



## Department of Aerospace Engineering

Indian Institute of Technology Madras  
Chennai – 600 036, India

Prof. R.I. Sujith

PROJECT COORDINATOR

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**Ref: No. ASE/RISU/ FABRICATION OF EXPERIMENTAL COMBUSTOR / 2014/**

**DATE: 04 .04. 2014**

Due date : 25.4.2014

Dear Sir,

1. Quotations are invited in duplicate for the various items shown below/overleaf/**enclosed list**.
2. The quotations are to be in two parts as  
**Technical Offer and as Commercial offer:**  
The two parts of the offer are to be clearly marked on the envelopes. The two parts of the offer in separate envelopes must be enclosed in the one bigger envelope duly sealed and super scribed with reference number and due date and must be addressed to the undersigned so as to reach him on or before the due date stipulated above.
3. Fax and Email quotation are not acceptable.
4. Quotations should be valid for 60 days from the due date and period of delivery required , warranty terms etc. should also be clearly indicated. A minimum of one year warranty is required from the date of commissioning.
5. Imported supplies should be quoted **for CIF Madras**.
6. Local firms to quote for free delivery to this Institute. If quoted for Ex-Godown delivery charges be indicated separately.
7. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples / machine/equipment if called for should be submitted / demonstrated at free of charges, and collected back AT THE SUPPLIER'S EXPENSES. Compliancy certificate is to be provided indicating conformity to the technical specifications
8. Sales Tax/General Taxes/ED if applicable and such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. If this is not indicated no such claim will be admitted at any stage. The taxes leviable should take into consideration that we are entitled to have concessional Sales Tax applicable to Non-Government Educational Institutions run with no profit motive for which a concession is given. Sales Tax Certificate will be issued at the time of final settlement of the bill.
9. Goods should be supplied carriage paid and insured.
10. Goods shall not be supplied without an official supply order.
11. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
12. In case of LC. Payment, 90% of the payment will be made after completion of the supply. The balance 10% of the payment will be made after satisfactory installation of the equipment.
13. IIT Madras is exempt from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand. IIT Madras will make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges.
14. **Acceptance and Rejection:-** I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

Yours faithfully

**Project coordinator**

Items required: **FABRICATION OF EXPERIMENTAL COMBUSTOR**, as per specifications enclosed.

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Phone Nos.: (044) 2257 5000 / 5027 / 5031 FAX: (044) 2257 4002, E-mail: sujith@ iitm.ac.in

## Fabrication of experimental combustor.

The experimental combustor is used to study the transverse combustion instability caused by bluff body stabilized flames.

### Brief scope of fabrication

1. The experimental combustor shall be fabricated as per following drawings

| S No | Drawing nomenclature                  | Qty |
|------|---------------------------------------|-----|
| 1.   | Plenum Chamber                        | 1   |
| 2.   | Main frames Top                       | 1   |
| 3.   | Main frame bottom                     | 1   |
| 4.   | Top quartz plate                      | 1   |
| 5.   | Starting side plate                   | 2   |
| 6.   | Fuel injection side plate head        | 1   |
| 7.   | Fuel injection side plate tail        | 1   |
| 8.   | Fuel injector tube with holes         | 3   |
| 9.   | Fuel injector tube without holes      | 3   |
| 10.  | Igniters plate                        | 4   |
| 11.  | Quartz holder                         | 2   |
| 12.  | Bluff body                            | 7   |
| 13.  | Flame holder side plates with 5 holes | 1   |
| 14.  | Flame holder side plates with 6 holes | 1   |
| 15.  | Flame holder quartz cover plate       | 2   |
| 16.  | Flame holder FH fixing plate          | 10  |
| 17.  | Ending side plate                     | 2   |
| 18.  | Chamber assembly                      | 1   |
| 19.  | Short frame bottom                    | 1   |
| 20.  | Flanges                               | 4   |
| 21.  | Bolts –flanges (8.5mm)                | 156 |
| 22.  | Bolts- set up (5mm)                   | 536 |
| 23.  | Pressure transducer (Blanks)          | 60  |
| 24.  | Thermocouple (Blanks)                 | 3   |
| 25.  | Spark plug (Blanks)                   | 5   |
| 26.  | Probe washer (Blanks)                 | 60  |
| 27.  | M4 blanks                             | 25  |
| 28.  | Top cover plate blank                 | 1   |

2. Material for the fabrication shall be stainless steel (SS310). Material is not provided by IITM.
3. The 'Combustor assembly shall be delivered assembling the rest of the parts.
4. The combustor assembly shall be fabricated and delivered within 2 months from the date of purchase order.
5. The supplier shall assemble and erect the facility at the chosen site at IITM
6. The drawings are uploaded in the institute website: <http://tenders.iitm.ac.in/>
7. Vendor has to provide the specification compliance report along with the quotation.

For any technical clarification please contact:

Mr. Hashir P.K.,

Email: [hashirkeezhoor@gmail.com](mailto:hashirkeezhoor@gmail.com) ,

Mob: +91 9087217027 , +91 (0) 44 2257 5000

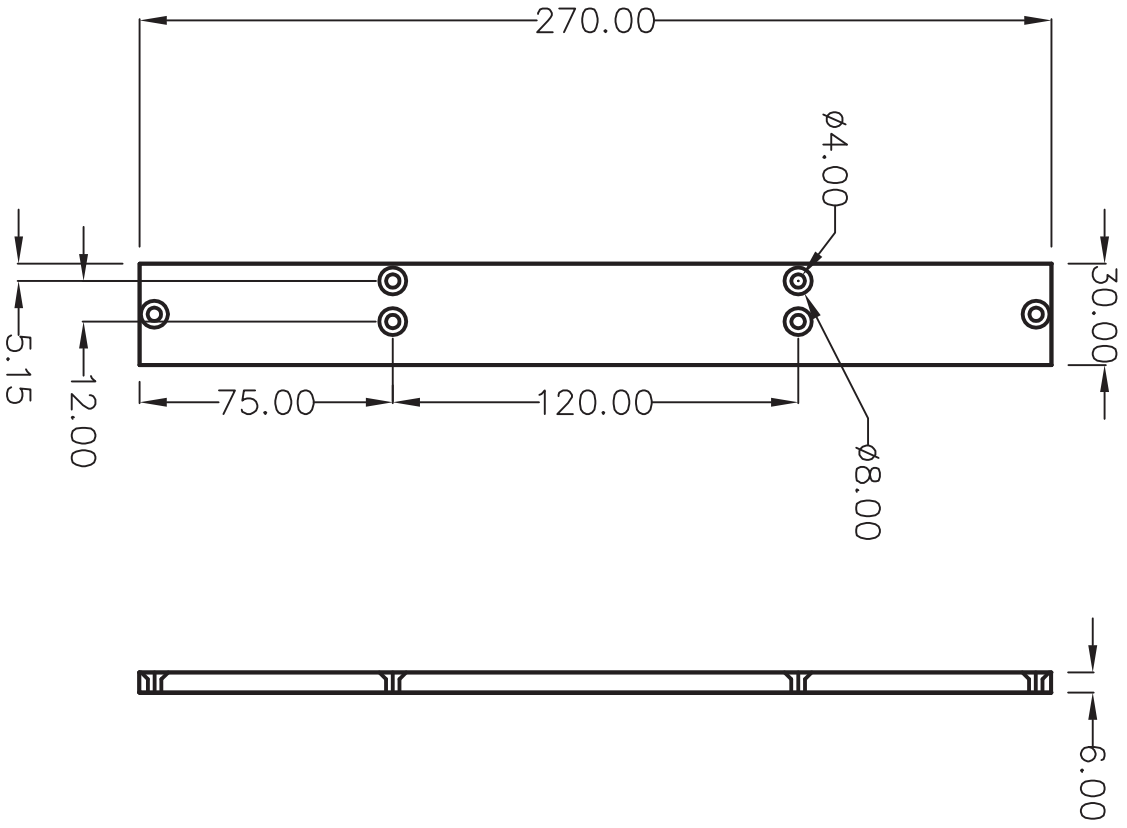
Department of Aerospace Engineering,

Indian Institute of Technology Madras- 600036,

Tamilnadu,

India.

# 2 Flame holder fixing plate



QTY : 2

| DATE | APPROVED |
|------|----------|
|      |          |

REVISION

NO.

