METROLOGY-GRADE TYPE N PRECISION CONNECTOR GAGE KIT

A020D

A020D Metrology-Grade Type N Precision Connector Gage Kit

Description

The Maury model A020D connector gage kit is an extremely high precision metrology grade test instrument designed to measure type N connectors with either female or male interfaces.

The model A020D consists of two gage assemblies, two master setting gages, two center conductor centering sleeves — all provided in a wood instrument case with operating instructions. The Maury models A020D1 (female) and A020D2 (male) gage assemblies feature a "thread-on" design which allows the gages to be conveniently mated with the respective devices being measured for hands-free operation. The precision gage assemblies are initially set to zero using their respective master setting gages, A020D3 (female) or A020D4 (male), permitting subsequent measurements to be read directly on the dial indicator.

Two centering sleeves are also provided to facilitate the measurement of precision beadless airlines and two-port standards. "Flush setting" the Maury metrology grade sliding loads, models 8834A and 8834B, is easily accomplished using this connector gage kit. The "thread-on" design of the model A020D eliminates the difficulty in measuring vector network analyzer test port adapters when they are connected to the test set.

Table 1.

Model	Gage Assemblies	Dial Graduations (Inches)	Applications
A020D	2 each	0.0001	Measures type N female and male connectors, sliding loads, airlines, two-port standards, VNA test port adapters, etc.

2900 Inland Empire Blvd. • Ontario, California 91764-4804
Tel: 909-987-4715 • Fax: 909-987-1112 • http://www.maurymw.com
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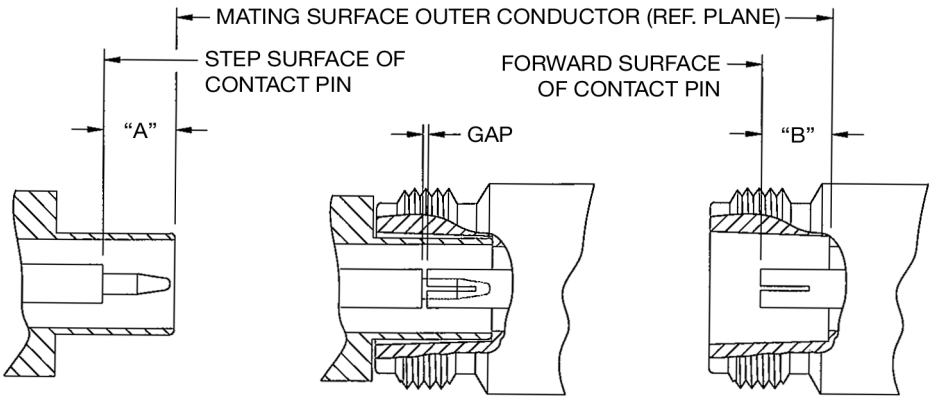

Figure 1

Table 2. Contact Pin Locations for Commonly used Type N Connectors

ITEM	SPECIFICATION	A		B		GAP (See *Figure 1*)			COMMENTS
						MIN	NOM	MAX	
A	Maury High Precision	0.2070	+0.0005 -0.0000	0.2070	+0.0000 -0.0005	0.0000	0.0000	0.0010	MMC High Precision type N Connector
B	Maury Precision (per Maury data sheet 5E-049)	0.207	+0.003 -0.000	0.207	+0.000 -0.003	0.000	0.000	0.006	MMC Precision Type N Connector[1]
C	—	0.207	+0.010 -0.000	0.207	+0.000 -0.010	0.000	0.000	0.020	[2]
D	MIL-C-39012 Class 1	0.208	+0.003 -0.000	0.207	+0.000 -0.003	0.001	0.001	0.007	MIL-C-39012C Standard Test Connector
*E	MIL-C-39012 Class 2	0.210	+0.020 -0.000	0.207	+0.000 -0.020	0.003	0.003	0.040	Type N General Specification[3]
F	MIL-T-81490	0.208	+0.003 -0.000	0.207	+0.000 -0.003	0.001	0.001	0.007	MIL-T-81490 Type EW Connectors

* The Maury A007A kit is designed to measure this specification.

Notes

[1] Precision connector compatible with most precision type N connectors in use today.

[2] Maury's general purpose type N connector per MIL-C-39012C except dimension A is reduced and the tolerances are tighter.

[3] Maury recommends that for better quality the following tolerances be used: A = 0.210 $^{+0.010}_{-0.000}$ B = 0.207 $^{+0.000}_{-0.010}$

[4] Type N male connectors may be slotted or not; MIL-C-39012 and MIL-T-81490 provide this option. Items A, B, C, and D are not slotted. Items E and F may or may not be slotted.

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SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Table 3. A020D Connector Gage Specifications

CHARACTERISTICS	LIMITS	COMMENTS
Gage Resolution	± 0.000020	1/5 Least dial graduation [5]
Gage Calibration Accuracy[9]	± 0.000150	1 Least dial graduation[6] plus 0.000050 measurement guardband
Gage Repeatability	± 0.000020	1/5 Least dial graduation[6]
Master Accuracy	± 0.000200	0.00040 Range[7]
Total Uncertainty[8, 9]		
RSS Worst Case	± 0.000252 ±0.000390	Root sum of the squares. Add resolution, repeatability, gage and master accuracy limits.

Notes

[5] Per ASME B89.1.10M-2001, C5.1.2.

[6] Per ASME B89.1.10M-2001, Table 2.

[7] Per manufacturer's specification.

[8] Performance standards are in compliance with ANSI/NCSL Z540-1, MIL-STD-45662A and ISO 10012-1.

[9] Applies over the operating range for connector gaging a recession of 0.005" to a protrusion of 0.001" from master gage zero setting.

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