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भारत सरकार
GOVERNMENT OF INDIA
भाभा परमाणु अनुसंधान केन्द्र
BHABHA ATOMIC RESEARCH CENTRE
INTEGRATED FUEL FABRICATION FACILITY

ट्रॉम्बे,
मुम्बई ४०० ०८५
Trombay
Mumbai 400 085

Ref: BARC/IF3/06/2018/ 194348

9th Oct 2018
10

Sub: Fabrication and supply of miscellaneous components (Qty- one set) as per attached drawing & specification.

Dear Sir/ Madam,

For & on behalf of The President of India your sealed offer on printed letter head of your company is invited for "Fabrication and supply of miscellaneous components (Qty- one set) as per attached drawing & specification". Technical specifications and general terms & conditions are enclosed with the enquiry in Annexure I and drawing of components in Annexure II.

Quotations should indicate GST registration number & PAN number of the firm without which the quotations are liable to be rejected. Your offer in sealed envelope should be addressed to:

Head, Integrated Fuel Fabrication Facility
Attn.: Shri Lalit Kumar
Scientific Officer (F)
Integrated Fuel Fabrication Facility
BARC, Mumbai. - 400 085.

Duly marked with above reference no. & due date 02-11-2018 on the envelope and reach us by 02-11-2018.

You are requested to send your quotation by Registered / Speed post only. Courier or Hand delivery of quotation is not acceptable.

Encl: 1. Technical Specifications as Annexure I.
2. Drawing of components as Annexure II.

Lalit Kumar
10-10-2018
(Lalit Kumar)
SO/F, IF3

For & on behalf of President of India

अधिकारी/Scientific Officer (F)
एकीकृत ईंधन सुविचारण सुविधा
Integrated Fuel Fabrication Facility
भारत सरकार/Government of India
भाभा परमाणु अनुसंधान केन्द्र
Bhabha Atomic Research Centre
ट्रॉम्बे, मुम्बई/Trombay, Mumbai 400 085

Technical specifications for miscellaneous components

Scope of work: Fabrication and supply of miscellaneous components as per attached Drawing and specification.

- 1) T clamp welding fixture (Qty- 2 sets)
- 2) Tuk Internal Components (big tube)
- 3) Tuk Internal Components (small tube)
- 4) Roller support for FA inspection (8 set)

1. **T clamp welding Fixture (Qty- 2 sets):** - The supplier shall provide **T clamp welding fixture** as per drawing attached.
 - All dimensions mentioned in the drawing are in mm.
 - Material of construction of top plate and bottom plate should be Perspex given in drawing. Other material of construction should be used as per detail given in drawing.
 - Size of top plate is 100mm X 75mm X10 mm thick.
 - Size of bottom plate is 100mm X 75mm X 11 mm thick.
 - Center distance of all locating pin match properly during assembly of both plate. Tightness fit (transition fit) maintain between top plate and bottom plate. Maintain mating of both plates in such way that both plates separate out by hand during T clamp fixing and removing.
 - Size of pin is Dia. 2 mm and material is SS.
 - Size of Bush is Outside Dia. 4 mm X Inside dia. 2 mm and material is Perspex.
 - Pin and Bush Fitted in Bottom plate.
 - All sharp corners shall be removed. During machining of top plate and bottom plate all corner properly machined.
 - All drilled holes shall be deburred properly.
 - Size of the mating part should be proper as per drawing and should be checked by Assembling Components.
 - There may be small change in dimensions from attached drawing; it will be clarified while placing the order. Vendor should make fabrication drawing based on attached drawing and should get clarify all doubts from BARC engineer before start of actual work.
 - **Fabrication or shop floor drawing shall be made before fabrication and approval shall be taken from BARC.**

2. **Tuk Internal Components (for big tube):** - The supplier shall provide **Tuk internal components (Big tube)** as per attached drawing and detail given below:-
 - a) **Circular plate – 14 nos.**
 - Size of circular plate Outside Dia. 190mm X Inside dia. 93 mm X 10 mm thick.
 - Dia. 8.5 mm dia. Hole (3 nos.) drilled equidistance on 160 mm P.C.D as per shown in drg.
 - All dimensions mentioned in the drawing are in mm.
 - General tolerance ± 0.1
 - Material - SS 304
 - All sharp corners shall be removed and drilled holed shall be deburred properly.

- The components shall be degreased. If the component is machined with carbon steel tools, then it shall be passivated.
- **Fabrication or shop floor drawing shall be made before fabrication and approval shall be taken from BARC.**

b) Triangular plate – 14 nos.