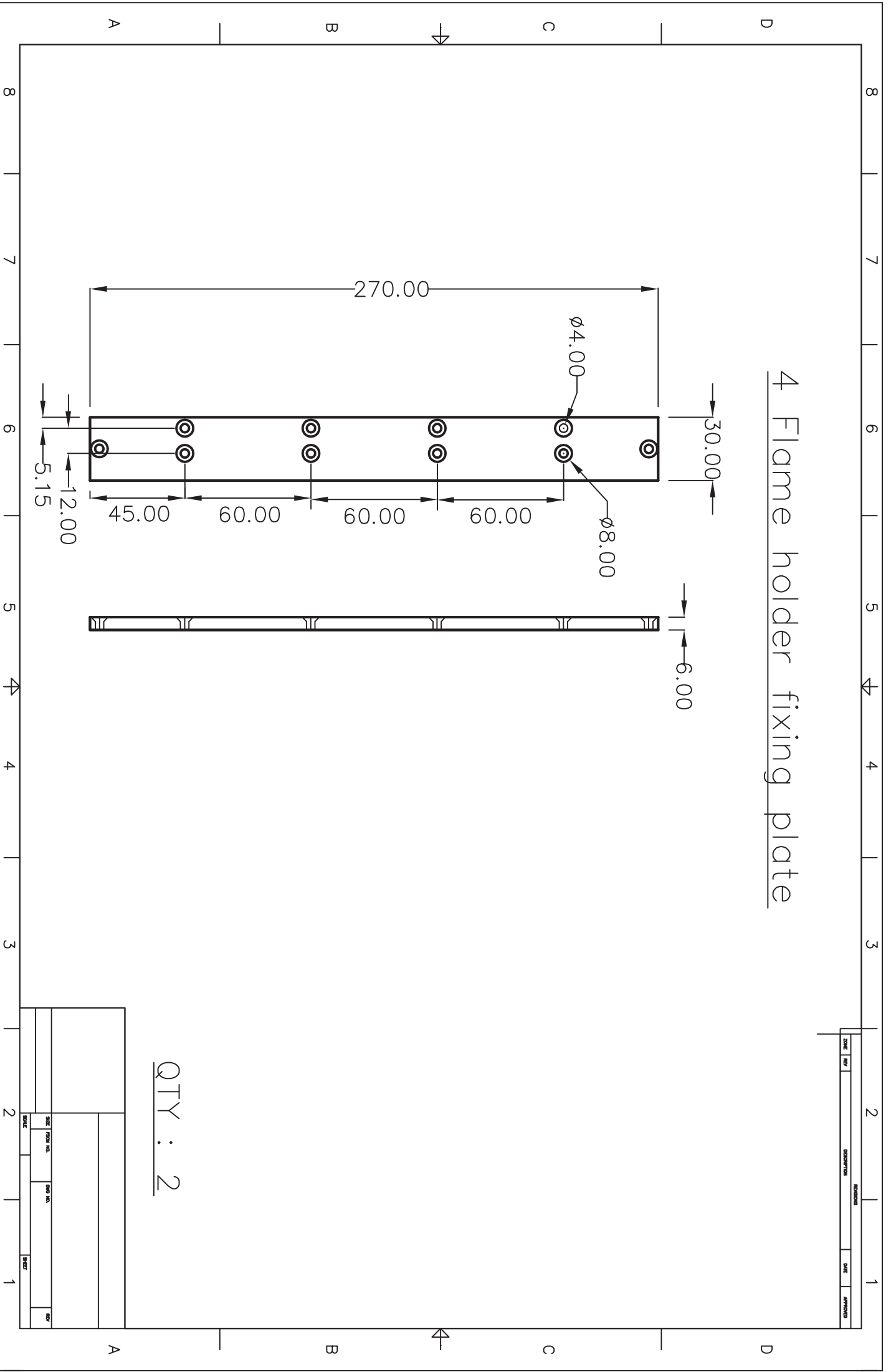
DATE

DATE

APPROVED

| NO. | REVISION | DATE | APPROVED |
|-----|----------|------|----------|
| 1   |          |      |          |
| 2   |          |      |          |

# 4 Flame holder fixing plate



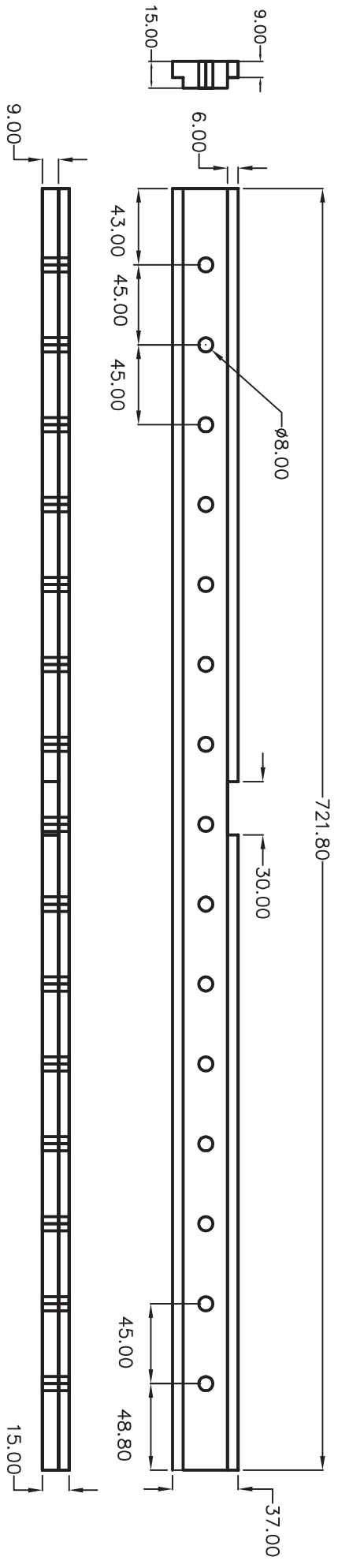
QTY : 2

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| DATE | DESIGNED BY | CHECKED BY | DATE | APPROVED BY |
|      |             |            |      |             |

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| DATE | NO. | DESCRIPTION | DATE | APPROVED |
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8 7 6 5 4 3 2 1

# Bottom long frame



QTY : 1

| REVISION |      | DATE | APPROVED |
|----------|------|------|----------|
| NO.      | REV. |      |          |

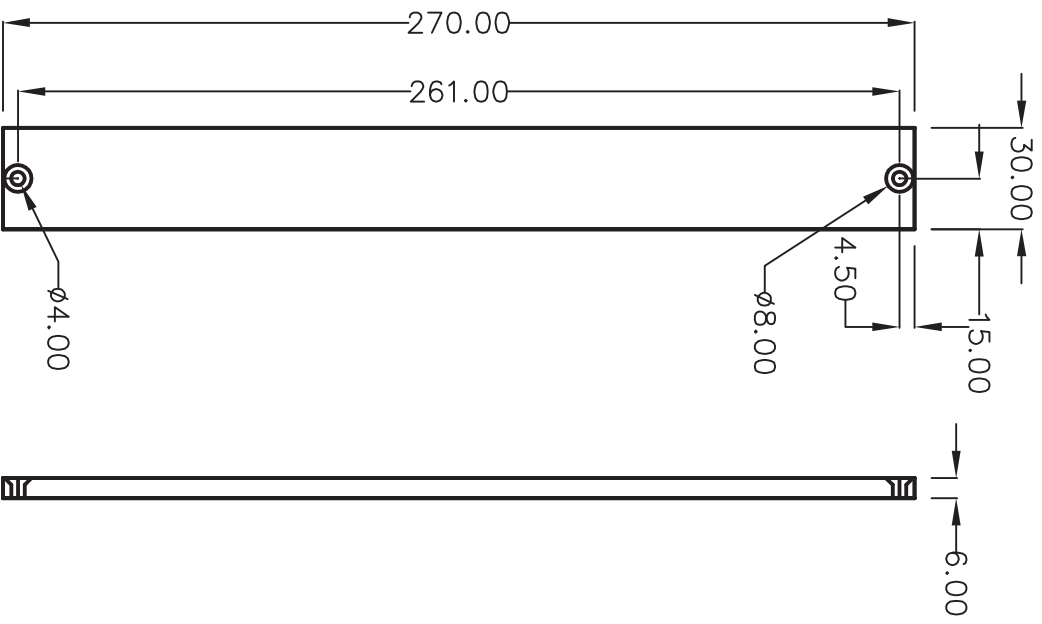
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| DESIGNED |  | APPROVED |  |
| DATE     |  | DATE     |  |

8 7 6 5 4 3 2 1

A B C D

A B C D

# Flame holder fixing plate

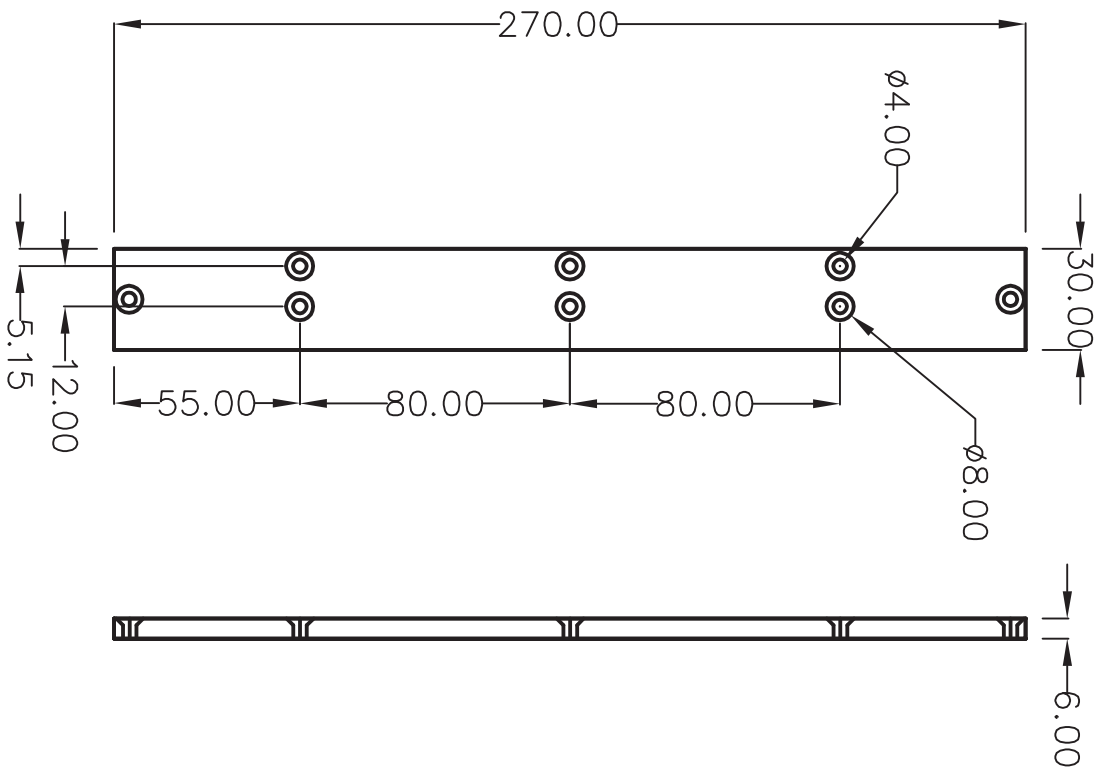


QTY : 4

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| DATE | REV | DESCRIPTION | DATE | APPROVED |
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# Flame holder fixing plate 1&3



