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Contract NAS8-24840

Restraint System Development

VOLUME II DESIGN DRAWINGS

JULY 1970



FACILITY FORM 602

N71-36817
(ACCESSION NUMBER)
47
(PAGES)
CR-119952
(NASA CR OR TMX OR AD NUMBER)

63
(THRU)
15
(CODE)
(CATEGORY)

vol. 2 of 2

* MARTIN MARIETTA CORPORATION

MCR-70-222

RESTRAINT SYSTEM DEVELOPMENT

FINAL REPORT

JULY 1970

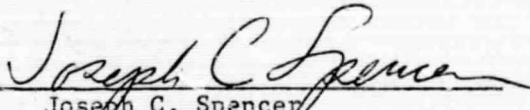
B. J. Buell
J. C. Spencer

Prepared Under Contract No. NAS8-24840

for

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
George C. Marshall Space Flight Center
Huntsville, Alabama

Approved


Joseph C. Spencer
Program Manager

MARTIN MARIETTA CORPORATION
Denver Division
Denver, Colorado 80201

FOREWORD

This report describes the work performed under National Aeronautics and Space Administration Contract NAS8-24840; Design, Development, Fabrication, Testing, and Delivery of a Restraint System (Positioning Tool for Maintenance and Repairs in Space). The work was performed by the Martin Marietta Corporation, Denver Division, P. O. Box 179, Denver, Colorado for the NASA Marshall Space Flight Center, Huntsville, Alabama. Mr. E. L. Brown of the Manufacturing Engineering Laboratory was the Contracting Officer's Representative. Mr. J. C. Spencer was Martin Marietta's Program Manager.

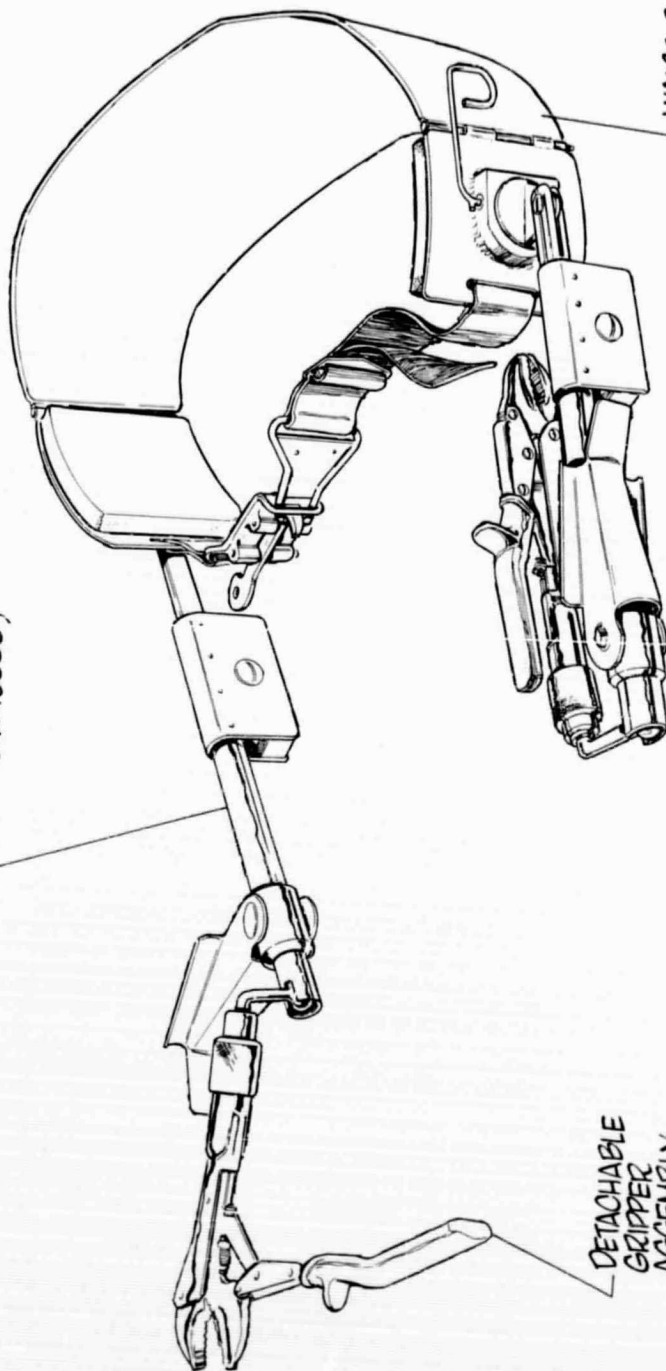
This report is presented in two volumes. Volume I is the narrative description of the contract effort with results, conclusions and recommendations. Volume II contains the design drawings for the Restraint System.

LIST OF DRAWINGS

<u>Number</u>	<u>Title</u>
SRD 484000000	Restraint System
SRD 484010000	Waist Belt Assembly
SRD 484010010	Back Support Subassembly
SRD 484010020	Hinge Plate ~ Back Support Sub-assembly
SRD 484010030	Hip Joint Subassembly
SRD 484010040	Hinge Plate ~ Hip Joint Subassembly
SRD 484010050	Base ~ Hip Joint Subassembly
SRD 484010060	Lever, Release - Hip Joint Sub-assembly (Sheets 1 and 2)
SRD 484010070	Cushion, Hip Joint ~ Waist Belt Assembly
SRD 484010080	Hinge Pin, Waist Belt Assembly
SRD 484012000	Detachable Gripper Assembly (Sheets 1 and 2)
SRD 484012010	Stem, Quick Disconnect
SRD 484012020	Sleeve, Quick Disconnect
SRD 484012030	Spring, Quick Disconnect
SRD 484012040	Pin, Quick Disconnect
SRD 484012050	Washer, Quick Disconnect
SRD 484013000	Boom Assembly (Sheets 1 and 2)
SRD 484013010	Ball, Coupling ~ Boom Assembly
SRD 484013020	Clamp ~ Swivel Joint Brass

<u>Number</u>	<u>Title</u>
SRD 484013030	Seat ~ Swivel Joint
SRD 484013040	Collar ~ Swivel Joint
SRD 484013050	Bushing ~ Cam Lock
SRD 484013060	Cam Shaft
SRD 484013070	Handle ~ Cam Lock (Sheets 1 and 2)
SRD 484013080	Tube, Inner ~ Boom Assembly
SRD 484013090	Tube, Outer ~ Boom Assembly
SRD 484013100	Swivel Plate ~ Hip
SRD 484013110	Handle, Telescopic Adj
SRD 484013120	Lever, Telescopic Adj
SRD 484013130	Locking Pin
SRD 484013140	Bolt Assembly Special
SRD 484014000	Detachable Gripper Assembly (Sheets 1 and 2)
SRD 484014010	Upper Jaw ~ Detachable Gripper (Sheets 1 and 2)
SRD 484014020	Lower Jaw ~ Detachable Gripper
SRD 484014030	Locking Collar ~ Detachable Gripper
SRD 484015000	Detachable Gripper Assembly

BOOM ASSEMBLY
(SRD 484013000)



WAIST BELT
ASSEMBLY
(SRD 48401000)

DETACHABLE
GRIPPER
ASSEMBLY
(SRD 484012000
SRD 484014000
SRD 484015000)

DRAWING TITLE: RESTRAINT SYSTEM DRAWN BY: BRUNER 2314 DATE: 7/15/70		MARTIN MARIETTA CORPORATION 2025 SOUTH FAY BLVD. DENVER, CO. 80202	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND DECIMALS ARE PLAIN TOLERANCES ON:		SIZE: C CODE: 04236 SCALE: NONE	
FINISHES: 1.132 F.1 2.03 1.070 3.1 F	ANGLES: .XXX .XXX .XXX	PROJECT: SRD 484000000	
MACHINED SURFACES REF. M.L. STD. 10		RELIABILITY: ✓	
M.L. 1-KIND STATUS INTERCHANGEABLE REPLACEMENT UNCONTROLLED		SHEET: 1 OF 1	

6.60 TYP

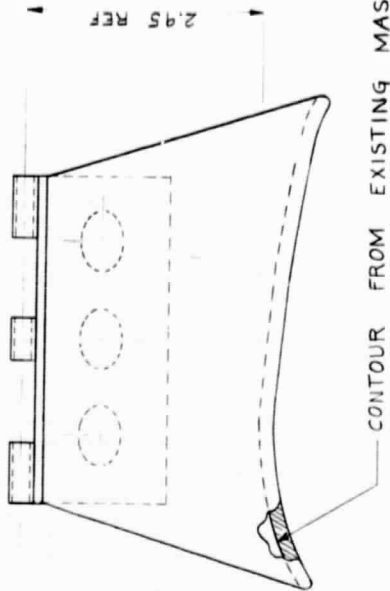
4 SYM

2.95 TYP

HINGE PLATE
(SRD 484010020)
TYP 2 PLACES

GLASS-FIBER REINFORCED
PLASTIC Δ

.150



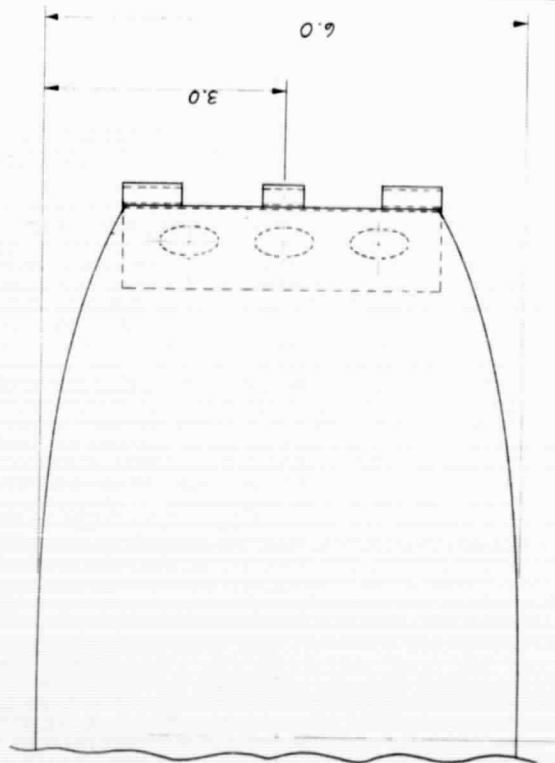
CONTOUR FROM EXISTING MASTER

2.95 REF

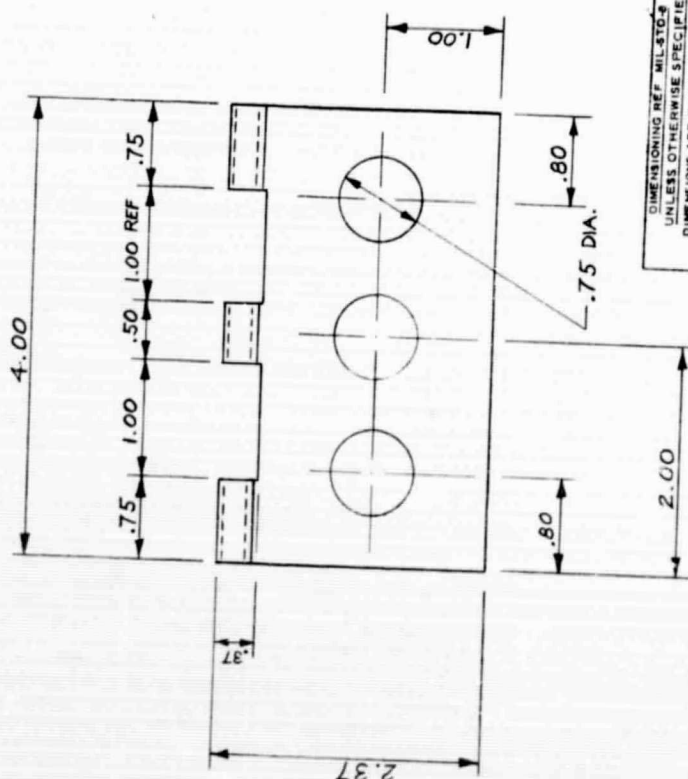
2. QUANTITY REQUIRED, 1 EA.

Δ PLASTIC SHALL CONSIST OF A POLYESTER OR
EPOXY RESIN SYSTEM.
REINFORCEMENT SHALL CONSIST OF FABRIC
WOVEN FROM GLASS FIBERS.

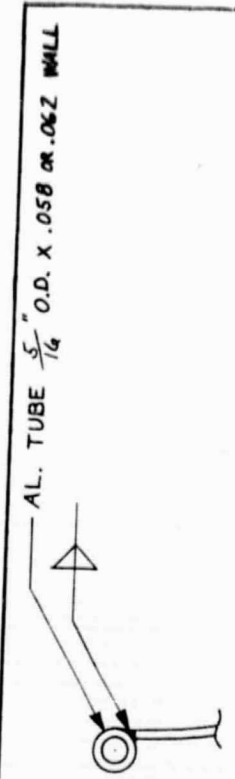
NOTES :



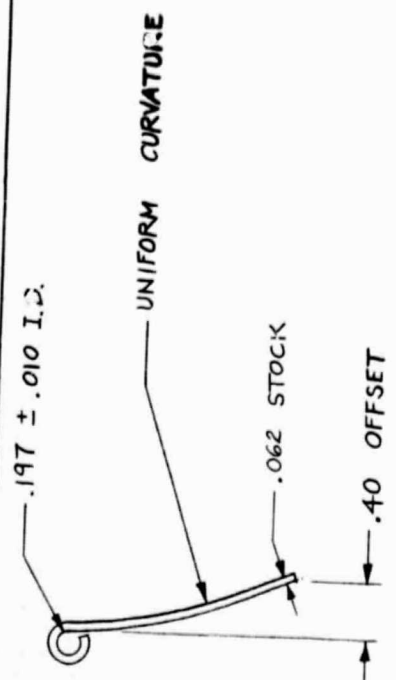
THIS DRAWING REF. MIL-STD-883 UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DATE OF B.J.E. JELL 2-4-70		DEPT. C. DIV. 8		MARTIN MARIETTA CORPORATION POST OFFICE BOX 100, SEVENTH, COLORADO 81201	
FUNCTION		CHECKER		STRESS ENGR		BACK SUPPORT SUBASSEMBLY	
TOLERANCES ON		FRACTIONS		WT ENGR		WASIT BEIT ASSEMBLY	
X .XX .XX		X .XX .XX		MATH ENGR		CODE GRANT NO	
.12 .12 .12		.12 .12 .12		RELIABILITY		04236	
MACHINED SURFACES		OR SHARP		PROJECT		SRD 484010010	
REF. MIL-STD-15		MIL-STD-15		CUST. APPROVAL		SCALE 1/1	
INTERCHANGEABLE		REPLACEABLE		UNCONTROLLED		1 OF 1	



