

MIL-STD-1863A
NOTICE 1
10 JUNE 1986

MILITARY STANDARD

INTERFACE DESIGNS AND DIMENSIONS FOR FIBER OPTIC INTERCONNECTION DEVICES

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NEW PAGE	DATE	SUPERSEDED PAGE	DATE
Cover	23 January 1985	Cover	REPRINTED WITHOUT CHANGE
ii		ii	23 January 1985
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(Project 6060-0038)

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AMSC N/A

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FSC 6060

MIL—STD—1863A

23 JANUARY 1985

SUPERSEDING

MIL—STD—1863

2 DEC 1982

MILITARY STANDARD

INTERFACE DESIGNS AND DIMENSIONS FOR FIBER OPTIC INTERCONNECTION DEVICES



FSC 6060

MIL-STD-1863A

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DEPARTMENT OF DEFENSE
Washington, DC 20301

INTERFACE DESIGNS AND DIMENSIONS FOR FIBER OPTIC INTERCONNECTION DEVICES

MIL-STD-1863A

1. This Military Standard is approved for use by all Departments and Agencies of the Department of Defense.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, U.S. Army Communications-Electronics Command, ATTN:AMSEL-ED-T0, Fort Monmouth, NJ 07703 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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Custodians:
Army - CR
Navy - EC
Air Force - 85

Review activities:
Army - AR, MI
Navy - AS, OS
Air Force - 11, 13, 19

User activities:
Army - AV
Navy - MC
Air Force - 14

Preparing activity:
Army - CR

Agent:
DLA - ES
(Project 6060-0019)

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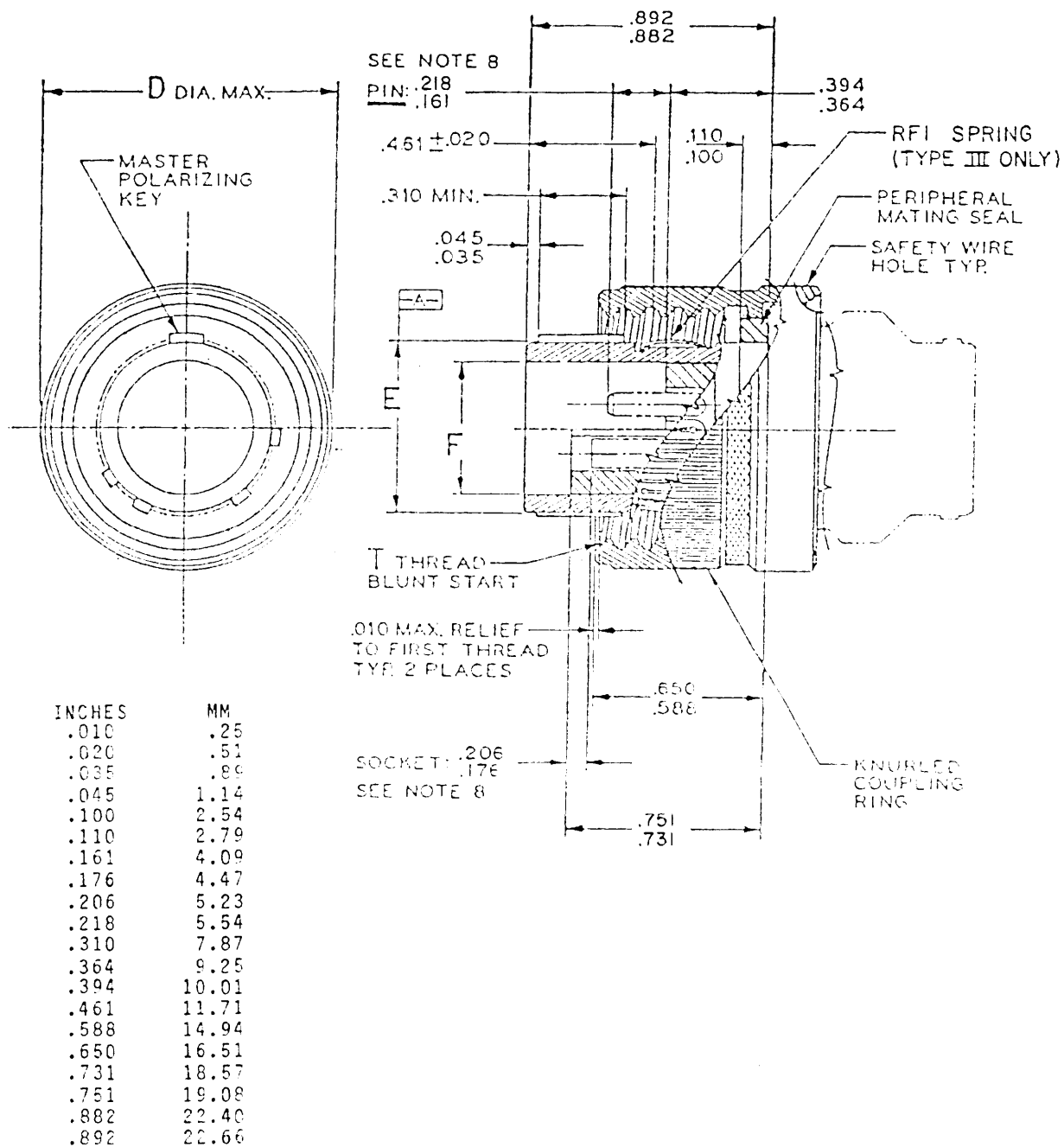


