



POF 1262  
(FOREIGN SUPPLIES)

GOVERNMENT OF PAKISTAN  
PAKISTAN ORDNANCE FACTORIES  
TENDER ENQUIRY.

To

M/s

NEWS

Dear Sirs,

Reference: TENDER ENQUIRY NO. **5167-34-PLG-CAPT-P-782 SJL** DATED: **31-12-2016**.

You are requested to submit quotations for the items(s) noted in the Schedule to the Tender. Offers should be sent duly sealed in an envelope. Please note the following instructions for filling the tender:-

1. SUBMISSION OF TENDER

1.1 Tenders will be opened at **1230 hours** on **09-02-2017** and must reach this office on or before **1200 hour upto due date**. The tender received late will not be entertained. You may witness the opening of the tender if you so desire. If a representative is deputed, he should bring a letter of authority from you.

1.2 Only one tender should be included in one envelope. The outside of the envelope should be inscribed with:-

Tender Enquiry No: **5167-34-PLG-CAPT-P-782 SJL** DATED: **31-12-2016**.

Tender to be opened on: **09-02-2017**

Address as follows:-

**MANAGING DIRECTOR POF SANJWAL CANTT DISTRICT ATTOCK PAKISTAN.**

1.3 If envelope does not indicate reference of T.Es or received late the same may be returned un-opened.

2. GENERAL INSTRUCTIONS REGARDING PREPARATION OF QUOTATIONS

2.1 For materials, the prices should be filled in column 5 and delivery date in column 6 of the schedule to this Tender Enquiry. The undertaking should be signed at the bottom of the Schedule which shall form the Quotation. You may use a separate sheet if necessary.

2.2 For Plant and Machinery, you are required to quote in two parts:-

Part I "TECHNICAL OFFER" It should exclusively give technical details and literatures/brochures of the offered plant, machinery and equipment; validity date; delivery schedule; and signed undertaking given on the schedule to this Tender Enquiry. It must not indicate price, costs etc.

Part II "COMMERCIAL OFFER" It should indicate the commercial terms e.g. price, terms of payment, mode of payment, mode of supply.

Each part should be placed in a separate sealed cover. The envelopes should be inscribed with: Part I "Technical Quotation without price" and Part II "Commercial Quotation with Price."

- 2.3 The quotation must remain valid for, at least 90 days from the date of opening of tenders.
- 2.4 The quotation should hold good for any reduced or enhanced quantities without notice.
- 2.5 In the event of non-acceptance of offer, intimation may be given to the tenderers on their request.
- 2.6 Conditional offers or alternative offers are likely to be ignored.
- 2.7 Quotations should be based on F.O.B. The consignment will be shipped through Pakistan National Shipping Corporation(PNSC). In case there is no PNSC service in the country of shipping, please quote on C & F basis. The freight should be indicated separately. Insurance premium should not be included in the quoted price. However where insurance is considered necessary, advice to that effect should be given in the quotation.
- 2.8 Submission of the offer through an agent in Pakistan should be avoided. In case it is considered inevitable, the agent's quotation must invariably be accompanied by the original proforma invoice from the principals/ manufacturers.
- 2.9 Country of origin and port of shipment to be stated.
- 2.10 The offer of principal must clearly indicate whether the rate quoted is inclusive of agent's commission, and if inclusive rate of commission included be specified.
- 2.11 Suppliers will render necessary information regarding hazardous effects on environment, of the materials/products supplied by them, in their quotations and shipping/Dispatch documents.
- 2.12 If the requisite information is not furnished on the T.E form or offer received is not in conformity with the requirement of the T.E such offer shall be ignored.

### 3. INSPECTION

- 3.1 Supplies shall be subject to the inspection and acceptance by the competent inspection authority nominated by the Purchaser, who will arrange it at his own cost, inspection facilities such as tools, test equipment, instruments etc will, however, be provided by the Suppliers in accordance with the relevant specifications.
- 3.2 Where considered necessary by the Purchaser, stores may be obtained on Warranty/Guarantee, subject to inspection on receipt. Rejected stores will be removed and replaced with the acceptable stores by the Supplier at his own expense, within a specified time.

### 3.3 TENDER SAMPLE

Where required offer must accompany tender sample strictly according to the description given in tender Enquiry. Offer not accompanied by tender sample will NOT be entertained excepting the established and reputable firms who have either previously satisfactorily supplied the same or similar stores or have submitted an acceptable samples thereof against previous T.E.

## 4. ACCEPTANCE OF OFFERS

4.1.1 The procuring agency may reject all bids or proposals at any time prior to the acceptance of a bid or proposal. The procuring agency shall upon request communicate to any supplier or contractor who submitted a bid or proposal, the grounds for its rejection of all bids or proposals, but is not required to justify those grounds.

4.1.2 The procuring agency shall incur no liability, solely by virtue of its invoking sub-rule (1.1) towards suppliers or contractors who have submitted bids or proposals.

4.1.3 Notice of the rejection of all bids or proposals shall be given promptly to all suppliers or contractors that submitted bids or proposals.

