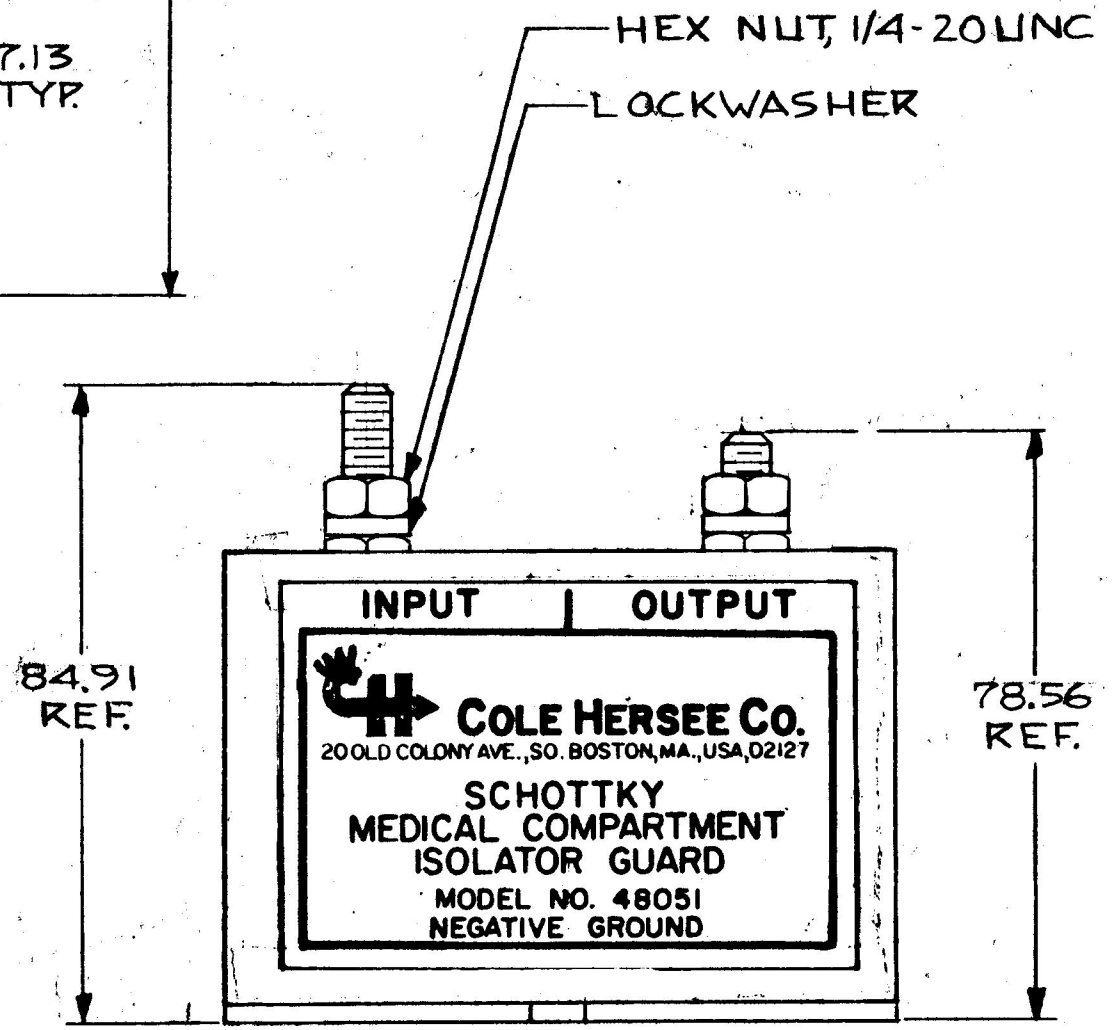
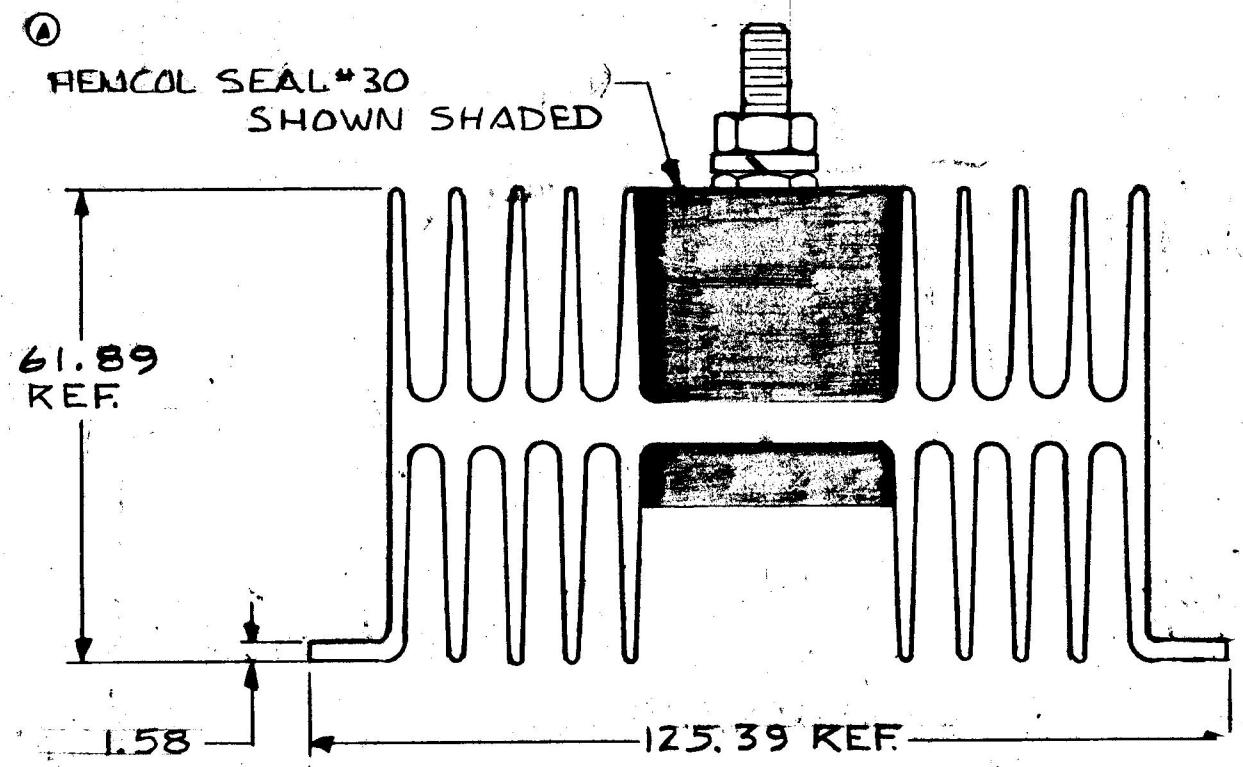
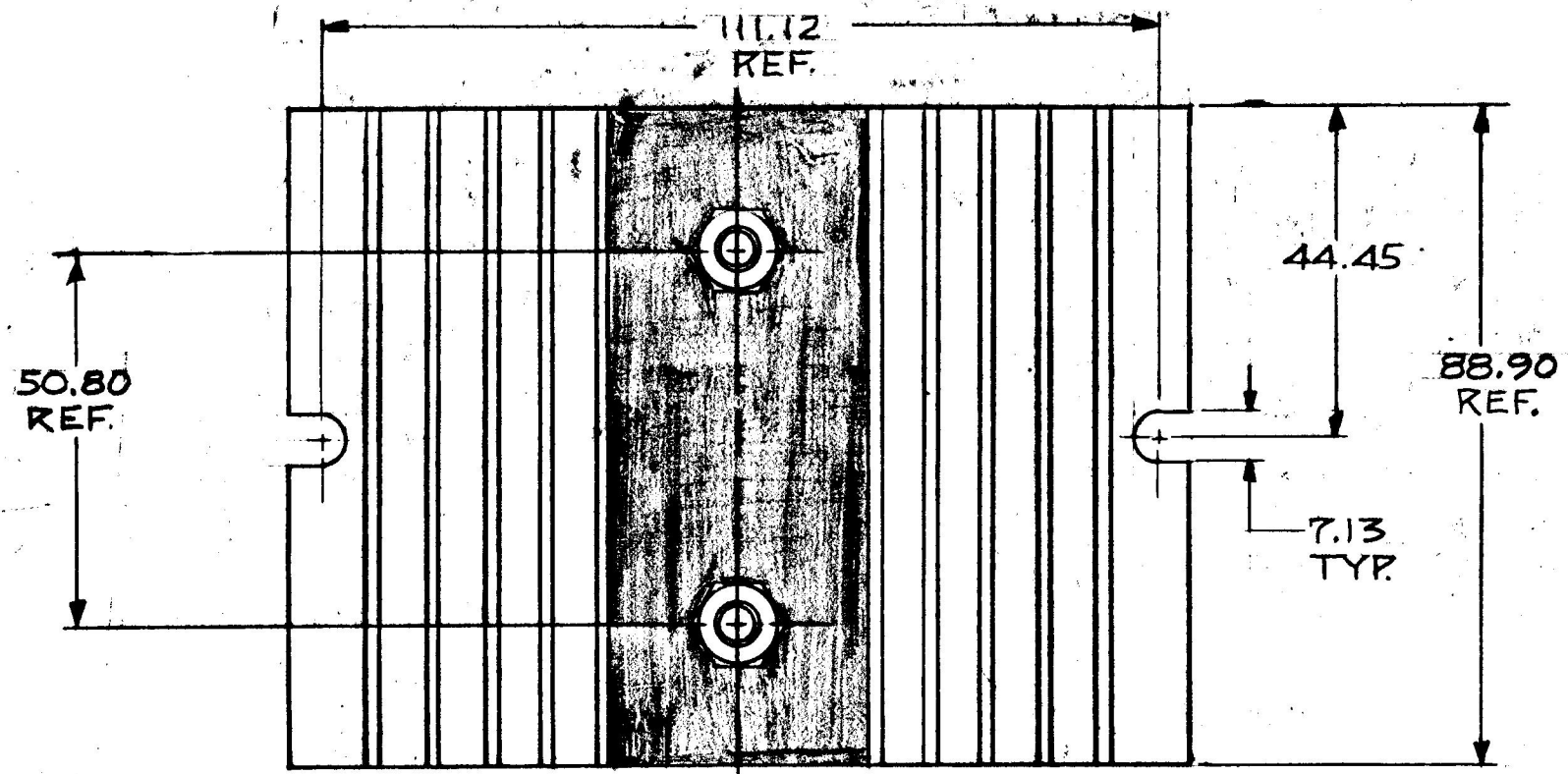


