

Annexure-A

UCIL TUMMALAPALLE ELECTRICAL MILL.			PURCHASE REQUISITION		
Purpose: For 222KW heaters in drying plant					
S.No	Material Code	Material Description	Unit Code	Item Cat.	QTY required
	Specifications and drawings of the heater coils and it's auxiliaries are detailed in Annexure-B				
1	300026088086	HEATING ELEMENT, TERMINAL SS310, 1/2inch ROD WITH NUT AND WASHER(37KW). (1 SET CONTAINS 6 NO'S OF HEATING ELEMENTS). ELEMENTS SHOULD BE AS PER DRAWING(UCIL/TMPL/ELECT-01) in sheet 1 and 2	12		3 Sets
2	300026088087	ELEMENT HOLDING MULLITE TUBE 50mm dia x 450mm L as per drawing (UCIL/TMPL/ELECT-01) in sheet3	1		144 Nos
3	300026088091	TERMINAL HOLDING MULLITE TUBE 23mm dia x 350 MM L AS PER DRAWING (UCIL/TMPL/ELECT-01) IN SHEET3	1		72 Nos
4	300026088088	ELEMENT END STOPPER REFRACTORY WASHERS AS PER DRAWING (UCIL/TMPL/ELECT-01) IN SHEET3	1		150 Nos

Specification of Spare Air Heater coil set

The Air Heater Coil set shall be equipped with heater coils rated for total 444 KW (222 KW for each set of heater coil set) suitable for 440 V AC, 50 Hz., 3-Phase, Star-connected Power system. The Air heater Coil Set shall be manufactured as per attached Drawing No.: TMPL/MILL/ELECT.-01 Sheet 1 and 2. The general arrangement of mounting of heater coils in our existing heater banks of rating 2 x 222 KW has been indicated in attached Drawing No.: TMPL/MILL/ELECT.-01 Sheet 5 and 6. The heating element of coil shall be made up of (80%/20%) Ni -Cr alloy of dia 5.5 mm of Kanthal make or equivalent with horizontal arrangement. The stud for connection of power cables with these heater coils shall be made up of SS 310 of dia 12.7 mm. All the dimensions and pitch of the individual heater coils shall be as per attached Drawing No.: TMPL/MILL/ELECT.-01 Sheet 1 and 2. Please note each set of heater coil i.e. 222 KW heater coils shall have 6 nos. of individual coils of rating approximately 37 KW each. Four

(4) nos. of heater coils shall be manufactured as per design given in attached Drawing No.: TMPL/MILL/ELECT.-01 Sheet 2 and two (02) nos. of heater coils shall be manufactured as per design given in attached Drawing No.: TMPL/MILL/ELECT.-01 Sheet 1. Total 2 sets of 6 individual heater coils (i.e. total 12 individual coils) shall be supplied for our existing heater bank of rating 2 x 222 KW i.e. total 444 KW.

The Air heating elements of both the heater coil set shall be supplied with accessories such as hollow Ceramic MULLITE TUBE Refractory, Ceramic refractory washers as per size, dimensions and design indicated in attached Drawing No TMPL/MILL/ELECT.-01 , Sheet 3 and 4 and shall be capable of withstanding temperatures as high as 1250 degrees Celsius. These SS 310 metal pipes shall be inserted into the ceramic mullite tube of length 450 mm which in turn shall be inserted into the coil pitches. The air heater coils shall be suitable for temperature rise up to 1250 degree Celsius.

Scope of Supply by bidder (Heater Coil and accessories) with quantity:

- 1) 222 KW Air Heater coil set (1 Set consists of 6 individual Coils) : **3 Sets**
- 2) Ceramic Mullite Tube Refractory (as per Drg. No.: TMPL/MILL/ELECT.-01, Sheet 3 [dia 50 x 450 mm length]): **144 Nos.**
- 3) Ceramic Mullite Tube Refractory (as per Drg. No.: TMPL/MILL/ELECT.-01, Sheet 3 [dia 23 x 350 mm length]): **72 Nos.**
- 4) Ceramic Refractory washer (as per Drg. No.: TMPL/MILL/ELECT.-01, Sheet 4): **150 nos.**