3. QUANTITY 2 EA.
2. BREAK ALL SHARP EDGES.
- 1 MATERIAL - 6061 T-6 AL.
- NOTES :

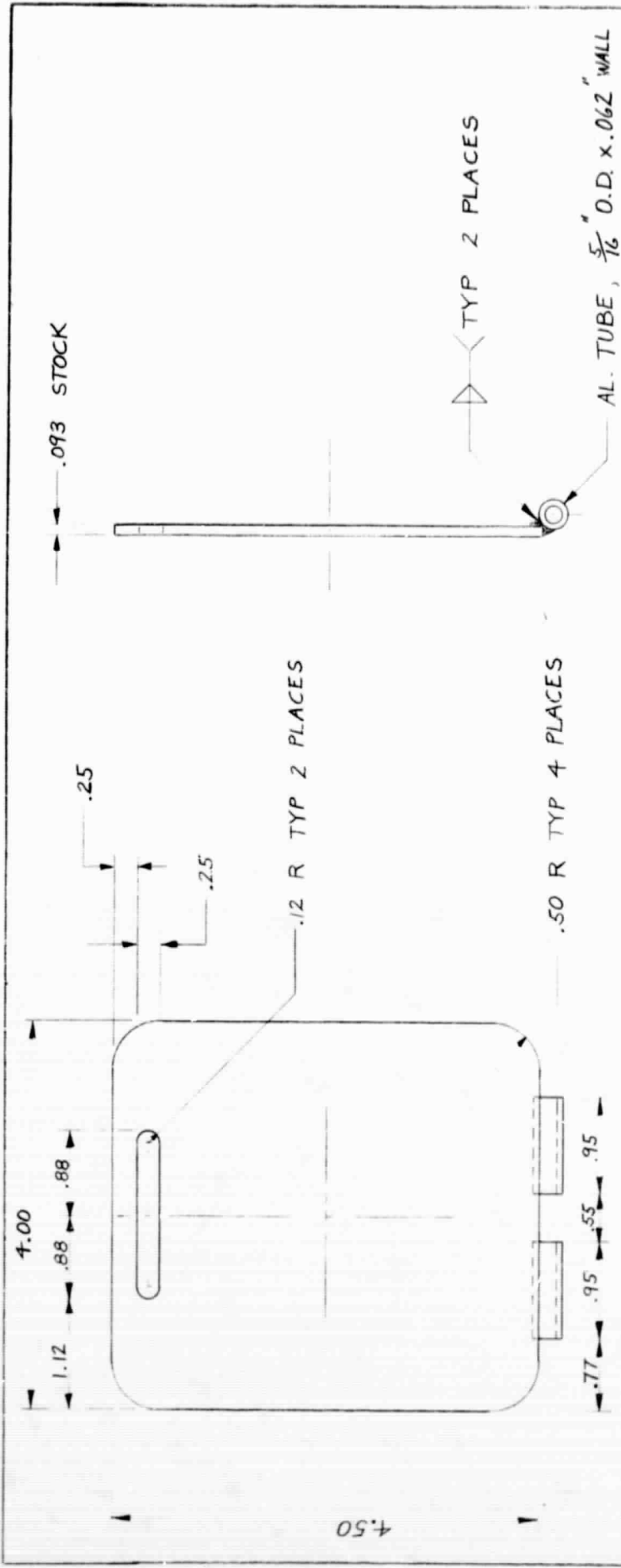


ALTERNATE CONFIGURATION



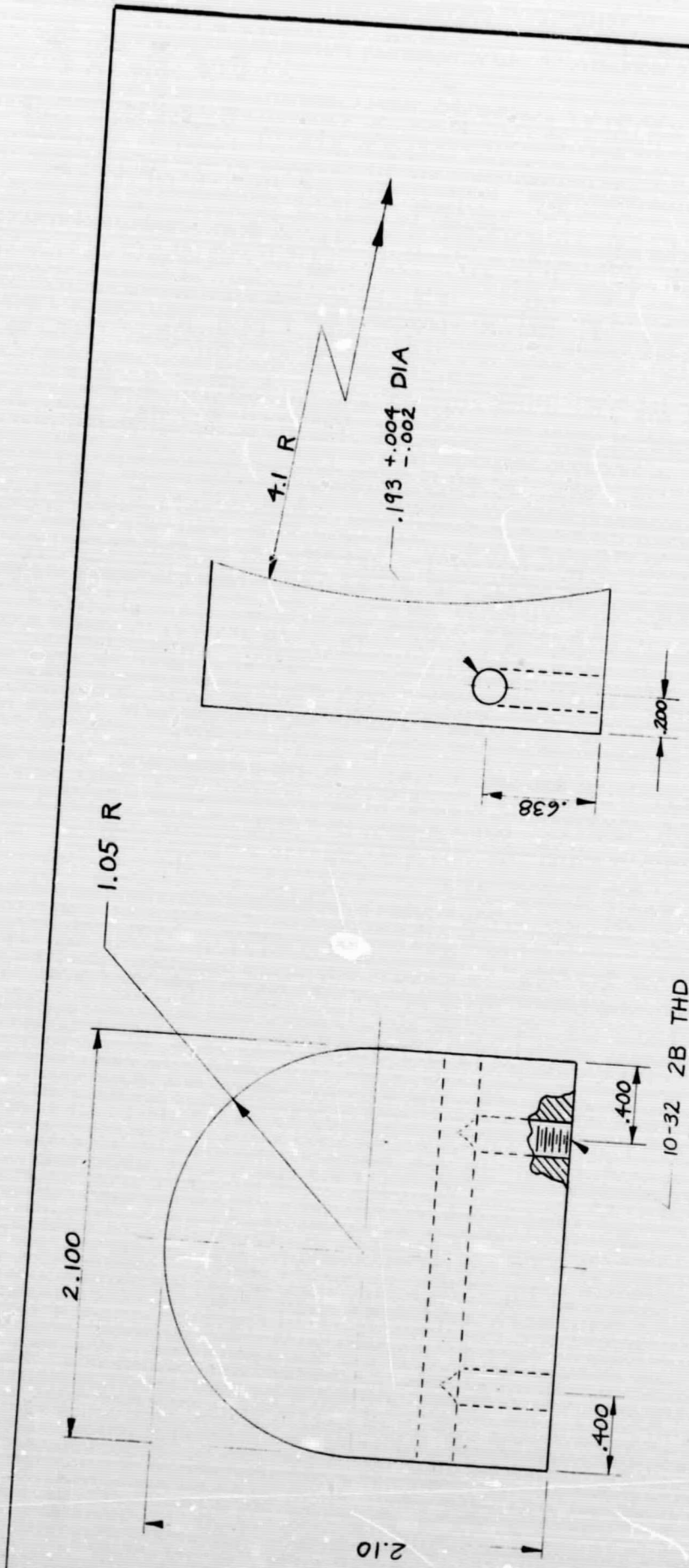
DIMENSIONING REF. MIL-STD-2 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY B. J. BUELL	DEPT 1640	DATE 11-17-57
FRACTIONS 11/32 5/16 1/8 1/16 1/32 1/64	DECIMALS .XX .XXX	CHECKER STRESS ENGR	PROJECT HINGE PLATE ~ BACK SUPPORT SUBASSY.	
MACHINED SURFACES REF: MIL-STD-10	ANGLES 11/2° 1/2°	RT ENGR MATL ENGR RELIABILITY OR ENGR	SIZE 04236	
MIL-14800 STATUS INTERCHANGEABLE REPLACEABLE UNCONTROLLED	CURT RPRSTV	CODE IDENT NO. SRD 484010020		SCALE 1/1
DEN 28125 (10-58)				SHEET 1 OF 1

MARTIN MARIETTA CORPORATION
POST OFFICE BOX 179, DENVER, COLORADO



DIMENSIONING REF. MIL-STD-4 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY B. J. BUELL	DEPT. 2-17-70	DATE 2-17-70
TOLERANCES ON: FRACTIONS DECIMALS ANGLES .X .XX .XXX .1/32 ±.1 ±.03 ±.010 ±1/2°		CHECKER STRESS ENGR MT ENGR MATL ENGR RELIABILITY QP ENGR PROJECT		
MACHINED SURFACES REF: MIL-STD-10		HINGE PLATE HIP JOINT SUBASSY.		
MIL-1-4500 STATUS INTERCHANGEABLE REPLACEABLE UNCONTROLLED		SIZE 04236		
CODE IDENT NO. 484010040		SCALE 1/1		

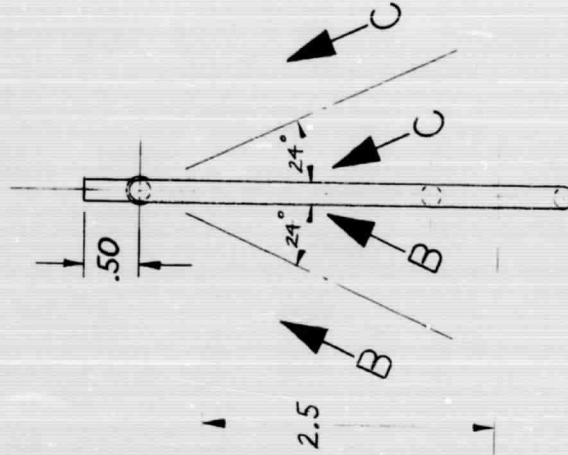
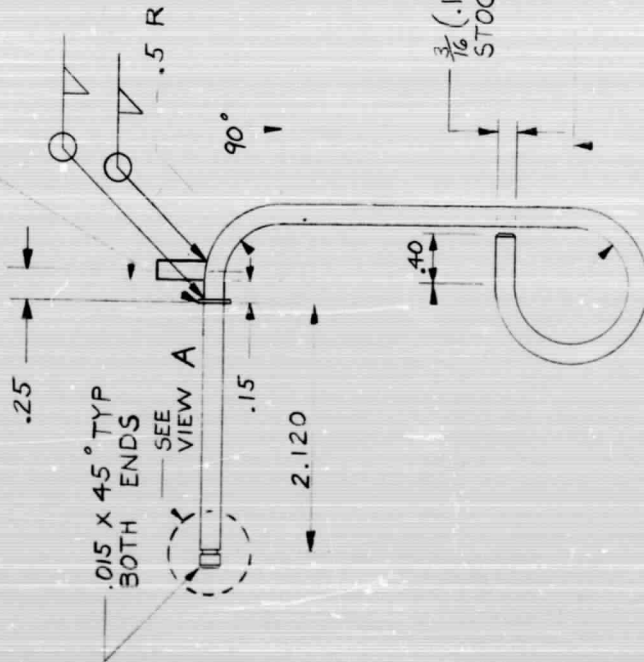
2. QUANTITY, 2 EA.
 1. MATERIAL, AL. SHEET
 6061 T-6 OR EQUIVALENT
 NOTES:



2. QUANTITY, 2 EA.
1. MATERIAL, 6061 T6 ALUM.
NOTES :

DIMENSIONING REF. MIL-STD-8 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY B J BUELL		DEPT 10		DATE 3-27-70	
TOLERANCES ON: FRACTIONS .X .XX .XXX DECIMALS .010 .020 .050 ANGLES ±1/8°		CHECKER STRESS ENGR		STRESS ENGR WT ENGR		MATL ENGR RELIABILITY GR ENGR PROJECT	
MACHINED SURFACES REF. MIL-STD-10		125/		MIL-1-8500 STATUS		INTERCHANGEABLE REPLACEABLE UNCONTROLLED	
SIZE B		CODE IDENT NO. 04236		HIP JOINT SUBASSY.		SRD 484010050	
SCALE 2/1		SHEET 1 of 1		MARTIN MARIETTA CORPORATION POST OFFICE BOX 179, DENVER, COLORADO		10-32 2B THD	

AN 960 C 8



VIEW A
GROOVE DETAIL
SCALE 4 TO 1

2. QUANTITY, 1 EA NEXT ASSY.

(SRD 484010030).

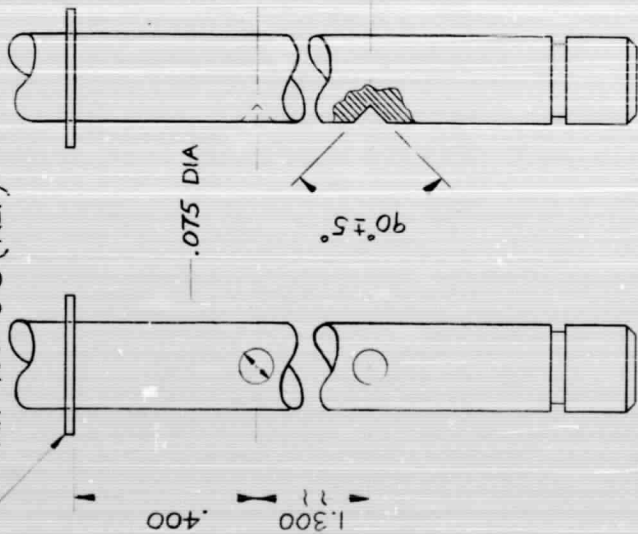
1. MATERIAL, 316 STAINLESS

STEEL OR EQUIVALENT.