MM IN  
 7.13 281  
 17.92 312  
 44.45 1.750  
 50.80 2.000  
 61.89 2.437  
 78.56 3.093  
 84.91 3.343  
 88.91 3.500  
 125.39 4.937  
 1.58 .062  
 111.12 4.375



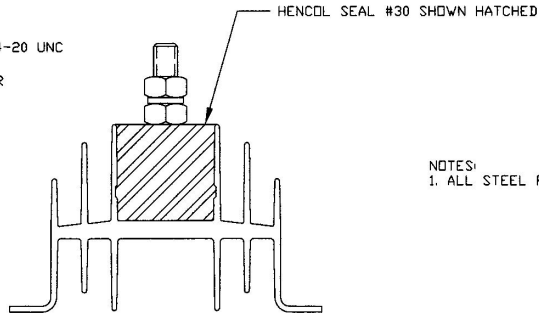
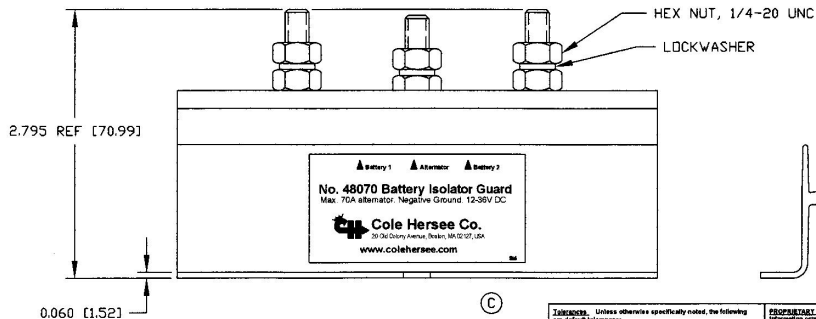
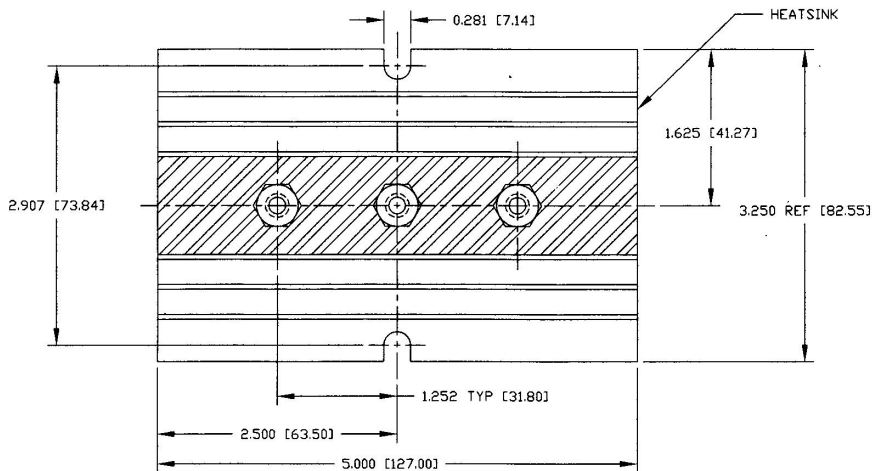
NOTE  
 ALL STEEL PARTS PLATED

DO NOT SCALE

LET.	WAS	DATE	BY	LET.	WAS	DATE	BY	MATERIAL	DRAWN	CHECKED	APPR'D.	SCALE	DATE DRAWN
									DPS	RJA		1:1	7-27-81
				B	ECN 25623	8/17/94	IF	FINISH	Cole Hersee Co. 20 OLD COLONY AVENUE, SOUTH BOSTON, MA, U.S.A. 02127				DATE BLUEPRINT
				A	REVISED NOTE	4/30/84	ups	TOLERANCES					SCHOTTKY ISOLATOR GUARD 75 AMPS
					LSM	3/21/82	MF	DECIMAL ±.010 METRIC ±.25					

METRIC

COLE-HERSEE CO.  
 EX 1938Z



NOTES:  
1. ALL STEEL PARTS PLATED

**Revision Control Record**

Rev.	Description of Change	ECN No.	Date
B	NEW LABEL	01273	5/16/01
C	BATTERY 2 WAS BATTERY 1	03626	11/18/03

(C)

**TOLERANCES:** Unless otherwise specifically noted, the following are default tolerances:  
 • 2-place Decimal Dimensions  $\pm .02"$   
 • 3-place Decimal Dimensions  $\pm .005"$   
 • Angular Dimensions  $\pm 0.5$  Deg.  
 • Holes: Refer to equivalent English Dimensional Tolerance  
 •  $\pm .005$  NOTE: All tolerances are Minus-Direction, unless otherwise specifically noted.

**Dimensional Limits:** All dimensions are expressed in inches except those shown in brackets (xxx) as expressed in millimeters.

**DMC** = **Dimensional Modification** - Minus-Tolerance Reference Dimension, shown for distribution purposes only.

Used On: \_\_\_\_\_ Scale: **1:1**  
 or Ref: \_\_\_\_\_

**PROPRIETARY INFORMATION:** This Engineering Drawing, and the information contained herein, is proprietary to Cole Hersee Company and may not be disclosed, re-produced, or in any other way transferred or communicated to any other party without the express written consent of an authorized representative of Cole Hersee Company.

**DESIGN CONTROL:** It is the responsibility of the individual using/relaying this drawing to ensure that the stated design revision level agrees with the revision level of the Controlled Document (Master Drawing). This is a **NON-CONTROLLED DOCUMENT** unless otherwise specifically noted.

Do NOT SCALE - dimensional variations may occur during printing/ reproduction.

Drawn By: **DPS** Date Drawn: **1/27/83**

**Essential Characteristics:**

- Critical Characteristic, relating to Safety and/or Regulatory Compliance
- Significant Characteristic relating to Process Control (SPC)
- Key Characteristic(s) relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer.

Note that the Identification of any Characteristics as being "essential" does not alter the requirement that ALL specified dimensions & tolerances must be met.

