Amphenol
MIL-DTL-83723, Series III, Matrix®

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MIL-DTL-83723 Series III, Matrix® Typical Markets:

- Military & Commercial Aviation
- Military Vehicles

Amphenol Aerospace

MIL-DTL-83723, Series III, Matrix®

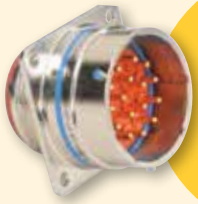
With a Wide Variety of Coupling Styles & Options

Amphenol Aerospace

Amphenol Aerospace offers the Matrix® Product line of MIL-DTL-83723*, Series III Connectors.

This series provides many choices within the range of a medium sized, environmentally resistant circular connector. With three coupling style choices - bayonet, threaded and quick-disconnect - the versatility of this family makes it increasingly popular for panel mount, box mount and line-to-line applications in aircraft. For general duty environmentally resistant requirements, this family of connectors provides a wide range of interconnection solutions.

MIL-DTL-83723, SERIES III CONNECTORS WITH BAYONET COUPLING



M83723/71 & 72 wall mounting receptacle

M83723/73 & 74 jam nut receptacle

M83723/75 & 76 straight plug

M83723/77 & 78 straight plug, RFI grounding

- **Quick positive coupling assured by 3 point bayonet coupling system; visual confirmation of complete coupling**
- **Five key/keyway design eliminates mismating**
- **Shell sizes 8 – 24**
- **Intermateable with most MIL-DTL-26500 bayonet coupling connectors**

MIL-DTL-83723, SERIES III CONNECTORS WITH THREADED COUPLING

M83723/82 & 83 wall mounting receptacle

M83723/84 & 85 jam nut receptacle

M83723/86 & 87 straight plug

M83723/91 & 92 straight plug, RFI grounding

M83723/95 & 96 straight plug, self-locking

- **Threaded coupling offers greater resistance to decoupling with a visual full mating indicator band on the shell**
- **Shell sizes 8 – 28**
- **Intermateable with most MIL-DTL-26500 threaded coupling connectors**

DESIGN CHARACTERISTICS

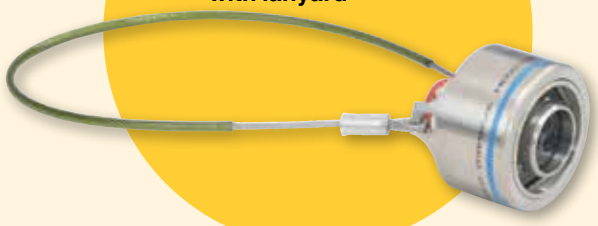
- Recommended operating voltage to 600 VAC (RMS) at sea level
- Complete environmental sealing includes individual contact seals and a silicone elastomer interfacial seal with raised barriers around each pin, a shell-to-shell seal and an insert-to-shell seal. Sealing over a wide range of wire diameters is assured by a triple-webbed grommet design
- Captive coupling nut prevents tampering, while a reduced coupling ring ramp allows easier mating
- Incorporates crimp rear release contacts in sizes 12, 16 and 20; contact arrangements accept 2 to 61 circuits
- Contacts conform to SAE AS39029** and use standard qualified rear-release type plastic tools
- Insertion and removal of contacts from the rear of the connector assures no damage to the front that might affect the sealing characteristics
- Grommets are constructed of tear-resistant elastomer and experience no degradation when exposed to a broad range of fluids
- Closed entry socket side of the insert is designed with a lead-in chamfer and a hard face that will accept a pin contact bent within pre-established limits
- MS and Commercial versions available
- Alternate positioning available
- Aluminum shells with black anodized, cadmium or electroless nickel finish options; passivated stainless steel shells are also available

**SAE AS39029 supersedes MIL-DTL-39029

MIL-DTL-83723, SERIES III CONNECTORS WITH QUICK DISCONNECT COUPLING

M83723/66 & 67 quick disconnect plug

M83723/68 & 69 quick disconnect plug with lanyard



- **Push-Pull, quick disconnect coupling is available in a straight plug that can be ordered with or without a lanyard release mechanism**

* MIL-DTL-83723 supersedes MIL-C-83723. Pyle-National Series of MIL-DTL-83723 is also offered by Amphenol.; see 83723 Pyle section of this catalog.

MIL-DTL-83723, Series III, Matrix®

Class Descriptions, Performance Specifications, Quick Reference Chart

CLASS DESCRIPTIONS

Military MIL-DTL-83723, Series III	Amphenol®/ Matrix® Commercial MB Series	Connector Style	Description
Class A	Class A	Bayonet, Threaded or Quick-Disconnect	Aluminum shell, black non-conduc-tive anodize finish, fluid resistant
Class R	Class R	Bayonet, Threaded or Quick-Disconnect	Aluminum shell, electroless nickel finish, fluid resistant
Class G	Class G	Bayonet, Threaded or Quick-Disconnect	Stainless steel shell, passivated, fluid resistant
Class W	Class W	Bayonet, Threaded or Quick-Disconnect	Aluminum shell, cadmium olive drab finish, corrosion/ fluid resistant

For Classes K, S and N see the Amphenol/Pyle high temperature versions of MIL-DTL-83723,Series III in the 83723 Pyle section of this catalog.

PERFORMANCE SPECIFICATIONS

SERVICE RATINGS

Service Rating	Recommended Operating AC Voltage at Sea Level	Test Voltage AC (RMS), 60 cps			
		Sea Level	50,000 ft.	70,000 ft.	110,000 ft.
I	600	1,500	500	375	200

Please note that the electrical data given is not an establishment of electrical safety factors. This is left entirely in the designer's hands as he can best determine which peak voltage, switching surges, transients, etc. can be expected in a particular circuit.

OPERATING TEMPERATURE RANGE
Classes A, G and R: –65°C (–85°F) to 200°C (392°F)
Class W: –65°C to 175°C

ENVIRONMENTAL SEAL
Wired, mated connectors with the specified accessory attached will meet the altitude immersion test specified in MIL-DTL-83723.

DURABILITY
Minimum of 500 mating cycles.

SHOCK AND VIBRATION REQUIREMENTS
Wired, mated connectors shall not be damaged, nor shall there be a current interruption longer than one microsecond when subjected to the following:

SHOCK: One shock in each of the three major axes, having a 100g peak for a six millisecond duration (half-sine pulse).

VIBRATION: Twelve hours of random vibration having a range of 10 to 2,000 Hz with a .06 inch double amplitude (10-55 Hz) and a 20g peak level (55-2,000 Hz).

The following is a quick reference chart for use in determining either the military designation or the commercial Amphenol®/ Matrix® designation number of MIL-DTL-83723 connectors. See also the how to order pages for complete part number breakdowns.