## 4.2 PERFORMANCE BOND

(a) The successful bidders will provide Performance Bond at the rate upto 10% of F.O.B. value of contract in favour of the Controller Military Accounts (CMA) POF Wah Cantt. The Performance Bond will be furnished in the form of Deposit At Call Receipt (CDR) from any scheduled Bank in Pakistan or an unconditional bank guarantee on prescribed proforma covered by any scheduled bank in Pakistan. The Performance Bond shall be furnished within 45 days from the date of opening of Letter of Credit. It shall be valid for a period of 12 months after the date of expiry of letter of credit. If the Performance Bond is not furnished within the prescribed time of 45 days, the Purchaser reserves the right to:

i. Impose penalty @ 1 % per month of the value of CDR/BG.

(Clause-4.2 (a i) is not applicable in case of procurement of Plant / Equipment / Machinery items)

OR

ii. Cancel the contract and make other arrangements for purchase of the stores at the risk and expense of the Supplier.

(b) No Performance Bond will be required if the total FOB value of the contract is less than US\$ 50,000 and contract is placed directly on the foreign Supplier.

#### 4.3 FAILURE TO SUPPLY THE STORES

All deliveries must be completed by the specified date. If the failure to deliver the stores within the scheduled time should have arisen from "Force Majeure", which the Purchaser may admit as reasonable ground for further time, he will allow such additional time as he may consider to have been required by the circumstances of the case. Otherwise, he will be entitled, at his discretion, to cancel the contract; and/or, claim liquidated damages upto 2% but not less than 1% of the contract price of the items and their quantities for each and every month or part of a month, beyond the specified delivery date, during which these may not be delivered, subject to a maximum of 10% of the total contract value of particular store which remained unsupplied either in part or in full or, to purchase, from elsewhere, the unsupplied stores at the risk and cost of the Supplier.

#### 4.4 PAYMENT

Payment will normally be made by means of irrevocable letter of credit. Unless otherwise stated 90% payment will be released on submission of Dispatch documents to Bank while balance 10% payment will be released on receipt and acceptance of store by the consignee.

All Bank charges incurred in Pakistan in connection with the establishment of L.C. will be borne by the Purchaser, whereas all Bank charges incurred in connection with drawing of payment including charges for confirmation of L.C. by the advising Bank/Foreign Bank will be borne by the Supplier.

#### 5 SECURITY OF INFORMATION

The tenderer and his employees must not communicate any information relating to the sale/purchase of stores under this enquiry to any person other than the manufacturer or to any press or agent not authorized in writing by POFs to receive it.

Please return the Schedule to the Tender duly signed by the specified date, alongwith the specifications drawings etc. if any, enclosed herewith - even if you are unable to quote.

#### WARNING

In case the firm abstain from making offers or fail to return/acknowledge the tender form by the specified date on three consecutive occasions, no further tender enquiry may be issued to them and their names would liable to be removed from the approved list.

Yours faithfully,

MANAGER-

PURCHASE

for PAKISTAN ORDNANCE FACTORIES

Tele:

Fax:

E-MAIL ADDRESS: [mdsjl@pof.gov.pk](mailto:mdsjl@pof.gov.pk)

**PAKISTAN ORDNANCE FACTORIES**

**SCHEDULE TO TENDER NO. 5167-34-PLG-CAPT-P-782 SJL DATED: 31-12-2016 TO BE OPENED ON 09-02-2017.**

(1) **FOR MATERIALS**

(1)	(2)	(3)	(4)	(5)		(6)
Item No.	Description with Specs. etc.	Unit	Qty.	Price per Unit FOB or C & F		Delivery Date
				In Figures	In Words	
1.	Pocketing Machine As per Annex-A attached Drawing of components to be manufactured by M/C is attached.	NO	01			
2.	Heading Machine As per Annex-B attached Drawing of components to be manufactured by M/C is attached.	NO	01			
3.	High Frequency Mouth Annealing Furnace (Solid State Design) As per Annex-C attached	NO	01			

(2) For Plant & Machinery:

Specification:-

(3) **Special Conditions.**

A. 90 % PAYMENT WILL BE MADE ON SUBMISSION OF SHIPPING DOCUMENTS WHILE REMAINING 10 % PAYMENT WILL BE RELEASED AFTER ACCEPTANCE OF STORE AT POF SANJWAL AND ISSUANCE A CERTIFICATE TO THIS EFFECT BY MD POF SANJWAL.

(4) **Undertaking**

Should our offer be accepted, we hereby undertake to supply the stores/render the services contracted on the basis of General Conditions of Contract embodied in Form POF 1282, and to deposit the performance bond within the prescribed time, failing which it will constitute a breach of contract, and POF will have the right to purchase the stores/services elsewhere at our risk and cost.

Place \_\_\_\_\_

Signatures of the Tenderer

Date \_\_\_\_\_

Name

Position

Address

Income Tax G.I.R.No.