Responsible Engineer: **N/A** Pg. 1 of 1

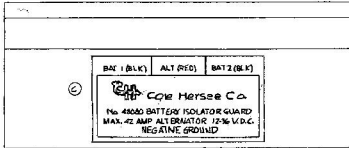
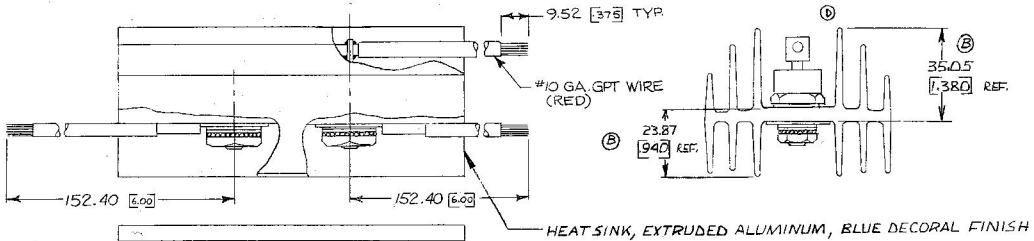
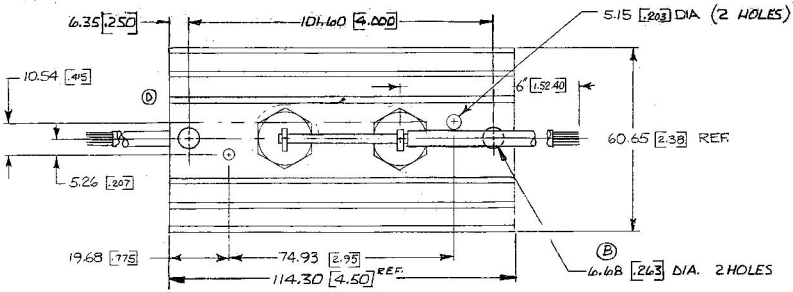
**Cole Hersee Co.**  
 20 Old Colony Ave., South Boston, MA, 02107  
 Phone: 617-268-2100 Web: www.colehersee.com

**Description:** **70 AMP BATTERY ISOLATOR GUARD**

**Drawing Part No.:** **48070**

**Current Rev.:** **C**

48080



DIMENSIONS: MILLIMETERS [INCHES]

Confidential Property of Cole Hersee

42 AMP @ 12-36 VDC

DO NOT SCALE

LET	WAS	DATE	BY	LET	WAS	DATE	BY	MATERIAL	DEWEN	CHECKED	APPROV'D	SCALE	DATE DRAWN
								FINISH	C.S.	1/18/76		1:1	9-19-75
				D	ECN 02133	3/2/82	ML	FINISH					
				C	REV LABEL	2/28/83	PS	FINISH					
				B	REV 2/1/83	10/3/85	ES						
				A	REDRAWN	1/4/84	ES	TOLERANCES: FRACTIONAL ± .01 DECIMAL ± .01					

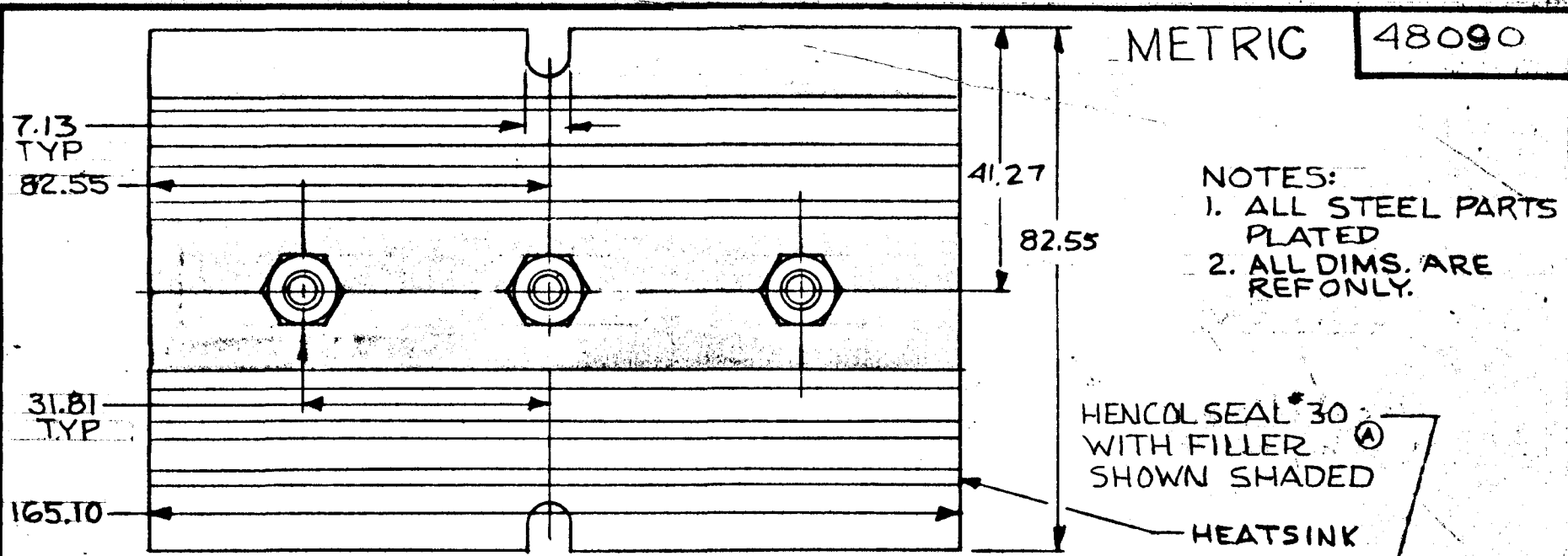
COLE-HERSEE COMPANY  
BOSTON, MASS. 0227, U.S.A.

BATTERY ISOLATOR GUARD  
42 AMP

DATE BLUEPRINT  
48080

EX-17312

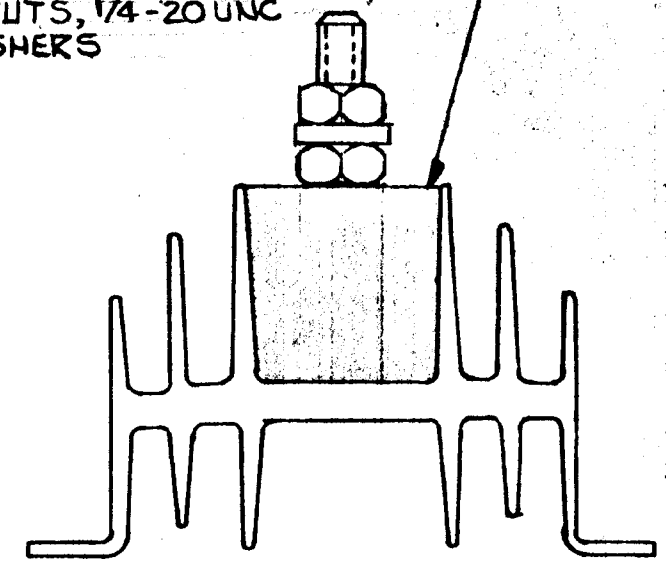
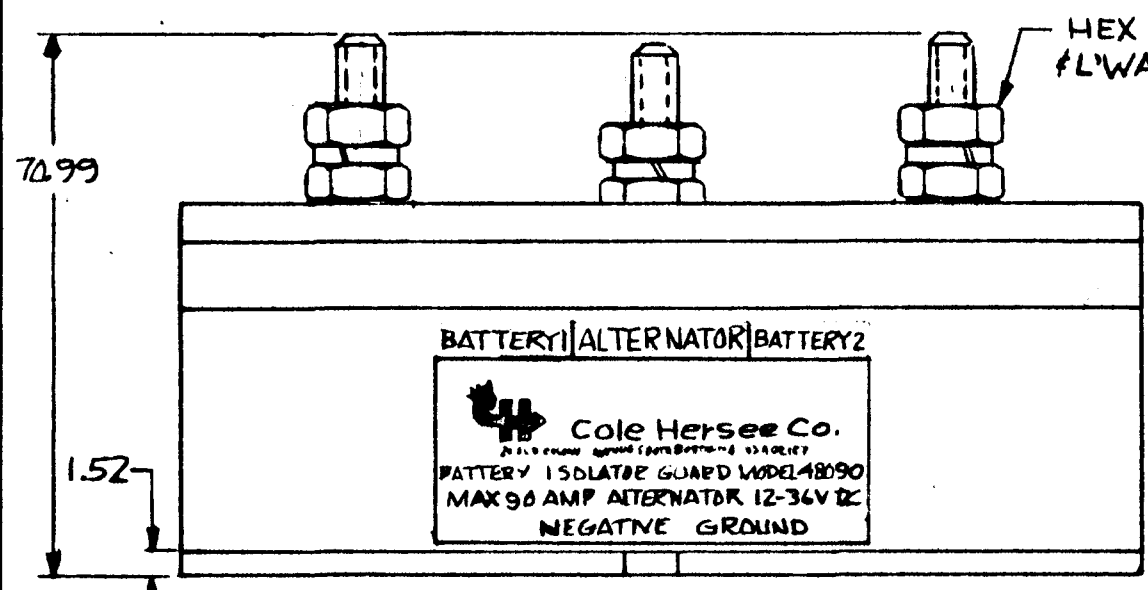
MM IN  
 1.52 .060  
 7.13 .281  
 31.81 1.252  
 41.27 1.625  
 82.55 3.250  
 70.99 2.795  
 87.55 3.250  
 165.10 6.500



METRIC 48090

- NOTES:  
 1. ALL STEEL PARTS PLATED  
 2. ALL DIMS. ARE REF ONLY.

