

U.S. DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
LABORATORY TEST PROCEDURE

FOR


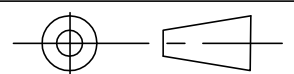
FMVSS No. 201U  
Occupant Protection in Interior Impact  
-Upper Interior Head Impact Protection-

**APPENDIX C**  
**FREE MOTION HEADFORM DRAWING PACKAGE**



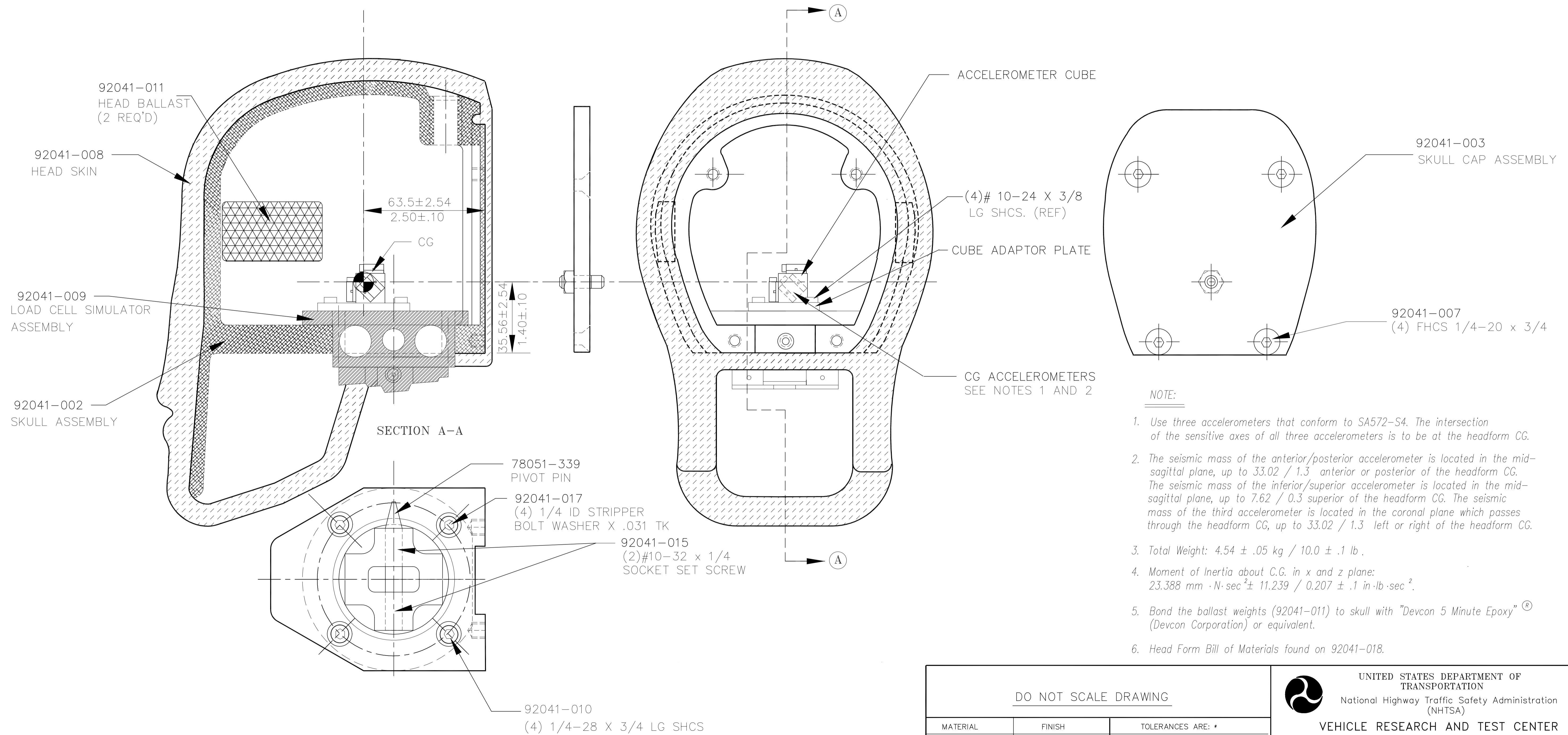
**ENFORCEMENT**  
**Office of Vehicle Safety Compliance**  
**Mail Code: NEF-240**  
1200 New Jersey Ave. SE  
Washington, DC 20590

LINE	DRAWING NO.	REV	NO. REQ'D	DESCRIPTION			
				1	2	3	4
1	92041-001		1	HEADFORM ASSEMBLY			
2	92041-002		1	SKULL ASSEMBLY			
3	78051-148	A	1	SKULL-CAST			
4	92041-013		4	INSERT-RKK 1/4-20x.37 LG (KEENSERT OR EQUIV.)			
5	92041-014		1	INSERT-RKK 1/2-20X.62 LG (KEENSERT OR EQUIV.)			
6	92041-012		1	INSERT-RKK #10-32X.31 LG (KEENSERT OR EQUIV.)			
7	92041-003		1	SKULL CAP PLATE ASSEMBLY			
8	92041-004		1	SKULL CAP PLATE			
9	92041-005		1	THREADED PIN			
10	92041-006		1	HEX NUT (1/4-20)			
11	92041-007		4	FHCS 1/4-20X3/4			
12	92041-008		1	HEAD SKIN WITHOUT NOSE			
13	78051-228	B	1	HEAD SKIN HYBRID III			
14	78051-372			VINYL SKIN FORMULATION			
15	92041-009		1	SIX-AXIS LOAD CELL SIMULATOR ASSEMBLY			
16	C-1797		1	NECK BLANK			
17	92041-016		2	PIN-.1259/.1260 DIA X .375 LG (HOLOKROME DOWEL OR EQUIVALENT)			
18	78051-339		1	PIVOT PIN - NECK TRANSDUCER			
19	92041-015		2	SCREW-#10-32x1/4 SOCKET SET SCREW (CUP POINT TYPE)			
20	92041-010		4	1/4-28x3/4 LG SHCS			
21	92041-017		4	1/4 I.D. STRIPPER BOLT WASHER x .031 TK.			
22	92041-011		2	HEAD BALLAST WEIGHT			
23	SA572-S4		3	ACCELEROMETER SPECIFICATION			

REVISION RECORD							 <b>UNITED STATES DEPARTMENT OF TRANSPORTATION</b> National Highway Traffic Safety Administration (NHTSA) <b>VEHICLE RESEARCH AND TEST CENTER</b> EAST LIBERTY, OHIO 43319			
ITEM NO.	DATE	BY	DESCRIPTION	MATERIAL	FINISH	TOLERANCES ARE:	ENGINEER	TITLE		
							<i>Mike Beebe</i>	Head Form Bill of Materials		
				MILLIMETER ; MILLIMETER/INCH INCH		THIRD ANGLE PROJECTION 	DRAWN BY <i>Gerda England</i>	DATE 11/30/92	SCALE	DRAWING NUMBER 92041-018
							REV			billmat.dwg

REVISION RECORD

ITEM NO.	DATE	BY	DESCRIPTION

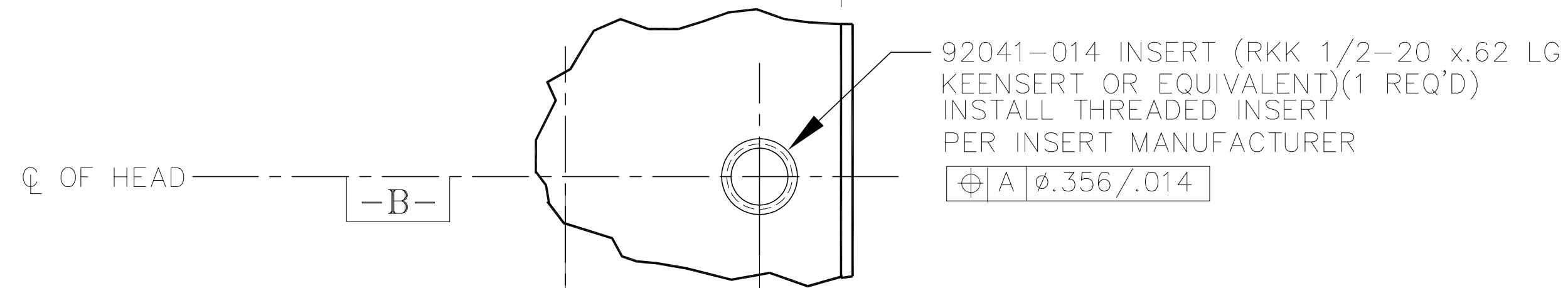


- NOTE:**
- Use three accelerometers that conform to SA572-S4. The intersection of the sensitive axes of all three accelerometers is to be at the headform CG.
  - The seismic mass of the anterior/posterior accelerometer is located in the mid-sagittal plane, up to 33.02 / 1.3 anterior or posterior of the headform CG. The seismic mass of the inferior/superior accelerometer is located in the mid-sagittal plane, up to 7.62 / 0.3 superior of the headform CG. The seismic mass of the third accelerometer is located in the coronal plane which passes through the headform CG, up to 33.02 / 1.3 left or right of the headform CG.
  - Total Weight: 4.54 ± .05 kg / 10.0 ± .1 lb.
  - Moment of Inertia about C.G. in x and z plane: 23.388 mm · N · sec<sup>2</sup> ± 11.239 / 0.207 ± .1 in · lb · sec<sup>2</sup>.
  - Bond the ballast weights (92041-011) to skull with "Devcon 5 Minute Epoxy"® (Devcon Corporation) or equivalent.
  - Head Form Bill of Materials found on 92041-018.