NOTES :

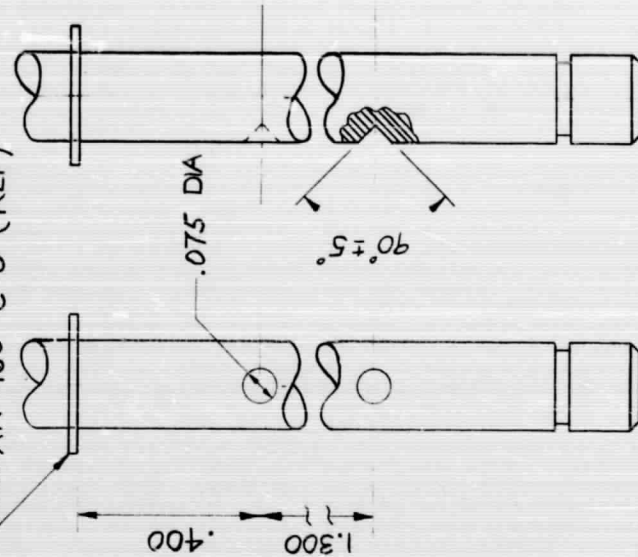
DRAWN BY B.J. BUELL		DATE 4-6-70	MARTIN MARSHALL CORPORATION POST OFFICE BOX 179, DENVER, COLORADO	
CHECKER		STRESS ENGR	LEVER, RELEASE ~	
WT ENGR		MATL ENGR	HIP JOINT SUBASSY.	
RELIABILITY		OR ENGR	PROJECT	
PROJECT		SIZE B	CODE IDENT NO. 04236	SRD 484010030
MIL-1-4800 STATUS		SCHEMATIC		
INTERCHANGEABLE		CUST RMRNTY		
REPLACEABLE		UNCONTROLLED		
UNCONTROLLED		DEN 2/28/88 (10-88)		

AN 960 C 8 (REF)



VIEW B-B (-001 ONLY)

AN 960 C 8 (REF)



VIEW C-C (-002 ONLY)

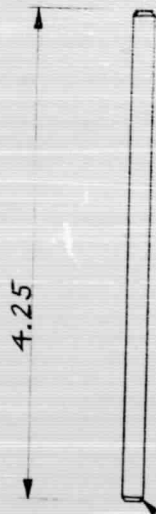
DIMENSIONING REF MIL-STD-8		DRAWN BY		DATE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		B. J. BUELL		4-8-70	
TOLERANCES ON:		CHECKER			
FRACTIONS	DECIMALS	ANGLES			
.X	.XX	.XXX			
±.12	±.1	±.01		±1/2	
MACHINED SURFACES		REF: MIL-STD-10			
KIL-1-8800 STATUS					
INTERCHANGEABLE					
REPLACEABLE					
UNCONTROLLED					

STRESS ENGR		WT ENGR		MATERIAL ENGR	
RELIABILITY		GR ENGR		PROJECT	
CUT RPHNTY					

MARTIN MARINETTE CORPORATION POST OFFICE BOX 179, DENVER, COLORADO		LEVER RELEASE ~ HIP JOINT SUBASSY.	
SIZE	CODE IDENT NO.	SRD 484010060	
B	04236		
SCALE 4 To 1		SHEET 2 of 2	

DIMENSIONING REF. MIL-STD-8 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY B.T. B.		DEPT 4	DATE 12-70
TOLERANCES ON: DECIMALS		CHECKER			
.X	.XX	ANGLES		STRESS ENGR	
.X	.XX	.XXX		WT ENGR	
± .32	± .1	± .03		MATL ENGR	
MACHINED SURFACES		REF. MIL-STD-10		RELIABILITY	
REF. MIL-STD-10		OR ENGR		PROJECT	
MIL-1-8500 STATUS		SIZE		CODE IDENT NO.	
INTERCHANGEABLE		B		04236	
REPLACEABLE		SRD		484010070	
UNCONTROLLED		SCALE		1/1	
DEN 051626 (10-69)		SHEET		1 OF 1	

4.25



.12 x 45° (TYP)

.187 ($\frac{3}{16}$) STOCK



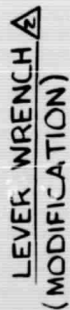
2. QUANTITY - 2 EACH
1. MATERIAL - BRASS
NOTES :

DIMENSIONS REF MIL-STD-8 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY B. J. BUELL		DATE 5-5-70	MARTIN MARIETTA CORPORATION POST OFFICE BOX 178, DENVER, COLORADO	
TOLERANCES ON:		CHECKER		HINGE PIN ~ WAIST BELT ASSY.		
FRACTIONS	DECIMALS	ANGLES		SIZE	CODE IDENT NO.	SRD 484010080
.X	.XX	.XXX		B	04236	
11/32	± .1	± .03		SCALE	1	SHEET 1 OF 1
MACHINED SURFACES REF. MIL-STD-10		125				
MIL-1-8500 STATUS		STRESS ENGR				
INTERCHANGEABLE		WT ENGR				
REPLACEABLE		MATL ENGR				
UNCONTROLLED		RELIABILITY GR ENGR				
		PROJECT				
		CUST REPSNTV				

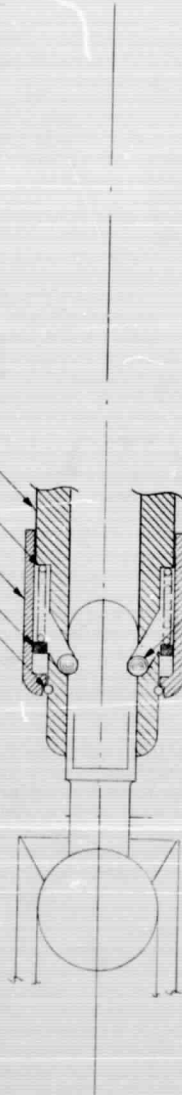
DEN 051526 112-68

[illegible]

- MIN. THICK. REASSEMBLE.
LEVERAGE TOOLS INC. GLENVIL, NEBRASKA.

[illegible]

SNAP RING (.075 DIA CRES WIRE)
 WASHER (SRD 484012050)
 SLEEVE (SRD 484012020)
 SPRING (SRD 484012030 - 005)
 STEM (SRD 484012010) REFERENCE

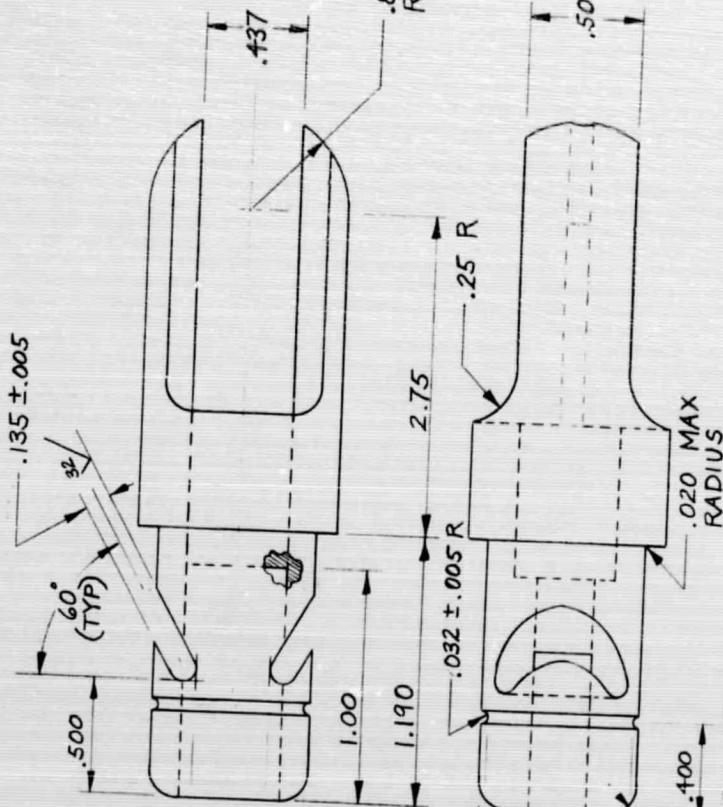


QUICK DISCONNECT

PIN (SRD 484012040)

DIMENSIONS REF. MIL-STD-883 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND FRACTIONS ARE IN 16THS TOLERANCES ON:		DESIGNED BY P.J. BUELL 1040	DATE 1-22-60	DRAWN BY P.J. BUELL 1040	DATE 1-22-60	CHECKED BY BT	APPROVED BY BT	MATERIALS BT	QUAL. CONTROL BT	RELIABILITY BT	PREPARED BY BT	PART NAME DETACHABLE GRIPPER ASSEMBLY	PART NUMBER SRD 484012000	QUANTITY 2	SHEET 2		
FRACTION 1/16 3/16 1/2 3/4 1 1 1/2 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16		DECIMALS .001 .002 .003 .004 .005 .006 .007 .008 .009 .010 .011 .012 .013 .014 .015 .016 .017 .018 .019 .020 .021 .022 .023 .024 .025 .026 .027 .028 .029 .030 .031 .032 .033 .034 .035 .036 .037 .038 .039 .040 .041 .042 .043 .044 .045 .046 .047 .048 .049 .050 .051 .052 .053 .054 .055 .056 .057 .058 .059 .060 .061 .062 .063 .064 .065 .066 .067 .068 .069 .070 .071 .072 .073 .074 .075 .076 .077 .078 .079 .080 .081 .082 .083 .084 .085 .086 .087 .088 .089 .090 .091 .092 .093 .094 .095 .096 .097 .098 .099 .100		ANGLES 15 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240 255 270 285 300 315 330 345 360		ROUNDS 1/16 3/16 1/2 3/4 1 1 1/2 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16		REF. MIL-STD-18		MIL-STD-883 STATUS INTERCHANGEABLE REPLACEMENT UNCONTROLLED		PART NAME DETACHABLE GRIPPER ASSEMBLY		PART NUMBER SRD 484012000		QUANTITY 2	

+ .005 DIA, RUN
- .002
255 X .445 BROAD
PERMITTED IN .5000



$.638 \pm .002$ DIA $\frac{.125 R}{\text{---}}$
 (GROOVE DIA) $\Delta 2$
 3. QUANTITY, 1 EA.
 $\Delta 2$ CONCENTRIC WITHIN .002 T.I.R.

NOTES :

DRAWN BY B. J. BUELL DATE 2-13-70
 DEPT. 10

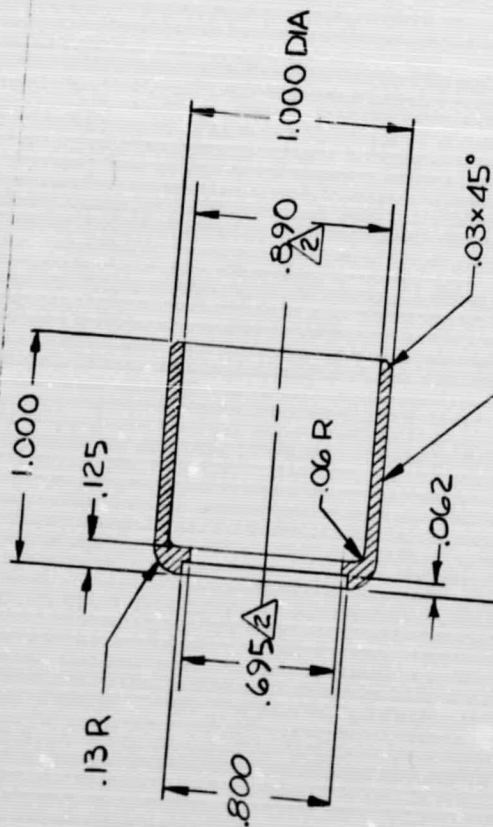
MARTIN MARIETTA CORPORATION
POST OFFICE BOX 179, DENVER, COLORADO

ST ENGR	AYL ENGR	RELIABILITY	R ENGR	PROPERTY
---------	----------	-------------	--------	----------

SRD 484012010

B 04236

CASE 2.1	
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MEDIUM (21 PITCH) DIAMOND POINT
KNURL THIS SURFACE

3. QUANTITY , 1 EA.
 ① CONCENTRIC WITHIN .002 T.I.R
 1 MAT'L ~ 2024-T4 ALUM
 NOTES :

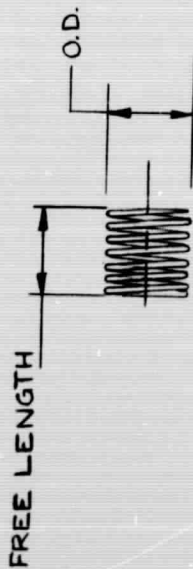
3. QUANTITY, 1 EA.

CONCENTRIC WITHIN .002 T.I.R

1. MAT'L ~ 2024-T4 ALUM

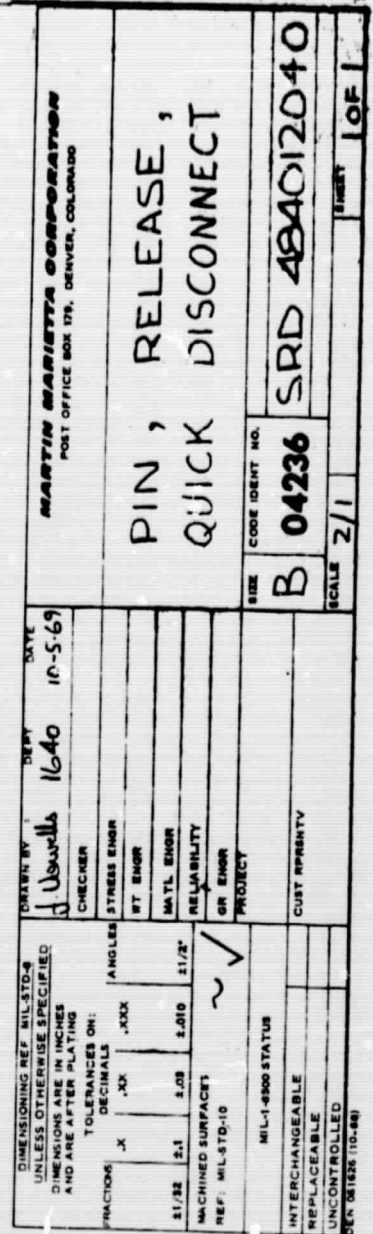
NOTES

DIMENSIONING REF MIL-STD-8 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING						DRAWN BY J. Juvells		DEPT K40	DATE 10-5-69
TOLERANCES ON: FRACTIONS .X DECIMALS .XXX ANGLES						CHECKER			
MACHINED SURFACES REF: MIL-STD-10						STRESS ENGR			
51.32 ±.1 ±.03 ±.010 ±1/2°						MT ENGR			
INTERCHANGEABLE REPLACEMENT UNCONTROLLED DFA 681426 (10-68)						MATL ENGR			
MIL-I-9500 STATUS						RELIABILITY			
6A ✓						OR ENGR			
PROJECT									
CUST REPRESENT									



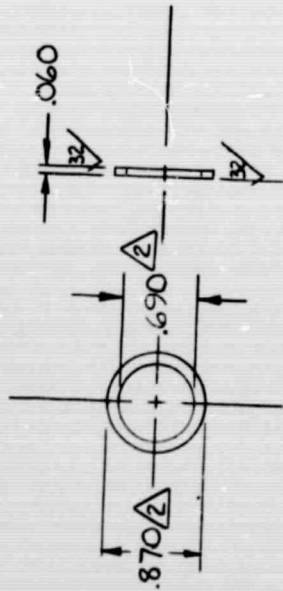
DASH NO	-001	-003	-005
MAT'L	CRES	CRES	CRES
WIRE DIA	.050	.032	.045
SPRING RATE	5 LB/IN	15 LB/IN	2 1/2 LB/IN
COIL DIRECTN	OPTIONAL	OPTIONAL	OPTIONAL
ACTIVE COILS	5	5	3 1/2
O. D.	.750	.300	.82
FREE LENGTH	.750	.625	.720