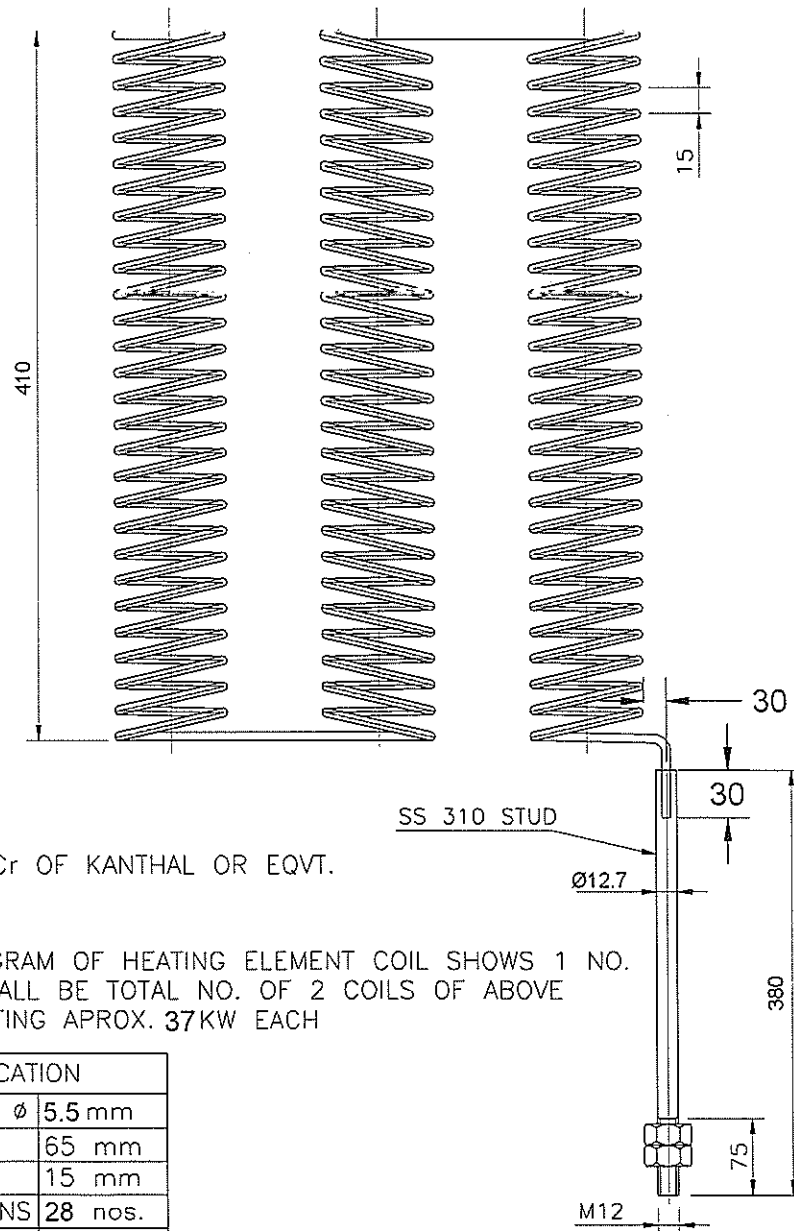
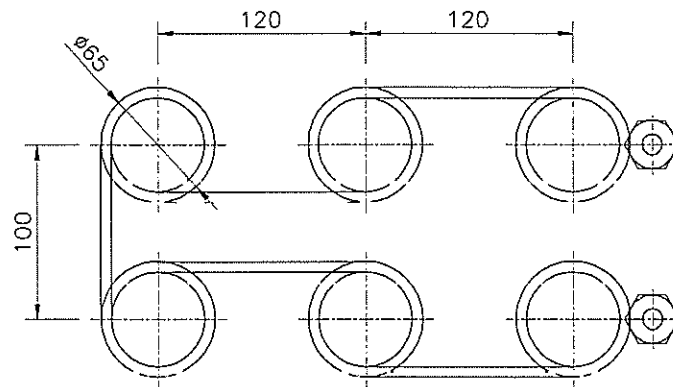
The following shall be furnished along with the offer of Air heater coil set:

- 1) Detailed dimensional and G.A. drawing of both the 222 KW heater coil set.
- 2) Details of Heating Element i.e. size, dimensions, rating, Material of composition etc.

