

INCH-POUND

MIL-DTL-15370/4D
 24 January 2002
 SUPERSEDING
 MIL-C-15370/4C
 22 September 1989

DETAIL SPECIFICATION SHEET

COUPLERS, DIRECTIONAL (WAVEGUIDE-MULTI HOLE)

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

The requirements for acquiring the couplers described herein shall consist of this document and the latest issue of MIL-DTL-15370.

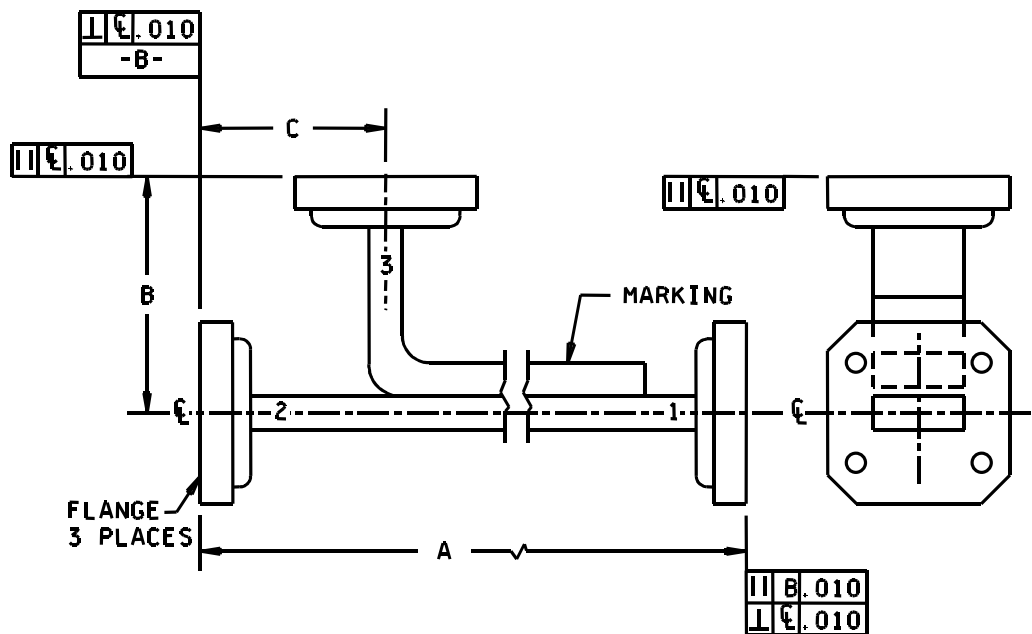


FIGURE 1. Dimensions and configuration.

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REQUIREMENTS:

Design, construction and physical dimensions: See figure 1 and table I.

Equivalent waveguide: See table I.

Flange: See table I.

Operating temperature range: -40°C to +85°C for dash numbers -001 through -017.
-20°C to +65°C for dash numbers -018 through -027.

Frequency range: See table II.

Coupling: See table II.

Coupling tolerance: See table II.

Coupling variation: See table II.

Effective directivity: See table II.

VSWR: See table II.

Marking: See figure 1.

Cross-reference data: See table III.

Part or Identifying Number (PIN): M15370/4- (and a dash number from table I).

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TABLE I. Physical characteristics.