- Triangular plate each side length 185 mm and thickness is 10 mm. dia. 93 mm hole bored at centre of plate. Outside Dia. 190mm X Inside dia. 93 mm X 10 mm thick.
- Sharp corners of plate are removed and arc of 13.5 mm radius is provided at the 3 corner of plate.
- Dia. 8.5 mm dia. Hole (3 nos.) drilled equidistance on 160 mm P.C.D as per shown in drg.
- All dimensions mentioned in the drawing are in mm.
- General tolerance ± 0.1
- Material - SS 304
- All sharp corners shall be removed and drilled holed shall be deburred properly.
- The components shall be degreased. If the component is machined with carbon steel tools, then it shall be passivated.
- **Fabrication or shop floor drawing shall be made before fabrication and approval shall be taken from BARC.**

C) Rubber Bush – 40 nos.

- Size of rubber bush is Outside Dia. 32mm X Inside dia. 8mm X length 40mm.
- Rubber bush is used in between circular plate and triangular plate on ss bolt. It is tighten in between two plate by applying around 100NM torque. It is keep inside tuk for long period. Maintain physical properties of Rubber bush in such way that it should not be cracked, torn or buckle after tightening. Outer dia. Of rubber should be enlarged after tightening around 1 to 3 mm.
- All dimensions mentioned in the drawing are in mm.
- General tolerance ± 0.1
- Material – rubber.
- Quality of rubber will be finalized after testing of sample.

d) Circular Wooden Block (I) – 14 nos.

- Size of circular wooden block dia. 86mm x 38mm length. There is rubber sheet dia. 86 mm X 11 mm thick sticked on both facing side of block. Total length of wooden block considering rubber sheet is 60 mm.
- All dimensions mentioned in the drawing are in mm.
- General tolerance ± 0.1
- Material – Wood + Rubber
- **Fabrication or shop floor drawing shall be made before fabrication and approval shall be taken from BARC.**

e) SS bolt and Nut – 40 nos. each

- Size of SS bolt is M8 x 80mm length. Nut size is M8. There is rubber sheet dia. 86 mm X 11 mm thick stucked on both facing side of block. Total length of wooden block considering rubber sheet is 60 mm.
- Material – SS (std)

3. Tuk Internal Components (Small tube): - The supplier shall provide Tuk internal components (small tube) as per attached drawing and detail given below:-

a) Rubber Bush – 120 nos.

- Size of rubber bush is Outside Dia. 36mm X Inside dia. 15.5mm X length 65mm.
- Rubber bush is used in between 4 tubes on ss bolt. It is displaced the 4 tubes equally and hold the tube firmly inside tuk. It is keep inside tuk for long period. Maintain physical properties of Rubber bush in such way that it should not be cracked, torn or buckle after tightening. Outer dia. Of rubber should be enlarged after tightening around 1 to 3 mm.
- All dimensions mentioned in the drawing are in mm.
- General tolerance ± 0.1

b) Rubber Sheet – 25 nos.

- Rubber sheet size is 8 ft X 4 ft X 2 mm thick.
- Material – Silicone grade 60 A

c) SS Bolt and nut – 120 nos. (each).

- Size of SS bolt is M16 X 110 mm length. All dimensions mentioned in the drawing are in mm.
- Size of head of bolt and threaded length should be maintained as per drawing
- **In drawing M10 x15 mm threaded length is provided. If it is necessary then there may be small change in dimensions instead of threading (M10) bolt may be squared to 10 mm towards 15 mm from threaded end.**
- Head size of nut should be provided as per drawing. Std nuts are available in the market. Before supplying the nuts, size of nuts will be clarified from BARC engineer.
- All sharp corners shall be removed. At the end of threading under cut is provided for proper tightening.
- Size of the mating part should be proper as per drawing and should be checked by Assembling Components.
- **There may be small change in dimensions from attached drawing, it will be clarified while placing the order. Vendor should make fabrication drawing based on attached drawing and should get clarify all doubts from BARC engineer before start of actual work.**

d) SS washer – 240 nos.

- Size of SS washer is Outside Dia. 30mm X Inside dia. 17mm X length 2.5mm.
- All dimensions mentioned in the drawing are in mm.
- General tolerance ± 0.1
- Material – SS

e) Circular Wooden Block (II) – 65 nos.

- Size of circular wooden block dia. 69mm x 38mm length. There is rubber sheet dia. 69 mm X 11 mm thick stuck on both facing side of block. Total length of wooden block considering rubber sheet is 60 mm.
- All dimensions mentioned in the drawing are in mm.
- General tolerance ± 0.1
- Material – Wood + Rubber
- **Fabrication or shop floor drawing shall be made before fabrication and approval shall be taken from BARC.**

f) Tightening clamp – 2 nos.

- Tightening clamp size is Dia. 33 mm X 150 mm length.
- Hexagonal shape machined internally in clamp upto 15 mm. Size of hexagon is 29 mm (Corner to corner distance) X 24 mm (face to face Distance).
- Purpose of hexagonal groove is holding M16 nut during tightening. Maintain hex size in such way that Nut properly go inside slot.
- All dimensions mentioned in the drawing are in mm.
- General tolerance ± 0.1
- Material - SS 304
- All sharp corners shall be removed and drilled holed shall be deburred properly.
- The components shall be degreased. If the component is machined with carbon steel tools, then it shall be passivated.

g) Handle – 2 nos.

