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ARLINGTON HALL STATION
ARLINGTON 12, VIRGINIA**



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MOLDED INSULATION COMPANY

335 E. PRICE STREET PHILADELPHIA 44, PA. code 215 Victor 4-2626

PRODUCTS

283618

283 618

CATALOGED BY ASTIA

A-AD No. _____

SUBMITTED TO: ARMED SERVICES TECHNICAL
INFORMATION AGENCY
ARLINGTON HALL STATION
ARLINGTON 12, VIRGINIA

SUBJECT: SUMMARY REPORT OF THE
PRODUCTION ENGINEERING OF
THE M18A1 MINE

CONTRACT: DA-28-017-ORD-3079

SUBMITTED BY

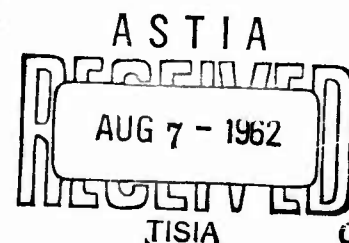
Michael Garrity

M. Garrity
Project Engineer

APPROVED

R. F. Hurst

R. F. Hurst
Vice President



ELECTRO-MECHANICAL
ASSEMBLIES

ELECTRONIC ASSEMBLIES
AND COMPONENTS

ELECTRONIC TESTING
EQUIPMENT

METAL
FABRICATION

PLASTICS-
ALL TYPES

PRECIOUS METAL
PLATING

METEOROLOGICAL
INSTRUMENTS

PRINTED CIRCUIT
ASSEMBLIES

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1. INTRODUCTION

The purpose of this report is to outline the processes used in the production of the M18A1 APERS Mine and to illuminate any difficulties encountered and suggest changes that will facilitate production.

This item will be procured in quantities of fifty thousand or greater so this report will deal only with large quantity production.

The design changes that occurred during this production study will not be discussed.

2. MATERIAL NOTES

The mine assembly is unique in anti-personnel mine systems in as much as it can be aimed when set in place and fired by remote control. This assembly is built to withstand a drop test of six feet to a steel plate without impairing its service.

Durability for the mine is important for it is given rough treatment from the time it is issued to the foot soldier until its destruction. The fiberfil material is compounded of fiber glass and polystyrene which coupled together make a strong but not brittle material yet flexible enough to withstand high impact. The high percentage of glass imparts good dimensional stability and the styrene bonds easily to itself or other plastics. This is the reason that this material was used for the various items.

3. CASE NO. 8800915

The predominant feature is the Case no. 8800915. This is injection molded of Fiberfil per MIL-M-21347. Due to the molded threads in the detonator well cavities two loose pins are required for each mold cavity. Orientation of the thread termination in relation to the case proper must be considered when designing the mold and an additional set of pins will increase the mold production. Two minutes cycle time is sufficient to produce a perfectly molded part regardless of a single cavity or multicavity mold. The gate location should be in the vicinity of the detonator wells to give a good fill with a minimum cylinder pressure. This will also maintain flash that can be removed by tumbling.

Fiberfil material is hydrostatic and should be stored in a dry area and warmed prior to loading in the injection cylinder. The Fiberfil Corporation of Warsaw, Indiana will cooperate in the design of the mold and processing of the raw material.

4. COVER NO. 8800916

The Cover no. 8800916 is the mating part for the case and of less complex configuration which results in less costly mold design and higher production figures. This part can be produced in a completely automatic press using the same material precautions as with the case and simply tumbled to remove molding flash.

• 5. DETONATOR WELL ADAPTER

The Detonator Well Adapter no. 8800913 is made of the same material as the case and cover and it too can be molded automatically.

6. DETONATOR WELL PLUG

The Detonator Well Plug no. 8800923 is ideally suited for automatic molding and its material linear polyethelene requires no special handling.

7. ANGLE BRACKET

The Angle Bracket no. 8800907 is an example of simplicity in design for the lowest cost with out sacrifice of function. Low carbon steel as specified is in abundance and the cheapest wrought material available. The progressive die necessary to produce this part can be made in any tool room and run in a press at one hundred strokes per minute. The tool necessary to do one good part will turn out several million.

8. LEG NO. 8800908

The Leg no. 8800908 is designed to support the mine on any terrain with some penetration of the leg into whatever surface it may be placed. Again low carbon steel is used with the best results but the die is a little different in design. Shaping the punch is the most difficult part but once shaped it can be fitted to the die steel. A good toolmaker can make this tool in fifty hours. This part can also be run at approximately one hundred strokes per minute.

9. WASHER - SPRING

The Washer - Spring no. 8837131 is a standard part produced by Shakeproof Incorporated and should be checked for hardness and temper retention.

10. WASHER - FLAT

Washer - Flat no. MS15795-308 can be manufactured with simple tools or can be purchased at any flat washer organization for very nominal prices.

11. STEEL BALL

Steel Ball no. 8800922 is similar to parts of like nature produced by all of the ball manufacturers. The material is low carbon steel in the range of 1009 to 1014 carbon and hardened to R_c43-47 to a depth of .020 to .030.

The first stage of manufacturing is heading where the steel wire is thread thru a die clamped and peened to form a shape roughly the same as a ball but with an equator raised about fifteen thousandths above the shaped diameter with a base section approximately ten to fifteen thousandths thick.

Production rate for the size ball required is in the neighborhood of three hundred per minute. After this operation the balls are then poured in a hopper of a grinding machine. This is a single purpose machine whose sole function is to rough grind the equator off the headed ball. Thousands of these balls are run thru this machine at one time recirculating about every two or three minutes to pass the multisegmented grinding wheel that is the heart of this machine. It takes several machine hours to process a single batch of balls.

Succeeding this grinding operation the balls are then heat treated to full hardness in a rotating carbonizing furnace. After this a temper drawing operation is conducted to reduce the full hardness down to the R_c45 .

The depth of the case dictates the length of time in hours to achieve the proper ball characteristics. A light acid dip is sufficient to remove the fire scale.

13. LEG ASSEMBLY

The Leg Assembly no. 8837129 can be processed on a standard riveting machine with standard tooling. This operation can be automated fully with hopper feeds for all parts in the proper sequence but the tooling cost would require production figures of at least one million pieces.

Riveting the leg assemblies to the case is performed in the same manner as assembly of the legs on the same equipment.

12. BALL POTTING MATERIAL

Several combinations of Devcon "A" and resins were tried to provide the best all around compound. The iron filings as found in the Devcon "A" are essential to provide a mat to support the resin prior to setting-up and when detonation occurs it, offers a density similar to the balls which tends to retard the blast as it escapes thru the small openings that exist between balls. The resin mines provide ease of handling and a tough body after curing.

14. ASSEMBLY NOTES

The balls can be dispensed within the count tolerance from an Exact Weight Scale into the front tray. After experimenting on many different fixtures and devices, the most economical method was to provide an operator with a small vacuum type probe which could lift a single ball and transport it to another section. The probe was also used to move many balls at one time and in a short training period, an operator could orient the tray full of balls in less than one minute.

