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GOVERNMENT OF INDIA
MINISTRY OF DEFENCE

**PROVISIONAL SPECIFICATION FOR
TEFLON POUCH AND
ATTENUATOR**

No. HEMRI/ED/PS/286

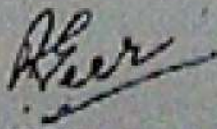
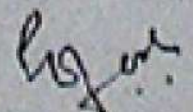
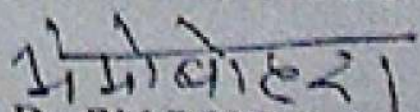
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**HIGH ENERGY MATERIAL RESEARCH LABORATORY
SUTARWADI, PUNE 411 021**

Month & Year of Issue: 2nd Revision - June 2000

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HEMRL/ ED/PS/286	ISSUE 1 DATE DEC 1996	REVISION DATE JUNE 2000	PAGE OF	
TITLE : PROVISIONAL SPECIFICATION FOR TEFLON POUCH & ATTENUATOR				
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HEMRL/ED/PS/286
2nd revision JUNE 2000

CONTENTS

Sr No.	Description	Page No.
1.	Scope	1
2.	Related documents	1
3.	Composition	2
4.	Manufacture	2
5.	Inspection	3
6.	Test Requirements	3
7.	Packing and marking	3
8.	Safety during manufacture.	4
9.	Appendix A	5
10.	Appendix B	6
11.	Drawings	7-15

- TO
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PROVISIONAL SPECIFICATION FOR TEFLON POUCH AND TOP ERA ATTENUATOR

This specification is prepared by High Energy Materials Research Laboratory, Sutarwadi, Pune - 411 021. For additional copies or any other enquiry regarding this specification reference should be made to the Director, HEMRL, Sutarwadi, Pune - 411021.

1. SCOPE

This specification is intended to govern the manufacture and inspection of Teflon pouch of following types and Top ERA attenuator. Following drawings are attached with this document.

- | | |
|---|----------------------|
| 1.1 Teflon pouch for Std. & Tapered ERA | Drg No. 1515 det. 2 |
| 1.2 Teflon pouch for Special ERA | Drg. No. 1516 det. 2 |
| 1.3 Top ERA pouch | Drg. No. 1517 det. 1 |
| 1.4 Top ERA Attenuator pouch | Drg. No. 1518 det. 1 |

2. RELATED DOCUMENTS

The thread cotton & teflon sheet used for manufacture of pouches shall conform to the following specifications

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Name of Item	Spec. No
1) Thread cotton for sewing	1. IS-1720-1978
Bleached, unproofed, off-white	2. JSS 8310-02
16 Tex x 6, Variety No.38	
2) Teflon sheet	As per Appendix A

3. COMPOSITION

The teflon sheet should be pure polytetrafluoroethylene (PTFE) polymer of thickness 0.25 ± 0.05 mm.

4. MANUFACTURE

4.1. Pouches

The pouches should be stitched on sewing machine with the specified cotton thread as per drawing. Approximately 7 - 10 stitches per centimeter are required.

4.2. Method of preparation of Top ERA Attenuator

65 to 70 nos. of teflon films of 126 x 126 x 0.25 mm are filled in the top ERA attenuator pouch. Then flap is inserted inside the pouch and pouch is taped across using black tape. (REF HEMRL DRG 1518 attached with this document.)

5. INSPECTION

- i) 5% samples for testing may be taken from any portion of the consignment of cut sheets/films/pouches. The measurement of dimensions of sheet and pouch as per drawings has to be carried out on samples with the help of scale and micrometer screw
- ii) The surface of sheet should be smooth finished and free from any void, scratch and dirty matters
- iii) The pouches should be evenly stitched.
- iv) The inside dimensions of the pouches are to be checked with the help of gauges drawing which are attached herewith.
- v) If on examination any sample be found not conforming to requirements of this specifications/drawings the whole consignment may be rejected

6. TEST REQUIRMENTS

Samples drawn from batch / lot of material should conform to para 3 and shall also comply with the tests given in Appendix A.

7. PACKING AND MARKING

- i) The teflon pouches and attenuator should be packed in a wooden box having inside linings of 5-6 mm thick thermocol and having capacity of 25 kg

- ii) All boxes should be marked with following details.
- a) Nomenclature
 - b) Consecutive number of wooden box
 - c) Batch no. and date of manufacture
 - d) Name and address of manufacturer
 - e) Consignee's name and address
 - f) Date of supply and S. Order no.
 - g) Total no. of pouches/ attenuator.
 - h) Gross and Net weight.
 - i) Inspecting authority.
- iii) In addition to above, the inspecting officer may like to suggest some more marking / identification at the time of inspection.

8. SAFETY DURING MANUFACTURE

Normal safety precautions, which are observed in mechanical workshop, should be followed.

APPENDIX-A

PROPERTIES AND TEST METHODS OF THE TEFLON SHEET

SR. No	PROPERTY	UNIT	SPECIFICATION LIMIT	TEST METHOD
1	Thickness	mm	0.25 ± 0.05	Micrometer screw
2	Density	g/cm ³	2.15 ± 0.05	By Archimedes principle
3	Tensile strength	kg/cm ²	250 ± 70 <small>MINIMUM 180</small>	As per Appendix "B".
4	Elongation at break	%	200 ± 70 <small>MINIMUM 130</small>	As per Appendix "B".
5	Hardness	Shore D	50-65	ASTM/D-2240
6	Flammability	-	Non-flammable	ASTM/D-635
7	Water absorption	%	0.5 Max.	ASTM/D-570

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Note:- The sample should conform to all above properties. There is no simple specific chemical method to check the purity of teflon. The high density and complete insolubility in acetone, toluene, dimethyl formamide, & hexane at room temperature is sufficient for identification.

