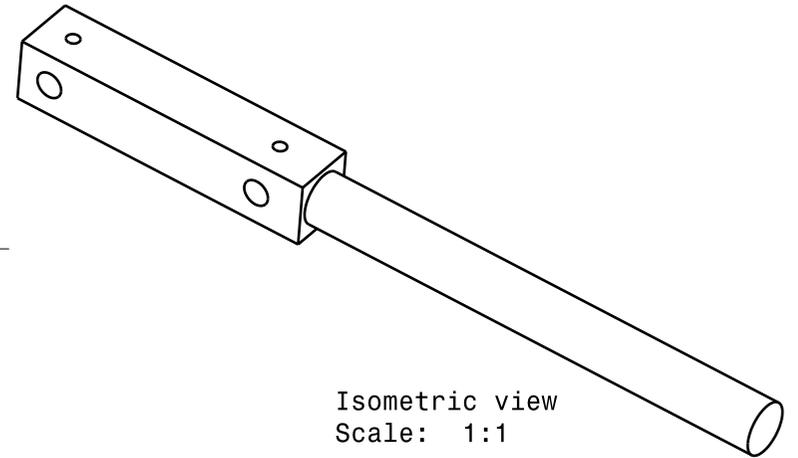
Ø19mm OD size of Bearing MR698ZZ

Qty: 01 no

| | | | | | |
|---|--|--|--|--------------------------------|----------------|
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| DRAWN BY RHRTD | | DATE | | DRAWING TITLE Link 4 | |
| CHECKED BY RHRTD | | DATE | | SIZE A2 | DRAWING NUMBER |
| DESIGNED BY RHRTD | | DATE | | SCALE 1:1 | WEIGHT (kg) |
| | | | | SHEET | 1/1 |