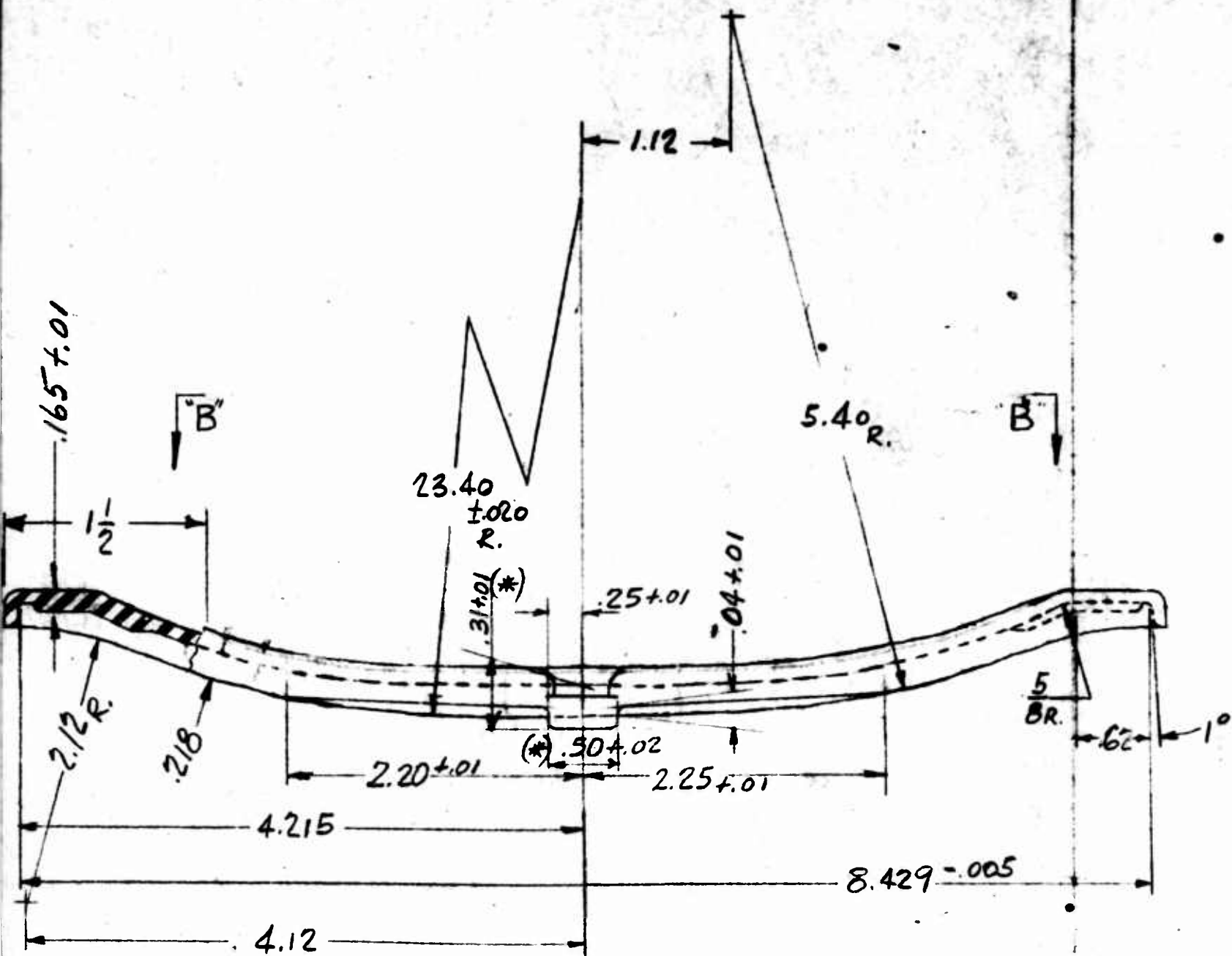
The potting material can be dispensed from any of the many available grease gun type dispensers available. Enough potting compound can be mixed for one day's production and stored in a cold box until used. When dispensing, the operator should trace a line about one inch from each case side for the entire length of the tray and do the same at each end except that the line should be about one half inch from the case end. Coordination of the movement of the gun and the volume of compound dispensed will deposit the right amount on the balls. The "right amount" being enough to cover thoroughly the balls without puddling in low spots of the case contour. A polyethylene paddle makes a very handy spreader to usher compound into starved areas. Water acts as a good lubricant on tools in contact with the compound and industrial alcohol is a good solvent.

The principle resin used is epoxy, and particular care should be exercised in cleaning the hands and tools as well as providing adequate ventilation.

1

500-01





5005

$\frac{7}{16}$

BACK

T48E3 APERS MINE

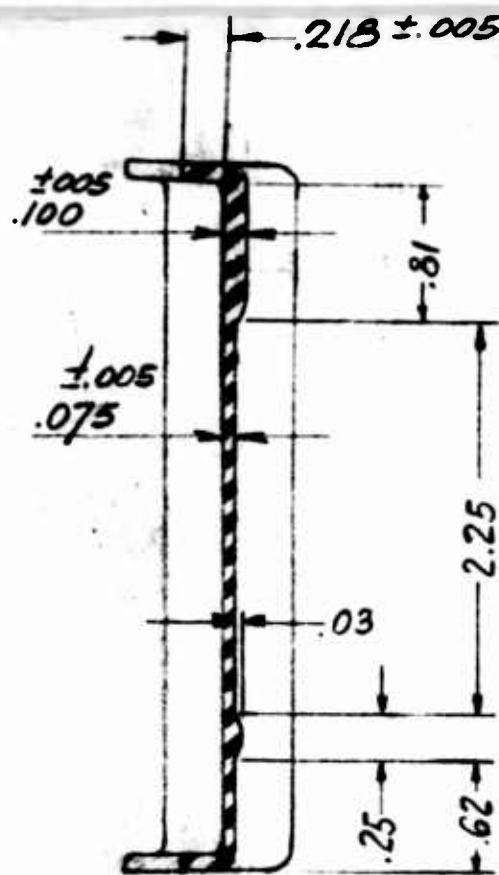
LOT

$\frac{15}{8}$

TE-4 & 5

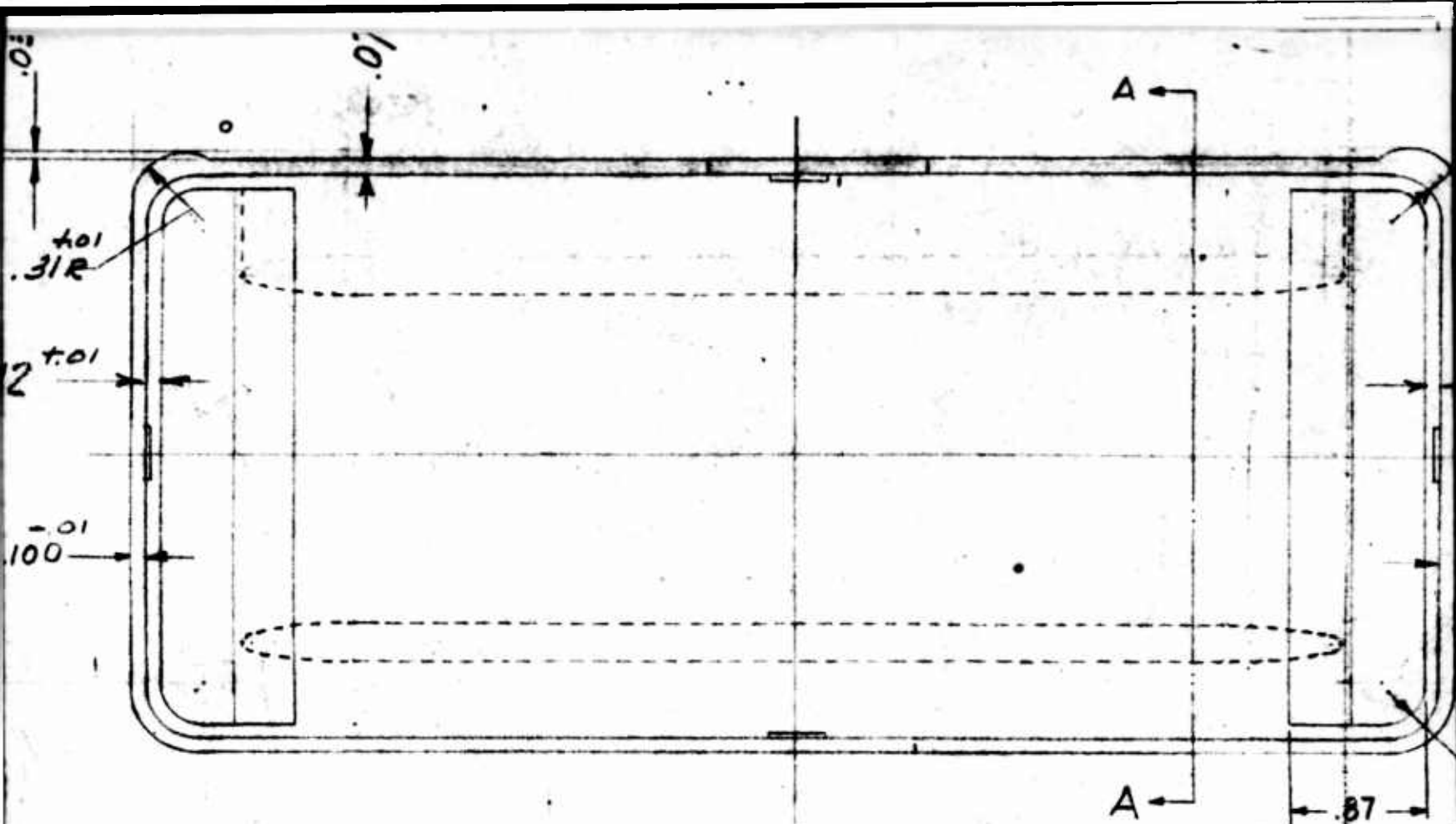
VIEW "B-B"

