Version 1
12-C1

Amphenol
Circular Interconnects
MIL-DTL-38999

- Aluminum
- Stainless Steel/Firewall
- Composite
- CLUTCH-LOK™ High Vibration
- Printed Circuit Boards
- EMI Filter/Transient
- Accessories
- High Density HD38999
- Durmalon

Amphenol Aerospace

About Amphenol® Aerospace

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ABOUT AMPHENOL AEROSPACE:

Amphenol Aerospace, a Division of Amphenol Corporation, is one of the largest manufacturers of interconnect products in the world for the Military, Commercial Aerospace and Industrial markets. Amphenol designs, manufactures and markets circular and rectangular, electronic, fiber optic, EMI/EMP filter, and a variety of special applications connectors and interconnect systems. Our 675,000 square foot facility is nestled at the foothills of the Catskill Mountains in Sidney NY. The Amphenol complex has over 1,400 employees, incorporating state-of-the-art manufacturing technologies including CNC machining, die-casting, molding, impact and extruding, plating, screw machining and process controls. Our fully equipped material evaluation lab and engineering organization, utilizing the latest in computer aided design software and analysis tools. This allows us to design, test and qualify interconnect systems.

Our interconnect products are supplied to thousands of OEMs worldwide and are supported by our worldwide sales and engineering force, plus the largest global network of electronic distributors.

The Amphenol Aerospace Division consists of the interconnect facility in NY, two facilities in NH that manufacture electrical backplanes, rigid boards and flex assemblies, an interconnect facility in Toronto Canada and two satellite assembly plants in Mexico and China.

AMPHENOL AEROSPACE'S PHILOSOPHY:

As a basic business philosophy, Amphenol Aerospace is dedicated to concentrating on those advanced and challenging market segments that demand an extraordinary level of supplier support and reaction. Our approach to implement this strategy is based on the following key principles:

FOCUS: Concentrate all resources on serving a limited number of tightly defined markets, and understanding the needs of those markets.

INNOVATION: Provide these markets new, creative solutions in both products and services.

RESPONSIVENESS: Identify and respond to the market and product needs more rapidly than any other supplier.

Performance is the sum of these principles. It is the measure of how well we continually and consistently implement our basic strategy and key principles.

CUSTOMIZED INTERCONNECT PACKAGES:

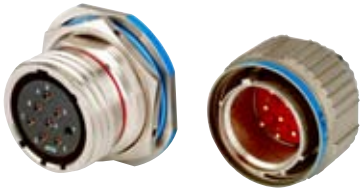
Amphenol Corporation's broad technical, product and manufacturing resources enable Amphenol Aerospace to provide exceptional performance in the area of customized system development-application specific packaging which blends both Corporate and Amphenol Aerospace products and design innovations. We provide customers with rapid, well engineered and cost-effective custom solutions interconnect.

QUALITY ASSURANCE:

Amphenol Aerospace has been awarded both AS9100 - Revision B and ISO9001:2000 quality assurance certifications.

MIL-DTL-38999, Series III, TV Tri-Start

Amphenol® Ti-Start, MIL-DTL-38999 Series III connectors, offer the highest performance capabilities for both general duty and severe environment applications. The Tri-Start connector with standard metal shells (aluminum or stainless steel with several finish options) offers these features:



- Threaded coupling
- Quickly and completely mate in 360° turn of coupling nut
- Lockwire eliminated
- Crimp termination. Recessed pins (100% scoop-proof feature minimizes contact damage)
- EMI Shielding
- Moisture Resistance
- Corrosion Resistance
- Operating temp. from -65° C to +200° C
- Operating voltage to 900 VAC (RMS) at sea level

MIL-DTL-38999, Series II, JT

The JT Series II connector provides high performance capabilities for both general duty and severe environmental applications. Shorter profile, designed for maximum weight/space savings.

- 3 point bayonet coupling
- Mismating eliminated with 5 key/keyway mating
- Operating temp. from -65° C to +200° C
- Operating voltage to 900 VAC (RMS) at sea level
- EMI Shielding optional in JT Series II
- Error proof alternate positioning ensures by different key/keyway locations

MIL-DTL-38999, Series I, LJT

The JT Series II connector provides high performance capabilities for both general duty and severe environmental applications. Longer shell profile than JT offers the following features:

- Contact protection 100% scoop -proof LJT design prevents bent pins and short circuits during mating
- 3 point bayonet coupling
- Mismating eliminated with 5 key/keyway mating
- Operating temp. from -65° C to +200° C
- Operating voltage to 900 VAC (RMS) at sea level
- EMI Shielding grounding fingers standard in LJT series
- Error proof alternate positioning ensures by different key/keyway locations

CLUTCH-LOKs

TV/MTV Series D38999 meets all MIL-DTL-38999 Series III requirements plus unique inner clutch design provides enhanced anti-vibration and anti decoupling capability.

- Threaded coupling.
- Quick low force mating in one 360° turn of the coupling nut.
- Mates with standard Series III receptacles.
- Crimp termination. Recessed pins (100% scoop-proof feature minimizes contact damage).

Fail Safe Lanyards Release

Circular connectors with lanyard release capability. Designed to provide quick disconnect of a connector plug and receptacle with axial pull on the lanyard. Provides instant decoupling and damage free separation. Ideal for weapons release and blind or difficult accessibility situations.

- Available in and meeting requirements of the following series:
- MIL-DTL-38999 Series I, II, III
- MIL-DTL-26482, Series I, Matrix MIL-DTL-83723, Series III, Matrix MIL-DTL-5015
- Use Straight plug connector styles. Connector mating is accomplished in the normal fashion
- Unmating is by axial pull on the coupling nut via the swivel lanyard or conventional coupling nut rotation.

Contact your Amphenol representative for information regarding custom configurations

Hermetic Connectors

Amphenol glass sealed hermetic connectors are available in a wide variety of Mil-Spec and custom configurations.

Features and Benefits:

- Leakage rate of 1x10-7 cc of He/sec or less
- Fused glass insert in steel shell

Applications:

- Pressurized avionics boxes
- Environmental sealed boxes
- Moisture sealing for industrial equipment and missiles

Options include:

- Special flanges
- PC board mounting stand-offs
- PC board mounting tails
- EMI filtering
- Through bulkhead configurations
- Crimp termination

Hermetics
32- 34 Series III
57-58 Series II
68-69 Series I
206 Custom

Epoxy Sealed Connectors

Amphenol epoxy sealed connectors are a light weight alternative to glass sealed hermetic connectors for use in avionics and other weight-sensitive applications where a high level of sealing is required. Epoxy sealed connectors are an optimal solution when increasingly stringent water immersion requirements must be met in radio and vetronics applications.

- Same epoxy as used in EMI filter connectors
- Less than 1x10-4 cc of He/sec leak rate
- Maintained after temperature cycling, 5 cycles -55 to +125°C
- Custom designs available with lower leak rates upon request
- Available in standard and custom configurations including PC tail, solder cup, and crimp termination, board mounting stand-offs, and through bulkhead configurations.

Epoxy Sealed
See pages 206

SJT

Amphenol SJT connectors combine unique design features of the scoop-proof LJT series within standard mounting dimensions of JT types. Available in a wide range of shell sizes, finishes, insert arrangements and accessories, the SJT features:

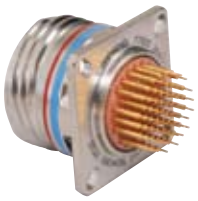
- 100% scoop-proof design basic MIL-DTL-38999 Series I length
- Standard mounting dimensions MIL-DTL-38999, Series III dimensions
- Compliance with European Specifications PAN6433-2, LN29729, BS9522F0012, VG96912

SJT
See pages 75-84

PC Tails (Printed Circuit Board Applications)

Circular connectors with PC tail contacts for solder mounting on printed circuit boards.

- Meets MIL-Spec requirements
- Available in MIL-DTL-38999 , Series I, II, III
- Available in Hermetics



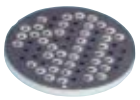
PC Tails
See pages 85-124

EMI Filter/Transient

Amphenol Filter Connectors protect sensitive circuits plus eliminate costly and bulky exteriors

- Reduction in overall weight and space with the elimination of external filter circuits
- Reduction of solder junctions
- Increase in reliability due to fewer connections
- Fragile filter elements protected from handling and environmental damage
- Pre-testing from factory and ready for installation

Filter
See pages 125-177



Accessories

Amphenol Aerospace is the leader in Interconnect solution and provide companies with a product portfolio of connectors, accessories, cable assemblies and system integration for most applications across various industries.