DIMENSIONING REF MIL-STD-4 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DATE 1640 9-17-69	DEPT 1640	DRAWN BY J. Ball	MARTIN MARIETTA CORPORATION POST OFFICE BOX 778, DENVER, COLORADO	
TOLERANCES ON: FRACTIONS DECIMALS ANGLES		CHECKER				
.X .XX .XXX		STRESS ENGR				
.1/32 .1 .08 .010 .1/2"		WT ENGR				
MACHINED SURFACES		MATL ENGR				
REF: MIL-STD-10		RELIABILITY				
MIL-1-4800 STATUS		OR ENGR				
INTERCHANGEABLE		PROJECT				
REPLACEABLE		CUST REPRESENT				
UNCONTROLLED		PROJECT				
NOTES :		SIZE CODE BENT NO.				
1. ENDS SQUARE & GROUND		B 04236				
		SRD 484012030				
		SCALE NONE				
		INSET 100%				



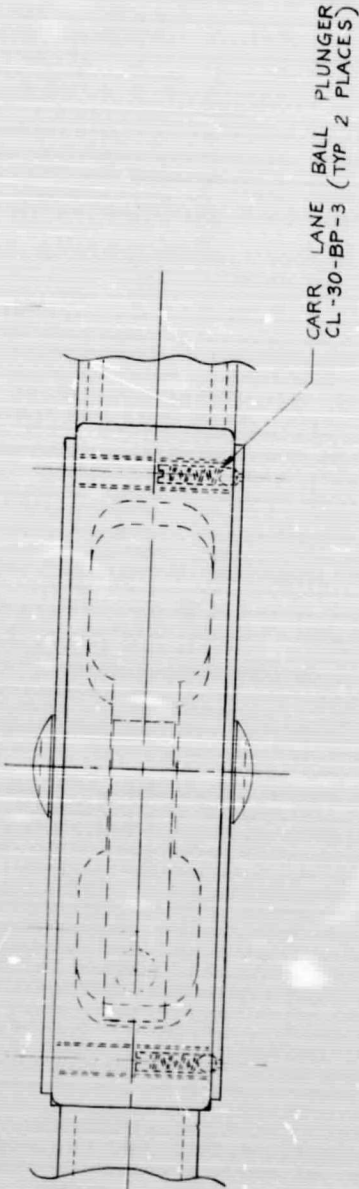
1. MAT'L ~ HT. COND. 303 STAINLESS

NOTES :

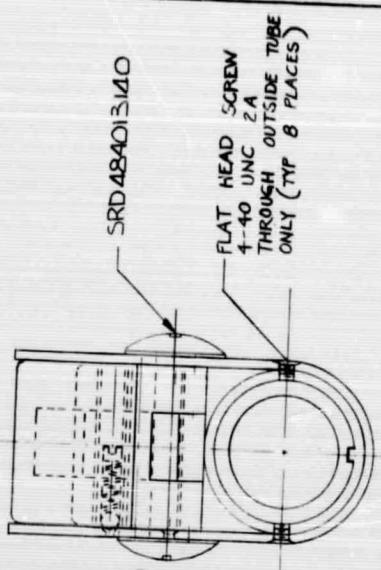
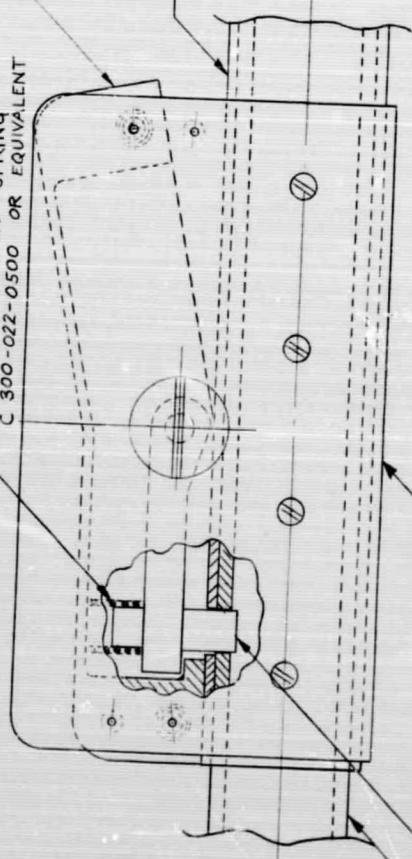


3. QUANTITY, 1 EA.
 1. MAT'L ~ 300 SERIES STAINLESS
 FULL HARD
 NOTES :

DIMENSIONING REF. MIL-STD-4 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY J. V. Vella	DEPT 1640	DATE 10-5-69	MARTIN MARIETTA CORPORATION POST OFFICE BOX 179, DENVER, COLORADO
TOLERANCES ON: FRACTIONS .X .XX .XXX .01/32 .1 .03 .010 .1/2"		CHECKER J. V. Vella		WASHER, RELEASE QUICK, DISCONNECT	
DECIMALS .X .XX .XXX .01/32 .1 .03 .010 .1/2"		STRENGTH ENGR WT ENGR MAT'L ENGR RELIABILITY OR ENGR PROPERTY		SIZE B	
REF. MIL-STD-10 125 ✓		MIL-1-4800 STATUS INTERCHANGEABLE REPLACEABLE UNCONTROLLED		CODE IDENT. NO. B-04236	
DEN 08125 (10-68)		CURT. RPNBTV		SCALE 1/1	
10-5-69		1640		SRD 484012050	