4

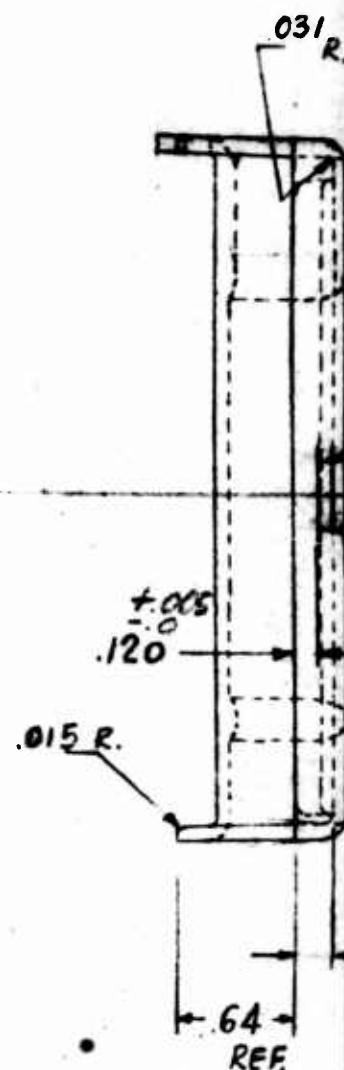
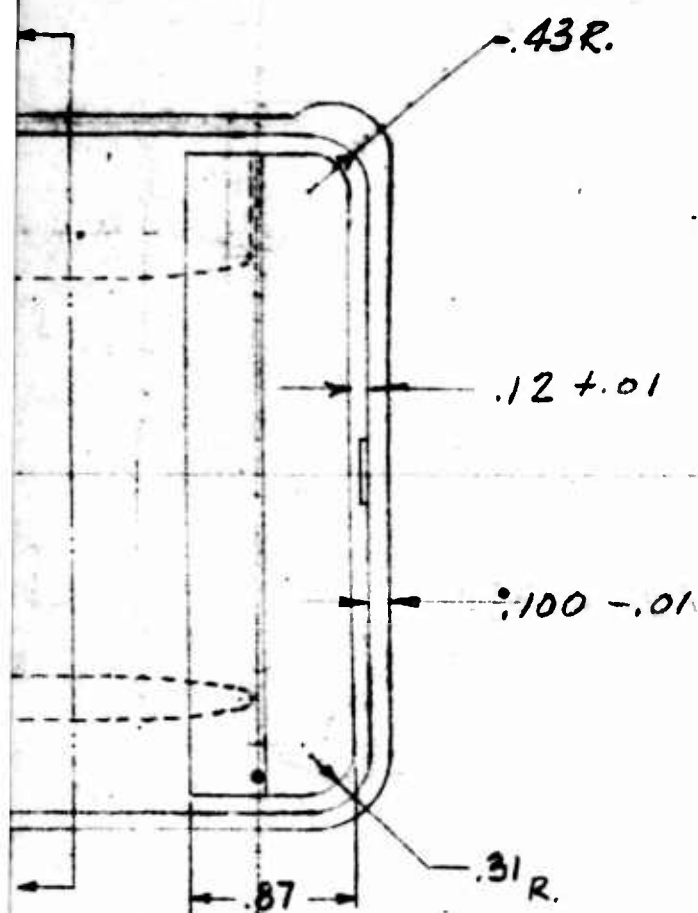


SECTION A-A

5



6

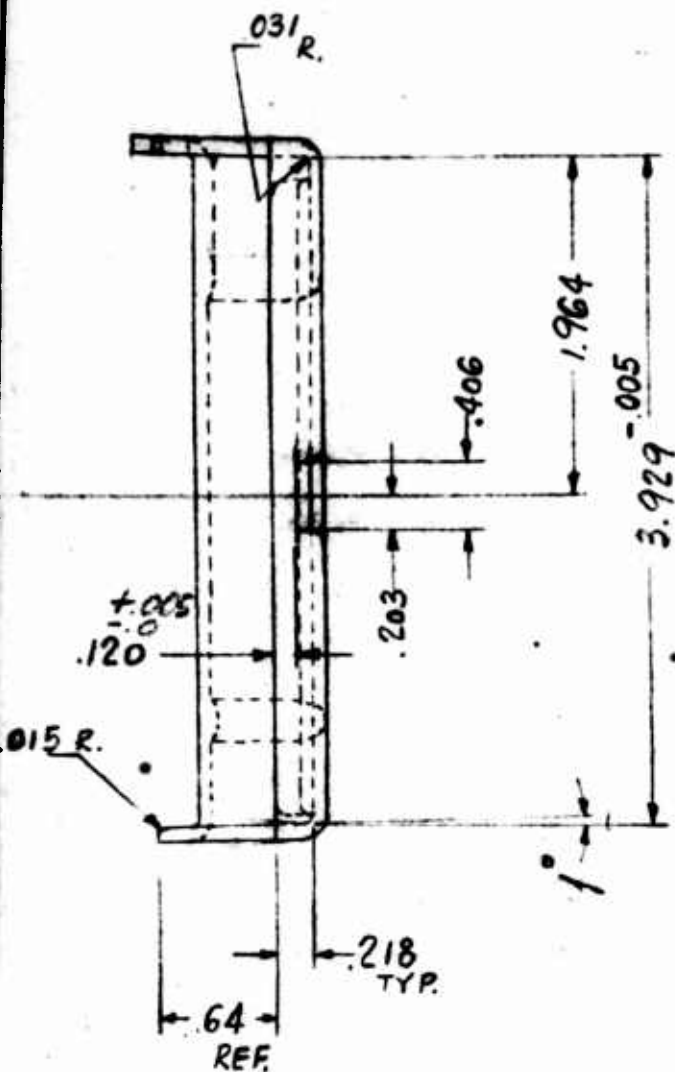


- 4- LETTERING TO BE CENTERED AS SHOWN
- 5- CHARACTERS TO BE ENGRAVED, $\frac{1}{4}$ HIGH, $\frac{1}{32}$ RAISED, $\frac{1}{16}$ WIDE LETTERING
- 6- THESE (*) DIMENSIONS WILL NOT BE PUT INTO EFFECT UNTIL NOTIFICATION FROM PK. ARSEN'AL.

7

ORDNANCE PART NO 8800916

MATERIAL
FINISH:
DESIGNED
ALL DIMES
LIMITS FR
ANGLES
SUPERSED
8800916



NOTES -

SHOWN

1/4 HIGH,

PUT INTO
M PK. ARSEN'AL.

- 1) MATERIAL - GLASS FILLED STYRENE PER MIL-P-3796, NATURAL COLOR
- 2) A 2° DRAFT ANGLE MAY BE USED WHERE NECESSARY TO FACILITATE MOLDING.
- 3) COVER CONTOUR MUST MATCH A MINIMUM TEMPLATE AND CASE SURFACE OF .06 MAXIMUM AT ANY POINT.

COVER

MATERIAL: SEE NOTE 1	
FINISH: NONE	
DESIGNED FOR:	FILE:
ALL DIMENSIONS ARE IN INCHES. LIMITS: FRACTIONS ± 1/64" DECIMALS ± .005" ANGLES ± 1/4° UNLESS OTHERWISE NOTED.	
SUPERSEDES:	SUPERSEDED BY:
CHECK WITH ENGINEERING DEPT. ON LATEST ISSUE BEFORE USING THIS PRINT.	

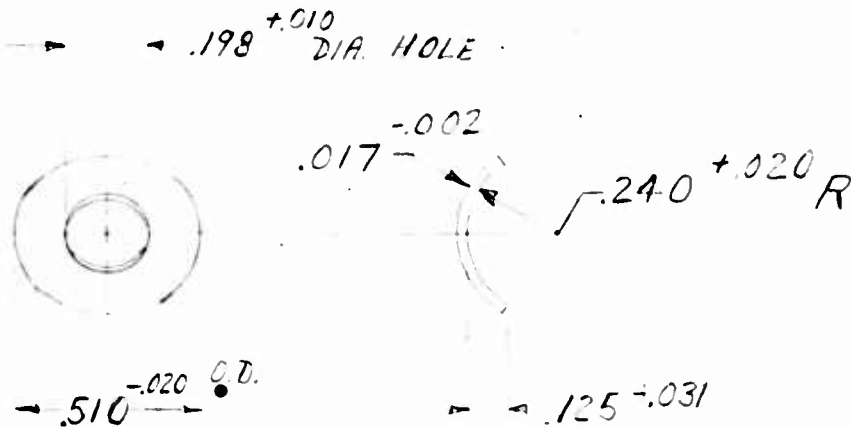
SCALE: FULL SIZE		DATE: 7 MAR., 1960.	
DRAWN: S.T. FRY	CHECKED:	APP'D:	
MOLDED INSULATION CO. 335 E. PRICE ST., PHILADELPHIA 44, PA. U. S. A.			
DATE OF PRINT:		7007-11	

CHANGED: B REDRAWN WITH CHANGES S.T. FRY MAR. 31, 1960.

C 6-15 LO CUT-OFFS REMOVED CORNER THICK INCREASED 1/4".