The following shall be furnished along with supply of both the 222 KW air heater coil set:

- 1) Detailed dimensional and G.A. drawing with details of individual parts – 2 Nos. of hardcopies.
- 2) Details of Heating Element i.e. size, dimensions, rating, Material of composition etc. – 2 Nos. of hard copies.

Enclosure: Drawing No.: TMPL/MILL/ELECT.-01 (containing 6 sheets)



MOC : 80/20 Ni-Cr OF KANTHAL OR EQVT.

NOTE : THE ABOVE DIAGRAM OF HEATING ELEMENT COIL SHOWS 1 NO. COIL. THERE SHALL BE TOTAL NO. OF 2 COILS OF ABOVE DESIGN AND RATING APROX. 37KW EACH

SPECIFICATION	
HEATING ELEMENT Ø	5.5 mm
O.D.	65 mm
PITCH	15 mm
NO.OF COIL TURNS	28 nos.
TOTAL LENGTH	410mm



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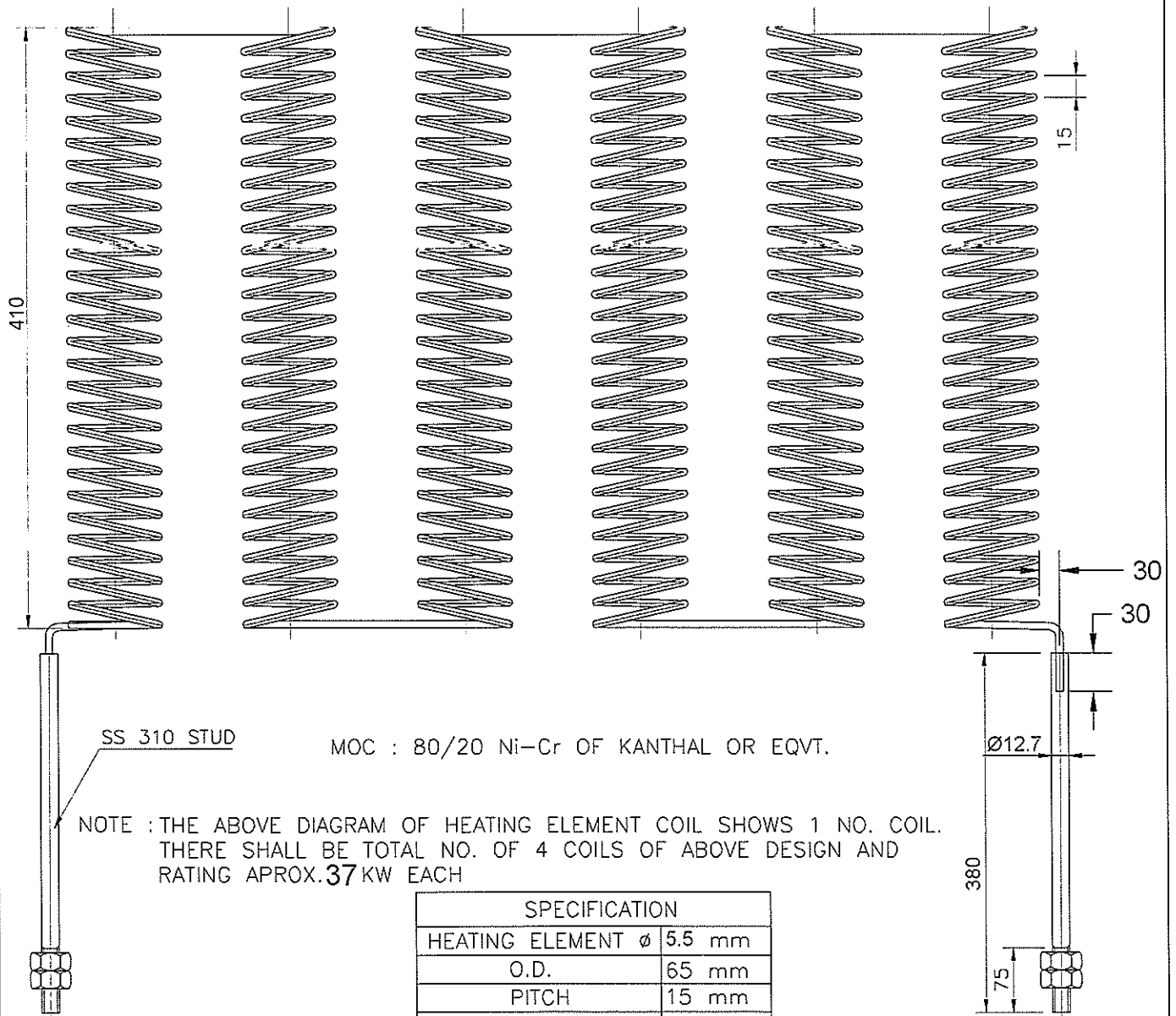
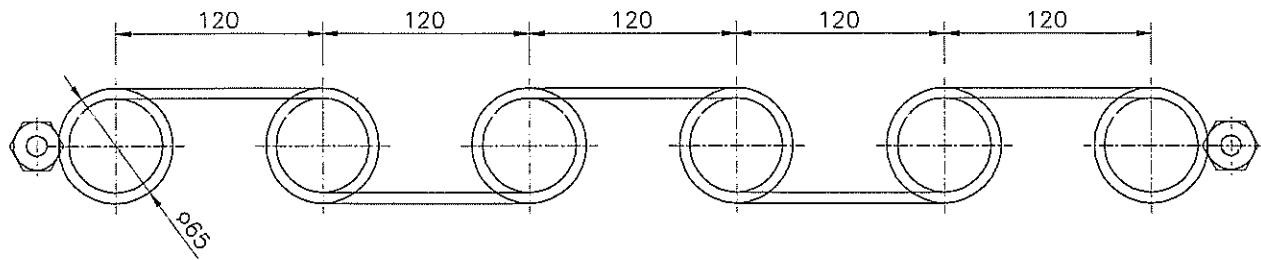
TITLE