DO NOT SCALE DRAWING			UNITED STATES DEPARTMENT OF TRANSPORTATION National Highway Traffic Safety Administration (NHTSA) <b>VEHICLE RESEARCH AND TEST CENTER</b> EAST LIBERTY, OHIO 43319				
MATERIAL	FINISH	TOLERANCES ARE: *	ENGINEER	TITLE	DATE	SCALE	DRAWING NUMBER
		DECIMALS      ANGLES .XX ±0.25/.01      + 1/2° .XXX ±0.13/.005 * unless otherwise noted	Mike Beabe	Head Form Assembly	11/30/92	Full	92041-001
MILLIMETER / INCH ; MILLIMETER/INCH		THIRD ANGLE PROJECTION	DRAWN BY	REV			hdform3.dwg
			Barda England				

SURFACE IN AS-CAST CONDITION

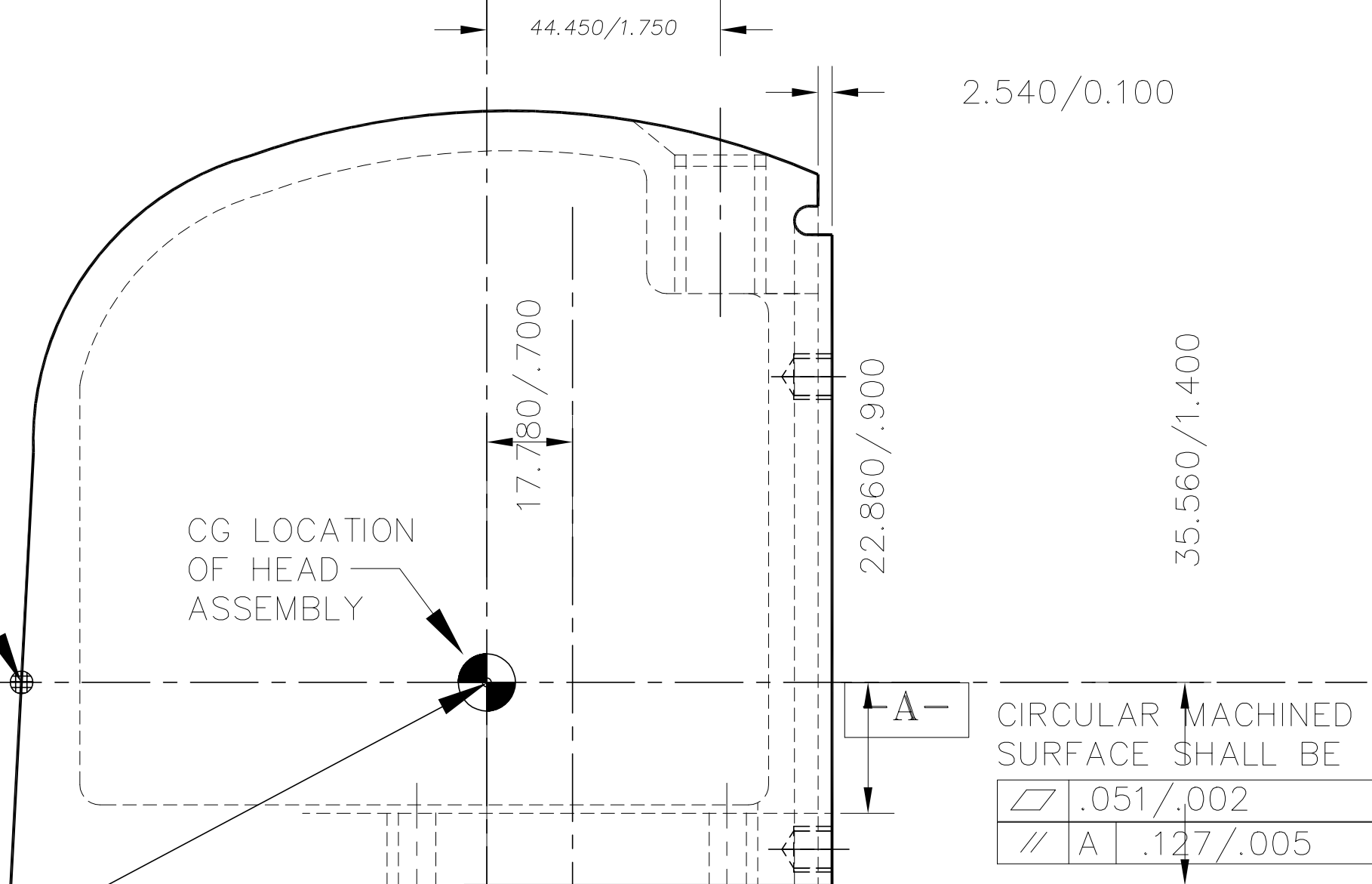
REVISION RECORD			
ITEM NO.	DATE	BY	DESCRIPTION



92041-014 INSERT (RKK 1/2-20 x.62 LG KEENSERT OR EQUIVALENT)(1 REQ'D) INSTALL THREADED INSERT PER INSERT MANUFACTURER

⊕ A |  $\phi$ .356/.014

Q OF HEAD -B-

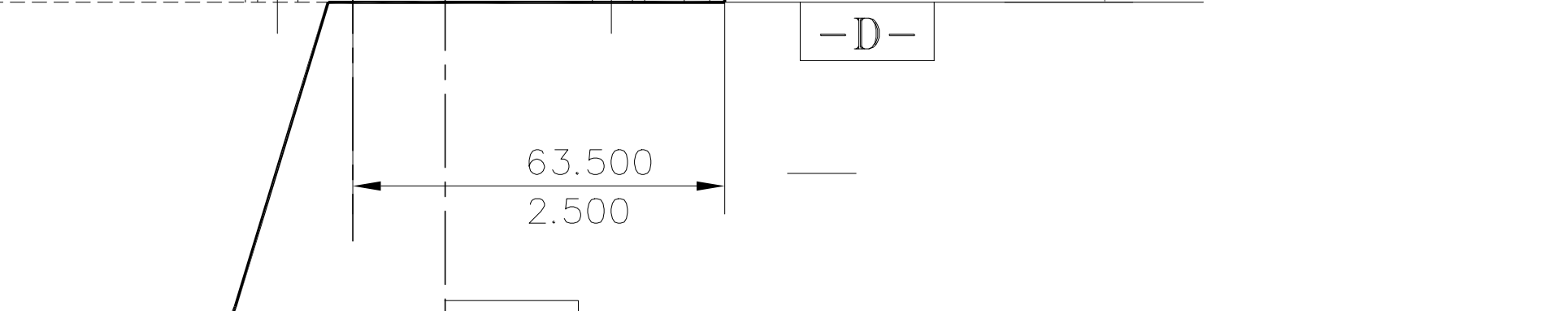


CENTER OF GRAVITY MARKING CAST ON FRONT OF SKULL AS SHOWN.

CG LOCATION OF HEAD ASSEMBLY

CIRCULAR MACHINED SURFACE SHALL BE  
 $\nabla$  .051/.002  
 $\parallel$  A | .127/.005

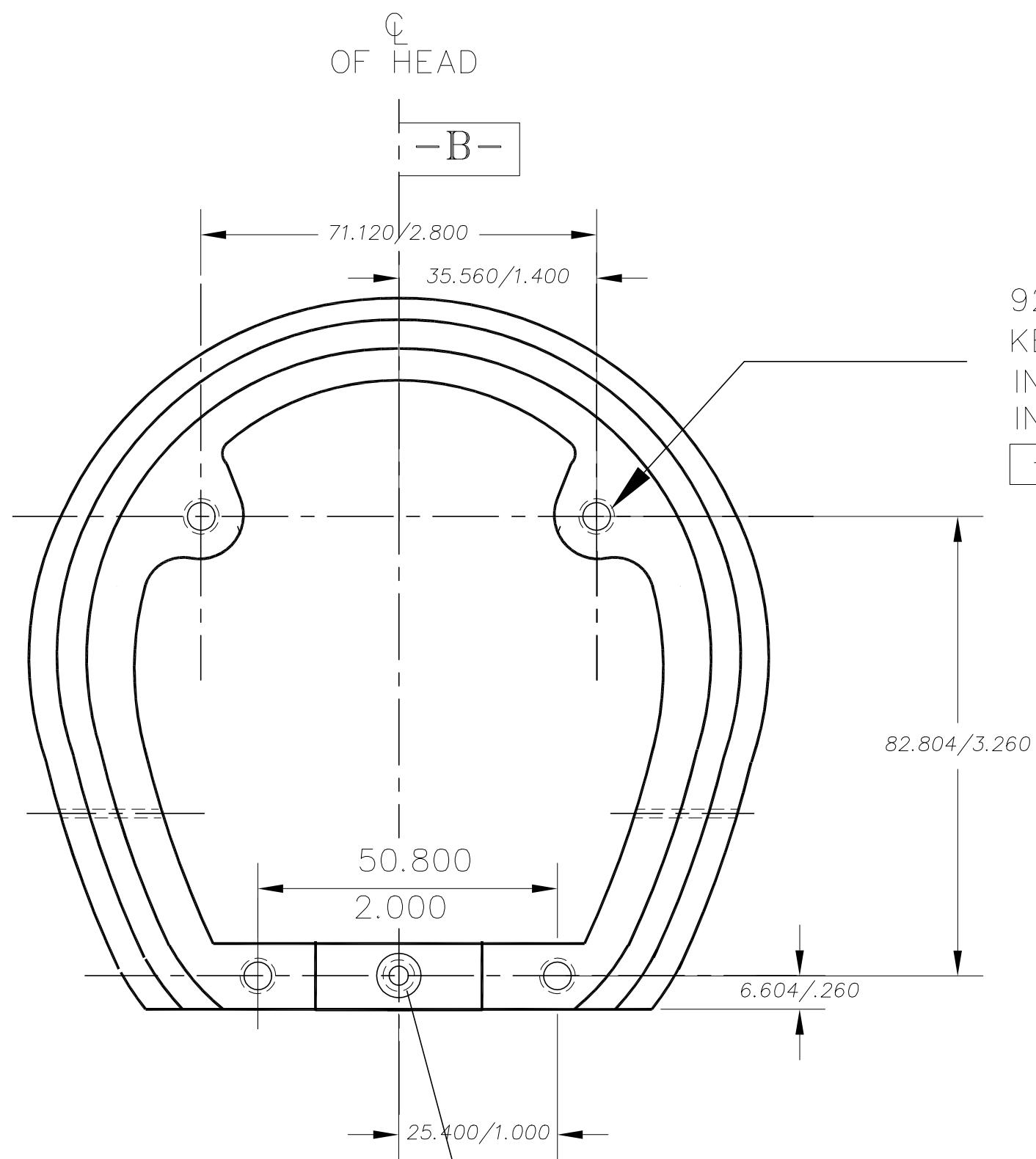
$\phi$ 1.575/.062 THRU 2 HOLES AS SHOWN  
 $\perp$  B | 0.356/.014



