MIL-DTL-83723, Series III, Matrix®

K



TABLE OF CONTENTS FOR SECTION K
MIL-DTL-83723, SERIES III, MATRIX®

Wide Variety of Coupling Styles & Options 2
Class Descriptions, Performance Specifications, Quick Reference Chart 3
Insert Availability and Identification,
Alternate Keying Positions, Alternate Rotations 4
Insert Arrangement Drawings 5, 6

BAYONET SHELL STYLES:

How to Order (Military & Commercial) 7
Wall Mounting Receptacle M83723/71 & /72 (MB30),
Jam Nut Receptacle M83723/73 & /74 (MB34) 8
Straight Plug M83723/75 & /76 (MB36),
Straight Plug with RFI Grounding Fingers M83723/77 & /78 (MB38) 9

THREADED SHELL STYLES:

How to Order (Military & Commercial) 10
Wall Mounting Receptacle M83723/82 & /83 (MT30),
Jam Nut Receptacle M83723/84 & /85 (MT34) 11
Straight Plug M83723/86 & /87 (MT36),
Straight Plug with RFI Grounding Fingers M83723/91 & /92 (MT38) 12
Straight Plug (Self-locking) M83723/95 & /96 (MT37) 13

QUICK-DISCONNECT SHELL STYLES:

How to Order (Military & Commercial) 14
Quick-Disconnect Plug M83723/66 & /67 (MQ36),Quick-Disconnect Plug with Lanyard
M83723/68 & /69 (MQ35/MQ38), Receptacle Adapter for quick
disconnect plug 15

CONTACT INFORMATION, SEALING PLUGS:

Crimp and Insertion/Removal Tools 16

MIL-DTL-83723, Series III, Matrix®

With a Wide Variety of Coupling Styles & Options

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

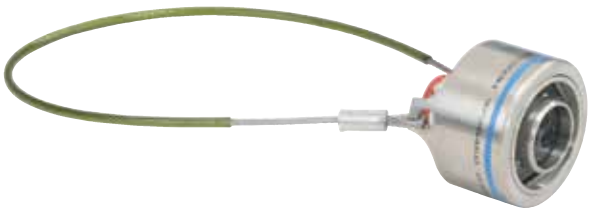
- Recommended operating voltage to 600 VAC (RMS) at sea level
- Complete environmental sealing includes individual contact seals and a silicone elastomer interfacial seal with raised barriers around each pin, a shell-to-shell seal and an insert-to-shell seal. Sealing over a wide range of wire diameters 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.

Class Descriptions, Performance Specifications, Quick Reference Chart

CLASS DESCRIPTIONS

Military MIL-DTL-83723, Series III	Commercial MB Series	Connector Style	Description
Class A	Class A	Bayonet, Threaded or Quick-Disconnect	Aluminum shell, black non-conductive 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	Military Designation	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

MIL-DTL-83723, Series III, Matrix®

Insert Availability and Identification, 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.

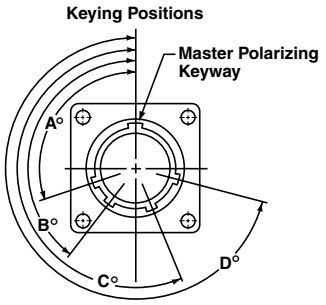
Shell size 28 is available in threaded coupling connectors only.

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

See how to order for bayonet type connectors on page 7, how to order for threaded on page 10, and how to order for quick-disconnect type connectors on page 14. Insert arrangements are per MIL-STD-1554.

ALTERNATE KEYING POSITIONS

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)

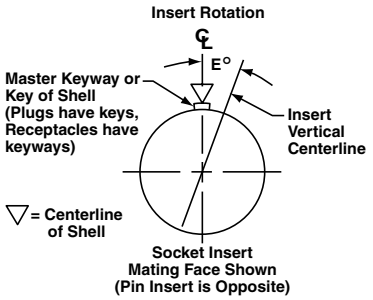
ALTERNATE KEYING POSITIONS OF SHELL

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.