HEATING ELEMENT COIL FOR
222 KW HEATER

REV	DATE	REV. BY	DESCRIPTION	DIMENSIONS IN MM	DRG.NO.- UCIL / TMPL /ELECT. - 01	REV.-0
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SHEET

1 OF 6



SS 310 STUD

MOC : 80/20 Ni-Cr OF KANTHAL OR EQVT.

NOTE : THE ABOVE DIAGRAM OF HEATING ELEMENT COIL SHOWS 1 NO. COIL.
THERE SHALL BE TOTAL NO. OF 4 COILS OF ABOVE DESIGN AND
RATING APROX. 37 KW EACH

SPECIFICATION	
HEATING ELEMENT ϕ	5.5 mm
O.D.	65 mm
PITCH	15 mm
NO.OF COIL TURNS	28 nos.
TOTAL LENGTH	410 mm



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TITLE

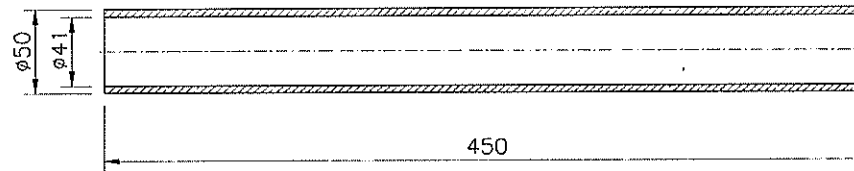
HEATING ELEMENT COIL FOR
222 KW HEATER

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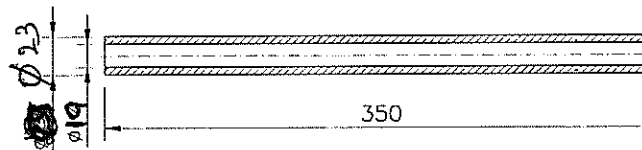
SHEET

2 OF 6

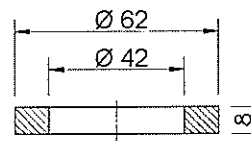
A2



CERAMIC PIPE
(MULLITE TUBE)



CERAMIC PIPE
(MULLITE TUBE)



CERAMIC WASHER

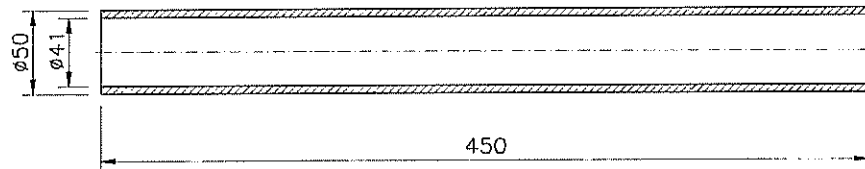
NOTE :- 1) THE ABOVE CERAMIC TUBES, WASHERS SHALL BE SUITABLE FOR USE IN AIR HEATER AT TEMPERATURE OF 1250°C MAX.