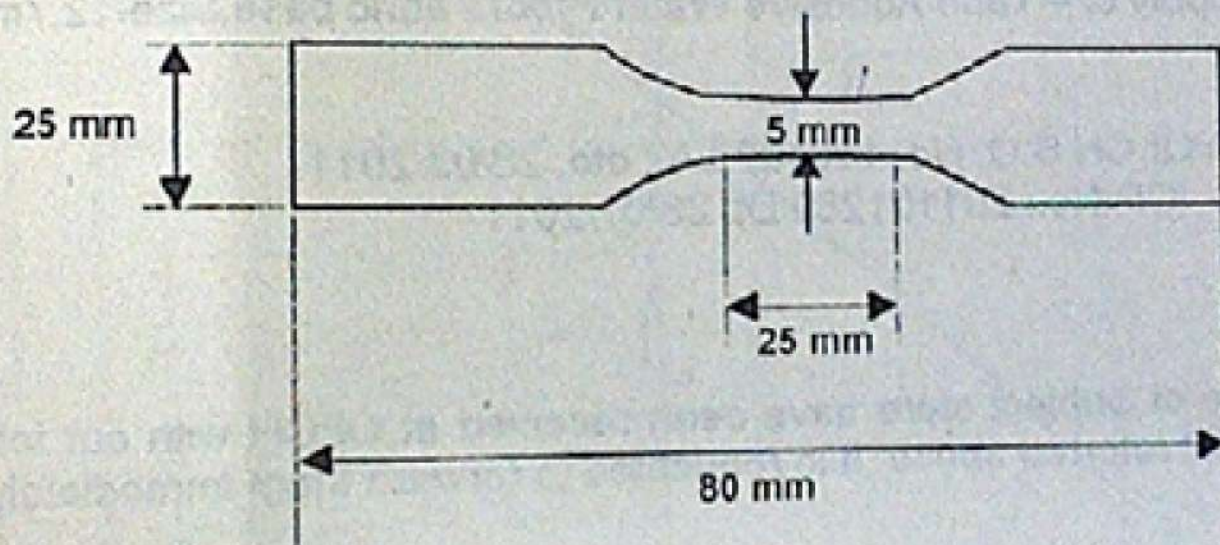
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APPENDIX - 'B'

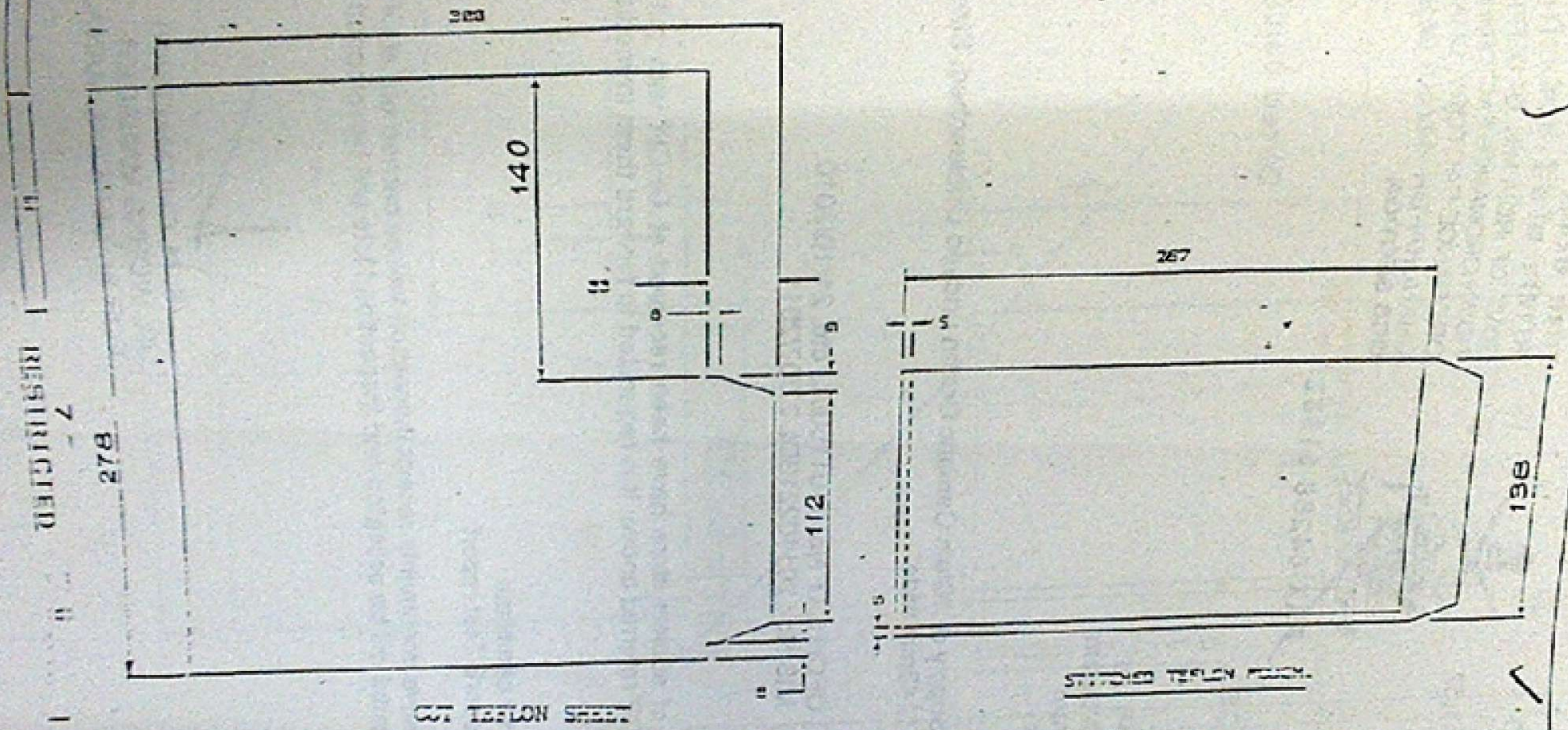
**DETERMINATION OF TENSILE STRENGTH
AND
% ELONGATION OF TEFLON SHEET**

Take the Teflon sheet and cut into the dumbbells of the size as per the specimen given below.



Check the thickness and width of each dumbbell and test it on universal materials testing machine, INSTRON 1185, at cross-head speed of 50/min.