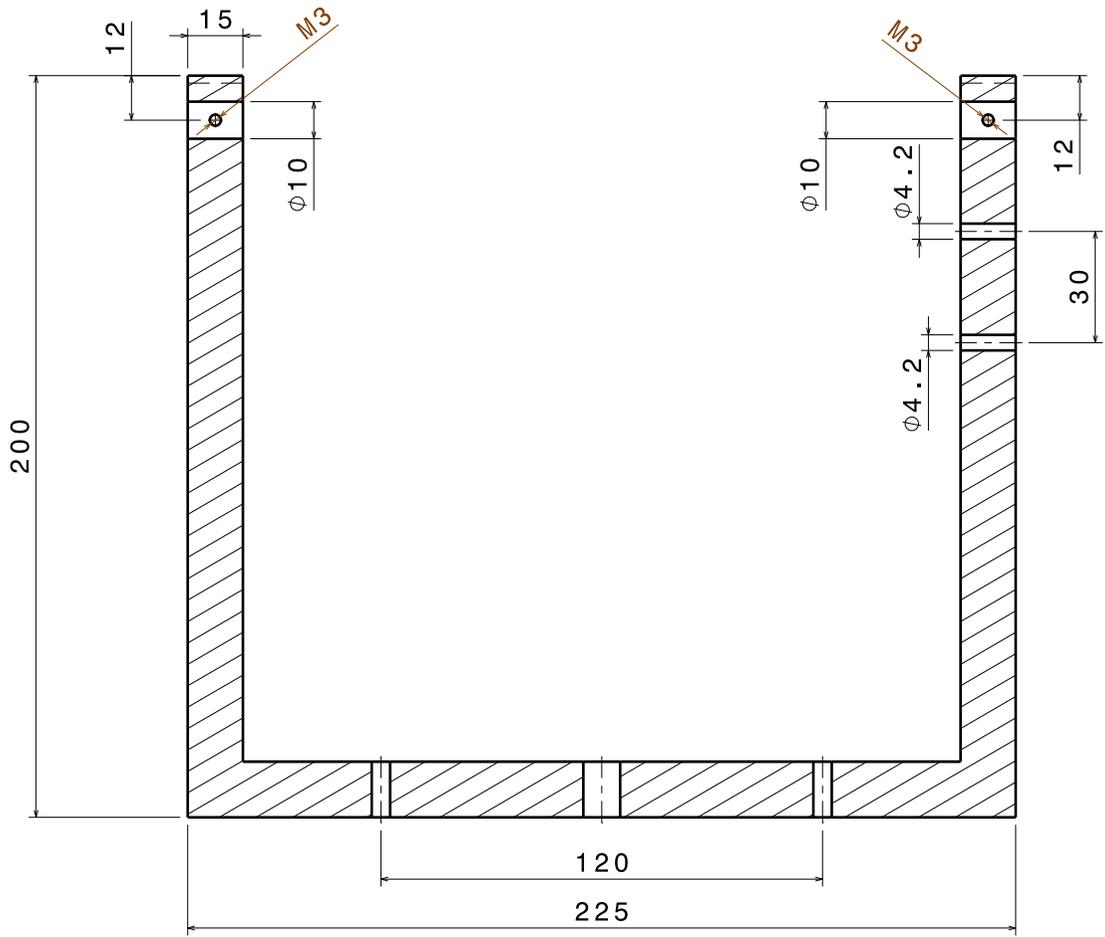
Section view A-A
Scale: 1:1



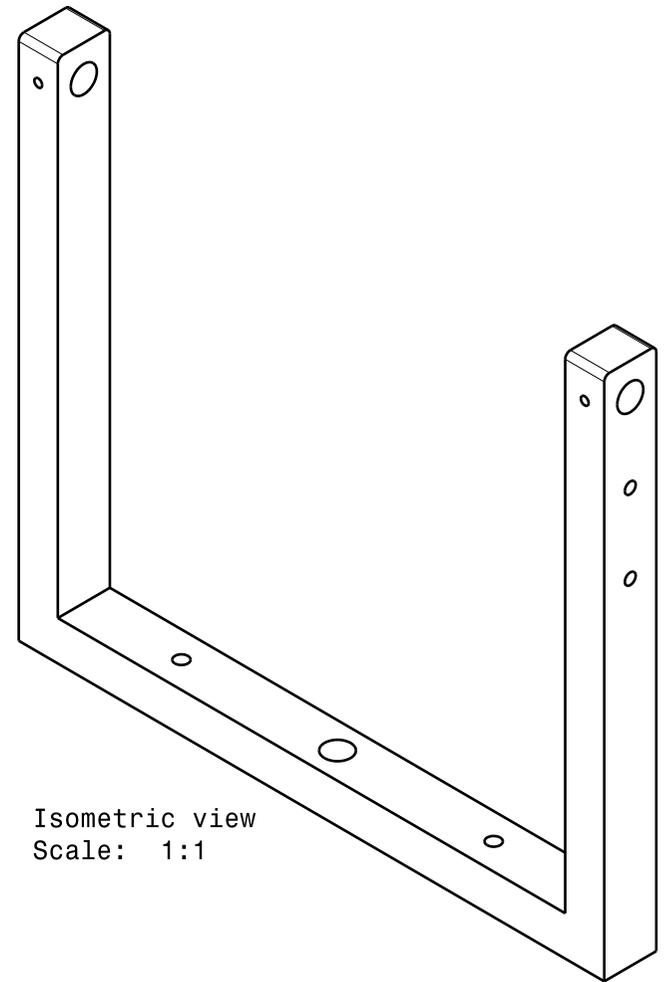
Isometric view
Scale: 1:1

Qty: 01 no

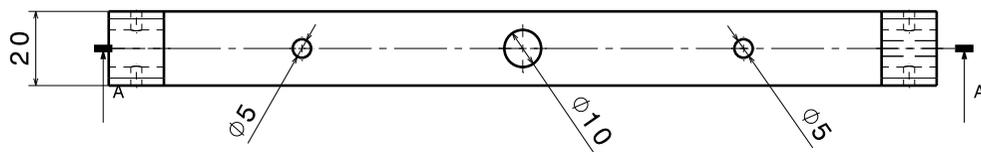
| | | | | | |
|---|------|--|--------------------------------|-------|-----|
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| DRAWN BY RHRTD | | DATE | DRAWING TITLE Link 5 | | |
| CHECKED BY RHRTD | DATE | SIZE A2 | DRAWING NUMBER | | REV |
| DESIGNED BY RHRTD | DATE | SCALE 1:1 | WEIGHT (kg) | SHEET | 1/1 |