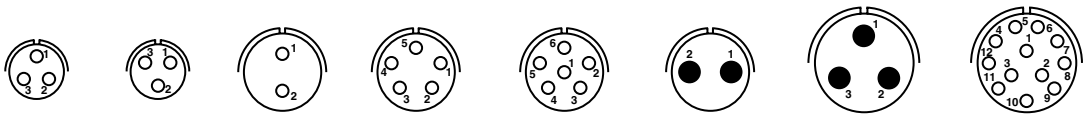
ALTERNATE ROTATIONS OF INSERT

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

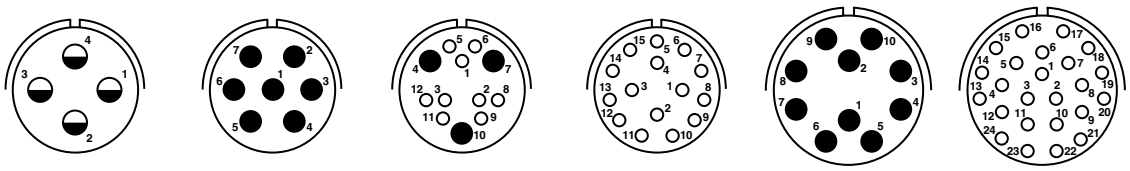
Note: Positions 1-5 are inactive for new designs per MIL-STD-1554.

Insert Arrangements

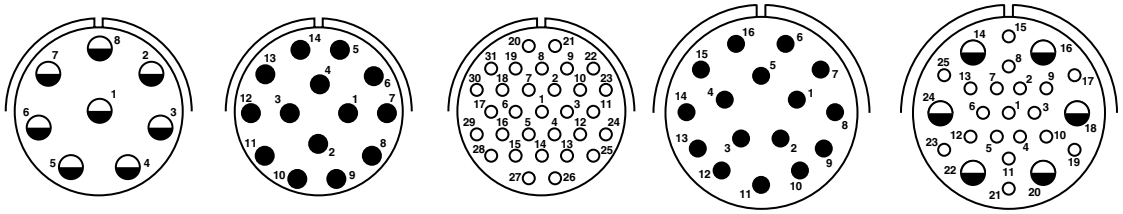
Front Face of Pin Insert or Rear Face of Socket Insert Illustrated



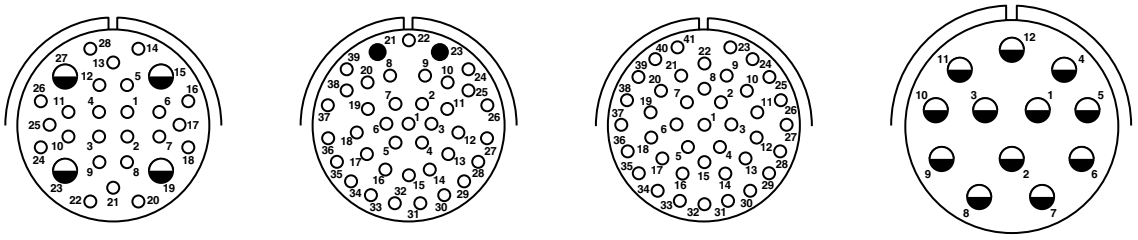
Insert Arrangement	0803	0898	1002	1005	1006	1020	1203	1212
Service Rating	I	I	I	I	I	I	I	I
Number of Contacts	3	3	2	5	6	2	3	12
Contact Size	20	20	20	20	20	16	16	20



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

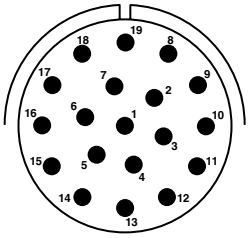
NOTE: Connectors sold as mil-spec connectors will have mil-spec markings on the insert (a "snail-trail" designating the numerical path). Commercial versions will have insert markings as shown here.