Connector Style	MIL-DTL-83723 Military Designation	Amphenol®/ Matrix® Commercial Designation	Contact Type
BAYONET COUPLING			
Square flange wall mount receptacle	M83723/71	MB30( )S	Socket
Square flange wall mount receptacle	M83723/72	MB30( )P	Pin
Single hole mount jam nut receptacle	M83723/73	MB34( )S	Socket
Single hole mount jam nut receptacle	M83723/74	MB34( )P	Pin
Standard straight plug	M83723/75	MB36( )S	Socket
Standard straight plug	M83723/76	MB36( )P	Pin
Straight plug with RFI grounding fingers	M83723/77	MB38( )S	Socket
Straight plug with RFI grounding fingers	M83723/78	MB38( )P	Pin
THREADED COUPLING			
Square flange wall mount receptacle	M83723/82	MT30( )S	Socket
Square flange wall mount receptacle	M83723/83	MT30( )P	Pin
Single hole mount jam nut receptacle	M83723/84	MT34( )S	Socket
Single hole mount jam nut receptacle	M83723/85	MT34( )P	Pin
Standard straight plug	M83723/86	MT36( )S	Socket
Standard straight plug	M83723/87	MT36( )P	Pin
Straight plug with RFI grounding fingers	M83723/91	MT38( )S	Socket
Straight plug with RFI grounding fingers	M83723/92	MT38( )P	Pin
Straight plug with self-locking clutch plate	M83723/95	MT37( )S	Socket
Straight plug with self-locking clutch plate	M83723/96	MT37( )P	Pin
QUICK-DISCONNECT PUSH-PULL COUPLING			
Straight plug without lanyard	M83723/66	MQ36( )P	Pin
Straight plug without lanyard	M83723/67	MQ36( )S	Socket
Straight plug with lanyard	M83723/68	MQ35( )P	Pin
Straight plug with lanyard	M83723/69	MQ35( )S	Socket

Insert Availability and Identification, Alternate Keying Positions, Alternate Rotations

INSERT ARRANGEMENTS

Shell Size/ Insert Arrangement	Service Rating	Total Contacts	Contact Size		
			12	16	20
0803	I	3			3
0898	I	3			3
1002	I	2			2
1005	I	5			5
1006	I	6			6
1020	I	2		2	
1203	I	3		3	
1212	I	12			12
1404	I	4	4		
1407	I	7		7	
1412	I	12		3	9
1415	I	15			15
1610	I	10		10	
1624	I	24			24
1808	I	8	8		
1814	I	14		14	
1831	I	31			31
2016	I	16		16	
2025	I	25	6		19
2028	I	28	4		24
2039	I	39		2	37
2041	I	41			41
2212	I	12	12		
2219	I	19		19	
2232	I	32	6		26
2239*	I	39		12	27
2255	I	55			55
2429†		29		29	
2430†		30		30	
2443	I	43		20	23
2457	I	57	2		55
2461	I	61			61
2841†		41		41	
2842†		42		42	

† Not an MS layout.
Connectors with these insert arrangements should be ordered by commercial part number only.

Shell size 28 is available in threaded coupling connectors only.

* Consult Amphenol Aerospace for availability of arrangement 22-39.

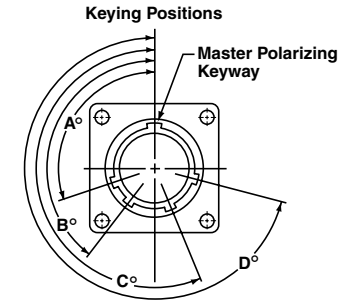
See how to order for bayonet type connectors on page 352, how to order for threaded on page 355, and how to order for quick-disconnect type connectors on page 359.

Insert arrangements are per MIL-STD-1554.

ALTERNATE KEYING POSITIONS (Rotation of key/keyway of shell)

To avoid cross-plugging problems in applications requiring the use of more than one connector of the same size and arrangement, alternate keying positions are available as indicated in the chart below. The diagram shows the engaging view of a receptacle shell with keyways. Plug shells would be the opposite of this diagram.

In the "alternate keying positions" (positions 6, 7, 8, 9 and Y), the minor keys/keyways are positioned with reference to master key/keyway as indicated in the keying position table.



Shown is Engaging Face View of Receptacle Shell with Keyways (Plug Shell Keys would be Opposite)

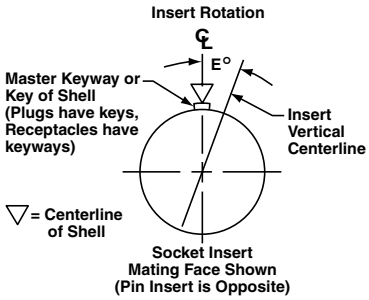
ALTERNATE KEYING POSITIONS OF SHELL

Shell Size	Polarizing Position	Key/Keyway Positions			
		A°	B°	C°	D°
8 thru 24	N	105	140	215	265
8 & 10	6	102	132	248	320
	7	80	118	230	312
	8	35	140	205	275
	9	64	155	234	304
10 only	Y*	25	115	220	270
12, 14, 16, 18, 20, 22, 24 and 28	6	18	149	192	259
	7	92	152	222	342
	8	84	152	204	334
	9	24	135	199	240
	Y*	98	152	268	338

* Position Y supersedes inactive positions 10 and Z designations. Ref. MIL-STD-1554.

ALTERNATE ROTATIONS (Rotation of insert)

Alternate positioning is also available with the rotation of the insert. The diagram shows the pin insert mating face. The center-line of the shell in the normal insert position (position N) coincides with the center-line of the master key/keyway in the shell. In alternate rotations, (positions 1, 2, 3, 4 and 5), the insert rotates relative to the center-line of the key/keyway of the shell. See E° call out on diagram and the table. The socket insert is rotated clockwise, and the pin insert is rotated counter-clockwise.

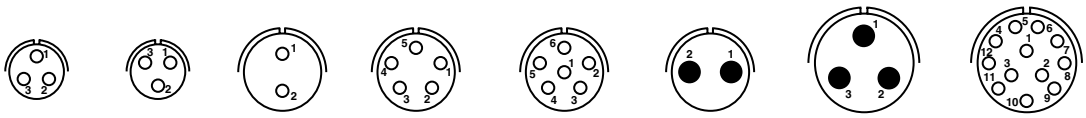


ALTERNATE ROTATIONS OF INSERT

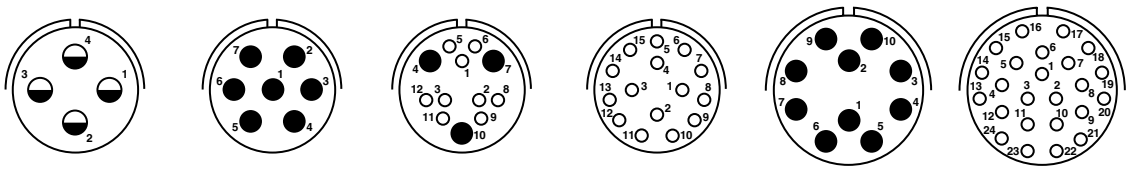
Shell Size	Polarizing Position	Insert Position E°
8 & 10	N	0
	1	10
	2	20
	3	30
	4	40
	5	50
12, 14, 16, 18, 20, 22, 24 and 28	N	0
	1	10
	2	20
	3	30
	4	40
	5	50

Note: Positions 1-5 are inactive for new designs per MIL-STD-1554.

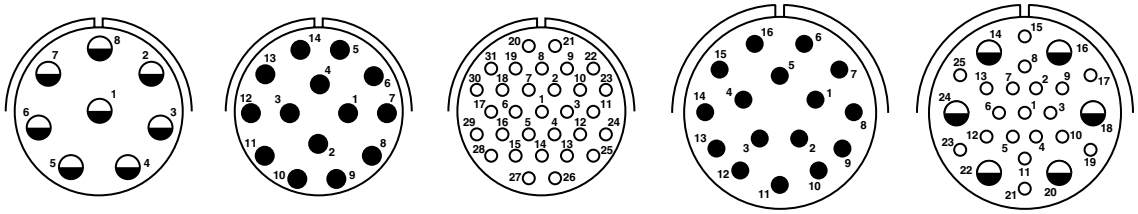
Front Face of Pin Insert or Rear Face of Socket Insert Illustrated