MACHINE INNER SURFACE OF SKULL  
 $\phi$ 89.4 +.51/-0.00 / 3.52 +.02/-0.00  
 $\odot$  C | .254/.01

$\phi$ 65.530/2.58 THRU

6.258/.257 $\phi$  DRILL THRU 4 PLACES ON 76.200/3.000 B.C. EQUALLY SPACED AS SHOWN



92041-013 INSERT (RKK 1/4-20 X .37 LG KEENSERT OR EQUIVALENT)(4 REQ'D) INSTALL THREADED INSERTS PER INSERT MANUFACTURER

⊕ C |  $\phi$ 0.356/0.014

Q OF HEAD -B-

92041-012 INSERT (RKK #10-32 X .31 LG KEENSERT OR EQUIVALENT)(1 REQ'D) INSTALL THREADED INSERTS PER INSERT MANUFACTURER

Note:  
 1. Skull-Head (Cast) Hybrid III Drawing No. 78051-148 REV (A) is used for Pattern Number and Material Requirements.

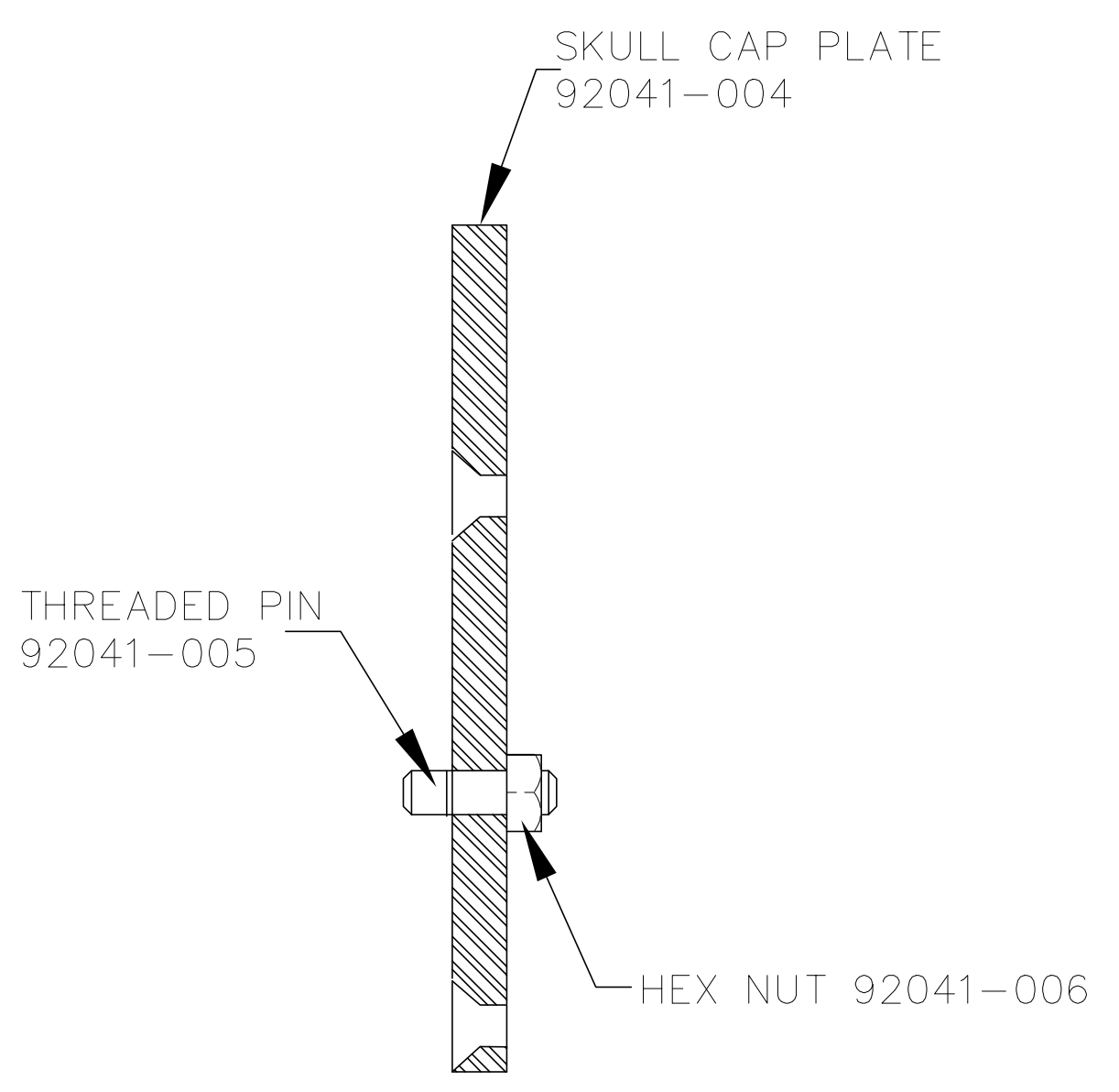
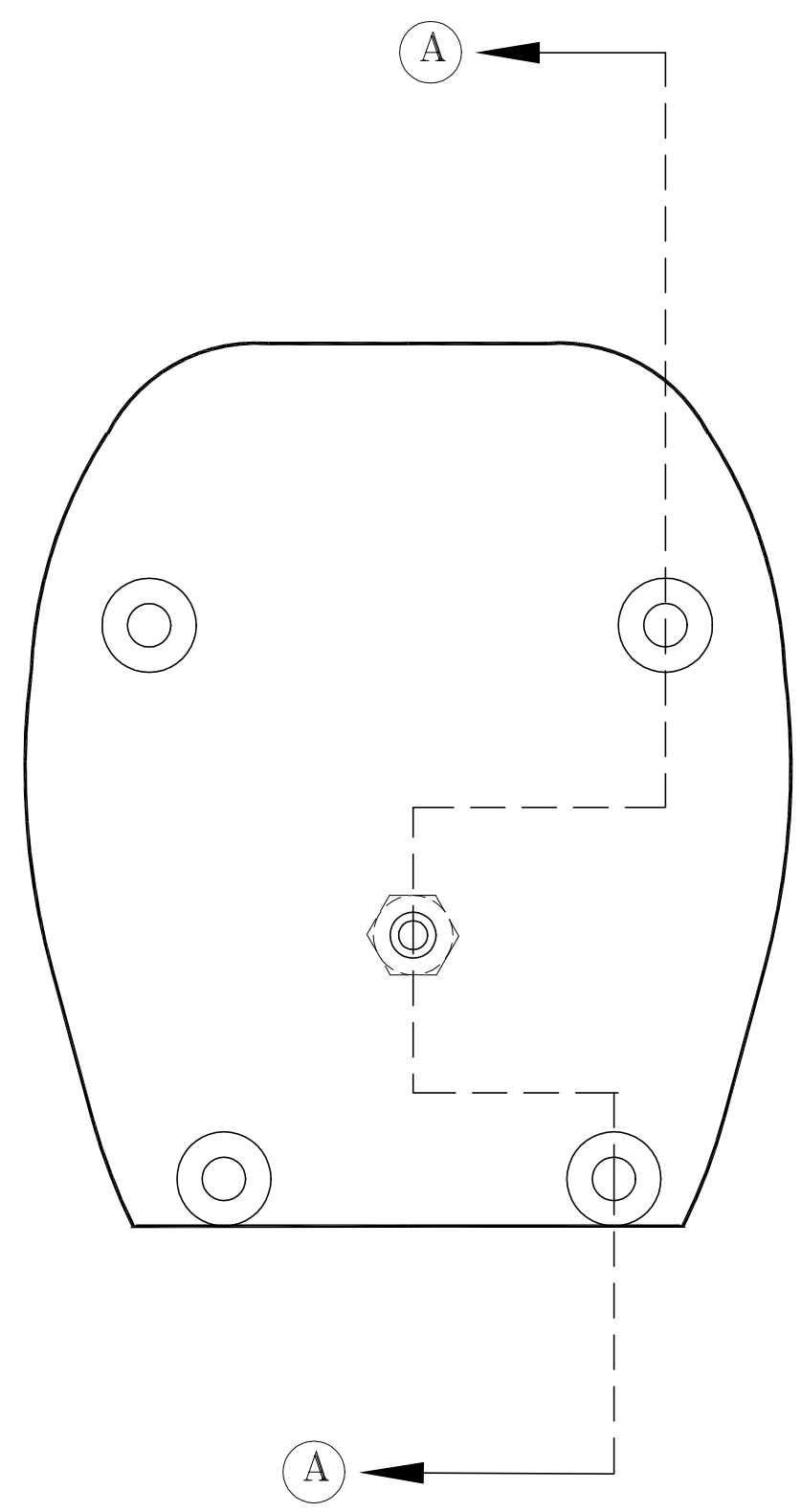
DO NOT SCALE DRAWING			<b>UNITED STATES DEPARTMENT OF TRANSPORTATION</b> National Highway Traffic Safety Administration (NHTSA) <b>VEHICLE RESEARCH AND TEST CENTER</b> EAST LIBERTY, OHIO 43319				
MATERIAL	FINISH	TOLERANCES ARE: *	ENGINEER	TITLE	DATE	SCALE	DRAWING NUMBER
SEE NOTE 1	MACHINED SURFACES SHALL NOT EXCEED 63 $\sqrt$	DECIMALS      ANGLES .XX ±0.25/01      + 1/2' .XXX ±0.13/005 * unless otherwise noted	Mike Beebe	Skull Assembly	11/30/92	Full	92041-002
MILLIMETER INCH	MILLIMETER/INCH	THIRD ANGLE PROJECTION 	DRAWN BY Linda England REV	DATE	SCALE	Full	DRAWING NUMBER 92041-002 bskula.dwg