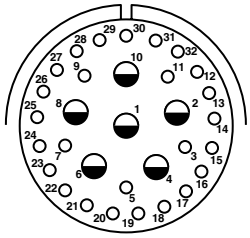
CONTACT LEGEND ○ 20 ● 16 ◒ 12

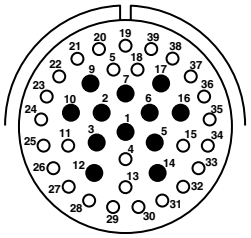
MIL-DTL-83723, Series III, Matrix®

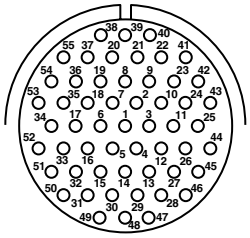
Insert Arrangements

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

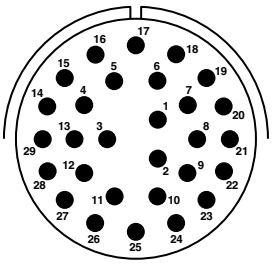


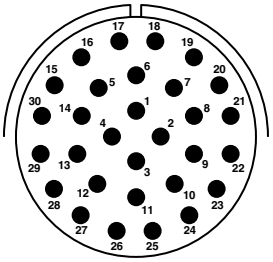


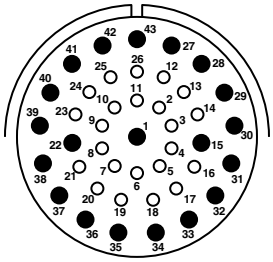


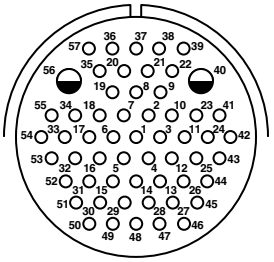


Insert Arrangement	2219	2232		2239*		2255
Service Rating	I	I		I		I
Number of Contacts	19	26	6	27	12	55
Contact Size	16	20	12	20	16	20

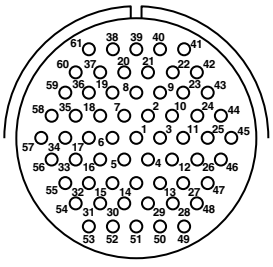


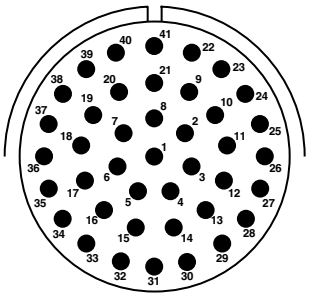


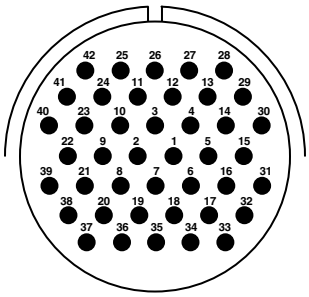




Insert Arrangement	2429†	2430†	2443		2457	
Service Rating			I		I	
Number of Contacts	29	30	23	20	55	2
Contact Size	16	16	20	16	20	12







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 7, how to order for threaded on page 10, and how to order for quick-disconnect type connectors on page 14.

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

MIL-DTL-83723, Series III, Matrix®

How to Order – Bayonet Coupling Connectors

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

	1.	2.	3.	4.	5.	6.	7.
	Connector Type (Bayonet)	Connector Style	Service Class	Shell Size/ Insert Arrangement	Contact Type	Alternate Keying Position of Shell or Alternate Rotation of Insert	Modification Number
COMMERCIAL	MB	34	R	1203	P	7	XXX

M83723 — 1. MILITARY MIL-DTL-83723 SERIES III CONNECTORS

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

2. CONNECTOR STYLE	
/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

3. SERVICE CLASS	
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.

4. SHELL SIZE & INSERT ARRANGEMENT FROM CHART ON PG. 4-6

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

5. 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 4 for descriptions.

OR

5. ALTERNATE ROTATION OF INSERT

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

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

MB — 1. COMMERCIAL BAYONET COUPLING CONNECTORS

2. CONNECTOR STYLE	
30	Wall Mount Receptacle
34	Jam Nut Receptacle
36	Standard Straight Plug
38	Straight Plug with RFI grounding fingers

3. SERVICE CLASS	
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.

4. SHELL SIZE & INSERT ARRANGEMENT FROM CHART ON PAGE 4-6

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

5. CONTACT TYPE	
P	Pin Contacts
S	Socket Contacts

6. 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 4 for descriptions.

OR

6. 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 4 for descriptions.

7. MODIFICATION NUMBER

Consult Amphenol Aerospace for information.

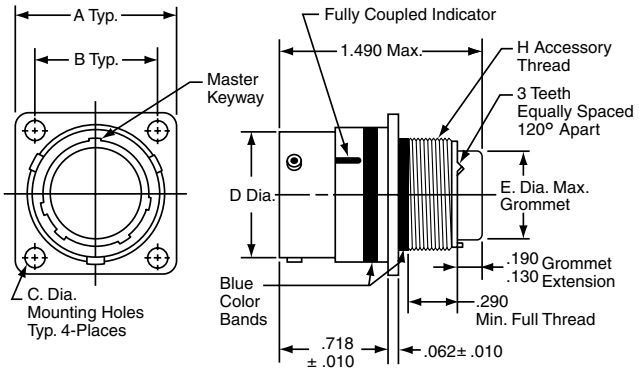
Wall Mounting Receptacle with Bayonet Coupling

Military (M83723/71 & /72), Commercial (MB30)

PART NUMBER BUILDER Page 7

MILITARY
M83723/71 Socket
M83723/72 Pin

Commercial MB30



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.

