INCH-POUND

MIL-PRF-29504/1B
12 November 2002
SUPERSEDING
MIL-T-29504/1A
19 December 1989

PERFORMANCE SPECIFICATION SHEET

TERMINI, FIBER OPTIC, CONNECTOR, REMOVABLE, ENVIRONMENT RESISTING, PIN TERMINUS, (FOR MIL-C-28876 and MIL-C-83526 CONNECTORS)

Inactive for new design after 15 December 2001
For new design use MIL-PRF-29504/14

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 and MIL-PRF-29504.

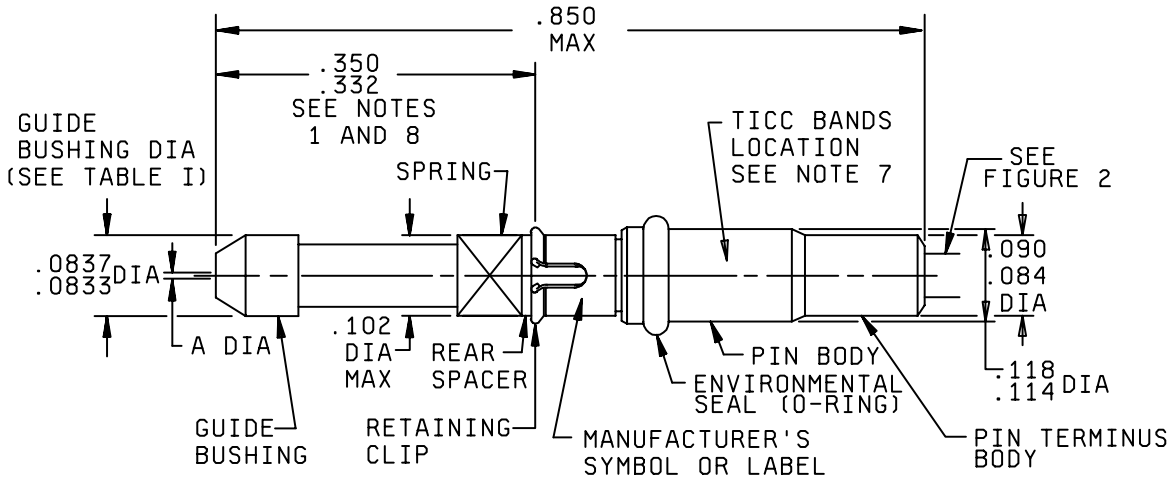
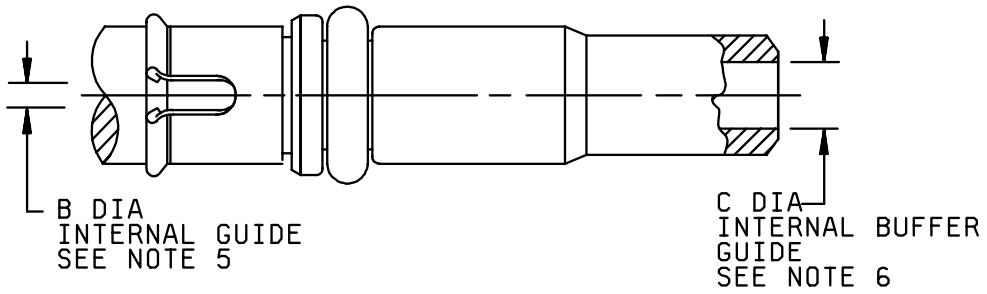


FIGURE 1. Pin terminus

Inches	mm		Inches	mm
.0833	2.116		.114	2.90
.0837	2.126		.118	3.00
.084	2.13		.332	8.43
.090	2.29		.350	8.89
.102	2.59		.850	21.59

NOTES:
1. These are unmated dimensions and will decrease 0.40 in (10.2 mm) as springs compress during mating.
2. Dimensions are in inches.
3. Metric equivalents are given for general information only, except for guide bushing "A" diameter which is based upon 1.00 inch = 25400.0 µm or 1.0 µm = .00003937 inch.
4. All diameters to be concentric within 0.002 inch (0.05 mm).
5. Dimensions apply after plating.
6. For internal configuration and dimensions of terminus rear, see figure 2.
7. The TICC bands shall be at the rear of the pin terminus.
8. Dimensions to be measured with terminus installed in connector insert or equivalent gauge fixture.