FIGURE 1. Interface dimensions for fiber optic connector plug, series 1 - type I, class A and type III, class A, style S.

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Shell sizes	T thread classes 2A	A DIA. MAX JAM-NUT	B DIA.	C DIA
(11)	.750-.1P- .2L-D.S.	1.290 (32.77)	.513 (13.03) .504 (12.80)	.367 (9.32) .352 (8.94)
(13)	.875-.1P- .2L-D.S.	1.435 (36.45)	.637 (16.18) .628 (15.95)	.489 (12.42) .474 (12.04)
(15)	1.062-.1P- .2L-D.S.	1.650 (41.91)	.809 (20.55) .800 (20.32)	.667 (16.94) .652 (16.56)
(17)	1.125-.1P- .2L-D.S.	1.725 (43.82)	.879 (22.33) .870 (22.10)	.744 (18.90) .729 (18.52)
(19)	1.312-.1P- .2L-D.S.	1.940 (49.28)	1.046 (26.57) 1.037 (26.34)	.888 (22.56) .873 (22.17)
(23)	1.500-.1P- .2L-D.S.	2.155 (54.74)	1.231 (31.27) 1.222 (31.04)	1.073 (27.25) 1.058 (26.87)
(25)	1.625-.1P- .2L-D.S.	2.300 (58.42)	1.392 (35.36) 1.383 (35.13)	1.262 (32.05) 1.247 (31.67)
(29)	1.812-.1P- .2L-D.S.	2.515 (63.88)	1.558 (39.57) 1.549 (39.34)	1.412 (35.86) 1.397 (35.48)
(33)	2.000-.1P- .2L-D.S.	2.730 (69.34)	1.750 (44.45) 1.741 (44.22)	1.610 (40.89) 1.595 (40.51)

NOTES:

1. Dimensions are in inches.
2. Millimeters are in parentheses.
3. Metric equivalents (to the nearest .01 mm) are given for general information only.
4. Dimensions apply after plating.
5. Mating keyway positions and dimensions are shown on figure 8.
6. This design information establishes connector intermating criteria and interchangeability of accessory hardware.
7. Rear end connector design for attachment of non-rotatable accessory hardware is shown on figure 11.
8. Dimension includes terminal slack. (Pin front end moves back during mating.)

FIGURE 2. Interface dimensions for fiber optic connector receptacle, series 1 - type I, class A and type III, class A, style S - Continued.

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	Min	Max
A	.3858 (9.804)	.3863 (9.812)
B	Plug must not enter .118 hole gauge	Plug must enter .124 Dia. hole gauge
C	.080 (2.03)	.100 (2.543)
D	.179 (4.57)	.181 (4.62)
E	.220 (5.59)	.233 (5.74)
F	.485 (12.3)	
G	.183 (4.661)	.224 (5.700)
H		1.50 (38.1)
J	.015 (0.38)	.045 (1.14)

K dimension	
50/125 μ m fiber	100/140 μ m fiber
.0050 +.0003 -.0000	.0057 +.0003 -.0000

NOTES:

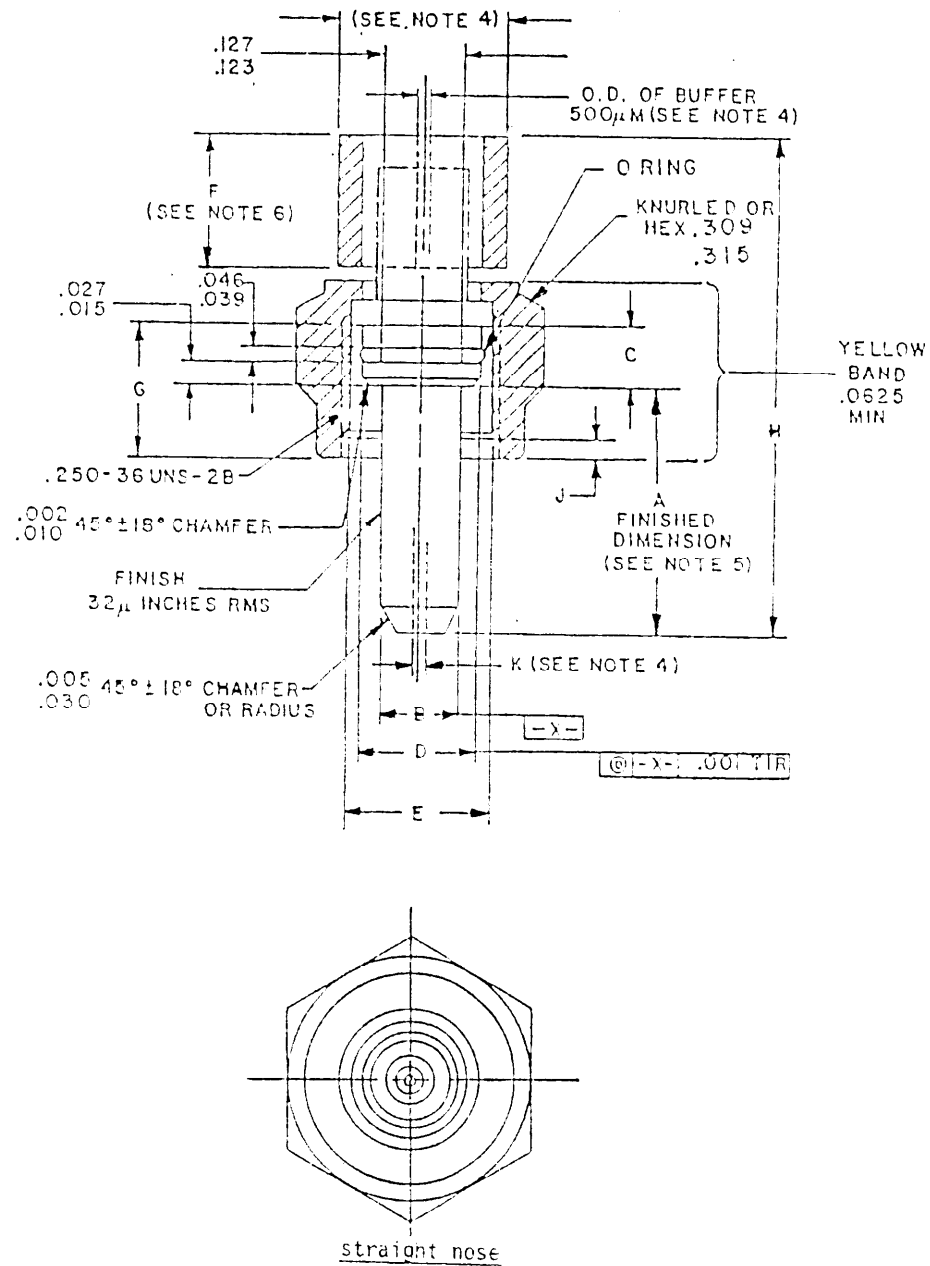
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Millimeters are in parentheses.
4. Dimensions for fiber optic cable shall be in accordance with DOD-C-85045.
5. Dimensions A is obtained after product has been assembled.
6. Ferrule may be integral part of component.
7. One full length sleeve to be used in conjunction with two step-down nose connectors.
8. One half length sleeve to be used in conjunction with one step-down nose connector and one receptacle (active device).
9. Three holes .016 (0.41 mm) minimum diameter, equally spaced, are required for safety wiring after mating. Location on the coupling nuts optional.

Dimensions and notes for step-down nose

FIGURE 3. Dimensions and configuration - Continued.

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FIGURE 3. Dimensions and configuration - Continued.