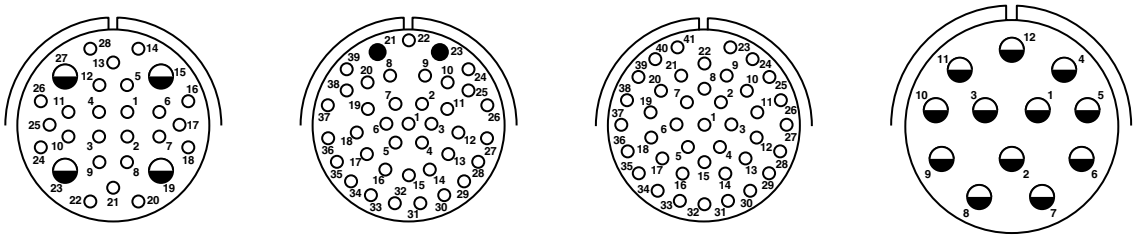
Insert Arrangement	0803	0898	1002	1005	1006	1020	1203	1212
Service Rating	I	I	I	I	I	I	I	I
Number of Contacts	3	3	2	5	6	2	3	12
Contact Size	20	20	20	20	20	16	16	20



Insert Arrangement	1404	1407	1412		1415	1610	1624
Service Rating	I	I	I		I	I	I
Number of Contacts	4	7	9	3	15	10	24
Contact Size	12	16	20	16	20	16	20



Insert Arrangement	1808	1814	1831	2016	2025	
Service Rating	I	I	I	I	I	
Number of Contacts	8	14	31	16	19	6
Contact Size	12	16	20	16	20	12

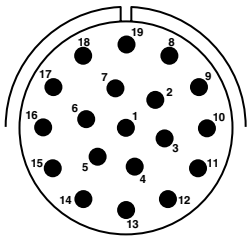


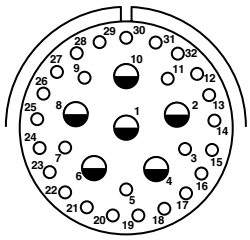
Insert Arrangement	2028		2039		2041	2212
Service Rating	I		I		I	I
Number of Contacts	24	4	37	2	41	12
Contact Size	20	12	20	16	20	12

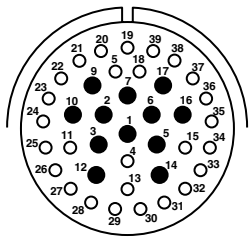
NOTE: Connectors sold as mil-spec connectors will have mil-spec markings on the insert (a "snail-trail" designating the numerical path). Commercial versions will have insert markings as shown here.

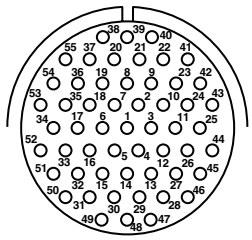
CONTACT LEGEND ○ 20 ● 16 ◒ 12

Front Face of Pin Insert or Rear Face of Socket Insert Illustrated

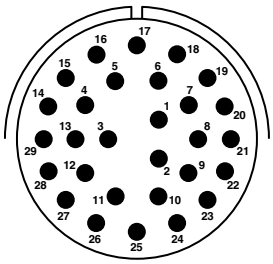


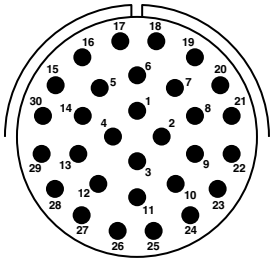


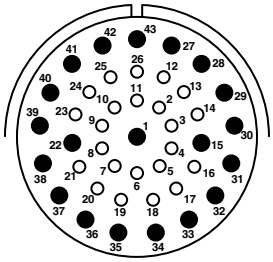


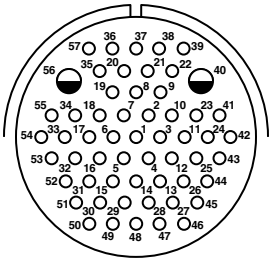


Insert Arrangement	2219	2232	2239*	2255
Service Rating	I	I	I	I
Number of Contacts	19	26 6	27 12	55
Contact Size	16	20 12	20 16	20

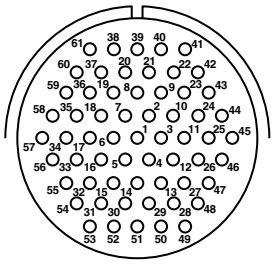


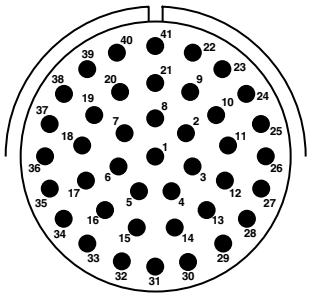


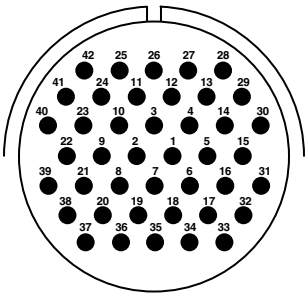




Insert Arrangement	2429†	2430†	2443	2457
Service Rating			I	I
Number of Contacts	29	30	23 20	55 2
Contact Size	16	16	20 16	20 12







Insert Arrangement	2461	2841†	2842†
Service Rating	I		
Number of Contacts	61	41	42
Contact Size	20	16	16

†Not a MS layout.
Connectors with these insert arrangements can be ordered by commercial part number only.

Shell size 28 is available in threaded coupling connectors only.

* Consult Amphenol Aerospace for availability of arrangement 22-39.

See how to order for bayonet type connectors on page 352, how to order for threaded on page 355, and how to order for quick-disconnect type connectors on page 359.

NOTE: Connectors sold as mil-spec connectors will have mil-spec markings on the insert (a "snail-trail" designating the numerical path).
Commercial versions will have insert markings as shown here.

CONTACT LEGEND	○ 20	● 16	◒ 12

	1. Connector Type	2. Connector Style (Bayonet) and Contact Type	3. Service Class	4. Shell Size/ Insert Arrangement	5. Alternate Keying Position of Shell or Alternate Rotation of Insert
MIL-DTL-83723, Series III MILITARY	M83723	/74	R	1203	7

	1. Connector Type (Bayonet)	2. Connector Style	3. Service Class	4. Shell Size/ Insert Arrangement	5. Contact Type	6. Alternate Keying Position of Shell or Alternate Rotation of Insert	7. Modification Number
Amphenol® Matrix® MIL-DTL-83723, Series III COMMERCIAL	MB	34	R	1203	P	7	XXX

Step 1. Military Connector Type

M83723	Designates MIL-DTL-83723 Series III Connectors

Step 2. Select a Connector Style

(Refer to military specification slash sheet number.) Bayonet coupling connectors are designated by numbers /71 -/78 as follows:

	Designates
/71	Wall Mount Receptacle with Socket Contacts
/72	Wall Mount Receptacle with Pin Contacts
/73	Jam Nut Receptacle with Socket Contacts
/74	Jam Nut Receptacle with Pin Contacts
/75	Standard Straight Plug with Socket Contacts
/76	Standard Straight Plug with Pin Contacts
/77	Straight Plug with RFI grounding, Socket Contacts
/78	Straight Plug with RFI grounding, Pin Contacts

Step 3. Select a Service Class

	Designates
A	Aluminum shell, black non-conductive anodize finish, fluid resistant insert
R	Aluminum shell, electroless nickel finish, fluid resistant insert
G	Stainless steel shell, passivated, fluid resistant insert
W	Aluminum shell, olive drab cadmium plated, fluid resistant insert

Note: Consult Amphenol Aerospace for hermetic classes H and Y availability.

Step 4. Select a Shell Size & Insert Arrangement from chart on pg. 349.

First number represents Shell Size, second number is the Insert Arrangement.

Step 5. Select an Alternate Keying Position - Rotation of master key/keyway of shell.

Use N for normal. Use 6, 7, 8, 9 or Y for alternate keying positions. See page 349 for descriptions.

or Step 5. Select an Alternate Rotation of Insert.

Use N for normal. Use 1, 2, 3, 4, or 5 for alternate rotation of insert. See page 349 for descriptions.