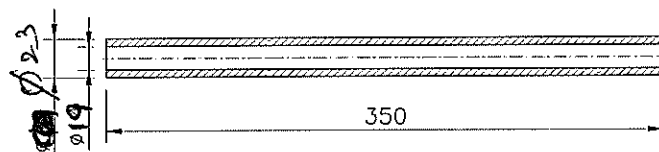
URANIUM CORPORATION OF INDIA LTD. TUMMALAPALLE
(A GOVT. OF INDIA ENTERPRISE, DEPT. OF ATOMIC ENERGY)

		TITLE	
		<u>ACCESSORIES FOR 222 KW</u>	
		<u>HEATER COIL MOUNTING</u>	
SCALE			
DIMENSIONS IN MM		DRG.NO.- UCIL / TMPL / ELECT. - 01	REV.- 0
		SHEET	3 OF 6

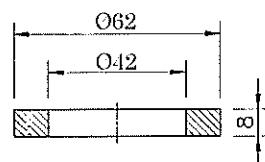
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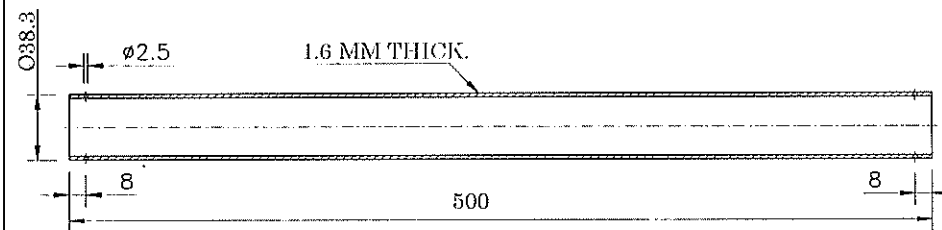
**CERAMIC REFRACTORY PIPE
(MULLITE TUBE)**



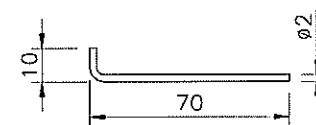
**CERAMIC REFRACTORY PIPE
(MULLITE TUBE)**



CERAMIC REFRACTORY WASHER



**METAL PIPE
MOC - SS 310**



**LOCK PIN
MOC - SS 310**



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DRN.

CHECKED

APPROVED

SCALE

DIMENSIONS IN MM

TITLE

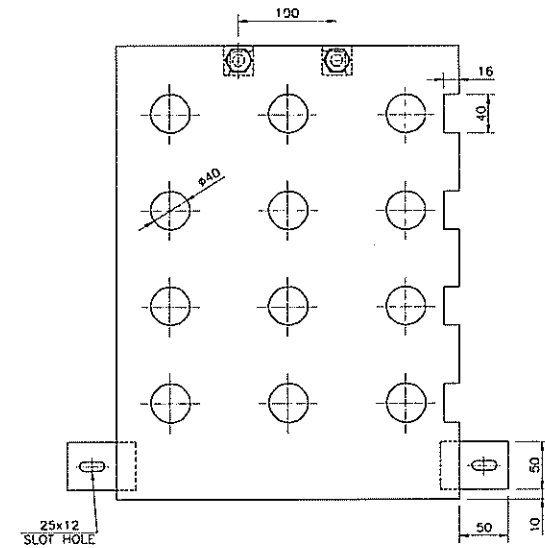
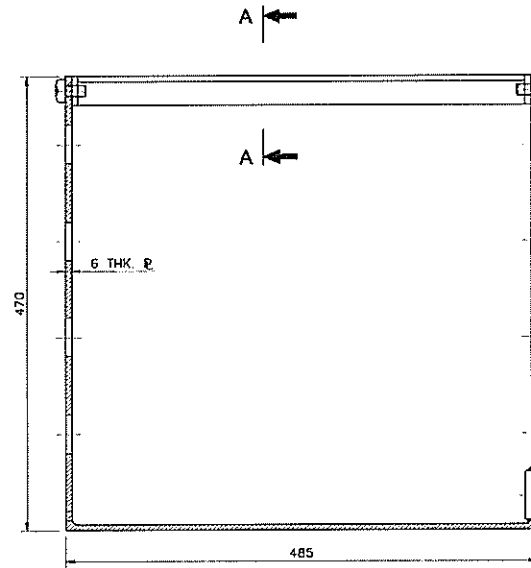
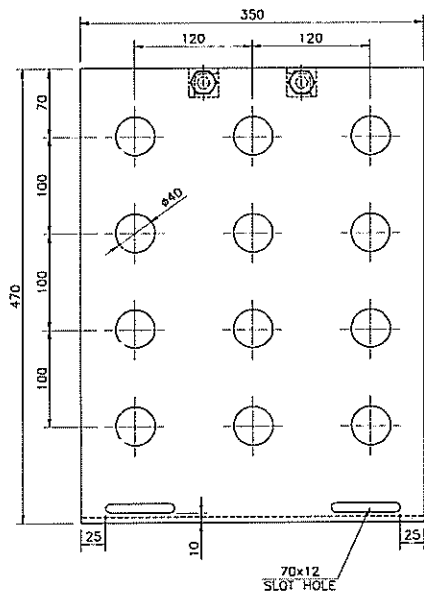
**ACCESSORIES FOR 222 KW
HEATER COIL MOUNTING**