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	Min	Max
A	.3656 (9.804)	.3862 (9.812)
B	Plug must not enter .118 hole gauge	Plug must enter .125 Dia. hole gauge
C	.086 (2.03)	.100 (2.543)
D	.179 (4.57)	.181 (4.62)
E	.220 (5.59)	.233 (5.74)
F	.485 (12.3)	
G	.183 (4.661)	.224 (5.700)
H		1.50 (38.1)
J	.015 (0.38)	.045 (1.14)

K dimension	
50/125 μ m fiber	100/140 μ m fiber
.0050 (0.127)	.0057 (0.145)
+.0003 (0.008)	+.0003 (0.008)
-.0000 (0.000)	-.0000 (0.000)

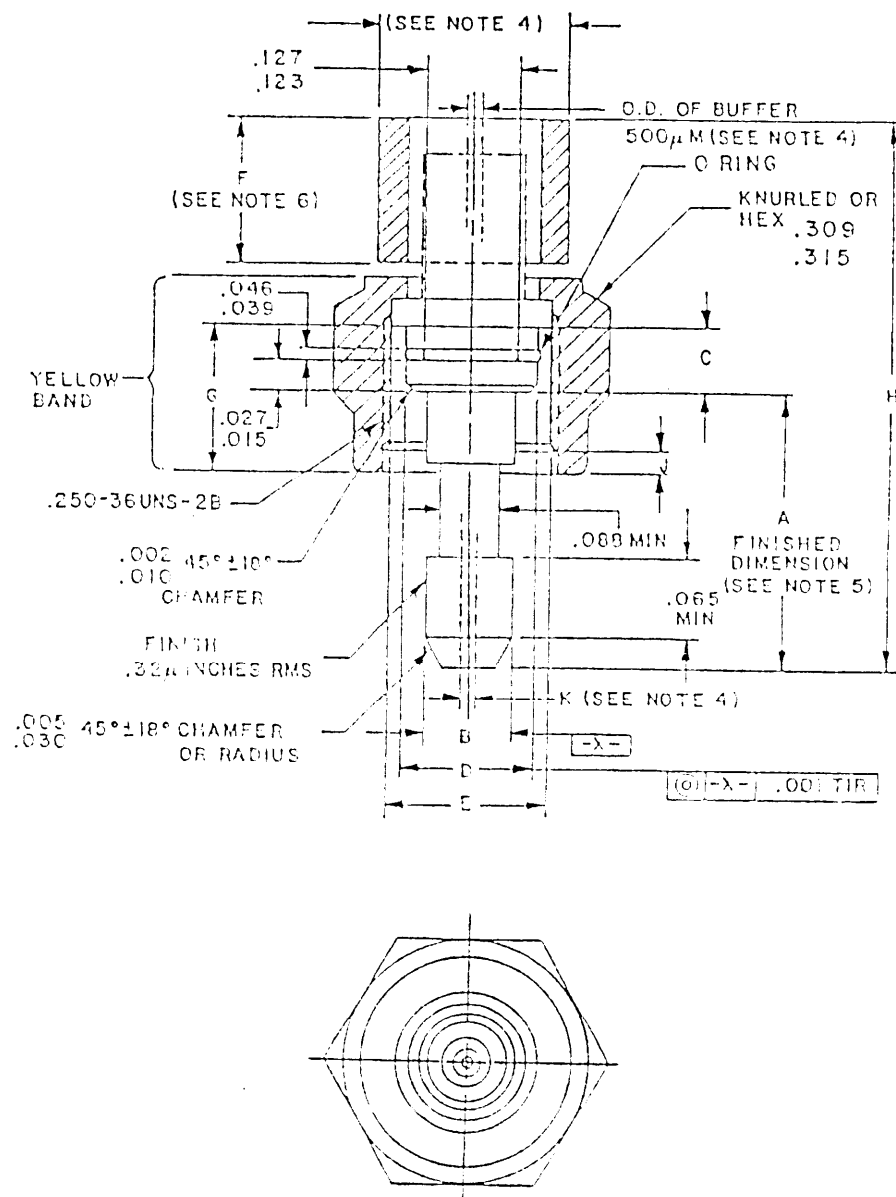
NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Millimeters are in parentheses.
4. Dimensions for fiber optic cable shall be in accordance with DOD-C-85045.
5. Dimension A is obtained after product has been assembled.
6. Ferrule may be integral part of component.
7. Three holes .016 (0.41 mm) minimum diameter, equally spaced, are required for safety wiring after mating. Location on the coupling nuts optional.

Dimensions and notes for straight nose.

FIGURE 3. Dimensions and configuration - Continued.

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straight nose (optional view)

FIGURE 3. Dimensions and configuration - Continued.