Dash Number	Dimensions 1/ 2/ 3/						Equivalent waveguide	Flange
	A		B		C			
	Min	Max	Min	Max	Min	Max		
001N S	26.437 (671.50)	26.563 (674.70)	4.500 (114.30)	4.625 (118.48)	2.000 (50.80)	2.125 (53.98)	M85/1-067 (RG-50/U)	M3922/55-001 8/ (UG-344/U)
002N S	25.500 (647.70)	26.625 (676.28)	4.500 (114.30)	4.625 (118.48)	2.000 (50.80)	2.125 (53.98)	M85/1-067 (RG-50/U)	M3922/55-001 8/ (UG-344/U)
003N S	25.500 (647.70)	26.625 (676.28)	4.500 (114.30)	4.625 (118.48)	2.000 (50.80)	2.125 (53.98)	M85/1-067 (RG-50/U)	M3922/55-001 8/ (UG-344/U)
004N S	18.563 (471.50)	19.188 (487.38)	2.938 (74.63)	3.063 (77.80)	1.063 (27.00)	1.188 (30.18)	M85/1-073 (RG-51/U)	M3922/53-002 (UG-51/U)
005N S	17.438 (442.90)	17.563 (446.10)	2.938 (74.63)	3.063 (77.80)	1.063 (27.00)	1.188 (30.18)	M85/1-073 (RG-51/U)	M3922/53-002 (UG-51/U)
006N S	17.438 (442.90)	17.563 (446.10)	2.938 (74.63)	3.063 (77.80)	1.063 (27.00)	1.188 (30.18)	M85/1-073 (RG-51/U)	M3922/53-002 (UG-51/U)
007N S	16.625 (422.28)	16.750 (425.45)	2.938 (74.63)	3.063 (77.80)	1.000 (25.40)	1.125 (28.58)	M85/1-079 (RG-52/U)	M3922/53-001 (UG-39/U)
008N S	15.625 (396.88)	15.750 (400.05)	2.938 (74.63)	3.063 (77.80)	1.000 (25.40)	1.125 (28.58)	M85/1-079 (RG-52/U)	M3922/55-001 8/ (UG-39/U)
009N S	15.625 (396.88)	15.750 (400.05)	2.938 (74.63)	3.063 (77.80)	1.000 (25.40)	1.125 (28.58)	M85/1-079 (RG-52/U)	M3922/55-001 8/ (UG-39/U)
010N S	12.188 (309.58)	12.313 (312.75)	1.968 (50.00)	2.094 (52.79)	.687 (17.48)	.813 (20.68)	M85/1-089 (RG-91/U)	M3922/53-005 (UG-419/U)
011N S	9.313 (236.55)	10.656 (270.66)	1.937 (49.20)	3.000 (76.20)	.562 (14.27)	1.000 (25.40)	M85/1-106 (RG-66/U)	M3922/54-001 8/ (UG-595/U)
012N S	9.313 (236.55)	9.968 (253.19)	1.937 (49.20)	3.000 (76.20)	.562 (14.27)	1.000 (25.40)	M85/1-106 (RG-66/U)	M3922/54-001 8/ (UG-595/U)
013N S	7.562 (192.10)	9.968 (253.19)	1.937 (49.20)	3.000 (76.20)	.562 (14.27)	1.000 (25.40)	M85/1-106 (RG-66/U)	M3922/54-001 8/ (UG-595/U)
014N S	20.350 (516.89)	20.410 (518.41)	2.230 (56.64)	2.270 (57.66)	.980 (24.89)	1.020 (25.91)	M85/1-109 (RG-349/U)	M3922/53-006 4/ (UG-1665/U)
015N S	20.350 (516.89)	20.410 (518.41)	2.230 (56.64)	2.270 (57.66)	.980 (24.89)	1.020 (25.91)	M85/1-090 (RG-349/U)	M3922/53-012
016N S	20.350 (516.89)	20.410 (518.41)	2.230 (56.64)	2.270 (57.66)	.980 (24.89)	1.020 (25.91)	M85/1-090 (RG-349/U)	M3922/53-012
017N S	20.350 (516.89)	20.410 (518.41)	2.230 (56.64)	2.270 (57.66)	.980 (24.89)	1.020 (25.91)	M85/1-090 (RG-349/U)	M3922/53-012
018N S	5.975 (151.77)	8.750 (222.25)	1.630 (41.40)	1.938 (49.23)	.400 (10.16)	.719 (18.26)	M85/3-008 (RG-271/U)	M3922/54-003 8/ (UG-599/U)

See footnotes at end of table.

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TABLE I. Physical characteristics - Continued.

Dash Number	Dimensions <u>1/</u> <u>2/</u> <u>3/</u>						Equivalent waveguide	Flange
	A		B		C			
	Min	Max	Min	Max	Min	Max		
019N S	5.975 (151.77)	8.750 (222.25)	1.630 (41.40)	1.938 (49.23)	.400 (10.16)	.719 (18.26)	M85/3-006 (RG-96/U)	M3922/54-003 <u>8/</u> (UG-599/U)
020N S	7.20 (182.88)	7.40 (187.96)	1.51 (38.35)	1.55 (39.37)	.782 (19.86)	.820 (20.83)	M85/1-078	M3922/53-003 (UG-135/U) <u>5/</u>
021N S	7.20 (182.88)	7.40 (187.96)	1.51 (38.35)	1.55 (39.37)	.782 (19.86)	.820 (20.83)	M85/1-077 (RG-67/U)	M3922/59-008 (UG-136B/U) <u>6/</u>
022N S	7.20 (182.88)	7.40 (187.96)	1.51 (38.35)	1.55 (39.37)	.782 (19.86)	.820 (20.83)	M85/1-077 (RG-67/U)	<u>7/</u>
023N S	13.50 (342.90)	13.95 (354.15)	1.875 (47.63)	1.879 (47.73)	.688 (17.48)	.706 (17.93)	M85/1-089 (RG-91/U)	M3922/53-005 (UG-419/U)
024N S	12.40 (314.96)	12.45 (316.23)	1.875 (47.63)	1.879 (47.73)	.688 (17.48)	.706 (17.93)	M85/1-089 (RG-91/U)	M3922/53-005 (UG-419/U)
025N S	12.40 (314.96)	12.45 (316.23)	1.875 (47.63)	1.879 (47.73)	.688 (17.48)	.706 (17.93)	M85/1-093 (RG-107/U)	M3922/53-005 (UG-419/U)
026N S	12.40 (314.96)	13.01 (330.45)	1.370 (34.80)	1.380 (35.05)	.688 (17.48)	.706 (17.93)	M85/1-089 (RG-91/U)	M3922/53-005 (UG-419/U)
027N S	12.40 (314.96)	15.00 (381.00)	1.630 (41.40)	1.938 (49.23)	.400 (10.16)	.719 (18.26)	M85/1-089 (RG-91/U)	M3922/53-005 (UG-419/U)

1/ Dimensions are in inches.