TECHNICAL SPECIFICATIONOfPOCKETING PRESS

1. **Description of the Press:** Pocketing Press tooled up to produce components as per attached drawing no. PDO/H/COM-862, Qty 01 Off.
2. **Capacity of Press:** 100 Tons
3. **Type:** Mechanical
4. **Frame:** C type. vertical
5. **Feeding:** Hopper.(automatic)
6. **Production Rate:** 60 components per minute minimum.
7. **OEE:** 95%
8. **Day light:** OEM
9. **Shut Height:** OEM
10. **Length of Stroke:** OEM
11. **Slide Adjustment:** OEM
12. **Ejector Force (Pneumatic):** 10-20 Ton
13. **Component Collection:** Suitable system to extract the finished components without damaging.
14. **Clutch & Brake:** Dry/segmented disc type
15. **Motor:** Preferably 14-20HP
16. **Tool Clamping and Change Over:** clamping and change over mechanism should be simple, robust and reliable.
17. **Tooling Life:** OEM will indicate the tooling life
18. **Air Supply:** 6 bar
19. **Lubrication System:** Automatic
20. **Colour:** Colour of the machine should be Green RAL6011.
21. **Electric supply:** 220VAC, 50Hz, 1Phase & 400VAC, 50 Hz, 3Phase. The standard supply voltage has variation of 5% whereas in contingency conditions the variation may go up to 10%. Suitable devices to keep the system be provided.
22. **Earthing:** The equipment should be earthed.
23. **Protections:** The equipment should have line protection circuit breakers with thermally delayed overload release and or electro-magnetic quick acting release, as required. It should be followed by cut-out and safety fuses to provide optimum selectivity, if necessary. All motors should be appropriately protected.
24. **Protection Clause:** IP-54
25. **Accuracy:** The industrial electrical measuring instruments, wherever used should have an accuracy of Class 1 or better.
26. **Temperature: Extreme,** -5 degree C to 55 degree C in Winter and Summer respectively.
27. **Insulation:** The requirement is for Class-B.
28. **Humidity:** 95%
29. **Literature:** 04 x sets of operating and maintenance manuals, details of electric schematics, PCBs and Brochures of the offered model must accompany the technical offer.
30. **Spare Parts:** Parts having wear & tear for 02 x year operation would be part of supply.
31. **Tooling with drawings:** Tooling for 02 x million components will part of delivery.

32. **Safeties:** All safeties against electrical hazard, operator and setter safeties. Arrangement for reversing the Press in case stuck up at bottom of stroke.
33. **Lifting Arrangement:** Press should be equipped with suitable lifting arrangements for installation and commissioning.
34. **Training:** POF team comprises of 04 x officials would be trained for 02 x weeks in OEM premises. All expenditures including boarding, lodging, air tickets & inland travelling would be borne by seller.
35. **PSI** would be carried out by 02 x Purchaser engineers for 01 x week. All expenditures including boarding, lodging, air tickets & inland travelling would be borne by seller.
36. **Components for training & PSI:** Qty10.000 Nos. for training and PSI would be supplied by Purchaser.
37. **Installation and commissioning** of Press at Purchaser premises is the responsibility of the Seller. Pocketing of 100,000 components would be the condition for acceptance of the Press.
38. **Foundation Drawing:** Seller will provide the drawing for installation of the Press.
39. **Payment:** 70% payment would be released against shipping document. 30% payment would be released after installation and successful commissioning as per clause No. 37.
40. **Warranty Guarantee.** Warranty period of the Press would be 01 x year after successful commissioning. Performance bond @ 10% valid for 01 x year would have to be submitted.

**TECHNICAL SPECIFICATION**  
**Of**  
**HEADING PRESS**

1. **Description of the Press:** Heading Press tooled up to produce components as per PDO/H/COM-863, Qty 01 Off.
2. **Capacity of Press:** 100 Tons
3. **Type:** Mechanical
4. **Frame:** C type. vertical
5. **Feeding:** Hopper.(automatic)
6. **Production Rate:** 60 components per minute minimum.
7. **OEE:** 95%
8. **Day light:** OEM
9. **Shut Height:** OEM
10. **Length of Stroke:** OEM
11. **Slide Adjustment:** OEM
12. **Ejector Force(Pneumatic):** 10-20 Ton
13. **Component Collection:** Suitable system to extract the finished components without damaging.
14. **Clutch & Brake:** dry/segmented disc type
15. **Motor:** Preferably 14-20HP
16. **Tool Clamping and Change Over:** clamping and change over mechanism should be simple, robust and reliable.
17. **Tooling Life:** OEM will indicate the tooling life
18. **Air Supply:** 6 bar
19. **Lubrication System:** Automatic
20. **Colour:** Colour of the machine should be Green RAL6011.
21. **Electric supply:** 220VAC, 50Hz, 1Phase & 400VAC, 50 Hz, 3Phase. The standard supply voltage has variation of 5% whereas in contingency conditions the variation may go up to 10%. Suitable devices to keep the system be provided.
22. **Earthing:** The equipment should be earthed.
23. **Protections:** The equipment should have line protection circuit breakers with thermally delayed overload release and or electro-magnetic quick acting release, as required. It should be followed by cut-out and safety fuses to provide optimum selectivity, if necessary. All motors should be appropriately protected.
24. **Protection Clause:** IP-54
25. **Accuracy:** The industrial electrical measuring instruments, wherever used should have an accuracy of Class 1 or better.
26. **Temperature:** Extreme - 5 degree C to 55 degree C in Winter and Summer respectively.
27. **Insulation:** The requirement is for Class-B.
28. **Humidity:** 95%
29. **Literature:** 04 x sets of operating and maintenance manuals, Details of electric schematics, PCBs and Brochures of the offered model must accompany the technical offer.
30. **Spare Parts.** Parts having wear & tear for 02 x year operation would be part of supply.
31. **Tooling with drawing:** Tooling for 02 x million components will part of delivery.