EX 20328

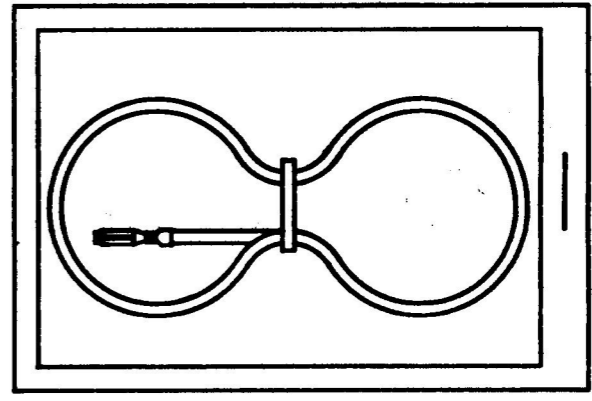
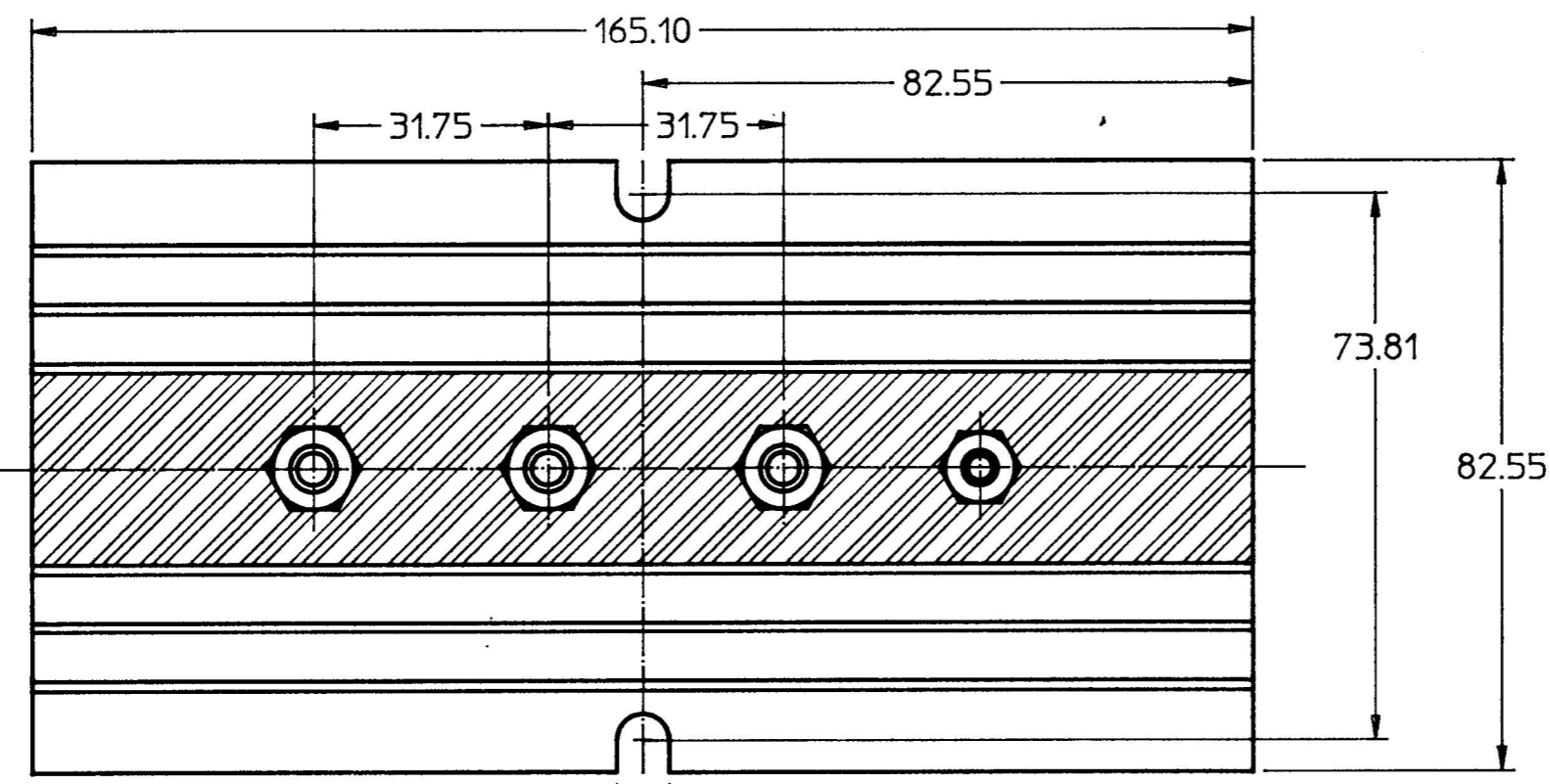


DO NOT SCALE

LET.	WAS	DATE	BY	LET	WAS	DATE	BY	MATERIAL	DRAWN	CHECKED	APPR'D	SCALE	DATE DRAWN
									DPB	RFB		1:1	9/13/83
								FINISH	 Cole Hersee Co. <small>20 OLD COLONY AVENUE SOUTH BOSTON MA U.S.A. 02127</small>				DATE BLUEPRINT
								TOLERANCES					
				A	REV. NOTE	4/27/84	DPB	DECIMAL ±	90 AMP BATTERY ISOLATOR GUARD				48090
					ISSUED	3/9/84	RFB	METRIC ±					