0916

8



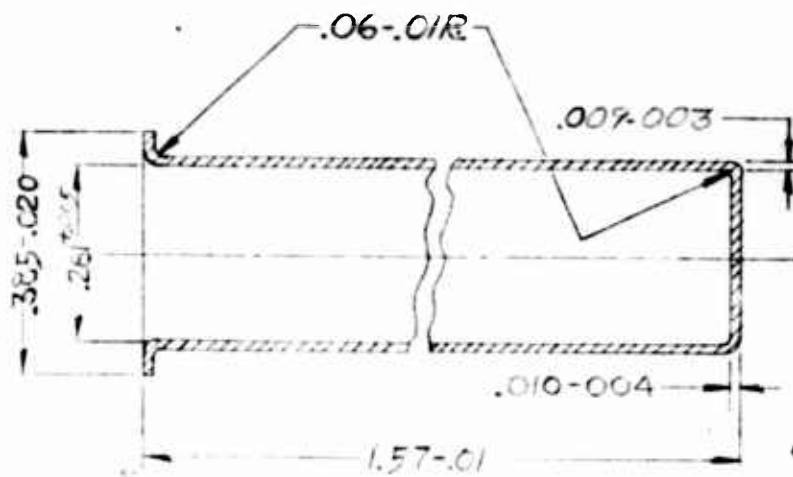
NOTES:-

1. SPEC. MIL-G-2550 APPLIES.
2. MATERIAL - STAINLESS STEEL.
3. APPROVED SOURCE: SHAKEPROOF •
DIV. OF ILL. TOOL WORKS
ST. CHARLES RD., ELGIN, ILL.
SHAKEPROOF PART NO. 3535-10-02

ORD. DWG NO. 8837131

WASHER, SPRING

MATERIAL: S. S.		SCALE: 1" = 1"		DATE: 12 MAY 61	
FINISH:		DRAWN: HPR		CHECKED:	
DESIGNED FOR:		FILE:		APP'V'D:	
ALL DIMENSIONS ARE IN INCHES. LIMITS: FRACTIONS $\pm 1/64$ " DECIMALS $\pm .005$ " ANGLES $\pm 1/4^\circ$ UNLESS OTHERWISE NOTED.					
SUPERSEDES:		SUPERSEDED BY:		MOLDED INSULATION CO. 335 E. PRICE ST., PHILADELPHIA 44, PA. U. S. A.	
CHECK WITH ENGINEERING DEPT. ON LATEST ISSUE BEFORE USING THIS PRINT.		DATE OF PRINT:		7007-21	



NOTES:

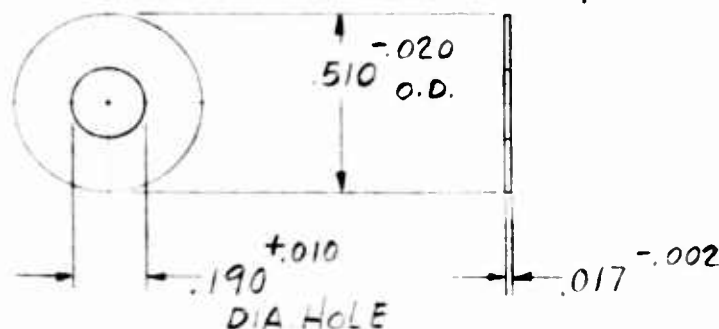
- 1- SPEC. MIL-G-2550 AND MIL-STD-10 APPLY
- 2- MATL: ALUMINUM ALLOY, SHEET, 1100F, SPEC. QQ-A-561
- 3- FINISH: ALL OVER 125 ✓

ORD. PART NO. 3837133

CUP WELL

MATERIAL: SEE NOTES		SCALE: 4-1		DATE: 8 MAY 1961	
FINISH: SEE NOTES		DRAWN: 125		CHECKED: YPB	
DESIGNED FOR:		FILE:		APPV'D:	
ALL DIMENSIONS ARE IN INCHES. LIMITS: FRACTIONS $\pm 1/64$ " DECIMALS $\pm .005$ " ANGLES $\pm 1/4^\circ$ UNLESS OTHERWISE NOTED.					
SUPERSEDES:		SUPERSEDED BY:			
CHECK WITH ENGINEERING DEPT. ON LATEST ISSUE BEFORE USING THIS PRINT.		MOLDED INSULATION CO. 335 E. PRICE ST., PHILADELPHIA 44, PA. U. S. A.		DATE OF PRINT:	
				7007-23	

PHYSICAL PROPERTIES		APPLICATION		A MS15795-308			
VP		NEET ASSY	USED ON	REVISIONS			
TS		SEE ENGINEERING RECORDS					
EL2		8837139	T-48-E3	SYM	DESCRIPTION	DATE	APPROVAL
RA							
BH							
RH							
		DO NOT	APPLY PART NO				
		DC	AS SPECIFIED				



NOTES:

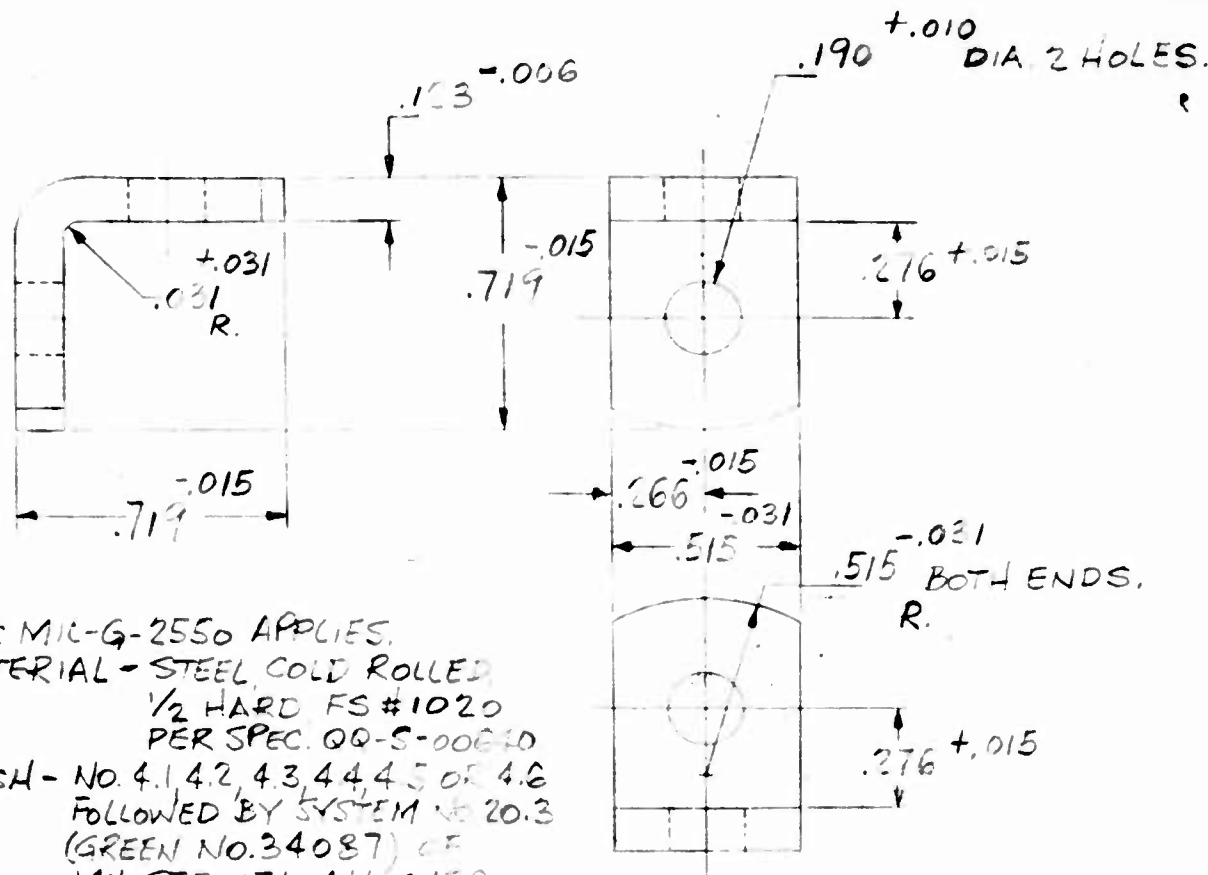
1. SPEC. MIL-G-2550 APPLIES.
2. MATERIAL - STEEL COLD ROLLED 1/2 HARD, FS 1020, PER SPEC. QQ-5-00640.
3. FINISH - CADMIUM PLATE (ELECTRODEPOSITED) PER SPEC. QQ-Z-325 CLASS 3 TYPE 2.
4. REMOVE ALL BURRS & SHARP EDGES.

ORDNANCE PART NO. MS15795-308 M.I.C. PT. No. 7007-28

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON - DECIMALS FRACTIONS ANGLES	ORIGINAL DATE OF DRAWING	2/29/60	WASHER BEARING. MAY 3 1960	PICATINNY ARSENAL ORDNANCE CORPS DEPT OF THE ARMY DOVER, NEW JERSEY.	
	DRAFTSMAN	FRY			CHECKER
	TRACER				CHECKER
	ENGINEER				ENGINEER
MATERIAL	SUBMITTED		Dwg SIZE A	MS15795-308 SHEET 1 OF 1	
SEE NOTE 2.					
HEAT TREATMENT					
NONE					
FINAL PROTECTIVE FINISH	APPROVED BY ORDER OF THE CHIEF OF ORDNANCE		SCALE 2=1	UNIT WT	
SEE NOTE 3.					