Section view A-A
Scale: 1:1

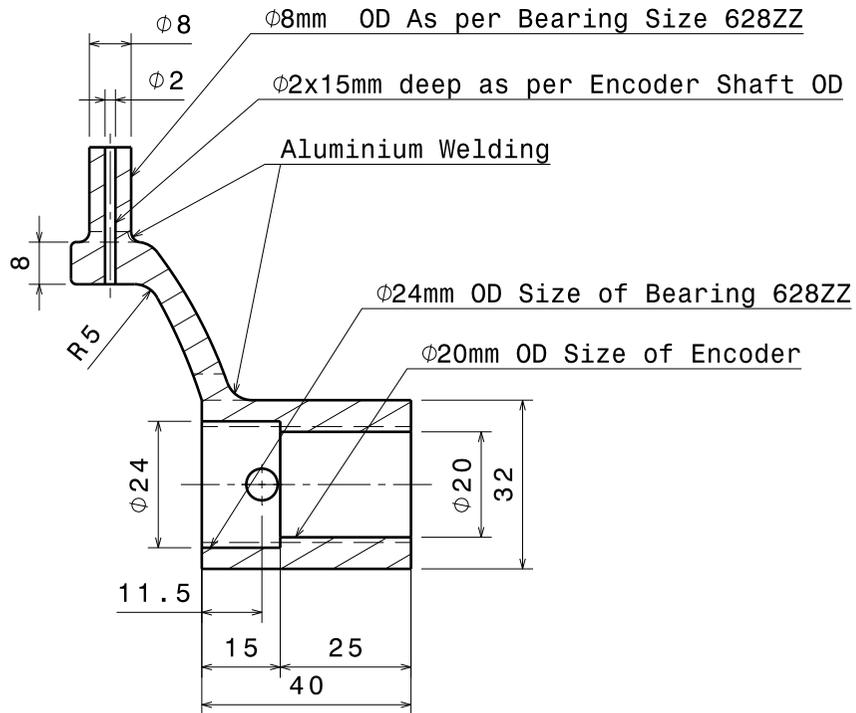


Isometric view
Scale: 1:1

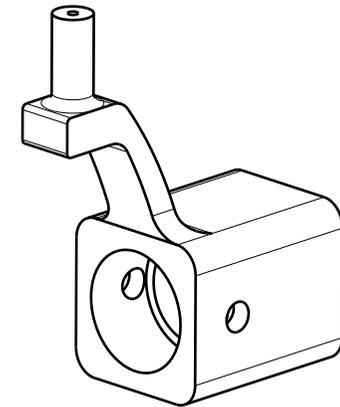
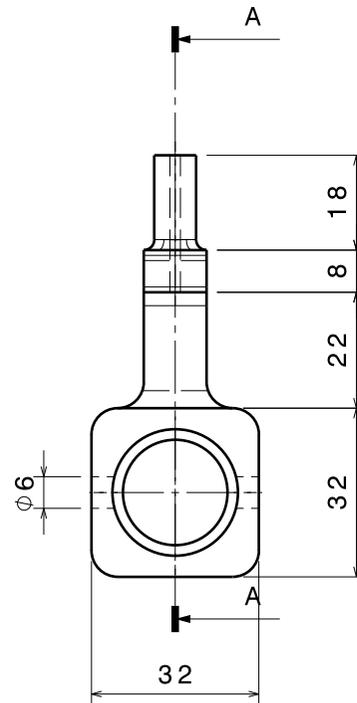


Qty: 01 no

| | | | | |
|---|--|--|------------|----------------|
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| DRAWN BY RHRTD | | DRAWING TITLE Link C | | |
| CHECKED BY RHRTD | | DATE | SIZE A2 | DRAWING NUMBER |
| DESIGNED BY RHRTD | | DATE | SCALE 1:1 | WEIGHT(kg) |
| | | | | SHEET 1/1 |



Section view A-A
Scale: 1:1



Isometric view
Scale: 1:1

Qty: 01 no

| | | | | |
|---|------|---|----------------|--------------|
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| | | BHAT, GANDHINAGAR-382 428 | | |
| DRAWN BY RHRTD | | DRAWING TITLE Middle Encoder Mounting | | |
| CHECKED BY RHRTD | DATE | SIZE A3 | DRAWING NUMBER | REV |
| DESIGNED BY RHRTD | DATE | SCALE 1:1 | WEIGHT(kg) | SHEET 1/1 |

D

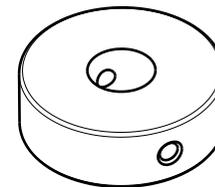
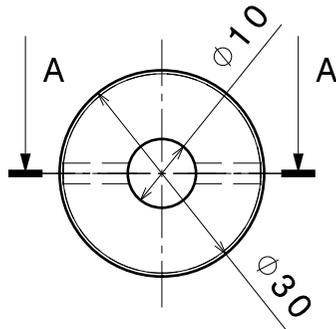
C

B

A

4

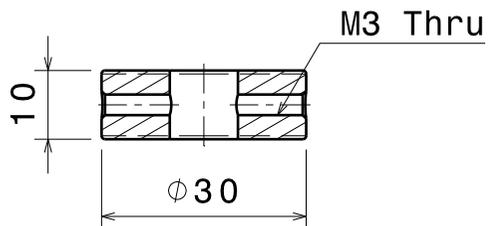
4



Isometric view
Scale: 1:1

3

3



Section view A-A
Scale: 1:1

2

2

| | | | | | |
|--|-------------|---|--|-----------------------|------------------|
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| | | DRAWING TITLE <h2 style="text-align: center;">Spacer</h2> | | | |
| DRAWN BY RHRTD | DATE | SIZE A4 | | DRAWING NUMBER | REV |
| CHECKED BY RHRTD | DATE | SCALE 1:1 | | WEIGHT (kg) | SHEET 1/1 |
| DESIGNED BY RHRTD | DATE | | | | |

Qty: 04 nos.