QTY : 2

| NO | DESCRIPTION | QTY | UNIT | REVISION | DATE | APPROVED |
|----|-------------|-----|------|----------|------|----------|
| 1  |             |     |      |          |      |          |
| 2  |             |     |      |          |      |          |

4

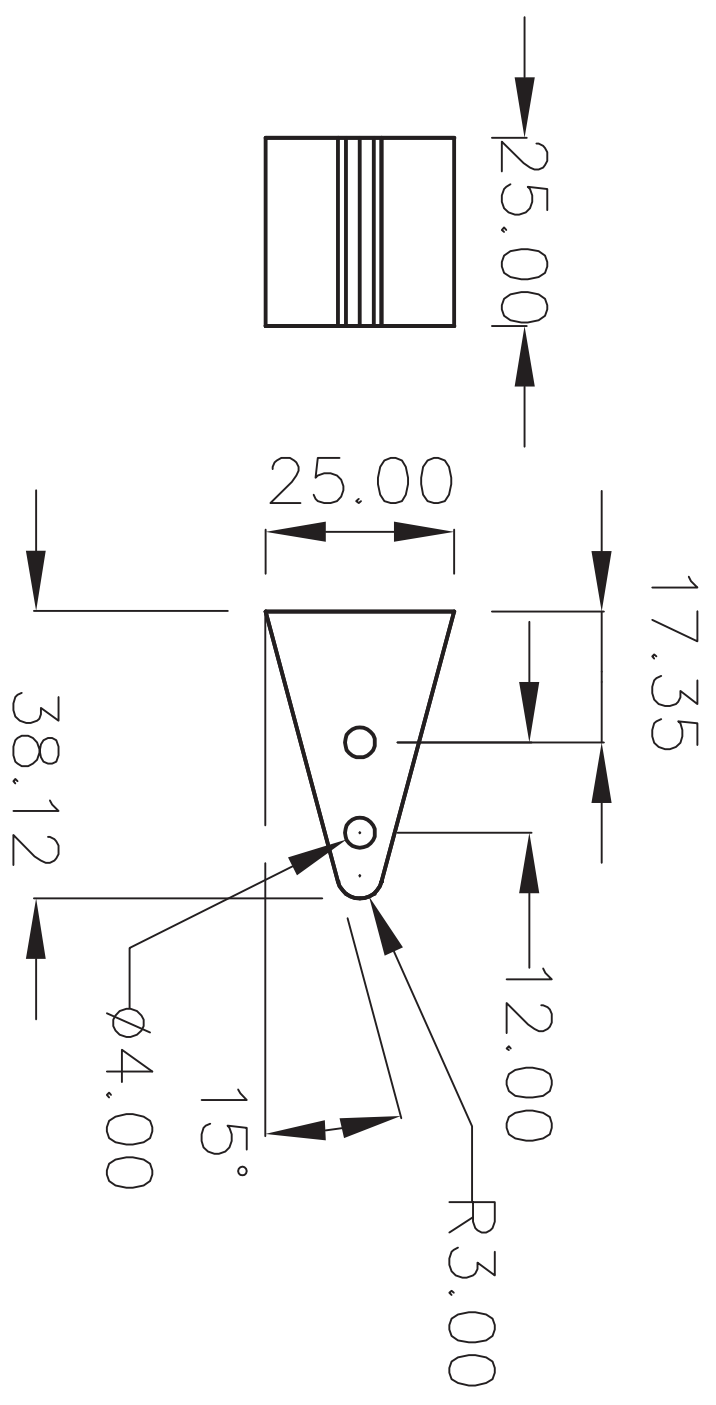
3

2

1

# Flame holder

| REVISIONS |     | DATE        | APPROVED |
|-----------|-----|-------------|----------|
| ZONE      | REV | DESCRIPTION |          |



QTY : 7

|       |      |          |         |       |     |
|-------|------|----------|---------|-------|-----|
| SCALE | SIZE | FORM NO. | DWG NO. | SHEET | REV |
|       |      |          |         |       |     |

A

B

4

C

D

4

3

4

2

1

A

B

4

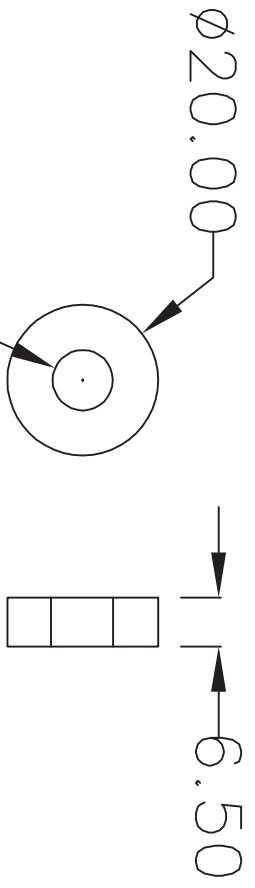
C

D



probe washer

| REVISIONS |     | DATE        | APPROVED |
|-----------|-----|-------------|----------|
| ZONE      | REV | DESCRIPTION |          |



QTY : 60

|      |          |         |       |       |     |
|------|----------|---------|-------|-------|-----|
| SIZE | FORM NO. | DWG NO. | SCALE | SHEET | REV |
|      |          |         |       |       |     |
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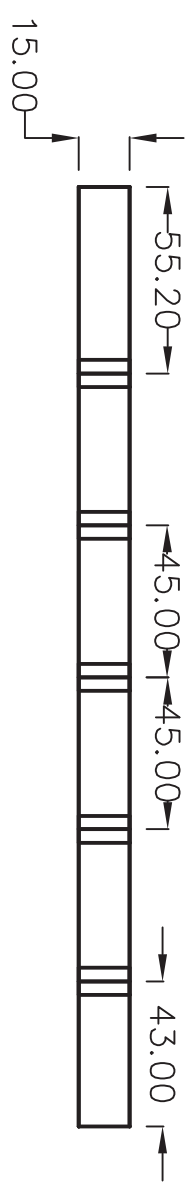
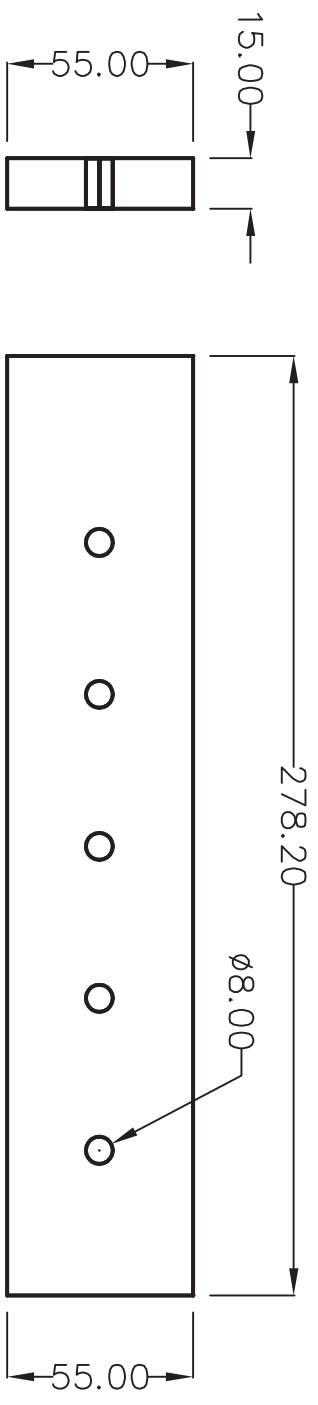


8 7 6 5 4 3 2 1

|      |  |             |  |      |  |          |  |
|------|--|-------------|--|------|--|----------|--|
| NAME |  | COMPARTMENT |  | DATE |  | APPROVED |  |
|      |  |             |  |      |  |          |  |

All dimensions are in mm

### Short frame bottom



Material : SS310

QTY : 1

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  |  |
|  |  |  |  |  |  |
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|  |  |  |  |  |  |