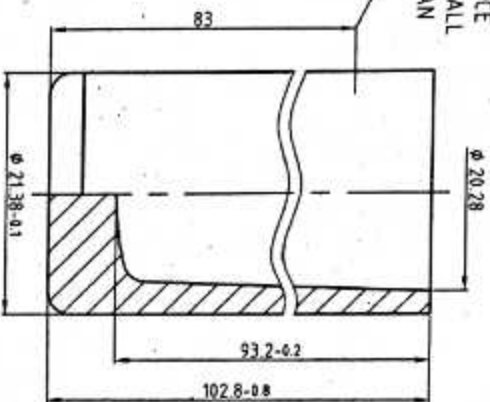
32. **Safeties:** All safeties against electrical hazard, operator and setter safeties. Arrangement for reversing the Press in case stuck up at bottom of stroke.
33. **Lifting Arrangement:** Press should be equipped with suitable lifting arrangements for installation and commissioning.
34. **Training:** POF team comprises of 04 x officials would be trained for 02 x weeks in OEM premises. All expenditures including boarding, lodging, air tickets & inland travelling would be borne by seller.
35. **PSI** would be carried out by 02 x Purchaser engineers for 01 x week. All expenditures including boarding, lodging, air tickets & inland travelling would be borne by seller.
36. **Components for training & PSI.** Qty10.000 Nos. for training and PSI would be supplied by Purchaser.
37. **Installation and commissioning** of press at purchaser premises is the responsibility of the Seller. Heading of 100,000 components would be the condition for acceptance of the Press.
38. **Foundation Drawing:** Seller will provide the drawing for installation of the Press.
39. **Payment:** 70% payment would be released against shipping document. 30% payment would be released after installation and successful commissioning as per clause No. 37.
40. **Warranty Guarantee.** Warranty period of the Press would be 01 x year after successful commissioning. Performance bond @ 10% valid for 01 x year would have to be submitted.

**TECHNICAL SPECIFICATION**  
**OF**  
**HIGH FREQUENCY MOUTH ANNEALING INDUCTION FURNACE (SOLID STATE DESIGN)**

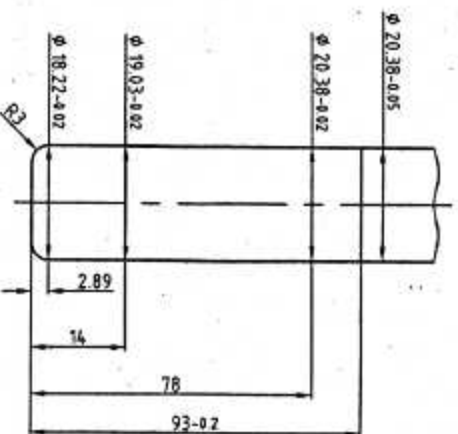
1. **Description of Machine:** High Frequency Mouth Annealing Induction Furnace (Solid State Design) for component, as per drawing no. PDO / H / COM -864, Qty 01 off.
2. **Technical requirements:**
  - a. Oscillating frequency: 250 ~300 KHz
  - b. Max. output power: 30 KW
  - c. Max. power in load condition: 25 KW
3. **Monitoring System:**
  - a. Display of output current, power and frequency on operator Panel
  - b. Push buttons for Inverter ON / OFF, Reset, Emergency Stop.
  - c. Auto / manual selector switch.
  - d. Indication lamps for Main Supply ON, Heat ON, Current Limit, Cooling Water High Temp & Low Water Flow.
4. **Protection:**
  - a. Breaker with under/over voltage, release interlock for safety purpose.
  - b. Rapid blow fuses at input.
  - c. An automatic electronic circuit operates in the event of an inverter misfire to shut down the converter momentarily and ensure that equipment's component will not be damaged when fault occurs.
  - d. A surge observer circuit to suppress transient voltage.
  - e. Thermal switches and flow switches at inlet/outlet manifold to monitor the water flow and temperature.
5. **Protection clause:** IP-54
6. **Power factor:** 0.90
7. **Duty cycle:** 100 %
8. **OEE:** 95 %
9. **Safeties:** All safeties against electrical and thermal hazards for human protection.
10. **Earthing:** The equipment should be earthed
11. **Insulation:** The requirement is for Class-B
12. **Feeding:** Hopper (Automatic).
13. **Production Rate:** 75 components per minute minimum
14. **Temperature:** Extreme -5 degree C to 55 degree C in Winter and Summer respectively.

