MILITARY SPECIFICATION SHEET

CONNECTOR, PLUG, FIBER OPTIC, SINGLE TERMINUS, THREADED, (STEP-DOWN NOSE INTERFACE), LENSLESS, EPOXY, FOR 50/125 µm, 62.5/125 µm, AND 100/140 µm

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-C-83522.

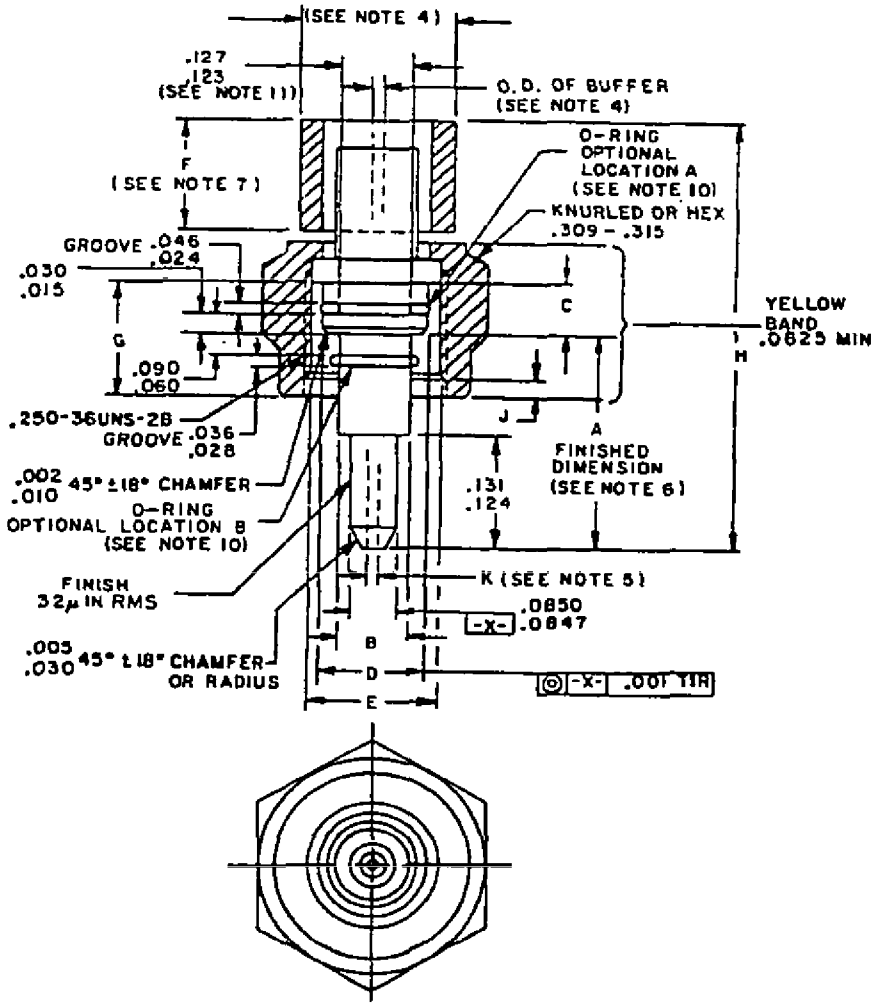


FIGURE 1. Dimensions and configuration (step-down nose).

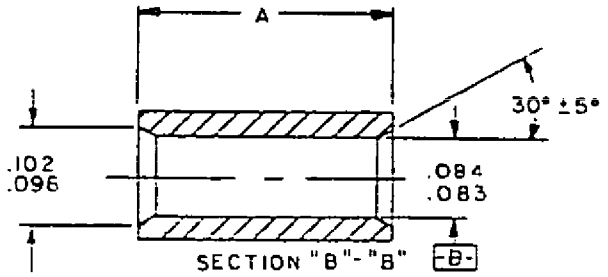
	Min	Max
A	.3858 (9.799)	.3863 (9.812)
C	.080 (2.03)	.100 (2.54)
D	.179 (4.55)	.182 (4.62)
E	.220 (5.59)	.233 (5.92)
F	.485 (12.32)	
G	.183 (4.65)	.244 (5.69)
H		.150 (38.1)
J	.015 (0.38)	.045 (1.14)
B	Plug must not enter .118 hole gauge	Plug must enter .124 dia. hole gauge

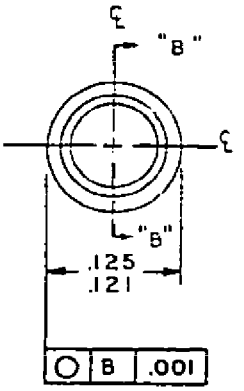
K dimension		
50/125 µm fiber	62.5/125 µm	100/140 µm fiber
.1300 max .1275 min	.1300 max .1275 min	.1450 max .1425 min

Inches	mm
.001	0.03
.002	0.05
.005	0.13
.010	0.25
.015	0.38
.028	0.71
.030	0.76
.036	0.91
.039	0.99
.046	1.17
.060	1.52
.0625	1.588
.0847	2.151
.0850	2.159
.090	2.29
.123	3.12
.124	3.15
.127	3.23
.131	3.33
.250	6.35
.309	7.85
.315	8.00