- Handle size is Dia. 16 mm X 300 mm length.
- Dia. 10 mm X 200 mm length rod is welded to handle for gripping purpose.
- **In drawing Nut (M10) is welded to handle. If it is necessary then there may be small change in dimensions. Instead of welding nut to handle there may be square hole (10 mm side) machined inside the handle upto 20 mm. Resp. to this changes 10 mm square machined instead of M10 on M16 SS bolt upto 16 mm length from threaded end.**
- **Vendor should get clarify all doubts from BARC engineer before start of actual work.**
- All dimensions mentioned in the drawing are in mm.
- General tolerance ± 0.1
- Material - SS 304
- All sharp corners shall be removed and drilled holed shall be deburred properly.
- The components shall be degreased. If the component is machined with carbon steel tools, then it shall be passivated.

4) Roller support for FA inspection (8 set)-:

- Material of construction of base plate and side plate is SS 304. Other material of construction should be used as per detail given in drawing.
- Size of base plate 125mm X 200mm X 15 mm thick.
- Size of side plate 95mm X 50mm X 15 mm thick.
- Roller is machined from nylon material. Size of roller is Dia. 70mm x 16 mm. roller shall be machined to maintain concentricity with bearing bore within 5 microns.

- M.S bush is inserted inside roller. Bush size is Dia. 40mm x 26 mm Length. Press fit is maintained between Bush and Roller.
- Pin shall be properly ground after heat treatment and 43-45 HRC shall be maintained. Close tolerance on pin is maintained as per drawing. Overall Size of pin is Dia. 15 mm x 60 mm length.
- All sharp corners shall be removed during machining of side plate and base plate
- Center distance between all holes maintained properly. All drilled holes shall be deburred properly.
- Size of the mating part should be proper as per drawing and should be checked by Assembling Components.
- There may be small change in dimensions from attached drawing; it will be clarified while placing the order. Vendor should make fabrication drawing based on attached drawing and should get clarify all doubts from BARC engineer before start of actual work.

1. **Technical Documents:** - The supplier shall submit dimensional inspection report and material test report for all parts involved.
2. **Scope included in the offer:** Fabrication and supply of miscellaneous components as per attached Drawing and specification.
 - Party shall purchase the required material form market for fabrication of these components. **No Free Issue Material (FIM) will be given for this by BARC.**
 - **Fabrication or shop floor drawing shall be made before fabrication and approval shall be taken from BARC.**
 - Dimensional report should be provided at the time of dispatch.
 - **Pre dispatch inspection at vendor works.**
 - **Delivery of miscellaneous components at BARC, Mumbai**
3. **General Terms and Conditions:**
 - a. Supplier shall give acceptance of order before starting the work and within one week of issue of work order to them.
 - b. Fabrication time from date of release of work order will be **five months** maximum.
 - c. Any delay in supplying the unit, which is attributable to the contractor, is liable for penalty @1/2 % per week (max 5 %) to be imposed on the contractor.
 - d. For entering into BARC premises, supplier must have Police Verification Certificate (PVC). Supplier shall arrange this in time to avoid any delay in execution of order.
 - e. In case of any clarification required, supplier may contact **Shri Lalit Kumar, SO/F, FAF, IF3, BARC, Mumbai 400 085, Tel. No. 022 – 2559 4534.**
 - f. Income tax @2% will be deducted from the Suppliers bill.
 - g. Packing, Forwarding, Freight & Transport Charges shall be restricted to 3% or else original proof payment of the entire charges shall be furnished.
 - h. In case any extension in delivery period required, Party shall submit request for extension before expiry of work order.
 - i. Taxes, if any, shall be specified separately.
 - j. Payment will be arranged after satisfactory completion of work at BARC and on production of, a) Bills in triplicate, b) Advanced stamped receipt, c) Warranty/ Guarantee Certificate d)

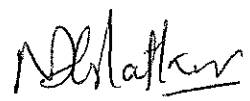
Inspection reports. **Advance, Part Payment or against delivery cannot be made.** Proposed payment terms from the firms cannot be accepted.

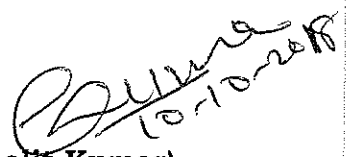
- k. **GST @ 5% shall be paid Since these goods are to be supplied against the work order meant for research purpose of a research organization under DAE, the necessary GST will be exempted to the party.**
- l. Supplier will have to submit undertaking stating that GST has been promptly deposited with the authority (copy of blank under taking attached).
- m. Guarantee for material quality & workmanship shall be provided for period of one year from date of supply of material to BARC.
- n. You will have to submit an undertaking saying that GST has been promptly deposited with authorities. (copy of undertaking attached).
- o. The contractor shall take all safety precautions while working in the department and shall be responsible for any incident happened in the department related to this work.