1

1

D

A

H G F E D C B A

4

4

3

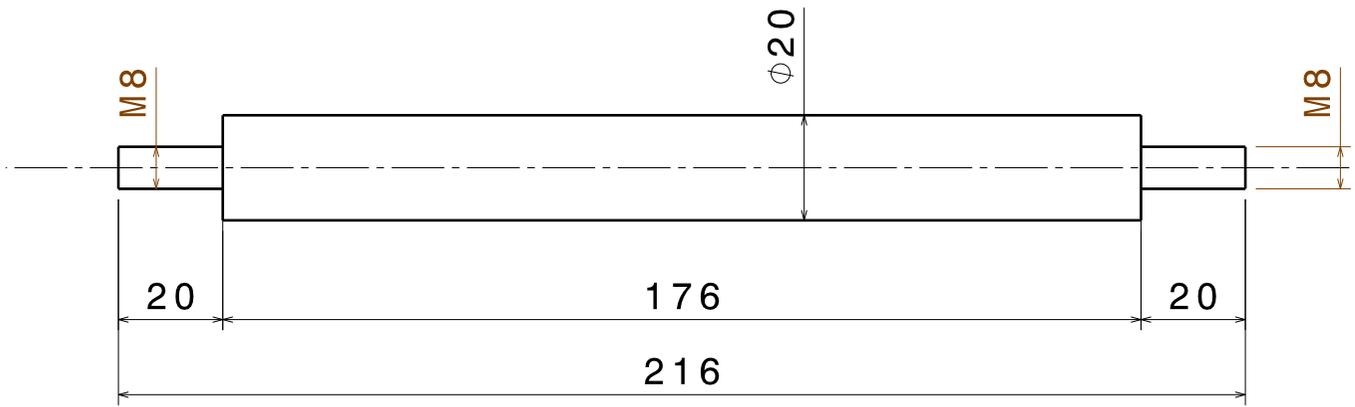
3

2

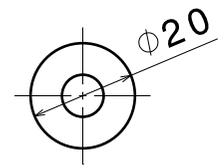
2

1

1



Front view
Scale: 1:1



Left view
Scale: 1:1

Qty: 04 nos.

| | | | | |
|---|--|---|--|--|
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| DRAWN BY RHRTD | | DATE | | DRAWING TITLE Support Pillar |
| CHECKED BY RHRTD | | DATE | | |
| DESIGNED BY RHRTD | | DATE | | SIZE A3 |
| | | SCALE 1:1 | | DRAWING NUMBER WEIGHT(kg) |
| | | | | SHEET 1/1 |

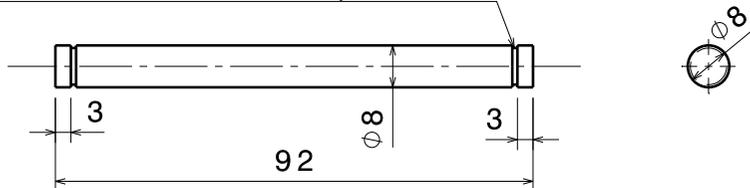
H G B A

H G F E D C B A

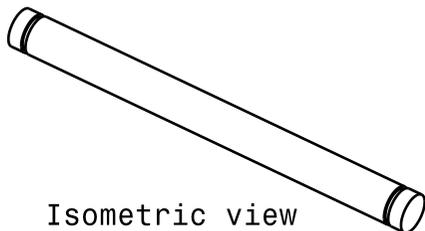
4

4

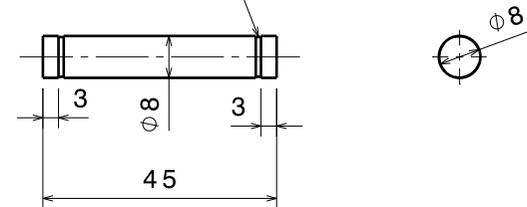
Ø8mm External Circlip Groove



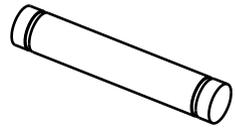
Isometric view
Scale: 1:1



Ø8mm External Circlip Groove



Isometric view
Scale: 1:1



Note: $\phi 8$ mm OD should be machined as per Bearing ID Size MR698ZZ

Qty: 02 nos.