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 PART NO. 1515
 DIM. ARE IN INCHES
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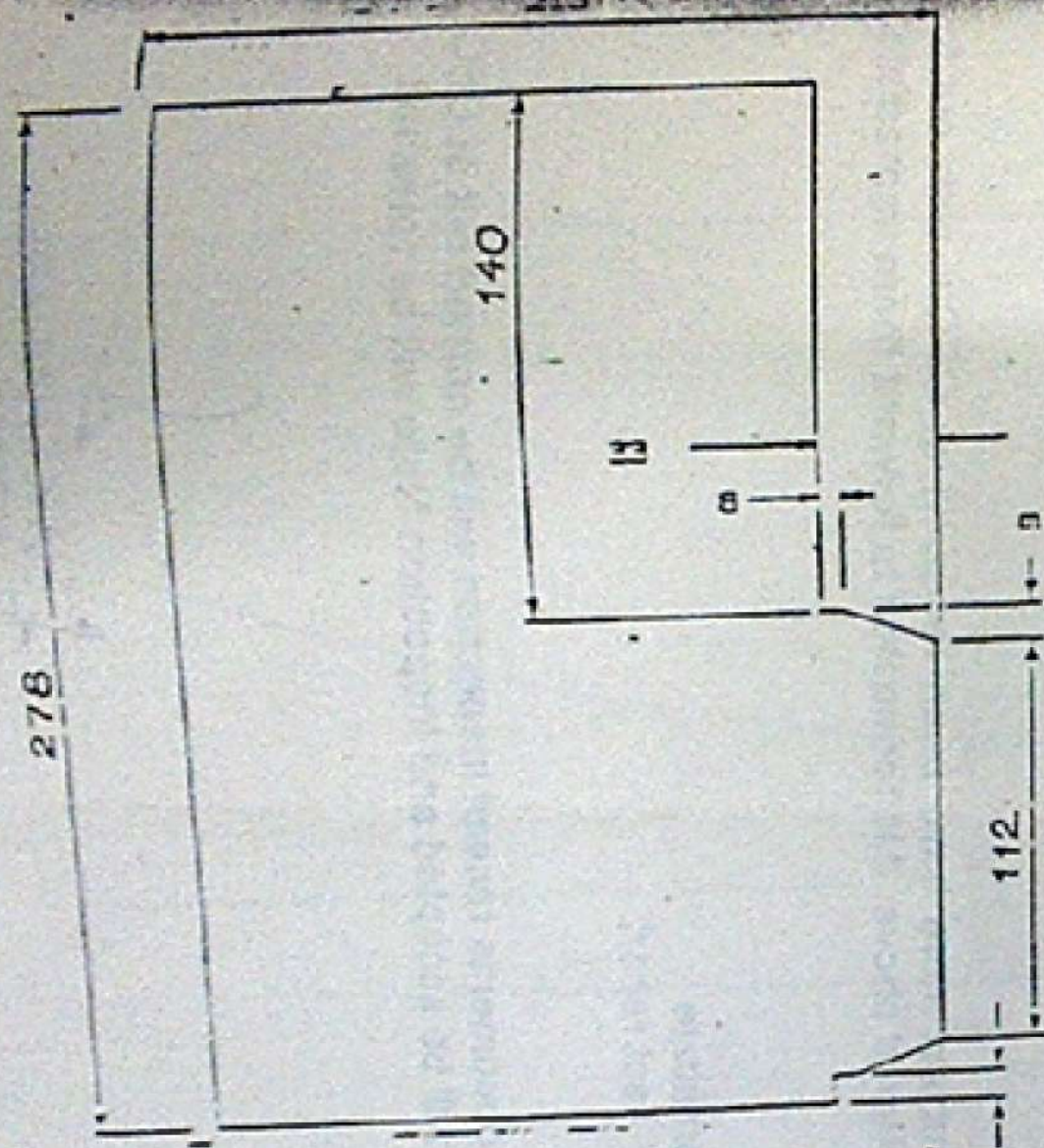


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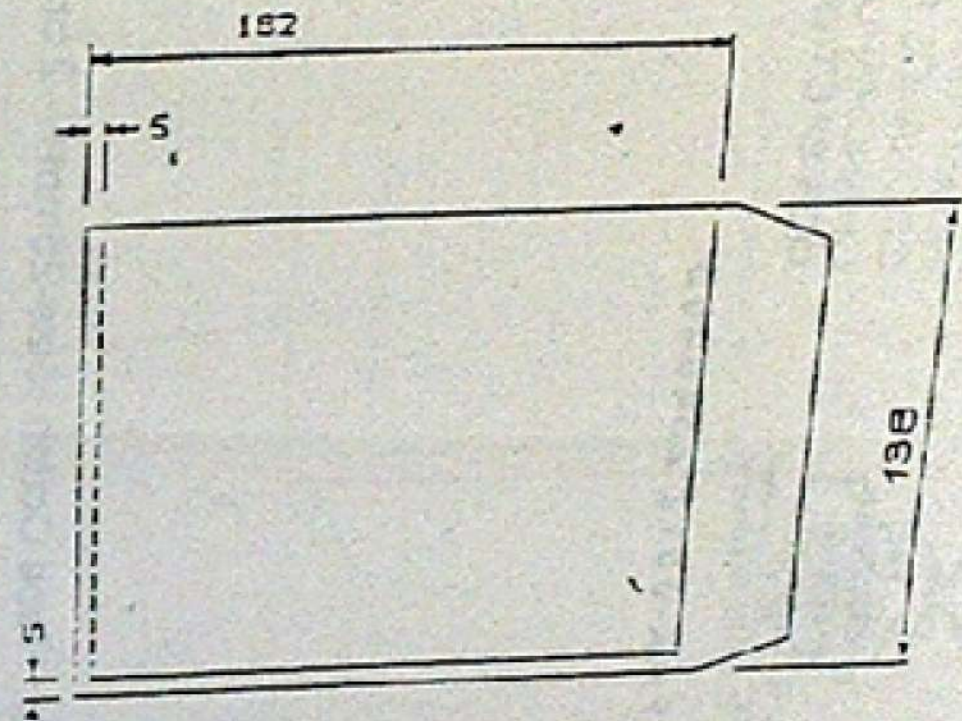
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DESIGN AUTHORITY		REVISION		MATERIAL SPEC.		PROTECTIVE FINISH		ORG. NO.	
HEMRL PUNE-41102				HEMRL EDI 951246				HEMRL ORG 1515	
DATE		DATE		DATE		DATE		D. S. CRT. No.	

TEFLON POUCH (FOR STD. & TAPERED ERA)