4. Confidentiality clause:-

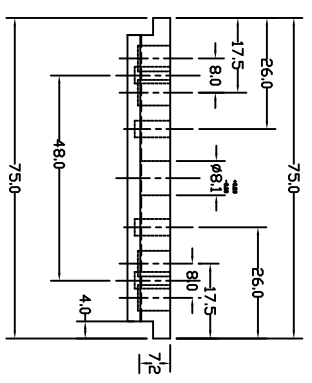
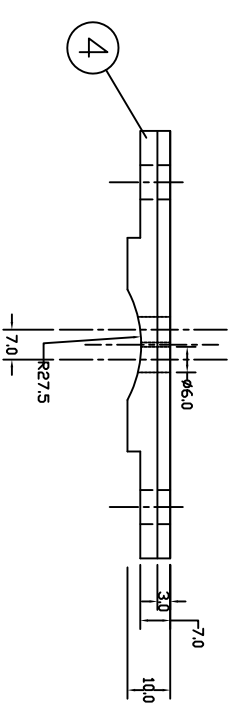
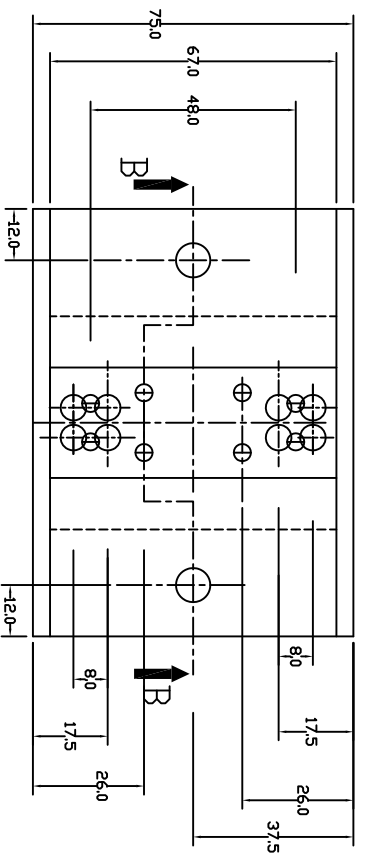
No party shall disclose any information to any third party concerning the matters under this contract generally. In particular, any conformation identified as "Proprietary" in nature by the disclosing party shall be kept strictly confidentiality by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party. This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by a party with equal force.

- I. "Restricted information" categories under Section 18 of the Atomic Energy Act 1962 and "Official Secrets" under Section 5 of the Official Secrets Act 1923. :-
- II. Any contravention of the above-mentioned provisions by any contractor, sub-contractor, consultant adviser or the employees of a contractor will invite penal consequences under the aforesaid legislation
- III. Prohibition against use of BARC's name without permission for publicity purposes. :-
- IV. The contractor of sub-contractor, consultant, adviser or the employees engaged by the contractor shall not use BARC's name for any publicity purpose through any public media like Press, T.V. or Internet without the prior written approval of BARC.

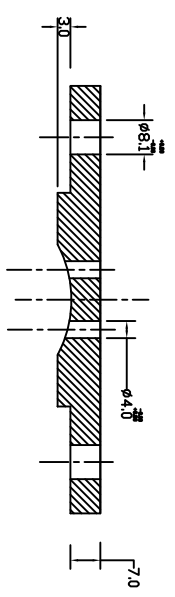

(Nandesh Golatkar)
SA/D, IF3


(Lalit Kumar)
SO/F, IF3

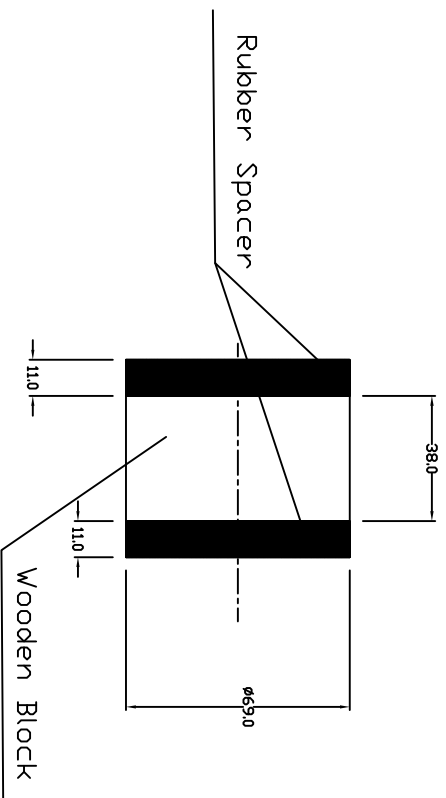
LALIT KUMAR
अधिकारी/Scientific Officer (F)
एकीकृत ईंधन संविकसन सुविधा
Integrated Fuel Fabrication Facility
भारत सरकार/Government of India
शांभा परमाणु अनुसंधान केंद्र
Shabha Atomic Research Centre
मुंबई/Bombay, Mumbai - 400 085