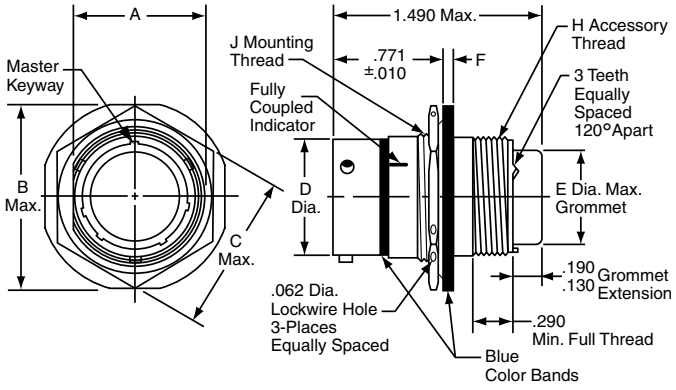
Jam Nut Receptacle with Bayonet Coupling

Military (M83723/73 & /74), Commercial (MB34)

PART NUMBER BUILDER Page 7

MILITARY
M83723/73 Socket
M83723/74 Pin

Commercial MB34



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.

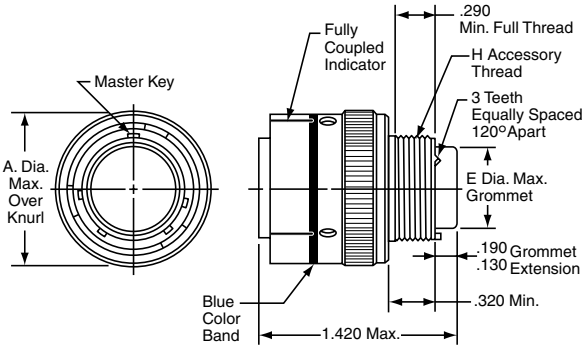
Straight Plug with Bayonet Coupling

Military (M83723/75 & /76), Commercial (MB36)

PART NUMBER BUILDER Page 7

MILITARY
M83723/75 Socket
M83723/76 Pin

Commercial — MB36



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.

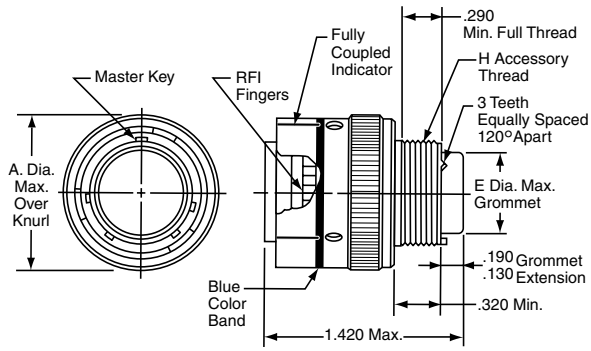
Straight Plug, Bayonet Coupling (with RFI grounding fingers)

Military (M83723/77 & /78), Commercial (MB38)

PART NUMBER BUILDER Page 7

MILITARY
M83723/77 Socket
M83723/78 Pin

Commercial — MB38



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.	2.	3.	4.	5.
	Connector Type	Connector Style (Threaded) and Contact Type	Service Class	Shell Size/ Insert Arrangement	Alternate Keying Position of Shell or Alternate Rotation of Insert
MILITARY	M83723	/84	R	0803	N

	1.	2.	3.	4.	5.	6.	7.
	Connector Type (Threaded)	Connector Style	Service Class	Shell Size/ Insert Arrangement	Contact Type	Alternate Keying Position of Shell or Alternate Rotation of Insert	Modification Number
COMMERCIAL	MT	34	R	0803	P	7	XXX

M83723 — 1. MILITARY MIL-DTL-83723 SERIES III CONNECTORS

(Refer to military specification slash sheet number).

2. CONNECTOR STYLE

/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

3. SERVICE CLASS

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.

4. SHELL SIZE & INSERT ARRANGEMENT FROM CHART ON PG. 4-6

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.)

5. 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 4 for descriptions.

OR

5. ALTERNATE ROTATION OF INSERT

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

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

MT — 1. COMMERCIAL THREADED COUPLING CONNECTORS

2. CONNECTOR STYLE

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

3. SERVICE CLASS

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.