NET TEFLON SHEET

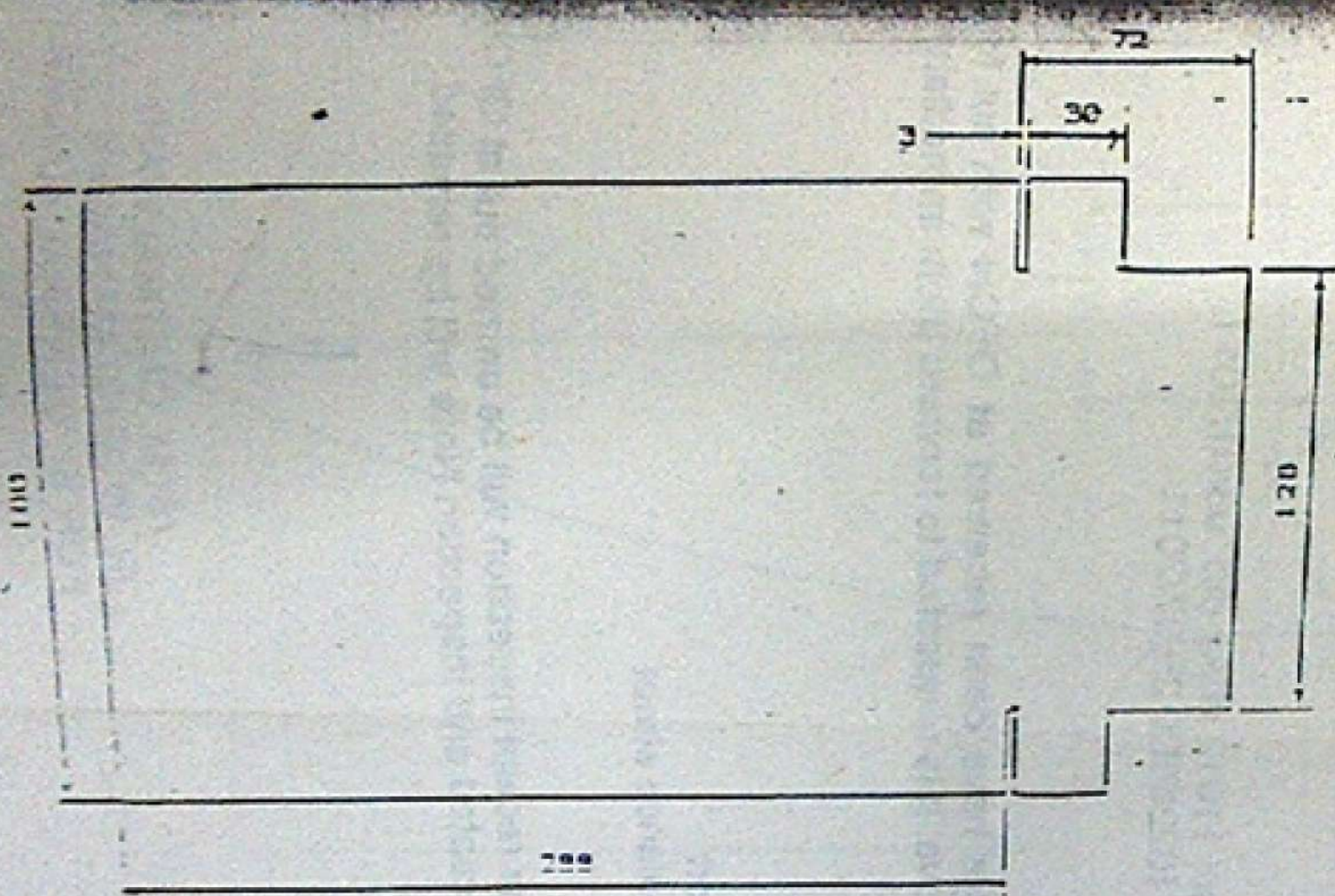


STITCHED TEFLON POUCH

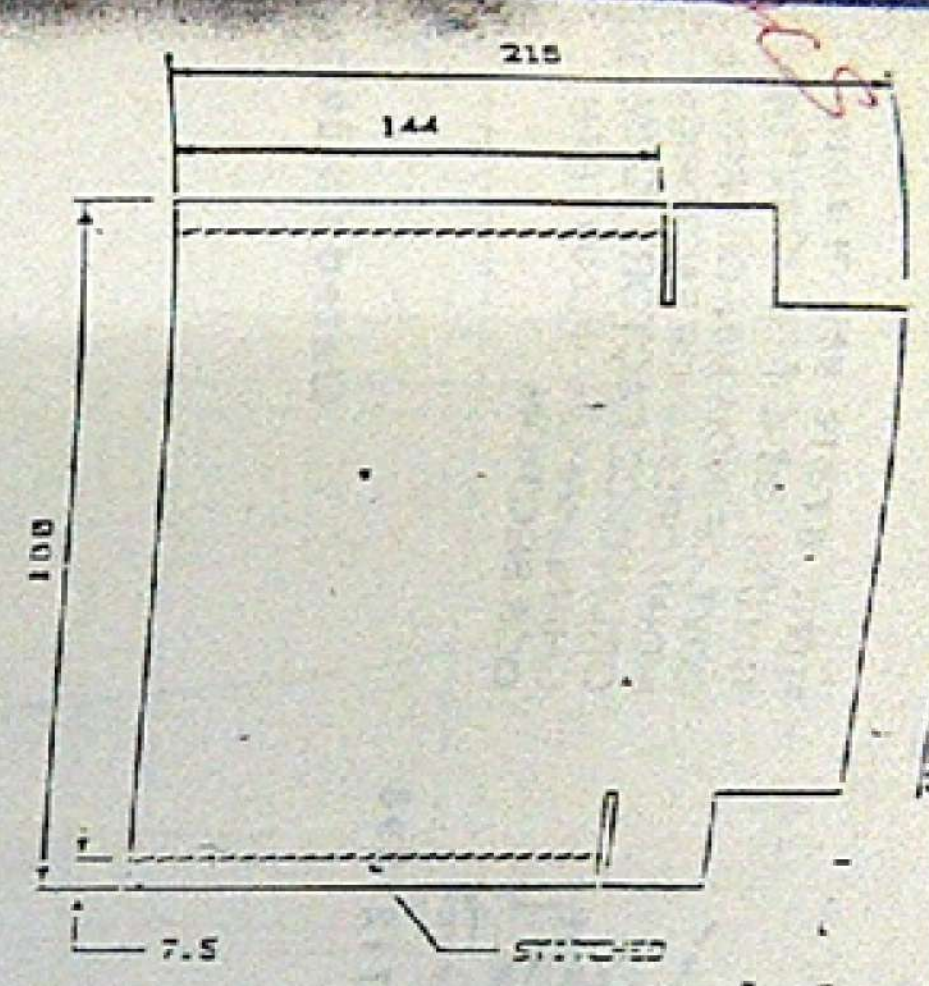
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DESIGNED BY: _____ CHECKED BY: _____ DATE: _____		TEFLON AS PER HEMRL SPEC. HEMRL/ED/PS/286		PROTECTIVE FINISH: _____ Class: _____	
REVISION: _____ DATE: _____		ZONE: _____ SIG. _____		ORG. NO. _____ HEMRL ORG 1516	

HEMRL/ED/PS/286
TEFLON POUCH (FOR SPECIAL ERA)

REGISTERED 9



CUT TEFLON SHEET



STITCHED POUCH

No. DATE AUTHORITY		REVISION		MATERIAL SPECIFICATION		DESIGN AUTHORITY	
ORG. SEAL				TEFLON AS PER MEMRL SPEC.		MEMRL PUNE-411221	
				PROTECTIVE FINISH		ORG. NO.	
						MEMRL ORG 1517	
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						PART No.	
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TOP ERA POUCH