- Threaded coupling
- Quick low force mating in one 360° turn of the coupling nut
- Mates with standard Series III receptacles
- Crimp termination. Recessed pins (100% scoop-proof feature minimizes contact damage)

Accessories
See pages 178-197

Options

Amphenol Aerospace offers a broad range of additional connector options to meet your special requirements. For a complete view of products, please visit www.amphenol-aerospace.com

- HD38999 High Density Connectors
- High Frequency contacts
- Press Fit connectors
- Electrostatic Discharge (ESD) Protected Connectors
- Fiber Optic Interconnects

Contact your Amphenol representative for information regarding custom configurations

Options
See pages 198-207

Series JT II	Series LJT I	Series TV III	Military TV III	JT/LJT Solder	Crimp	Hermetics Class H	Hermetics Class Y	TV*	Service Rating	Total Contacts	Contact Size 22D	22M	22	20	16	12	12 (Coax)	10 (Power)	8 (Coax)	8†† (Twinax)
8-2■				P					M	2				2						
8-3■				X	NA	P	P		M	3				3						
	9-3■			X																
		9-5★■	A5						Grounded	1										1
8-6				X	X	P	P		M	6		6								
	9-6			X	X	P	P													
	9-7■			X					M	7		7								
	9-22■			X					I	2				2						
8-35					X	P	P		M	6	6									
	9-35	9-35	A35		X	P	P	P												
8-44					X	P	P		M	4			4							
	9-44				X															
		9-94 ■	A94		✦				M	2				2						
8-97■				X					M	4		2		2						
8-98				S	X	P	P		I	3				3						
	9-98	9-98	A98	X	X	P	P	P												
	11-2★	11-2★	B2		X	P**			I	2					2					
10-4					3				I	4				4						
	11-4			X	2															
10-5				X	X	P	P		I	5				5						
	11-5	11-5	B5	X	X			P												
	11-6■			S					I	6				6						
10-13				X	X	P/S	P/S		M	13		13								
	11-13			X	X	P/S	P/S													
10-35					X	P/S	P/S		M	13	13									
	11-35	11-35	B35		X	P/S	P/S	P												
		11-54 ■	B54		X ✦				II	4	4									
10-98				X	X	P/S	P/S		I	6				6						
	11-98	11-98	B98	X	X	P/S	P/S	P												
10-99					X	P	P		I	7				7						
	11-99	11-99	B99		P X			P												
12-3				X	X ✦	P	P		II	3					3					
	13-3■				P															
12-4				X	X	P	P		I	4					4					
	13-4★	13-4★	C4	X	X	P	P	P												
12-8				X	X	P	P		I	8				8						
	13-8	13-8	C8	X	X	P	P	P												
		13-13■	C13						I, Fiber Optic	4					2**	2				
12-22					X	P/S	P/S		M	22		22								
	13-22			X	X	P/S	P/S													
12-35					X	P/S	P/S		M	22	22									
	13-35	13-35	C35		X	P/S	P/S	P												
		13-63■			✦				I	4					2	2				
12-98				X	X	P/S	P/S		I	10				10						
	13-98	13-98	C98	X	X	P/S	P/S	P												
14-4■					2				I	4						4				
	15-4■	15-4■	D4		2 ✦															
14-5				X	X	P	P		II	5					5					
	15-5★	15-5★	D5	X	X	P	P	P												
14-15				X	X	P	P		I	15				14	1					
	15-15	15-15	D15	X	X	P/S	P/S	P	I	15				14	1					

X Completely tooled.
• Majority of tooling is completed (contact Amphenol Aerospace for availability).
✦ Not tooled for 02-R.
P Available with Pin contacts only
S Available with Socket contacts only
P/S Available with Pin contacts or Socket contacts
★ Ground plane proprietary option available. Arrg. 9-5 is exclusively ground plane type.
■ Not Mil-Qualified.
✧ 21-75 is Mil-Qualified with twinax contacts only.
Note: MS connector 21-75 is supplied with size 8 twinax.
Commercial connector 21-75 is supplied with size 8 coax.

* Hermetic inserts - solder termination standard. (Contact Amphenol Aerospace for optional PCB or eyelet termination).
** Two size 16 contacts dedicated to fiber optics. Consult Amphenol Aerospace catalog 12-352 for fiber optic information.
*** For use in MIL-STD-1760 applications (see pages 38 & 39).
† For RG 180/U and RG 195/U cables only.
†† Size 8 Coax and Twinax are interchangeable.
(2) Not Tooled for RP or 02RE
(3) Pin inserts only, not tooled for RP or 02RE (Consult Sidney, NY for avail.)
(5) MS Connector 21-79 has provision for two size 8 coax contacts. Coax contacts are not supplied unless specified by customer.

MIL-DTL-38999, Series I LJT, II JT, III TV

Insert Availability and Identification Chart

Amphenol Aerospace

Series	Series	Series	Military	JT/LJT		Hermetics					Contact Size									
JT II	LJT I	TV III	TV III	Solder	Crimp	Class H	Class Y	TV*	Service Rating	Total Contacts	22D	22M	22	20	16	12	12 (Coax)	10 (Power)	8 (Coax)	8†† (Twinax)
14-18				X	X	P/S	P/S		I	18				18						
	15-18	15-18	D18	X	X	P/S	P/S	P												
14-19■				X	X				I	19				19						
	15-19	15-19	D19		X	P	P	P												
14-35					X	P	P		M	37	37									
	15-35	15-35	D35		X	P/S	P/S	P												
14-37				X	X	P	P		M	37		37								
	15-37			X	X	P	P													
14-68■					2	P	P		1	8								8		
	15-68■			X	3															
14-97■					X	P	P		I	12				8	4					
	15-97	15-97	D97	X	X	P	P	P												
	17-2	17-2	E2		X ✦				M	39	38									1
16-6					X	P	P		I	6						6				
	17-6	17-6	E6		X	P	P	P												
16-8				X	X	P	P		II	8					8					
	17-8★	17-8★	E8	X	X	P/S	P/S	P												
16-13■					2				I	13					13					
	17-13■				2															
	17-22■	17-22★■	E22		✦				Coax	4							2		2	
	17-25■				2				M	24	22								2	
16-26				X	X	P/S	P/S		I	26				26						
	17-26	17-26	E26	X	X	P/S	P/S	P												
16-35					X	P	P		M	55	55									
	17-35	17-35	E35	X	X	P	P	P												
16-42					X				M	42			42							
	17-42■				P															
		17-52■			X ✦				M	2										2
16-55				X	X	P/S	P/S		M	55		55								
	17-55			X	X	P/S	P/S													
		17-60■			X				I/Coax	10	8								2	
16-99				X	X	P	P		I	23				21	2					
	17-99	17-99	E99	X	X	P	P													
		19-AD■			X ✦				Inst.	17				16						1
18-11				X	X	P	P		II	11					11					
	19-11★	19-11★	F11	X	X	P	P	P												
	19-18	19-18	F18		2 X				M	18	14									4
18-28				X	X				I	28				26	2					
	19-28■	19-28	F28	X	P X															
18-30				X	X				I	30				29	1					
	19-30■			X	P															
		19-31 ■	F31		X				M	15	12					1			2	
18-32				X	X	P/S	P/S		I	32				32						
	19-32	19-32	F32	X	X	P/S	P/S	P												
18-35					X	P	P		M	66	66									
	19-35	19-35	F35		X	P	P	P												
18-53				X	X				M	53			53							
	19-53■				P															
18-66				X	X	P	P		M	66		66								
	19-66				X	P	P													
	19-67■			X	3	S	S		M	67		67								
18-68■					2				I	18					18					
	19-68■				3															
18-96■					2				I	9						9				
20-1					X	P	P		M	79		79								
	21-1				X	P/S	P/S													
20-2					X				M	65			65							
	21-2■				X															
20-11■					3				I	11						11				
	21-11★	21-11★	G11		X															