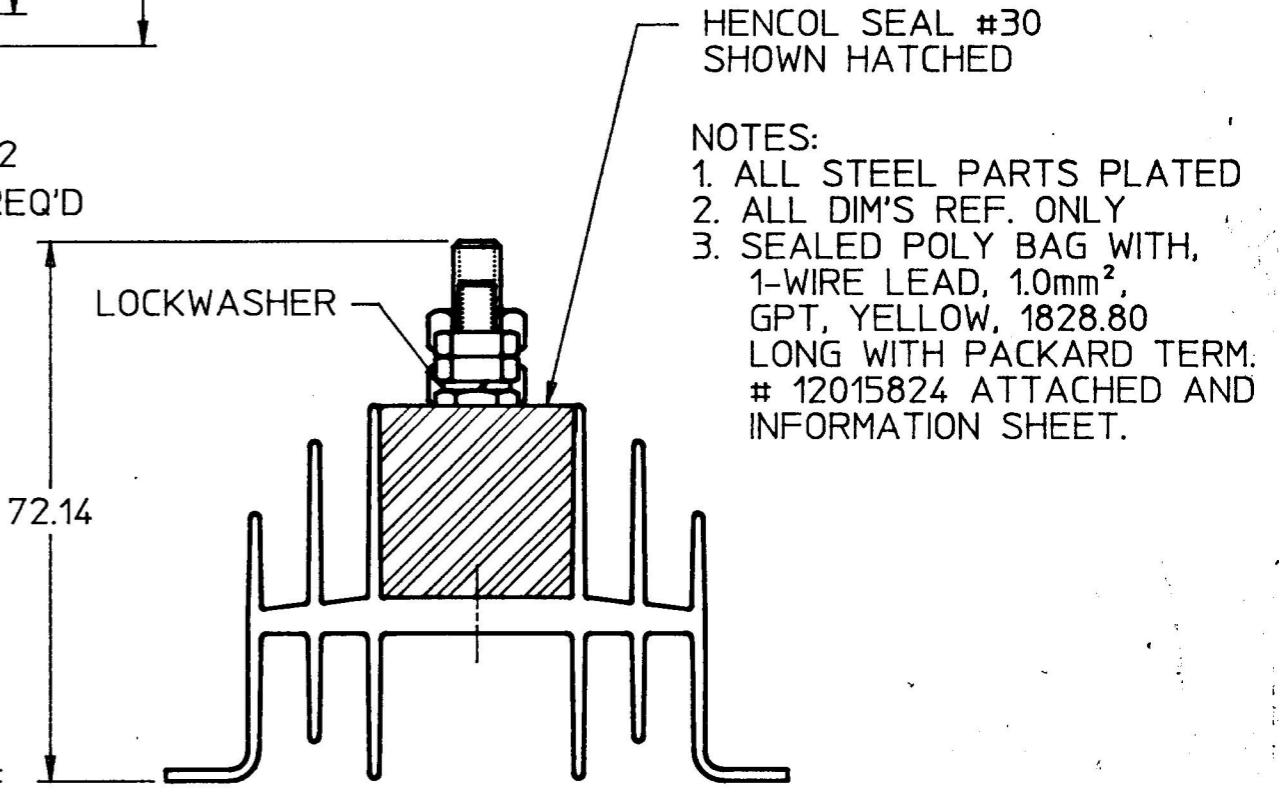
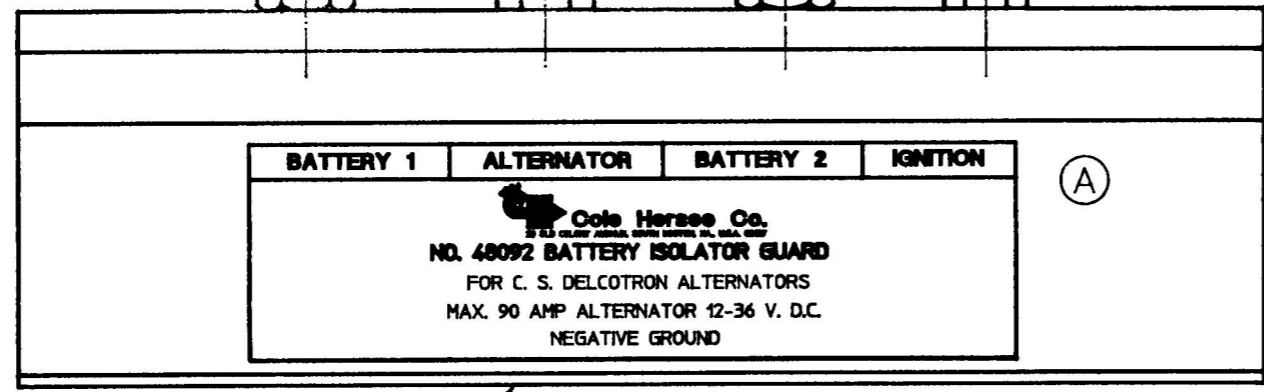
CH-188(4-78)

MM	IN
1.52	0.060
7.13	0.281
31.75	1.250
72.14	2.840
73.81	2.906
82.55	3.250
165.10	6.500
1828.80	72.000
1 mm <sup>2</sup>	16 ga



**BAGGED PARTS**  
 SCALE 1:2  
 NOTE 3  
 SHIPPED LOOSE

- STUD, 1/4-20, 3 PL
- HEX NUT, 5 REQ'D
- LOCKWASHER, 3 REQ'D
- STUD, #10-32
- HEX NUT, 2 REQ'D



- HENCOL SEAL #30  
 SHOWN HATCHED
- NOTES:  
 1. ALL STEEL PARTS PLATED  
 2. ALL DIM'S REF. ONLY  
 3. SEALED POLY BAG WITH,  
 1-WIRE LEAD, 1.0mm<sup>2</sup>,  
 GPT, YELLOW, 1828.80  
 LONG WITH PACKARD TERM.  
 # 12015824 ATTACHED AND  
 INFORMATION SHEET.