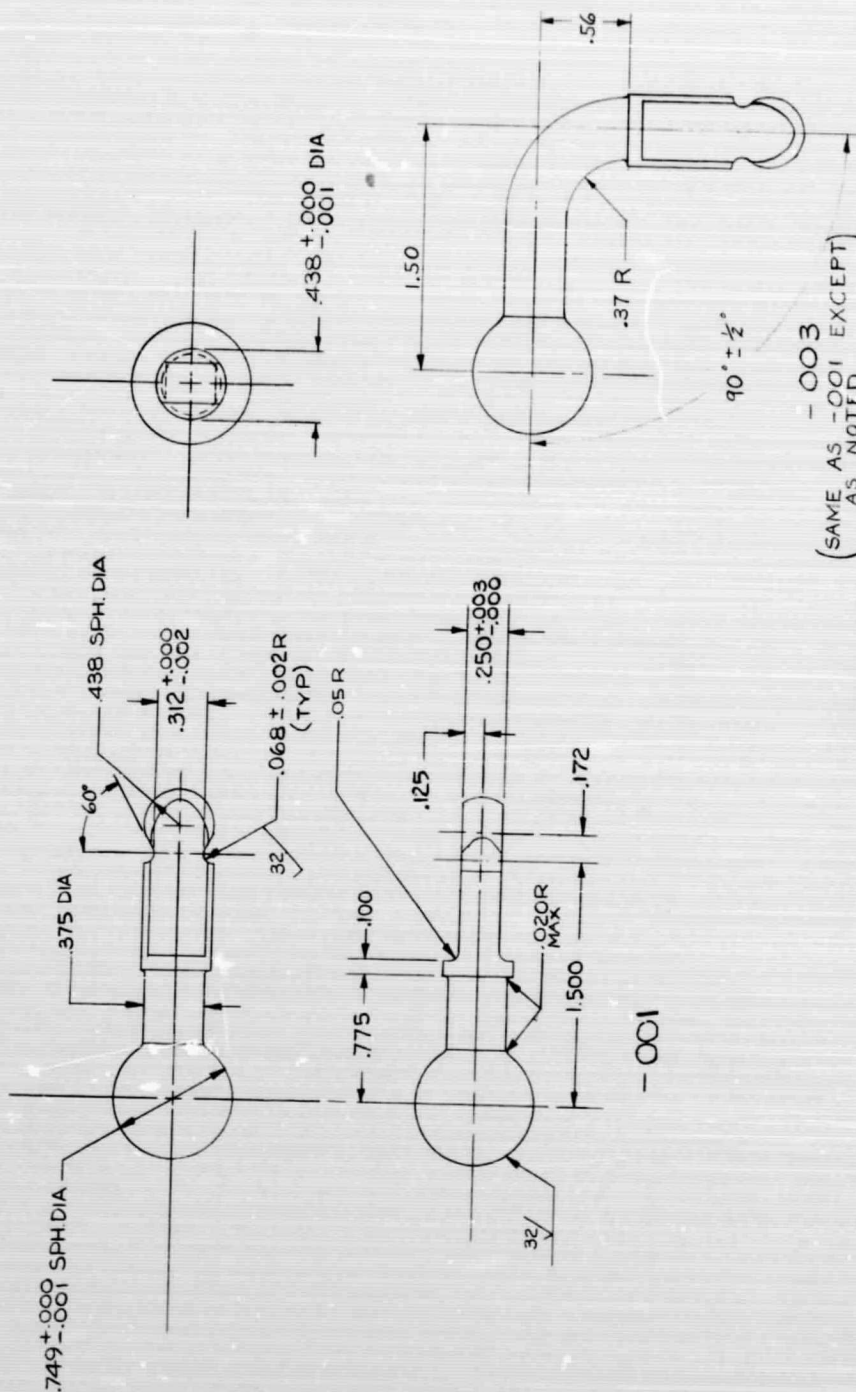


SPEC COMPRESSION SPRING
C 300-022-0500 OR EQUIVALENT



TELESCOPIC ADJUSTMENT

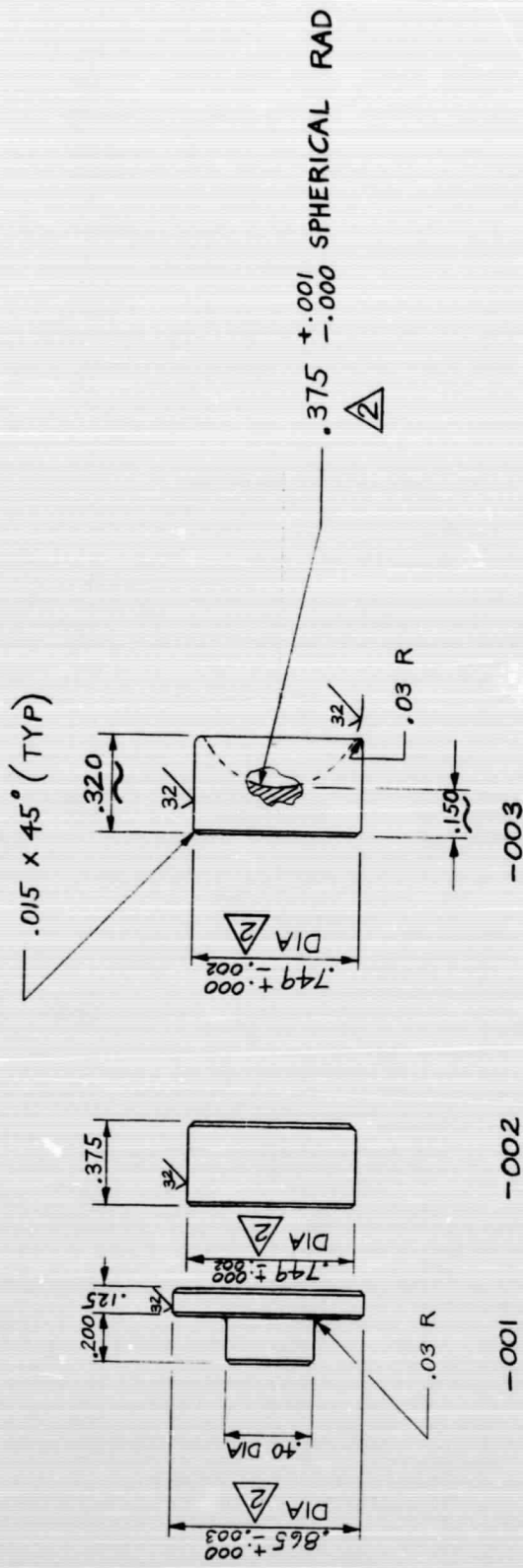
DRAWING NO. REF. MIL-STD-4 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DESIGNED BY B. J. BUELL	DATE 1-22-70
TOLERANCES (IN) FRACTIONS DECIMALS .001 .002 .005 .010 .015 .020 .030 .040 .050 .060 .070 .080 .090 .100 .125 .150 .175 .200 .250 .300 .375 .400 .500 .625 .750 .875 1.000 1.250 1.500 1.750 2.000 2.500 3.000 3.750 4.000 5.000 6.250 7.500 8.750 10.000		CHECKED BY ST. BROWN	PROJECT BOOM ASSEMBLY
FINISH 1/16 1/8 1/4 3/8 1/2 3/4 1 1 1/4 1 1/2 1 3/4 2 2 1/4 2 1/2 3 3 1/4 3 1/2 4 4 1/4 4 1/2 5 5 1/4 5 1/2 6 6 1/4 6 1/2 7 7 1/4 7 1/2 8 8 1/4 8 1/2 9 9 1/4 9 1/2 10 10 1/4 10 1/2 11 11 1/4 11 1/2 12 12 1/4 12 1/2 14 14 1/4 14 1/2 16 16 1/4 16 1/2 18 18 1/4 18 1/2 20 20 1/4 20 1/2 22 22 1/4 22 1/2 24 24 1/4 24 1/2 26 26 1/4 26 1/2 28 28 1/4 28 1/2 30 30 1/4 30 1/2 32 32 1/4 32 1/2 34 34 1/4 34 1/2 36 36 1/4 36 1/2 38 38 1/4 38 1/2 40 40 1/4 40 1/2 42 42 1/4 42 1/2 44 44 1/4 44 1/2 46 46 1/4 46 1/2 48 48 1/4 48 1/2 50 50 1/4 50 1/2 52 52 1/4 52 1/2 54 54 1/4 54 1/2 56 56 1/4 56 1/2 58 58 1/4 58 1/2 60 60 1/4 60 1/2 62 62 1/4 62 1/2 64 64 1/4 64 1/2 66 66 1/4 66 1/2 68 68 1/4 68 1/2 70 70 1/4 70 1/2 72 72 1/4 72 1/2 74 74 1/4 74 1/2 76 76 1/4 76 1/2 78 78 1/4 78 1/2 80 80 1/4 80 1/2 82 82 1/4 82 1/2 84 84 1/4 84 1/2 86 86 1/4 86 1/2 88 88 1/4 88 1/2 90 90 1/4 90 1/2 92 92 1/4 92 1/2 94 94 1/4 94 1/2 96 96 1/4 96 1/2 98 98 1/4 98 1/2 100 100 1/4 100 1/2 102 102 1/4 102 1/2 104 104 1/4 104 1/2 106 106 1/4 106 1/2 108 108 1/4 108 1/2 110 110 1/4 110 1/2 112 112 1/4 112 1/2 114 114 1/4 114 1/2 116 116 1/4 116 1/2 118 118 1/4 118 1/2 120 120 1/4 120 1/2 122 122 1/4 122 1/2 124 124 1/4 124 1/2 126 126 1/4 126 1/2 128 128 1/4 128 1/2 130 130 1/4 130 1/2 132 132 1/4 132 1/2 134 134 1/4 134 1/2 136 136 1/4 136 1/2 138 138 1/4 138 1/2 140 140 1/4 140 1/2 142 142 1/4 142 1/2 144 144 1/4 144 1/2 146 146 1/4 146 1/2 148 148 1/4 148 1/2 150 150 1/4 150 1/2 152 152 1/4 152 1/2 154 154 1/4 154 1/2 156 156 1/4 156 1/2 158 158 1/4 158 1/2 160 160 1/4 160 1/2 162 162 1/4 162 1/2 164 164 1/4 164 1/2 166 166 1/4 166 1/2 168 168 1/4 168 1/2 170 170 1/4 170 1/2 172 172 1/4 172 1/2 174 174 1/4 174 1/2 176 176 1/4 176 1/2 178 178 1/4 178 1/2 180 180 1/4 180 1/2 182 182 1/4 182 1/2 184 184 1/4 184 1/2 186 186 1/4 186 1/2 188 188 1/4 188 1/2 190 190 1/4 190 1/2 192 192 1/4 192 1/2 194 194 1/4 194 1/2 196 196 1/4 196 1/2 198 198 1/4 198 1/2 200 200 1/4 200 1/2 202 202 1/4 202 1/2 204 204 1/4 204 1/2 206 206 1/4 206 1/2 208 208 1/4 208 1/2 210 210 1/4 210 1/2 212 212 1/4 212 1/2 214 214 1/4 214 1/2 216 216 1/4 216 1/2 218 218 1/4 218 1/2 220 220 1/4 220 1/2 222 222 1/4 222 1/2 224 224 1/4 224 1/2 226 226 1/4 226 1/2 228 228 1/4 228 1/2 230 230 1/4 230 1/2 232 232 1/4 232 1/2 234 234 1/4 234 1/2 236 236 1/4 236 1/2 238 238 1/4 238 1/2 240 240 1/4 240 1/2 242 242 1/4 242 1/2 244 244 1/4 244 1/2 246 246 1/4 246 1/2 248 248 1/4 248 1/2 250 250 1/4 250 1/2 252 252 1/4 252 1/2 254 254 1/4 254 1/2 256 256 1/4 256 1/2 258 258 1/4 258 1/2 260 260 1/4 260 1/2 262 262 1/4 262 1/2 264 264 1/4 264 1/2 266 266 1/4 266 1/2 268 268 1/4 268 1/2 270 270 1/4 270 1/2 272 272 1/4 272 1/2 274 274 1/4 274 1/2 276 276 1/4 276 1/2 278 278 1/4 278 1/2 280 280 1/4 280 1/2 282 282 1/4 282 1/2 284 284 1/4 284 1/2 286 286 1/4 286 1/2 288 288 1/4 288 1/2 290 290 1/4 290 1/2 292 292 1/4 292 1/2 294 294 1/4 294 1/2 296 296 1/4 296 1/2 298 298 1/4 298 1/2 300 300 1/4 300 1/2 302 302 1/4 302 1/2 304 304 1/4 304 1/2 306 306 1/4 306 1/2 308 308 1/4 308 1/2 310 310 1/4 310 1/2 312 312 1/4 312 1/2 314 314 1/4 314 1/2 316 316 1/4 316 1/2 318 318 1/4 318 1/2 320 320 1/4 320 1/2 322 322 1/4 322 1/2 324 324 1/4 324 1/2 326 326 1/4 326 1/2 328 328 1/4 328 1/2 330 330 1/4 330 1/2 332 332 1/4 332 1/2 334 334 1/4 334 1/2 336 336 1/4 336 1/2 338 338 1/4 338 1/2 340 340 1/4 340 1/2 342 342 1/4 342 1/2 344 344 1/4 344 1/2 346 346 1/4 346 1/2 348 348 1/4 348 1/2 350 350 1/4 350 1/2 352 352 1/4 352 1/2 354 354 1/4 354 1/2 356 356 1/4 356 1/2 358 358 1/4 358 1/2 360 360 1/4 360 1/2 362 362 1/4 362 1/2 364 364 1/4 364 1/2 366 366 1/4 366 1/2 368 368 1/4 368 1/2 370 370 1/4 370 1/2 372 372 1/4 372 1/2 374 374 1/4 374 1/2 376 376 1/4 376 1/2 378 378 1/4 378 1/2 380 380 1/4 380 1/2 382 382 1/4 382 1/2 384 384 1/4 384 1/2 386 386 1/4 386 1/2 388 388 1/4 388 1/2 390 390 1/4 390 1/2 392 392 1/4 392 1/2 394 394 1/4 394 1/2 396 396 1/4 396 1/2 398 398 1/4 398 1/2 400 400 1/4 400 1/2 402 402 1/4 402 1/2 404 404 1/4 404 1/2 406 406 1/4 406 1/2 408 408 1/4 408 1/2 410 410 1/4 410 1/2 412 412 1/4 412 1/2 414 414 1/4 414 1/2 416 416 1/4 416 1/2 418 418 1/4 418 1/2 420 420 1/4 420 1/2 422 422 1/4 422 1/2 424 424 1/4 424 1/2 426 426 1/4 426 1/2 428 428 1/4 428 1/2 430 430 1/4 430 1/2 432 432 1/4 432 1/2 434 434 1/4 434 1/2 436 436 1/4 436 1/2 438 438 1/4 438 1/2 440 440 1/4 440 1/2 442 442 1/4 442 1/2 444 444 1/4 444 1/2 446 446 1/4 446 1/2 448 448 1/4 448 1/2 450 450 1/4 450 1/2 452 452 1/4 452 1/2 454 454 1/4 454 1/2 456 456 1/4 456 1/2 458 458 1/4 458 1/2 460 460 1/4 460 1/2 462 462 1/4 462 1/2 464 464 1/4 464 1/2 466 466 1/4 466 1/2 468 468 1/4 468 1/2 470 470 1/4 470 1/2 472 472 1/4 472 1/2 474 474 1/4 474 1/2 476 476 1/4 476 1/2 478 478 1/4 478 1/2 480 480 1/4 480 1/2 482 482 1/4 482 1/2 484 484 1/4 484 1/2 486 486 1/4 486 1/2 488 488 1/4 488 1/2 490 490 1/4 490 1/2 492 492 1/4 492 1/2 494 494 1/4 494 1/2 496 496 1/4 496 1/2 498 498 1/4 498 1/2 500 500 1/4 500 1/2 502 502 1/4 502 1/2 504 504 1/4 504 1/2 506 506 1/4 506 1/2 508 508 1/4 508 1/2 510 510 1/4 510 1/2 512 512 1/4 512 1/2 514 514 1/4 514 1/2 516 516 1/4 516 1/2 518 518 1/4 518 1/2 520 520 1/4 520 1/2 522 522 1/4 522 1/2 524 524 1/4 524 1/2 526 526 1/4 526 1/2 528 528 1/4 528 1/2 530 530 1/4 530 1/2 532 532 1/4 532 1/2 534 534 1/4 534 1/2 536 536 1/4 536 1/2 538 538 1/4 538 1/2 540 540 1/4 540 1/2 542 542 1/4 542 1/2 544 544 1/4 544 1/2 546 546 1/4 546 1/2 548 548 1/4 548 1/2 550 550 1/4 550 1/2 552 552 1/4 552 1/2 554 554 1/4 554 1/2 556 556 1/4 556 1/2 558 558 1/4 558 1/2 560 560 1/4 560 1/2 562 562 1/4 562 1/2 564 564 1/4 564 1/2 566 566 1/4 566 1/2 568 568 1/4 568 1/2 570 570 1/4 570 1/2 572 572 1/4 572 1/2 574 574 1/4 574 1/2 576 576 1/4 576 1/2 578 578 1/4 578 1/2 580 580 1/4 580 1/2 582 582 1/4 582 1/2 584 584 1/4 584 1/2 586 586 1/4 586 1/2 588 588 1/4 588 1/2 590 590 1/4 590 1/2 592 592 1/4 592 1/2 594 594 1/4 594 1/2 596 596 1/4 596 1/2 598 598 1/4 598 1/2 600 600 1/4 600 1/2 602 602 1/4 602 1/2 604 604 1/4 604 1/2 606 606 1/4 606 1/2 608 608 1/4 608 1/2 610 610 1/4 610 1/2 612 612 1/4 612 1/2 614 614 1/4 614 1/2 616 616 1/4 616 1/2 618 618 1/4 618 1/2 620 620 1/4 620 1/2 622 622 1/4 622 1/2 624 624 1/4 624 1/2 626 626 1/4 626 1/2 628 628 1/4 628 1/2 630 630 1/4 630 1/2 632 632 1/4 632 1/2 634 634 1/4 634 1/2 636 636 1/4 636 1/2 638 638 1/4 638 1/2 640 640 1/4 640 1/2 642 642 1/4 642 1/2 644 644 1/4 644 1/2 646 646 1/4 646 1/2 648 648 1/4 648 1/2 650 650 1/4 650 1/2 652 652 1/4 652 1/2 654 654 1/4 654 1/2 656 656 1/4 656 1/2 658 658 1/4 658 1/2 660 660 1/4 660 1/2 662 662 1/4 662 1/2 664 664 1/4 664 1/2 666 666 1/4 666 1/2 668 668 1/4 668 1/2 670 670 1/4 670 1/2 672 672 1/4 672 1/2 674 674 1/4 674 1/2 676 676 1/4 676 1/2 678 678 1/4 678 1/2 680 680 1/4 680 1/2 682 682 1/4 682 1/2 684 684 1/4 684 1/2 686 686 1/4 686 1/2 688 688 1/4 688 1/2 690 690 1/4 690 1/2 692 692 1/4 692 1/2 694 694 1/4 694 1/2 696 696 1/4 696 1/2 698 698 1/4 698 1/2 700 700 1/4 700 1/2 702 702 1/4 702 1/2 704 704 1/4 704 1/2 706 706 1/4 706 1/2 708 708 1/4 708 1/2 710 710 1/4 710 1/2 712 712 1/4 712 1/2 714 714 1/4 714 1/2 716 716 1/4 716 1/2 718 718 1/4 718 1/2 720 720 1/4 720 1/2 722 722 1/4 722 1/2 724 724 1/4 724 1/2 726 726 1/4 726 1/2 728 728 1/4 728 1/2 730 730 1/4 730 1/2 732 732 1/4 732 1/2 734 734 1/4 734 1/2 736 736 1/4 736 1/2 738 738 1/4 738 1/2 740 740 1/4 740 1/2 742 742 1/4 742 1/2 744 744 1/4 744 1/2 746 746 1/4 746 1/2 748 748 1/4 748 1/2 750 750 1/4 750 1/2 752 752 1/4 752 1/2 754 754 1/4 754 1/2 756 756 1/4 756 1/2 758 758 1/4 758 1/2 760 760 1/4 760 1/2 762 762 1/4 762 1/2 764 764 1/4 764 1/2 766 766 1/4 766 1/2 768 768 1/4 768 1/2 770 770 1/4 770 1/2 772 772 1/4 772 1/2 774 774 1/4 774 1/2 776 776 1/4 776 1/2 778 778 1/4 778 1/2 780 780 1/4 780 1/2 782 782 1/4 782 1/2 784 784 1/4 784 1/2 786 786 1/4 786 1/2 788 788 1/4 788 1/2 790 790 1/4 790 1/2 792 792 1/4 792 1/2 794 794 1/4 794 1/2 796 796 1/4 796 1/2 798 798 1/4 798 1/2 800 800 1/4 800 1/2 802 802 1/4 802 1/2 804 804 1/4 804 1/2 806 806 1/4 806 1/2 808 808 1/4 808 1/2 810 810 1/4 810 1/2 812 812 1/4 812 1/2 814 814 1/4 814 1/2 816 816 1/4 816 1/2 818 818 1/4 818 1/2 820 820 1/4 820 1/2 822 822 1/4 822 1/2 824 824 1/4 824 1/2 826 826 1/4 826 1/2 828 828 1/4 828 1/2 830 830 1/4 830 1/2 832 832 1/4 832 1/2 834 834 1/4 834 1/2 836 836 1/4 836 1/2 838 838 1/4 838 1/2 840 840 1/4 840 1/2 842 842 1/4 842 1/2 844 844 1/4 844 1/2 846 846 1/4 846 1/2 848 848 1/4 848 1/2 850 850 1/4 850 1/2 852 852 1/4 852 1/2 854 854 1/4 854 1/2 856 856 1/4 856 1/2 858 858 1/4 858 1/2 860 860 1/4 860 1/2 862 862 1/4 862 1/2 864 864 1/4 864 1/2 866 866 1/4 866 1/2 868 868 1/4 868 1/2 870 870 1/4 870 1/2 872 872 1/4 872 1/2 874 874 1/4 874 1/2 876 876 1/4 876 1/2 878 878 1/4 878 1/2 880 880 1/4 880 1/2 882 882 1/4 882 1/2 884 884 1/4 884 1/2 886 886 1/4 886 1/2 888 888 1/4 888 1/2 890 890 1/4 890 1/2 892 892 1/4 892 1/2 894 894 1/4 894 1/2 896 896 1/4 896 1/2 898 898 1/4 898 1/2 900 900 1/4 900 1/2 902 902 1/4 902 1/2 904 904 1/4 904 1/2 906 906 1/4 906 1/2 908 908 1/4 908 1/2 910 910 1/4 910 1/2 912 912 1/4 912 1/2 914 914 1/4 914 1/2 916 916 1/4 916 1/2 918 918 1/4 918 1/2 920 920 1/4 920 1/2 922 922 1/4 922 1/2 924 924 1/4 924 1/2 926 926 1/4 926 1/2 928 928 1/4 928 1/2 930 930 1/4 930 1/2 932 932 1/4 932 1/2 934 934 1/4 934 1/2 936 936 1/4 936 1/2 938 938 1/4 938 1/2 940 940 1/4 940 1/2 942 942 1/4 942 1/2 944 944 1/4 944 1/2 946 946 1/4 946 1/2 948 948 1/4 948 1/2 950 950 1/4 950 1/2 952 952 1/4 952 1/2 954 954 1/4 954 1/2 956 956 1/4 956 1/2 958 958 1/4 958 1/2 960 960 1/4 960 1/2 962 962 1/4 962 1/2 964 964 1/4 964 1/2 966 966 1/4 966 1/2 968 968 1/4 968 1/2 970 970 1/4 970 1/2 972 972 1/4 972 1/2 974 974 1/4 974 1/2 976 976 1/4 976 1/2 978 978 1/4 978 1/2 980 980 1/4 980 1/2 982 982 1/4 982 1/2 984 984 1/4 984 1/2 986 986 1/4 986 1/2 988 988 1/4 988 1/2 990 990 1/4 990 1/2 992 992 1/4 992 1/2 994 994 1/4 994 1/2 996 996 1/4 996 1/2 998 998 1/4 998 1/2 1000 1000 1/4 1000 1/2		MATERIAL ALUMINUM	PART NO. 04236
INTERCHANGEABLE REPLACEMENT REPAIRABLE REWORKABLE REFINISHABLE REUSEABLE RECYCLABLE REPAIRABLE REWORKABLE REFINISHABLE REUSEABLE RECYCLABLE		CODE IDENT. NO. SRD 484013000	SCALE 1/1