Qty: 02 nos.

| | | | | | |
|---|--|--------------------------------------|--|---------------------------------------|----------------|
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| | | BHAT, GANDHINAGAR-382 428 | | | |
| DRAWN BY RHRTD | | DATE | | DRAWING TITLE Support Shaft | |
| CHECKED BY RHRTD | | DATE | | SIZE A3 | DRAWING NUMBER |
| DESIGNED BY RHRTD | | DATE | | SCALE 1:1 | WEIGHT (kg) |
| | | | | SHEET | 1/1 |

H G F E D C B A

1

1

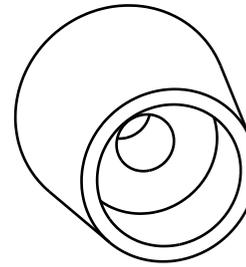
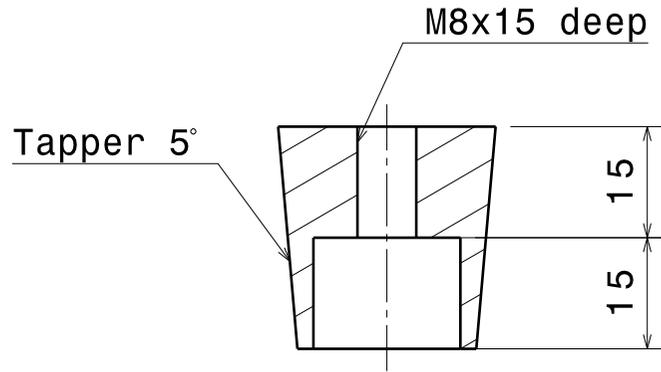
D

C

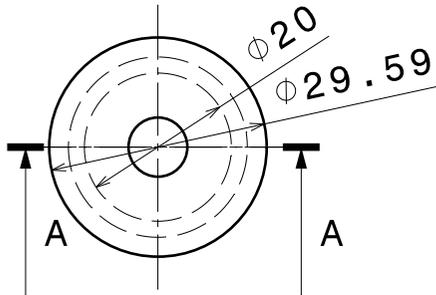
B

A

Section view A-A
Scale: 1:1



Isometric view
Scale: 1:1



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DRAWING TITLE

Support Peg

DRAWN BY
RHRTD

DATE

CHECKED BY
RHRTD

DATE

SIZE

A4

DRAWING NUMBER

REV

DESIGNED BY
RHRTD

DATE

SCALE

1:1

WEIGHT (kg)

SHEET

1/1

Qty: 04 nos

D

A

4

4

3

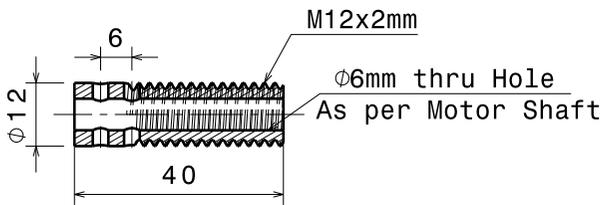
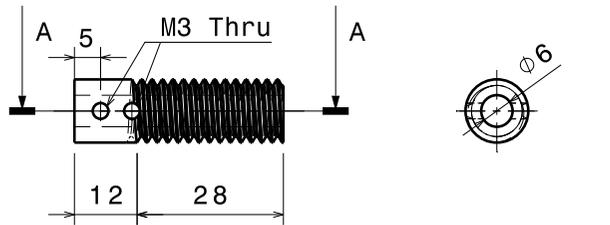
3

2

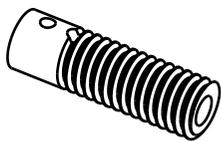
2

1

1

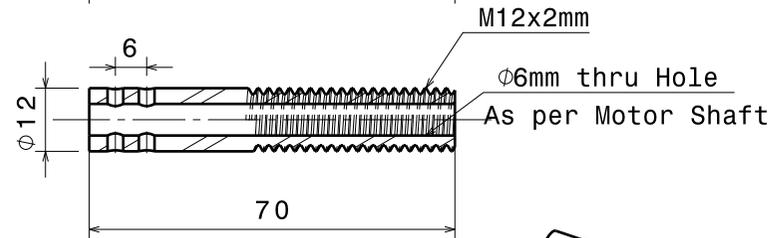
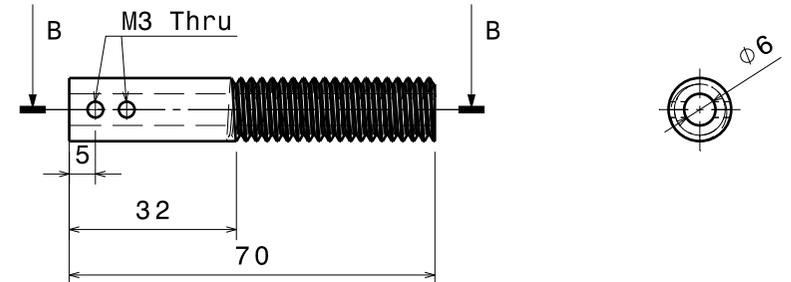