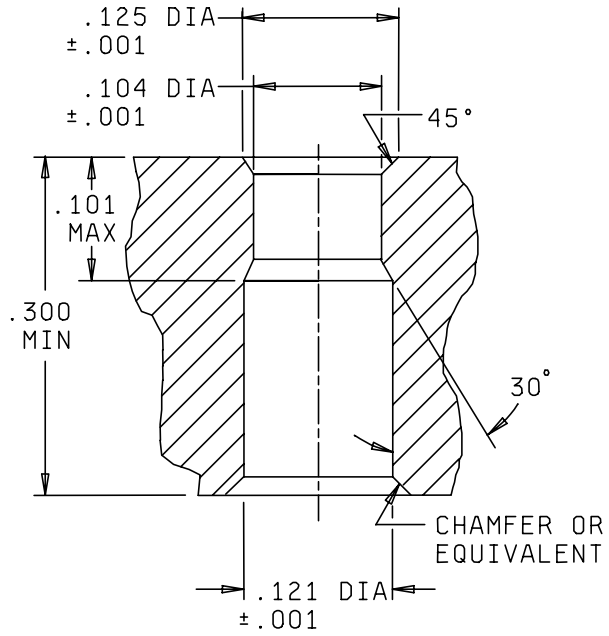
FIGURE 1. Pin terminus - Continued.



B diameter (internal guide)		C diameter (internal buffer guide)	
Inches	mm	Inches	Mm
0.017 0.014	0.43 0.36	0.056 0.053	1.42 1.35

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. All diameters to be concentric within .002 inch (0.05 mm).
4. Dimensions apply to plated/finished part.
5. The "B" diameter of the internal guide is used to center coated optical waveguide fiber.
6. The "C" diameter of the internal buffer guide is used to center the optical waveguide fiber buffer.

FIGURE 2. Terminus internal guide and buffer.



Inches	mm
.001	0.03
.101	2.57
.104	2.64
.121	3.07
.125	3.18
.300	7.62

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. All diameters to be concentric within .002 inch (0.05 mm).
4. Dimensions apply to plated/finished part.
5. Tolerance on all angles is ± 1°, unless otherwise noted.

FIGURE 3. Insert equivalent fixture for terminus measurement.

REQUIREMENTS:

Design and construction:

Dimensions and configuration: See figures 1 and 2 and table I.

Weight: 1 gram maximum.

Adhesives: Use MIL-PRF-24792 or as approved by the qualifying activity.

Tools: See table II.

Mating termini: MIL-PRF-29504/2 and MIL-PRF-29504/13.

Crimp sleeve: (for 2.4 mm maximum diameter cable) to be supplied with terminus when specified in the PIN.

Circular runout: Not greater than 2.5 micrometers.

Optical performance:

Insertion loss: The initial insertion loss of a mated pin and socket shall be not greater than 1.5 dB. The maximum insertion loss of a mated pin and socket at any time during testing shall be not greater than 2.0 dB.

Environmental/mechanical: Termini shall be tested to the following MIL-PRF-28876 environmental and mechanical requirements. Change in optical transmittance and optical discontinuity requirements shall be as specified in MIL-PRF-28876.

Impact
Vibration
Shock
Thermal shock
Temperature/humidity cycling
Temperature cycling
Temperature life
Flammability
Ozone exposure

To qualify or requalify termini to this specification sheet, all requirements of MIL-PRF-28876 shall be met using the qualifying terminus in a connector qualified to MIL-PRF-28876.

