

METRIC

MIL I-24728/1B  
1 June 1995  
SUPERSEDING  
MIL-I-24728/1A  
23 July 1992

MILITARY SPECIFICATION SHEET

INTERCONNECTION BOX, FIBER OPTIC, SUBMERSIBLE, 254 X 330 MM

This specification is approved for use by all Departments and Agencies of the Department of Defense

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation MIL-I-24728

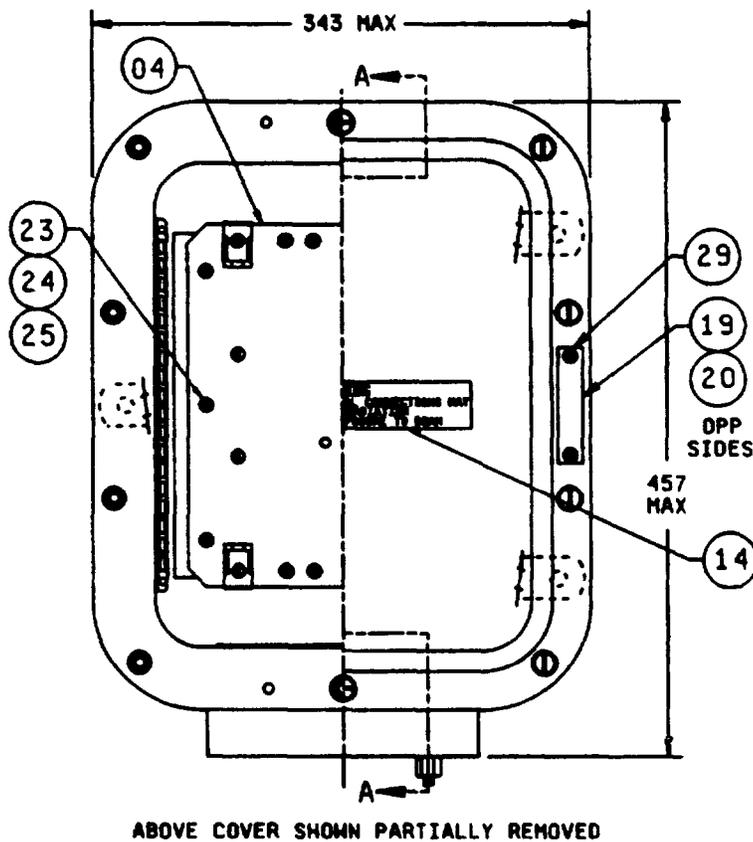


FIGURE 1 Enclosure assembly, M24728/1 005 and M24728/1-006

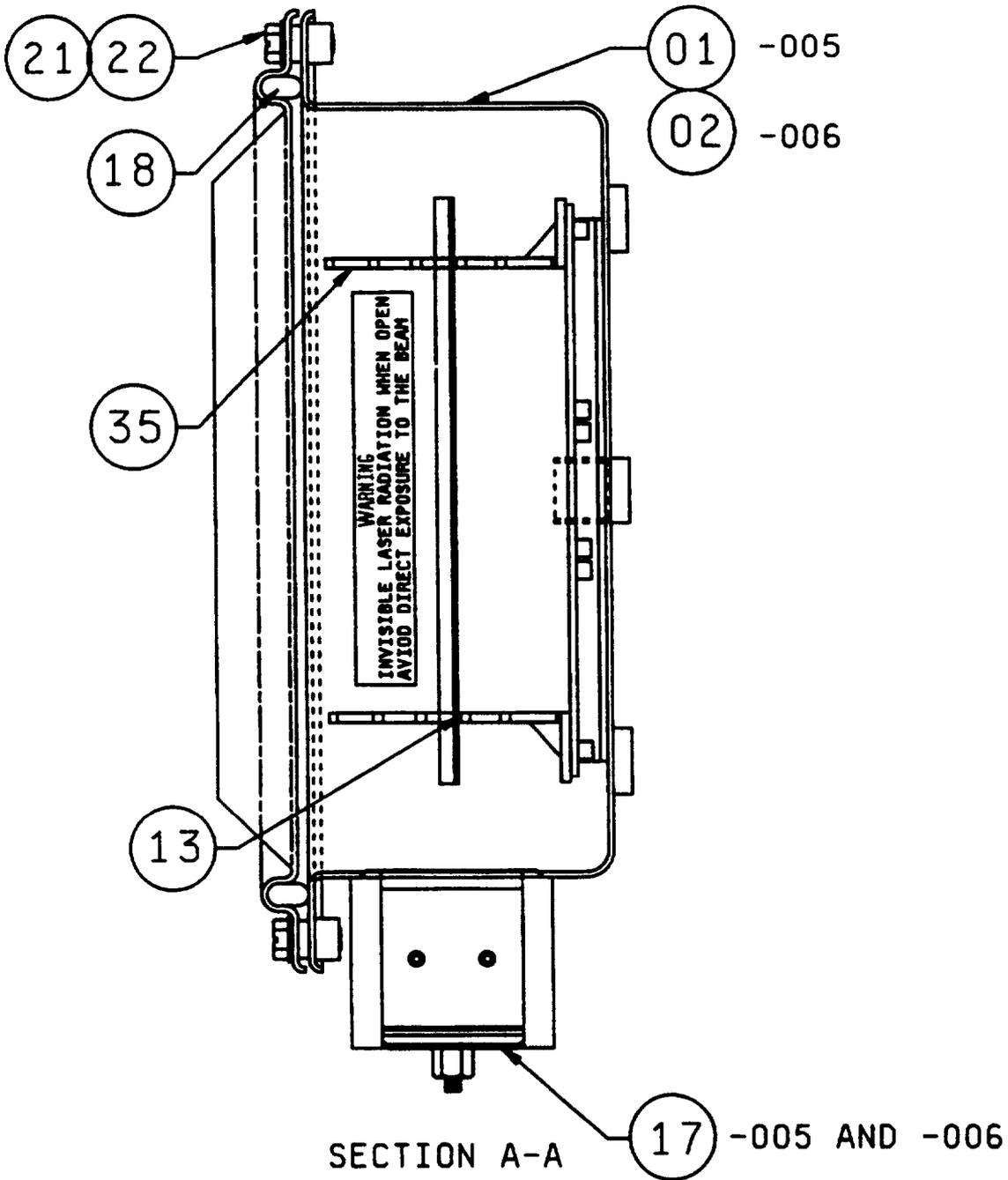
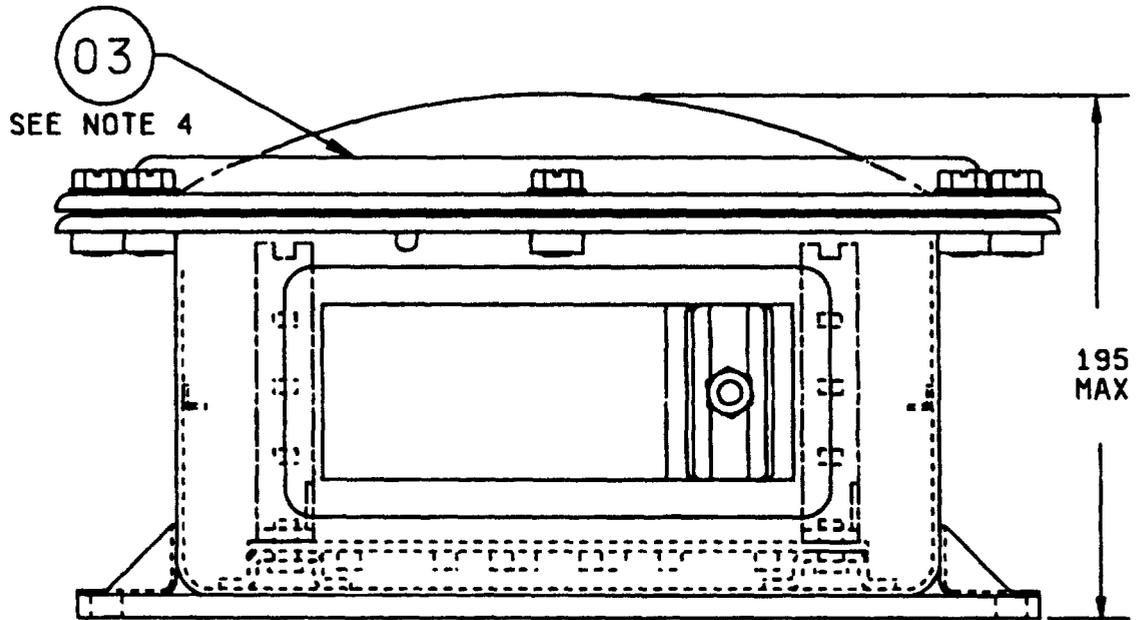