Section view A-A
Scale: 1:1

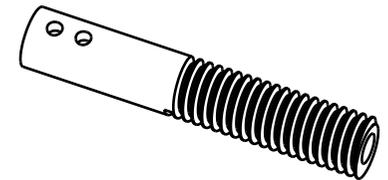


Isometric view
Scale: 1:1

Qty: 02 nos



Section view B-B
Scale: 1:1



Isometric view
Scale: 1:1

Qty: 01 no

| | | | | |
|---|--|---|--------------|----------------|
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| DRAWN BY RHRTD | | DRAWING TITLE Threaded Coupler | | |
| CHECKED BY RHRTD | | DATE | SIZE A3 | DRAWING NUMBER |
| DESIGNED BY RHRTD | | DATE | SCALE 1:1 | WEIGHT (kg) |
| | | SHEET | | 1/1 |

D

C

B

A

4

4

3

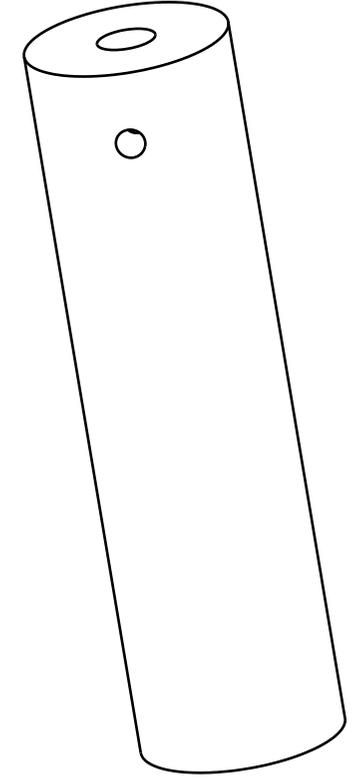
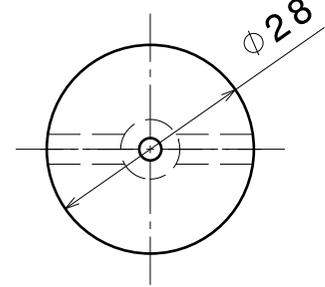
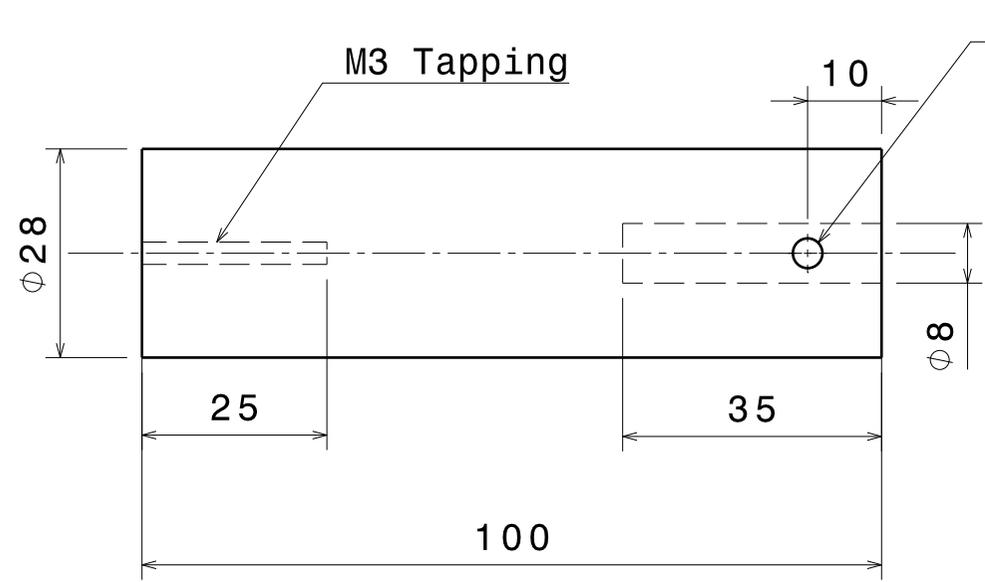
3

2

2

1

1



Isometric view
Scale: 1:1

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DRAWING TITLE
Thumb Handle

DRAWN BY RHRTD **DATE**

CHECKED BY RHRTD **DATE**

DESIGNED BY RHRTD **DATE**

SIZE A4 **DRAWING NUMBER** **REV**

SCALE 1:1 **WEIGHT (kg)** **SHEET** 1/1

Qty: 01 no.