Qualification connector: The qualification connector for this terminus shall be a qualified MIL-PRF-28876 connector.

Test specimens: Test specimens shall be constructed using a 62.5/125 micron optical fiber within a single fiber cable with an outer diameter not greater than 2.4 mm.

Part or identifying number (PIN): See table III and paragraph 6.6 of MIL-PRF-29504.

M29504/1	-XXXX	X
Basic specification and specification sheet	TICC Code (see table I)	Crimp sleeve (optional)

TABLE 1. TICC numbers to fiber diameter cross-reference.

TICC	A diameter (hole diameter)	
	Inches +0.0001 -0.0000	µm +2.5 -0.0
4000	.0047	119.5
4001	.0048	122.0
4002	.0049	124.5
4003	.0050	127.0
4004	.0051	129.5
4005	.0052	132.0
4006	.0053	134.5
4007	.0054	137.0
4008	.0055	139.5
4009	.0056	142.0
4010	.0057	145.0
4011	.0076	193.0
4012	.0077	195.5
4013	.0078	198.0
4014	.0079	200.5
4015	.0080	203.0
4016	.0081	205.5
4017	.0082	208.0
4018	.0083	211.0

TABLE II. Tools.

Tool	Part number
Insertion tool	NAVSEA DWG 6872813-2 (NSN 5120-01-144-5338)
Removal tool	NAVSEA DWG 6872813-6 (NSN 5120-01-419-2942)
Polishing tool	Packard Hughes PN 4569100H or equivalent

Supersession data: See table III.

Usage: Termini compliant with this specification sheet may be used in connectors other than MIL-PRF-28876 at the discretion of the acquiring activity.

TABLE III. The PIN and supersession data.

TICC	PIN M29504/01-	Superseded PIN M28876/16-	Superseded manufacturer's PIN	CAGE
-4000 1/	4000	048XXX 2/	44970016048 0110	91662
			1093201-048FXXXS 2/	53669
-4001 1/	4001	049XXX	1093201-049FXXXS	53669
-4002 1/	4002	050XXX	1093201-050FXXXS	53669
-4003 1/	4003	051XXX	1093201-051FXXXS	53669
-4004 1/	4004	052XXX	1093201-052FXXXS	53669
-4005 1/	4005	053XXX	1093201-053FXXXS	53669
-4006 1/	4006	054XXX	1093201-054FXXXS	53669
-4007 1/	4007	055XXX	1093201-055FXXXS	53669
-4008 1/	4008	056XXX	1093201-056FXXXS	53669
-4009 1/	4009	057XXX	44970015057 7000	91662
			1093201-057FXXXS	53669
-4010 1/	4010	058XXX	1093201-058FXXXS	53669
-4011 1/	4011	077XXX	1093201-077FXXXS	53669

TABLE III. The PIN and supersession data - Continued.

-4012 1/	4012	078XXX	1093201-078FXXXS	53669
-4013 1/	4013	079XXX	1093201-079FXXXS	53669
-4014 1/	4014	080XXX	1093201-080FXXXS	53669
-4015 1/	4015	081XXX	1093201-081FXXXS	53669
-4016 1/	4016	082XXX	1093201-082FXXXS	53669
-4017 1/	4017	083XXX	1093201-083FXXXS	53669
-4018 1/	4018	084XXX	1093201-084FXXXS	53669

1/ Inactive for new design.

2/ X - Indicates all numerical combinations possible.

Patent notice: The Government does not have royalty-free license under the following patents for the benefit of manufacturers of the item, either for the Government or for use in equipment to be delivered to the Government.

Patent number	Patent expiration date
US 4707068	11/17/2004

Custodians:
Army - CR
Navy - SH
Air Force - 11
DLA - CC

Review activities:
Navy - AS
Air Force - 03, 13, 19, 93, 99
NASA - NA
DIA - DI

Preparing activity:
Navy - SH

Agent:
DLA - CC

Project 6060-0132-01)