Series JT II	Series LJT I	Series TV III	Military TV III	JT/LJT Solder	Crimp	Hermetics H	Hermetics Y	Hermetics TV*	Service Rating	Total Contacts	Contact Size 22D	22M	22	20	16	12	12 (Coax)	10 (Power)	8 (Coax)	8†† (Twinax)
20-16				X	X	P/S	P/S		II	16					16					
	21-16★	21-16★	G16	X	X	P	P	P												
	21-24■			X					I	24				24						
	21-25■			X					I	25				25						
	21-27■			X					I	27				27						
		21-29 ■	G29		X				I	27				19	4	4				
20-35					X	P	P		M	79	79									
	21-35	21-35	G35		X	P/S	P/S	P												
20-39				X	X	P	P		I	39				37	2					
	21-39	21-39	G39	X	X	P	P	P												
20-41				X	X	P	P		I	41				41						
	21-41	21-41	G41	X	X	P/S	P/S	P												
	21-75★	21-75★✧	G75		2 | X				N | M	4									4	(4)
	21-79■	21-79 ■	G79		2 | X				II	19	17								2	(5)
22-1					X	P/S	P/S		M	100		100								
	23-1				X	P	P													
22-2				X	X	P	P		M	85			85							
	23-2			X	X	P	P													
	23-6★■	23-6★■	H6		P				M	6										6
22-14■					2 | ✦				I	14						14				
	23-14■	23-14 ■	H14		2 | ✦															
22-21				X	X	P	P		II	21					21					
	23-21★	23-21★	H21	X	X	P	P	P												
22-32				X	X	P	P		I	32				32						
	23-32■			X	P															
	23-34■			X					I	34				34						
22-35					X	P/S	P/S		M	100	100									
	23-35	23-35	H35		X	P	P	P												
22-53■					P				I	53				53						
	23-53	23-53	H53	X	X	P/S	P/S	P												
		23-54 ■	H54		X				M	53	40				9	4				
22-55				X	X	P	P		I	55				55						
	23-55	23-55	H55		3			P												
	23-97■			X					II	16					16					
	23-99■			X					II	11					11					
24-1					X	P	P		M	128		128								
	25-1				X	P	P													
24-2					X				M	100			100							
	25-2				X															
24-4					X	P	P		I	56				48	8					
	25-4	25-4	J4		X			P												
	25-7■	25-7	J7		X				M | Twinax	99	97								2	
		25-8★	J8		✦				Twinax	8										8
		25-11***	J11		2 | ✦				N	11				2				9		
		25-17 ■	J17		✦				M	42				36						6
24-19■					X	P	P		I	19						19				
	25-19★	25-19★	J19		X			P												
	25-20■	25-20***	J20		2 | ✦				N	30				10	13		4			3
24-24					X	P	P		I	24					12	12				
	25-24★	25-24★	J24		X	P	P													
		25-26 ■	J25		✦				I	25				16		5			4	
24-29					X				I	29					29					
	25-29★	25-29★	J29	X	X															

X Completely tooled.
• Majority of tooling is completed (contact Amphenol Aerospace for availability).
✦ Not tooled for 02-R.
P Available with Pin contacts only
S Available with Socket contacts only
P/S Available with Pin contacts or Socket contacts
★ Ground plane proprietary option available. Arrg. 9-5 is exclusively ground plane type.
■ Not Mil-Qualified.
✧ 21-75 is Mil-Qualified with twinax contacts only.
* Hermetic inserts - solder termination standard. (Contact Amphenol Aerospace for optional PCB or eyelet termination).
** Two size 16 contacts dedicated to fiber optics. Consult Amphenol Aerospace catalog 12-352 for fiber optic information.
*** For use in MIL-STD-1760 applications (see pages 38 & 39).
† For RG 180/U and RG 195/U cables only.
†† Size 8 Coax and Twinax are interchangeable.
(2) Not Tooled for RP or 02RE
(3) Pin inserts only, not tooled for RP or 02RE (Consult Sidney, NY for avail.)
(4) MS connector 21-75 is supplied with size 8 twinax. Commercial connector 21-75 is supplied with size 8 coax.
(5) MS Connector 21-79 has provision for two size 8 coax contacts. Coax contacts are not supplied unless specified by customer.

MIL-DTL-38999, Series I LJT, II JT, III TV
Insert Availability and Identification Chart

Amphenol Aerospace

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24-35					X	P	P		New	128	128										
	25-35	25-35	J-35		X	P	P	P	M												
24-37					X				I	37					37						
	25-37★	25-37★	J-37		X																
		25-41 ■	J-41		X				N/Inst.	41	22			3	11		2			3	
24-43■					3				I	43				23	20						
	25-43	25-43	J-43	X	2 ✦																
	25-46	25-46	J-46		2 ✦				I	46				40	4		2				
24-61				X	X	P	P		I	61				61							
	25-61	25-61	J-61	X	X	P	P	P													
		25-62■			X ✦				I	12					8						4
		25-90■	J-90		✦				I	46				40	4					2	
		25-F4 ■	J-F4		X				M/I	66	49				13	4					

X Completely tooled.
✦ Not tooled for 02-R.
P Pin inserts only (contact Amphenol Aerospace for socket availability).
★ Ground plane proprietary option available. Arrg. 9-5 is exclusively ground plane type.
■ Not Mil-Qualified.

TV Series III

(Not Mil-Spec Qualified)

Shell Size-Insert Arrg.	Military Shell-Insert Arrg.	Crimp	Hermetics*	Service Rating	Total Contacts	Comments	Contact Size 22D	20	16	12	8†† (Twinax)
9-2	A-2	X		I	2	Formerly Pyle		2			
15-4	D-4	X		II	4	Formerly Pyle			4		
15-25	D-25	X		M	25	Formerly Pyle	22		3		
17-20	E-20	X		M	20	Formerly Pyle	16			4	
21-12	G-12	X		I	12	Formerly Pyle		3		9	
21-21	G-21	X		M/Inst.	41	Improved sealing	32			9	
21-99	G-99	X		M	16	Formerly Pyle	5			11	
25-92	J-92	X		M	101	Formerly Pyle	92		9		
25-97	J-97	X		M	42	Formerly Pyle	26		3	13	

Select Non-Standard Shell Size

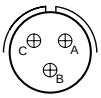
Shell Size-Insert Arrg.	Crimp	Hermetics*	Service Rating	Total Contacts	Contact Size 22D	20	8	4	0
25-16	X		M	8		6		2	
25L-3	X		II	3			1	2	
25L-7	X		II	7			7		
33-3	X		II	3				1	2
33-5	X		II	5				5	
33-6	X		II	6			2	4	
37-5	X		II	4					4

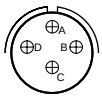
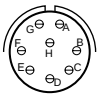
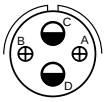
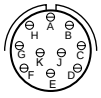
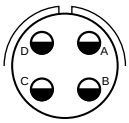
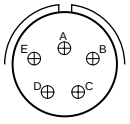
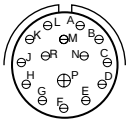
(Insert arrangements requiring non-standard shells or larger contacts)

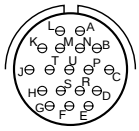
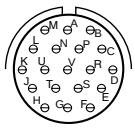
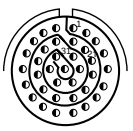
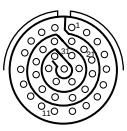
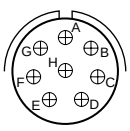
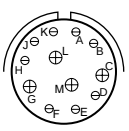
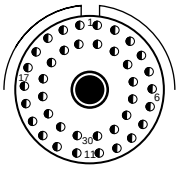
X Completely tooled.
• Majority of tooling is completed (contact Amphenol Aerospace for availability).
✦ Not tooled for 02-R.
P Pin inserts only (contact Amphenol Aerospace for socket availability).
★ Ground plane proprietary option available. Arrangement 9-5 is exclusively ground plane type.
■ Not Mil-Qualified.
* Hermetic inserts - solder termination standard. (Contact Amphenol Aerospace for optional PCB or eyelet termination).
** Two size 16 contacts dedicated to fiber optics. Consult Amphenol Aerospace catalog 12-352 for fiber optic information.
*** For use in MIL-STD-1760 applications (pgs. 38 & 39).
† For RG 180/U and RG 195/U cables only.
†† Size 8 Coax and Twinax are interchangeable.
Note: 25L-3 and 25L-7 require longer shells.