8 7 6 5 4 3 2 1

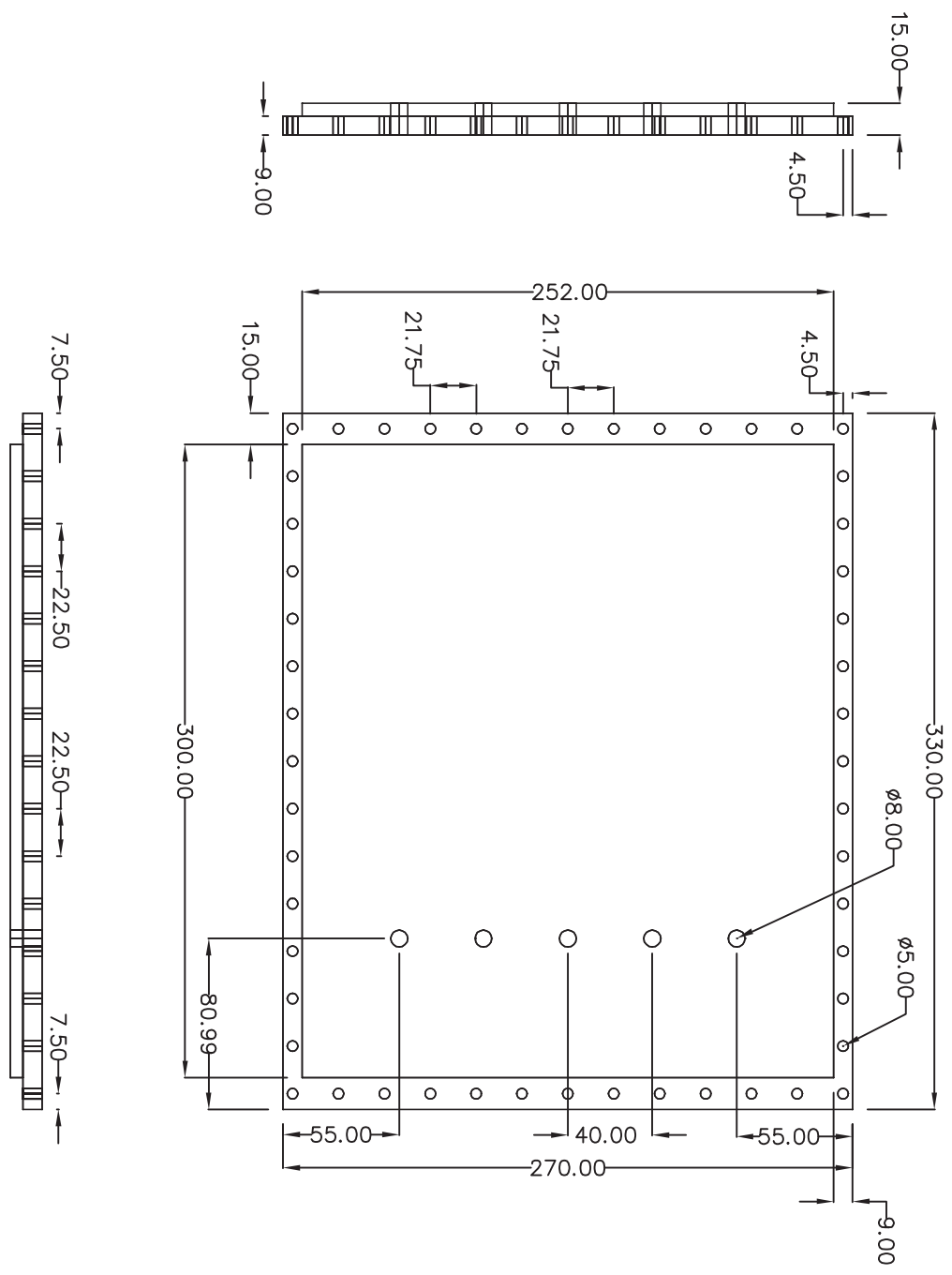
A B C D

A B C D

|      |     |             |      |          |
|------|-----|-------------|------|----------|
| DATE | REV | DESCRIPTION | DATE | APPROVED |
|      |     |             |      |          |

# Side plate .1

All dimensions are in mm



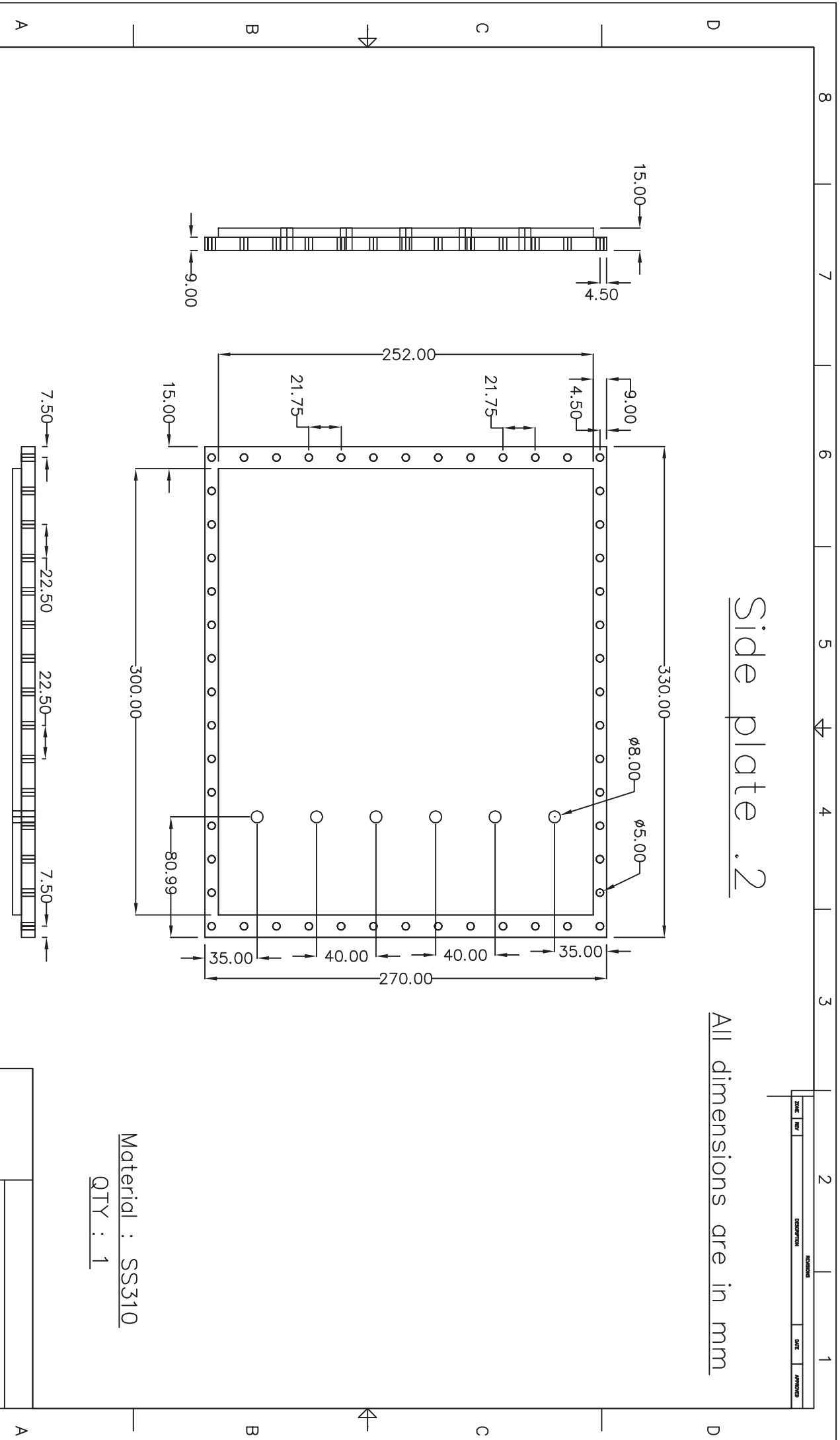
Material : SS310  
QTY : 1

|      |     |             |      |          |
|------|-----|-------------|------|----------|
| DATE | REV | DESCRIPTION | DATE | APPROVED |
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|      |     |             |      |          |
|------|-----|-------------|------|----------|
| DATE | REV | DESCRIPTION | DATE | APPROVED |
|      |     |             |      |          |

# Side plate .2

All dimensions are in mm

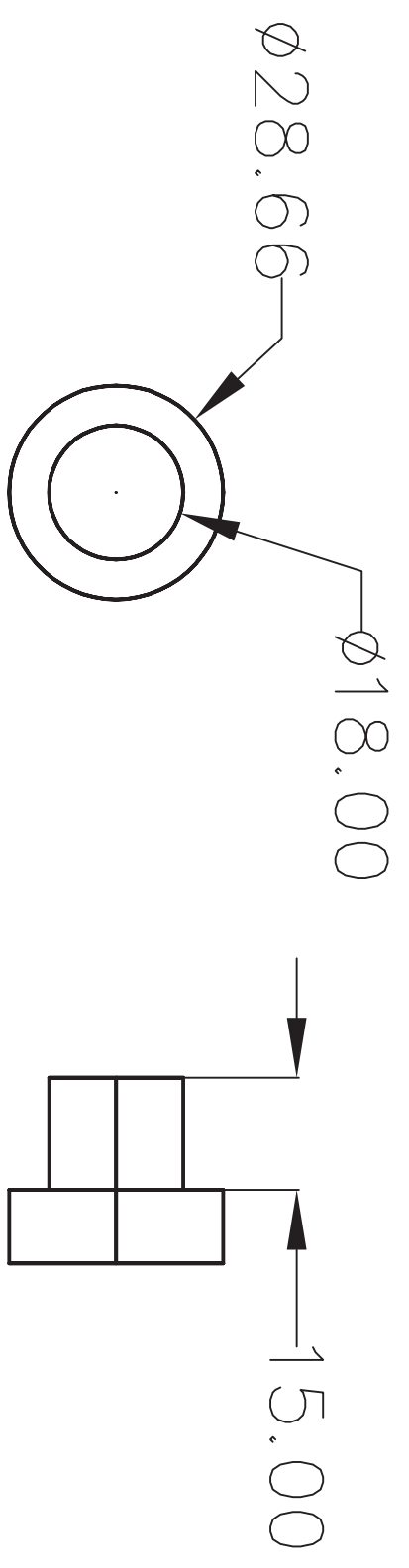


Material : SS310  
 QTY : 1

|      |     |             |      |          |
|------|-----|-------------|------|----------|
| DATE | REV | DESCRIPTION | DATE | APPROVED |
|      |     |             |      |          |