PHYSICAL PROPERTIES		APPLICATION		A 8800907			
VP		NET ASSY	USED ON	REVISIONS			
TS		SEE ENGINEERING RECORDS					
EL2		8837139	T-48-E3	SYN	DESCRIPTION	DATE	APPROVAL
RA							
RH							
RH							
		DO NOT	APPLY PART NO				

8800907



NOTES:

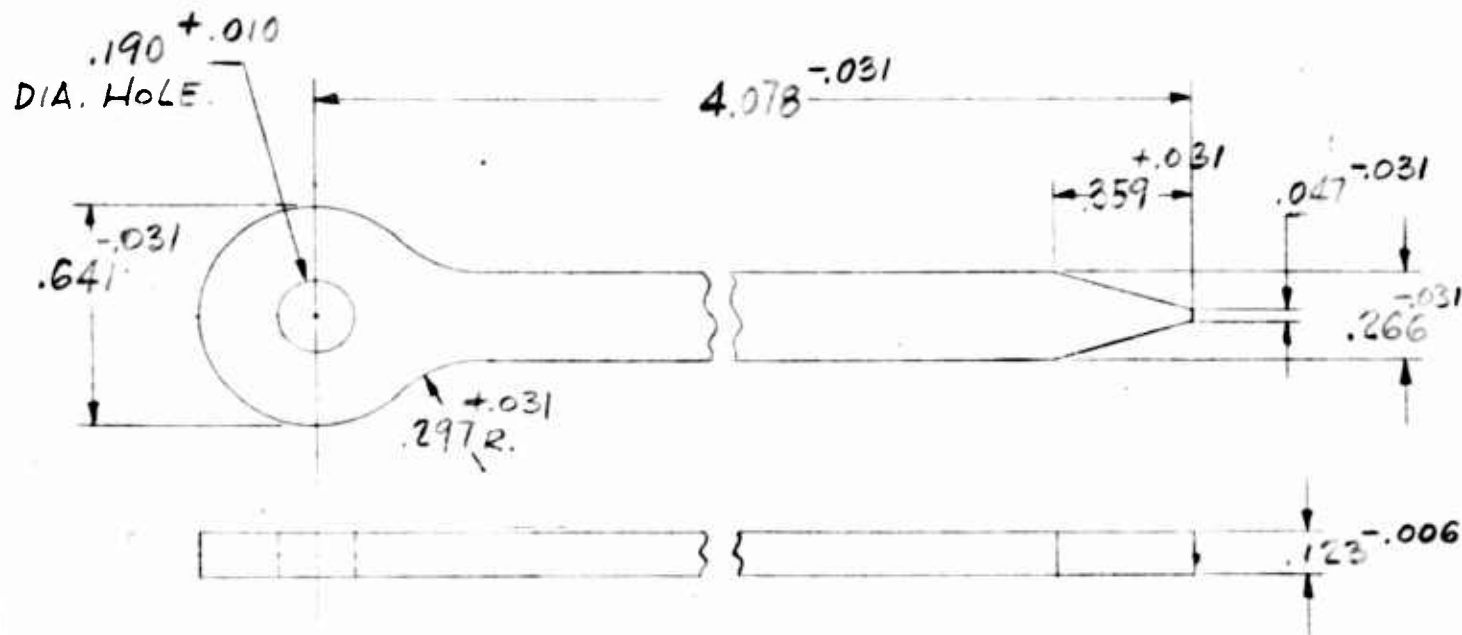
1. SPEC MIL-G-2550 APPLIES.
2. MATERIAL - STEEL COLD ROLLED
1/2 HARD FS #1020
PER SPEC. QQ-S-00640
3. FINISH - NO. 4.1, 4.2, 4.3, 4.4, 4.5 OR 4.6
FOLLOWED BY SYSTEM NO. 20.3
(GREEN NO. 34087) OF
MIL-STD-171 ALL OVER.
4. REMOVE ALL BURRS & SHARP EDGES.

ORDNANCE PART NO. 8800907 REV. B M.I.C. 7007-26

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON - DECIMALS FRACTIONS ANGLES MATERIAL SEE NOTE 2. HEAT TREATMENT NONE FINAL PROTECTIVE FINISH SEE NOTE 3.	ORIGINAL DATE OF DRAWING 2/29/60 DRAFTSMAN FRY CHECKER TRACER CHECKER ENGINEER ENGINEER SUBMITTED ORD CORPS APPROVED BY ORDER OF THE CHIEF OF ORDNANCE ORD CORPS	BRACKET LEG SCALE 2=1 UNIT WT	PICATINNY ARSENAL ORDNANCE CORPS DEPT OF THE ARMY DOVER, NEW JERSEY DWG SIZE A 8800907 SHEET 1 OF 1

PHYSICAL PROPERTIES		APPLICATION		A 8800908			
VP		HEAT TREAT	USED ON	REVISIONS			
TS		SEE ENGINEERING RECORDS					
ELZ		8837139	T-48-E3	SYM	DESCRIPTION	DATE	APPROVAL
RA							
BH							
RH							
		DO NOT	APPLY PART NO				
		DC	RE-ENGINEERED				

8800908



NOTES:

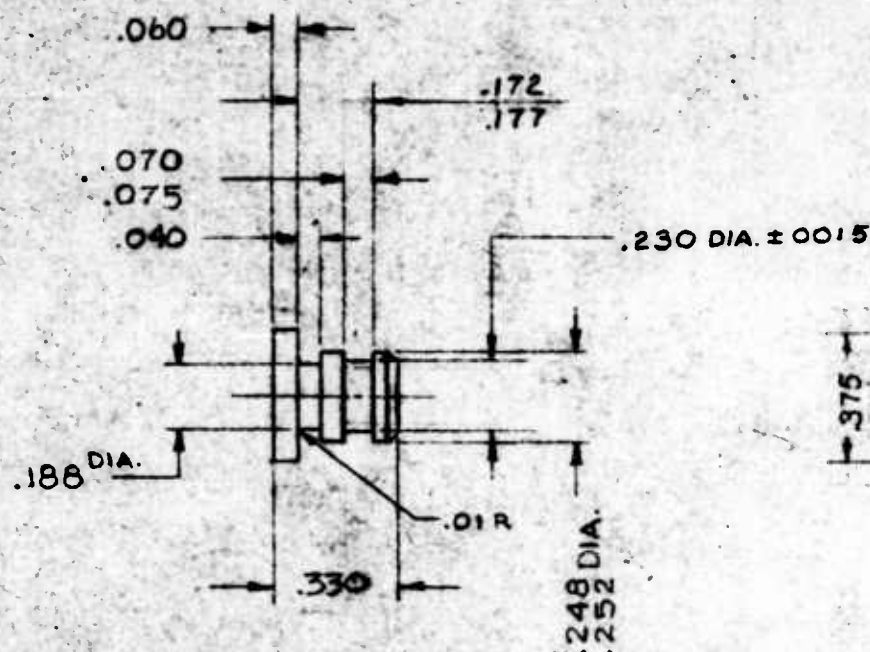
1. SPEC. MIL-G-2550 APPLIES.
2. MATERIAL-STEEL COLD ROLLED 1/2 HARD FS #1020 PER SPEC. QQ-S-00640.
3. FINISH- NO. 4.1 4.2 4.3 4.4 4.5 OR 4.6 FOLLOWED BY SYSTEM NO. 20.3 (GREEN NO. 34087) OF MIL-STD-171 ALL OVER.
4. REMOVE ALL BURRS & SHARP EDGES.