For ordering information on accessories, such as protection caps and backshell hardware, contact Amphenol Aerospace.

Step 1. Commercial Connector Type

MB	Designates Amphenol®/Matrix® Bayonet Coupling Connectors

Step 2. Select a Connector Style

	Designates
30	Wall Mount Receptacle
34	Jam Mount Receptacle
36	Standard Straight Plug
38	Straight Plug with RFI grounding fingers

Step 3. Select a Service Class

	Designates
A	Aluminum shell, black non-conductive anodize finish, fluid resistant insert
R	Aluminum shell, electroless nickel finish, fluid resistant insert
G	Stainless steel shell, passivated, fluid resistant insert
W	Aluminum shell, cadmium olive drab finish, corrosion resistant, fluid resistant insert

Note: Consult Amphenol Aerospace for hermetic classes H and Y availability.

Step 4. Select a Shell Size & Insert Arrangement from chart on page 349.

First number represents Shell Size, second number is the Insert Arrangement.

Step 5. Select a Contact Type

	Designates
P	Pin Contacts
S	Socket Contacts

Step 6. Select an Alternate Keying Position - Rotation of master key/keyway of shell.

Use 6, 7, 8, 9 or Y for alternate keying positions. No letter required for normal (No rotation position). See page 349 for descriptions.

or Step 6. Select an Alternate Rotation of Insert.

Use 1, 2, 3, 4, or 5 for alternate rotation of insert. No letter required for normal (No rotation position).
See page 349 for descriptions.

Step 7. Modification Number

Consult Amphenol Aerospace for information.

M83723/71 & /72 – MIL-DTL-83723, Series III

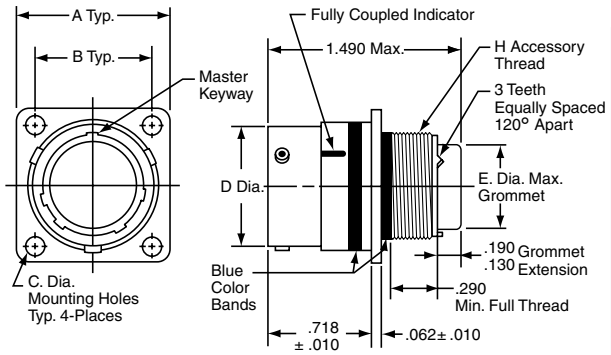
Wall Mounting Receptacle with Bayonet Coupling

PART #

To complete, see how to order page 352.

	Connector Type	Connector Style (Bayonet) and Contact Type	Service Class	Shell Size & Insert Arrg	Alt. Keying Position or Alt. Rotation
Military	M83723	/71 (with socket contacts)	X	X-X	X
Military	M83723	/72 (with pin contacts)	X	X-X	X

	Connector Type (Bayonet)	Connector Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alt. Keying Position or Alt. Rotation	Modification Number
Commercial	MB	30	X	X-X	X	X	XXX



Shell Size	A ±.005	B ±.005	C Dia. ±.005	D Dia.	E Dia.	H Accessory Thread Class 2A
8	.812	.594	.120	.536/.531	.305	.5000-20 UNF
10	.937	.719	.120	.659/.654	.405	.6250-24 UNEF
12	1.031	.812	.120	.829/.824	.531	.7500-20 UNEF
14	1.125	.906	.120	.898/.893	.665	.8750-20 UNEF
16	1.250	.969	.120	1.025/1.020	.790	1.0000-20 UNEF
18	1.343	1.062	.120	1.131/1.126	.869	1.0625-18 UNEF
20	1.437	1.156	.120	1.256/1.251	.994	1.1875-18 UNEF
22	1.562	1.250	.120	1.381/1.376	1.119	1.3125-18 UNEF
24	1.703	1.375	.149	1.506/1.501	1.244	1.4375-18 UNEF

All dimensions for reference only.

M83723/73 & /74 – MIL-DTL-83723, Series III

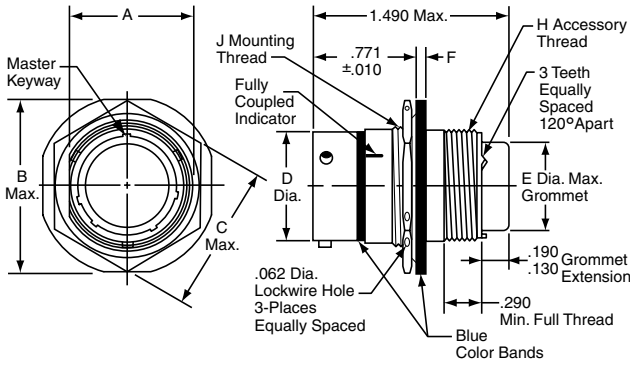
Jam Nut Receptacle with Bayonet Coupling

PART #

To complete, see how to order page 352.

	Connector Type	Connector Style (Bayonet) and Contact Type	Service Class	Shell Size & Insert Arrg	Alt. Keying Position or Alt. Rotation
Military	M83723	/73 (with socket contacts)	X	X-X	X
Military	M83723	/74 (with pin contacts)	X	X-X	X

	Connector Type (Bayonet)	Connector Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alt. Keying Position or Alt. Rotation	Modification Number
Commercial	MB	34	X	X-X	X	X	XXX

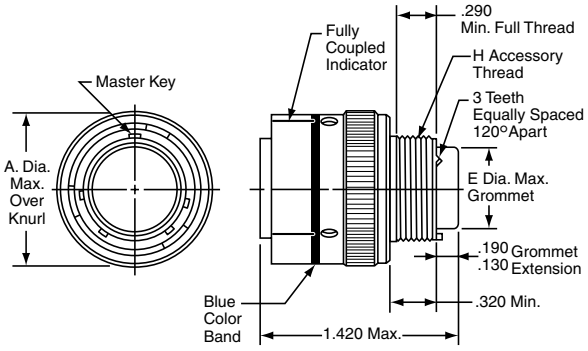


Shell Size	A	B Max.	C Max.	D Dia.	E Dia. Max.	F	H Accessory Thread Class 2A	J Mounting Thread Class 2A
8	.596/.590	.979	.829	.536/.531	.305	.137/.097	.5000-20 UNF	.6250-20 UN
10	.721/.715	1.104	.954	.659/.654	.405	.137/.097	.6250-24 UNEF	.7500-20 UNEF
12	.908/.902	1.291	1.142	.829/.824	.531	.113/.097	.7500-20 UNEF	.9375-20 UNEF
14	.971/.965	1.391	1.205	.898/.893	.665	.137/.097	.8750-20 UNEF	1.0000-20 UNEF
16	1.096/1.090	1.516	1.329	1.025/1.020	.790	.137/.097	1.0000-20 UNEF	1.1250-20 UN
18	1.220/1.214	1.641	1.455	1.131/1.126	.869	.137/.097	1.0625-18 UNEF	1.2500-18 UNEF
20	1.345/1.339	1.766	1.579	1.256/1.251	.994	.137/.097	1.1875-18 UNEF	1.3750-18 UNEF
22	1.470/1.464	1.954	1.705	1.381/1.376	1.119	.169/.128	1.3125-18 UNEF	1.5000-20 UNEF
24	1.595/1.589	2.079	1.829	1.506/1.501	1.244	.168/.128	1.4375-18 UNEF	1.6250-18 UNEF

All dimensions for reference only.

M83723/75 & /76– MIL-DTL-83723, Series III

Straight Plug with Bayonet Coupling



PART #

To complete, see how to order page 352.