FIGURE 1 Enclosure assembly, M24728/1 005 and M24728/1 006 Continued

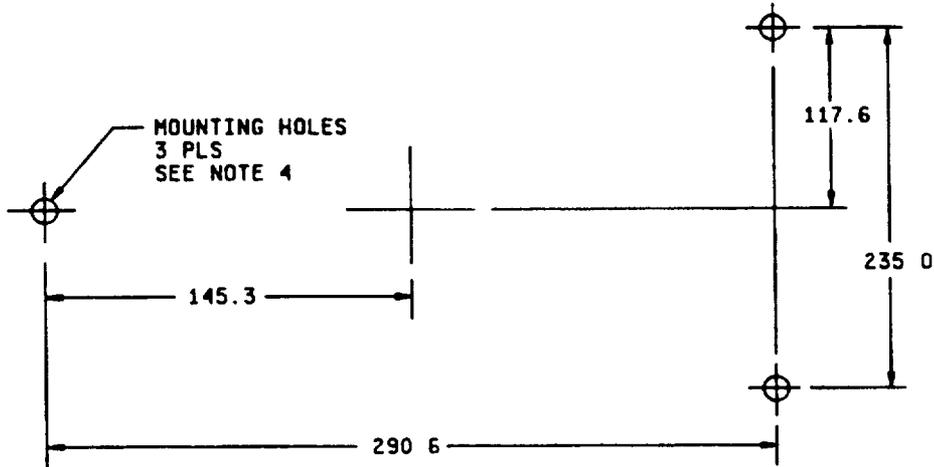


mm	Inches
195	7 7
343	13 5
457	18 0

NOTES

- 1 Dimensions are in millimeters
- 2 Inch-pound equivalents are given for general information only
- 3 Unless otherwise specified, tolerance is  $\pm 3$  mm (.12 inch) for 1 place decimals
- 4 For identification of subcomponent parts (circled numbers), see table 1
- 5 This item was designed using inch-pound units of measurement. In case of problems involving conflicts between the metric and inch-pound units, the inch-pound units shall rule