REVISION RECORD			
DATE	LET	CHANGES	BY
8-17-78	A	MATERIAL REVISED	KLT

CAST USING PATTERN-78051-148  
 CASTING MUST BE SMOOTH, WELL CLEANED, FREE FROM HARMFUL POROSITY, CRACKS AND INCLUSIONS, CHILLS AND ANY OTHER DEFECTS DETRIMENTAL TO MACHINABILITY, APPEARANCE OR PERFORMANCE.  
 PIECE MARK USING PART NUMBER AND REVISION LETTER, AND SERIALIZE.  
 MATERIAL: (AA) 357.0 (A)  
 (UNS) A 03570


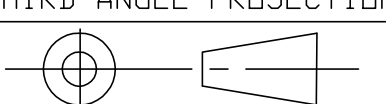
NOTE: READ CAREFULLY BEFORE STARTING: REPORT ALL ERRORS

DO NOT SCALE UNLESS OTHERWISE SPECIFIED, ALLOWABLE VARIATION ON ALL DIMENSIONS: DECIMALS: ± FRACTIONS: ± ANGLES: ±	DWG. BY: V.A.M./J.B.	<b>GM</b> PROVING GROUND GENERAL MOTORS CORPORATION
	ENGR.: WOLANIN	
	DATE: 5-20-78	TITLE: SKULL - HEAD (CAST) HYBRID III
	PROJ. NO.: MATERIAL: NOTED	DWG. No. 78051-148
FINISH:	HEAT TREAT: T6	SCALE: SHEET



SECTION A - A

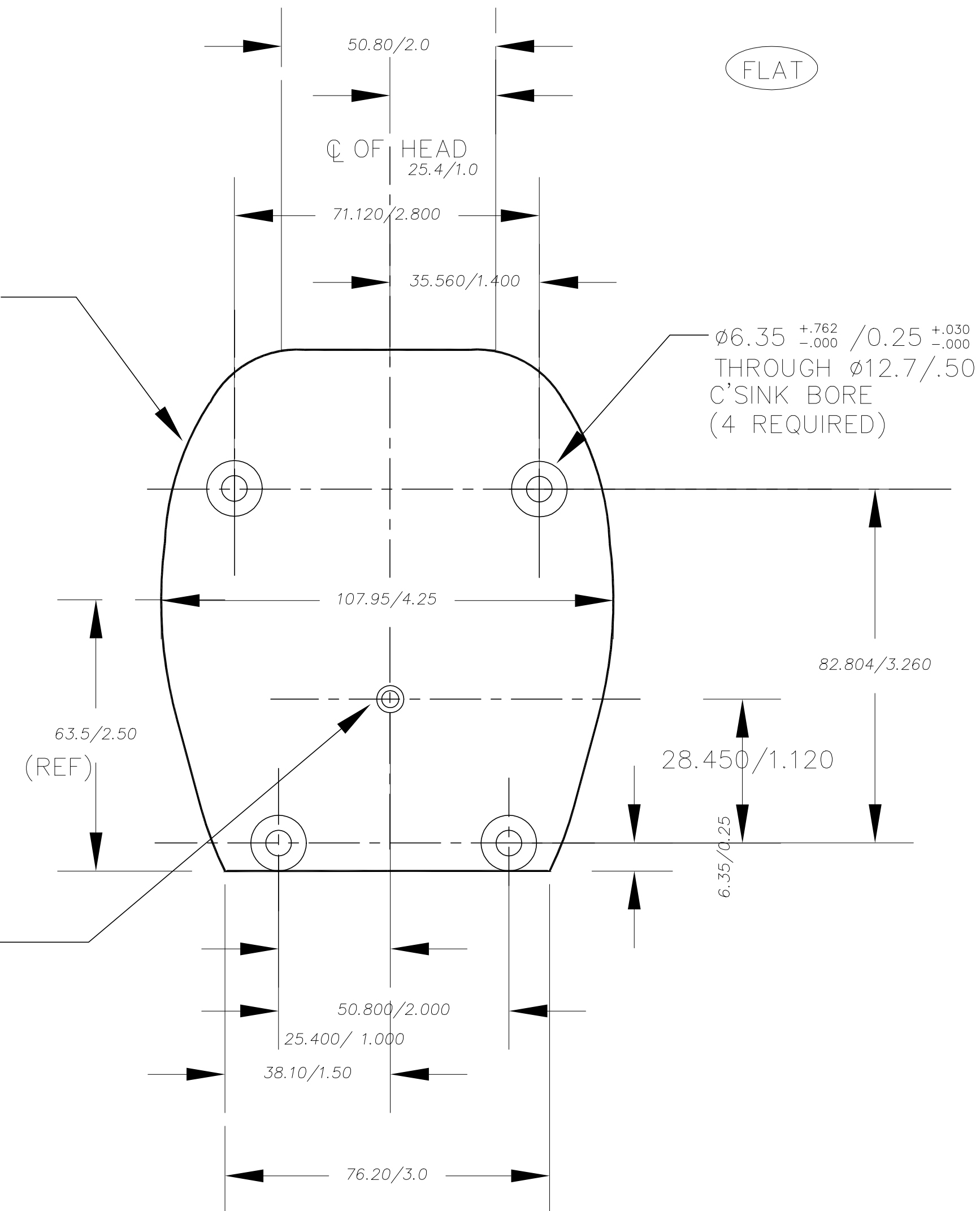
REVISION RECORD			
ITEM NO.	DATE	BY	DESCRIPTION

DO NOT SCALE DRAWING			 <b>UNITED STATES DEPARTMENT OF TRANSPORTATION</b> National Highway Traffic Safety Administration (NHTSA) <b>VEHICLE RESEARCH AND TEST CENTER</b> EAST LIBERTY, OHIO 43319				
MATERIAL	FINISH	TOLERANCES ARE: *	ENGINEER	TITLE	DATE	SCALE	DRAWING NUMBER
		DECIMALS      ANGLES .XX ±0.25/.01      + 1/2° .XXX ±0.13/.005 * unless otherwise noted	<i>Mike Beebe</i>	Skull Cap Plate Assembly	11/30/92	Full	92041-003
MILLIMETER ; MILLIMETER/INCH		THIRD ANGLE PROJECTION	DRAWN BY	REV		Assembly	skullcap.dwg
INCH			<i>Borda England</i>				