15. **Colour:** The colour of Furnace should be Green RAL 6011 Preferably.
16. **Electric supply:** 220VAC, 50Hz, 1Phase & 400VAC, 50 Hz, 3Phase. The standard supply voltage has variation of 5% whereas in contingency conditions, the variation may go up to 10%. Suitable devices to keep the system be provided.
17. **Lifting Arrangement:** Furnace should be equipped with suitable lifting arrangements for installation and commissioning
18. **Documentation:**
- a. Drawing for completes wiring of switch board.
  - b. Drawing for inverter circuit.
  - c. Circuit diagram for water distribution system
  - d. List of recommended machine spares.
  - e. 04 x set of operating manual in English version
  - f. 02 x copies of software backup.
19. **Spare Parts:** Recommended spare parts for 02 x year production will be part of supply.
20. **Confirmation of spares:** Firm will provide confirmation of availability of spares from OEM up to 10 x years from supply of equipment.
21. **Country of origin:** USA, Japan, Europe, Korea, Turkey.
22. **PSI:** PSI would be carried out by 02 purchaser engineers for 01x week. All expenditures including boarding, lodging, air tickets & inland travelling would be borne by Seller.
23. **Training:** Operational & Maintenance training for 04 x POF Officials. POF team comprises of 04 x officials would be trained for 02 x weeks in OEM premises. All expenditures including boarding, lodging, air tickets & inland travelling would be borne by Seller.
24. **Components for training & PSI:** Qty 10.000 Nos. for training and PSI would be supplied by purchaser.
25. **Foundation Drawing :** Seller will provide the drawing for installation of the furnace.
26. **Installation and Commissioning:** Design, installation and commissioning will be carried out by the Supplier
27. **Performance:** OEM will demonstrate the full load performance according to requirements in the presence of POF Engineers for capacity run at least 02 x weeks during commissioning.
28. **Payment:** 70% payment would be released against shipping document. 30% payment would be released after trial run.
29. **Warranty / Guaranty:** 02 x years operational warranty / guaranty.



WALL THICKNESS DIFFERENCE  
NOT MORE THAN 0.1 MM WALL  
THICKNESS NOT MORE THAN  
0.48 MM



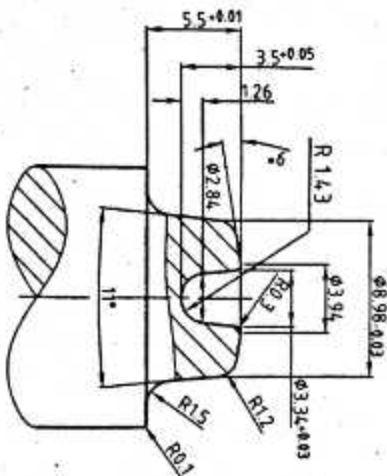
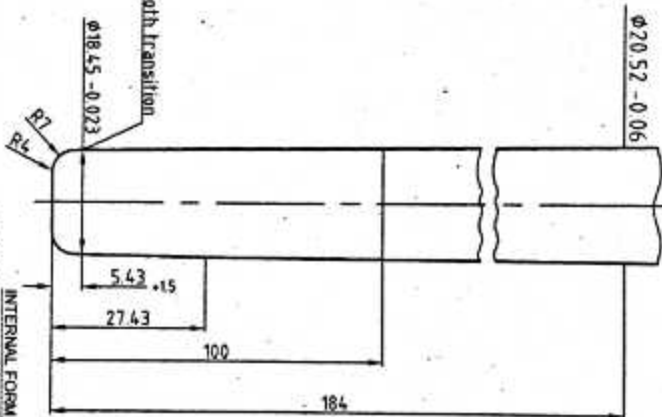
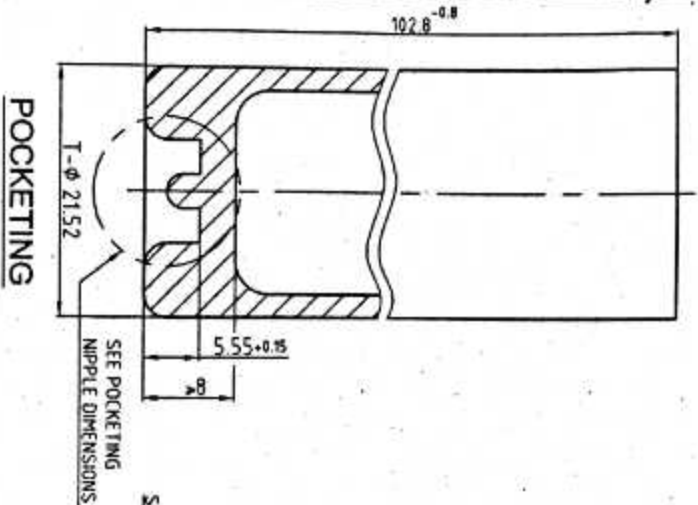
THIRD DRAW  
READY FOR POCKETING



INTERNAL FORM (FROM THE  
DIMENSION OF THE PUNCH)

1	1	COMPONENT FORM BEFORE POCKETING	HIGH GRADE LOW CARBON DEAD MILTED STEEL STANDARD CODE I-520A1			
DET NO	NO OFF	DESCRIPTION	MATERIAL	HEAT TREATMENT		
DRAWN:-	FAISAL	CHECKED:-		APPROVED:-		
THIRD DRAW : COMPONENT READY FOR POCKETING			DRG No:- PDD0/H/COM-862			
SCALE:- N T S			SHEET 1 OF 2		PDD - POF - SJL	
			DATE :- 03 - 11 - 2016			

ALL DIMENSION IN MM



POCKETING NIPPLE

INSPECTION CRITERIA

5	HEAD THICKNESS	-	± 8
4	POCKET ECCENTRICITY	9.35	-
3	STRAIGHTNESS GAUGE	21.52	-
2	RING GAUGE	21.52	-
1	DEPTH GAUGE FOR POCKET	5.55	5.7
		GO SIZE	NOT GO SIZE
SR	NAME	NOMINAL SIZE	