2/ Metric equivalents (to the nearest .01 mm) are given for general information only.

3/ Metric equivalents are in parentheses.

4/ Except the lip thickness is .25 inch (.635 mm) and tapped holes .138-32UNC-2B.

5/ Except for tapped holes, .164-32UNC-2B in the input (1) flange.

6/ Except for clearance holes of .167/.179 dia in the output (2) flange.

7/ Input flange (1) is M3922/53-003 (8/), and the output and coupled flanges (2 and 3) are M3922/59-008. All three flanges have threaded holes .164-32UNC-2B.

8/ MIL-F-3922/54 and MIL-F-3922/55 flange specification sheets are inactive for new design and no longer used, except for replacement purposes.

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TABLE II. Electrical characteristics.

Dash number	Frequency range (GHz)	Coupling (dB)		Coupling variation (dB) max	Effective directivity (dB) min	VSWR max		Power dissipation of internal load (avg) (Watts)
		Nominal	Tolerance			Primary line	Secondary line	
001N S	5.85-8.2	3	±0.5	±0.5	40	1.10:1	1.20:1	1.0
002N S	5.85-8.2	10	±0.5	±0.5	40	1.05:1	1.15:1	1.0
003N S	5.85-8.2	20	±0.5	±0.5	40	1.05:1	1.15:1	1.0
004N S	7.05-10.0	3	±0.5	±0.5	40	1.10:1	1.20:1	1.0
005N S	7.05-10.0	10	±0.5	±0.5	40	1.05:1	1.15:1	1.0
006N S	7.05-10.0	20	±0.5	±0.5	40	1.05:1	1.15:1	1.0
007N S	8.2-12.4	3	±0.5	±0.5	40	1.10:1	1.20:1	1.0
008N S	8.2-12.4	10	±0.5	±0.5	40	1.05:1	1.15:1	1.0
009N S	8.2-12.4	20	±0.5	±0.5	40	1.05:1	1.15:1	1.0
010N S	12.4-18.0	20	±0.5	±0.5	40	1.05:1	1.15:1	1.0
011N S	18.0-26.5	3	±0.5	±0.5	40	1.10:1	1.20:1	0.5
012N S	18.0-26.5	10	±0.5	±0.5	40	1.05:1	1.15:1	0.5
013N S	18.0-26.5	20	±0.5	±0.5	40	1.05:1	1.15:1	0.5
014N S	11.0-17.0	10	±0.4	±0.4	35	1.10:1	1.20:1	1.0
015N S	11.0-17.0	15	±0.4	±0.4	35	1.10:1	1.20:1	1.0
016N S	11.0-17.0	20	±0.4	±0.4	35	1.10:1	1.20:1	1.0
017N S	11.0-17.0	30	±0.4	±0.4	35	1.10:1	1.20:1	1.0

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TABLE II. Electrical characteristics – Continued.

Dash number	Frequency range (GHz)	Coupling (dB)		Coupling variation (dB) max	Effective directivity (dB) min	VSWR max		Power dissipation of internal load (avg) (Watts)
		Nominal	Tolerance			Primary line	Secondary line	
018N S	26.5-40.0	20	±0.7	±0.6	40	1.05:1	1.20:1	0.5
019N S	26.5-40.0	30	±0.7	±0.6	40	1.05:1	1.20:1	0.5
020N S	8.2-12.4	20	±0.5	±0.5	30	1.10:1	1.20:1	3.0
021N S	8.2-12.4	20	±0.5	±0.5	40	1.05:1	1.15:1	1.0
022N S	8.2-12.4	40	±0.4	±0.4	30	1.05:1	1.15:1	1.0
023N S	12.4-18.0	3	±0.5	±0.5	40	1.10:1	1.20:1	1.0
024N S	12.4-18.0	6	±0.5	±0.5	40	1.10:1	1.20:1	1.0
025N S	12.4-18.0	10	±0.5	±0.5	40	1.10:1	1.20:1	1.0
026N S	12.4-18.0	10	±0.5	±0.5	30	1.10:1	1.20:1	1.0
027N S	12.4-18.0	40	±0.5	±0.5	40	1.10:1	1.20:1	1.0

TABLE III. Cross-reference of PIN/AN nomenclature.

Dash number	AN nomenclature
001	CU-1510/U
002	CU-1511/U
003	CU-1512/U
004	CU-1507/U
005	CU-1508/U
006	CU-1509/U
007	CU-1513/U
008	CU-1514/U
009	CU-1515/U
010	CU-1519/U
011	CU-1522/U
012	CU-1523/U
013	CU-1524/U
018	

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

Custodians:

Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:

DLA - CC

(Project 5985-1245-01)

Review activities:

Navy - AS, CG, MC, OS, SH
Air Force - 99