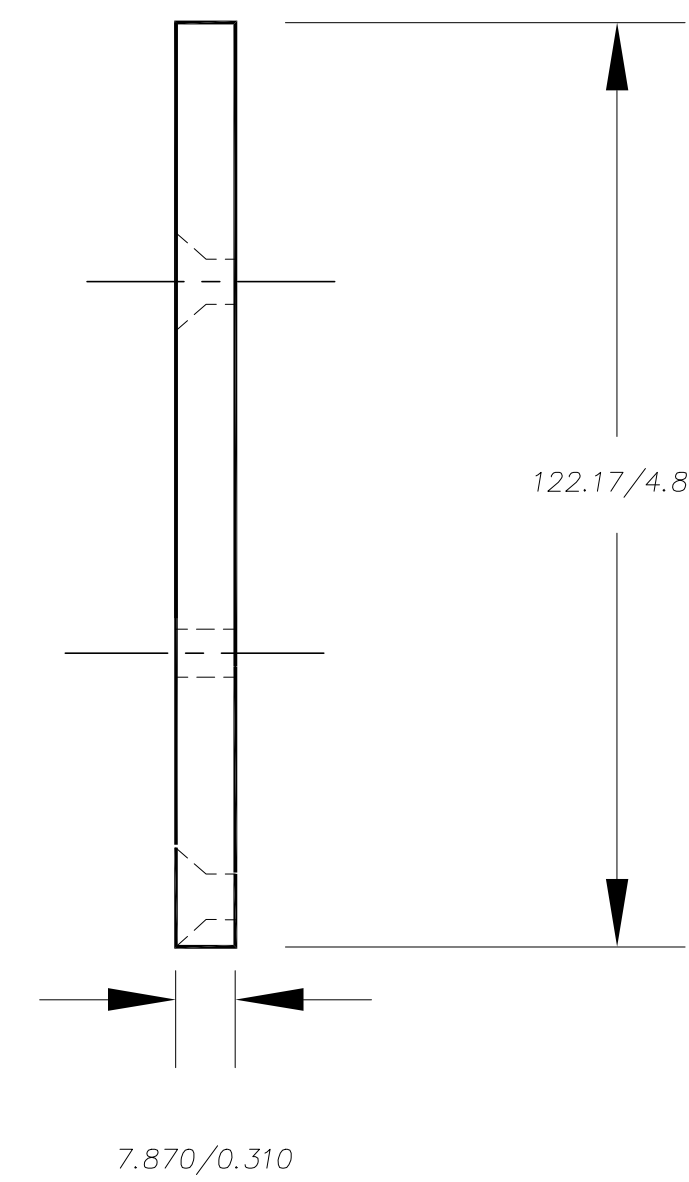
REVISION RECORD

ITEM NO.	DATE	BY	DESCRIPTION

USE DRAWING AS PATTERN  
FOR SKULL CAP OUTLINE  
DRAWN FULLSIZE.  
HOLD OUTLINE ±.01



1/4-20 TAP THROUGH



UNITED STATES DEPARTMENT OF  
TRANSPORTATION  
National Highway Traffic Safety Administration  
(NHTSA)

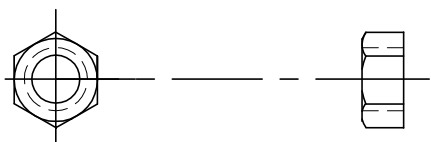
VEHICLE RESEARCH AND TEST CENTER  
EAST LIBERTY, OHIO 43319

MATERIAL	FINISH	TOLERANCES ARE: *	ENGINEER	TITLE	DATE	SCALE	DRAWING NUMBER
Steel 1018		DECIMALS .XX ±0.25/.01 .XXX ±0.13/.005 * unless otherwise noted	Mike Beebe	Skull Cap Plate	11/30/92	Full	92041-004
MILLIMETER INCH ; MILLIMETER/INCH		THIRD ANGLE PROJECTION	DRAWN BY Brenda England	REV		Dimension	scplate.dwg


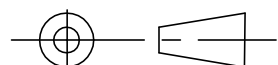




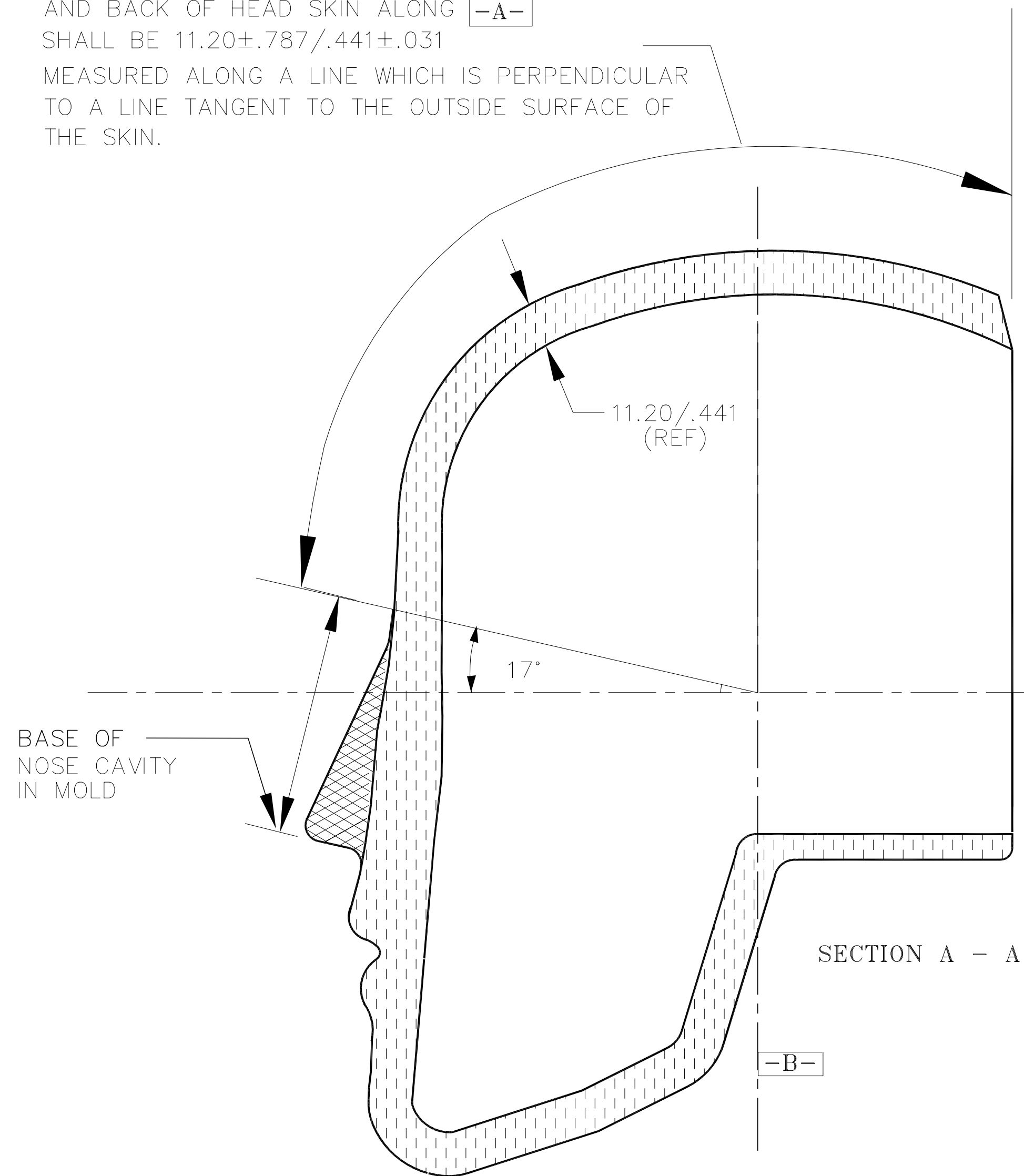
REVISION RECORD			
ITEM NO.	DATE	BY	DESCRIPTION



1/4 HEX NUT  
 1/4 - 20

<u>DO NOT SCALE DRAWING</u>			 <b>UNITED STATES DEPARTMENT OF TRANSPORTATION</b> National Highway Traffic Safety Administration (NHTSA) <b>VEHICLE RESEARCH AND TEST CENTER</b> EAST LIBERTY, OHIO 43319			
MATERIAL	FINISH	TOLERANCES ARE:	ENGINEER	TITLE		
Steel 1018		DECIMALS .XX ±0.25/.01      ANGLES + 1/2° .XXX ±0.13/.005	<i>Mike Beebe</i>	Hex Nut		
MILLIMETER / INCH ; MILLIMETER/INCH		THIRD ANGLE PROJECTION	DRAWN BY	DATE	SCALE	DRAWING NUMBER
			<i>Linda England</i>	11/30/92	Full	92041-006
			REV		Dimension	hexnut.dwg