ORDNANCE PART NO. 8800908

REV. A

M.I.C. PT. NO. 7007-25

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON- DECIMALS FRACTIONS ANGLES-	ORIGINAL DATE OF DRAWING 2/29/60		LEG MINE	PICATINNY ARSENAL ORDNANCE CORPS DEPT OF THE ARMY DOVER, NEW JERSEY.
	DRAFTSMAN FRY	CHECKER		
	TRACER	CHECKER		
	ENGINEER	ENGINEER		
MATERIAL SEE NOTE 2.	SUBMITTED		DWG SIZE A	8800908 SHEET 1 OF 1
HEAT TREATMENT NONE	ORD CORPS			
FINAL PROTECTIVE FINISH SEE NOTE 3.	APPROVED BY ORDER OF THE CHIEF OF ORDNANCE			
		ORD CORPS	SCALE 2=1	UNIT WT



1

PHYSICAL PROPERTIES				UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		ORIGINAL OF DRAW DRAFTSMAN
TP				TOLERANCES ON DECIMALS XX ± .010		
TS				ANGLES ± 5°	FRACTIONS XX ± .015	TRACER
ZL 2				MATERIAL .500 DIA. STEEL		ENGINEER
RA				BAR- TYPE 1010-1020 COML GR.		SUBMIT
SH		NEXT ASSY	USED ON	HEAT TREATMENT		
SH		APPLICATION		FINAL PROTECTIVE FINISH		APPROV CHIEF OF
		DO NOT	APPLY PART NO.	NO. 21.4 OF MIL-STD-171 (ORD)		
		DO	AS SPECIFIED			

MS 16535-302

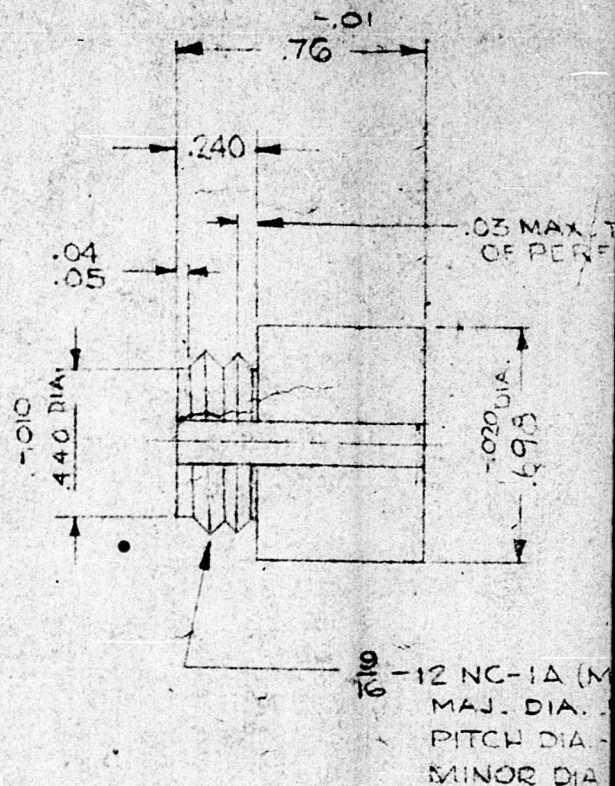
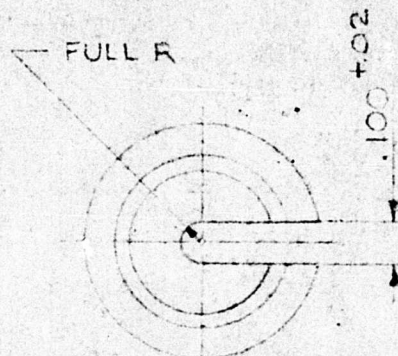
7/19/41

2

SYN	DESCRIPTION	DATE	APPROVAL
REVISIONS			

S ARE IN INCHES SXX ± .010 SXXX ± .005 TEEL COMIL GR.	ORIGINAL DATE OF DRAWING 1-14-59 DRAFTSMAN <i>WJ</i> CHECKER <i>[Signature]</i> TRACER CHECKER ENGINEER <i>[Signature]</i> ENGINEER SUBMITTED ORDN CORPS	PIN	ORDNANCE CORPS DEPT. OF THE ARMY
H (ORD)	APPROVED BY ORDER OF THE CHIEF OF ORDNANCE ORDN CORPS	SCALE 2/1	UNIT WT. 8500 LBS

1



NOTE:

- 1- SPEC MIL-G-2530, MIL-STD-8, MIL-S-9, MIL-STD-10, PA-PD-
- 2- GLASS FILLED STYRENE PER MIL-P-3796 NATURAL COLOR
- 3- UNTOLERANCED DIMENSIONS NEED NOT BE GAGED.
- 4- FINISH ALL OVER $\sqrt{25}$

ORDNANCE PART NO. 8800913

PHYSICAL PROPERTIES		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		ORIGINAL DATE OF DRAWING
YP		TOLERANCES ON DECIMALS		DRAFTSMAN WS
YS		ANGLES FRACTIONS		TRACER
EL 2		MATERIAL		ENGINEER
RA	8837104	SEE NOTE 2		SUBMITTED
BH	NEXT ASSY	HEAT TREATMENT		APPROVED BY OR CHIEF OF ORDNANCE
	USED ON	FINAL PROTECTIVE FINISH		
RH	DO NOT	APPLY PART NO.		
	DO	AS SPECIFIED		

2

-.01
.76

.03 MAX. TO MAJOR DIA AT START
OF PERFECT THDS.

695
-020-01A.

10
76 -12 NC-1A (MODIFIED)
MAJ. DIA. .5601 -.0188
PITCH DIA. .3060 -.0109
MINOR DIA. .4579 MAX

PA-PD: AND 30-1-7 APPLY
COLOR

SUPERCEDED BY
ADAPTER TRAINING
MIA4
2/29/00

A4
2/29/00
8800912
MGA

SYM	DESCRIPTION	DATE	APPROVAL
MIC-7007-B	REVISIONS		

8880913

ARE IN INCHES

ORIGINAL DATE
OF DRAWING JAN 20 1937

DRAFTSMAN	CHECKER
-----------	---------

TRACER	CHECKER
--------	---------

ENGINEER ENGINEER

SUBMITTED

ONE CORPS

APPROVED BY ORDER OF THE
CHIEF OF ORDNANCE

ORD COMPS

ADAPTER -
DETONATOR

PIGATINNY ARSENAL
 ORDNANCE CORPS
 DEPT OF THE ARMY
 DOVER, NEW JERSEY

**DWG
SIZE**

B

8800913

SHEET

OF

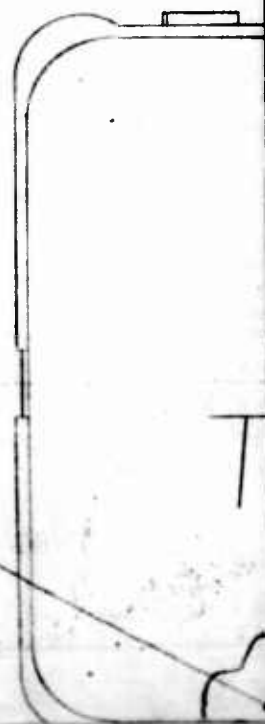
SCALE 2/1

UNIT WT

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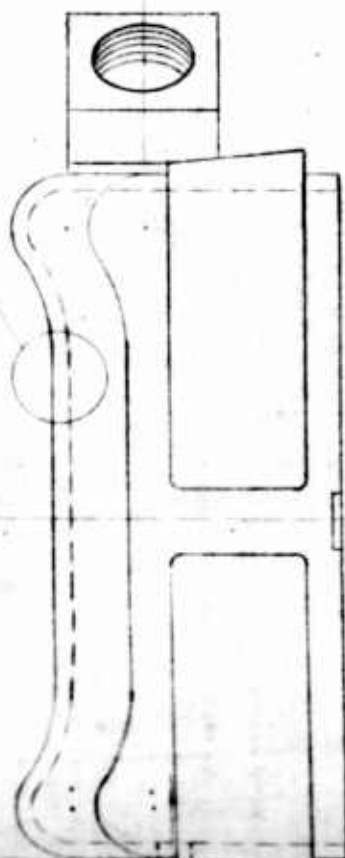
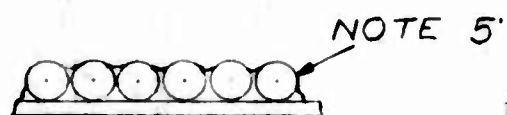
1

2- WASHER, FLAT —
MS 15795-308



2

FRONT
TOWARD ENEMY



3

D

REVISIONS

SYM	DESCRIPTION	DATE	APPROVAL
-----	-------------	------	----------

4

NOTES:-

1-SPEC MIL-G-2550 APPLIES

2-NO VOID LARGER THAN ONE BALL PERMISSABLE. BALLS TO BE FLUSH WITH BOTTOM OF CASE.

3-BOND BALLS TO CASE AS SHOWN USING DEVCON A. SEE NOTE 6.

APPROVED SOURCE:-CHEMICAL DEVELOPMENT CORP, DANVERS, MASS.,
OR APPROVED SUBSTANTIAL EQUAL. NOTE 4.