4. SHELL SIZE & INSERT ARRANGEMENT FROM CHART ON PG. 4-6

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

5. CONTACT TYPE

P	Pin Contacts
S	Socket Contacts

6. 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 4 for descriptions.

OR

6. 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 4 for descriptions.

7. MODIFICATION NUMBER

Consult Amphenol Aerospace for information.

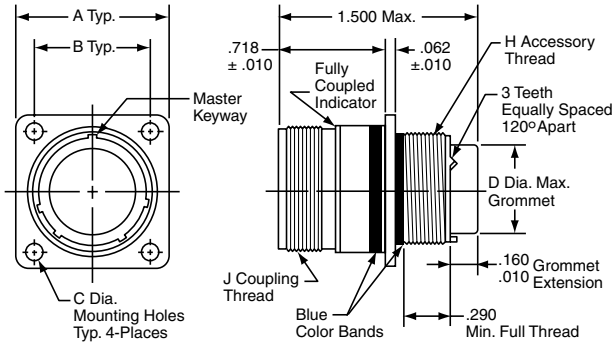
Wall Mounting Receptacle with Threaded Coupling

Military (M83723/82 & /83), Commercial (MT30)

PART NUMBER BUILDER Page 10

MILITARY
M83723/82 Socket
M83723/83 Pin

Commercial MT30



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.

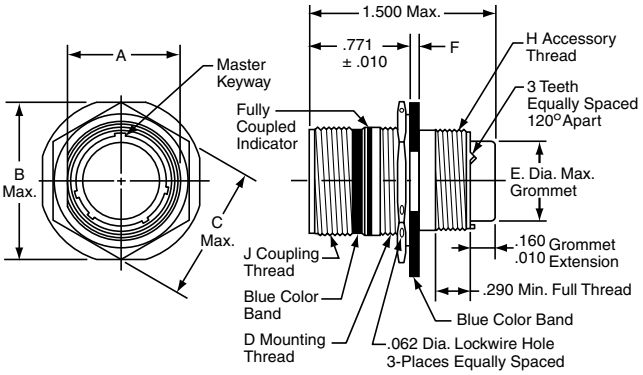
Jam Nut Receptacle with Threaded Coupling

Military (M83723/84 & /85), Commercial (MT34)

PART NUMBER BUILDER Page 10

MILITARY
M83723/84 Socket
M83723/85 Pin

Commercial MT34



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.

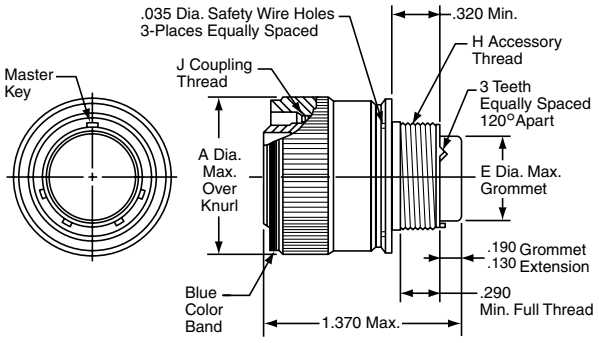
Straight Plug with Threaded Coupling

Military (M83723/86 & /87), Commercial (MT36)

PART NUMBER BUILDER Page 10

MILITARY
M83723/86 Socket
M83723/87 Pin

Commercial **MT36**



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.

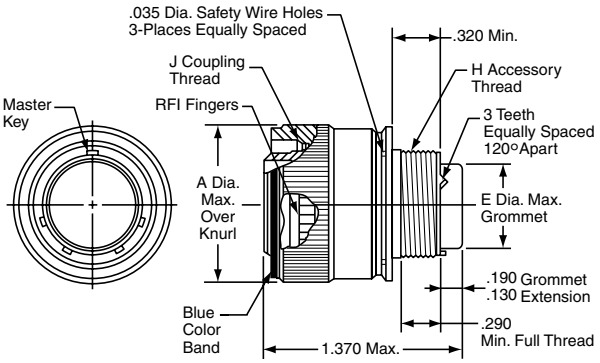
Straight Plug, Threaded Coupling (With RFI Grounding Fingers)

Military (M83723/91 & /92), Commercial (MT38)

PART NUMBER BUILDER Page 10

MILITARY
M83723/91 Socket
M83723/92 Pin

Commercial **MT38**



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.

