

INCH-POUND

MIL-DTL-15370/4E
 15 June 2011
 SUPERSEDING
 MIL-DTL-15370/4D
 24 January 2002

DETAIL SPECIFICATION SHEET

COUPLERS, DIRECTIONAL (WAVEGUIDE-MULTIHOLE)

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 MIL-DTL-15370.

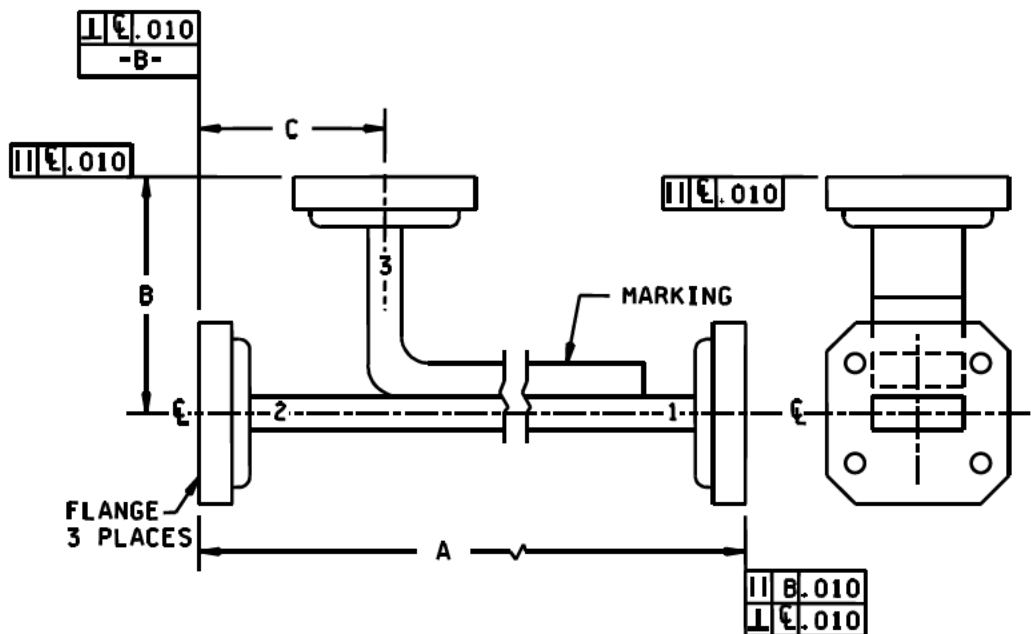


FIGURE 1. Dimensions and configuration.

MIL-DTL-15370/4E

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).

MIL-DTL-15370/4E
TABLE I. Physical characteristics.

Dash Number	Dimensions 1/ 2/ 3/						Equivalent waveguide	Flange
	A		B		C			
	Min	Max	Min	Max	Min	Max		
001	26.437 (671.50)	26.563 (674.70)	4.500 (114.30)	4.625 (117.48)	2.000 (50.80)	2.125 (53.98)	M85/1-067 (RG-50/U)	M3922/55-001 8/ (UG-344/U)
002	25.500 (647.70)	26.625 (676.28)	4.500 (114.30)	4.625 (117.48)	2.000 (50.80)	2.125 (53.98)	M85/1-067 (RG-50/U)	M3922/55-001 8/ (UG-344/U)
003	25.500 (647.70)	26.625 (676.28)	4.500 (114.30)	4.625 (117.48)	2.000 (50.80)	2.125 (53.98)	M85/1-067 (RG-50/U)	M3922/55-001 8/ (UG-344/U)
004	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)
005	17.438 (442.93)	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)
006	17.438 (442.93)	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)
007	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)
008	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)
009	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)
010	12.188 (309.58)	12.313 (312.75)	1.968 (50.00)	2.094 (53.19)	.687 (17.45)	.813 (20.65)	M85/1-089 (RG-91/U)	M3922/53-005 (UG-419/U)
011	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)
012	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)
013	7.562 (192.08)	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)
014	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)
015	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
016	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
017	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
018	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.

MIL-DTL-15370/4E
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		
019	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)
020	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>
021	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>
022	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>
023	13.50 (342.90)	13.95 (354.33)	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)
024	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)
025	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)
026	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)
027	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 (6.35 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-DTL-3922/54 and MIL-DTL-3922/55 flange specification sheets are inactive for new design and no longer used, except for replacement purposes.

MIL-DTL-15370/4E
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	
001	5.85-8.2	3	±0.5	±0.5	40	1.10:1	1.20:1	1.0
002	5.85-8.2	10	±0.5	±0.5	40	1.05:1	1.15:1	1.0
003	5.85-8.2	20	±0.5	±0.5	40	1.05:1	1.15:1	1.0
004	7.05-10.0	3	±0.5	±0.5	40	1.10:1	1.20:1	1.0
005	7.05-10.0	10	±0.5	±0.5	40	1.05:1	1.15:1	1.0
006	7.05-10.0	20	±0.5	±0.5	40	1.05:1	1.15:1	1.0
007	8.2-12.4	3	±0.5	±0.5	40	1.10:1	1.20:1	1.0
008	8.2-12.4	10	±0.5	±0.5	40	1.05:1	1.15:1	1.0
009	8.2-12.4	20	±0.5	±0.5	40	1.05:1	1.15:1	1.0
010	12.4-18.0	20	±0.5	±0.5	40	1.05:1	1.15:1	1.0
011	18.0-26.5	3	±0.5	±0.5	40	1.10:1	1.20:1	0.5
012	18.0-26.5	10	±0.5	±0.5	40	1.05:1	1.15:1	0.5
013	18.0-26.5	20	±0.5	±0.5	40	1.05:1	1.15:1	0.5
014	11.0-17.0	10	±0.4	±0.4	35	1.10:1	1.20:1	1.0
015	11.0-17.0	15	±0.4	±0.4	35	1.10:1	1.20:1	1.0
016	11.0-17.0	20	±0.4	±0.4	35	1.10:1	1.20:1	1.0
017	11.0-17.0	30	±0.4	±0.4	35	1.10:1	1.20:1	1.0
018	26.5-40.0	20	±0.7	±0.6	40	1.05:1	1.20:1	0.5
019	26.5-40.0	30	±0.7	±0.6	40	1.05:1	1.20:1	0.5
020	8.2-12.4	20	±0.5	±0.5	30	1.10:1	1.20:1	3.0
021	8.2-12.4	20	±0.5	±0.5	40	1.05:1	1.15:1	1.0
022	8.2-12.4	40	±0.4	±0.4	30	1.05:1	1.15:1	1.0
023	12.4-18.0	3	±0.5	±0.5	40	1.10:1	1.20:1	1.0
024	12.4-18.0	6	±0.5	±0.5	40	1.10:1	1.20:1	1.0
025	12.4-18.0	10	±0.5	±0.5	40	1.10:1	1.20:1	1.0
026	12.4-18.0	10	±0.5	±0.5	30	1.10:1	1.20:1	1.0
027	12.4-18.0	40	±0.5	±0.5	40	1.10:1	1.20:1	1.0

MIL-DTL-15370/4E

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	

Referenced documents: In addition to MIL-DTL-15370, this document references the following
MIL-DTL-3922/54
MIL-DTL-3922/55

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DLA - CC

(Project 5985-2011-020)

Review activities:
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Air Force - 99

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