HEATSINK, BLUE

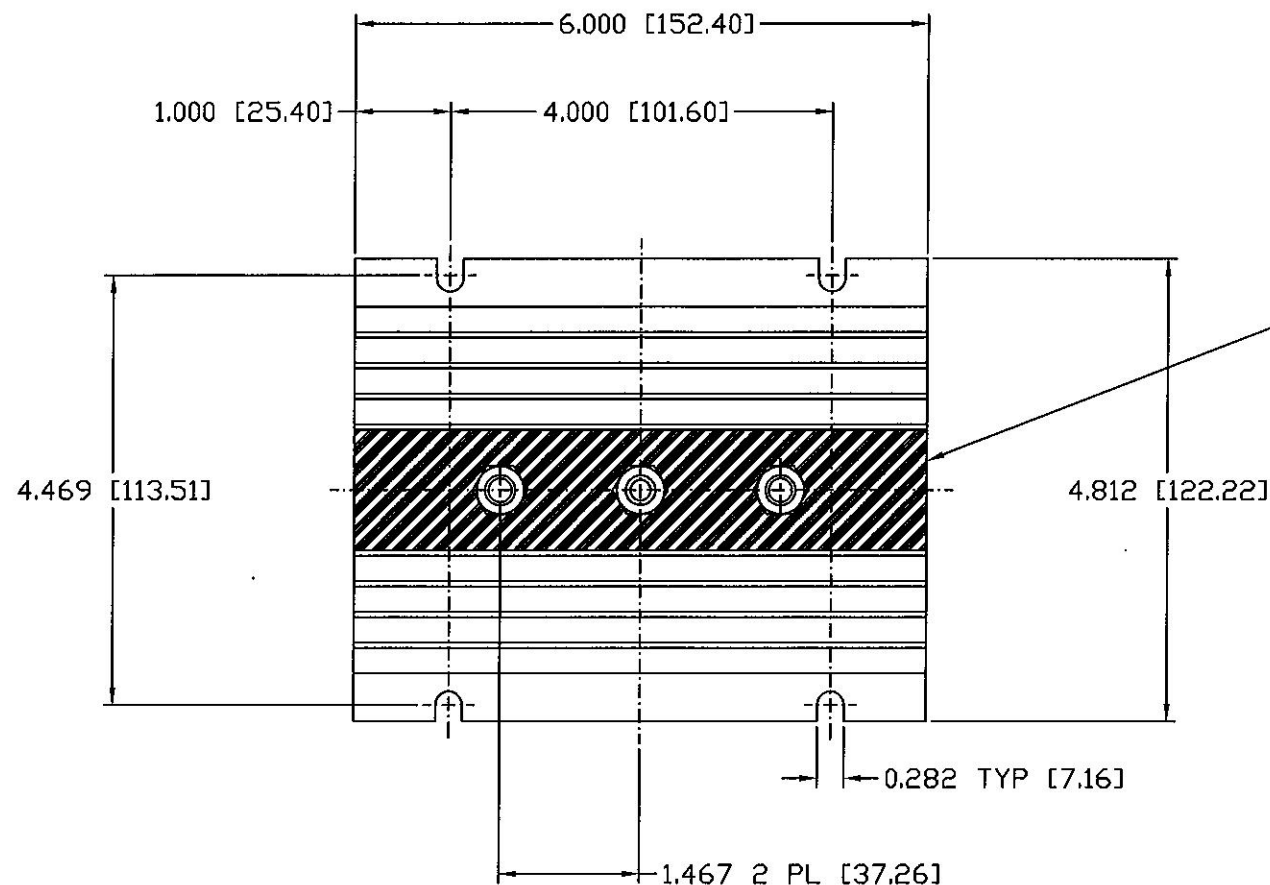
**DO NOT SCALE**  
**CAD GENERATED**

METRIC

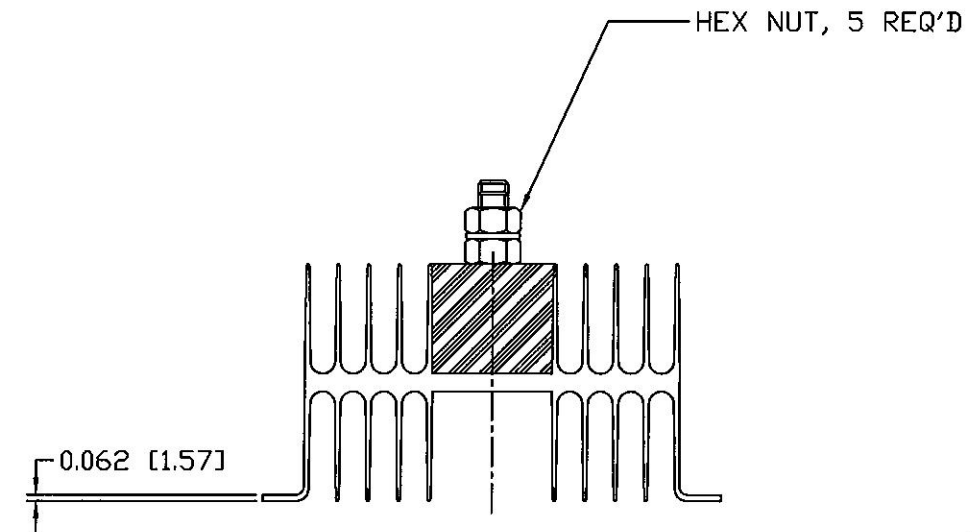
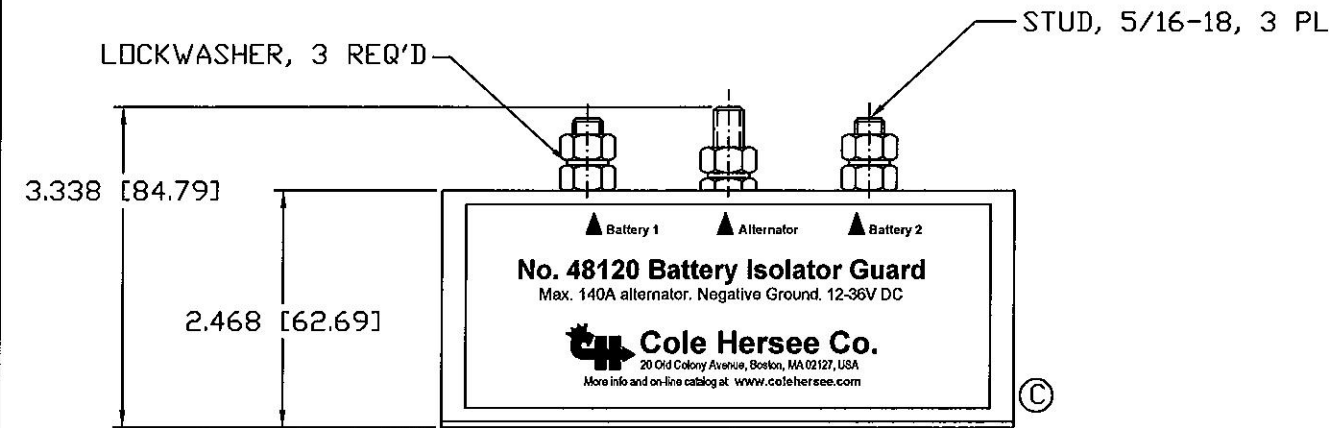
LET.	WAS	DATE	BY	LET.	WAS	DATE	BY	MATERIAL	DRAWN	CHK	APVD	SCALE	EX22440	DATE DRAWN
									DPS			1:1		9/30/88
								FINISH						DATE BLUEPRINTED
				A	ECN 24092	7/27/89	JP	TOLERANCES DECIMAL ± ANGLE ±	Cole Hersee Co. 20 OLD COLONY AVENUE SOUTH BOSTON MA, U.S.A. 02127				DATE BLUEPRINTED	
					ISSUED				<b>BATTERY ISOLATOR GUARD                  FOR C S DELTRON ALTERATOR</b>				48092	

**Revision Control Record**

Rev.	Description of Change	ECN No.	Date
C	NEW LABEL	01274	05/15/01
D	CHANGED 120 TO 140 AMP	10236	06/02/10



HENCOL SEAL #30 SHOWN HATCHED



NOTES:  
 1. ALL STEEL PARTS PLATED  
 2. ALL DIMENSIONS REFERENCE ONLY

**Tolerances** Unless otherwise specifically noted, the following are default tolerances:  
 \* 2-place Decimal Dimensions +/- .02"  
 \* 3-place Decimal Dimensions +/- .005"  
 \* Angular Dimensions +/- 1.0 Deg.  
 \* Metric: Refer to equivalent English Dimension Tolerance  
 >>> NOTE: All tolerances are Non-Cumulative. <<<

**Dimensional Units** All dimensions are expressed in inches except those shown in brackets (xxx) are expressed in millimeters

"REF." or an Asterisk (\*) = Non-Toleranced Reference Dimension, shown for clarification purposes only.

Used On or Ref.: Scale: **1:2** Drawn By: **DPS** Date Drawn: **1/28/83**

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**DESIGN CONTROL** It is the responsibility of the individual using/ referencing this drawing to assure that the noted design revision level agrees with the revision level of the Controlled Document (Master Drawing). This is a NON-CONTROLLED DOCUMENT unless otherwise specifically noted.

DO NOT SCALE - Dimensional variation may occur during printing/ reproduction.

**Key for Special Characteristics:**

- CC Critical Characteristic, relating to Safety and/or Regulatory Compliance
- X Significant Characteristic relating to Process Control (SPC)
- CD Control Dimension relating to Form - Fit - Function as defined by Cole Hersee Company and/or the Customer

(Note that the identification of any Characteristics as being "Special" does not alter the requirement that ALL specified dimensions & tolerances must be met.)

Responsible Engineer: **N/A** Pg. 1 of 1

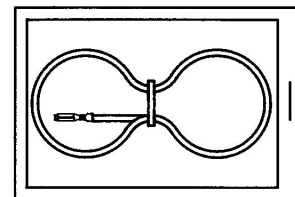
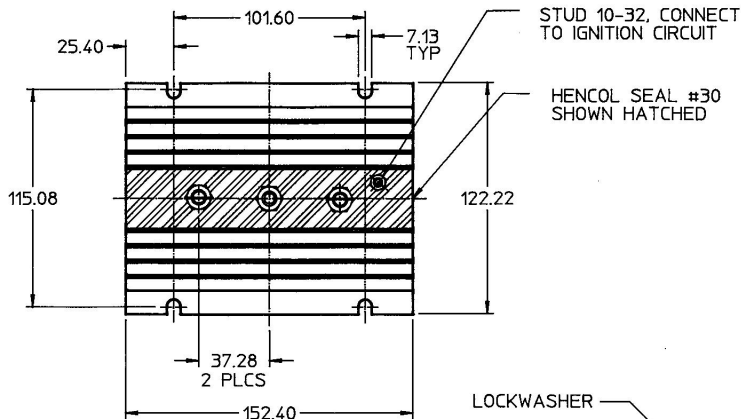
**Cole Hersee Co.**  
 20 Old Colony Ave., South Boston, MA, 02127  
 Phn: 617-268-2100 Web: www.colehersee.com

**Description:** **140 AMP BATTERY ISOLATOR GUARD**

**Drawing / Part No.:** **48120**

**Current Rev.:** **D**

MM	IN
1.58	0.062
7.13	0.281
25.40	1.000
37.28	1.467
62.68	2.467
84.78	3.338
101.60	4.000
115.08	4.531
122.22	4.812
152.40	6.000
1828.80	72.000
1.0 mm <sup>2</sup>	16 ga



BAGGED PARTS

SCALE 1:2  
NOTE 3

SHIPPED LOOSE

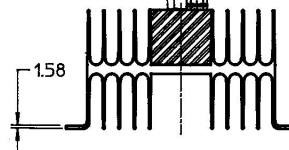
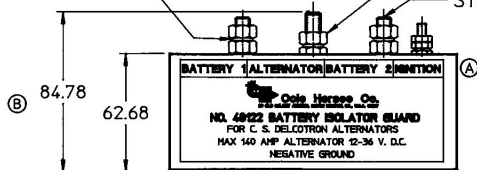
LOCKWASHER, 3 REQD

HEX NUT, 5 REQD

STUD, 5/16-18, 3 PL

LOCKWASHER

HEX NUT, 10-32, 2 REQD



NOTES:

1. ALL STEEL PARTS PLATED
2. ALL DIM'S REFERENCE ONLY
3. BAGGED PARTS INCLUDE 1-WIRE LEAD, 1.0 mm<sup>2</sup> GPT YELLOW, 1828.80 LONG WITH PACKARD TERMINAL #12015824 ATTACHED AND INFORMATION SHEET.