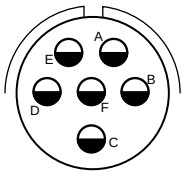
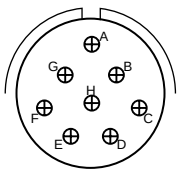
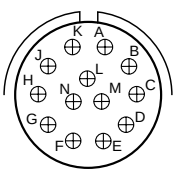
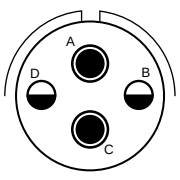
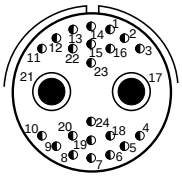
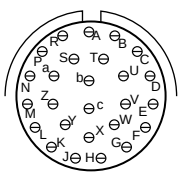
Front face of pin inserts illustrated

Shell Size & Insert Arrg. for:											
Series II JT	8-2	8-3		8-6			8-35	8-44		8-97	8-98
Series I LJT		9-3		9-6	9-7	9-22	9-35	9-44			9-98
Series III TV			9-5				9-35		9-94		9-98
Service Rating	M	M	Grounded	M	M	I	M	M	M	M	I
Number of Contacts	2	3	1	6	7	2	6	4	2	2 2	3
Contact Size	20	20	8 Twinax	22M	22M	20	22D	22	20	22M 20	20

Shell Size & Insert Arrg. for:										
Series II JT		10-4	10-5		10-13	10-35		10-98	10-99	12-3
Series I LJT	11-2	11-4	11-5	11-6	11-13	11-35		11-98	11-99	13-3
Series III TV	11-2		11-5			11-35	11-54	11-98	11-99	
Service Rating	I	I	I	I	M	M	II	I	I	II
Number of Contacts	2	4	5	6	13	13	4	6	7	3
Contact Size	16	20	20	20	22M	22D	22D	20	20	16

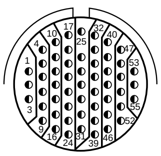
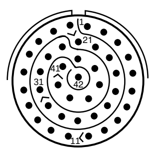
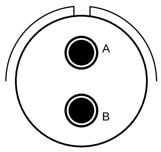
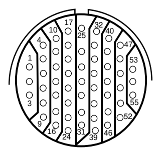
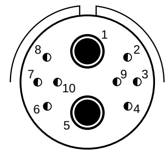
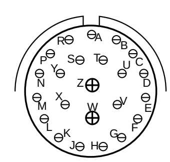
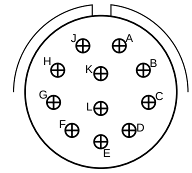
Shell Size & Insert Arrg. for:									
Series II JT	12-4	12-8	12-22	12-35		12-98	14-4	14-5	14-15
Series I LJT	13-4	13-8	13-22	13-35		13-98	15-4	15-5	15-15
Series III TV	13-4	13-8		13-35	13-63	13-98	15-4	15-5	15-15
Service Rating	I	I	M	M	I	I	I	II	I
Number of Contacts	4	8	22	22	2 2	10	4	5	14 1
Contact Size	16	20	22M	22D	16 12	20	12	16	20 16

Shell Size & Insert Arrg. for:							
Series II JT	14-18	14-19	14-35	14-37	14-68	14-97	
Series I LJT	15-18	15-19	15-35	15-37	15-68	15-97	17-2
Series III TV	15-18	15-19	15-35			15-97	17-2
Service Rating	I	I	M	M	I	I	M
Number of Contacts	18	19	37	37	8	8 4	38 1
Contact Size	20	20	22D	22M	16	20 16	22D 8 Twinax

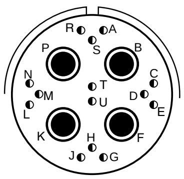
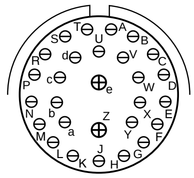
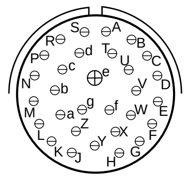
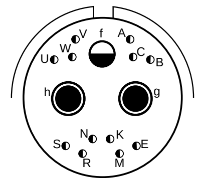
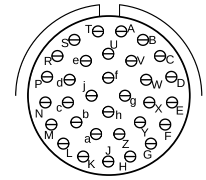
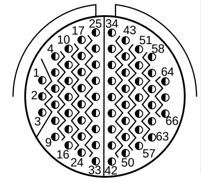
Shell Size & Insert Arrg. for:						
Series II JT	16-6	16-8	16-13			16-26
Series I LJT	17-6	17-8	17-13	17-22	17-25	17-26
Series III TV	17-6	17-8		17-22		17-26
Service Rating	I	II	I	Coax	M	I
Number of Contacts	6	8	13	2 2	22 2	26
Contact Size	12	16	16	12 Coax 8 Coax	22D 8 Coax	20

CONTACT LEGEND 8 10 12 16 20 22 22M 22D

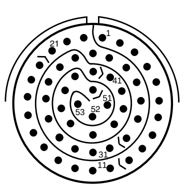
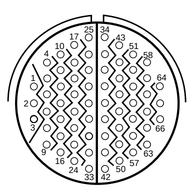
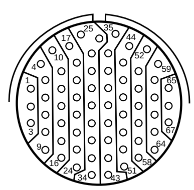
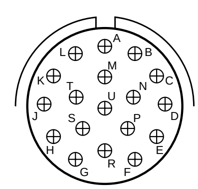
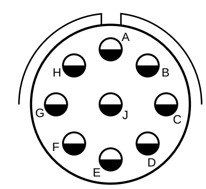
Front face of pin inserts illustrated

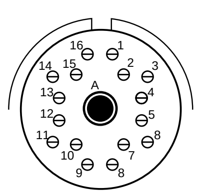
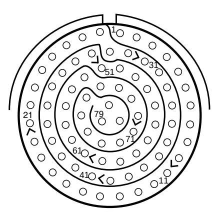
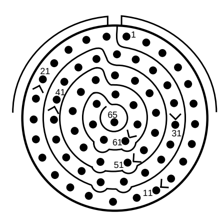
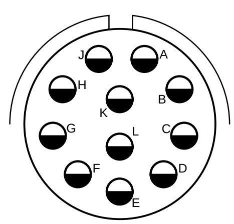
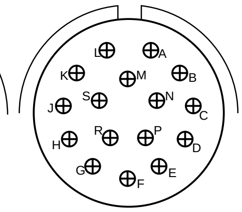
Shell Size & Insert Arrg. for:									
Series II JT	16-35	16-42		16-55			16-99		18-11
Series I LJT	17-35	17-42		17-55			17-99		19-11
Series III TV	17-35		17-52		17-60		17-99		19-11
Service Rating	M	M	M	M	I/Coax		I		II
Number of Contacts	55	42	2	55	8	2	21	2	11
Contact Size	22D	22	8 Twinax	22M	22D	8 Coax	20	16	16

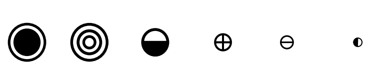
Shell Size & Insert Arrg. for:											
Series II JT			18-28		18-30					18-32	18-35
Series I LJT	19-18		19-28		19-30					19-32	19-35
Series III TV	19-18		18-28					19-31		19-32	19-35
Service Rating	M		M		I			M		I	M
Number of Contacts	14	4	26	2	29	1	2	1	12	32	66
Contact Size	22D	8 Twinax	20	18	20	16	8 Coax	12	22D	20	22D

Shell Size & Insert Arrg. for:					
Series II JT	18-53	18-66		18-68	18-96
Series I LJT	19-53	19-66	19-67	19-68	
Series III TV					
Service Rating	M	M	M	I	I
Number of Contacts	53	66	67	18	9
Contact Size	22	22M	22M	16	12

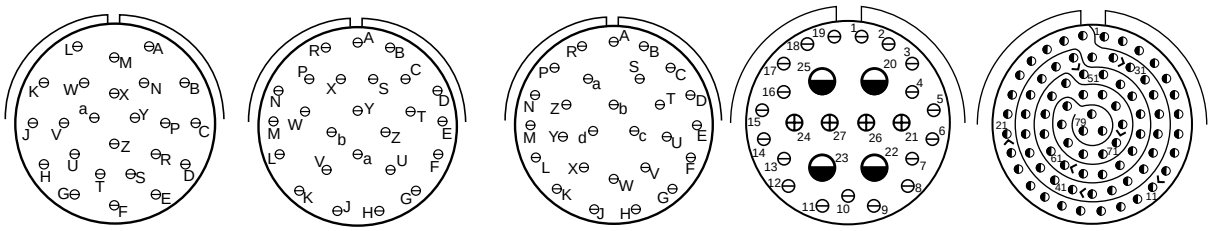






Shell Size & Insert Arrg. for:						
Series II JT			20-1	20-2	20-11	20-16
Series I LJT			21-1	21-2	21-11	21-16
Series III TV	19-AD				21-11	21-16
Service Rating	Inst.		M	M	I	II
Number of Contacts	16	1	79	65	11	16
Contact Size	20	8 Twinax	22M	22	12	16