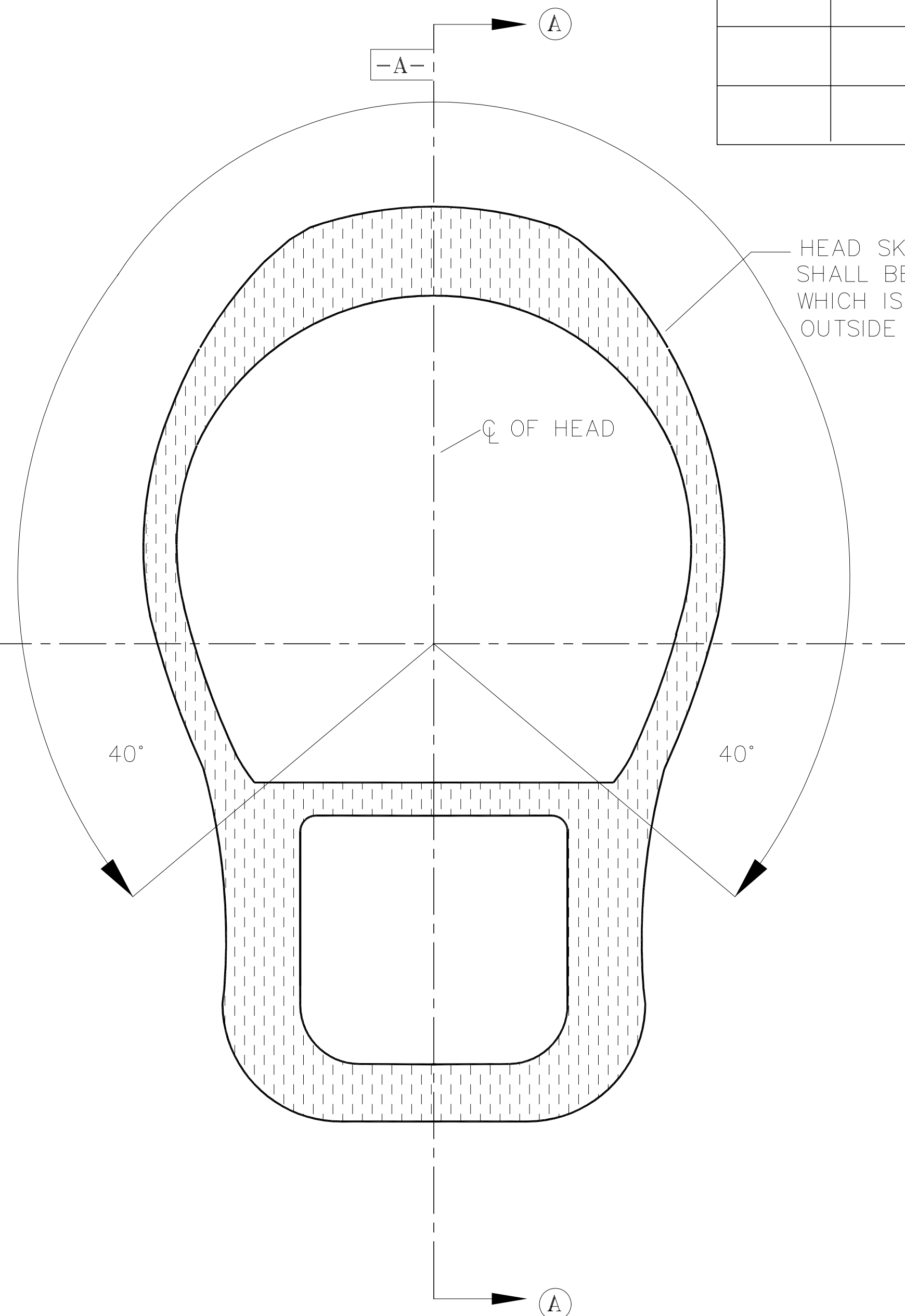
HEAD SKIN THICKNESS BETWEEN 17° REF LINE AND BACK OF HEAD SKIN ALONG **-A-** SHALL BE  $11.20 \pm .787 / .441 \pm .031$  MEASURED ALONG A LINE WHICH IS PERPENDICULAR TO A LINE TANGENT TO THE OUTSIDE SURFACE OF THE SKIN.



MANUFACTURING MOLD CHANGE

1. PLUG NOSE CAVITY IN HYBRID III FLESH MOLD. CAVITY WILL BE FILLED WITH AN ALUMINUM PLUG TO CREATE A  $12.70 \pm 7.88 / .50 \pm 0.31$  THICK SKIN THROUGH THE MIDSAGITTAL PLANE AS SHOWN.
2. SKULL INSERT IN FLESH MOLD WILL REQUIRE REMOVAL OF NOSE PRIOR TO MOLDING. (REF. COULD BE STD. HYBRID III SKULL).

REVISION RECORD			
ITEM NO.	DATE	BY	DESCRIPTION


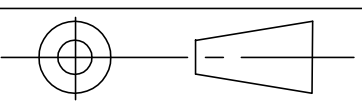


HEAD SKIN THICKNESS BETWEEN 40° REF LINES AND ALONG **-B-** SHALL BE  $11.20 \pm .787 / .441 \pm .031$  MEASURED ALONG A LINE WHICH IS PERPENDICULAR TO A LINE TANGENT TO THE OUTSIDE SURFACE OF THE SKIN.

NOTES:

1. USE HYBRID III SKIN PATTERN 78051-228 (REV-B). NOSE SECTION WILL BE REMOVED PER THIS DRAWING.
2. MATERIAL WILL BE PER HYBRID III DWG 78051-228 REV-B PT-4. DRAWING NO. 78051-372 (NO REV. LEVEL) CONTAINS FORMULATION SPECIFICATION FOR PT-4.
3. MATERIAL SPECIFICATION: VINYL PLASTISOL (REF)  
DUROMETER SHORE "A" - 37-42 (REF)  
 PER ASTM TEST D-2240  
RESILIENCE USING REBOUND - 50% (REF)  
 PENDULUM PER ASTM TEST D-1054  
TENSION PROPERTY - 960 psi ULTIMATE ELONGATION 400% (REF)  
 PER METHOD A ASTM TEST D-412  
 300% MOD 760 psi (REF)  
 100% MOD 310 psi (REF)  
SPECIFIC GRAVITY - 1.075 (REF)  
 PER ASTM TEST D-792  
 METHOD A-1

DO NOT SCALE DRAWING

MATERIAL:		TOLERANCES ARE: *		 <b>UNITED STATES DEPARTMENT OF TRANSPORTATION</b> National Highway Traffic Safety Administration (NHTSA) <b>VEHICLE RESEARCH AND TEST CENTER</b> EAST LIBERTY, OHIO 43319			
SEE NOTE 1		DECIMALS .XX ±0.25/.01 .XXX ±0.13/.005 * unless otherwise noted	ANGLES + 1/2'				
MILLIMETER INCH	; MILLIMETER/INCH	THIRD ANGLE PROJECTION 		DRAWN BY <i>Bonda England</i>	DATE 11/30/92	SCALE Full	DRAWING NUMBER 92041-008 skin.dwg

REVISION RECORD			
DATE	LET	CHANGES	BY
7-23-79	A	NOTE REVISED	MLD
9-24-79	B	SKIN THICKNESS SPEC. ADDED	K.W.

MOLD USING PATTERN \* 78051-228  
 SEPARATE INTO SKULL SKIN \* 78051-228  
 AND REAR SKULL CAP SKIN \* 78051-229

MATERIAL:  
 FORMULATION PT-4

Ⓑ SKIN THICKNESS AT ANY LOCATION  
 SHALL NOT BE LESS THAN 0.08.

PIECE MARK USING PART NUMBER  
 AND REVISION LETTER AND SERIALIZE.  
 Ⓐ WITH HOT IRON

NOTE: READ CAREFULLY BEFORE STARTING; REPORT ALL ERRORS

DO NOT SCALE UNLESS OTHERWISE SPECIFIED, ALLOWABLE VARIATION ON ALL DIMENSIONS: DECIMALS: ± _____ FRACTIONS: ± _____ ANGLES: ± _____ FINISH: _____	DWG. BY: <i>VAM/SMB</i>	<b>GM</b> PROVING GROUND GENERAL MOTORS CORPORATION
	ENGR.: WOLANIN	
	DATE: 5-20-78	TITLE: SKIN - HYBRID III
	PROJ. NO.: 90-885-001	MATERIAL: VINYL PLASTISOL
HEAT TREAT: _____	SCALE: _____	DWG. No. 78051-228 SKIN - SKULL
	SHEET	78051-229 SKIN - RR. SKULL CAP

REVISION RECORD			
DATE	LET	CHANGES	BY

PT-1

GEON 121,	PVC HOMOPOLYMER, B.F. GOODRICH	80 LBS.
DIOCTYL PHTHALATE(DOP),	PLASTICIZER,	80 LBS.
PARAPLEX G-62,	PLASTICIZER,	8 LBS.
FERRO 5871,	ROHM & HAAS	2 LBS
K-17961,	FERRO CORP.	24 LBS
PIGMENTS,	CLAREMOUNT POLYCHEMICAL	120 GRAMS.
	CLAREMOUNT POLYCHEMICAL	120 GRAMS.
	CLAREMOUNT POLYCHEMICAL	4 GRAMS.

PT-2

MARVINOL VR-51,	PVC COPOLYMER	UNIROYAL	100 LBS.
DIOCTYL PHTHALATE(DOP)	PLASTICIZER,		80 LBS.
PARAPLEX G-62,	PLASTICIZER,	ROHM & HAAS	5 LBS.
FERRO 5871,	STABILIZER,	FERRO CORP	3 LBS.
K-17961,	WHITE PASTE,	CLAREMOUNT POLYCHEMICAL	25 LBS.
PIGMENTS,	K-925	CLAREMOUNT POLYCHEMICAL	150 GRAMS.
	K-973	CLAREMOUNT POLYCHEMICAL	150 GRAMS
	K-951	CLAREMOUNT POLYCHEMICAL	3 GRAMS

PT-3

MIX 50% BY VOLUME OF PT-1 AND  
50% BY VOLUME OF PT-2.