D

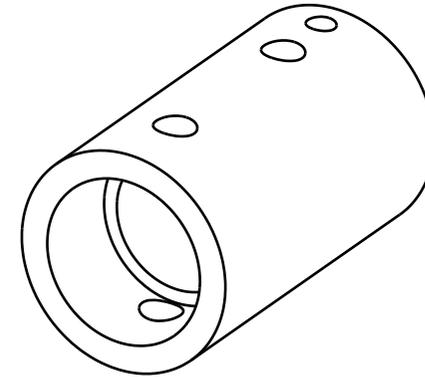
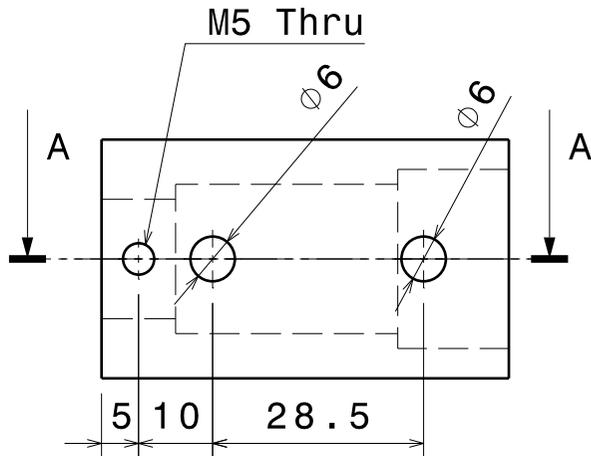
A

D

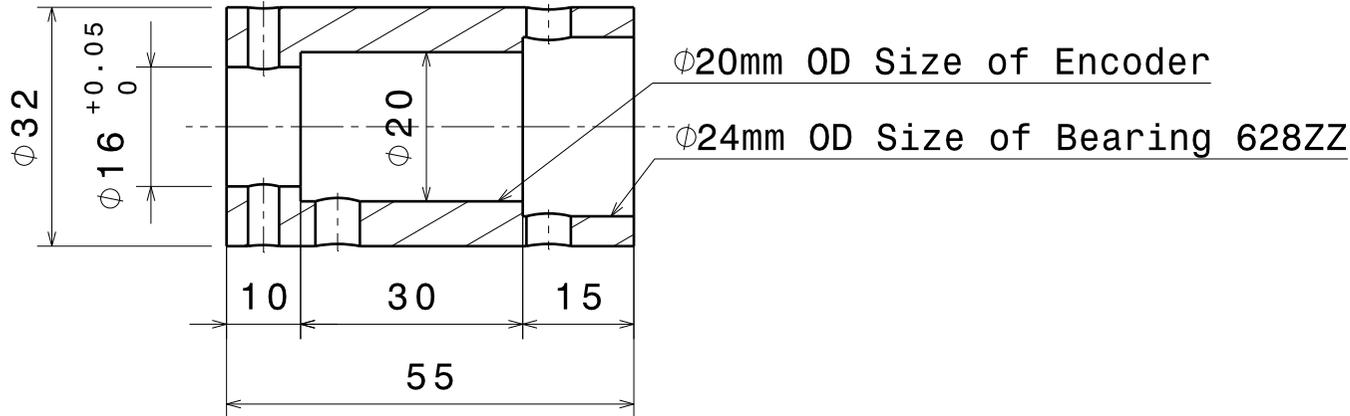
C

B

A



Isometric view
Scale: 1:1



Section view A-A
Scale: 1:1

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DRAWING TITLE

Top Encoder Mounting

DRAWN BY
RHRTD

DATE

CHECKED BY
RHRTD

DATE

DESIGNED BY
RHRTD

DATE

SIZE

A4

DRAWING NUMBER

REV

SCALE

1:1

WEIGHT (kg)