	Connector Type	Connector Style (Bayonet) and Contact Type	Service Class	Shell Size & Insert Arrg	Alt. Keying Position or Alt. Rotation
Military	**M83723**	**/75 (with socket contacts)**	X	X-X	X
Military	**M83723**	**/76 (with pin contacts)**	X	X-X	X

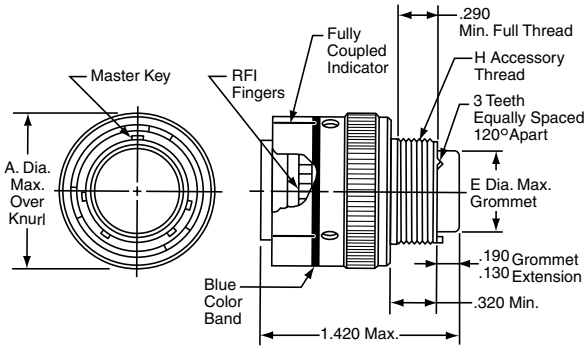
	Connector Type (Bayonet)	Connector Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alt. Keying Position or Alt. Rotation	Modification Number
Commercial	**MB**	**36**	X	X-X	X	X	XXX

Shell Size	A Dia. Max.	E Dia. Max.	H Accessory Thread Class 2A
8	.776	.305	.5000-20 UNF
10	.906	.405	.6250-24 UNEF
12	1.078	.531	.7500-20 UNEF
14	1.141	.665	.8750-20 UNEF
16	1.266	.790	1.0000-20 UNEF
18	1.375	.869	1.0625-18 UNEF
20	1.510	.994	1.1875-18 UNEF
22	1.625	1.119	1.3125-18 UNEF
24	1.760	1.244	1.4375-18 UNEF

All dimensions for reference only.

M83723/77 & /78 – MIL-DTL-83723, Series III

Straight Plug, Bayonet Coupling (with RFI grounding fingers)



PART #

To complete, see how to order page 352.

	Connector Type	Connector Style (Bayonet) and Contact Type	Service Class	Shell Size & Insert Arrg	Alt. Keying Position or Alt. Rotation
Military	**M83723**	**/77 (with socket contacts)**	X	X-X	X
Military	**M83723**	**/78 (with pin contacts)**	X	X-X	X

	Connector Type (Bayonet)	Connector Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alt. Keying Position or Alt. Rotation	Modification Number
Commercial	**MB**	**38**	X	X-X	X	X	XXX

Shell Size	A Dia. Max.	E Dia. Max.	H Accessory Thread Class 2A
8	.776	.305	.5000-20 UNF
10	.906	.405	.6250-24 UNEF
12	1.078	.531	.7500-20 UNEF
14	1.141	.665	.8750-20 UNEF
16	1.266	.790	1.0000-20 UNEF
18	1.375	.869	1.0625-18 UNEF
20	1.510	.994	1.1875-18 UNEF
22	1.625	1.119	1.3125-18 UNEF
24	1.760	1.244	1.4375-18 UNEF

All dimensions for reference only.

MIL-DTL-83723, Series III, Matrix®

How to Order – Threaded Coupling Connectors

1. MIL-DTL-83723, Series III	2. Connector Type	3. Connector Style (Threaded) and Contact Type)	4. Service Class	5. Shell Size/ Insert Arrangement	6. Alternate Keying Position of Shell or Alternate Rotation of Insert
MILITARY	M83723	/84	R	803	N

1. Amphenol®/Matrix® MIL-DTL-83723, Series III	2. Connector Type (Threaded)	3. Connector Style	4. Service Class	5. Shell Size/ Insert Arrangement	6. Contact Type	7. Alternate Keying Position of Shell or Alternate Rotation of Insert	8. Modification Number
COMMERCIAL	MT	34	R	0803	P	7	XXX

Step 1. Military Connector Type

M83723	Designates MIL-DTL-83723 Series III Connectors

Step 2. Select a Connector Style

(Refer to military specification slash sheet number).

	Designates
/82	Wall Mount Receptacle with Socket Contacts
/83	Wall Mount Receptacle with Pin Contacts
/84	Jam Nut Receptacle with Socket Contacts
/85	Jam Nut Receptacle with Pin Contacts
/86	Standard Straight Plug with Socket Contacts
/87	Standard Straight Plug with Pin Contacts
/91	Straight Plug with RFI grounding, Socket Contacts
/92	Straight Plug with RFI grounding, Pin Contacts
/95	Straight Plug with Self-Locking Clutch Plate, Socket Contacts
/96	Straight Plug with Self-Locking Clutch Plate, Pin Contacts

Step 3. Select a Service Class

	Designates
A	Aluminum shell, black non-conductive anodize finish, fluid resistant insert
R	Aluminum shell, electroless nickel finish, fluid resistant insert
G	Stainless steel shell, passivated, fluid resistant insert
W	Aluminum shell, olive drab cadmium plated, fluid resistant insert

See additional classes of MIL-DTL-83723, Series III which are available in the Amphenol/Pyle versions: Classes K, S, N - firewall, high temperature (200°C – 260°C) and Classes H and Y - hermetics. These are covered in the 83723 Pyle section of this catalog.

Step 4. Select a Shell Size & Insert Arrangement from chart on pg. 349.

First number represents Shell Size, second number is the Insert Arrangement. (Note that shell size 28 is not an MS connector, and should be ordered by commercial number.)

Step 5. Select an Alternate Keying Position - Rotation of master key/keyway of shell.

Use N for normal. Use 6, 7, 8, 9 or Y for alternate keying positions. See page 349 for descriptions.

or Step 5. Select an Alternate Rotation of Insert.

Use N for Normal. Use 1, 2, 3, 4, or 5 for alternate rotation of insert. See page 349 for descriptions.

For ordering information on accessories, such as protection caps and backshell hardware, contact Amphenol Aerospace.

Step 1. Commercial Connector Type

MT	Designates Amphenol®/Matrix® Threaded Coupling Connector

Step 2. Select a Connector Style

	Designates
30	Wall Mount Receptacle
34	Jam Mount Receptacle
36	Standard Straight Plug
38	Straight Plug with RFI grounding fingers
37	Straight Plug with Self-Locking Clutch Plate

Step 3. Select a Service Class

	Designates
A	Aluminum shell, black non-conductive anodize finish, fluid resistant insert
R	Aluminum shell, electroless nickel finish, fluid resistant insert
G	Stainless steel shell, passivated, fluid resistant insert
W	Aluminum shell, cadmium olive drab finish, corrosion resistant, fluid resistant insert

See additional classes of MIL-DTL-83723, Series III which are available in the Amphenol/Pyle versions: Classes K, S, N - firewall, high temperature (200°C – 260°C) and Classes H and Y - hermetics. These are covered in the 83723 Pyle section of this catalog.

Step 4. Select a Shell Size & Insert Arrangement from chart on pg. 349.

First number represents Shell Size, second number is the Insert Arrangement.

Step 5. Select a Contact Type

	Designates
P	Pin Contacts
S	Socket Contacts

Step 6. Select an Alternate Keying Position - Rotation of master key/keyway of shell.

Use 6, 7, 8, 9 or Y for alternate keying positions. No letter required for normal (No rotation position). See page 349 for descriptions.

or Step 6. Select an Alternate Rotation of Insert.

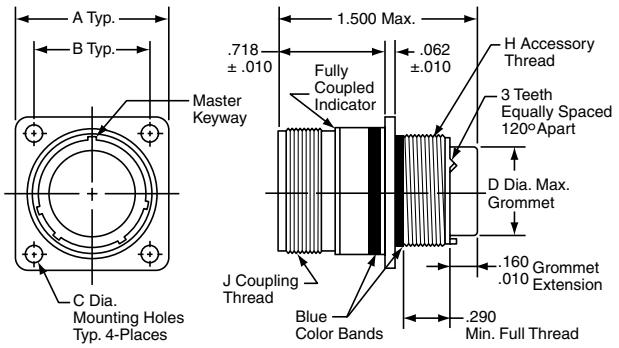
Use 1, 2, 3, 4, or 5 for alternate rotation of insert.
No letter required for normal (No rotation position)
See page 349 for descriptions.