Confidential Property of Cole Hersee

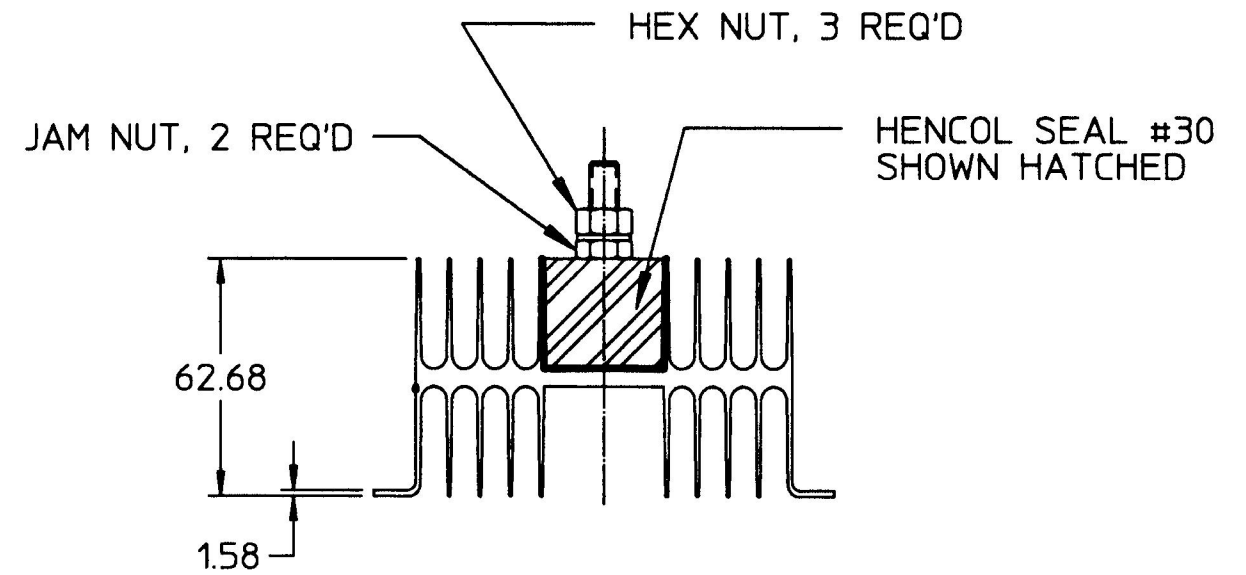
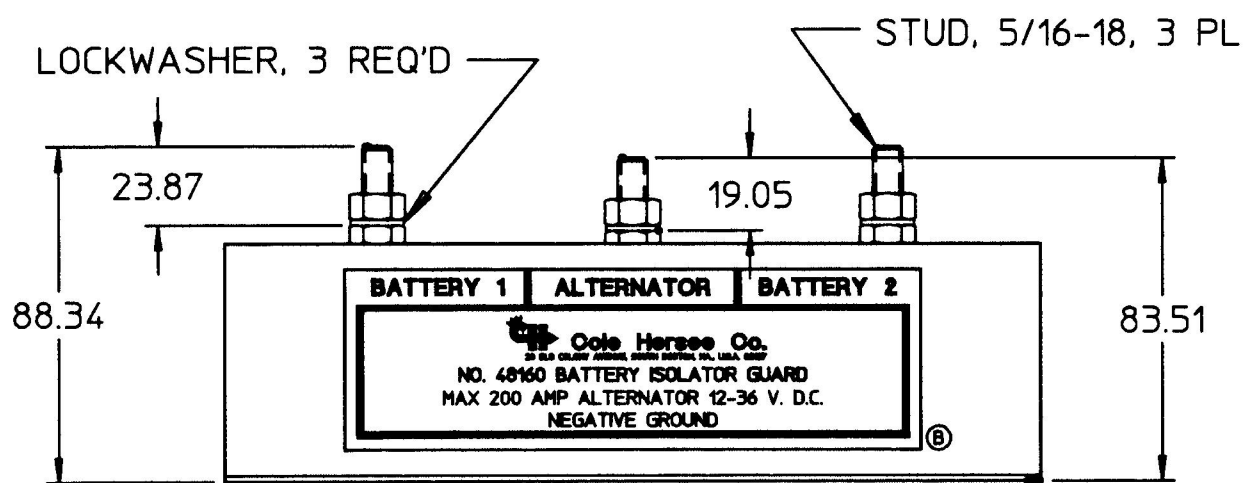
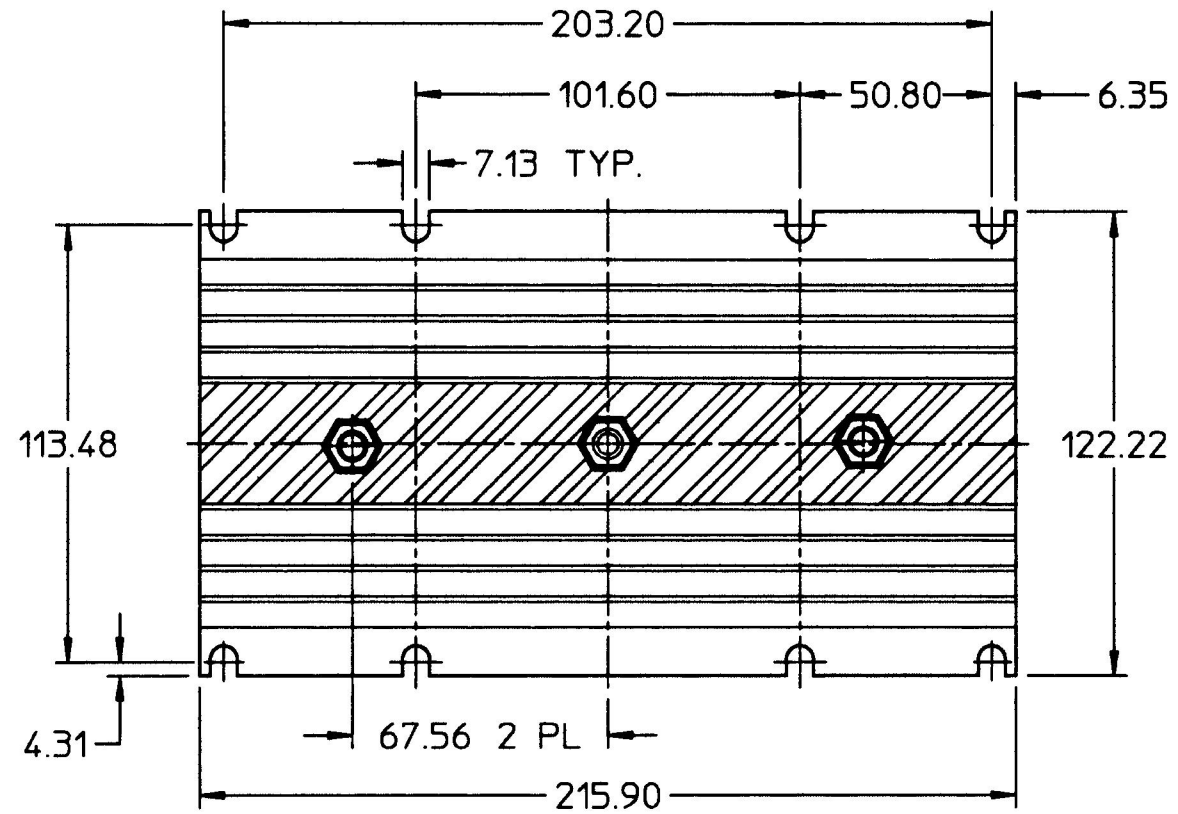
METRIC

DO NOT SCALE

LET.	WAS	DATE	BY	LET.	WAS	DATE	BY	MATERIAL	DRWN	CHK	APVD	SCALE	EX22439	EX22627	DATE DRAWN
												1:2			10/5/88
				B	87.48	12/29/93	BL	FINISH							DATE BLUEPRINTED
				A	ECN 24012	7/22/89	JP	TOLERANCES DECIMAL & ANGLE &							
					ISSUED	2/2/89	AF								


**Cole Hersee Co.**  
20 OLD COLONY AVENUE, BOSTON, MA, U.S.A., 02127  
**BATTERY ISOLATOR GUARD**  
**FOR C S DELTRON ALTERNATOR**

MM	IN
1.58	0.062
4.31	0.170
6.35	0.250
7.13	0.281
19.05	0.750
23.87	0.940
50.80	2.000
62.68	2.467
67.56	2.660
83.51	3.288
88.34	3.478
101.60	4.000
113.48	4.468
122.22	4.812
203.20	8.000
215.90	8.500