FIGURE 1 Enclosure assembly, M24728/1 005 and M24728/1 006 Continued



mm	Inches
117.6	4.63
145.3	5.72
235.0	9.25
290.6	11.44

NOTES

- 1 Dimensions are in millimeters
- 2 Inch-pound equivalents are given for general information only
- 3 Unless otherwise specified, tolerance is  $\pm 0.3$  mm (01 inch) for 1 place decimals
- 4 Mounting holes shall accommodate M12.7 X 1.95 (50.13) bolts

FIGURE 2 Box mounting hole dimensions

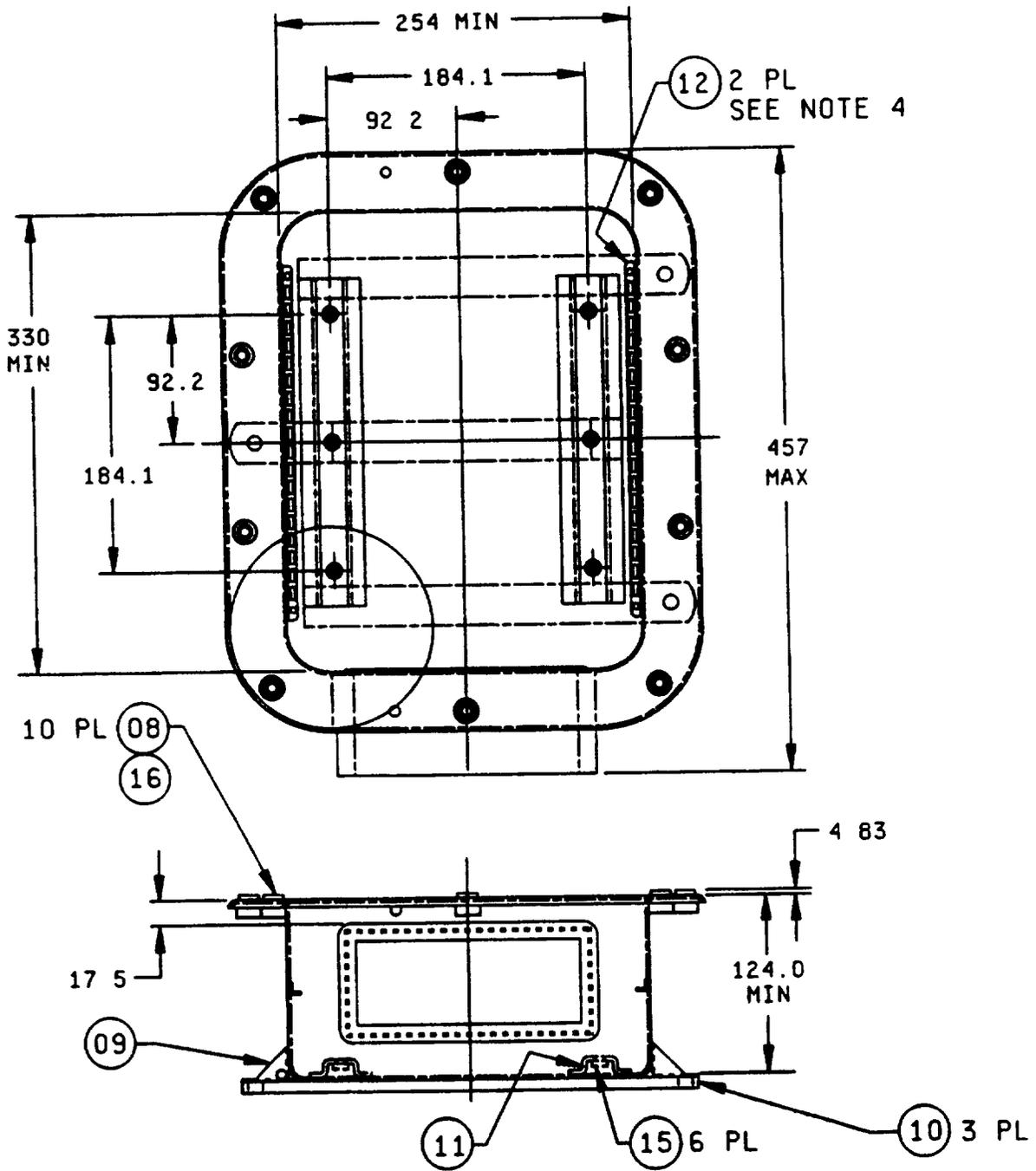
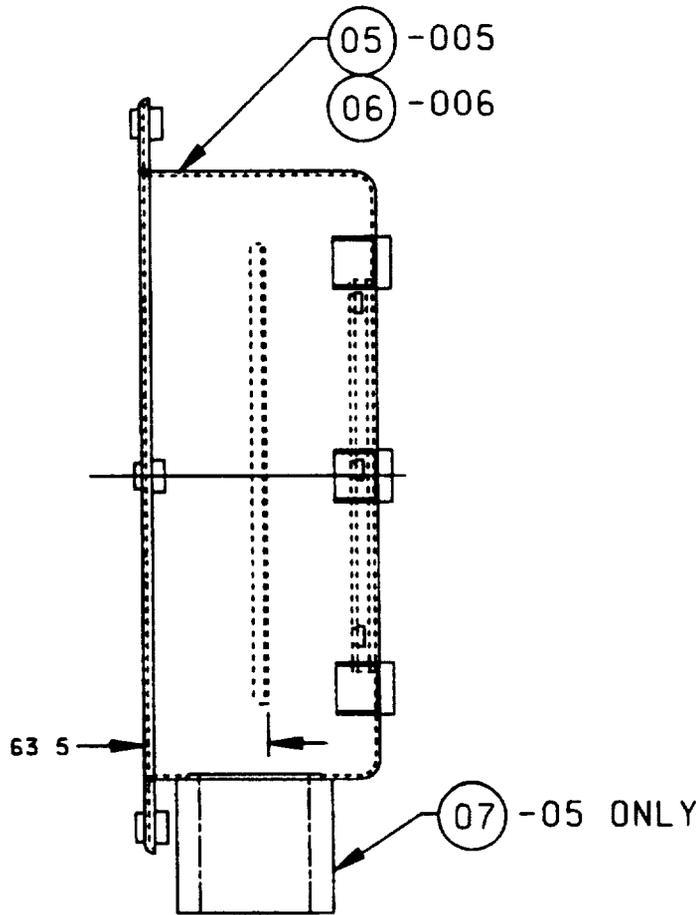