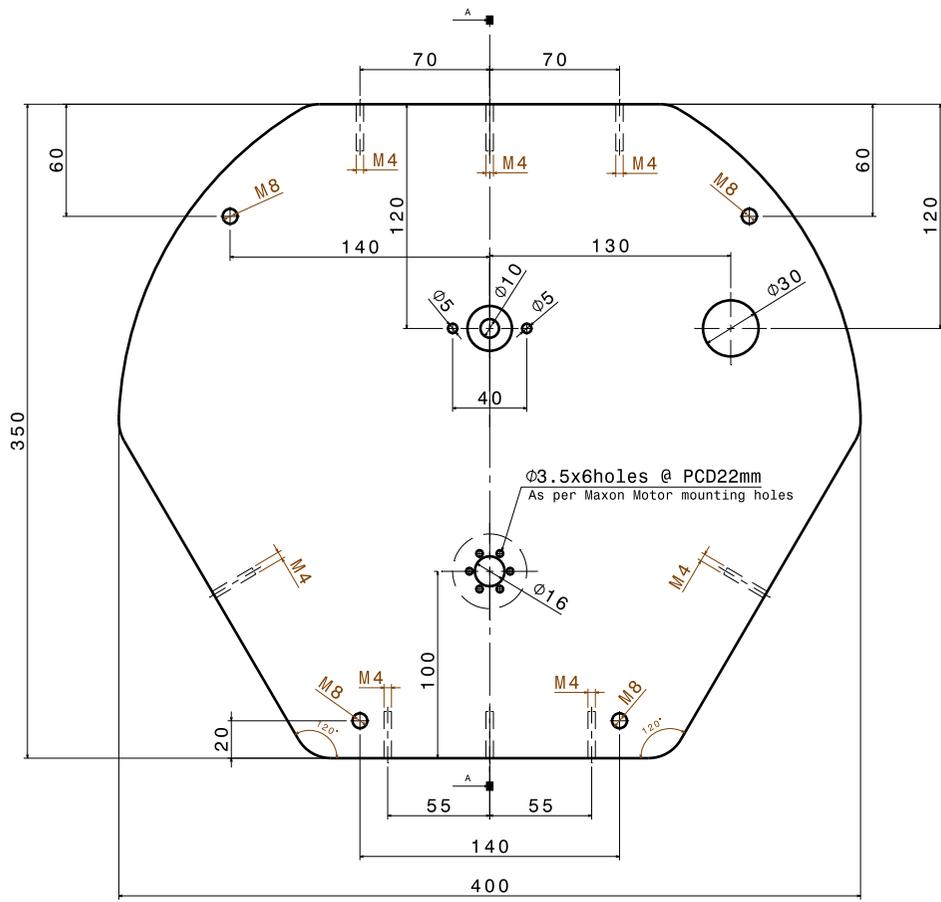
SHEET

1/1

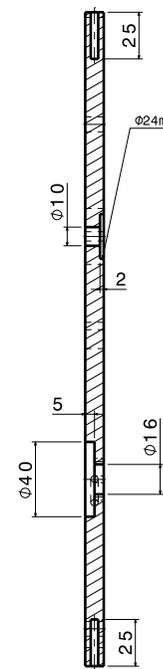
Qty:01 no

D

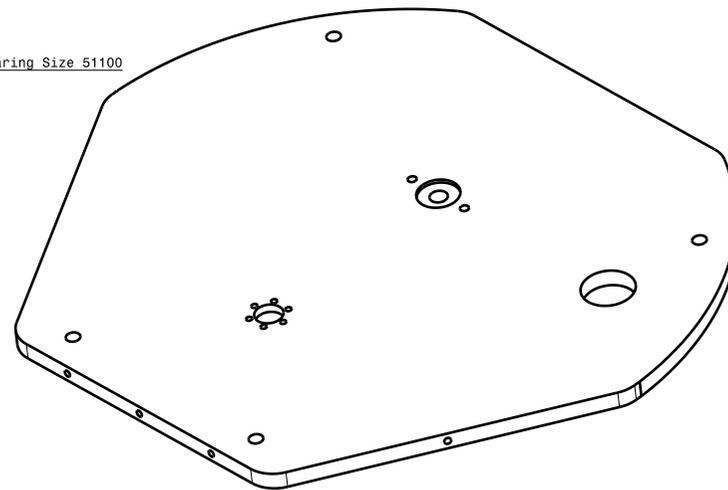
A



Front view
Scale: 1:1



Section view A-A
Scale: 1:1



Isometric view
Scale: 1:1

Qty: 01 no

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DRAWN BY: RHRTD
CHECKED BY: RHRTD
DESIGNED BY: RHRTD

DATE
DATE
DATE

DRAWING TITLE
Top Plate



| | | | |
|-------|-----|----------------|-----------|
| SIZE | A0 | DRAWING NUMBER | REV |
| SCALE | 1:1 | WEIGHT (kg) | SHEET 1/1 |

(This need to be printed in Bidders letter head)

1. Please quote with complete technical details along with technical compliance sheet.
2. Quotation should be submitted in the format given below, else IPR shall not consider the offer by the vendor.

NAME OF PARTY : _____

ENQUIRY NO: _____

QUOTATION No. & DATE : _____

Currency of Quotation: **Indian Rupees**

| Sr. No. | Item Description | HSN/SAC Code | Quantity | Unit Rate (Basic) | Packaging & forwarding (P&F) | Applicable GST | Rate (incl P&F and GST) | Total Value |
|---------|------------------|--------------|----------|-------------------|------------------------------|----------------|-------------------------|-------------|
| | | | a | b | c | d | e = b + c + d | f = a * e |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |

| Sr. No. | Particular | Remarks |
|---------|--------------------------------|---------|
| I. | Ex-works / FOR Destination | |
| II. | Freight | |
| III. | Insurance | |
| IV. | Delivery Period | |
| V. | Payment (IPR terms will apply) | |
| VI. | Guarantee / Warrantee | |
| VII. | Validity Period | |
| VIII. | Discount (if any) | |
| IX. | Remarks | |

Place: Authority Signatory

Date: Company Seal

Note:

1. Bidder should submit the copy of GSTIN / ARN Certificate along with the offer
2. Bidder should specify the SUPPLY and SERVICE rates/ charges separately wherever applicable