- NOTES:  
 1. ALL STEEL PARTS PLATED  
 2. ALL DIM'S REF. ONLY

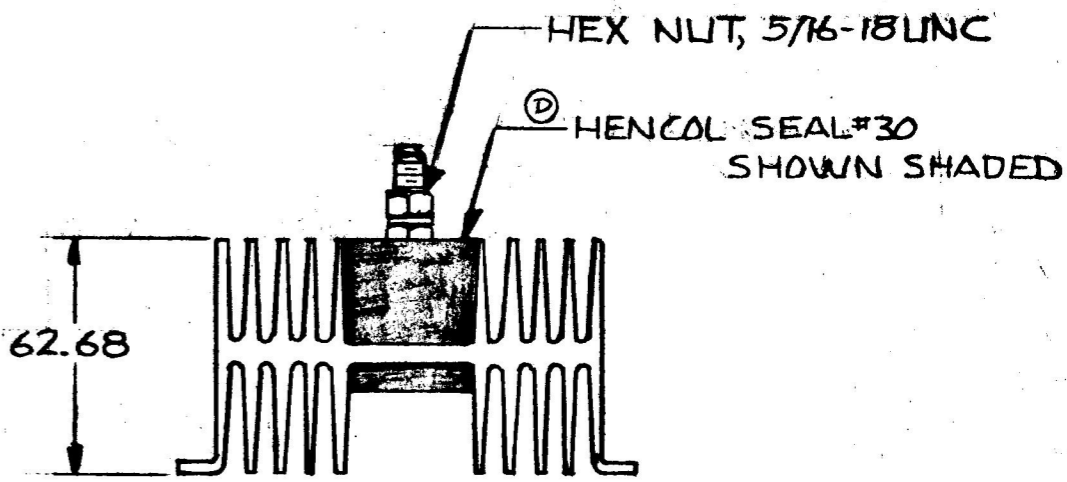
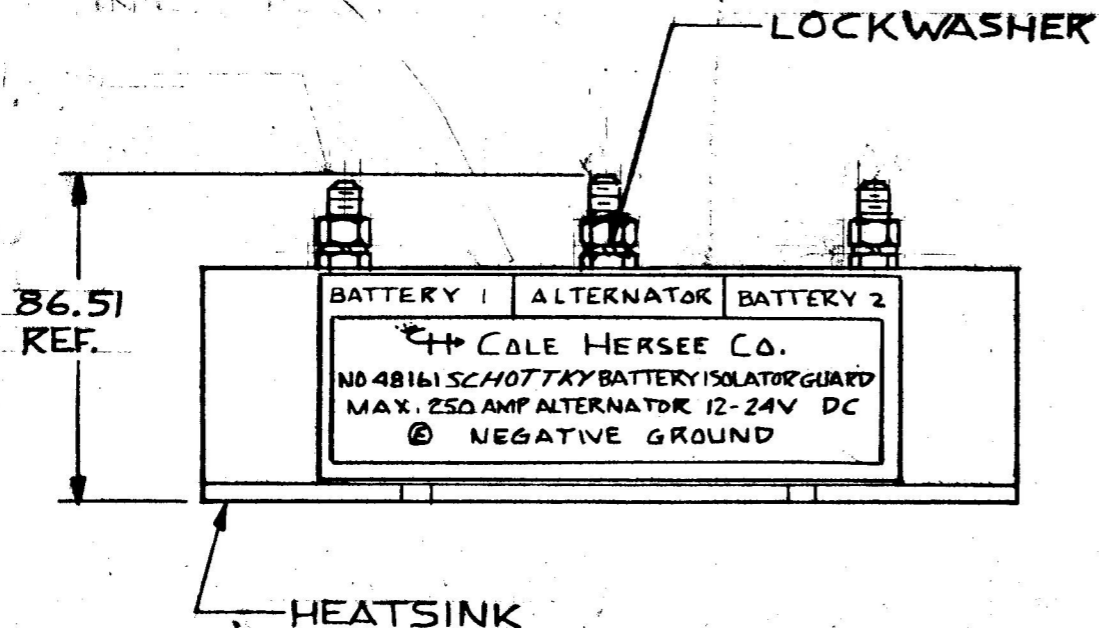
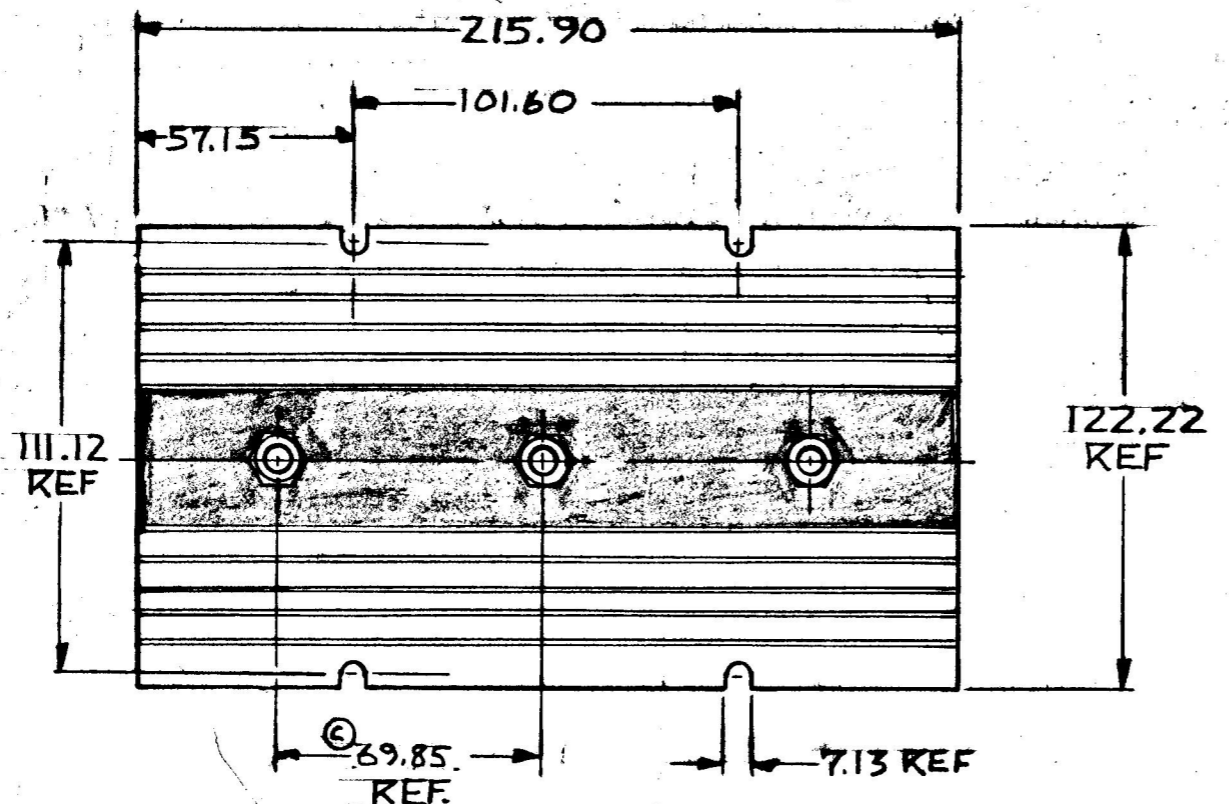
DO NOT SCALE

LET.	WAS	DATE	BY	LET.	WAS	DATE	BY	MATERIAL	DRAWN	CHK	APVD	SCALE	EX22999	DATE DRAWN
								N/A	LIZ	KY	N/A	1:2		3/10/89
				B	ECN #00155	02/02/00	MA	FINISH N/A	 <b>Cole Hersee Co.</b> 20 OLD COLONY AVENUE, BOSTON, MA., U.S.A. 02127					DATE BLUEPRINTED
			A	ECN 24503 48160-01	8/10/90	RO	TOLERANCES DECIMAL ± N/A ANGLE ± N/A	BATTERY ISOLATOR GUARD FOR C S DELTRON ALTERNATOR						(A)
				ISSUED	3/31/89	AF		48160						



MM 17  
7.13 .281  
57.12 2.290  
62.68 2.468  
86.51 3.406  
101.60 4.000  
122.22 4.812  
215.90 8.500  
69.85 2.750  
111.42 4.375

COLE-HERSEE CO.  
EX19679



NOTE:  
ALL STEEL PARTS PLATED

METRIC

DO NOT SCALE

LET.	WAS	DATE	BY	LET.	WAS	DATE	BY	MATERIAL	DRAWN	CHECKED	APPR'D.	SCALE	DATE DRAWN
				E	ECN 23988	3-31-89	JK		PS	RA		1/2:1	8-21-81
				D	REVISED NOTE	1/30/81	PS	FINISH					DATE BLUEPRINT
				C	34.92	9-22-82	PS						
					ISSUED	3-17-82	RJA	TOLERANCES					
				B	REVISED & REDRAWN	3-3-82	PS	DECIMAL ±.010 METRIC ±.25					
												160 AMP SCHOTTKY BATTERY ISOLATOR GUARD	48161

**CH** Cole Hersee Co.  
20 OLD COLONY AVENUE, SOUTH BOSTON, MA. U.S.A. 02127