FIGURE 3 Box assembly

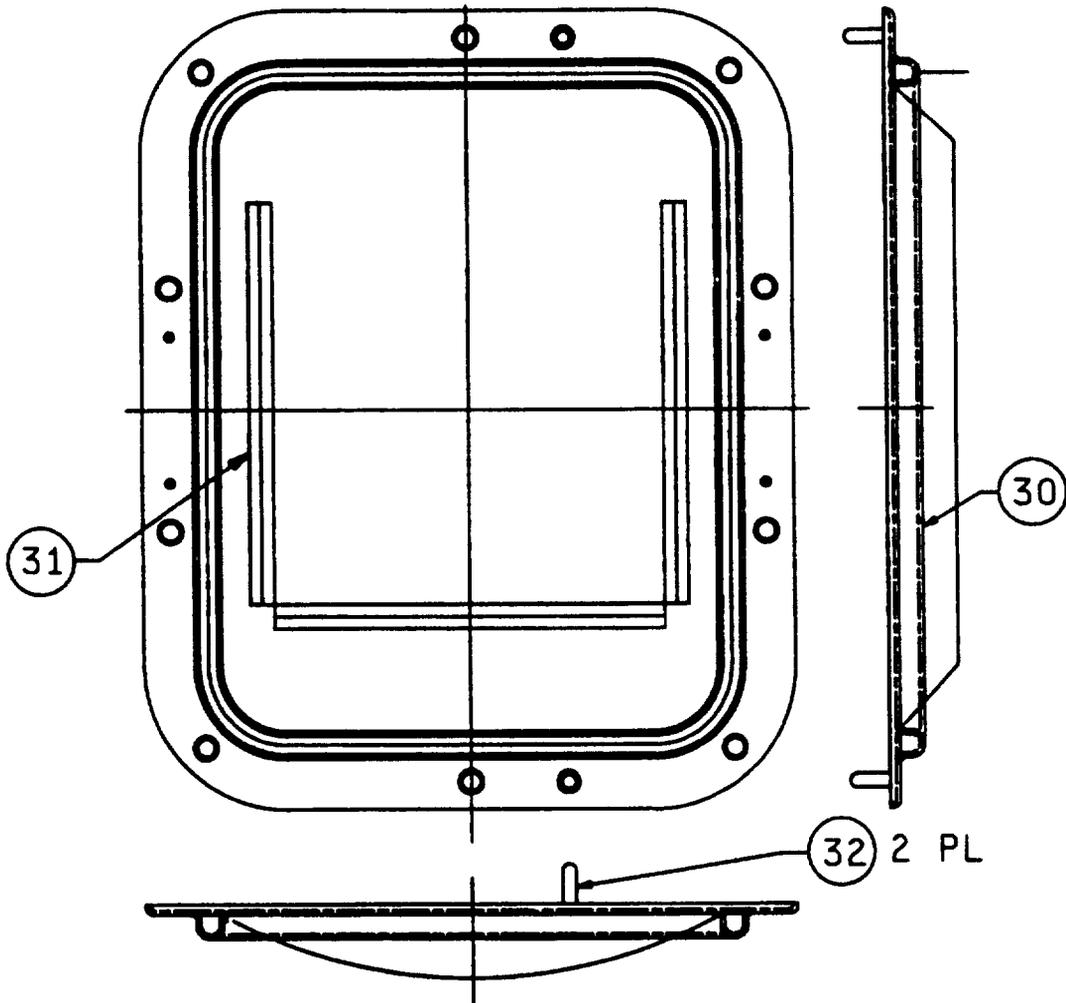


mm	Inches	mm	Inches
4 83	.190	184 1 7 25	
17 5	.69	254	10
63 5	2 50	330	13
92 2	3 63	457	18
124 0	4 90		

NOTES

- 1 Dimensions are in millimeters.
- 2 Inch-pound equivalents are given for general information only
- 3 Unless otherwise specified, tolerance is  $\pm 3$  mm (.12 inch) for whole numbers and  $\pm 3$  mm (.01 inch) for 1 place decimals, and  $\pm 13$  mm (.005 inch) for 2 place decimals. A tolerance of  $\pm 8$  mm (.03 inch) is acceptable on dimensions controlled by welding or brazing, providing that this tolerance does not interfere with the interchangeability of assemblies or parts
- 4 Circled numbers are subcomponent identification numbers. See table 1

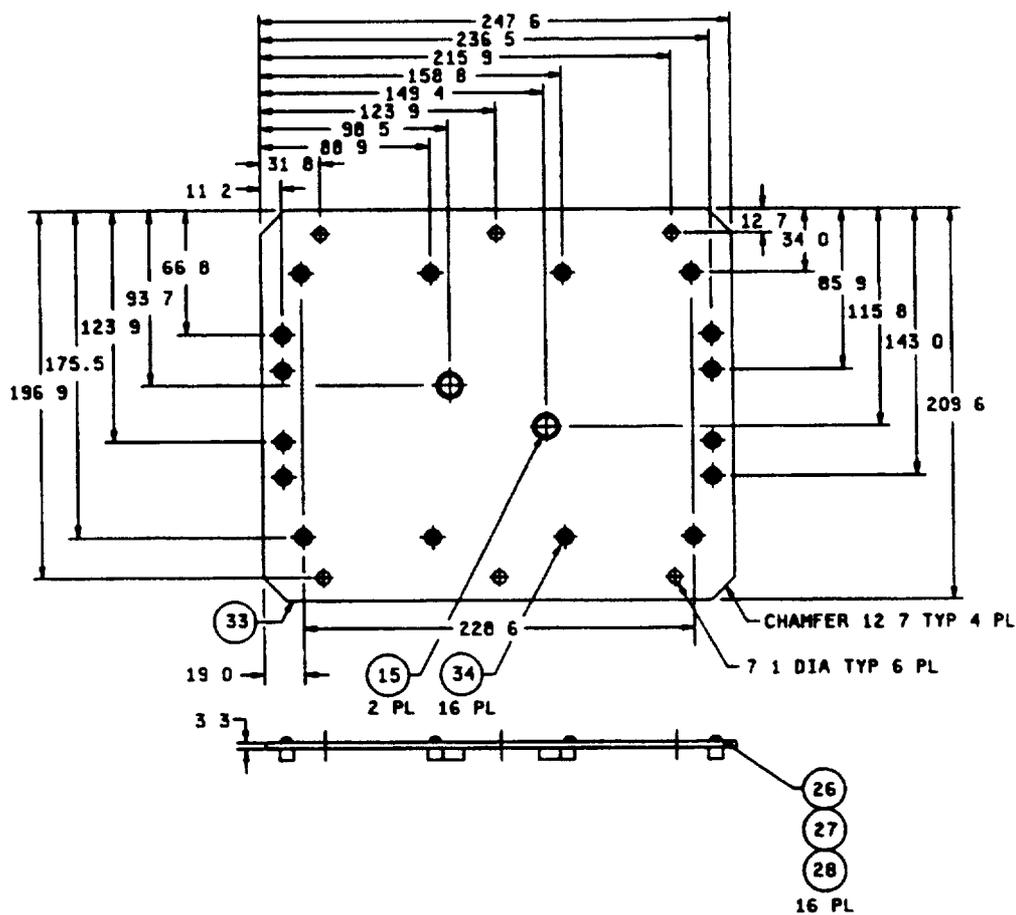
FIGURE 3 Box assembly - Continued



NOTES

- 1 Detailed layout and placement of diagram holder is not specified
- 2 Circled numbers are subcomponent identification numbers See table I