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	Min	Max
A	.3858 (9.804)	.3863 (9.812)
B	Plug must not enter .118 hole gauge	Plug must enter .125 Dia. hole gauge
C	.080 (2.03)	.100 (2.543)
D	.179 (4.57)	.181 (4.62)
E	.220 (5.59)	.233 (5.74)
F	.485 (12.3)	
G	.183 (4.661)	.224 (5.700)
H		1.50 (38.1)
J	.015 (0.38)	.045 (1.14)

K dimension	
50/125 μ m fiber	100/140 μ m fiber
.0050 (0.127)	.0057 (0.145)
+0.0003 (0.008)	+0.0003 (0.008)
-0.0000 (0.000)	-0.0000 (0.000)

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Millimeters are in parentheses.
4. Dimensions for fiber optic cable shall be in accordance with DOD-C-85045.
5. Dimension A is obtained after product has been assembled.
6. Ferrule may be integral part of component.
7. Three holes .016 (0.41 mm) minimum diameter, equally spaced, are required for safety wiring after mating. Location on the coupling nuts optional.

Dimensions and notes for straight nose (optional view)FIGURE 3. Dimensions and configuration - Continued.

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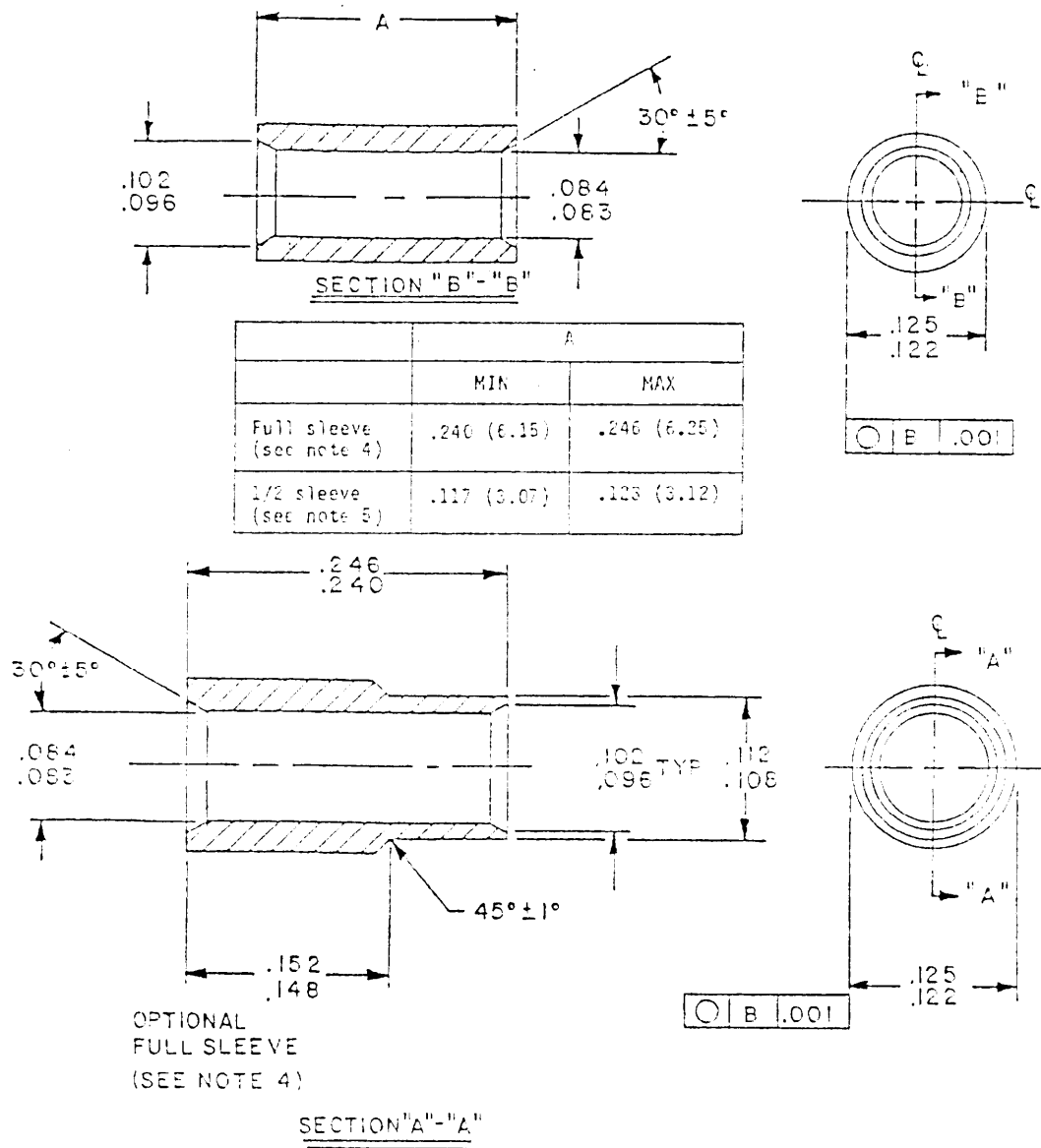


FIGURE 3A. Alignment sleeves.