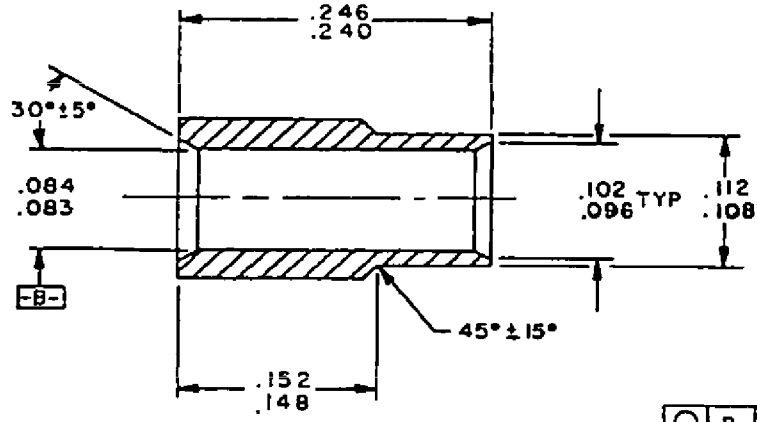
NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Millimeters are in parentheses.
4. Dimensions for fiber optic cable shall be in accordance with DOD-C-85045.
5. K dimension is specified in micrometer. This dimension is critical to fiber alignment. Dimensions for fiber optic fiber shall be in accordance with DOD-F-49291.
6. Dimensions A are obtained after product has been assembled.
7. Ferrule may be intergral part of component.
8. One full length sleeve to be used in conjuction with two step-down nose connectors.
9. One-half length sleeve to be used in conjuction with one step-down nose connector and one receptacle (active device).
10. O-ring is required. Component shall be machined for either O-ring location A or location B.
11. Dimension of O-ring area.

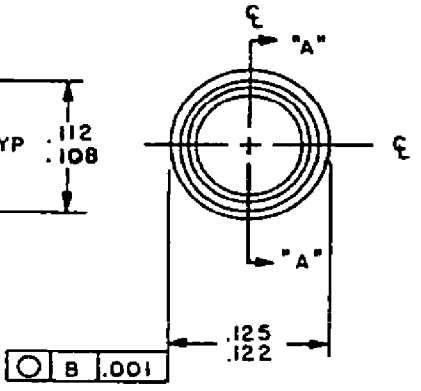
FIGURE 1. Dimensions and configuration - Continued.





	A	
	Min	Max
Full sleeve (see note 4)	.240 (6.10)	.246 (6.25)
One-half sleeve (see note 5)	.117 (2.97)	.124 (3.15)





OPTIONAL
FULL SLEEVE
(SEE NOTE 4)

SECTION "A"-"A"

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 acetal sleeve to be used in conjuction with two step-down down nose connectors.
5. One-half length acetal 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.

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

FIGURE 2. Alignment sleeves.

REQUIREMENTS:

Vendors with products qualified to MIL-C-83522B shall not be required to test in accordance with MIL-C-83522C for retention of qualification testing.

Metals: The plug housing shall be of corrosion resistant steel in accordance with QQ-S-763, class 303 or nickel plated brass in accordance with QQ-B-626. Other metal components shall be of corrosion resistant steel in accordance with QQ-S-763, class 303; nickel plated beryllium copper in accordance with QQ-B-530 or nickel plated brass in accordance with QQ-B-626.

Epoxies: Use Trabond 230, Eccobond 1448 or an equivalent epoxy approved by the qualifying activity.

Dimensions and configuration: See figure 1.

Fiber optic cable requirements:

Cable diameter: In accordance with DOD-C-85045.

Cable configuration: In accordance with DOD-C-85045.

Fiber diameter: 50/125 µm, 62.5/125 µm, and 100/140 µm.

Fiber numerical aperture: In accordance with DOD-F-49291.

Fiber type: Multimode.

Fiber optic terminal: In accordance with MIL-F-49291.

Method of optical alignment: Ferrule/sleeve type (see figure 2).

Lens configuration: Not applicable.

Coating requirements: Not applicable.

Optical requirements:

Number of optical termini: One.

Coupling loss (attenuation): 3 dB maximum per mated pair.

Weight: 6 grams maximum.

Polarization: Not applicable.

Safety wire holes: Optional.

Force to engage and disengage:

Longitudinal force: 12 pounds maximum.

Torque: 4 inch-pounds maximum.

Coupling proof torque: 5 inch-pounds minimum.

Coupling mechanism retention force: 60 pounds minimum.

Ozone exposure: Not applicable.

Durability: 200 cycles, 1 dB maximum change.

Low temperature: 1 dB change.

Part or Identifying Number (PIN): See table I.

TABLE I. PIN.

PIN M83522/1-	Fiber size µm
03	50/125
03	62.5/125
04	100/140

Plug accessories: Each plug shall be supplied with a minimum of one crimp ferrule as needed (see figure 1); two alignment sleeves (see figure 2); one protective cable-end cap; one 1.5 inch length of heat-shrink tubing or one rubber boot; and one set of assembly instructions. The assembly instructions shall include a listing of the epoxies specified in this specification sheet and a cleaning procedure statement as follows:

Cleaning procedures: Dampen lens tissue (paper wipes or cotton swab) with a small amount of isopropyl alcohol or water. Gently wipe the face of the connector, removing any debris, particularly around the optical fiber, using clean lens tissue (paper wipes, cotton swab). Dry face of connector by blowing with dry air.

NOTE: The plug mates with MIL-C-83522/4 receptacle; MIL-C-83522/5 receptacle, MIL-C-83522/7 receptacle; MIL-C-83522/8 receptacle; or a MIL-C-83522/3 adapter mated with another MIL-C-83522/1 plug. Connection to any other type plug may result in excessive coupling loss.

Revision letters are not used to denote changes due to the extensiveness of the changes.

CONCLUDING MATERIAL

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

Review activities:
Navy - SH
Air Force - 11, 17, 19, 80, 90, 99
DLA - ES

User activities:
Navy - AS, MC, OS
Air Force - 13, 14

Preparing activity:
Air Force - 85

Agent:
DLA - ES

(Project 6060-0091-1)