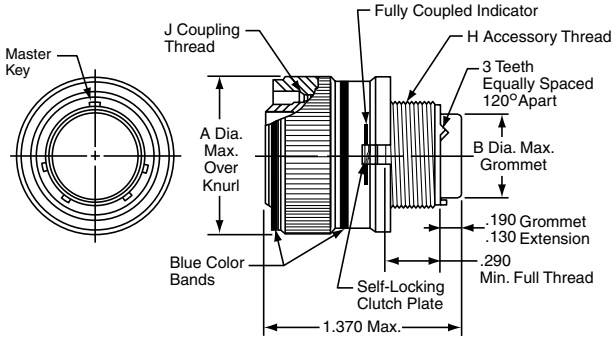
Straight Plug with Threaded Coupling (Self-Locking)

Military (M83723/95 & /96), Commercial (MT 37)

PART NUMBER BUILDER Page 10

MILITARY
M83723/95 Socket
M83723/96 Pin

Commercial MT37



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.

MIL-DTL-83723, Series III, Matrix®

How to Order – Quick-Disconnect Coupling Connectors

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

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

M83723 — 1. MILITARY MIL-DTL-83723 SERIES III CONNECTORS

(Refer to military specification slash sheet number).

2. CONNECTOR STYLE

/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

3. SERVICE CLASS

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.

4. SHELL SIZE & INSERT ARRANGEMENT FROM CHART ON PAGE 4-6

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.)

5. 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 4 for descriptions.

OR

5. ALTERNATE ROTATION OF INSERT

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

MQ — 1. COMMERCIAL QUICK-DISCONNECT COUPLING CONNECTORS

2. CONNECTOR STYLE

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

3. SERVICE CLASS

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.

4. SHELL SIZE & INSERT ARRANGEMENT FROM CHART ON PAGE 4-6

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

5. CONTACT TYPE

P	Pin Contacts
S	Socket Contacts

6. 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 4 for descriptions.

OR

6. 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 4 for descriptions.

7. MODIFICATION NUMBER

Consult Amphenol Aerospace for information.

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

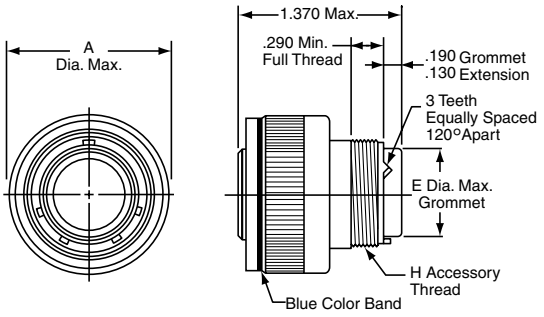
Quick-Disconnect Plug

Military (M83723/66 & /67), Commercial (MQ36)

PART NUMBER BUILDER Page 14

MILITARY
M83723/67 Socket
M83723/66 Pin

Commercial **MQ36**



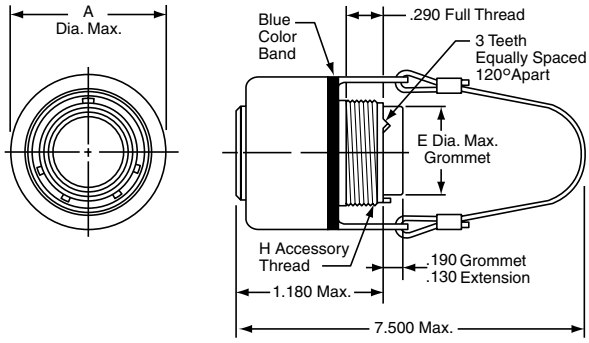
Quick-Disconnect Plug with Lanyard

Military (M83723/68 & /69), Commercial (MQ35, MQ38)

PART NUMBER BUILDER Page 14

MILITARY
M83723/69 Socket
M83723/68 Pin

Commercial **MQ35**
MQ38



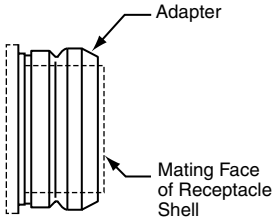
Adapter for Mating Quick-Disconnect Plugs with Receptacles

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

MIL-DTL-83723, Series III, Matrix®

Contact Information, Sealing Plugs, Crimping, and Insertion/Removal Tools

MIL-DTL-83723, SERIES III CRIMP CONTACTS				
Contact Size	Wire Range		Socket Contacts	Pin Contacts
	AWG	mm^2	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 TOOL			
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).