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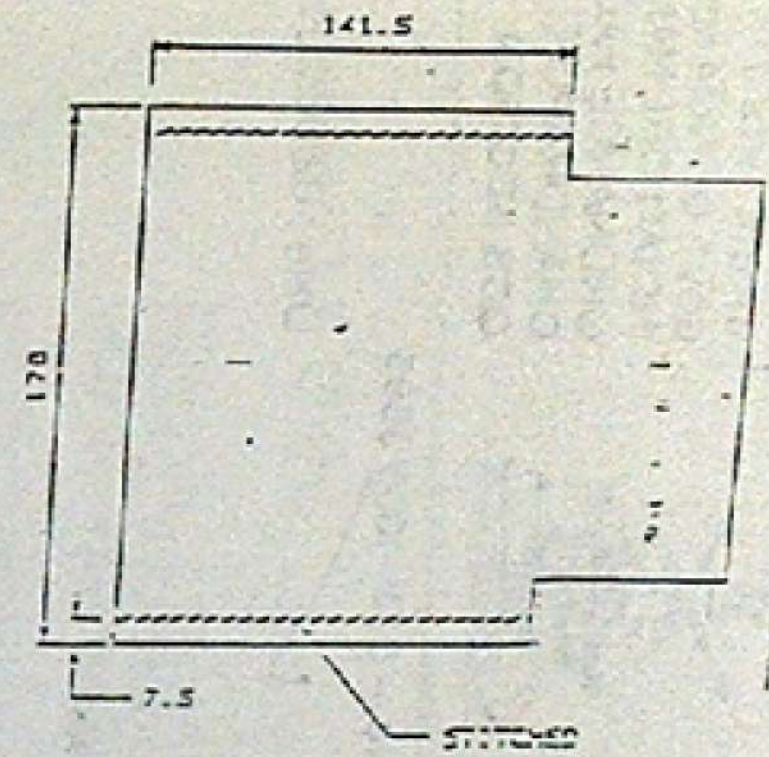
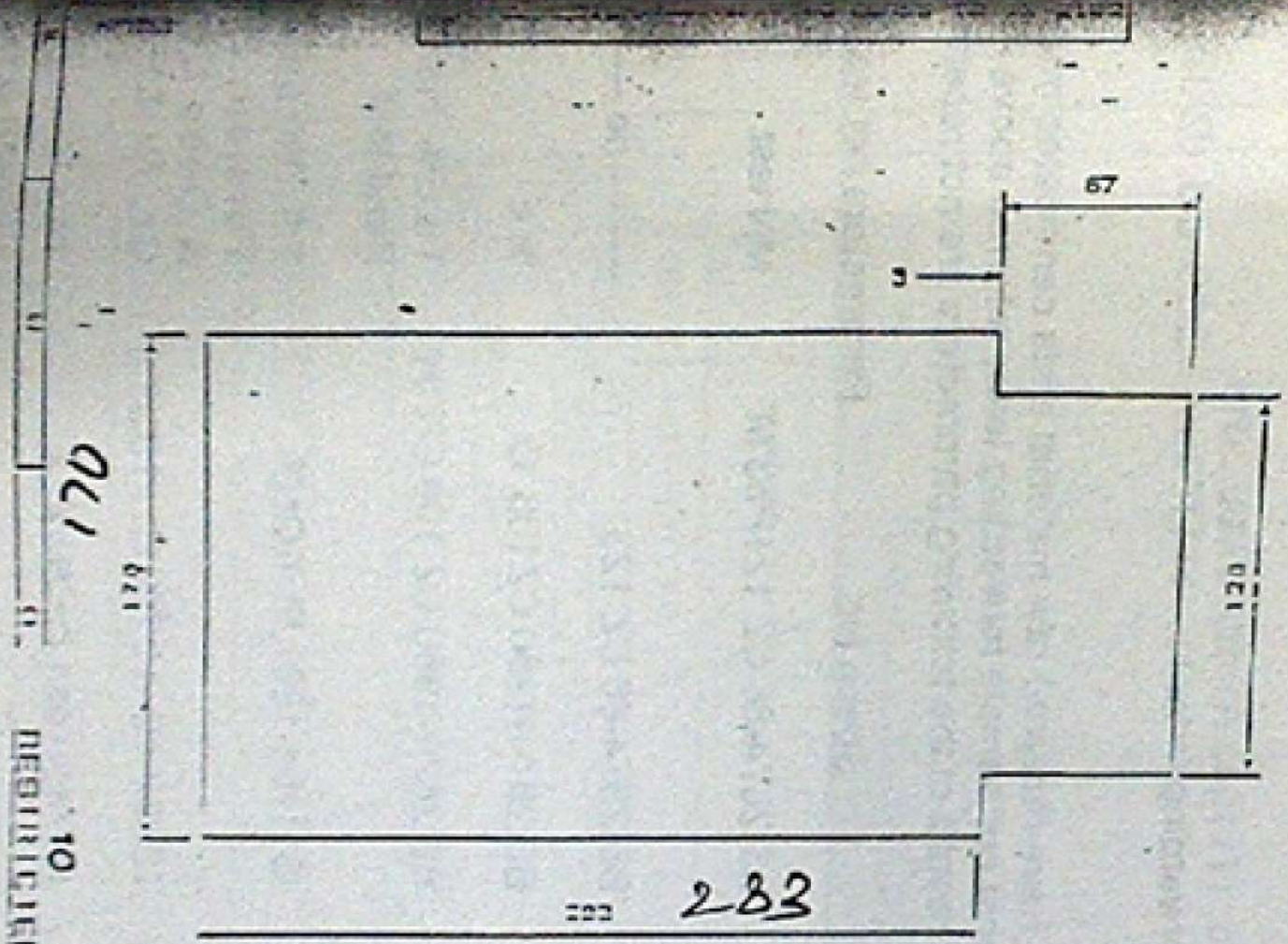
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SCALE		DESIGN AUTHORITY						
MATERIAL		GAUGE		HEMRL PUNE-40102				
DATE		DATE		33-01-87				
MATERIAL		MATERIAL		TEFLON AS PER HEMRL SPEC.				
REVISION		ZONE		HEMRL/ED/PS/286				
ORG. SEALED		PROTECTIVE FINISH		HEMRL ORG 1513				
		IC		PART No.				
				D.S. CAT. No.				
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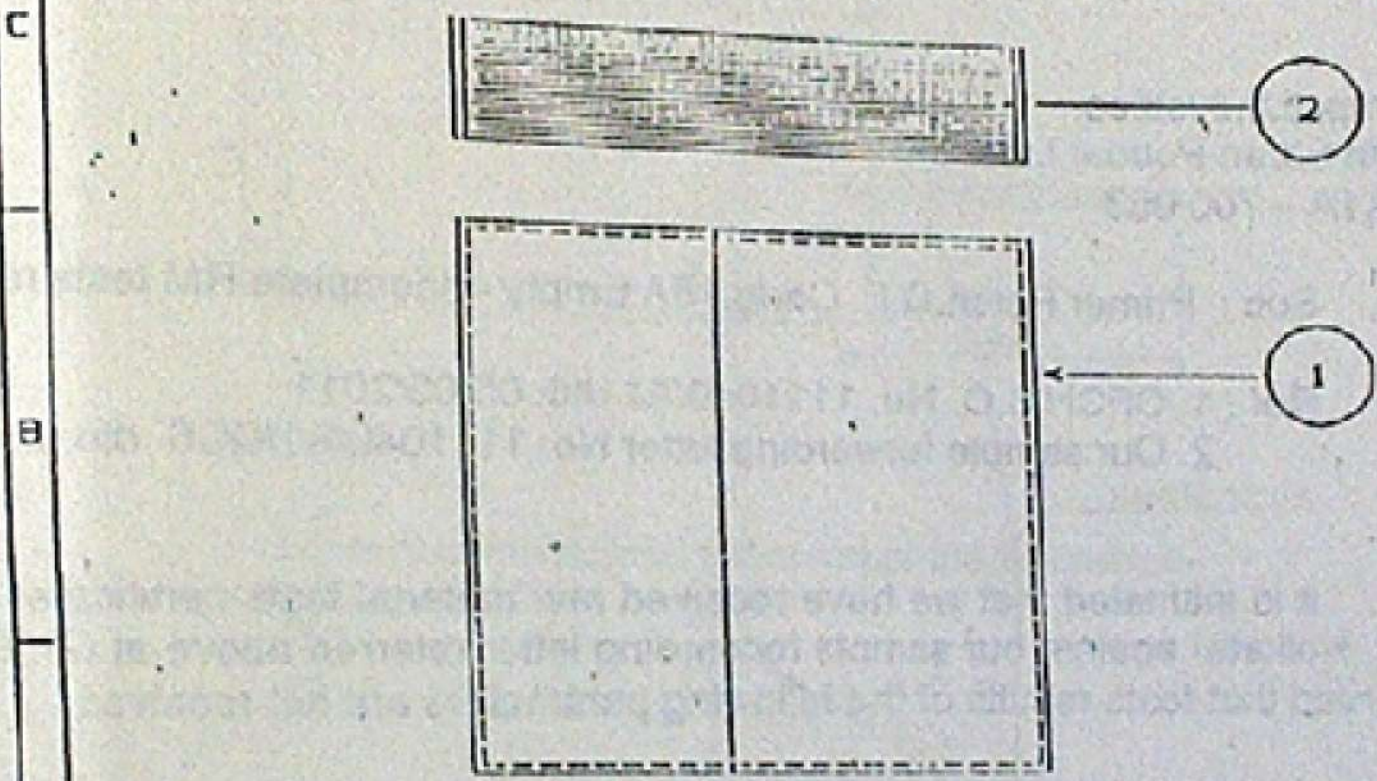
TOP ATTENUATOR POUCH