Step 7. Modification Number

Consult Amphenol Aerospace for information.

M83723/82 & /83 – MIL-DTL-83723, Series III

Wall Mounting Receptacle with Threaded Coupling



PART

To complete, see how to order page 355.

	Connector Type	Connector Style (Threaded) and Contact Type	Service Class	Shell Size & Insert Arrg	Alt. Keying Position or Alt. Rotation
Military	M83723	/82 (with socket contacts)	X	X-X	X
Military	M83723	/83 (with pin contacts)	X	X-X	X

	Connector Type (Threaded)	Connector Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alt. Keying Position or Alt. Rotation	Modification Number
Commercial	MT	30	X	X-X	X	X	XXX

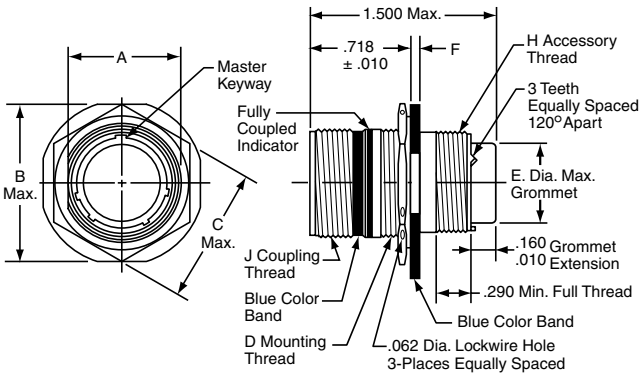
Shell Size	A ±.005	B ±.005	C Dia.	D Dia. Max.	H Accessory Thread Class 2A	J Coupling Thread Class 2A
8	.812	.594	.125/.116	.305	.5000-20 UNEF	.5625-24 UNEF
10	.937	.719	.125/.116	.405	.6250-24 UNEF	.6875-24 UNEF
12	1.031	.812	.125/.116	.531	.7500-20 UNEF	.8750-20 UNEF
14	1.125	.906	.125/.116	.665	.8750-20 UNEF	.9375-20 UNEF
16	1.250	.969	.125/.116	.790	1.0000-20 UNEF	1.0625-18 UNEF
18	1.343	1.062	.125/.116	.869	1.0625-18 UNEF	1.1875-18 UNEF
20	1.437	1.156	.125/.116	.994	1.1875-18 UNEF	1.3125-18 UNEF
22	1.562	1.250	.125/.116	1.119	1.3125-18 UNEF	1.4375-18 UNEF
24	1.703	1.375	.154/.145	1.244	1.4375-18 UNEF	1.5625-18 UNEF
28*	2.000	1.562	.154/.145	1.465	1.7500-18 UNS	1.8125-16 UN

* Shell size 28 is not a MS connector; order by commercial part number.

All dimensions for reference only.

M83723/84 & /85 – MIL-DTL-83723, Series III

Jam Nut Receptacle with Threaded Coupling



PART

To complete, see how to order page 355.

	Connector Type	Connector Style (Threaded) and Contact Type	Service Class	Shell Size & Insert Arrg	Alt. Keying Position or Alt. Rotation
Military	M83723	/84 (with socket contacts)	X	X-X	X
Military	M83723	/85 (with pin contacts)	X	X-X	X

	Connector Type (Threaded)	Connector Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alt. Keying Position or Alt. Rotation	Modification Number
Commercial	MT	34	X	X-X	X	X	XXX

Shell Size	A ±.003	B Max.	C Max.	D Mounting Thread	E Dia. Max.	F	H Accessory Thread Class 2A	J Coupling Thread Class 2A
8	.593	.980	.828	.6250-20 UN	.305	.137/.097	.5000-20 UNEF	.5625-24 UNEF
10	.718	1.104	.953	.7500-20 UNEF	.405	.137/.097	.6250-24 UNEF	.6875-24 UNEF
12	.905	1.291	1.140	.9375-20 UNEF	.531	.137/.097	.7500-20 UNEF	.8750-20 UNEF
14	.968	1.391	1.250	1.0000-20 UNEF	.665	.137/.097	.8750-20 UNEF	.9375-20 UNEF
16	1.093	1.516	1.329	1.1250-18 UNEF	.790	.137/.097	1.0000-20 UNEF	1.0625-18 UNEF
18	1.217	1.641	1.455	1.2500-18 UNEF	.869	.137/.097	1.0625-18 UNEF	1.1875-18 UNEF
20	1.342	1.766	1.642	1.3750-18 UNEF	.994	.137/.097	1.1875-18 UNEF	1.3125-18 UNEF
22	1.467	1.954	1.705	1.5000-18 UNEF	1.119	.148/.128	1.3125-18 UNEF	1.4375-18 UNEF
24	1.592	2.079	1.892	1.6250-18 UNEF	1.244	.148/.128	1.4375-18 UNEF	1.5625-18 UNEF
28*	1.840	2.330	2.145	1.8750-20 UN	1.465	.148/.128	1.7500-18 UNS	1.8125-16 UN

* Shell size 28 is not a MS connector; order by commercial part number.

All dimensions for reference only.

M83723/86 & /87– MIL-DTL-83723, Series III

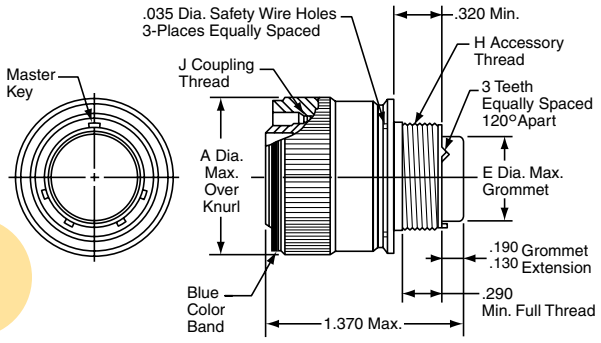
Straight Plug with Threaded Coupling

PART #

To complete, see how to order page 355.

	Connector Type	Connector Style (Threaded) and Contact Type	Service Class	Shell Size & Insert Arrg	Alt. Keying Position or Alt. Rotation
Military	**M83723**	**/86 (with socket contacts)**	X	X-X	X
Military	**M83723**	**/87 (with pin contacts)**	X	X-X	X

	Connector Type (Threaded)	Connector Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alt. Keying Position or Alt. Rotation	Modification Number
Commercial	**MT**	**36**	X	X-X	X	X	XXX



Shell Size	A Dia. Max.	E Dia. Max.	H Accessory Thread Class 2A	J Coupling Thread Class 2B
8	.756	.305	.5000-20 UNF	.5625-24 UNEF
10	.906	.405	.6250-24 UNEF	.6875-24 UNEF
12	1.078	.531	.7500-20 UNEF	.8750-20 UNEF
14	1.141	.665	.8750-20 UNEF	.9375-20 UNEF
16	1.266	.790	1.0000-20 UNEF	1.0625-18 UNEF
18	1.375	.869	1.0625-18 UNEF	1.1875-18 UNEF
20	1.510	.994	1.1875-18 UNEF	1.3125-18 UNEF
22	1.625	1.119	1.3125-18 UNEF	1.4375-18 UNEF
24	1.760	1.244	1.4375-18 UNEF	1.5625-18 UNEF
28*	2.050	1.465	1.7500-18 UNS	1.8125-18 UN

* Shell size 28 is not a MS connector; order by commercial part number. All dimensions for reference only.