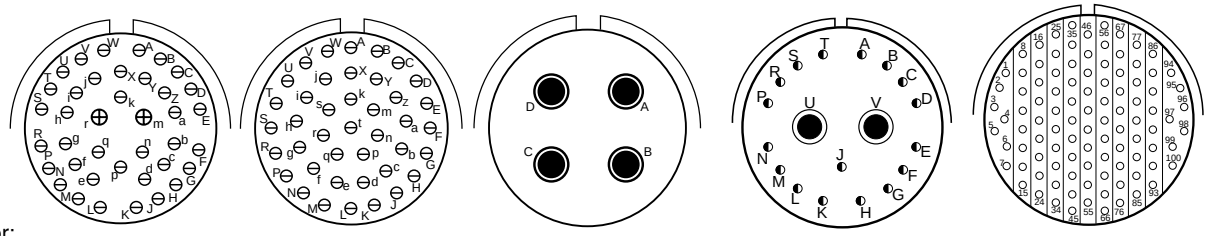


CONTACT LEGEND 8 10 12 16 20 22D

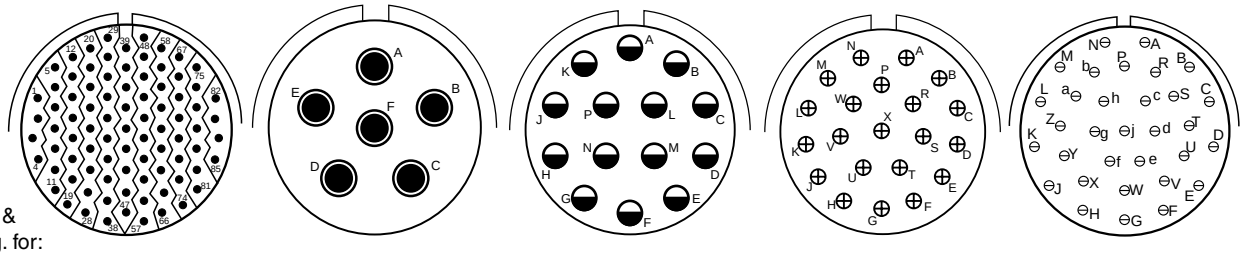
Front face of pin inserts illustrated



Shell Size & Insert Arrg. for:							
Series II JT							20-35
Series I LJT	21-24	21-25	21-27				21-35
Series III TV				21-29			21-35
Service Rating	I	I	I	I			M
Number of Contacts	24	25	27	19	4	4	79
Contact Size	20	20	20	20	16	12	22D



Shell Size & Insert Arrg. for:						
Series II JT	20-39		20-41			22-1
Series I LJT	21-39		21-41	21-75	21-79	23-1
Series III TV	21-39		21-41	21-75	21-79	
Service Rating	I		I	N	II	M
Number of Contacts	37	2	41	4	17 (See Note)	100
Contact Size	20	16	20	(See Note)	22D	22M



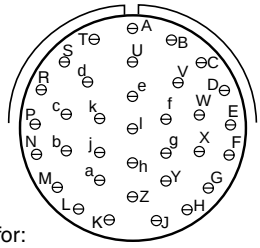
Shell Size & Insert Arrg. for:					
Series II JT	22-2		22-14	22-21	22-32
Series I LJT	23-2	23-6	23-14	23-21	23-32
Series III TV		23-6	23-14	23-21	
Service Rating	M	M	I	II	I
Number of Contacts	85	6	14	21	32
Contact Size	22	8 Twinax	12	16	20

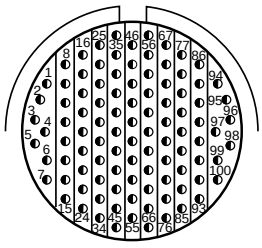
Note: MS connector 21-75 is supplied with four size 8 twinax contacts.
Commercial connector 21-75 is supplied with four size 8 coax contacts.
MS connector 21-79 has provision for two size 8 coax contacts.
Coax contacts are not supplied unless specified by customers.

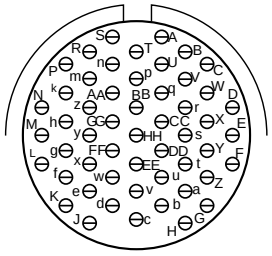
CONTACT LEGEND	8	10	12	16	20	22D

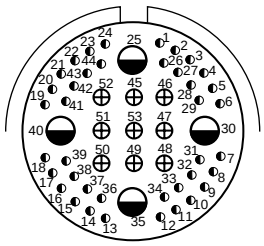
Amphenol Aerospace

Front face of pin inserts illustrated

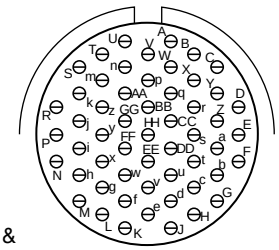


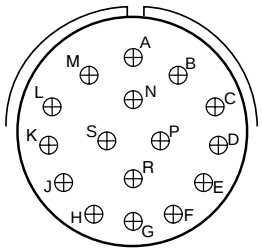


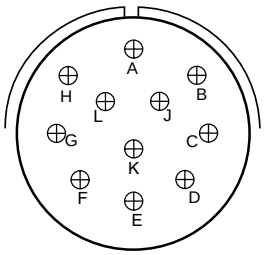


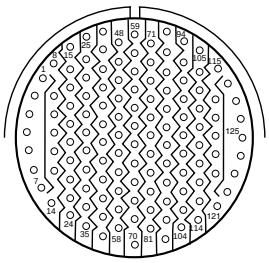


Shell Size & Insert Arrg. for:				
Series II JT		22-35	22-53	
Series I LJT	23-34	23-35	23-53	
Series III TV		23-35	23-53	23-54
Service Rating	I	M	I	M
Number of Contacts	34	100	53	40 9 4
Contact Size	20	22D	20	22D 16 12

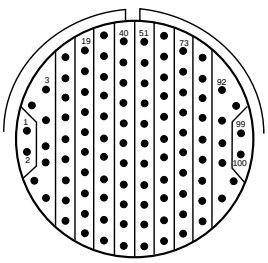


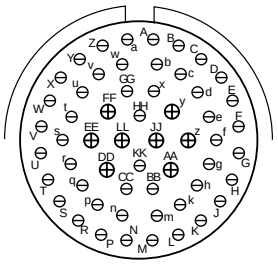


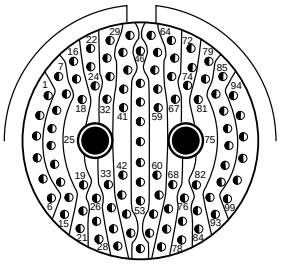


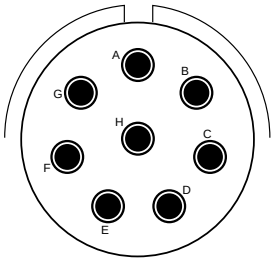


Shell Size & Insert Arrg. for:				
Series II JT	22-55			24-1
Series I LJT	23-55	23-97	23-99	25-1
Series III TV	23-55			
Service Rating	I	II	II	M
Number of Contacts	55	16	11	128
Contact Size	20	16	16	22M







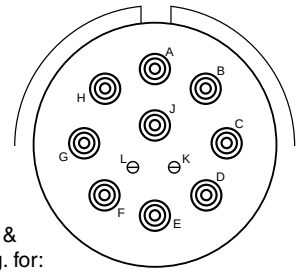
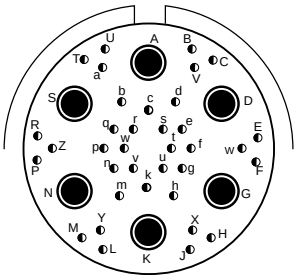
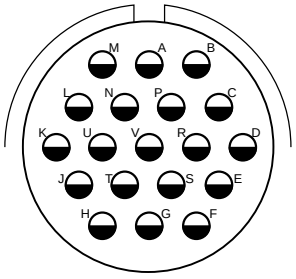
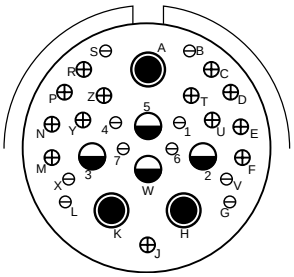


Shell Size & Insert Arrg. for:				
Series II JT	24-2	24-4		
Series I LJT	25-2	25-4	25-7	
Series III TV		25-4	25-7	25-8
Service Rating	M	I	M	Twinax
Number of Contacts	100	48 8	97 2	8
Contact Size	22	20 16	22D 8 Twinax	8 Twinax