PT-4

GEON 121,	PVC HOMOPOLYMER, B.F. GOODRICH	20.5 LBS.
DIOCTYL PHTHALATE(DOP)	PLASTICIZER,	12.5 LBS.
TRYCRESYL PHOSPHATE(TCP)	PLASTICIZER,	6.0 LBS.
ADMEX 710	PLASTICIZER,	10.0 LBS.
VANCIDE 89	FUNGICIDE	.5 LBS.
MARK 755	STABILIZER	.5 LBS.
COLOR PREMIX.		
DOP	.49 LBS.	
K925	34.5 GRAMS	
K973	34.5 GRAMS	
D747	.4 GRAMS	.64 LBS

NOTE: READ CAREFULLY BEFORE STARTING: REPORT ALL ERRORS

DO NOT SCALE UNLESS OTHERWISE SPECIFIED, ALLOWABLE VARIATION ON ALL DIMENSIONS: DECIMALS: ± FRACTIONS: ± ANGLES: ± FINISH:	DWG. BY: D.HEDGES	<b>GM</b> PROVING GROUND GENERAL MOTORS CORPORATION
	ENGR.: WOLANIN	
	DATE: 5-20-78	TITLE: VINYL SKIN FORMULATION HYBRID III
	PROJ. NO.: 70-885-801	SCALE: SHEET
	HEAT TREAT:	DWG. No. 78051-372

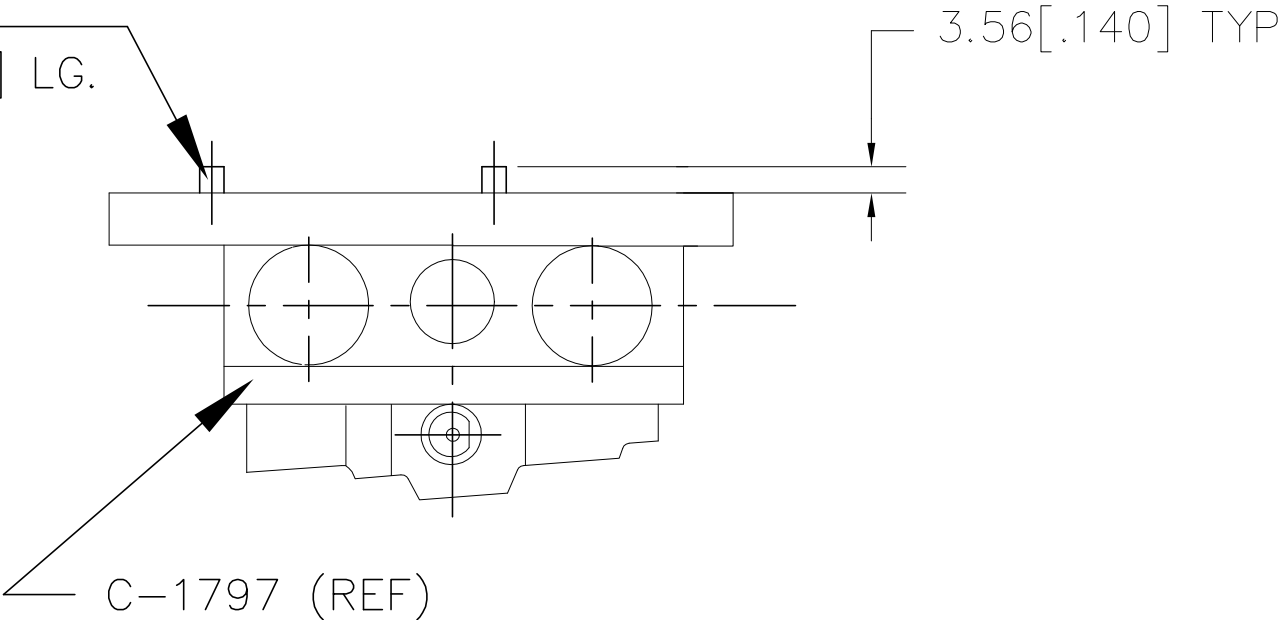
REVISION RECORD			
ITEM NO.	DATE	BY	DESCRIPTION


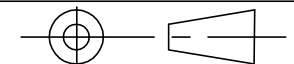
92041-016 PIN (2 REQ'D)  
 3.1979/3.200 [.1259/.1260] X 9.525[.375] LG.  
 (HOLOKROME DOWEL OR EQUIVALENT)

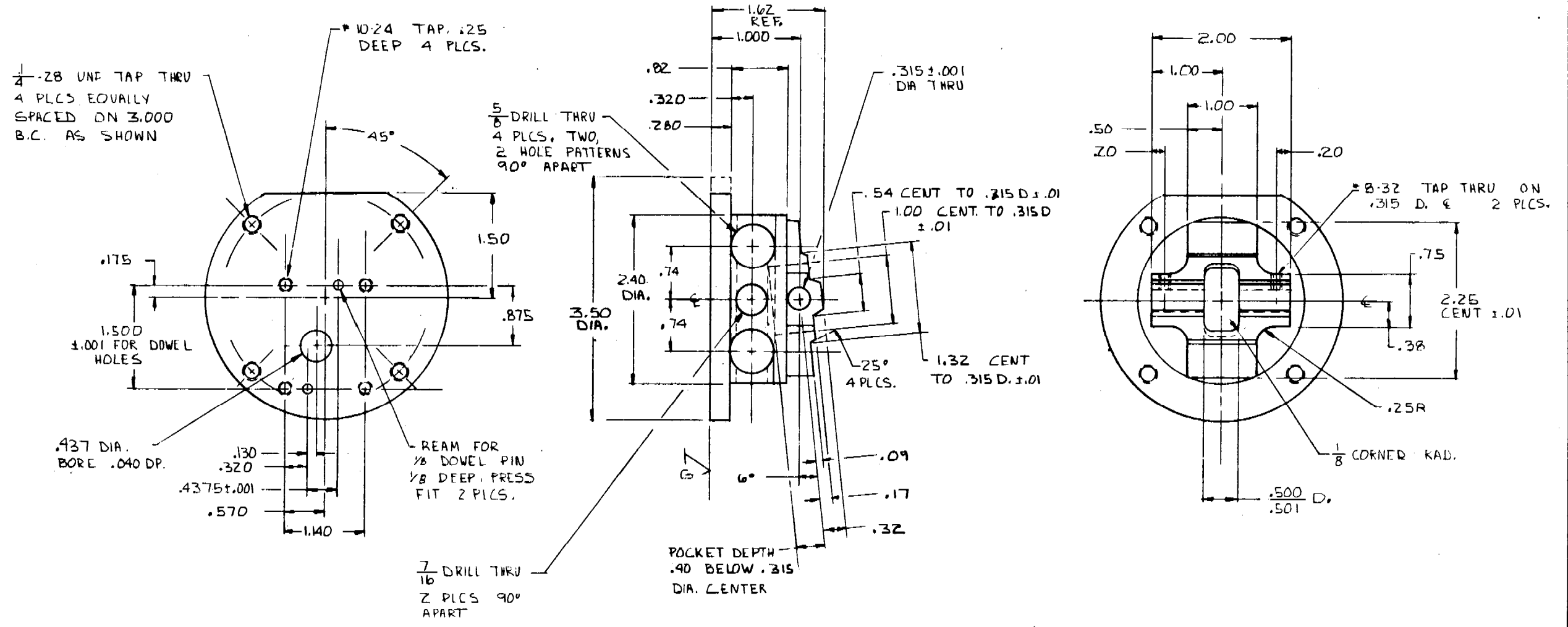
92041-009 IS MADE FROM  
 C-1797 (DENTON INC) NECK BLANK  
 DRAWING OR EQUIVALENT.

NOTE:

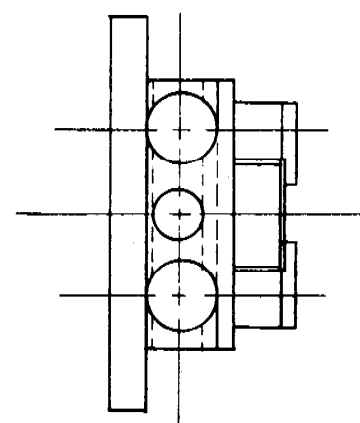
- WEIGHT SPEC FOR THIS PART SHALL BE  $.635 \pm .02$  kg/ $1.40 \pm .05$  lb.



<u>DO NOT SCALE DRAWING</u>			 <b>UNITED STATES DEPARTMENT OF TRANSPORTATION</b> National Highway Traffic Safety Administration (NHTSA) <b>VEHICLE RESEARCH AND TEST CENTER</b> EAST LIBERTY, OHIO 43319			
MATERIAL	FINISH	TOLERANCES ARE:		ENGINEER	TITLE	
		DECIMALS	ANGLES	<i>Mike Beebe</i>	Six-Axis Load Cell Simulator Assembly	
		.XX ±0.25/.01	+ 1/2°	DRAWN BY	DATE	SCALE
		.XXX ±0.13/.005		<i>Serda England</i>	11/30/92	Full
		.XXXX ±0.0635/.0025		REV		Dimension
MILLIMETER ; MILLIMETER/INCH INCH		THIRD ANGLE PROJECTION		DRAWING NUMBER		DRAWING NUMBER
				92041-009		neckblnk.dwg