M83723/91 & /92 – MIL-DTL-83723, Series III

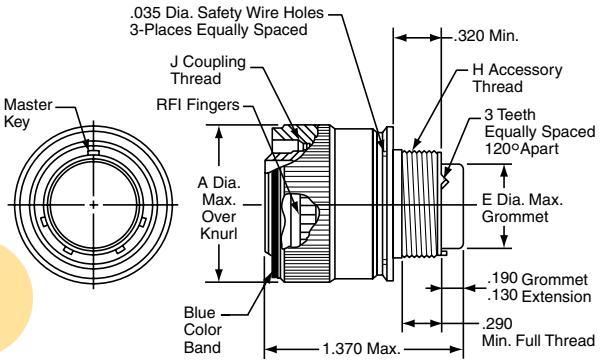
Straight Plug, Threaded Coupling (With RFI Grounding Fingers)

PART #

To complete, see how to order page 355.

	Connector Type	Connector Style (Threaded) and Contact Type	Service Class	Shell Size & Insert Arrg	Alt. Keying Position or Alt. Rotation
Military	**M83723**	**/91 (with socket contacts)**	X	X-X	X
Military	**M83723**	**/92 (with pin contacts)**	X	X-X	X

	Connector Type (Threaded)	Connector Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alt. Keying Position or Alt. Rotation	Modification Number
Commercial	**MT**	**38**	X	X-X	X	X	XXX

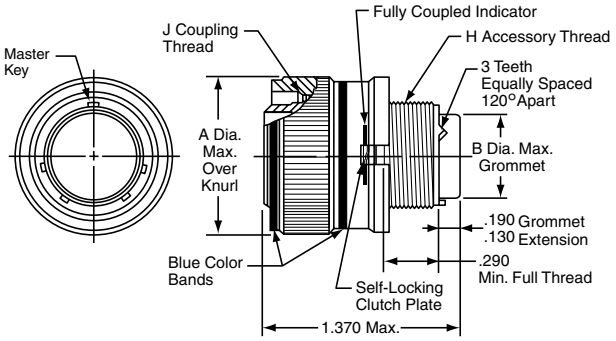


Shell Size	A Dia. Max.	E Dia. Max.	H Accessory Thread Class 2A	J Coupling Thread Class 2B
8	.756	.305	.5000-20 UNF	.5625-24 UNEF
10	.906	.405	.6250-24 UNEF	.6875-24 UNEF
12	1.078	.531	.7500-20 UNEF	.8750-20 UNEF
14	1.141	.665	.8750-20 UNEF	.9375-20 UNEF
16	1.266	.790	1.0000-20 UNEF	1.0625-18 UNEF
18	1.375	.869	1.0625-18 UNEF	1.1875-18 UNEF
20	1.510	.994	1.1875-18 UNEF	1.3125-18 UNEF
22	1.625	1.119	1.3125-18 UNEF	1.4375-18 UNEF
24	1.760	1.244	1.4375-18 UNEF	1.5625-18 UNEF
28*	2.050	1.465	1.7500-18 UNS	1.8125-18 UN

* Shell size 28 is not a MS connector; order by commercial part number. All dimensions for reference only.

M83723/95 & /96– MIL-DTL-83723, Series III

Straight Plug with Threaded Coupling (Self-Locking)



PART

To complete, see how to order page 355.

	Connector Type	Connector Style (Threaded) and Contact Type	Service Class	Shell Size & Insert Arrg	Alt. Keying Position or Alt. Rotation
Military	**M83723**	**/95 (with socket contacts)**	X	X-X	X
Military	**M83723**	**/96 (with pin contacts)**	X	X-X	X

	Connector Type (Threaded)	Connector Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alt. Keying Position or Alt. Rotation	Modification Number
Commercial	**MT**	**37**	X	X-X	X	X	XXX

Shell Size	A Dia. Max.	B Dia. Max.	H Accessory Thread Class 2A	J Coupling Thread Class 2B
8	.832	.305	.5000-20 UNEF	.5625-24 UNEF
10	.959	.405	.6250-24 UNEF	.6875-24 UNEF
12	1.097	.531	.7500-20 UNEF	.8750-20 UNEF
14	1.236	.665	.8750-20 UNEF	.9375-20 UNEF
16	1.360	.790	1.0000-20 UNEF	1.0625-18 UNEF
18	1.428	.869	1.0625-18 UNEF	1.1875-18 UNEF
20	1.586	.994	1.1875-18 UNEF	1.3125-18 UNEF
22	1.703	1.119	1.3125-18 UNEF	1.4375-18 UNEF
24	1.846	1.244	1.4375-18 UNEF	1.5625-18 UNEF
28*	2.165	1.465	1.7500-18 UNS	1.8125-18 UN

* Shell size 28 is not a MS connector; order by commercial part number.

All dimensions for reference only.

How to Order – Quick-Disconnect Coupling

Connectors

1. MIL-DTL-83723, Series III	2. Connector Type	3. Connector Style (Quick-Disconnect) and Contact Type)	4. Service Class	5. Shell Size/ Insert Arrangement	Alternate Keying Position of Shell or Alternate Rotation of Insert
MILITARY	M83723	/66	R	0803	N

1. Amphenol®/Matrix® MIL-DTL-83723, Series III	2. Connector Type (Quick-Disconnect)	3. Connector Style	4. Service Class	5. Shell Size/ Insert Arrangement	6. Contact Type	7. Alternate Keying Position of Shell or Alternate Rotation of Insert	Modification Number
COMMERCIAL	MQ	35	R	0803	P	7	XXX

Step 1. Military Connector Type

M83723	Designates MIL-DTL-83723 Series III Connectors

Step 2. Select a Connector Style

(Refer to military specification slash sheet number).

	Designates
/66	Straight Plug without Lanyard, Pin Contacts
/67	Straight Plug without Lanyard, Socket Contacts
/68	Straight Plug with Lanyard, Pin Contacts
/69	Straight Plug with Lanyard, Socket Contacts

Step 3. Select a Service Class

	Designates
A	Aluminum shell, black non-conductive anodize finish, fluid resistant insert
R	Aluminum shell, electroless nickel finish, fluid resistant insert
G	Stainless steel shell, passivated, fluid resistant insert
W	Aluminum shell, olive drab cadmium plated, fluid resistant insert

See additional classes of MIL-DTL-83723, Series III which are available in the Amphenol/Pyle versions: Classes K, S, N - firewall, high temperature (200°C – 260°C) and Classes H and Y - hermetics. These are covered in the 83723 Pyle section of this catalog.

Step 4. Select a Shell Size & Insert Arrangement from chart on page 349.

Shell Size & Insert Arrangements are together in one chart. First number represents Shell Size, second number is the Insert Arrangement. (Note that shell size 28 is not an MS connector, and should be ordered by commercial number.)

Step 5. Select an Alternate Keying Position - Rotation of master key/keyway of shell.

Use N for normal. Use 6, 7, 8, 9 or Y for alternate keying positions. See page 349 for descriptions.

or Step 5. Select an Alternate Rotation of Insert.

Use N for Normal. Use 1, 2, 3, 4, or 5 for alternate rotation of insert. See page 349 for descriptions.

For ordering information on accessories, such as protection caps and backshell hardware, contact Amphenol Aerospace.

Step 1. Commercial Connector Type

MQ	Designates Amphenol®/Matrix® Quick-Disconnect Coupling Connector

Step 2. Select a Connector Style

	Designates
35	Straight Plug with Lanyard
36	Straight Plug without Lanyard
38	Straight Plug with Lanyard, RFI grounding fingers (No Mil-Spec equivalent)

Step 3. Select a Service Class

	Designates
A	Aluminum shell, black non-conductive anodize finish, fluid resistant insert
R	Aluminum shell, electroless nickel finish, fluid resistant insert
G	Stainless steel shell, passivated, fluid resistant insert
W	Aluminum shell, cadmium olive drab finish, corrosion resistant, fluid resistant insert

See additional classes of MIL-DTL-83723, Series III which are available in the Amphenol/Pyle versions: Classes K, S, N - firewall, high temperature (200°C – 260°C) and Classes H and Y - hermetics. These are covered in the 83723 Pyle section of this catalog.