FIGURE 4 Cover assembly

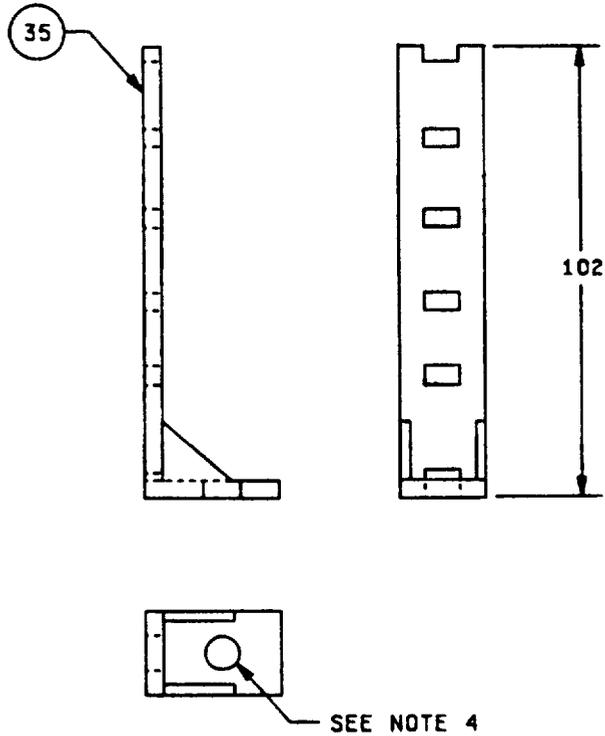


mm	Inches	mm	Inches	mm	Inches
3.3	.13	85.9	3.38	158.8	6.25
7.1	.28	88.9	3.50	175.5	6.91
11.2	.44	93.7	3.69	196.9	7.75
12.7	.50	98.5	3.88	209.6	8.25
19.0	.75	115.8	4.56	215.9	8.50
31.8	1.25	123.9	4.88	228.6	9.00
34.0	1.34	143.0	5.63	236.5	9.31
64.3	2.53	143.0	5.63	247.6	9.75
66.8	2.63	149.4	5.88		

NOTES

- 1 Dimensions are in millimeters
- 2 Inch-pound equivalents are given for general information only
- 3 Unless otherwise specified, tolerance is  $\pm 3$  mm (.01) for 1 place decimals
- 4 Circled numbers are subcomponent identification numbers See table I

FIGURE 5 Mounting plate assembly

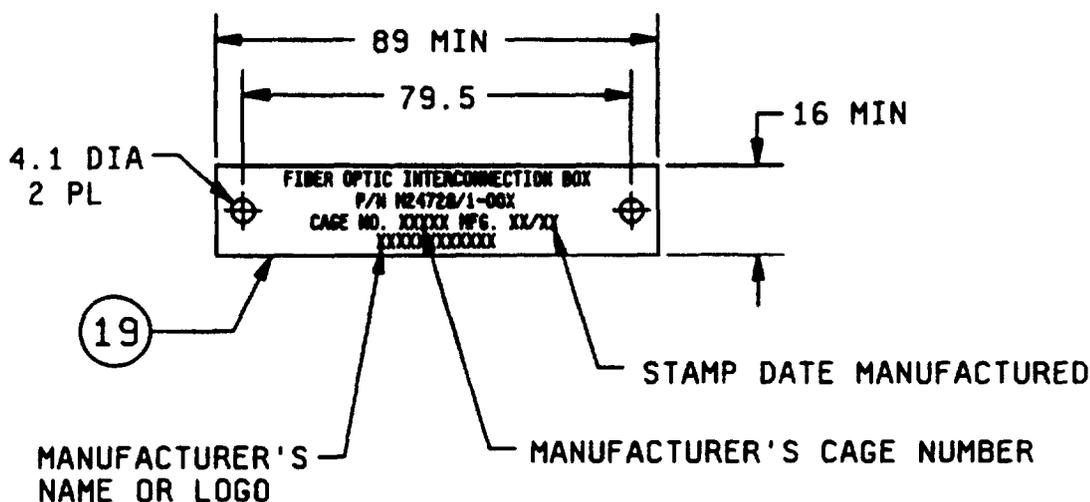


mm	Inches
102	4 0

NOTES

- 1 Dimensions are in millimeters
- 2 Inch-pound equivalents are given for general information only
- 3 Unless otherwise specified, tolerance is  $\pm 3$  mm (  $\pm 12$  inch)
- 4 Hole is 5.6 mm (  $\pm .22$  inch) in diameter
- 5 Circled number is a component identification number See table I