DRG.NO.- UCIL / TMPL / ELECT.-01 REV.-

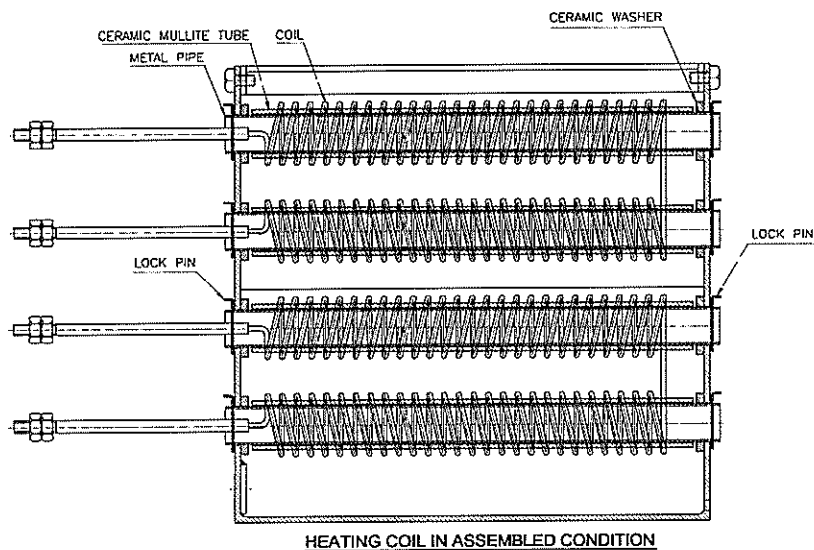
REV DATE

SHEET 4 OF 6

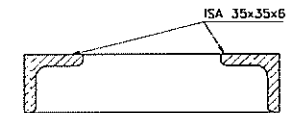
A2



MOC OF HEATER FRAME : SS 310




HEATING COIL IN ASSEMBLED CONDITION

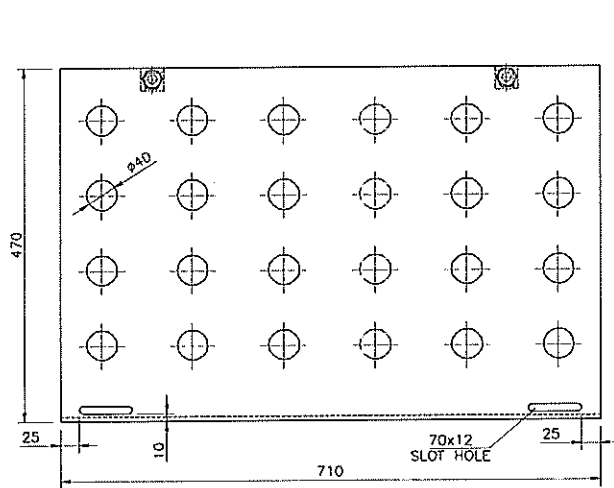


SEC. A - A

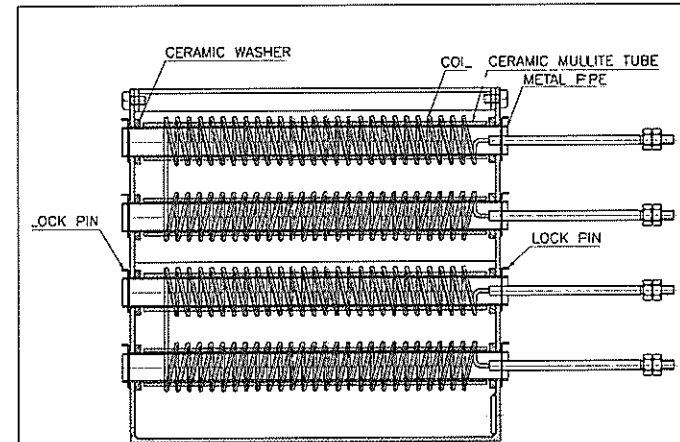
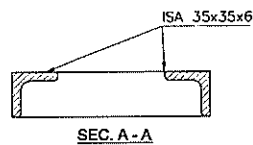
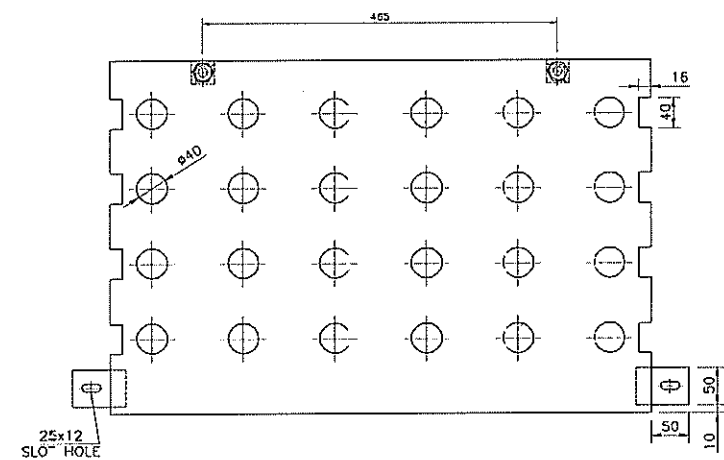
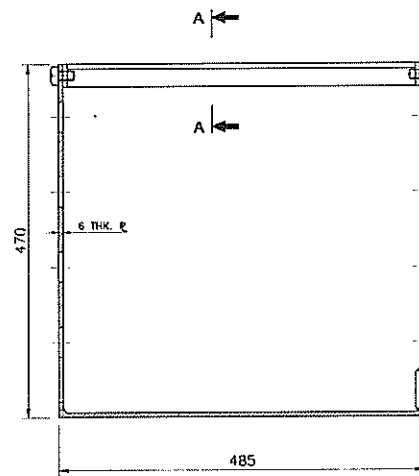
- NOTE : 1) ALL NUTS, BOL'S, WASHERS, ISA, HEATER FRAME & EXCEPT HEATER ELEMENT COIL SHALL BE MADE OF SS 310
2) MAX. TEMPERATURE WITHSTAND - 125°C

 URANIUM CORPORATION OF INDIA LTD TUMMALAPALLE (A GOVT. OF INDIA ENTERPRISE, DEPT. OF ATOMIC ENERGY)		TITLE	
DRN.		222 KW HEATER COIL FRAME SET	
CHECKED			
APPROVED			
SCALE		DRG.NO.- UCL/TMPI/ELECT. - 01	
DIMENSIONS IN MM		REV.- 0	
SHEET		5 OF 6	

REV	DATE	REV. BY	DESCRIPTION



MOC OF HEATER FRAME : SS 310



HEATING COIL IN ASSEMBLED CONDITION

NOTE : 1) ALL NUTS, BOLTS, WASHERS, ISA, HEATER FRAME & EXCEPT HEATER ELEMENT COIL SHALL BE MADE OF SS 310
2) MAX. TEMPERATURE WITHSTAND - 1250°C



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DRN.
CHECKED
APPROVED
SCALE
DIMENSIONS IN MM

TITLE
222 KW HEATER COIL FRAME SET
DRG.NO.- UCIL/TMP/ELECT. - 01
REV.-0

REV	DATE	REV BY	DESCRIPTION

SHEET

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A2