NOTE:  
SELECTION OF MATERIAL FOR PUNCH & NIPPLE IS THE RESPONSIBILITY OF OEM

(FROM THE DIMENSIONS OF PUNCH)

1	1	POCKETING COMPONENT	HIGH GRADE, LOW CARBON, DEAD MILD STEEL STANDARD CODE: (150A1)	HEAT TREATMENT
DET NO	NO OFF	DESCRIPTION	MATERIAL	
DRAWN:-	FAISAL	CHECKED:-	APPROVED:-	

POCKETING COMPONENT: INTERNAL FORM & NIPPLE

DRG No:-

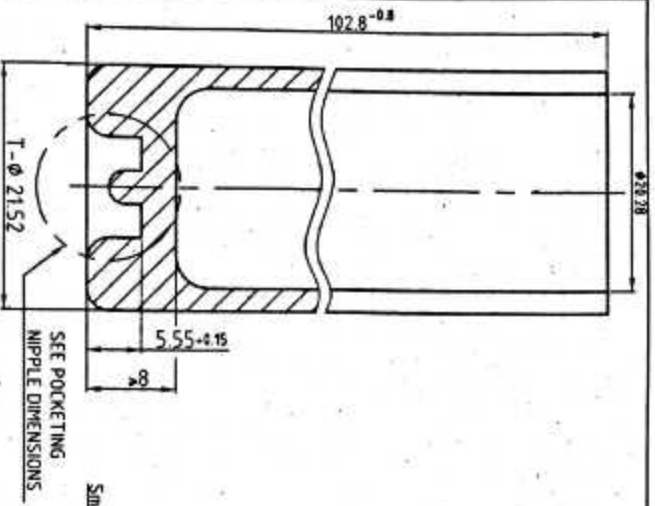
PDO/H/COM-862

PDO - POF - SJL

SCALE:- N.T.S

SHEET 2 OF 2

DATE:- 03 - 11 - 2016

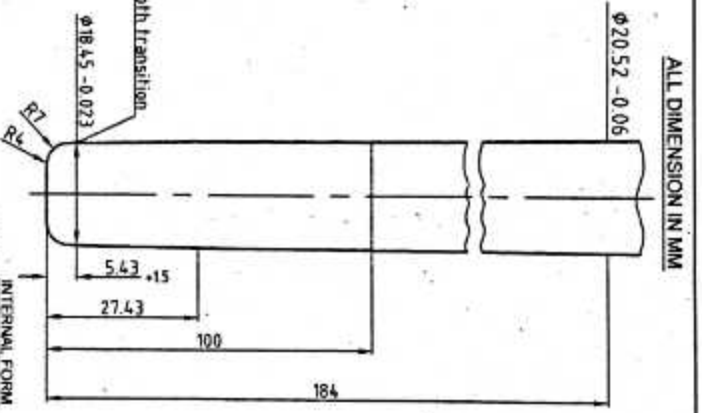


**POCKETING**

**INSPECTION CRITERIA**

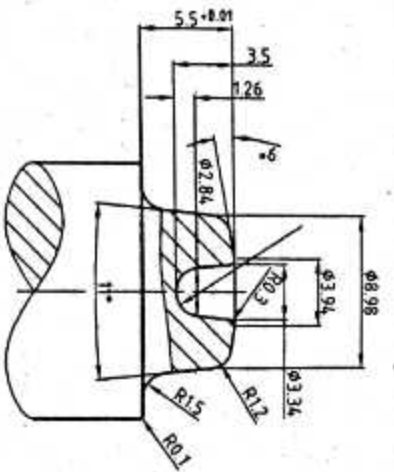
5	HEAD THICKNESS	-	± 8
4	POCKET ECCENTRICITY	9.35	-
3	STRAIGHTNESS GAUGE	21.52	-
2	RING GAUGE	21.52	-
1	DEPTH GAUGE FOR POCKET	5.55	5.7
		GO SIZE	NOT GO SIZE
S/R	NAME	NOMINAL SIZE	

NOTE:  
SELECTION OF MATERIAL FOR PUNCH & NIPPLE IS THE RESPONSIBILITY OF OEM



ALL DIMENSION IN MM

(FROM THE DIMENSIONS OF PUNCH)



**POCKETING NIPPLE**

1	1	COMPONENT FORM BEFORE HEADING	HIGH GRADE, LOW CARBON, DEAD PULVERIZED STEEL STANDARD CODE: (1520A)	HEAT TREATMENT	-
DET. NO	NO OFF	DESCRIPTION	MATERIAL	APPROVED-	DRG No.-
DRAWN:-	FAISAL	CHECKED:-	<i>Rajeev</i>	APPROVED:-	<i>Shyams</i>