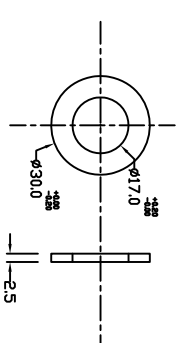
④ Top Plate, Matl-Perspex, Qty-11 no.



SECT B-B

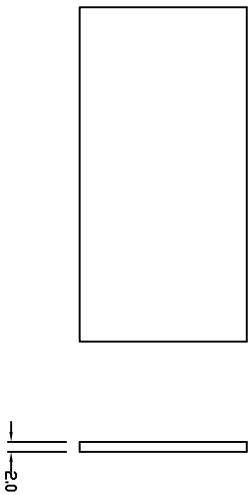


- (E) Part Name-: Wooden Block
 Material-: Wood+Rubber
 Qty-: 1 no.



- (D) Part Name-: S.S Washer
 Material-: S.S 304
 Qty-: 240 nos.

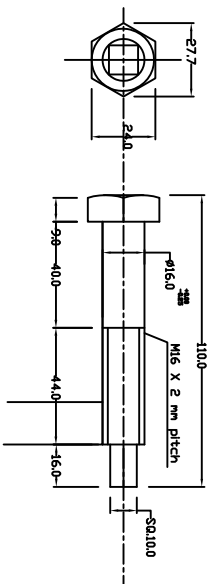
Drg. Name-: Tuk Internal Components
 (Small Tube)



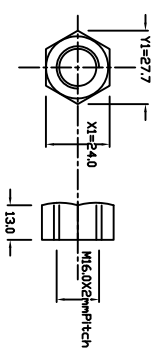
- (b) Part Name-: Rubber Sheet 8 ftX 4 Ft X2 mm thick
Material-: Silicone grade 60 A
Qty-: 25 nos.

- Note-: 1) 2 nos. stick at 65 mm from both end of the SS Tube
2) 1 no. rubber pad stick at the center of the SS Tube
3) 1mm or 2 mm Rubber Sheet also provided with these material
Size of Rubber sheet is 8ftX4ftX1mm or 2mm thick

Drng. Name-: Tuk Internal Components
(Small Tube)

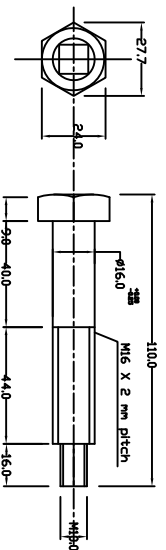


- Ⓒ Part Name:- S.S Bolt
Material:- S.S
Qty:- 120 nos.



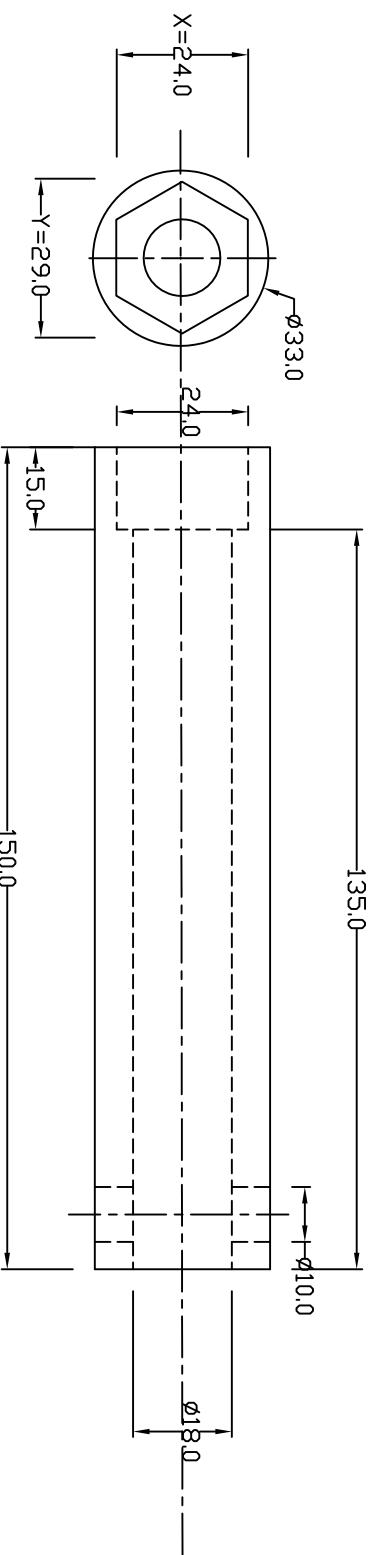
- Ⓒ Part Name:- S.S Nut
Material:- S.S 304
Qty:- 120 nos.