*** For use in MIL-STD-1760 applications (see pages 38 and 39).

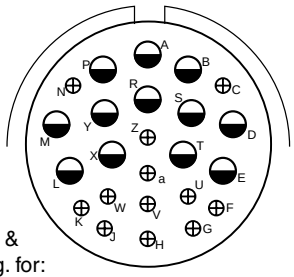
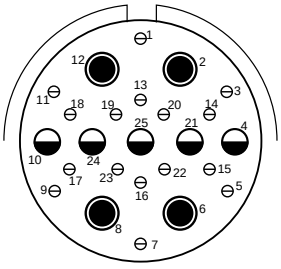
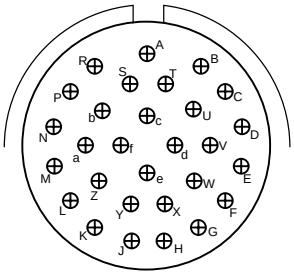
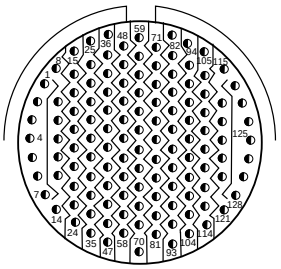
CONTACT LEGEND	8	10	12	16	20	22D

Front face of pin inserts illustrated

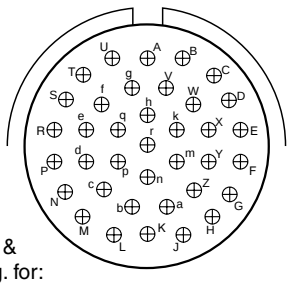
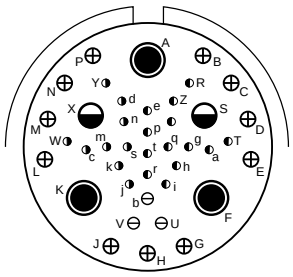
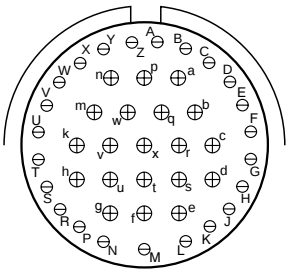
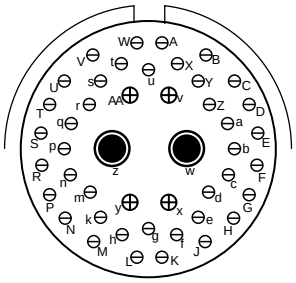





Shell Size & Insert Arrg. for:												
Series II JT						24-19						
Series I LJT	25-11					25-19			25-20			
Series III TV	25-11***		25-17			25-19			25-20***			
Service Rating	N		M			I			N			
Number of Contacts	2	9	36	6		19	10	13	3	4		
Contact Size	20	10	22D	8 Twinax		12	20	16	8 Twinax	12 Coax		

(With Matched Impedance)

Shell Size & Insert Arrg. for:												
Series II JT	24-24					24-29			24-35			
Series I LJT	25-24					25-29			25-35			
Series III TV	25-24		25-26			25-29			25-35			
Service Rating	I		I			I			M			
Number of Contacts	12	12	16	5	4	29			128			
Contact Size	16	12	20	12	8 Coax	16			22D			

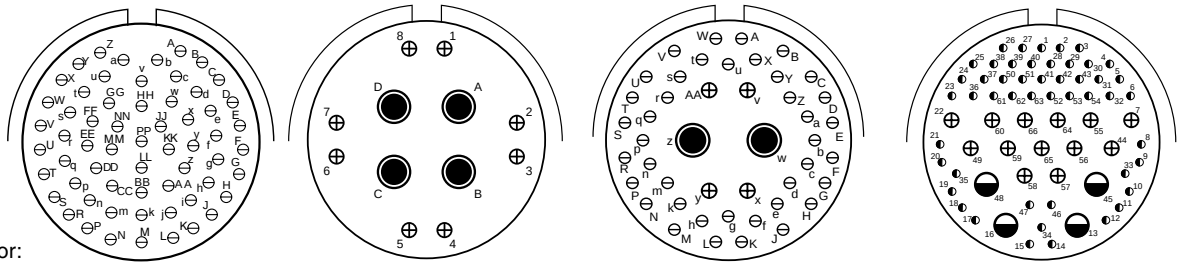





Shell Size & Insert Arrg. for:												
Series II JT	24-37						25-43					
Series I LJT	25-37						25-43			25-46		
Series III TV	25-37			25-41			25-43			25-46		
Service Rating	I			N/Inst.			I			I		
Number of Contacts	37	22	3	11	2	3	23	20		40	4	2
Contact Size	16	22D	20	16	12 Coax	8 Twinax	20	16		20	16	8 Coax

† Coax contacts for RG180/U or RG195/U cable.

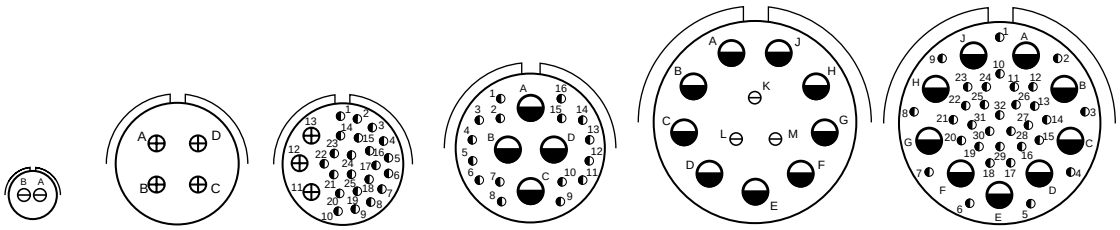
CONTACT LEGEND 8 10 12 16 20 22D

Front face of pin inserts illustrated

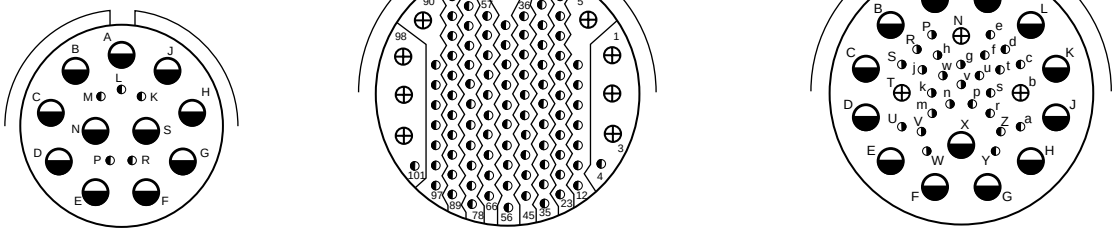


Shell Size & Insert Arrg. for:													
Series II JT	24-61												
Series I LJT	25-61												
Series III TV	25-61	25-62			25-90				25-F4				
Service Rating	I	I			I				Size 22D=M, Balance =I				
Number of Contacts	61	8	4		40	4	2		49	13	4		
Contact Size	20	16	8		20	16	8 Twinax		22D	16	12		

MIL-DTL-38999, Series III TV



Shell Size & Insert Arrg. for:												
Series III TV	9-2	15-4*	15-25		17-20		21-12		21-21			
Service Rating	I	II	M		M		I		M/Inst.			
Number of Contacts	2	4	22	3	16	4	3	9	32	9		
Contact Size	20	16	22D	16	22D	12	20	12	22D	12		



Shell Size & Insert Arrg. for:												
Series III TV	21-99			25-92			25-97					
Service Rating	M			M			M					
Number of Contacts	5	11		92	9		26	3	13			
Contact Size	22D	12		22D	16		22D	16	12			

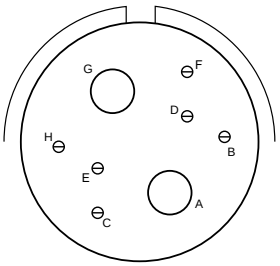
NOTE: Some specials shown here were formerly known as Pyle arrangements. Consult Amphenol for how to order information for connectors with these inserts. For further information on special arrangements consult Amphenol Aerospace, Sidney NY.

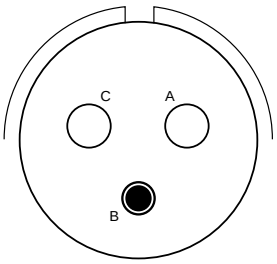
* Pyle 15-4 does not mate with Amphenol Tri-Start 15-4 insert.