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(U.S.)

GEN. TOL. HETERO/COURSE/FINE CLASS 10/15/2102

LIST OF COMPONENTS

S.No	DESCRIPTION	DRG.No.	DET.No	PART No	No OFF
1	TOP ERA ATTENUATOR POUCH	HEMRL DRG 1518	1		1
2	TEFLON FILM 120x120x0.25mm		2		05-70



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ORG. SEALED -

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APPD. FOR DIRECTOR

MATL -

PROTECTIVE FINISH -

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**TOP ERA ATTENUATOR
CASSETTE**

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DESIGN AUTHORITY
HEMRL PUNE-41102

ORG.No.
HEMRL DRG 1518
DET.No. SHS. 2 DET.No.1
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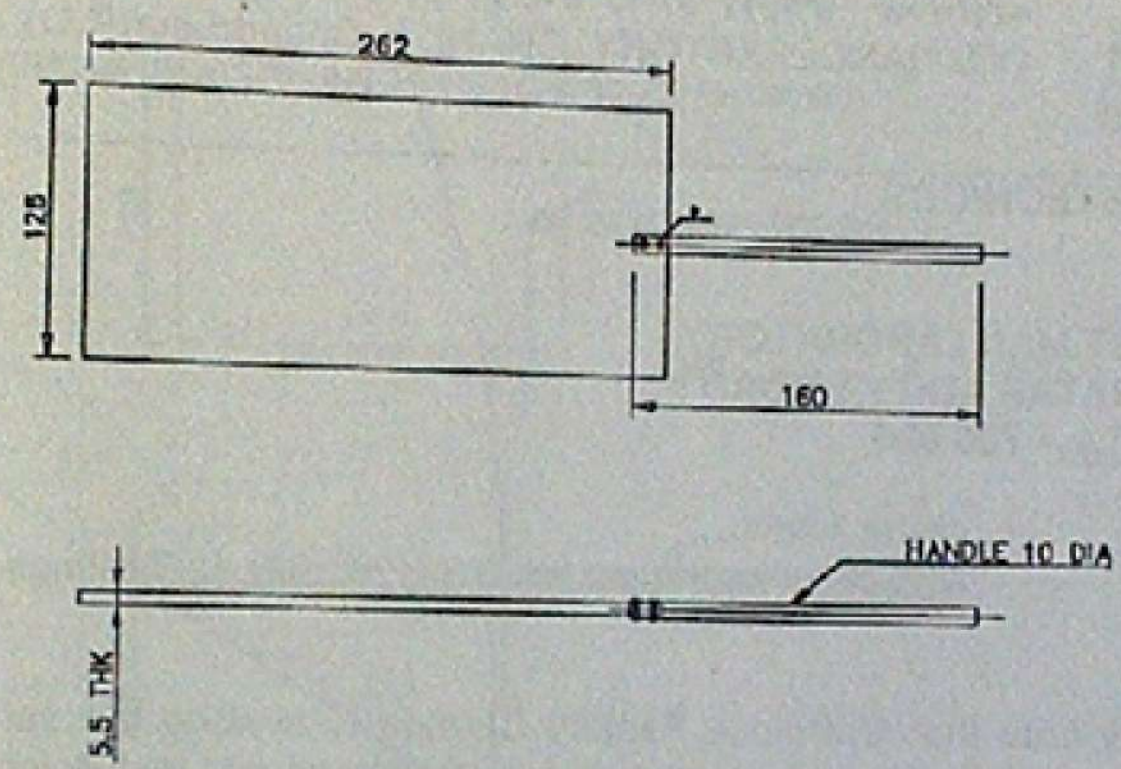
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 GEN.TOL.MEDIUM/COURSE/FINE CLASS TO IS: 2102

ORG.No.
 HEMRL/ED/DRG.No. 006
 DET No. 130
 SHTS. SHT.No.



NOTE :-
 Aluminum Rivets for Gauge Handle
 10 mm Apart & 10 mm from corner.