# Spark plug blank

| REVISIONS |     | DATE | APPROVED |
|-----------|-----|------|----------|
| ZONE      | REV |      |          |
|           |     |      |          |



QTY : 5

|       |  |          |  |         |  |       |  |
|-------|--|----------|--|---------|--|-------|--|
| SIZE  |  | FORM NO. |  | DWG NO. |  | SHEET |  |
|       |  |          |  |         |  |       |  |
| SCALE |  |          |  |         |  | REV   |  |
|       |  |          |  |         |  |       |  |

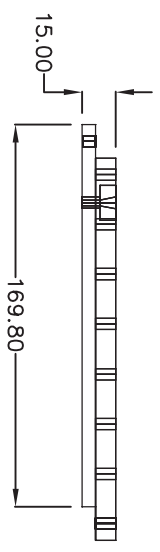
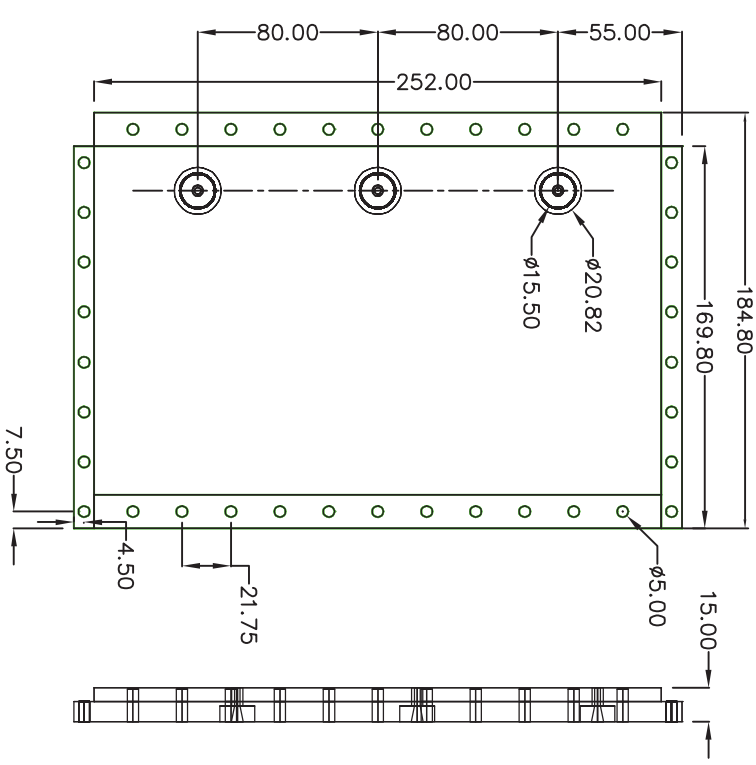


8 7 6 5 4 3 2 1

# Fuel injector plate

All dimensions are in mm

|      |     |             |      |          |
|------|-----|-------------|------|----------|
| DATE | REV | DESCRIPTION | DATE | APPROVED |
|      |     |             |      |          |



QTY : 1

|      |     |             |      |          |
|------|-----|-------------|------|----------|
| DATE | REV | DESCRIPTION | DATE | APPROVED |
|      |     |             |      |          |

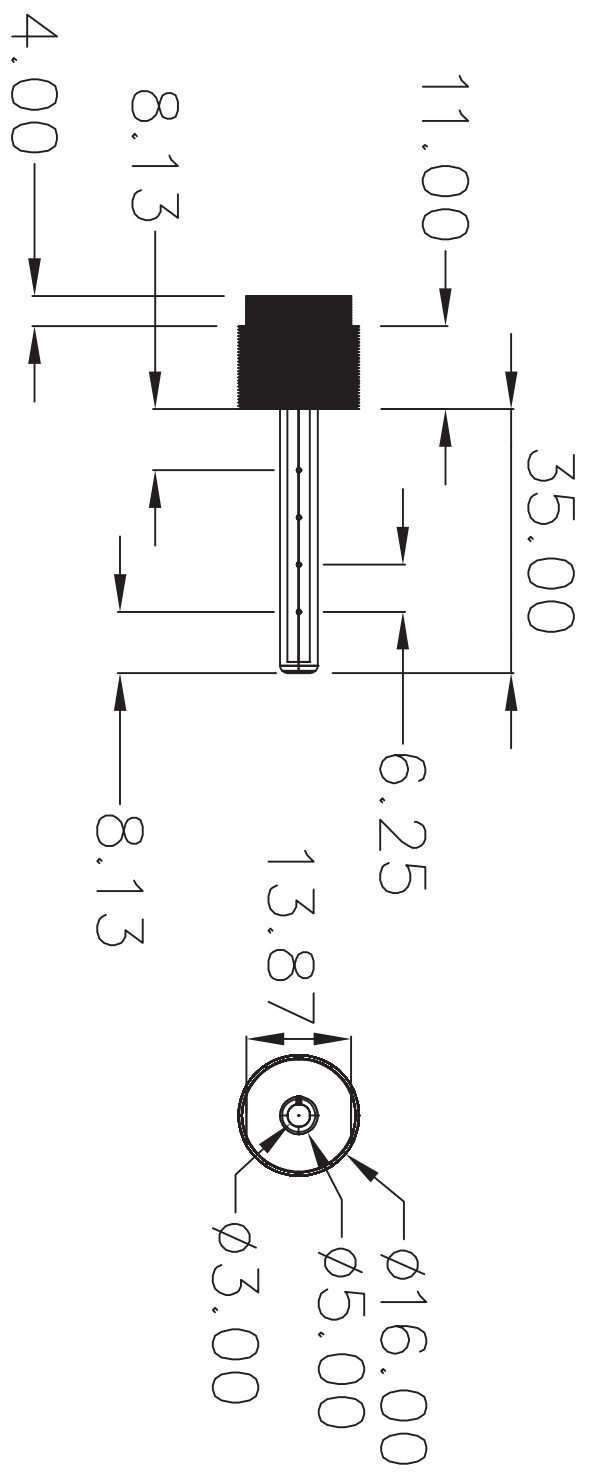
8 7 6 5 4 3 2 1

A B C D

A B C D



# Fuel injector With holes



QTY : 3

| REVISIONS |     |             |      |
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| ZONE      | REV | DESCRIPTION | DATE |
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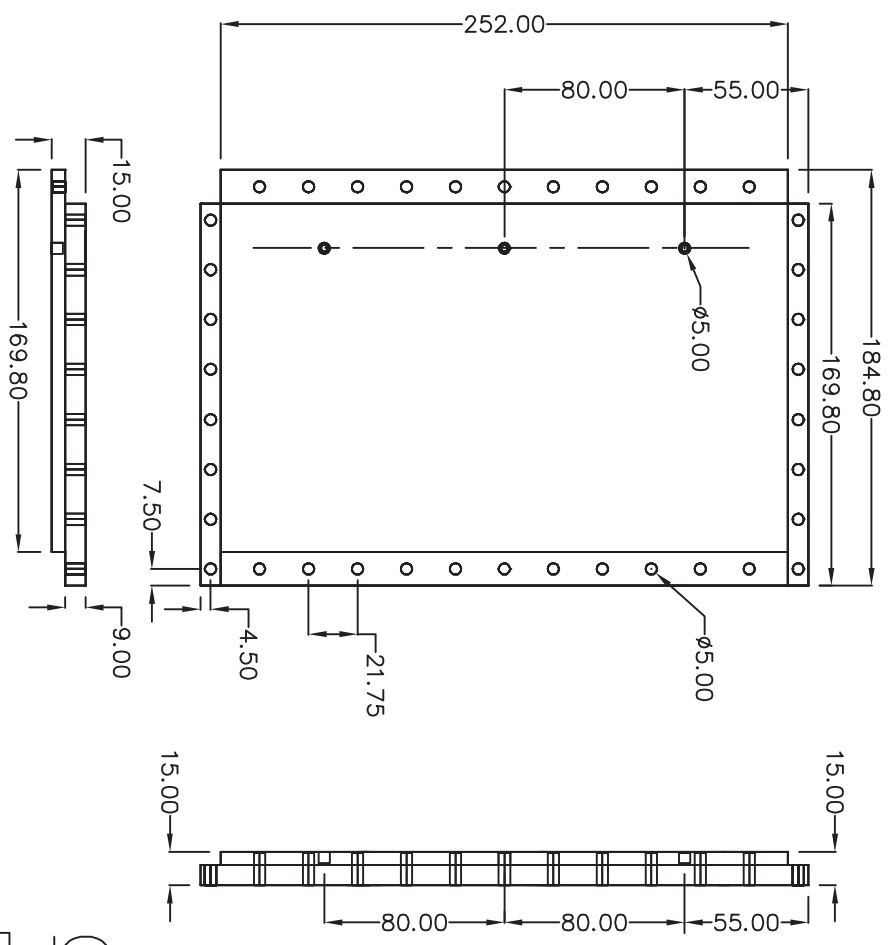
|       |          |         |     |
|-------|----------|---------|-----|
| SIZE  | FORM NO. | DWG NO. | REV |
| SCALE |          |         |     |
| SHEET |          |         |     |