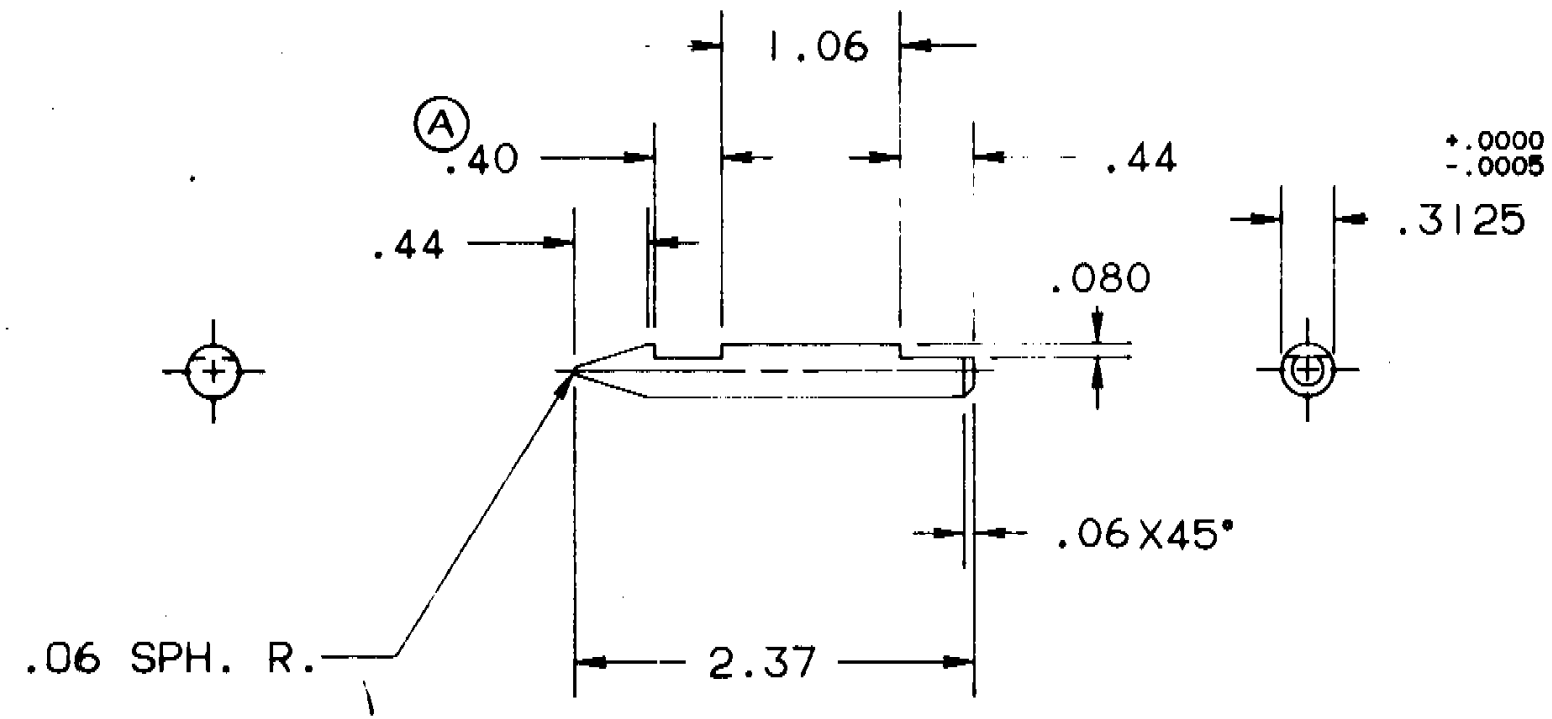


NOTES  
 1. MAT'L - A140, LEADED OPTIONAL  
 HEAT TREAT RC 38-42  
 2. TOLERANCES: 2 PLC. DEC.  $\pm .01$   
 3 PLC. DEC.  $\pm .005$   
 OR AS NOTED

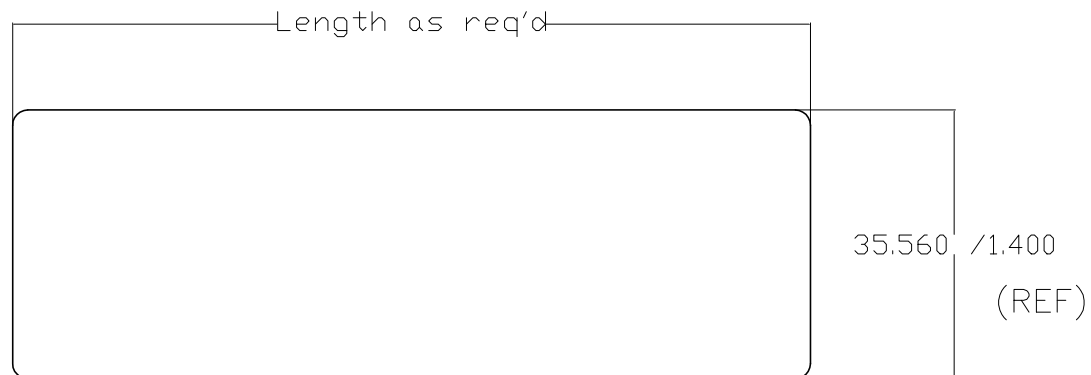
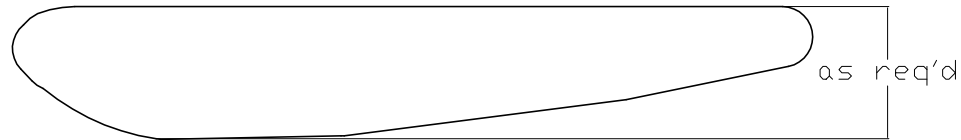


NECK BLANK		
SCALE: FULL	APPROVED BY:	DRAWN BY: C.F. NORD
DATE: 8-1-89		REVISED
Robert A. Denton, Inc. ROCHESTER, MICHIGAN		DRAWING NUMBER C-1797


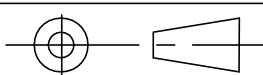
DATE	BY	REVISION RECORD	AUTH.	DR.	OK.
5/19/78	A	.40 WAS .25		M.S.	



Safety Research and Development Lab		
<input type="checkbox"/> FLATNESS <input type="checkbox"/> STRAIGHTNESS <input type="checkbox"/> ROUNDNESS <input checked="" type="checkbox"/> CYLINDRICITY <input type="checkbox"/> PROFILE OF ANY LINE <input type="checkbox"/> PROFILE OF ANY SURFACE <input type="checkbox"/> SYMMETRY	<input type="checkbox"/> PARALLELISM <input type="checkbox"/> SQUARENESS <input type="checkbox"/> ANGULARITY <input checked="" type="checkbox"/> RUNDOUT (CIRCULAR) <input checked="" type="checkbox"/> TRUE POSITION <input checked="" type="checkbox"/> CONCENTRICITY <input checked="" type="checkbox"/> RUNDOUT (TOTAL)	
DO NOT SCALE		
90° CHAMFER/SINK TAPPED HOLES TO MAJOR THREAD DIAMETER		
TOLERANCES NOT OTHERWISE SPECIFIED		
ANGLES: 1 PLACE DECIMALS * ( ) 2 PLACE DECIMALS * 3 PLACE DECIMALS *		COMMERCIAL TOLERANCES APPLY TO ROLLED AND DRAWN SECTIONS, SHEET METAL BARS AND DRILLED HOLES.
DWG DATE 5-20-78	SCALE FULL	DRAWN BY M.M.F.
MATERIAL .3125 D.R. SS		CHECKED
FINISH		APPROVED P. DILL
HEAT TREAT		APPROVED
PROJECT NO. 90-885-801	MODEL	REFERENCE
NAME PIVOT PIN-NECK TRANSDUCER		
PART NO. 78051-339		A3




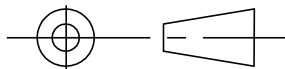
REVISION RECORD			
ITEM NO.	DATE	BY	DESCRIPTION

<u>DO NOT SCALE DRAWING</u>			 <b>UNITED STATES DEPARTMENT OF TRANSPORTATION</b> National Highway Traffic Safety Administration (NHTSA) <b>VEHICLE RESEARCH AND TEST CENTER</b> EAST LIBERTY, OHIO 43319			
MATERIAL	FINISH	TOLERANCES ARE:				
Cerrobase		DECIMALS	ANGLES			
		.XX ±0.25/.01	+ 1/2°			
		.XXX ±0.13/.005				
MILLIMETER INCH ; MILLIMETER/INCH		THIRD ANGLE PROJECTION		ENGINEER	TITLE	
				<i>Mike Beebe</i>	Head Ballast Weight	
				DRAWN BY	DATE	
				<i>Gerda England</i>	11/30/92	
				REV	SCALE	
					Full	
					Dimension	
					DRAWING NUMBER	
					92041-011	
					ballast.dwg	



## ACCELEROMETER SPECIFICATION

RANGE	+/- 2000 g
MOUNTED RESONANCE FREQUENCY	25000 Hz minimum
FREQUENCY RESPONSE (+/- 5% MAX, REF. 100 Hz)	0 to 4000 Hz minimum range
DAMPING RATIO	.005 of critical (typical)
TRANSVERSE SENSITIVITY	1% max
THERMAL SENSITIVITY	-5% max, -18 to 66°C [0 to 150°F]
ACCELERATION LIMITS (SHOCK)	5 000 g min, 200 microsec or longer
SINUSOIDAL VIBRATION LIMITS	1000 g below 4000 Hz min
TEMPERATURE EXPOSURE LIMITS	-18 to 66°C [0 to 150°F] operational -54 to 93°C [-65 to 200°F] storage
WEIGHT	1 gram [0.002 lb] without cable
SIZE	any shape inside a 15.24 mm [.60 in] cube
HUMIDITY	sealed

R E V I S I O N   R E C O R D							 <b>UNITED STATES DEPARTMENT OF TRANSPORTATION</b> National Highway Traffic Safety Administration (NHTSA)					
ITEM NO.	DATE	BY	DESCRIPTION	MATERIAL	FINISH	TOLERANCES ARE:		ENGINEER <i>Mike Beebe</i>	TITLE Accelerometer Specification			
						DECIMALS .XX ±0.25/.01 .XXX ±0.13/.005	ANGLES + 1/2°					
				MILLIMETER INCH ; MILLIMETER/INCH		THIRD ANGLE PROJECTION		DRAWN BY <i>Gerda England</i>	DATE 11/30/92	SCALE	DRAWING NUMBER SA572-S4	
								REV			accspec.dwg	