(SAME AS -003 EXCEPT)
AS NOTED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND FRACTIONS ARE TO BE DECIMALS UNLESS OTHERWISE NOTED		DATE 16-40 9-25-69	BY J. D. B. 16-40	CHKD J. D. B. 16-40	DATE 9-25-69
MATERIAL 300 SERIES STAINLESS STEEL		PART NAME BALL, COUPLING ~ BOOM ASSEMBLY			
QUANTITY 2 EA.		CODE IDENT NO. C 04236			
REPLACEMENT PART UNCONTROLLED		DRAWING NO. SRD 484013010			

2. QUANTITY, 1 EA.
1. MATERIAL, 300 SERIES STAINLESS STEEL
NOTES:



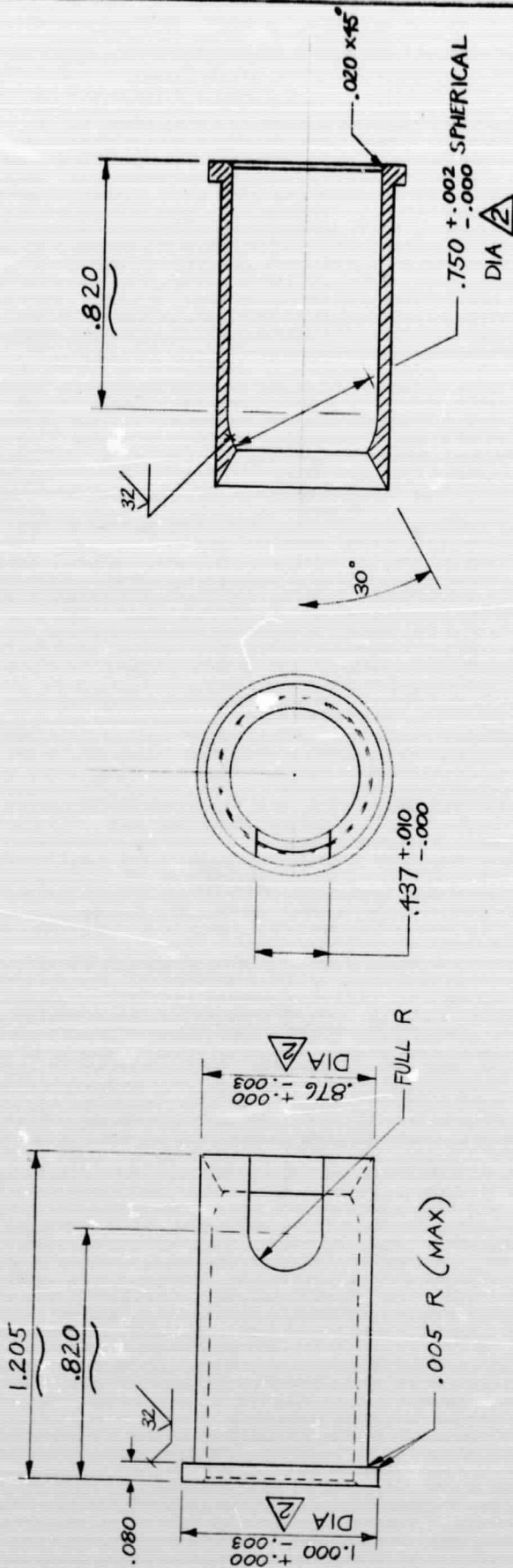
3. QUANTITY, 1 EA.

△ CONCENTRIC WITHIN .001 T.I.R.

1. MATERIAL, BRASS

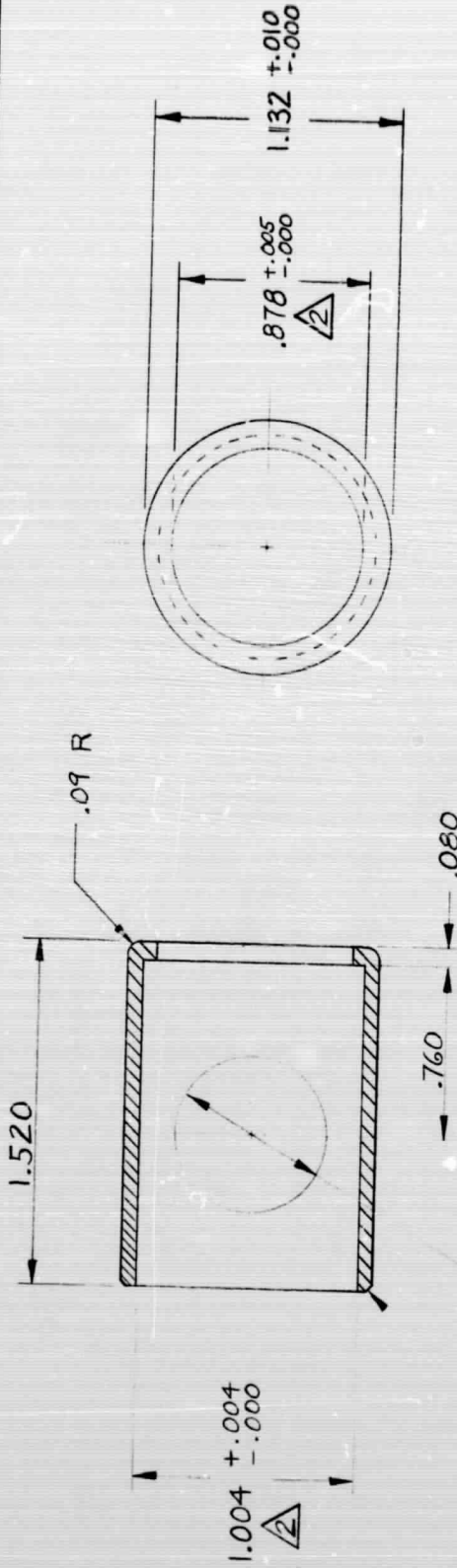
NOTES :

DIMENSIONING REF. MIL-STD-8 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY B.J. BUELL	DATE 1-23-70	MARTIN MARIETTA CORPORATION POST OFFICE BOX 179, DENVER, COLORADO	
FRACTIONS .X 21/32	TOLERANCES ON: DECIMALS .XX 2.01	CHECKER	STRESS ENGR	CLAMP ~ SWIVEL JOINT	
ANGLES .XXX	1/2"	WT ENGR	MATL ENGR	SIZE CODE IDENT NO. 04236	SRD 484013020
MACHINED SURFACES REF. MIL-STD-10	125	RELIABILITY GR ENGR	PROJECT	SCALE 2/1	SHEET 1 OF 1
MIL-1-4800 STATUS		CUST MRCNTY			
INTERCHANGEABLE					
REPLACEABLE					
UNCONTROLLED					



3. QUANTITY, 1 EA.
- Δ CONCENTRIC WITHIN .002 T.I.R.
1. MATERIAL, 300 SERIES STAINLESS
- NOTES :

DIMENSIONING REF. MIL-STD-8 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY B.J. BUELL	DES. 1-24-70	DATE 1-24-70	MARTIN MARIETTA CORPORATION POST OFFICE BOX 179, DENVER, COLORADO
FRACTIONS 1/32 5/16 3/8 1/2 3/4 1	DECIMALS .XX .XXX .XXX .XXX .XXX .XXX	CHECKER STRESS ENGR WT ENGR MATL ENGR RELIABILITY DR ENGR PROPERTY	SEAT ~ SWIVEL JOINT	SIZE 04236	CODE IDENT NO. SRD 184618030
MACHINED SURFACES REF. MIL-STD-10	125	MIL-1-4800 STATUS	SCALE 2x1	PART 1 OF 1	
INTERCHANGEABLE REPLACEABLE UNCONTROLLED					



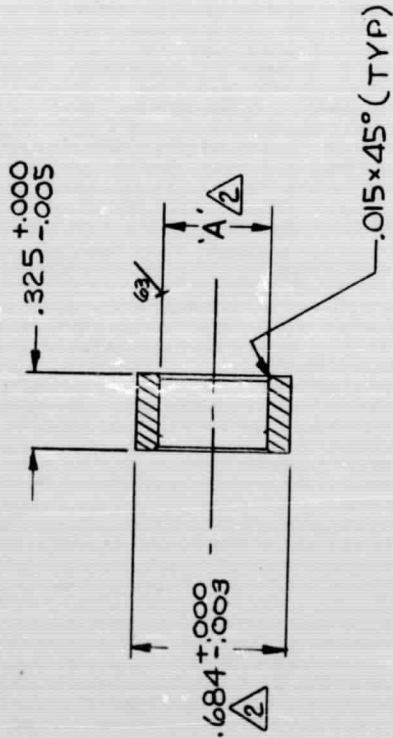
DIMENSIONING REF. MIL-STD-8 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY B. J. S. J.	DEPT 12770	DATE 12770	MARTIN MARIETTA CORPORATION POST OFFICE BOX 179, DENVER, COLORADO
TOLERANCES ON: FRACTIONS: .X .XX .XXX DECIMALS: .010 .012 ANGLES: .125		CHECKER	STRESS ENGR	WT ENGR	
MACHINED SURFACES REF: MIL-STD-10		GR ENGR	RELIABILITY	MATL ENGR	COLLAR, SWIVEL JOINT ~ BOOM ASSY.
MIL-1-8500 STATUS:		PROJECT	CUST RPRNTV	SIZE	
INTERCHANGEABLE REPLACEABLE UNCONTROLLED		CODE IDENT. NO. B 04236			SRD 484013040
SCALE 2/1		SHEET 1 OF 1			

3. QUANTITY, 1 EA.

Δ CONCENTRIC WITHIN .001 T.I.R.

1 MATERIAL, 304 STAINLESS

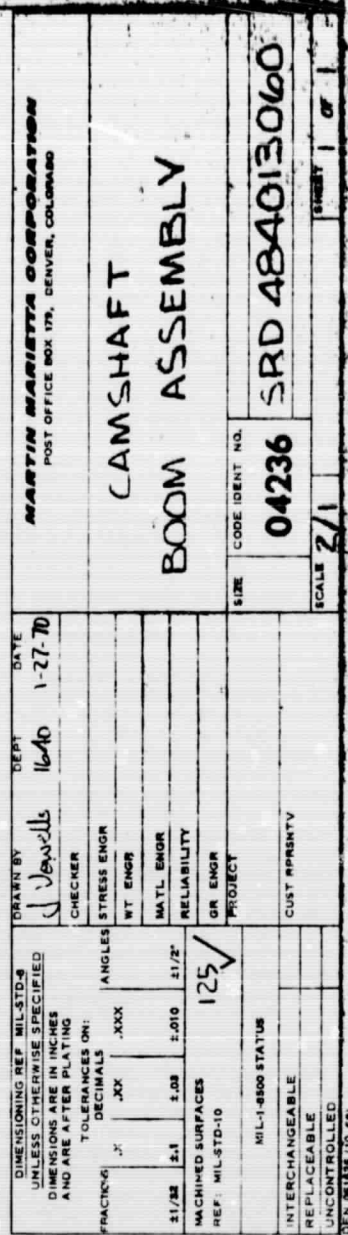
NOTES:



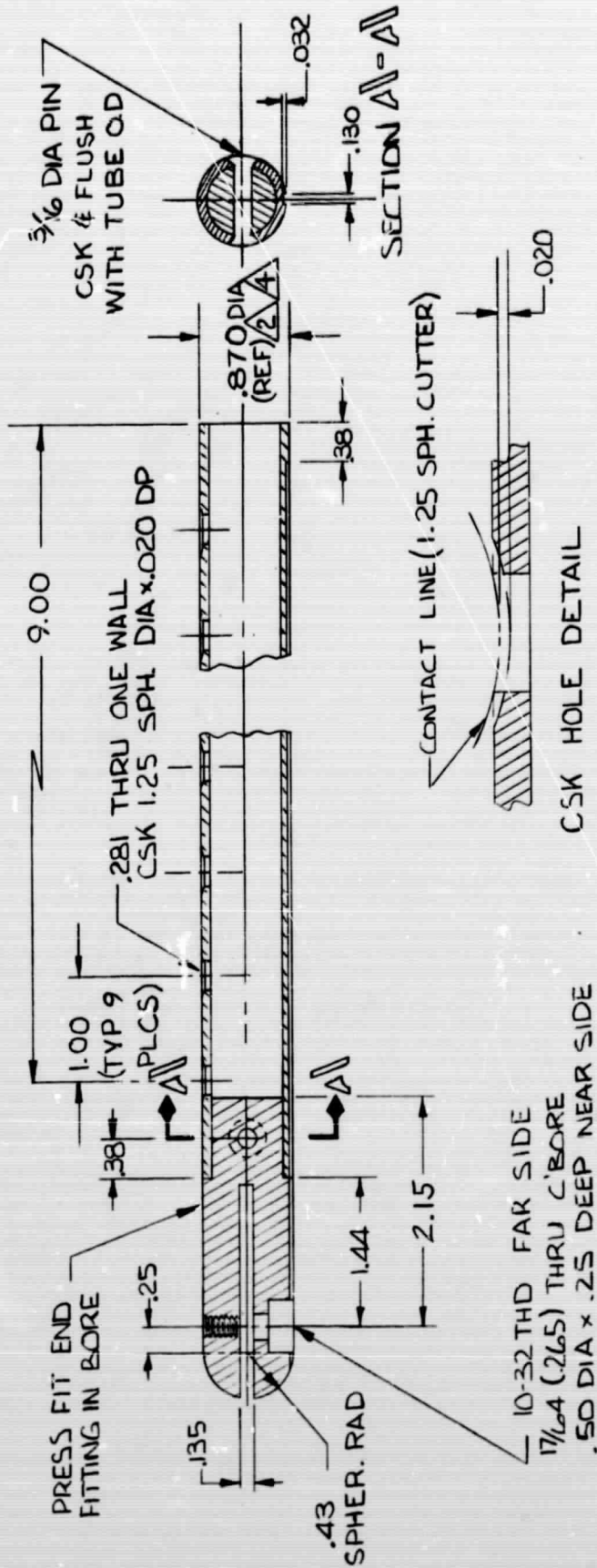
DASH NO	DIM 'A'
001	$.377 \pm .003$
003	$.558 \pm .003$