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Inches	mm
.001	0.03
.083	2.11
.084	2.13
.096	2.44
.102	2.59
.108	2.74
.112	2.85
.122	3.10
.125	3.18
.148	3.76
.152	3.86
.240	6.10
.246	6.25

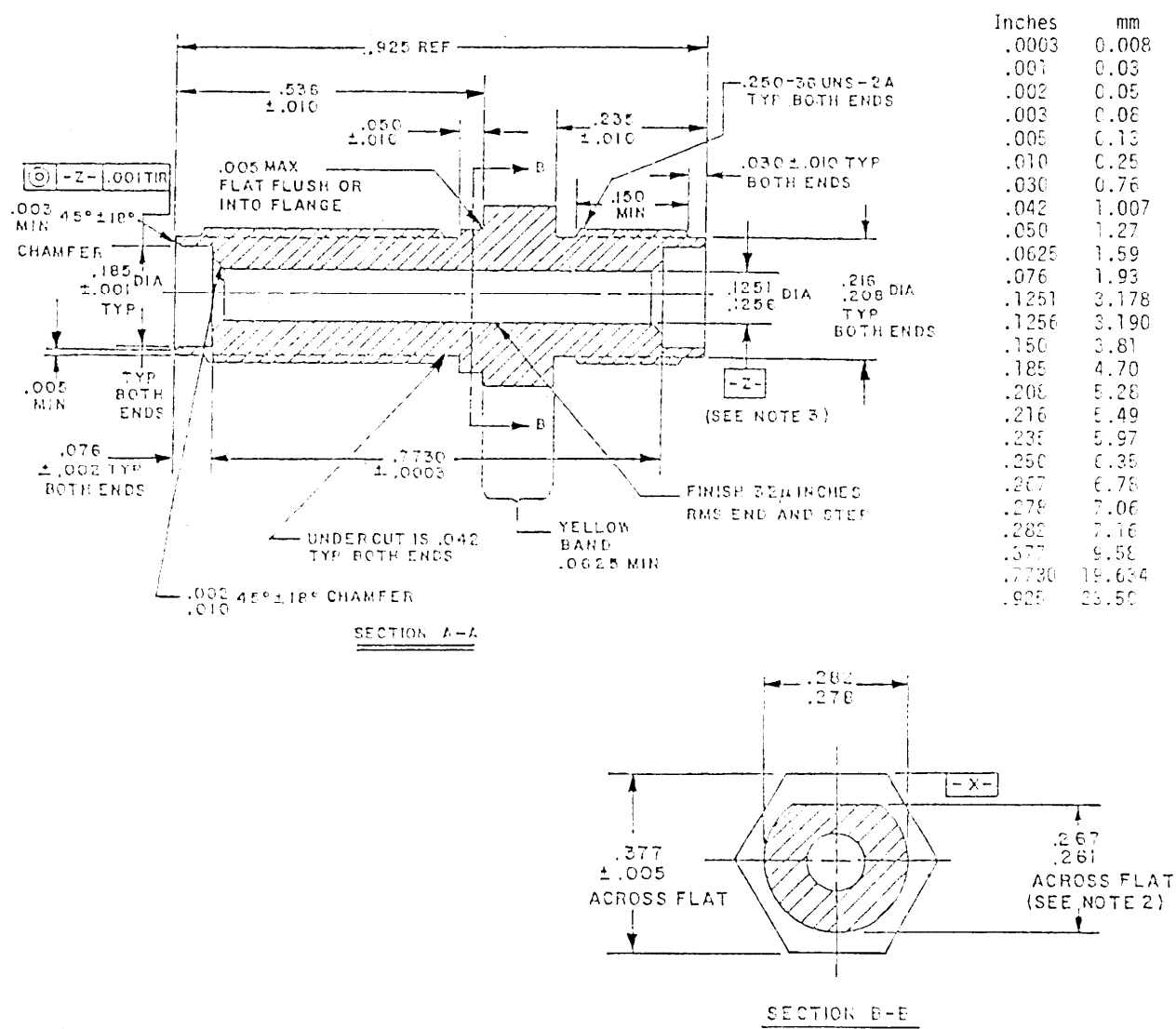
NOTES:

1. Dimensions are in inches.
2. Metric equivalents are in parentheses.
3. Metric equivalents are given for general information only.
4. One full length delrin sleeve to be used in conjunction with two step-down nose connectors.
5. One half length delrin sleeve to be used in conjunction with one step-down nose connector and one receptacle (active device).
6. Dimensions apply to sleeve as manufactured. Sleeve material may be compressed when in use.