R. NO.	DATE	AUTHORITY	BRIEF RECORD	ZONE	CD.	CO.

DRG. SEALED

DRN. RBS	CHD.	TRD.	COMP.	ASSY DRG. HEMRL/ED/DRG No.005
CD.	PASSED	SCALE :- 1 : 4		DESIGN AUTHORITY
APPROVED	<i>[Signature]</i>	EST MASS :		HEMRL PUNE - 411021.
	FOR DIRECTOR	GAUGE SCHD.		
		DATE - 03-08-2000		

MATL : ALUMINUM

PROTECTIVE FINISH :

TITLE

GAUGE FOR TEFLON POUCH
 OF
 STANDARD / TAPERED ERA

DRG.No.
 HEMRL/ED/DRG No. 006

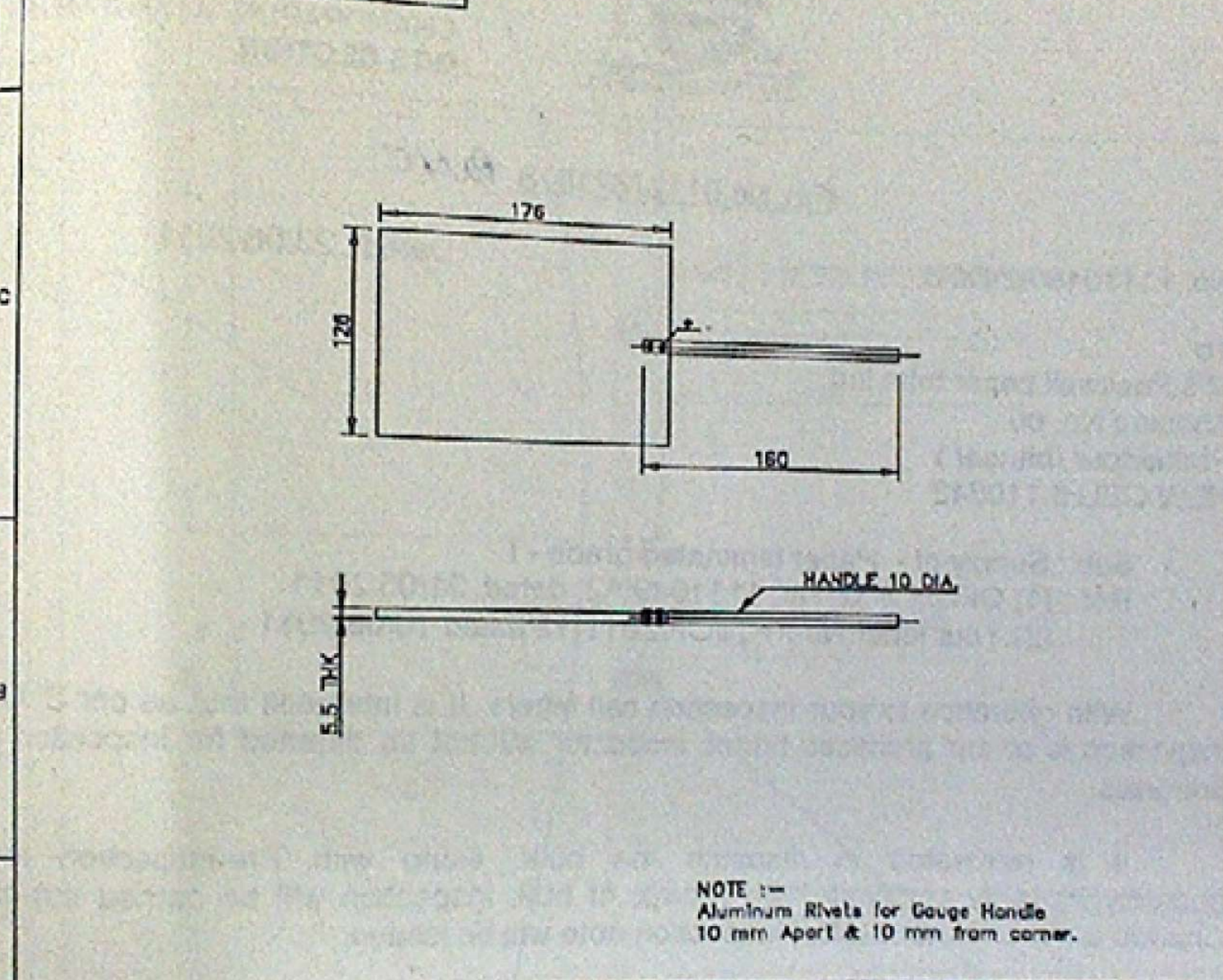
DET No. SHTS. SHT.No.

PART No.

D.S.CAT.No.

A.H.S.P.

CONVENTIONS CONFORM TO IS: 698.
 DIMS ARE IN m.m. UNLESS OTHERWISE STATED.
 GEN.TOL.MEDIUM/COARSE/FINE CLASS TO IS:2102



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DRN. RBS	CHD.	SCALE :- 1 : 4		DESIGN AUTHORITY
CD.	PASSED	EST MASS :		HEMRL PUNE - 411021.
APPROVED	<i>[Signature]</i>	GAUGE SCHD.		
	FOR DIRECTOR	DATE - 03-08-2000		