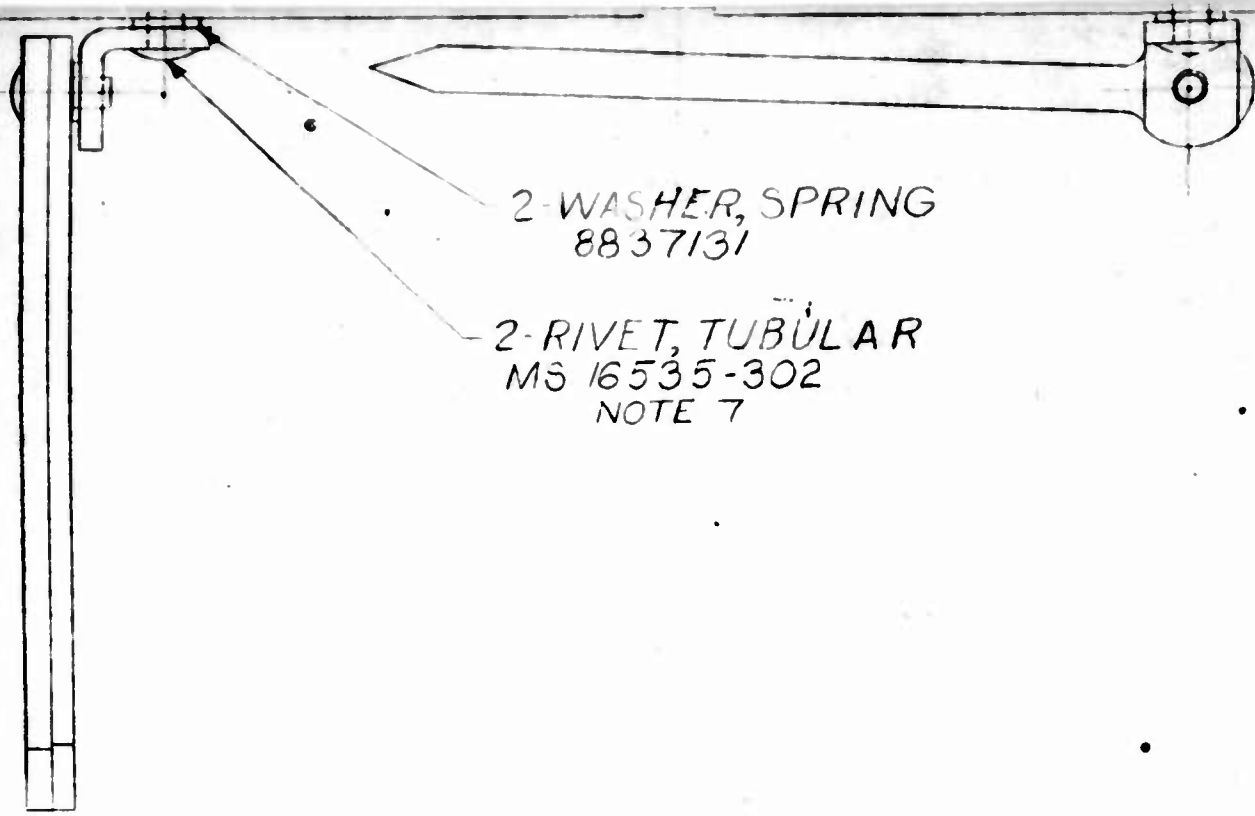
4-ALL SOURCES MUST COMPLY WITH THE PHYSICAL AND FUNCTIONAL REQUIREMENTS OF THE MANUFACTURER'S ITEM INDICATED.

5-REMOVE ALL EXCESS RESIN TO MAINTAIN INNER CONTOUR.

6-ADVISORY:- THIN DEVCON A TO ALLOW FOR A MIXTURE OF 75% STEEL.

7-THE LEG AND BRACKET ASSEMBLIES SHALL NOT ROTATE ABOUT PIVET JOINT WHEN A MIN. TORQUE OF .25 FT. LBS. IS APPLIED AND SHALL ROTATE WHEN A MAX. TORQUE OF 1.75 FT. LBS. IS APPLIED.

5

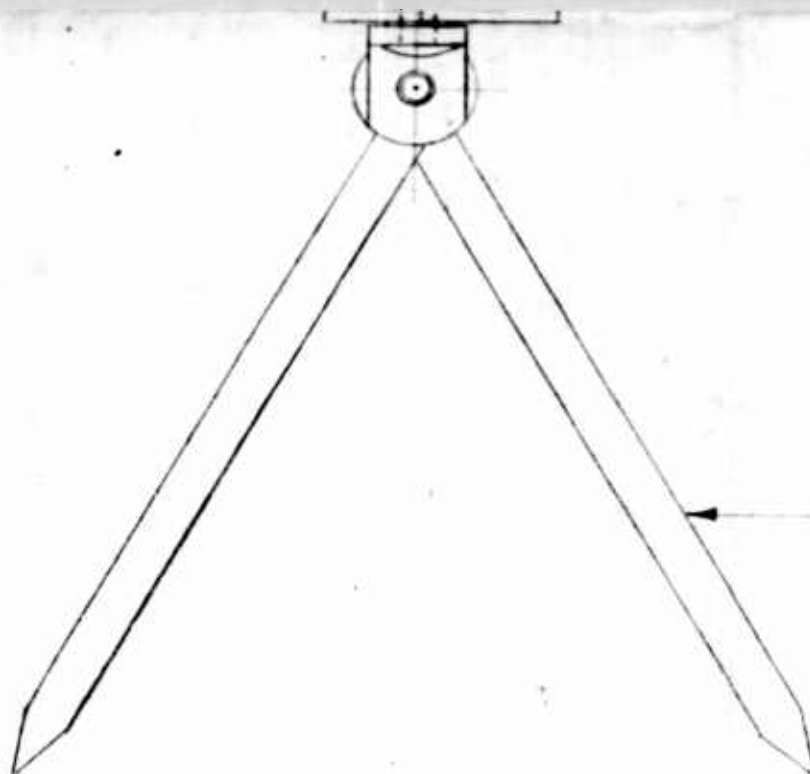


2-WASHER, SPRING
8837131

The drawing shows a mechanical assembly. On the left, a vertical rectangular component is shown in cross-section. A horizontal arm extends from the top of this component to the right. At the end of this arm is a circular component with a central hole. Two lines originate from the text labels and point to specific locations on the horizontal arm: one points to a small circular feature, and the other points to a larger circular feature.

2-RIVET, TUBULAR
MS 16535-302
NOTE 7

6



2-LEG AN
ASS'Y

7

		PHYSICAL PROPERTIES		UNLESS OTHERWISE SPECIFIED		ORIGINAL DATE OF DRAWING 2/29/60	
		YP		DIMENSIONS ARE IN INCHES		DRAFTSMAN	
		TS		TOLERANCES ON		CHECKER	
		EL 2		FRACTIONS DECIMALS ANGLES		TRACER <i>NO</i>	
		RA		MATERIAL		ENGR	
		BH		HEAT TREATMENT		ENGR	
D8800919		MINE APERS		FINAL PROTECTIVE FINISH		SUBMITTED	
NEXT ASSY		USED ON				ORD CORP	
APPLICATION		RH				APPROVED BY ORDER OF THE CHIEF OF ORDNANCE	
DO NOT		APPLY PART NO.				ORD CORP	
-SS-		-AS-SPECIFIED-					

2-LEG AND BRACKET
ASS'Y 8837129.

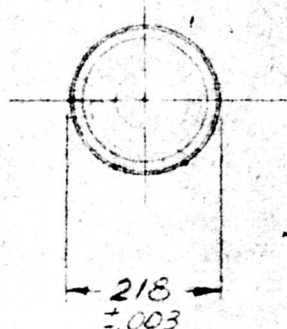
8

ORDANCE PART NO. 8800918

DED ES ANGLES	ORIGINAL DATE OF DRAWING 2/29/60	CASE ASSEMBLY		PICATINNY ARSENAL ORDNANCE CORPS DEPT OF THE ARMY DOVER, NEW JERSEY		
	DRAFTSMAN					CHECKER
	TRACER <i>KB</i>					CHECKER
	ENGR					ENGR
SUBMITTED		SCALE 1:1		UNIT WT	DWS SIZE D	
ORN CORPS						
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE						
ORN CORPS		SHEET 25		OF		

A8800922

PROPERTY		APPLICATION					
TP		INDEX ASS.	USED IN				
TS		8800919	MINE AERS 74853				
EL2				SYL	DESCRIPTION	DATE	APPROVAL
PA							
BH							
PH		DO NOT	APPLY PART NO				
		DO	AS SPECIFIED				