FIGURE 3A. Alignment sleeves - Continued.

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NOTES:

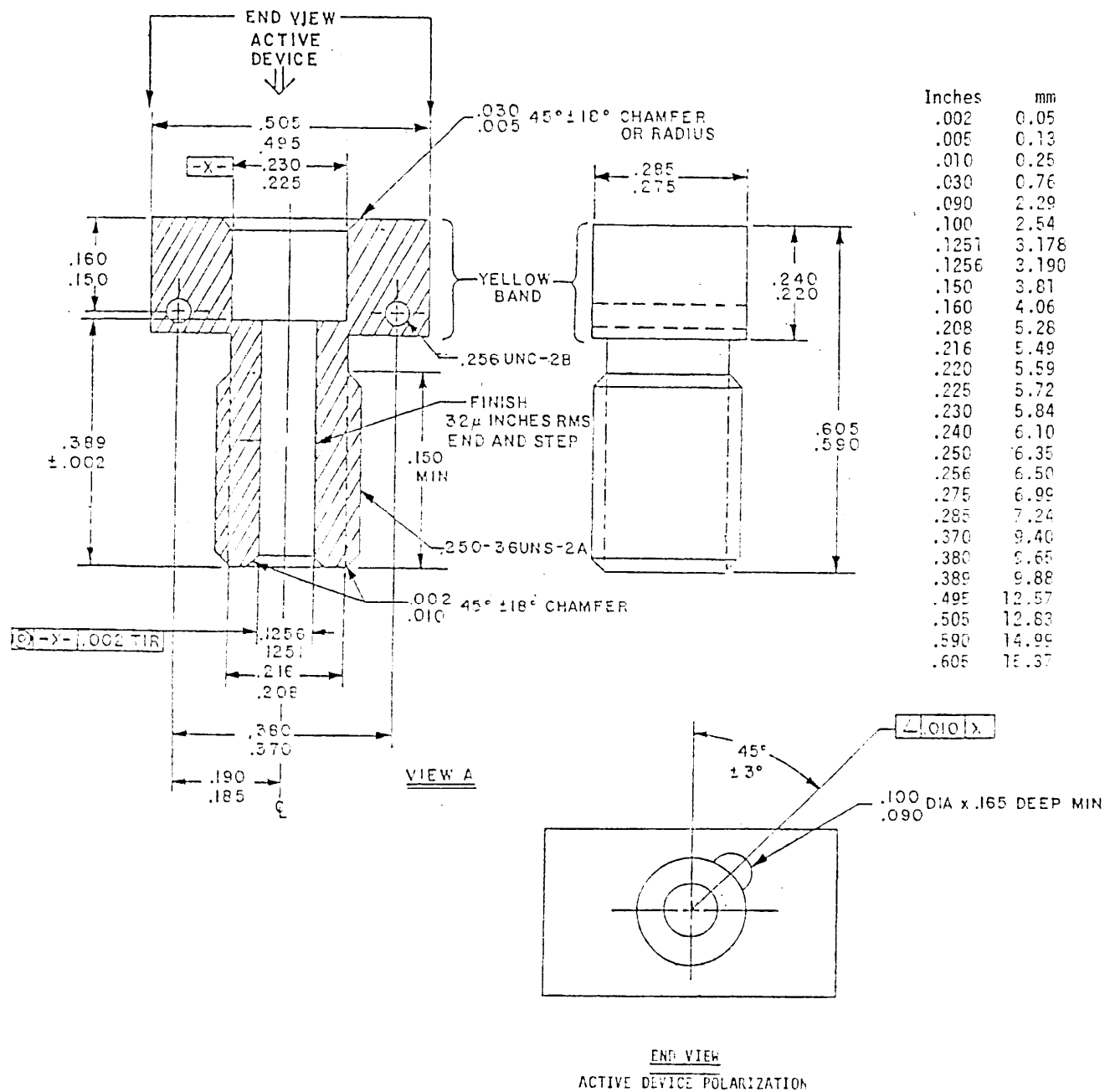
1. All dimensions are after plating.
2. Flat to be within ± 0.005 of surface ---X--- .
3. No burrs or nicks for entire length.
4. Dimensions are in inches.
5. Metric equivalents are given for general information only.
6. Three holes .016 (0.41 mm) minimum diameter, equally spaced, are required for safety wiring after mating. Location on the coupling nuts optional.