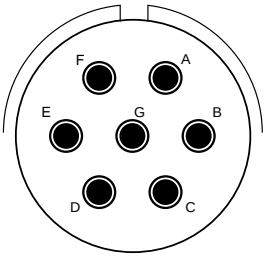
CONTACT LEGEND	8	10	12	16	20	22D

Non-Standard Shells or Large Contacts

Front face of pin inserts illustrated

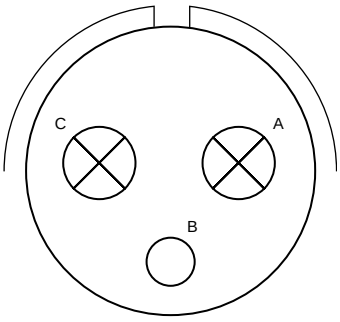


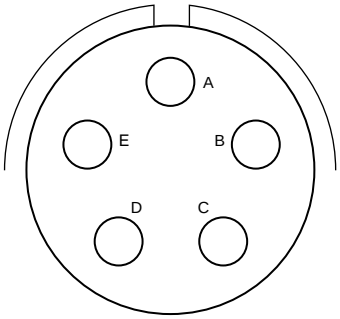


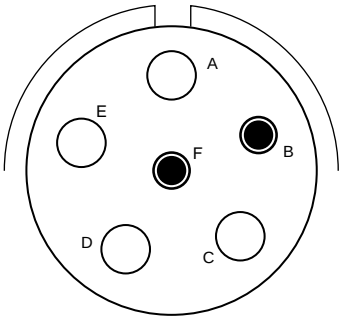


Shell Size & Insert Arrg. for:

Series III TV	25-16	25L-3	25L-7
Service Rating	M	II	II
Number of Contacts	6 2	1 2	7
Contact Size	20 4	8 4	8

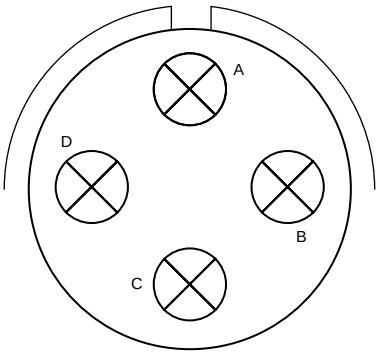






Shell Size & Insert Arrg. for:

Series III TV	33-3	33-5	33-6
Service Rating	II	II	II
Number of Contacts	1 2	5	2 4
Contact Size	4 0	4	8 4



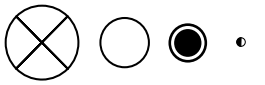
Shell Size & Insert Arrg. for:

Series III TV	37-5
Service Rating	II
Number of Contacts	4
Contact Size	0

NOTE: Some specials shown here were formerly known as Pyle arrangements. Consult Amphenol for how to order information for connectors with these inserts.

Consult Amphenol Aerospace for longer shell drawings.

CONTACT LEGEND



0 4 8 22D

CONTACT RATING

Contact Size	Test Current (Amps)		Maximum Millivolt Drop Crimp*	Maximum Millivolt Drop	
	Crimp	Hermetic		Solder*	Hermetic*
22M	3	2	45	20	60
22D	5	3	73		85
22	5	3	73	20	85
20	7.5	5	55	20	60
16	13	10	49	20	85
12	23	17	42	20	85
10 (Power)	33	NA	33	NA	NA
8 (Power)	46	NA	26	NA	NA
4	80	NA	23	NA	NA
0	150	NA	21	NA	NA

*When tested using silver plated wire.

Contact Size	Crimp Well Data		Solder Well Data	
	Well Diameter	Normal Well Depth	Well Diameter	Nominal Well Depth
22M	.028 ± .001	.141	.029 +.004 – .000	
22D	.0345 ± .0010	.141	.036 +.004 -.000	.094
22	.0365 ± .0010	.141	.036 +.004 -.000	.094
20	.047 ± .001	.209	.044 +.004 -.004	.125
16	.067 ± .001	.209	.078 +.000 -.004	.141
12	.100 ± .002	.209	.116 +.004 -.002	.141
10 (Power)	.137 ± .002	.355	NA	NA
8	.181 ± .002	.490	NA	NA
4	.281 ± .002	.490	NA	NA
0	.453 ± .002	.585	NA	NA

SERVICE RATING**

Service Rating	Suggested Oper. Voltage (Sea Level)		Test Voltage (Sea Level)	Test Voltage 50,000 Ft.	Test Voltage 70,000 Ft	Test Voltage 110,000 Ft.
	AC (RMS)	DC				
M	400	500	1300 VRMS	550 VRMS	350 VRMS	200 VRMS
N	300	450	1000 VRMS	400 VRMS	260 VRMS	200 VRMS
I	600	850	1800 VRMS	600 VRMS	400 VRMS	200 VRMS
II	900	1250	2300 VRMS	800 VRMS	500 VRMS	200 VRMS

**Please note that the establishment of electrical safety factors is left entirely in the designer's hands, since he is in the best position to know what peak voltage, switching surges, transients, etc. can be expected in a particular circuit.

FINISH DATA MIL-DTL-38999, Tri-Start Series III TV

Aluminum Shell Components Non-Hermetic		
Finish	**Service Class**	
	Military	**Commercial**
Anodic Coating (Non-Conductive)	C	RX**
Electroless Nickel	F (Metal)	RF
	M (Composite)	
Olive Drab Cadmium Plate Nickel Base	W (Metal)	RW
	J (Composite)	
Stainless Steel with Nickel Plate	S	RS
Stainless Steel	K	RK
Durmalon plated		DN

Hermetic Shell Components		
Material/Finish	**Service Class**	
	Military	**Commercial**
Stainless Steel	Y	Y
Stainless Steel with Nickel Plate	N	YN

**Add Suffix (005) to part number.

FINISH DATA MIL-DTL-38999, Series I LJT, II JT

Aluminum Shell Components Non-Hermetic					
Finish	**Suffix**			**Indicated Finish Standard for JT Types Listed Below**	**Indicated Finish Standard for LJT Types Listed Below**
	Military	**Commercial**	**Finish Plus "SR" Suffix**		
Cadmium Plated Nickel Base	MS (A)	–	(SR)	JT/JTG/JTL/JTP	LJT/LJTP
Anodic Coating (Alumilite)	MS (C)	(005)	(300)	JTS/JTPS/JTLS	LJTPS/LJTS
Chromate Treated (Iridite 14-2)		(011)	(344)	JTN/JTPN/JTLN	LJTN/LJTPN
Olive Drab Cadmium Plate Nickel Base	MS (B)	(014)	(386)		
Electroless Nickel	MS (F)	(023)	(424)		
Nickel-PTFE		(038)			

Hermetic Connectors				
Finish	**Suffix**		**Indicated Finish Standard for JT Types Listed Below**	**Indicated Finish Standard for LJT Types Listed Below**
	Military	**Commercial**		
Carbon Steel Shell Tin Plated Shell and Contacts			JT( )H / JT( )Y JTL( )H / JTL( )Y	LJT( )Y LJT( )H
Carbon Steel Shell Tin Plated Shell and Gold Plated Contacts	MS (D)			
Stainless Steel Shell Gold Plated Contacts	MS (E)	(162)	JTS( )Y JTLS( )Y	LJTS( )Y

Tri-Start™ MIL-DTL-38999 Series III
with Metal Shells - Aluminum, Stainless Steel, Class K Firewall

Amphenol® Tri-Start MIL-DTL-38999* Series III Connectors offer the highest performance capabilities for both general duty and severe environment applications. Meeting or exceeding MIL-DTL-38999 Series III requirements, the Tri-Start connector with standard metal shells (aluminum or stainless steel with several finish options) offers these features:

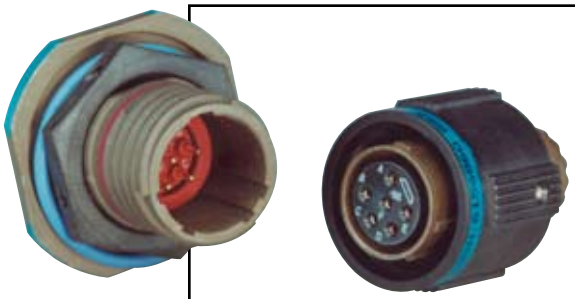
- **EMI Shielding** - solid metal to metal coupling, grounding fingers, electroless nickel plating, and thicker wall sections provide superior EMI shielding capability of 65dB minimum at 10 GHz
- **Contact Protection -** recessed pins in this 100% scoop-proof connector minimize potential contact damage
- **Moisture Resistance -** improved interfacial seal design helps prevent electrolytic erosion of contacts
- **Corrosion Resistance -** shells of stainless steel or cadmium over nickel plating withstand a 500 hour salt spray exposure
- **Vibration/Shock -** operates under severe high temperature vibration, through 200°C
- **Firewall Capability -** available in a stainless steel shell, class RK, RS
- **Lockwiring Eliminated -** unique, self-locking, quick coupling connector eliminates lockwiring
- **Quick Coupling -** completely mates and self-locks in a 360° turn of the coupling nut
- **Inventory Support Commonality -** uses standard MIL-DTL-38999 contacts, application tools, insert arrangements
- **Electrostatic Discharge Protection (ESD) -** protection for sensitive circuitry without diodes, varistors, etc., with the use of the Faraday Cage principle which shunts high voltage, high current discharge events (see page 197)
- **Hermetic-** air leakage limited to 1 X 10^{-7} cm^3 per second optional
- **Qualified Specifications** - Stainless Steel qualified to BACC63DB and BACC63DC specifications

Optional Shell Geometries
Amphenol offers a number of different shell configurations to fit your needs.