3. QUANTITY EACH - 001 & - 003
 2 CONCENTRIC WITHIN .001 T.I.R
 NOTE 1. MAT'L ~ BRASS

DIMENSIONING REF MIL-STD-9 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY J. J. J. J. DATE 1/27/70		DEPT 1640		MARTIN MARIETTA CORPORATION POST OFFICE BOX 174, DENVER, COLORADO	
TOLERANCES ON:		CHECKER		STRESS ENGR		BUSHING, CAM LOCK	
FRACTIONS		DECIMALS		WT ENGR		BOOM ASSEMBLY	
21/32		2.1		MAT'L ENGR		SIZE B CODE IDENT NO. 04236	
21/32		2.1		RELIABILITY		SCALE 2/1	
21/32		2.1		OR ENGR		SRD 484013050	
21/32		2.1		PROPERTY		1961	
MACHINED SURFACES REF: MIL-STD-10		125		CUST APPRNTY			
MIL-1-8800 STATUS							
INTERCHANGEABLE							
REPLACEABLE							
UNCONTROLLED							



NOTES :

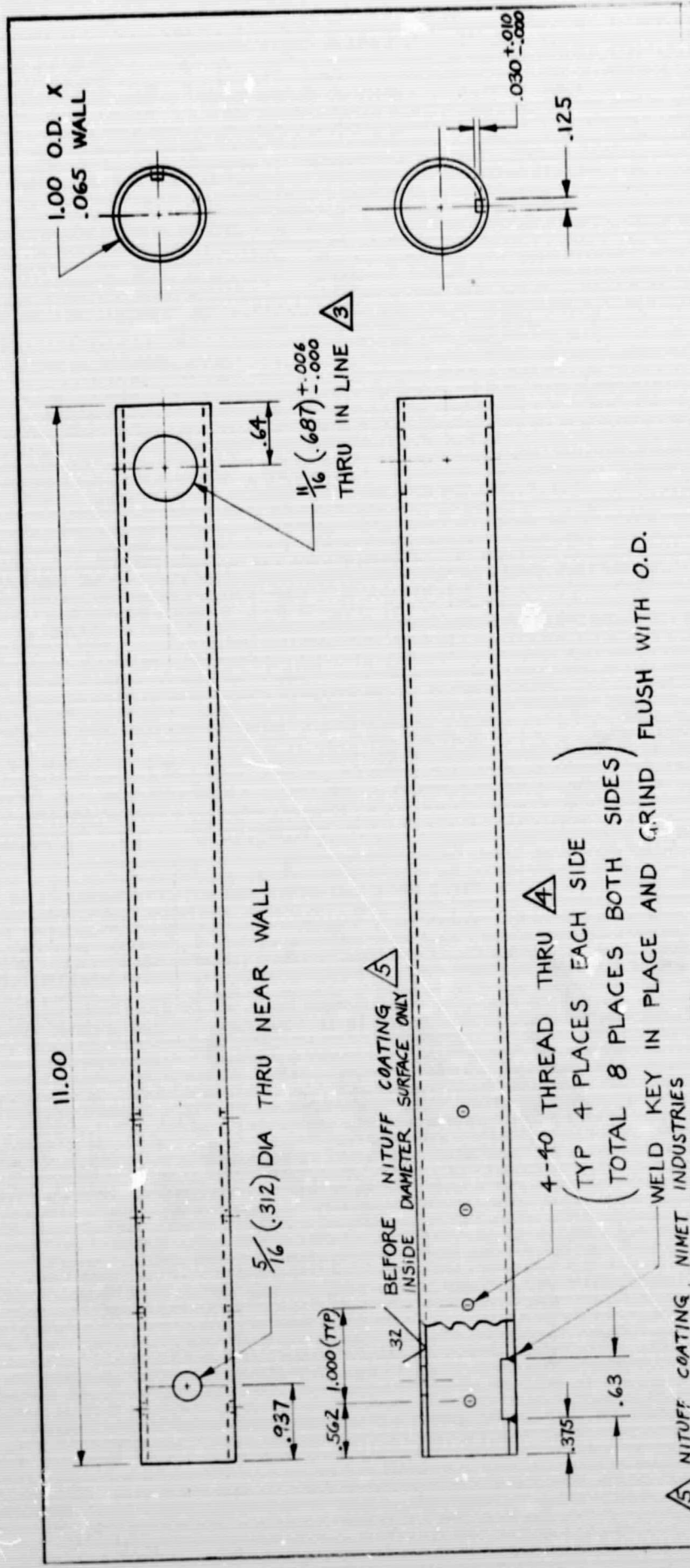


4. SRD 484013080 TUBE TO SLIDE FREELY IN SRD 484013090
3. QUANTITY REQD 1 EACH
2. THIS DIA BEFORE NITUFF COATING. NIMET INDUSTRIES, 925 SOUTH WEBSTER ST. SOUTH BEND, IND.
1. MAKE FROM .875 OD x .095 W 6061-T6 ALUM TUBE

NOTES :

DOWNING REF MIL-STD-8 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DESIGNED BY	DATE
TOLERANCES ON:		10/40	1-28-70
FRACTIONS	DECIMALS	CHECKER	
.X	.XX	STRESS ENGR	
.1/32	.005	BT ENGR	
MACHINED SURFACES	2.010	MATL ENGR	
REF MIL-STD-10	2.010	RELIABILITY	
	125	OR ENGR	
MIL-1-8000 STATUS		PROJECT	
INTERCHANGEABLE			
REPLACEABLE			
UNCONTROLLED			
CUST APPRNTY		TUBE, INNER BOOM ASSEMBLY	
SIZE	CODE IDENT NO.	SRD 484013080	
B	04236		
SCALE	1/1	SHEET 1 OF 1	

MARTIN MARIETTA CORPORATION
POST OFFICE BOX 179, DENVER, COLORADO



5 NITUFF COATING, NIMET INDUSTRIES
925 SO. WEBSTER ST. SOUTH BEND, IND. 46621
TEL: (219) 287-7234

4 TO MATCH SRD 484013110 HANDLE

3 TO INTERSECT TUBE & WITHIN .001

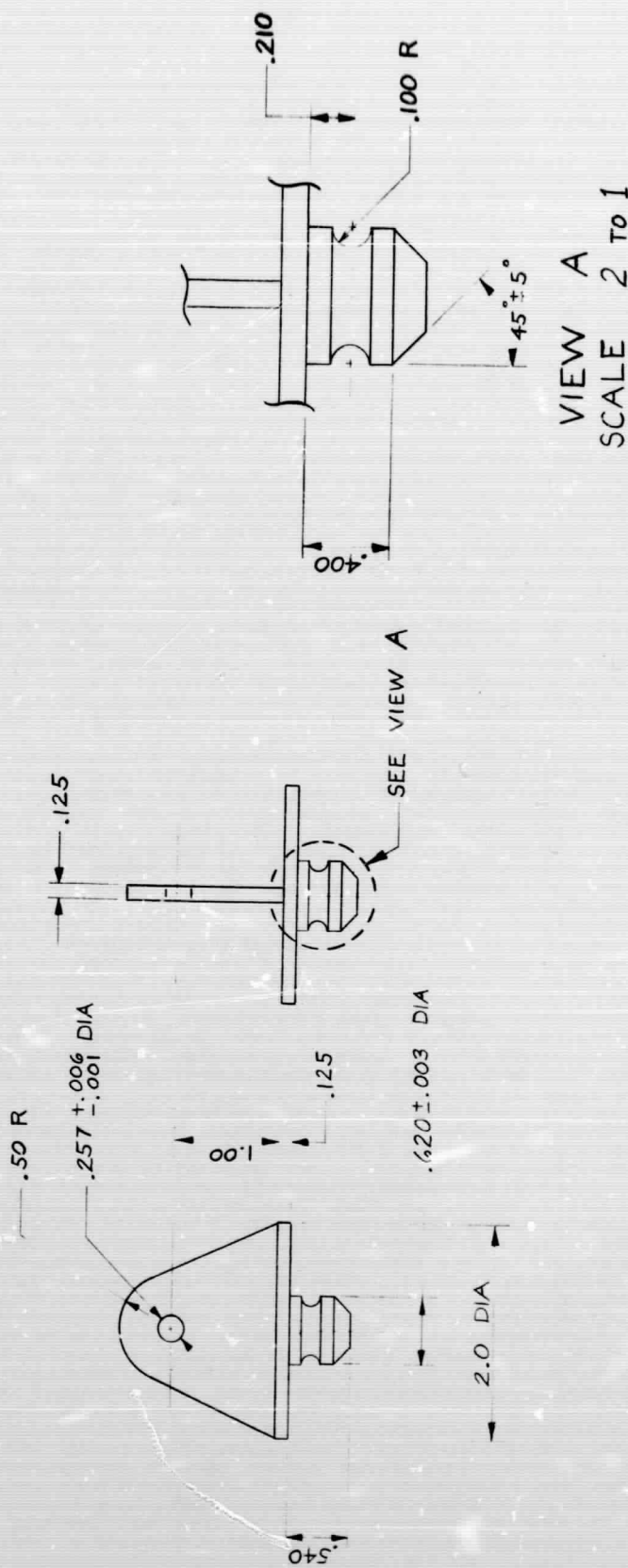
2. MATERIAL 6061 TG AL TUBE,
6061 AL KEY

1. QUANTITY, 1 EA

NOTES :

MARTIN MARIETTA CORPORATION POST OFFICE BOX 179, DENVER, COLORADO	
TUBE, OUTER BOOM ASSEMBLY	SRD 484013090
SIZE B	CODE IDENT NO. 04236
SCALE 1/1	SHEET 1 OF 1

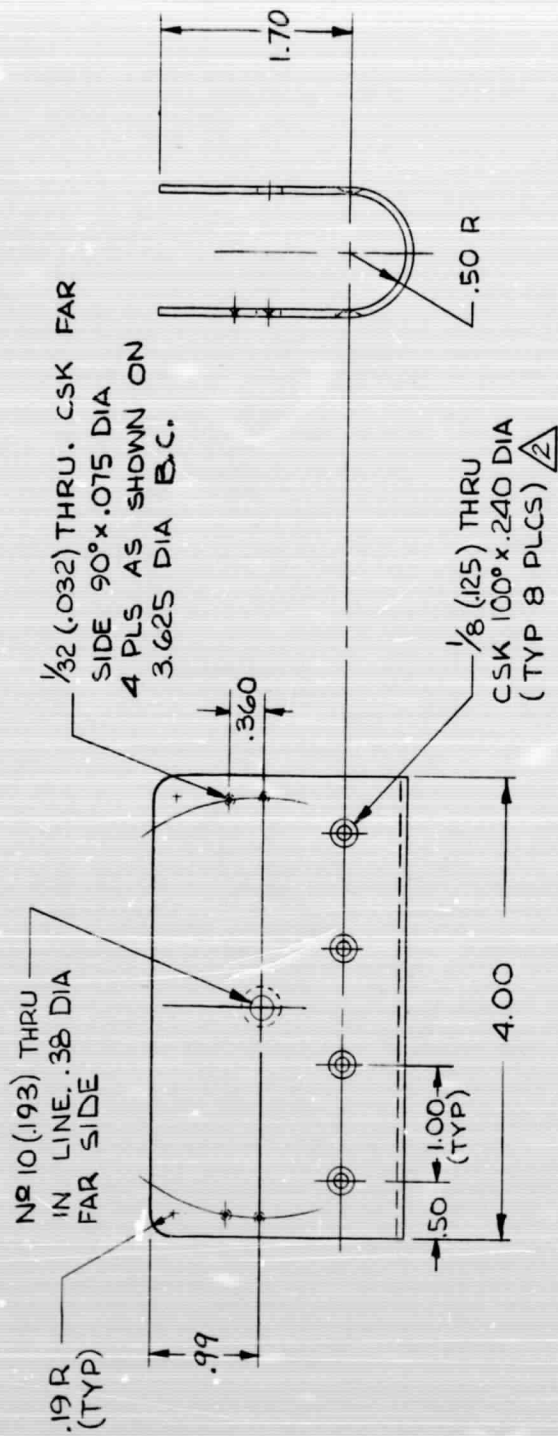
DRAWN BY B. J. BUELL	DATE 3-19-70	DEPT
CHECKER 		
STRESS ENGR 	ANGLES 	TOLERANCES ON:
WT ENGR 	DECIMALS 	FRACTIONS
MATL ENGR 	XXX 	XXX
RELIABILITY 	1/2" 	1/2"
OR ENGR 	125 	125
PROJECT 	MIL-STD-10 	MIL-1-4800 STATUS
CUST APPRNTV 		
INTERCHANGEABLE 		
REPLACEABLE 		
UNCONTROLLED 		



VIEW A
SCALE 2 TO 1

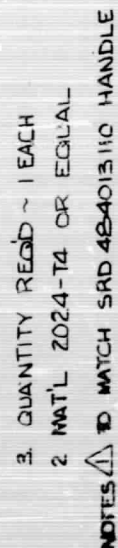
2. QUANTITY, 1 EA NEXT ASSY.
1. MATERIAL, 300 SERIES CRES.
NOTES:

DIMENSIONING REF. MIL-STD-8 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY B.J. BUELL	DATE 4-7-70
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FRACTIONS	DECIMALS	STRESS ENGR	
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±.010		PROJECT	
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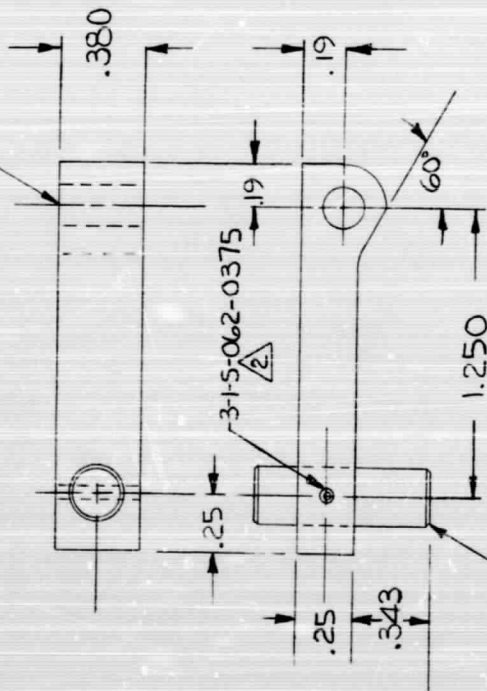
3. QUANTITY REQD 1 EACH
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 1 MAT'L ~301 CRES FULL HARD