Step 4. Select a Shell Size & Insert Arrangement from chart on page 349.

Shell Size & Insert Arrangements are together in one chart. First number represents Shell Size, second number is the Insert Arrangement.

Step 5. Select a Contact Type

	Designates
P	Pin Contacts
S	Socket Contacts

Step 6. Select an Alternate Keying Position - Rotation of master key/keyway of shell.

Use 6, 7, 8, 9 or Y for alternate keying positions. No letter required for normal (No rotation position) See page 349 for descriptions.

or Step 6. Select an Alternate Rotation of Insert.

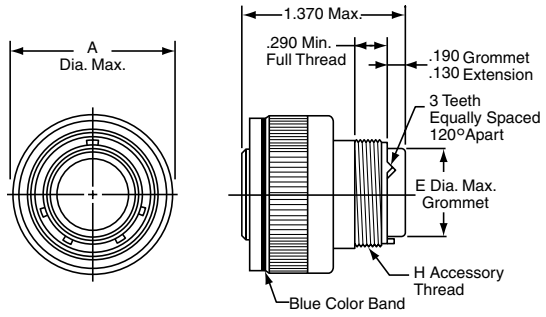
Use 1, 2, 3, 4, or 5 for alternate rotation of insert. No letter required for normal (No rotation position). See page 349 for descriptions.

Step 7. Modification Number

Consult Amphenol Aerospace for information.

M83723/66 & /67– MIL-DTL-83723, Series III

Quick-Disconnect Plug



PART

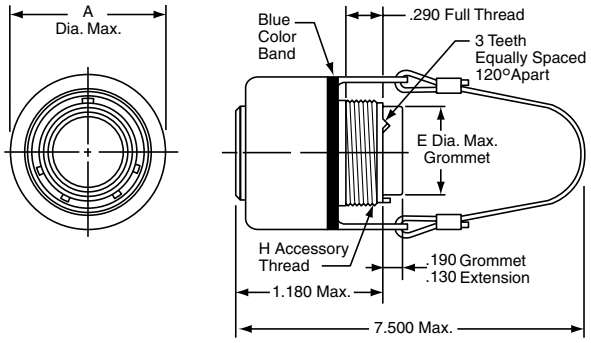
To complete, see how to order page 359.

	Connector Type	Connector Style (Quick-Disconnect) and Contact Type	Service Class	Shell Size & Insert Arrg	Alt. Keying Position or Alt. Rotation
Military	**M83723**	**/67 (with socket contacts)**	X	X-X	X
Military	**M83723**	**/66 (with pin contacts)**	X	X-X	X

	Connector Type (Quick-Disconnect)	Connector Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alt. Keying Position or Alt. Rotation	Modification Number
Commercial	**MQ**	**36**	X	X-X	X	X	XXX

M83723/68 & /69 – MIL-DTL-83723, Series III

Quick-Disconnect Plug with Lanyard



PART

To complete, see how to order page 359.

	Connector Type	Connector Style (Quick-Disconnect) and Contact Type	Service Class	Shell Size & Insert Arrg	Alt. Keying Position or Alt. Rotation
Military	**M83723**	**/69 (with socket contacts)**	X	X-X	X
Military	**M83723**	**/68 (with pin contacts)**	X	X-X	X

	Connector Type (Quick-Disconnect)	Connector Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alt. Keying Position or Alt. Rotation	Modification Number
Commercial	**MQ**	**35**	X	X-X	X	X	XXX
Commercial (No Mil-spec Equivalent)	**MQ**	**38**	X	X-X	X	X	XXX

Adapter for Mating Quick-Disconnect Plugs with Receptacles

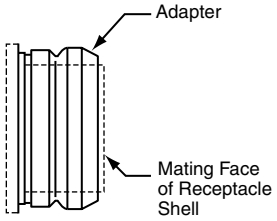
Shell Size	A Dia. Max.	E Dia. Max.	H Accessory Thread Class 2A
8	1.095	.305	.5000-20 UNF
10	1.240	.405	.6250-24 UNEF
12	1.432	.531	.7500-20 UNEF
14	1.490	.665	.8750-20 UNEF
16	1.711	.790	1.0000-20 UNEF
18	1.815	.869	1.0625-18 UNEF
20	1.962	.994	1.1875-18 UNEF
22	2.070	1.119	1.3125-18 UNEF
24	2.195	1.244	1.4375-18 UNEF

Receptacle Adapter

Required to mate the quick-disconnect plug with receptacle.

Not furnished with the quick-disconnect plug; must be ordered separately.

Note: Use Locktite Material on the threads for a permanent installation to the shell.



How to Order Adapter
by Commercial Part Number
2500-007-0X XX

Finish — Shell Size

00 designates aluminum, electroless nickel, Class R
01 designates aluminum, hard anodize, Class A
03 designates aluminum, cadmium plate, Class W
02 designates stainless steel, Class G

How to Order Adapter
by Military Part Number
M83723/70 X XX

Finish — Shell Size

R designates aluminum, electroless nickel, Class R
A designates aluminum, hard anodize, Class A
W designates aluminum, cadmium plate, Class W
G designates stainless steel, Class G

Crimping and Insertion/Removal Tools

MIL-DTL-83723, SERIES III CRIMP CONTACTS

Contact Size	Wire Range		Socket Contacts	Pin Contacts
	AWG	mm²	Military Part Number	Military Part Number
20	24-20	0.2-0.6	M39029/5-115	M39029/4-110
16	20-16	0.5-1.4	M39029/5-116	M39029/4-111
12	14-12	2-3	M39029/5-118	M39029/4-113

CONTACT CURRENT RATING AND RETENTION

Contact Size*	Current Rating		Contact Retention	
	Amperes Max.	Voltage Drop Millivolts	Axial Load	
			lb.	N
20	7.5	35	20	89.0
16	13.0	25	25	111.2
12	23.0	25	30	133.4

* Organize individual circuits to maintain heat rise within operating temperature requirements.

SEALING PLUGS

Contact Size	Sealing Plugs	
	Military Part Number	Amphenol/Matrix Part Number
20	MS27488-20	3400-043-0020
16	MS27488-16	3400-043-0016
12	MS27488-12	3400-043-0012

CRIMPING TOOLS

Contact Size	Wire Range		Finished Wire Dia. Range		Crimping Tool Part Number	Turret or Positioner Part Number
	AWG	mm2	Inch	mm		
20	24-20	0.2-0.6	.040-.083	1.02-2.11	M22520/1-01 or M22520/2-01	M22520/1-02 or M22520/2-02
16	20-16	0.5-1.4	.053-.103	1.34-2.62	M22520/1-01	M22520/1-02
12	14-12	2-3	.097-.158	2.46-4.01	M22520/1-01	M22520/1-02

INSERTION/REMOVAL TOOLS

Contact Size	Color Code	Military Part Number	Amphenol/Matrix Part Number
20	Red/White	M81969/14-11	6500-001-0020
16	Blue/White	M81969/14-03	6500-001-0016
12	Yellow/White	M81969/14-04	6500-001-0012

Note: Each connector is furnished with contacts. One spare for inserts requiring 1 to 26 of each contact, two spares for inserts with more than 26 contacts, and a minimum of one sealing plug up to 10% of the number of contacts.

BACKSHELLS

The section of this catalog called "Backshells" covers the backshells for MIL-DTL-83723 Matrix, Series III that are provided through Amphenol PCD. Please refer to this section for:

- Backshells for Connector Family "J", which includes MIL-DTL-26482 (Series II), MIL-DTL-5015 (MS3400), MIL-DTL-83723 (Series I & III).

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