OR



- Ⓒ Part Name:- S.S Bolt
Material:- S.S 304
Qty:- 120 nos.

Dwg. Name:- Tuk Internal Components
(Small Tube)



(F) Part Name:- Tightening Clamp

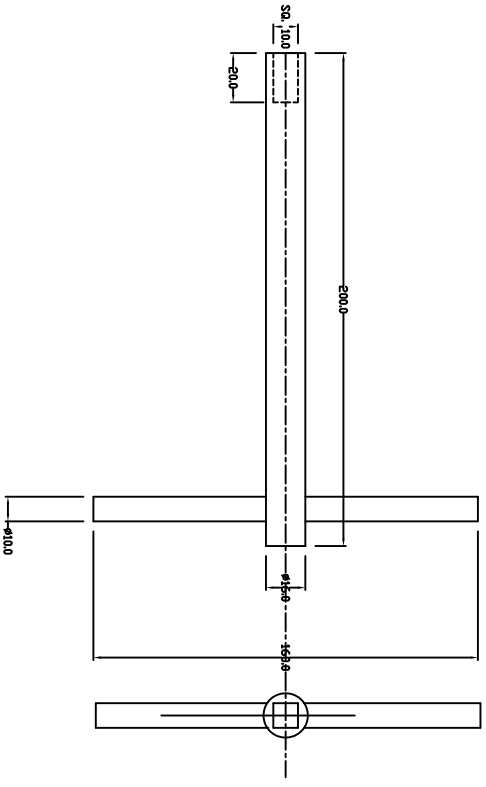
Material:- S.S 304

Qty:- 2 nos.

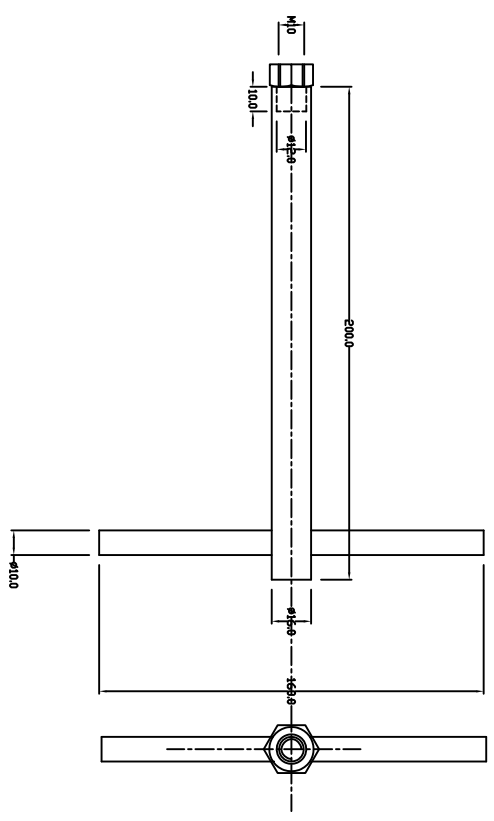
Note:-

1) Size of X and Y of Tightening Clamp varied as per the size of M16 Nut X1 and Y1 size

Drwg. Name:- TUK Internal Components
 (Small Tube)