**POCKETING: COMPONENT READY FOR HEADING**

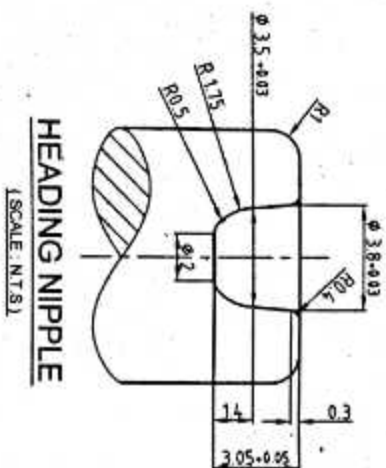
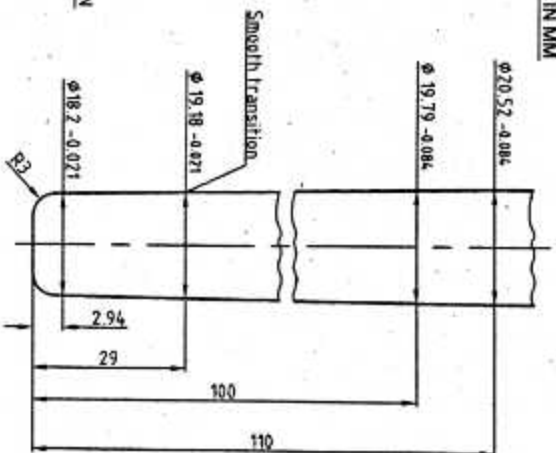
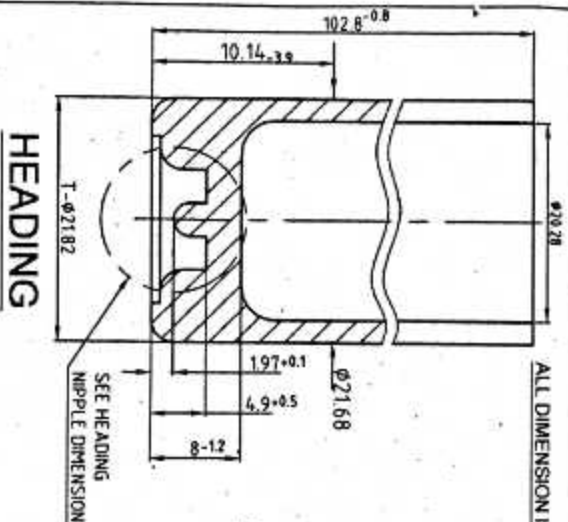
PDO/H/COM-863  
PDO - POF - S JL

SCALE:- N T S

SHEET 1 OF 3

DATE :- 03 - 11 - 2016

ALL DIMENSION IN MM



### INSPECTION CRITERIA

9	HEAD THICKNESS GAUGE	6.8	8.01
8	REFERENCE GAUGE	1.97 (MIN)	2.07 (MAX)
7	INDICATING GAUGE FOR ANVIL HIGHT	-	-
6	PLUS GAUGE FOR POCKET	8.945	8.99
5	BASE SURFACE SQUARENESS	0.01 (MIN)	0.15 (MAX)
4	DEPTH GAUGE FOR POCKET	4.9 (MIN)	5.4 (MAX)
3	HEIGHT GAUGE	6.24 (MIN)	10.14 ( MAX)
2	RING GAUGE	21.82	21.68
1	GAUGE FOR POCKET ECCENTRICITY	8.95	9.00
S/R	NAME	GO SIZE	NOT GO SIZE NOMINAL SIZE

NOTE:  
SELECTION OF MATERIAL FOR PUNCH & NIPPLE IS THE RESPONSIBILITY OF OEM

### INTERNAL FORM

(FROM THE DIMENSIONS OF PUNCH)  
(SCALE: N.T.S.)

1	1	HEADING	DESCRIPTION	CHECKED:-	APPROVED:-	HIGH GRADE, LOW CARBON, DEAD MILTED STEEL STANDARD CODE: I: S20A1	HEAT TREATMENT
DET NO	NO OFF	FAISAL		(Signature)			