FIGURE 6 Tie wrap post

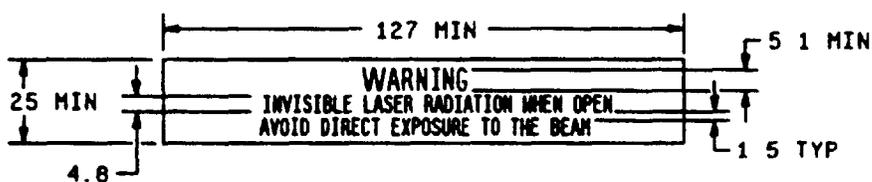


mm	Inches
4.1	.16
16.0	.63
79.5	3.13
89	3.5

NOTES

- 1 Dimensions are in millimeters
- 2 Inch-pound equivalents are given for general information only
- 3 Unless otherwise specified, tolerance is  $\pm 3$  mm (.12 inch) for whole numbers and  $\pm 3$  mm (.01 inch) for 1 place decimals
- 4 Circled number is a subcomponent identification number See table I

FIGURE 7 Identification plate



mm	Inches
1.5	.06
4.8	.19
5.1	.20
25	1.0
127	5.0

NOTES

- 1 Dimensions are in millimeters
- 2 Inch-pound equivalents are given for general information only
- 3 The signal word "WARNING" shall be in yellow on a black background in the upper panel The lower panel shall consist of black letters on a yellow background
- 4 Unless otherwise specified tolerance is  $\pm 3$  mm (.12 inch) for whole numbers and  $\pm 3$  mm (.01 inch) for 1 place decimals

FIGURE 8 Inside warning label



mm	Inches
1.5	.06
3.3	.13
5.1	.20
25	1.0
127	5.0

NOTES.

- 1 Dimensions are in millimeters
- 2 Inch-pound equivalents are given for general information only
- 3 The signal word "WARNING" shall be in yellow on a black background in the upper panel. The lower panel shall consist of black letters on a yellow background.
- 4 Unless otherwise specified, tolerance is  $\pm 3$  mm (  $\pm 12$  inch) for whole numbers and  $\pm 3$  mm (.01 inch) for 1 place decimals.

FIGURE 9 Outside warning label

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TABLE I Parts list

Subcomponent identification numbers circled (see figures 1 through 9)	Part name	PIN M24728/1		Subassembly number				Remarks and reference figures
		005	006	01	02	03	04	
01	Box assembly with MCT frame	1		1				1 and 3
02	Box assembly without MCT frame		1		1			1 and 3
03	Cover assembly	1	1			1		1 and 4
04	Mounting plate assembly	1	1				1	1 and 5
05 <u>1</u> / <u>2</u> /	254 x 330 box with MCT frame			1				3
06 <u>1</u> / <u>2</u> /	254 x 330 box without MCT frame				1			3
07 <u>3</u> / <u>4</u> /	MCT frame			1				3
08 <u>2</u> / <u>3</u> /	Flange pad			10	10			3
09 <u>2</u> / <u>5</u> /	Gusset			3	3			3
10 <u>3</u> /	Mounting leg			3	3			3
11 <u>3</u> /	Mounting channel			2	2			3
12 <u>3</u> /	Tie wrap bracket			2	2			3
13 <u>6</u> /	Warning label (inside)			1	1			1 and 8
14 <u>6</u> /	Warning label (outside)	1	1					1 and 9
15 <u>7</u> /	M6 35 x 1.27 ( 25-20) insert			6	6		2	3 and 5
16 <u>7</u> /	M9 53 x 1.59 ( 375-16) helicoil			10	10			3
17 <u>4</u> /	MCT wedge pack	1	1					1
18 <u>2</u> /	Gasket	1	1					1

See footnotes at end of table

TABLE I Parts list - Continued

Subcomponent identification numbers, circled (see figures 1 through 9)	Part name	PIN M24728/1		Subassembly number				Remarks and reference figures
		005	006	01	02	03	04	
19 <u>8</u> /	Identification plate	1	1					1 and 7
20 <u>8</u> /	Blank nameplate	1	1					1
21 <u>2</u> / <u>7</u> /	M9.53 x 1.59 (.375-16) hex bolt	10	10					1
22 <u>7</u> /	9.53 (375) flat washer	10	10					1
23 <u>7</u> /	M6.35 x 1.27 (.25-20) x 15.9 PHMS	6	6					1
24 <u>7</u> /	6.35 (25) flat washer	6	6					1
25 <u>7</u> /	6.35 (.25) split lock washer	6	6					1
26 <u>7</u> /	M4.0 x .79 (8-32) x 12.7 PHMS						16	5
27 <u>7</u> /	4.0 (#8) flat washer						16	5
28 <u>7</u> /	4.0 (#8) split lock washer						16	5
29 <u>7</u> /	M3.5 x .79 (6-32) x 6.35 PHMS	4	4					1
30 <u>1</u> / <u>2</u> /	254 x 330 cover					1		4
31 <u>2</u> / <u>8</u> / <u>9</u> /	Diagram holder					1		4
32 <u>2</u> / <u>8</u> /	Dowel pin					2		4
33 <u>8</u> /	Mounting plate						1	5
34 <u>7</u> /	M4.0 x .79 (8-32) insert						16	5
35	Tie wrap post	4	4					6

1/ Aluminum, 3003 or 6061 in accordance with ASTM-B-209

2/ See MIL-E-24142/6 for guidance.