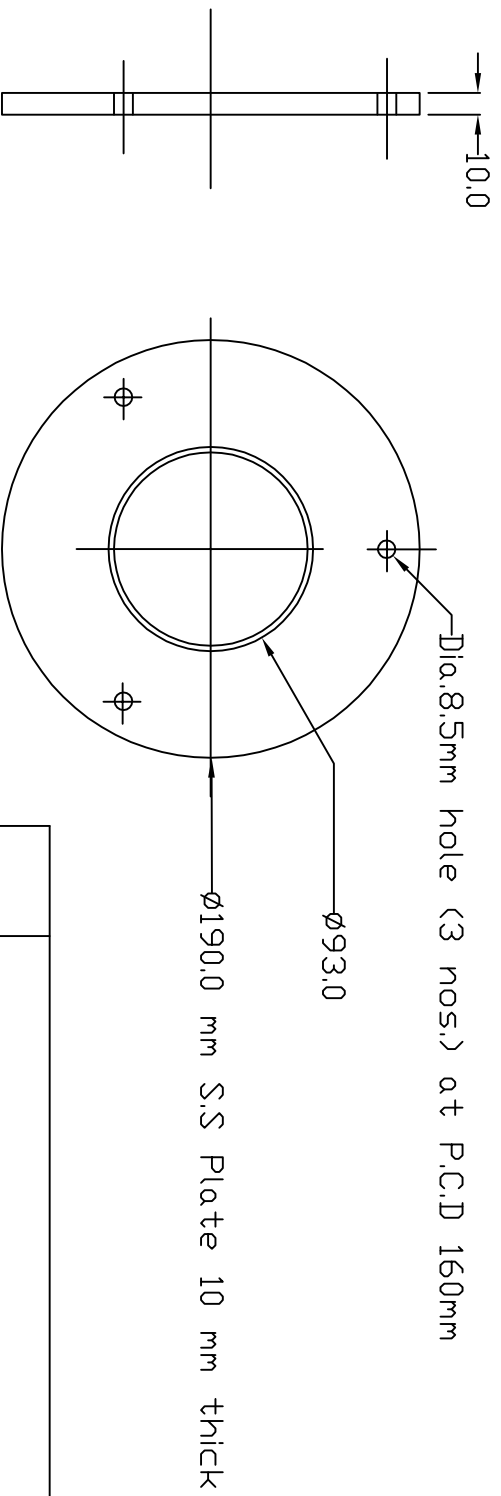
OR



(G) Part Name:- Handle
 Material:- S.S
 Qty:- 2 nos.

(G) Part Name:- Handle
 Material:- S.S
 Qty:- 2 nos.

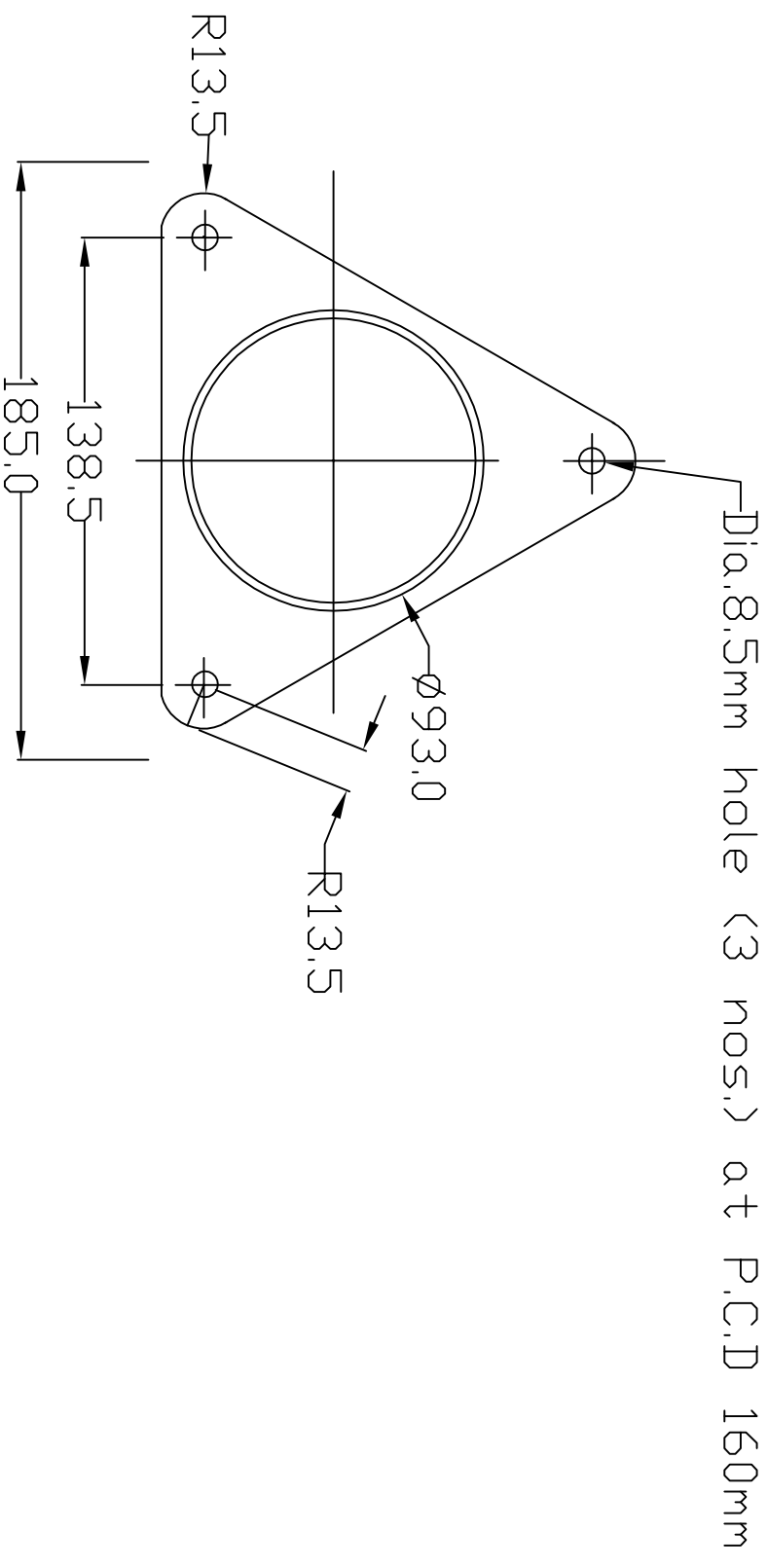
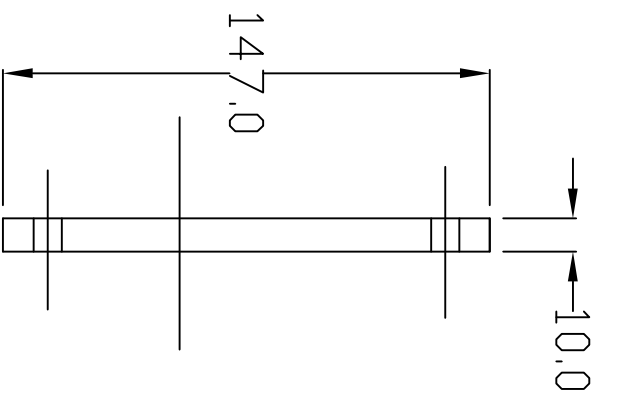
Drng. Name:- Tuk Internal Components
 (Small Tube)