8 7 6 5 4 3 2 1

# Fuel injector side plate-tail

All dimensions are in mm



QTY : 1

|      |     |             |      |          |
|------|-----|-------------|------|----------|
| DATE | REV | DESCRIPTION | DATE | APPROVED |
|      |     |             |      |          |

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| DATE | REV | DESCRIPTION | DATE | APPROVED |
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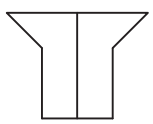
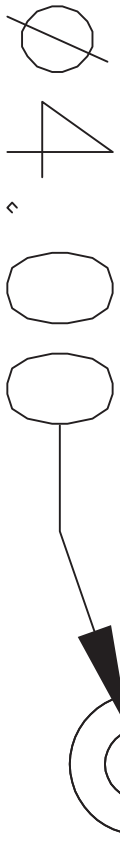
8 7 6 5 4 3 2 1

A B C D

A B C D

| REVISIONS |     |             |      |
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| ZONE      | REV | DESCRIPTION | DATE |
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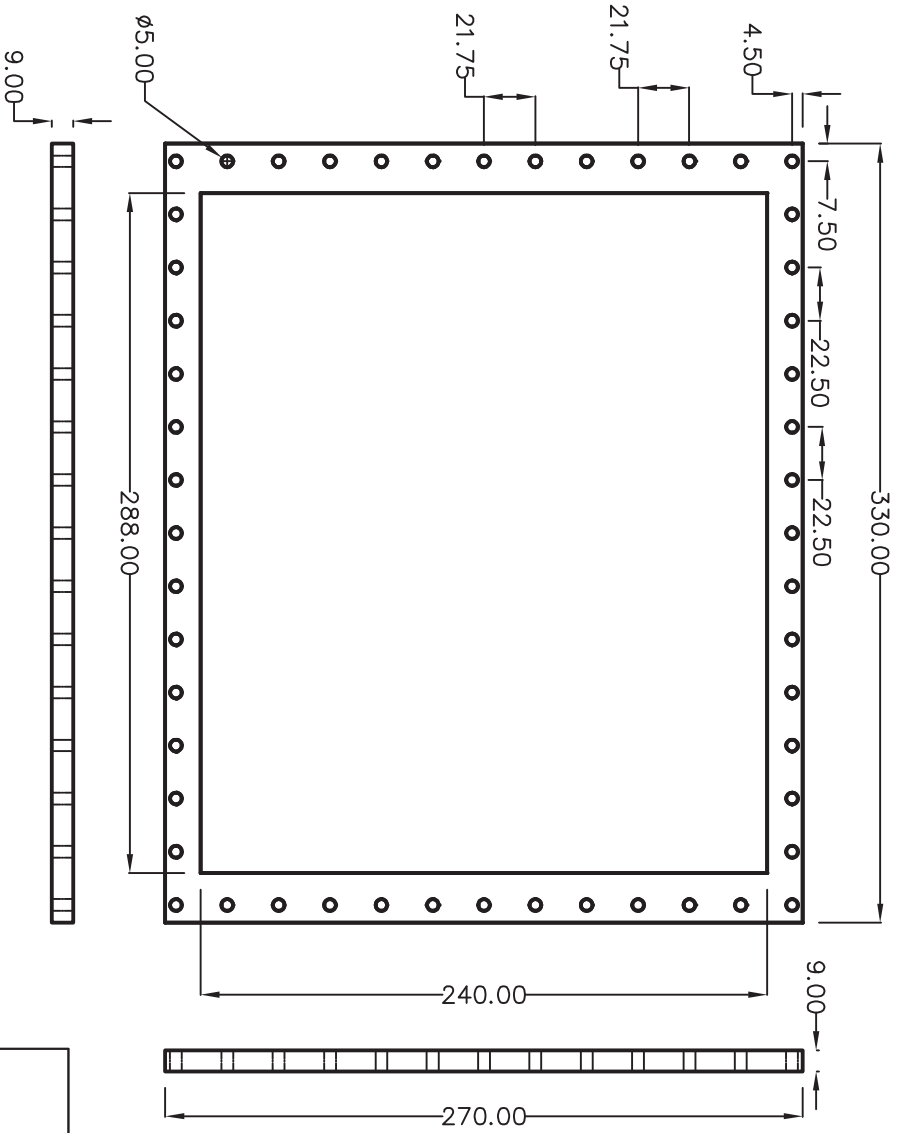
M4 blank



QTY : 25

|       |          |         |     |
|-------|----------|---------|-----|
| SCALE |          | SHEET   |     |
| SIZE  | FORM NO. | DWG NO. | REV |
|       |          |         |     |
|       |          |         |     |

# Optical Duct Cover plate



QTY: 2no,s

| REVISIONS |     |             |      |
|-----------|-----|-------------|------|
| ZONE      | REV | DESCRIPTION | DATE |
|           |     |             |      |
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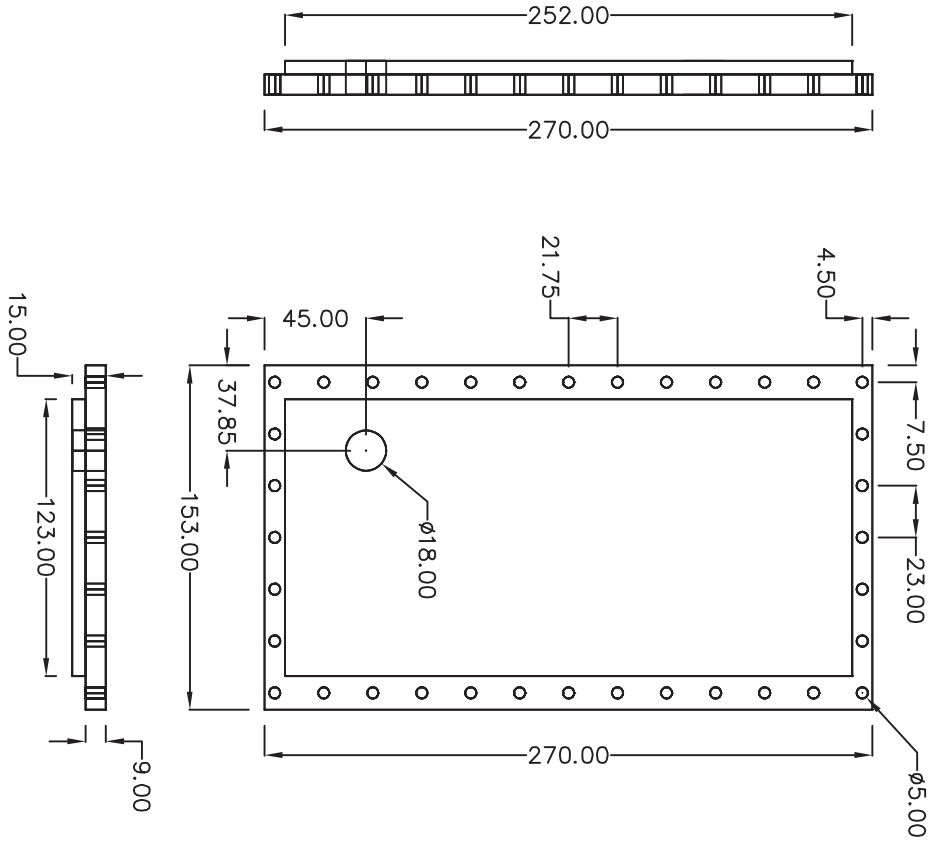
|       |          |         |       |  |     |
|-------|----------|---------|-------|--|-----|
|       |          |         |       |  |     |
| SIZE  | FSCM NO. | DWG NO. |       |  |     |
| SCALE |          |         | SHEET |  | REV |