MATERIAL : ALUMINUM		DRG.No.
PROTECTIVE FINISH :		HEMRL/ED/DRG No. 007
TITLE		DET No.
<p style="text-align: center;">GAUGE FOR TEFLON POUCH OF SPECIAL ERA</p>		SHTS. SIT.No.
		PART No.
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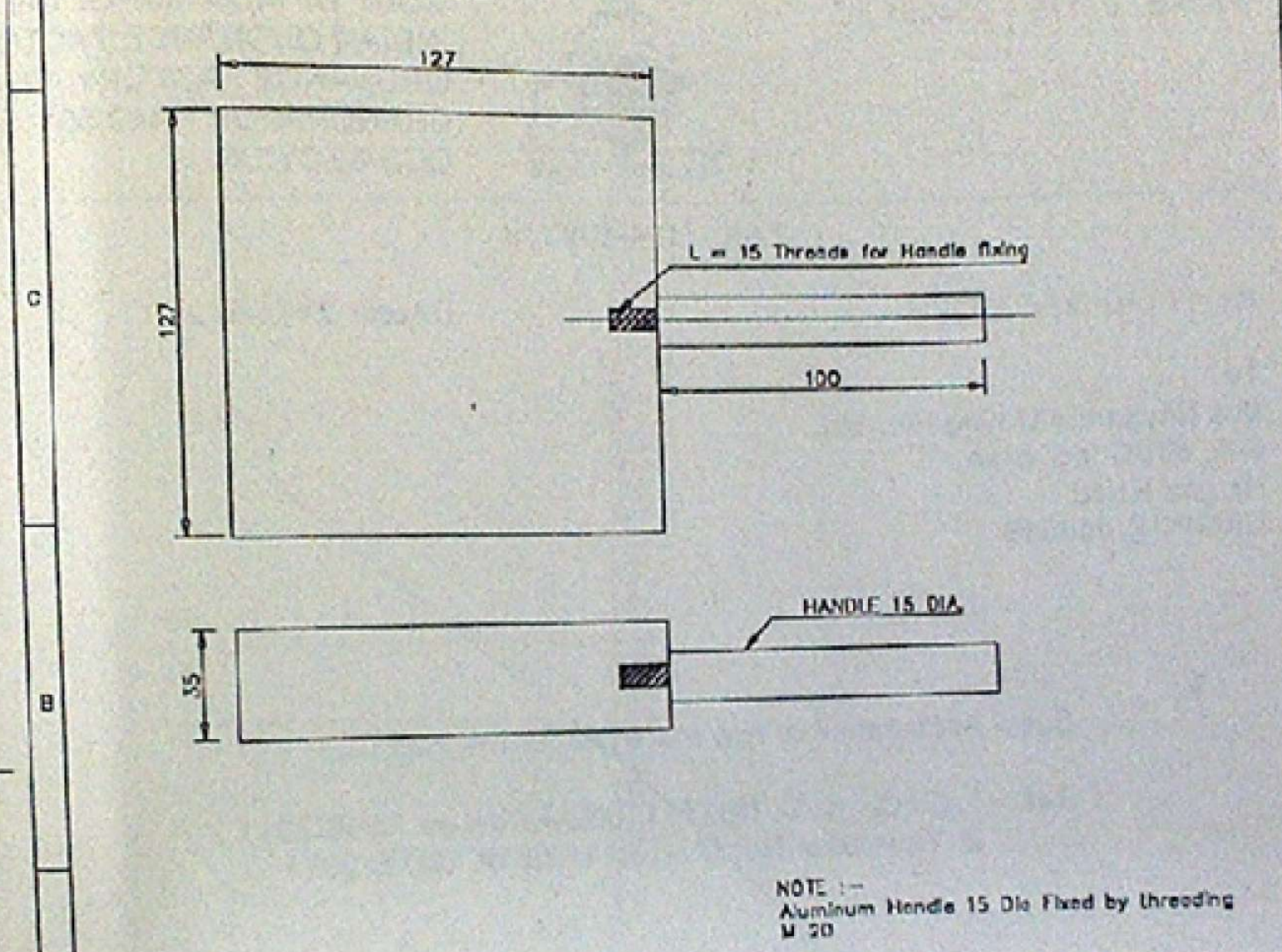
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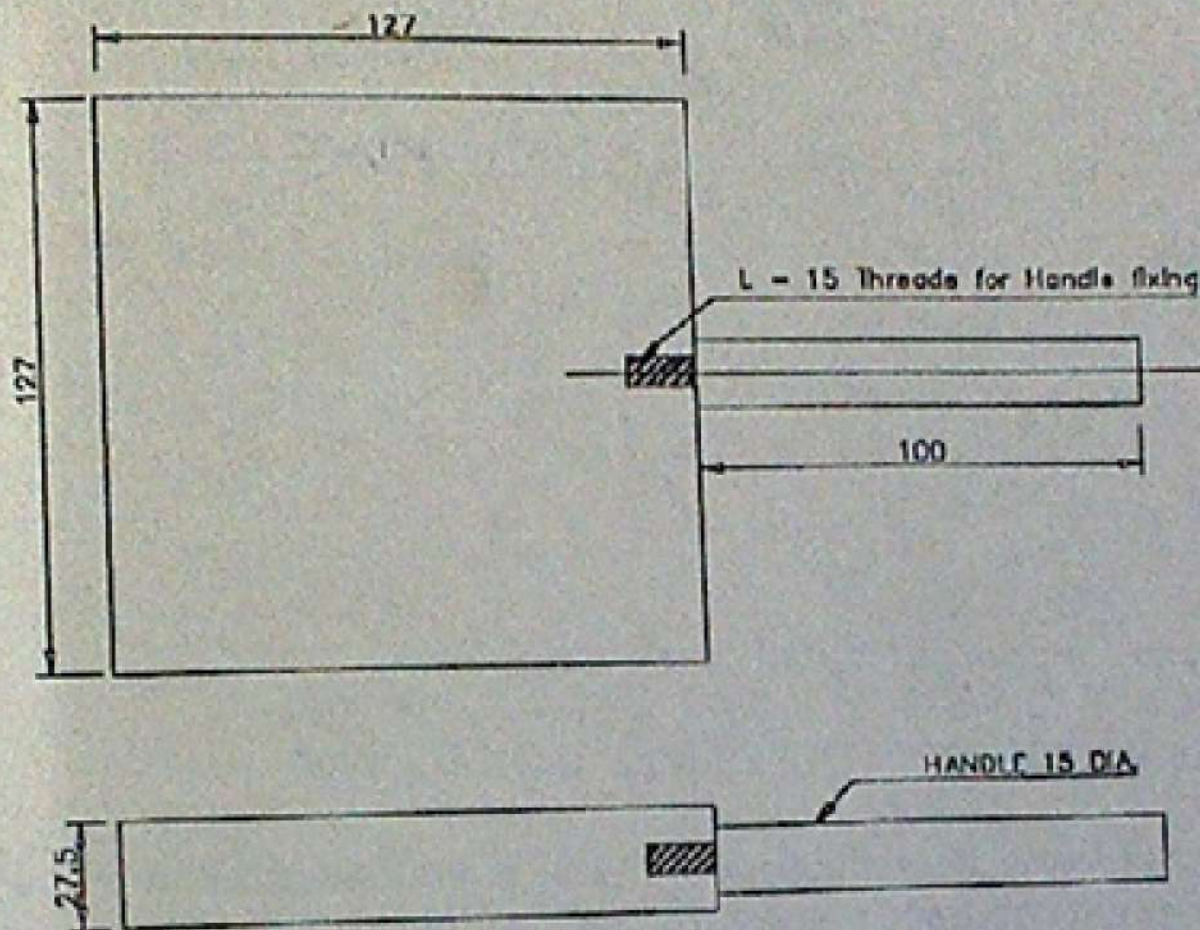
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ON S.D.S. S.D.S. DRG No. 130
HEMRL/ED/DRG No.008
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R. NO.	DATE	AUTHORITY	BRIEF RECORD		ZONE	CO.	CO.	
DRG. SEALED			TRD.	COMP.	ASSY DRG.			
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MATERIAL: ALUMINUM			GAUGE SCHD.					
PROTECTIVE FINISH :			DATE - 03-08-2000					
TITLE			HEMRL/ED/DRG No.008					
<p style="text-align: center;">GAUGE FOR TEFLON POUCH OF TOP ERA</p>			DCT No.	SITS	SIT.No.			
			PART No.					
			D.SCAT.No.					
A.H.S.P.								

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NOTE :-
Aluminum Handle 15 Dia Fixed by threading
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R. NO.		DATE	AUTHORITY	BRIEF RECORD		ZONE	CO.	CO.	
DRG SEALED		DRN. RBS	CHD.	TRD.	COMP.	ASSY DRG.			
CO.		PASSED		SCALE :- 1 : 4		DESIGN AUTHORITY			
APPROVED		FOR DIRECTOR		EST MASS :		HEMRL PUNE - 411021.			
MATERIAL : ALUMINIUM				GAUGE SCHD.					
PROTECTIVE FINISH :				DATE - 03-08-2000					
TITLE		GAUGE FOR TEFLON POUCH						DRG No.	
		OF						HEMRL/ED/DRG No.009	
		TOP ERA ATTENUATOR						DET No.	
								SHIS. SIT.No.	
								PART No.	
								D.SCAT.No.	
								A.N.S.P.	

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