② Part Name:- Circular Plate
 Material:- S.S
 Qty:- 14 nos.

6	Nut M8	STD.	40
5	S.S. Bolt M8 X 80 mm	STD.	40
4	Rubber Bush	Rubber	40
3	Triangular Plate	S.S	14
2	Circular Plate	S.S	14
1	Wooden block	Wood+ Rubber	14
Sr. no.	Part Name	Ma tl.	Qty.in nos.

Drg. name:- Tuk Internal Components (Big)



3

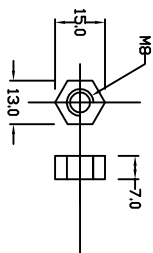
Part Name:- Triangular Plate

Material:- S.S

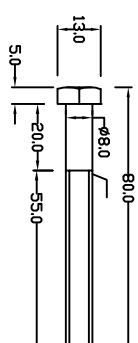
Qty:- 14 nos.

Drwg. name:- TUK Internal Components (Big)

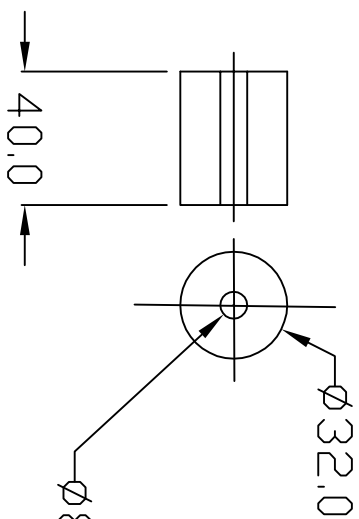
Sheet:- 2/3



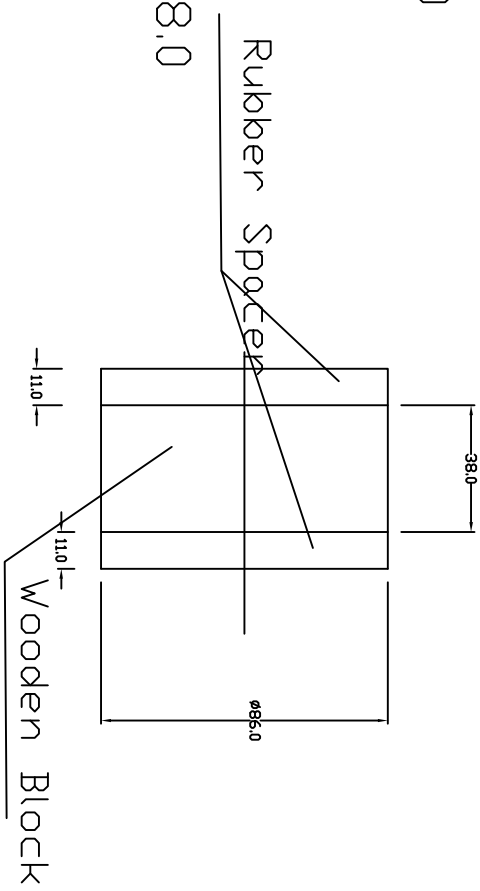
6 Part Name:- M8 Nut
 Material:- STD.
 Qty:-:40 nos



5 Part Name:- M8 Bolt
 Material:- STD.
 Qty:-:40 nos



4 Part Name:- Bush
 Material:- Rubber
 Qty:-:40 nos



1 Part Name:- Wooden Block
 Material:- Wood+Rubber
 Qty:-: 14 no.

Drwg. name:- Tuk Internal Components (Big)