# spark plug plate-4 FH

All dimensions are in mm

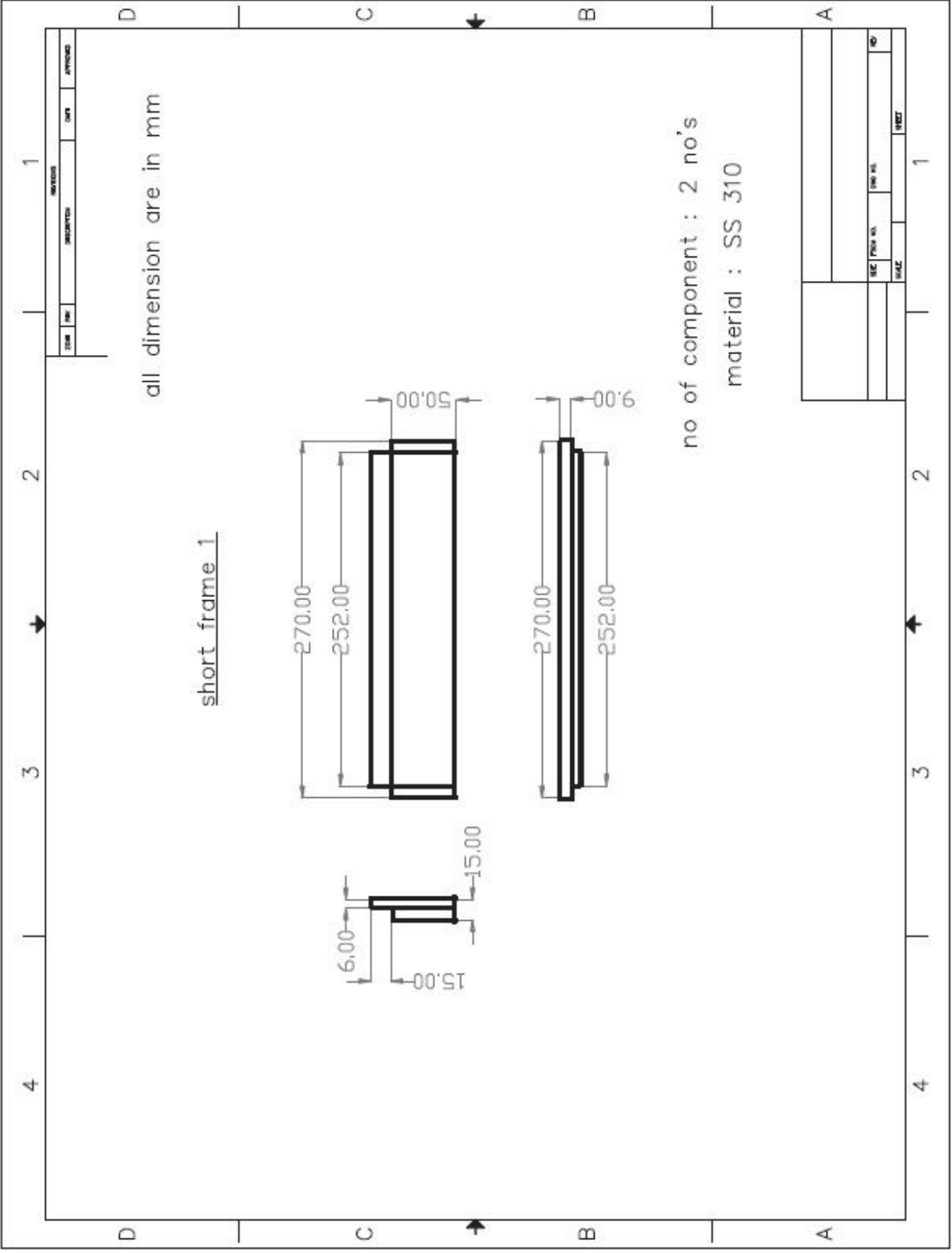


Material : SS310

QTY : 1

| NO. | DESCRIPTION      | QTY | UNIT |
|-----|------------------|-----|------|
| 1   | SPARK PLUG PLATE | 1   | PC   |

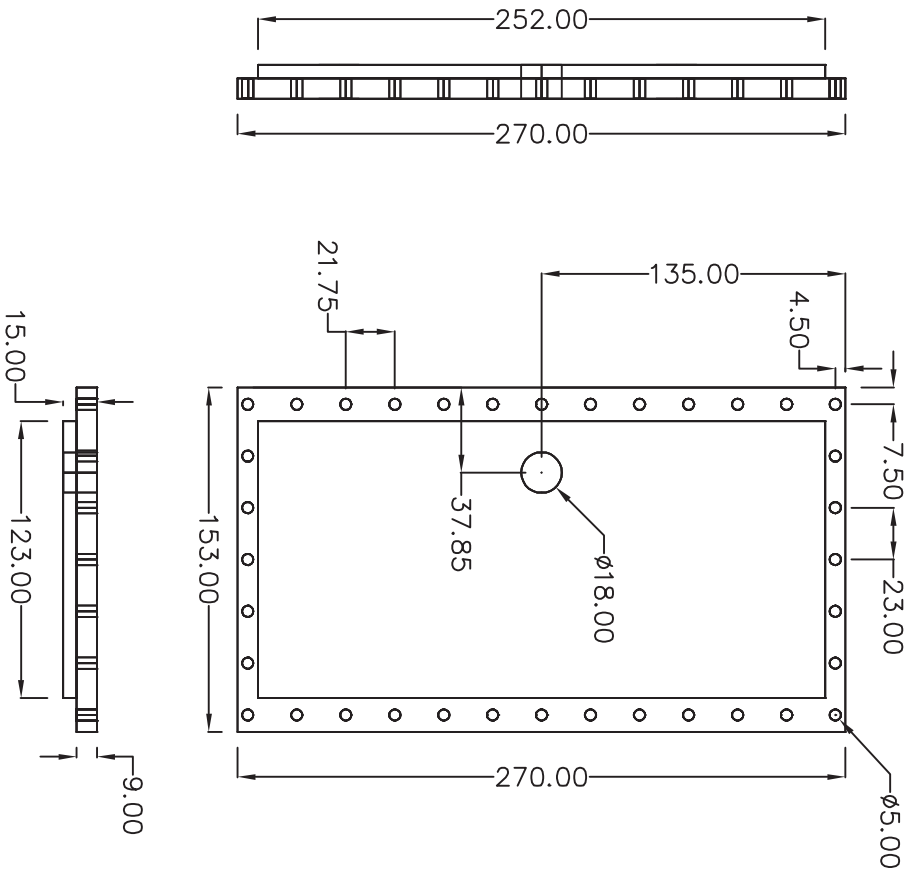






# spark plug plate-1 & 3 FH

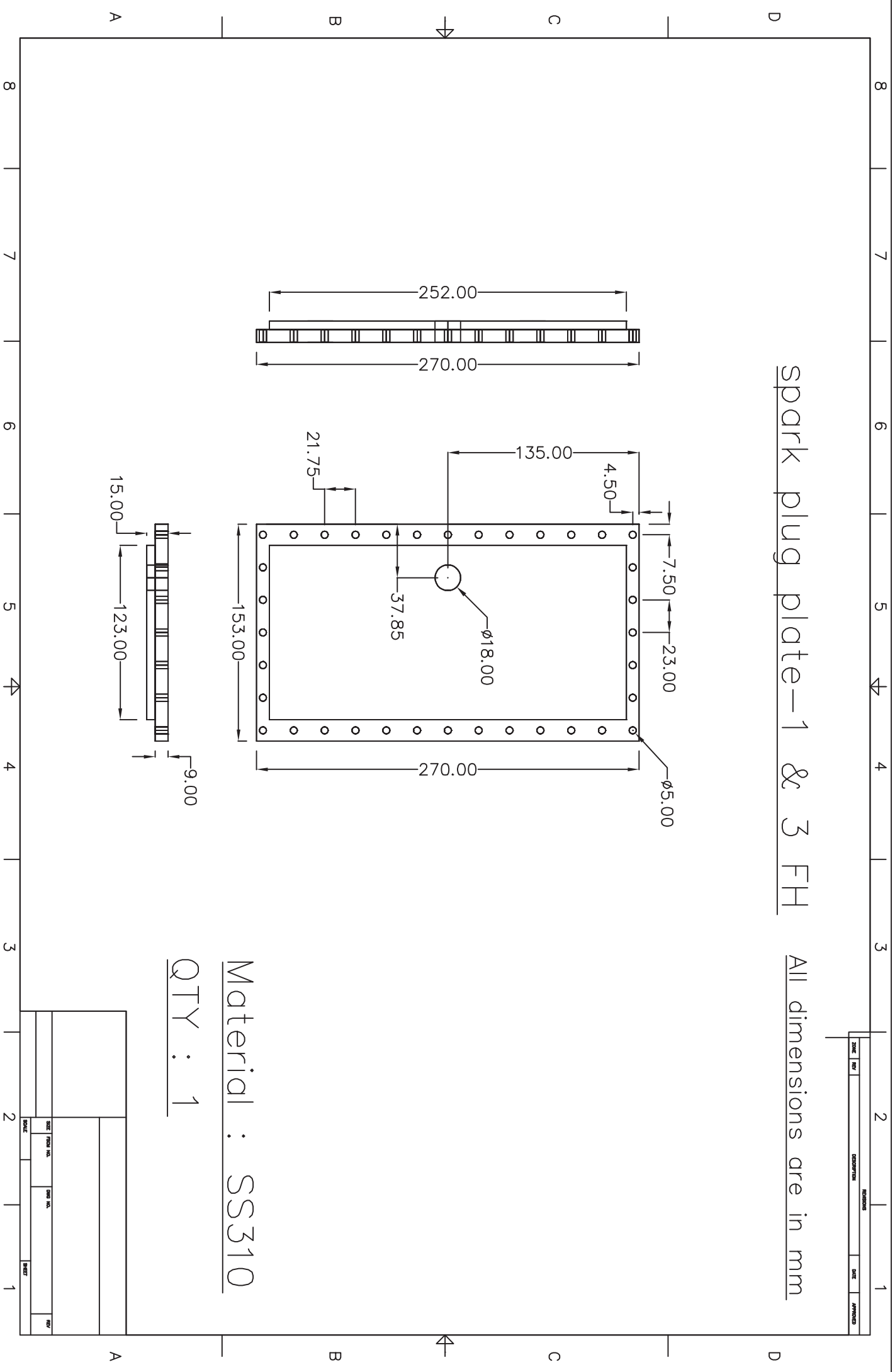
All dimensions are in mm



Material : SS310

QTY : 1

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|------|-----|-------------|------|----------|
| DATE | REV | DESCRIPTION | DATE | APPROVED |
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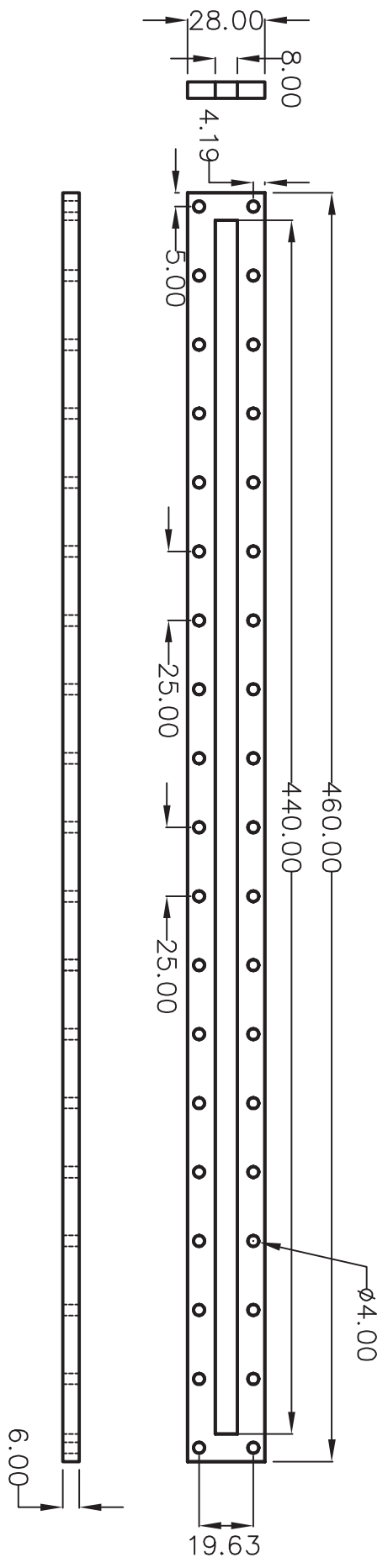