### HEADING COMPONENT: INTERNAL FORM & NIPPLE

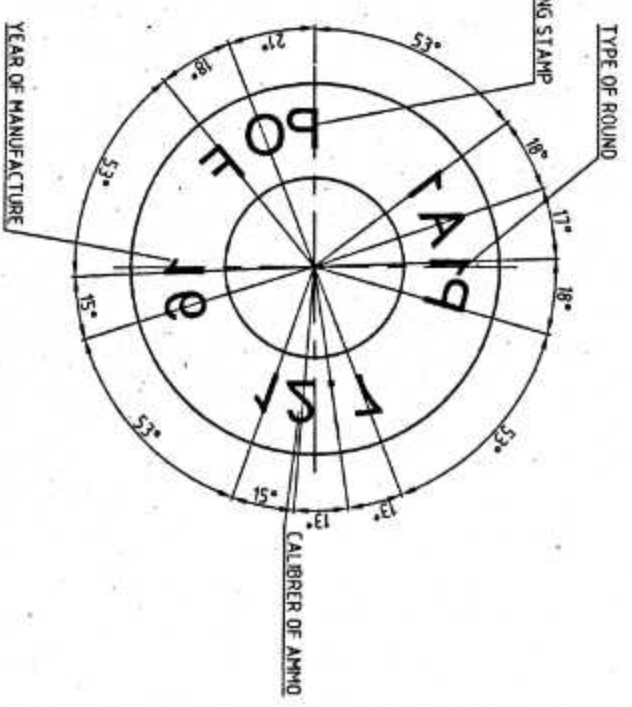
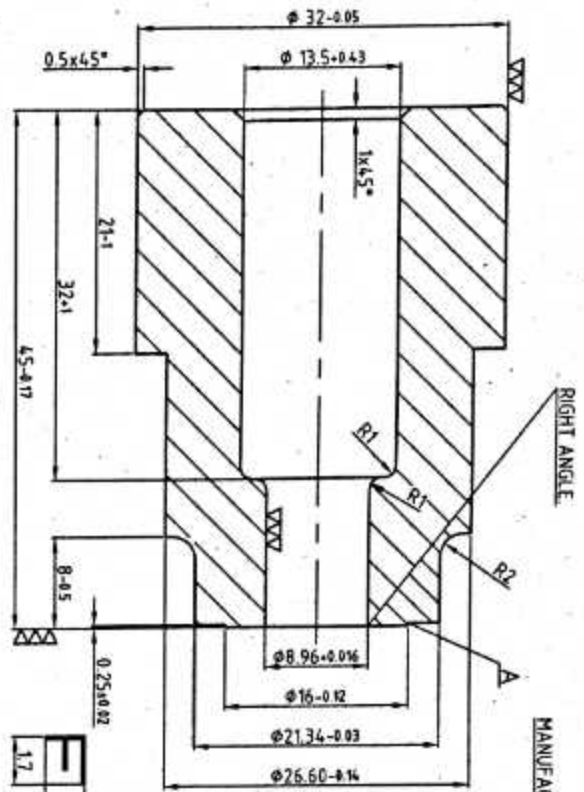
DRG No:- PDD0/H/COM-863

PDD0 - POF - SJL

SCALE:- N.T.S

SHEET 2 OF 3

DATE :- 03 - 11 - 2016

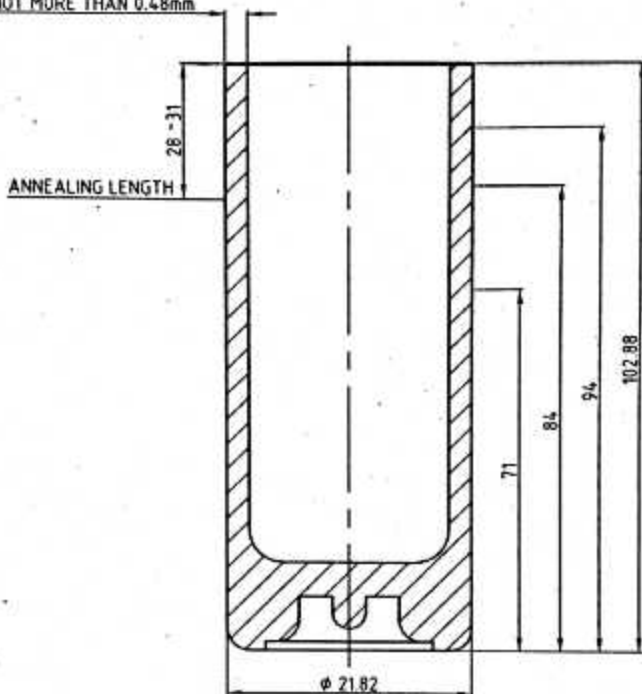


- NOTES:-
1. THE DEPTH OF THE STAMPED LETTERS AND FIGURES IS 0.07-0.033 MM, WHICH MAY BE GREATER THAN 0.31 MM, BUT MUST NOT BE HIGHER THAN 0.31 MM.
  2. BOTH UPPER AND LOWER END FACES OF THE CHARACTER STAMP SHOULD BE PERPENDICULAR TO CENTER LINE WITHIN 0.05 MM.
  3. AFTER REBORING 8.16-0.12 OVERALL LENGTH NOT LESS THAN 44.6-0.17 MM IS PROVIDED.

1	1	HEADING STAMP & MONOGRAM	SELECTION OF MATERIAL FOR STAMPING	HEAT TREATMENT
DET. NO.	NO. OFF.	DESCRIPTION	TOOL IS THE RESPONSIBILITY OF OEN	
DRAWN:-	FAISAL	CHECKED:- (Date)	MATERIAL	APPROVED:- (Signature)
<b>HEADING STAMP</b>				
SCALE:- NTS				
SHEET 3 OF 3				
DRG No- <u>                    </u>				
PDD/H/COM-863				
PDD - POF - SJL				
DATE :- 03 - 11 - 2016				



WALL THICKNESS NOT MORE THAN 0.48mm



## MOUTH ANNEALING

### HARDNESS PATTERN AFTER ANNEALING

AT 71mm = OVER 90 HR-15T

AT 84mm = OVER 80-87 HR-15T

AT 94mm = OVER 78-85 HR-15T

1	1	MOUTH ANNEALING	HIGH GRADE, LOW CARBON, DEAD MELTED STEEL STANDARD CODE : (S20A1)	
DET.NO	NO.OFF	DESCRIPTION	MATERIAL	HEAT TREATMENT
DRAWN- FAISAL		CHECKED- <i>[Signature]</i>	APPROVED- <i>[Signature]</i>	
<b><u>MOUTH ANNEALING</u></b>				ORG No:- PDO/H/COM-864 PDO - POF - SJL
SCALE - N.T.S		SHEET 1 OF 1		DATE :- 03 - 11 - 2016