FIGURE 4. Interface dimensions for fiber optic mating adapter, type II, class A, series 2.

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NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.

FIGURE 5. Interface dimensions for fiber optic connector receptacle (active device), type II, class A, series 2.

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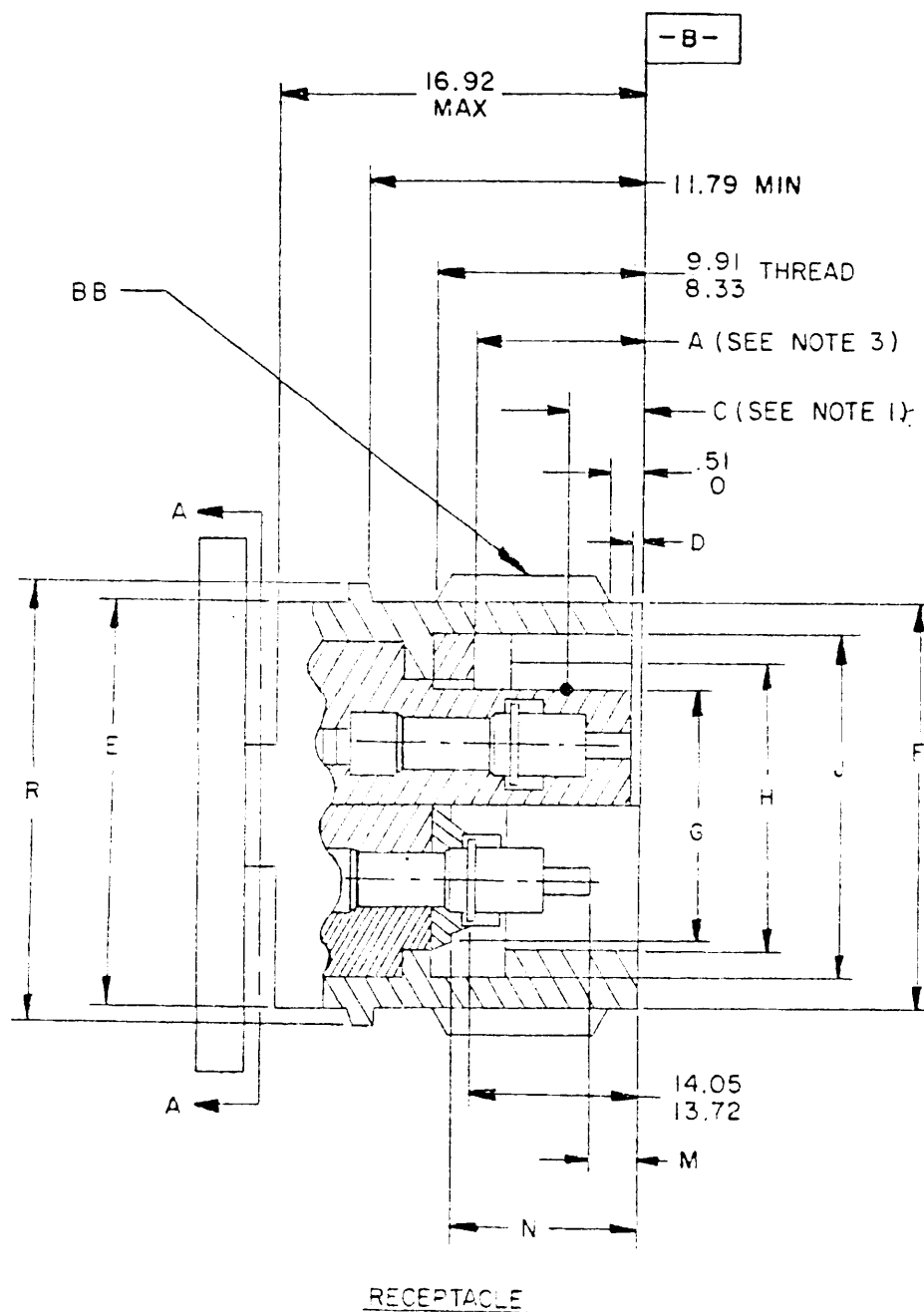


FIGURE 6. Intermateability dimensions for fiber optic interconnect, series 3 - type I, class A and type III, class A, style R.

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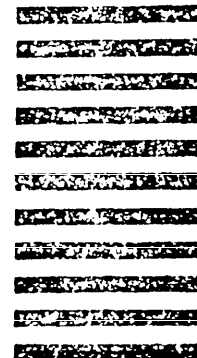
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