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4 3 2 1

# Top Cover plate



Qty : 1

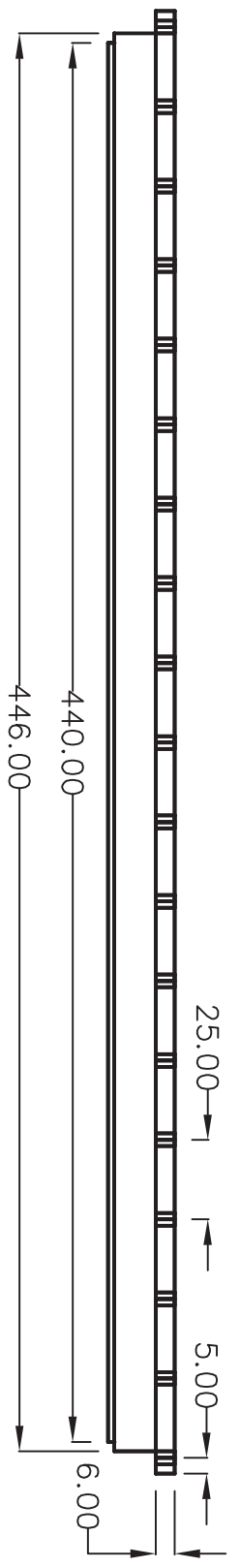
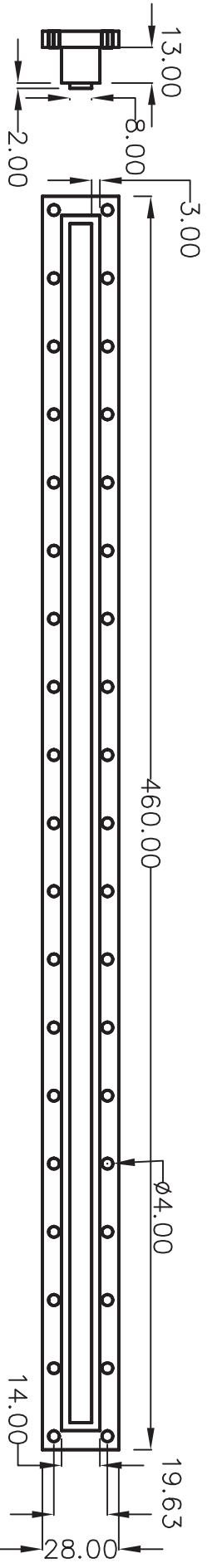
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|-------|------|----------|---------|-------|
| SCALE | SIZE | FORM NO. | DWG NO. | SHEET |
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|       |      |          |         |       |
|       |      |          |         |       |

4 3 2 1

A B C D

| REVISIONS |     |             |      |
|-----------|-----|-------------|------|
| ZONE      | REV | DESCRIPTION | DATE |
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|           |     |             |      |
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# Top Cover plate blank

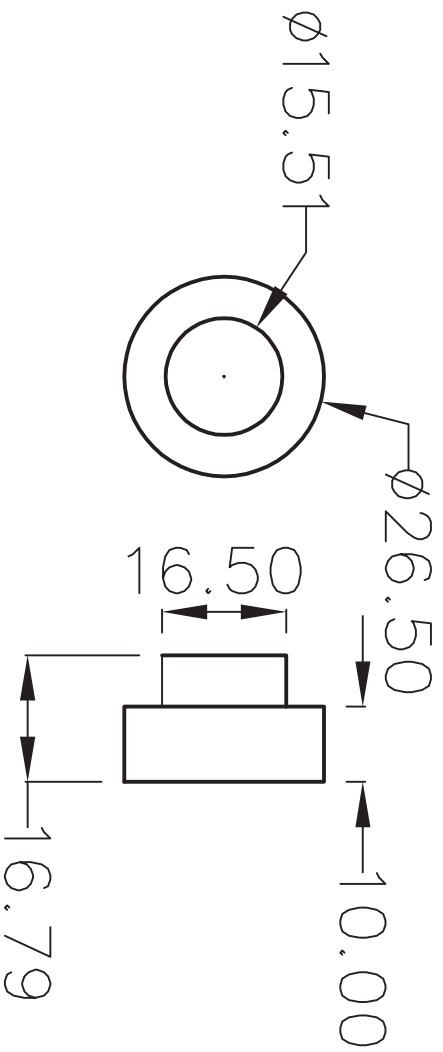


Qty : 1

|       |          |         |     |
|-------|----------|---------|-----|
| SIZE  | FORM NO. | DWG NO. | REV |
|       |          |         |     |
| SCALE | SHEET    |         |     |
|       |          |         |     |

# Thermocouple blank

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|-----------|-----|-------------|----------|
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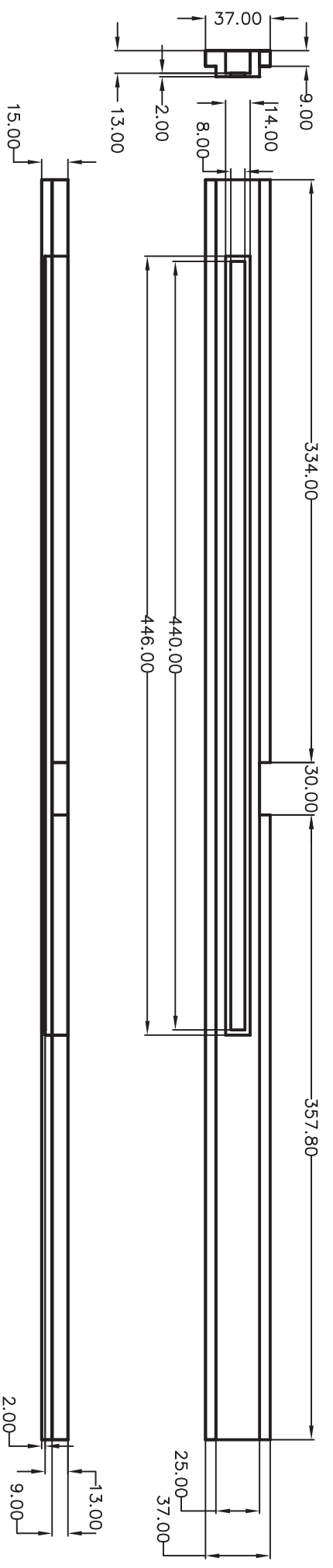


QTY : 3

|       |          |         |       |     |
|-------|----------|---------|-------|-----|
| SIZE  | FORM NO. | DWG NO. | SHEET | REV |
| SCALE |          |         |       |     |

8 7 6 5 4 3 2 1

# Top long frame



QTY : 1

| REVISION |      | DATE | APPROVED |
|----------|------|------|----------|
| NO.      | DATE |      |          |

| NO. | DATE | APPROVED |
|-----|------|----------|
| 1   |      |          |

8 7 6 5 4 3 2 1

A B C D

A B C D



| DATE | REV | DESCRIPTION | ISSUED | APPROVED |
|------|-----|-------------|--------|----------|
|      |     |             |        |          |

1

2

3

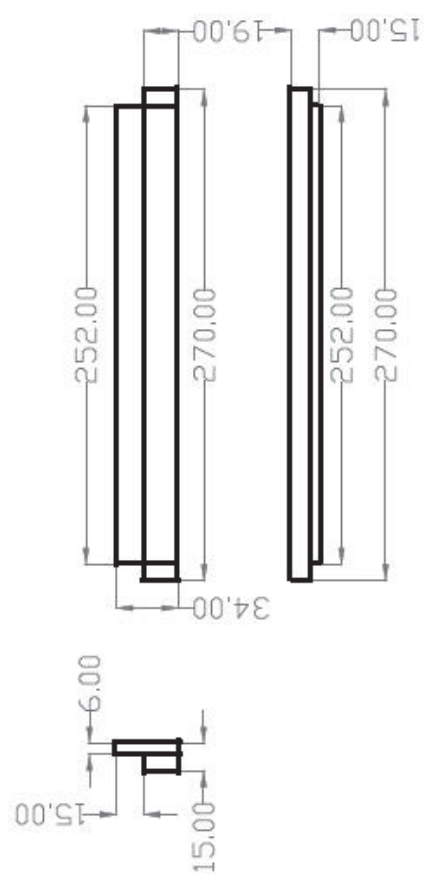
4

D C B

D C B

all dimension are in mm

short frame 2



no of component : 2 no's

material : SS 310