DIMENSIONING REF MIL-STD-8 UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES AND ANGLES IN DEGREES AND AFTER PLATING		DRAWN BY J. J. J.	DESIGNED BY 1640	DATE 1-29-70	MARTIN MARIETTA CORPORATION POST OFFICE BOX 371, DENVER, COLORADO
FRACTIONS 1/32 1/16 1/8 1/4 1/2 3/4 1 1 1/2 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 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.250 DIA x .780 LG CRES PIN
.015 x 45° CHAMFER BOTH ENDS

- 001

(SAME AS -001 EXCEPT AS NOTED)

-002

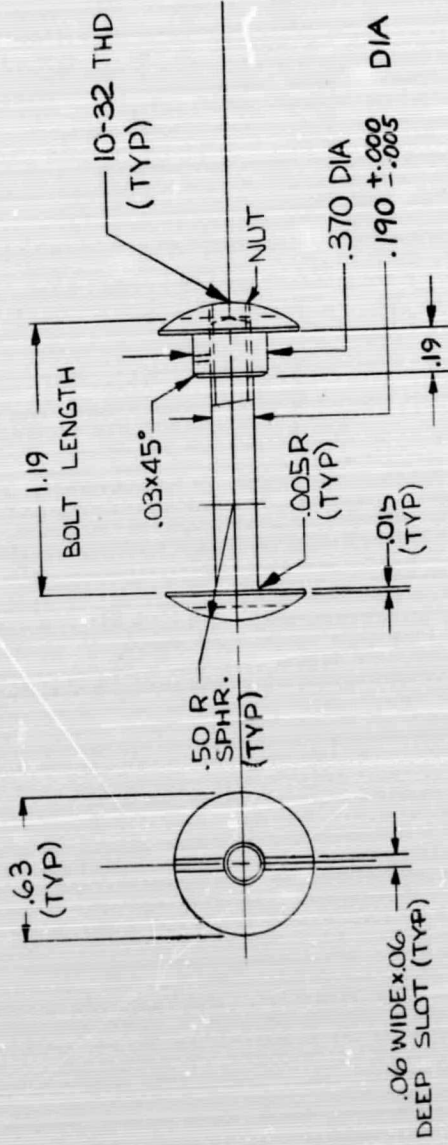
3. QUANTITY REQD 1 EACH

2. SEL LOK SPRING PIN, PRECISION FASTENER DIV PRESSED STEEL CO.

1. MAT'L 304 CRES STEEL

NOTES :

DIMENSIONING REF MIL-STD-8 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		DRAWN BY J. Boudels 144	DESIGNED 1-28-70	DATE	MARTIN MARIETTA CORPORATION POST OFFICE BOX 179, DENVER, COLORADO
TOLERANCES ON: FRACTIONS DECIMALS ANGLES		CHECKER			LOCKING PIN, TELESCOPIC ADJ BOOM, ASSEMBLY
.X .XX .XXX		STRESS ENGR			
1/16 1/32 1/64		WT ENGR			
1/16 1/32 1/64		MAT'L ENGR			
MACHINED SURFACES REF MIL-STD-10		RELIABILITY OR ENGR			SIZE B
125 ✓		PROJECT			
MIL-1-8500 STATUS		CUST RPNSTV			CODE IDENT NO. 04236
INTERCHANGEABLE REPLACEABLE UNCONTROLLED		SCALE 1/1			SRD 484013130
DEN 061626 (10-68)		SHEET 191			191



DIMENSIONING REF MIL-STD-4		DESIGN BY	DATE
UNLESS OTHERWISE SPECIFIED		10/10/66	2-2-70
DIMENSIONS ARE IN INCHES		CHECKER	
AND PRELIMINARY PLATING			
TOLERANCES ON:		STRESS ERROR	
FRACTIONS	DECIMALS	RT ERROR	
1/32	±.01	MAT'L ERROR	
	±.02	RELIABILITY	
	±.010	OR ERROR	
	±.012	PROJECT	
MACHINED SURFACES			
REF MIL-STD-10			
125			
MIL-1-4800 STATUS			
INTERCHANGEABLE			
REPLACEABLE			
UNCONTROLLED			
REF. 301626 (10-64)			

MARTIN MARISTTA CORP. - DENVER, COLORADO		POST OFFICE BOX 129, DENVER, COLORADO	
BOLT ASSY. SPECIAL		BOOM ASSEMBLY	
SIZE	CODE IDENT NO.	SRD 484013140	
B	04236		
SCALE	3/1	SHEET 1 OF 1	

2. QUANTITY REQD 1 EACH

1. MAT'L ~ 304 CRES.

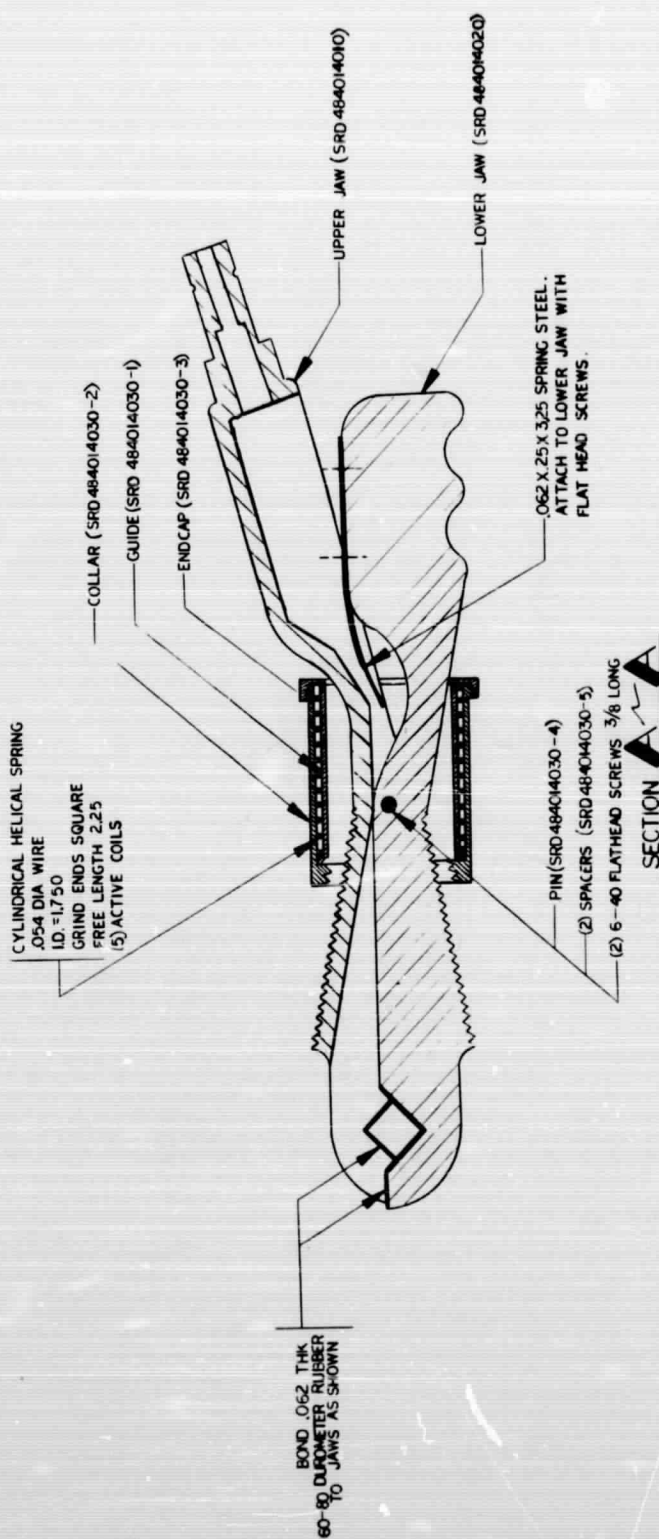
NOTE



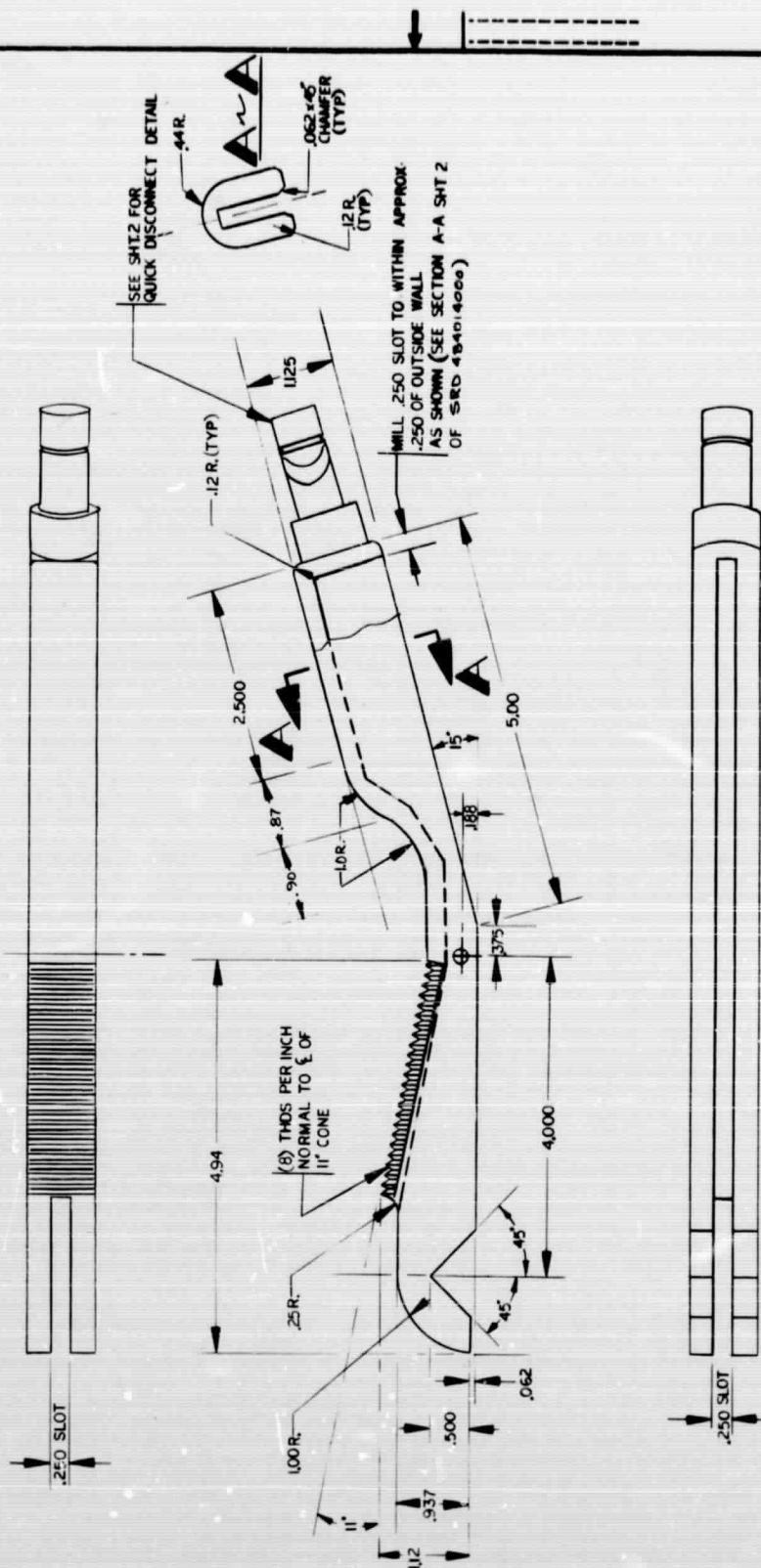
SEE SMD 48-002000 SMT 2 PUR
QUICK-DISCONNECT ASSY DETAILS

[illegible]

REVISIONS		
NO.	DESCRIPTION	DATE



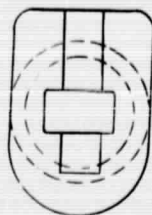
DESIGNED BY TOM JONKONIEC		CHECKED BY BY ENGR		DATE 11/27	
DRAWN BY BY ENGR		MATERIALS ON ENGR		REVISIONS	
TITLE DETACHABLE GRIPPER ASSEMBLY		PART NUMBER SRD 484014000		QUANTITY 1	
INTERCHANGEABLE REPLACEMENT		REPLACEMENT PART NUMBER		REPLACEMENT PART QUANTITY	



MATERIAL: AL 6061-T6

QUANTITY: (1)

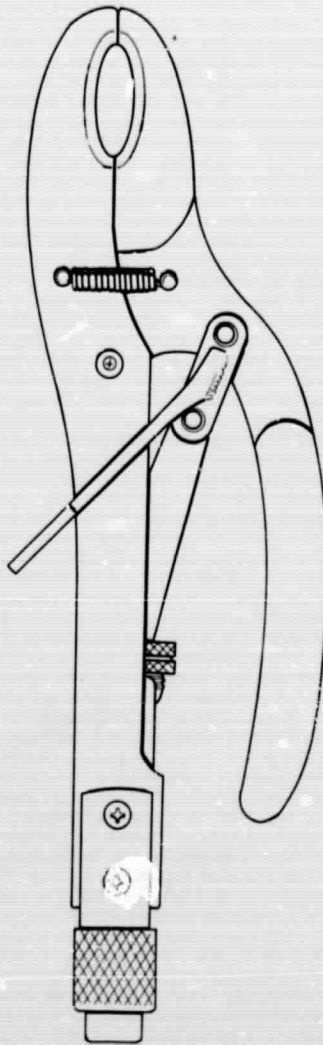
[illegible]



UPPER JAW DETACHABLE GRIPPER ASSY					
SRD 484014010					
C 04228					
FULL					
2 OF 2					

REPRODUCIBILITY OF THE ORIGINAL PAGE IS POOR.





DIMENSIONS OF FIG. 100-100-1 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND ARE AFTER PLATING		PART NO. 234 DATE 7/15/70		MARTIN MARIETTA CORPORATION POST OFFICE BOX 170, DENVER, COLORADO	
CHECKED BY DESIGNED BY DRAWN BY MANUFACTURED BY MATERIAL BY FINISHED BY REF. M.L. 100-100-1		CHECKED BY DESIGNED BY DRAWN BY MANUFACTURED BY MATERIAL BY FINISHED BY REF. M.L. 100-100-1		DETACHABLE GRIPPER ASSEMBLY	
SIZE CODE C 04235		SIZE CODE C 04235		SIZE CODE C 04235	
INTERCHANGEABLE REPLACEMENT UNCONTROLLED		INTERCHANGEABLE REPLACEMENT UNCONTROLLED		INTERCHANGEABLE REPLACEMENT UNCONTROLLED	
SHEET 1 OF 1		SHEET 1 OF 1		SHEET 1 OF 1	