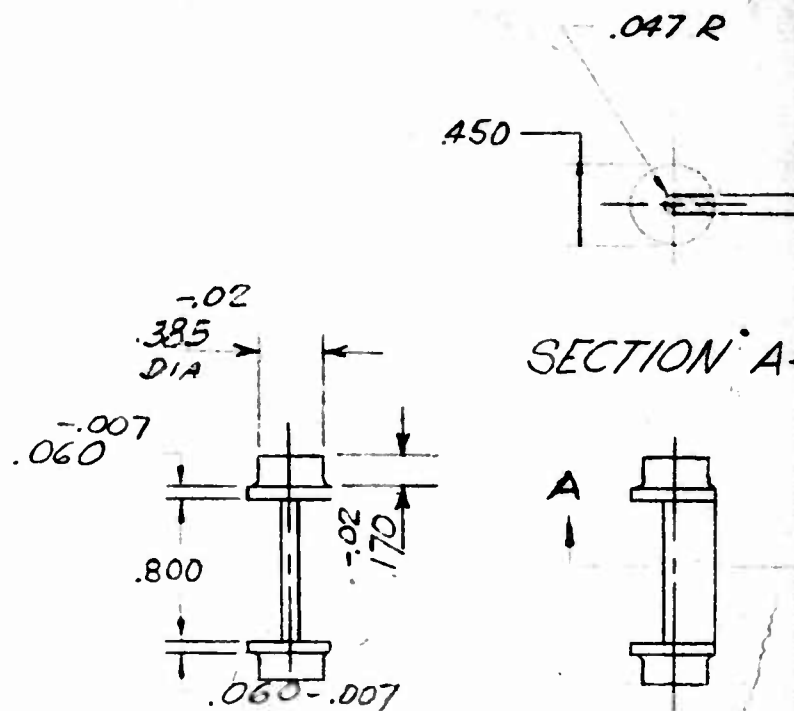


NOTES:-

1. SPEC MIL-G-2550, MIL-STD-B, MIL-STD-10.
PA PD. APPLY
2. MATERIAL - LOW CARBON STEEL
3. FLASHED & HARDEN TO ROCKWELL C-43 TO C-48
4. BALL MUST BE SPHERICAL WITHIN THE SPECIFIED TOLERANCES

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON- DECIMALS FRACTIONS ANGLES MATERIAL SEE NOTE-2 HEAT TREATMENT SEE NOTE-3 FINAL PROTECTIVE FINISH	ORIGINAL DATE OF DRAWING JAN-26-60	BALL, FRAGMENTATION	POKATUNNY ARSENAL ORDNANCE CORPS DEPT OF THE ARMY DOVER, NEW JERSEY	
	DRAFTSMAN, D1 TRACER ENGINEER			CHECKER CHECKER ENGINEER
	SUBMITTED			
	APPROVED BY ORDER OF THE CHIEF OF ORDNANCE			
	ORG CORPS SCALE 4/1	DWG SIZE A	8800922 SHEET 26	

NOTICE: WHEN GOVERNMENT DRAWS SPECIFICATIONS ON OTHER DATA, IT
 USES FOR ANY PURPOSE OTHER THAN CONNECTION WITH A LIMITED
 PATENTED GOVERNMENT INVENTION OR INVENTION OF THE UNITED STATES GOVERN-
 MENT THEREBY INCURS NO RESPONSIBILITY OR ANY OBLIGATION WHATSOEVER
 AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED RECOMMENDATIONS
 ON, IN ANY WAY SUPPLIED THE SAID DRAWINGS SPECIFICATIONS OR OTHER DATA
 IS NOT TO BE REGARDED AS IMPLICATION OR OTHERWISE AS IN ANY MANNER
 LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION OR CONFERS NO
 ANY RIGHTS OR PERMISSION TO MANUFACTURE USE OR SELL ANY PATENTED
 INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.



NOTES:

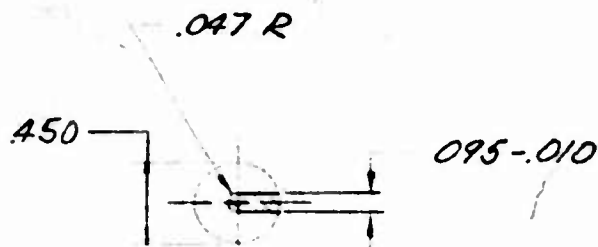
- 1-SPEC MIL-G-2550, MIL STD-8 PA-PD APPLY
- 2 MATERIAL HIGH DENSITY OLIVE DRAB
POLY STYRENE
- 3 ALL CORNER RADII .010 MAX
- 4 UNTOLERANCED DIMENSION NEED NOT BE GAGED

1

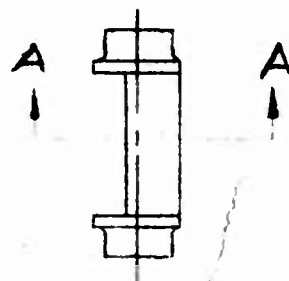
ORDNANCE PART No. 8

		PHYSICAL PROPERTIES	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES	ORIGINAL DATE OF DRAWING <i>10/1</i>
				DRAFTSMAN <i>1</i> CHECK
			MATERIAL	TRACER <i>1</i> CHECK
				ENGR <i>1</i> ENGR
<i>55-7409</i>	<i>NEW 7451</i> <i>AGE</i>		<i>NOT NOT</i>	SUBMITTED
NEXT ASSY	USED ON		HEAT TREATMENT	
APPLICATION				
DO NOT DO	APPLY PART NO AS SPECIFIED		FINAL PROTECTIVE FINISH	APPROVED BY ORDER OF CHIEF OF ORDNANCE

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
A	ADDED TO AGREE WITH CHANGES MADE BY DICATIONNY ARSENAL	1-3-61	M. S. 1-3-61



SECTION A-A



SUPERSEDED BY
EO FA 7116 5/12/61

2

ANCE PART No. 8800923

MIC-7007-20

SPECIFIED IN INCHES ON US ANGLES	ORIGINAL DATE OF DRAWING JAN 27 61
DRAWN	CHECKED
ENGINEER	INSPECTOR
SUBMITTED	
APPROVED BY ORDER OF THE CHIEF OF ORDNANCE	

PLUG,
DETONATOR,
WELL

ORDNANCE CORPS

DEPT OF THE ARMY

8800923

B

CHECKED & APPROVED BY M. S. 1-3-61

PHYSICAL PROPERTY NO.		APPLICATION		A 8837129			
TP		TEST ASSY	USED ON				
TS		SEE ENGINEERING RECORDS					
EL		T-48-E3					
RA				REVISIONS		DATE	APPROVAL
BH							
RH							
		DO NOT	REWORK				

8837129

BEVEL SPRING WASHER-8837137(2)

LEG BRACKET-8837136

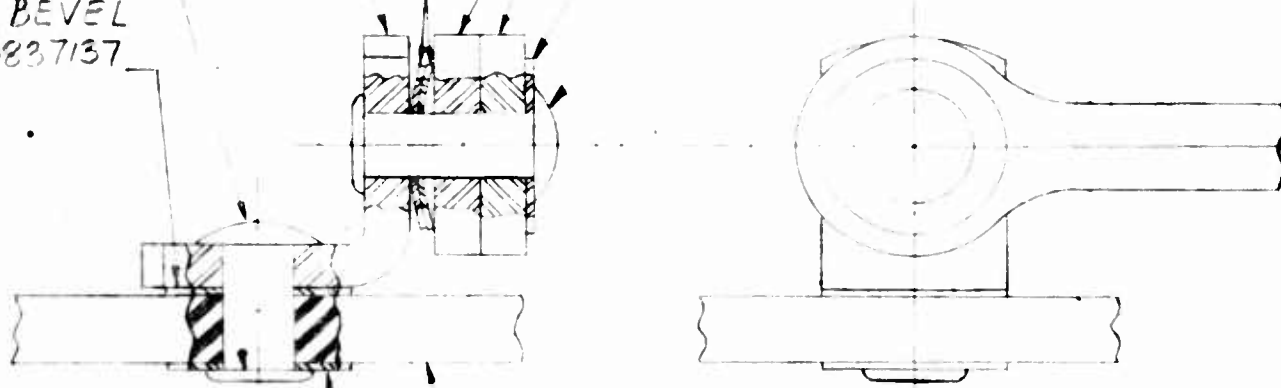
RIVET-
MS 16535-304

LEG-8837135

BEARING WASHER-8837138

RIVET-MS 16535-307

WASHER BEVEL
SPRING-8837137



CASE ASSEM. 8800918

BEARING WASHER-8837138

NOTE:

1. SPEC MIL-G-2550 APPLIES.
2. THIS ASSEMBLY EXISTS AT TWO LOCATIONS ON EACH CASE.

ORDNANCE PART NO. 8837129 REV. C M.I.C. PT. NO. 7007-29

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON- DECIMALS FRACTIONS ANGLES	ORIGINAL DATE OF DRAWING 2/29/60		LEG & BRACKET ASSEMBLY 3 1960	PICATINNY ARSENAL ORDNANCE CORPS DEPT OF THE ARMY DOVER, NEW JERSEY
	DRAFTSMAN FRY	CHECKER		
	TRACER	CHECKER		
	ENGINEER	ENGINEER		
MATERIAL ~	SUBMITTED		8837129 SHEET 1 OF 1	
HEAT TREATMENT ~	ORD CORPS			
FINAL PROTECTIVE FINISH ~	APPROVED BY ORDER OF THE CHIEF OF ORDNANCE			
		ORD CORPS	SCALE 2=1	UNIT WT

UNCLASSIFIED

UNCLASSIFIED