3/ Aluminum, 5052 H-32 or 6061 in accordance with ASTM-B-209

4/ See MIL-P-24705/1 for guidance

5/ Aluminum, 5052 H-32 or 6061 in accordance with ASTM-B-209, 2.39 mm (.09 inch) thick

6/ In accordance with MIL-P-15024, type G, adhesive-backed, metal foil

7/ CRES

8/ Aluminum, 5052 H-32 in accordance with ASTM-B-209

9/ Constructed to hold an 216 mm (8.5 inches) by 279 mm (11.0 inches) diagram

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REQUIREMENTS

Design and construction See figure 1 through figure 9, and table I

The interconnection box shall be constructed using MIL E 24142/6 004 as guidance

The MCT shall be constructed using MIL-P-24705/1 as guidance The MCT interior dimensions shall be 159.5 x 59.9 mm (6.28 inches x 2.36 inches)

The enclosure assembly shall be constructed using the following combinations of materials

- a The box, MCT frame, flange pads, gussets, mounting legs, mounting channels, tie wrap bracket, and cover are aluminum, 6061 in accordance with ASTM-B 209
- b The box and cover are aluminum, 3003 in accordance with ASTM-B-209 and the MCT frame, gussets, flange pads, mounting legs, mounting channels, and tie wrap bracket are aluminum, 5052 H-32 in accordance with ASTM-B-209

Enclosure assemblies constructed using 6061 aluminum shall not be welded

Enclosure assemblies constructed using 6061 aluminum shall be dip-brazed in accordance with MIL-B-7883 type V, grade B

Enclosure assemblies constructed using 6061 aluminum shall be artificially aged at +177 °C for 12 hours to a 6061-T4 condition

Enclosure assemblies shall be class 1A conversion coated in accordance with MIL-C 5541 before being epoxy powder coated

Cable interconnection interface The cable feed-through shall be in accordance with MIL-P-24705 and shall accept cables having outer diameters between 6.1 mm (.24 inch) and 25.4 mm (1.00 inches) constructed in accordance with MIL-C 85045

Enclosure assemblies shall be stress relieved in accordance with MIL E-24142

Mass	M24728/1-005	7.72 Kg (maximum)
	M24728/1-006	5.9 Kg (maximum)

Interconnection box mounting See figure 2

Interconnect organization

Fiber optic diagram holders See figure 4

Fiber optic cable tie posts 4 (see figure 6)

Fiber optic splice tray holder 2 maximum (see MIL I 24728/7)

Fiber optic connector module 1 maximum (see MIL I-24728/6)

Fiber optic splices When outfitted with two MIL-I-24728/7 splice tray holders, the interconnection box shall organize up to 72 MIL-S-24623/4 fiber optic splices

Fiber optic connector adapters When outfitted with a MIL-I-24728/6 connector module, the interconnection box shall organize up to 48 MIL-C-83522/17 connector adapters

Cable retention Not applicable

Cable seal flexing Not applicable

Cable twist Not applicable

Compression resistance Not applicable

Impact Not applicable

Water pressure The interconnection cover bolts and the MCT wedge pack nut shall be tightened to a minimum torque of 16.94 N-m (150 in lbs) during this test

Flammability Not applicable

Salt spray Not applicable

Flame spread Not applicable

Fungus test shall be conducted only on polymeric materials

The operating temperature range shall be -54 °C to +65 °C and the storage range shall be -62 °C to +85 °C

Part or Identifying Number (PIN) See table I

M24728/1 005, box, mounting plate, and lid, with cable entrance and wedge pack

M24728/1-006, box, mounting plate, and lid, without cable entrance

M24728/1-001, M24728/1-002, M24728/1-003 and M24728/1-004 have been canceled without replacement

The gasket size shall be 263 53 mm (10 375 inches) wide x 339 73 mm (13 375 inches) long This corresponds to PIN M24142/6-004 of MIL-E-24142/6

Insert blocks compatible with the MCT frame are specified in MIL-P-24705/1

Qualification by similarity Manufacturers who produce products for both MIL-I-24728/2 and this specification sheet who are qualified under MIL I-24728/2, and who pass the water pressure test and size inspection specified herein, are qualified under this specification sheet

The US Government preferred system of measurement is the metric SI system However, since this item was originally designed using inch-pound units of measurement, in the event of conflict between the metric and inch-pound units, the inch pound units shall take precedence

#### CONCLUDING MATERIAL

##### Custodians

Army - CR  
Navy - SH  
Air Force - 85  
NASA NA

##### Review activities.

Army AR, MI  
Navy CG EC MC YD AS  
Air Force - 17, 19, 80, 99  
DLA - ES

Preparing activity  
Navy - SH

Agent  
DLA - ES

(Project 6099-0004-01)