- Deep Reach Shells - For increased panel thickness
- Stand-off Flange Shells - For attachments to Printed Circuit boards.
- Connector with Integral Strain Reliefs

* MIL-DTL-38999 Series III supersedes MIL-C-38999 Series III.

Applicable Patents:
Tri-Start™ Connector Patent 4,109,990.
Composite Connector Patents:
4,268,103; 4,648,670; 4,682,832; 4,703,987.
Clutch-Lok® Patent 6,152,753.



Series III

Composite Tri-Start, Qualified to MIL-DTL-38999, Rev. J

MIL-Qualified to MIL-DTL-38999, Rev. K, the Amphenol® Composite Tri-Start Connector offers a lightweight, corrosion resistant connector with the same high performance features as its metal counterpart. The Composite Tri-Start Connector also includes the following features:

- **Lightweight -** 17% – 70% weight savings
  (17–40% weight savings vs. Aluminum)
  (60–70% weight savings vs. Stainless steel)
  See Composite weight comparison chart, pg. 19.
- **Corrosion Resistance -** available in standard MIL-DTL-38999 olive drab cadmium (-65°C to 175°C) and electroless nickel plating (-65°C to 200°C), both with standing 2000 hours of salt spray exposure. The base material is able to withstand an indefinite exposure to salt spray.
- **Durability -** 1500 couplings minimum (in reference to connector couplings, not contacts)
- **Extended Life Contact -** Mil-approved plating process which provides 1500 couplings minimum
- Qualified to BACC63CT and BACC63CU specifications

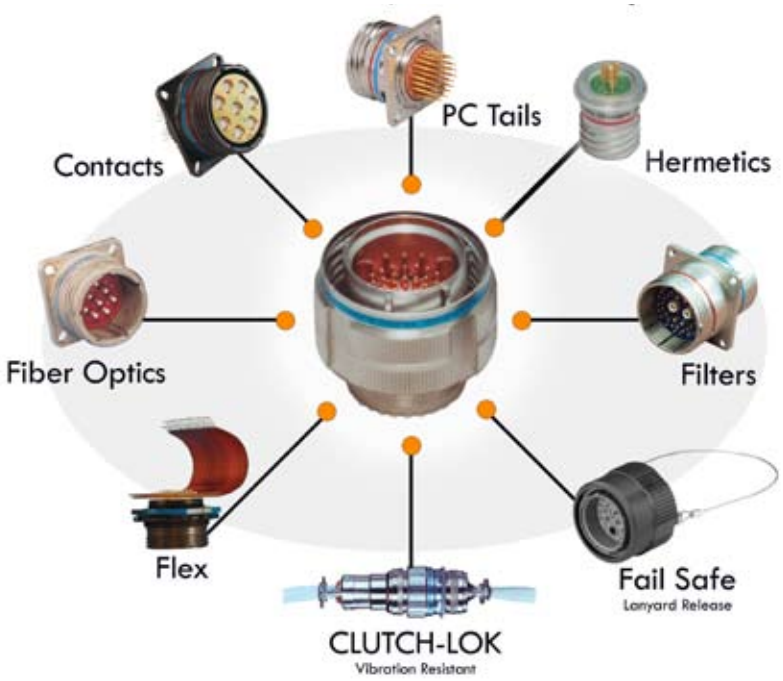
CLUTCH-LOK™ MIL-DTL-38999 Series III
High Vibration Connector

The Tri-Start option CLUTCH-LOK offers all advantages of stainless steel/Class K firewall for MIL-DTL-38999 Series III connectors, plus a unique clutch design that actually tightens itself under vibration.
Features include:

- High degree of differential torque
- No settling back to the next ratchet tooth
- Completely intermateable with all existing MIL-DTL-38999 Series III connectors
- Offers advantage in inaccessible, hard to reach areas where mating torque is difficult to apply and complete coupling is not verifiable by inspection

See page 28 for description, 21 – 23 for ordering.

Series III, TV Tri-Start Connectors, offer more versatility & options than any other interconnection family!



High reliability and increased versatility best describe Amphenol MIL-DTL-38999, Series III circular connectors. Originally designed for the harshest of environments and most demanding of applications, Amphenol MIL-DTL-38999 Series III, Tri-Start connectors continue to evolve in pace with the needs of an ever-changing market.

Amphenol Tri-Start connectors can be configured with a number of application specific technologies like Filters, Hermetics, PC Tails, Fiber Optics, Flex, CLUTCH-LOK, Fail Safe, and contacts. Flexibility aids in design optimization through the combination of different technologies within a common, time-tested, harsh environment connector body.

Performance

Designed for Performance

Numerous advantages in performance capability are designed into the Amphenol Tri-Start Connector. A positive metal to metal coupling design, grounding fingers, and electroless nickel plating provide superior EMI shielding capability of 65 dB minimum at 10 GHz.

Acme threads provide coupling durability. Thicker wall sections and a greater coupling surface area improve strength and shock resistance. Blunting of the thread on both the coupling nut and receptacle eliminates cross coupling. The connector quickly mates and self locks in a 360° turn of the coupling nut.

Elongated mounting holes permit the Tri-Start Connector to intermount with various existing MIL-Spec box or wall mount receptacles, giving it a design replacement advantage.

Shells of stainless steel, or cadmium over nickel plating prevent severe corrosion. Resistance is tested through exposure to a 500 hour salt spray. Composite versions provide protection from salt spray exposure for 2000 hours. Other finish options are available; see how to order Tri-Start metal and Tri-Start Composite.

Recessed pins minimize potential contact damage in this 100% scoop-proof connector. In a blind mating application, mating shells cannot “scoop” the pins and cause a shorting or bending of contacts.

The design of the Amphenol Tri-Start interfacial seal meets the MIL-DTL-38999 Series III requirements for electrolytic erosion resistance.

A rigid dielectric insert with excellent electrical characteristics provides durable protection to the contacts. The socket contacts are probe proof, and all contacts are rear removable. They are plated in the standard 50 micro inches minimum gold, with 100 micro inches as an option and are available in standard Tri-Start insert arrangements and special Pyle® insert arrangements in sizes 10 power, 12, 16, 20 and 22D contacts. Special insert patterns are also available with larger contacts in sizes 4 and 0.

Depending on the shell style, shell size and contact count, weight savings can range from 17% to 40% compared to standard aluminum product

Tri-Start Weight in Ounces (includes contacts)

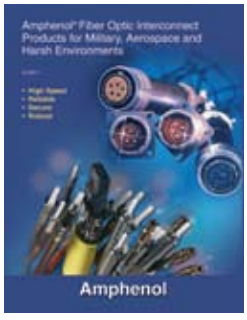
Weight

	Wall Mount Receptacle (00 • Military D38999/24						Jam Nut Receptacle (07) • Military D38999/24						Plug (06) • Military D38999/26					
	Stainless Steel		Aluminum		Composite		Stainless		Aluminum		Composite		Stainless Steel		Aluminum		Composite	
	Pin	Socket	Pin	Socket	Pin	Socket	Pin	Socket	Pin	Socket	Pin	Socket	Pin	Socket	Pin	Socket	Pin	Socket
9-35	.7216	.7840	.3248	.3777	.2588	.3121	1.1472	1.2096	.4416	.5040	.3489	.4413	1.0736	1.1360	.4236	.4625	.2606	.2994
9-98	.7216	.7776	.2496	.3056	.1664	.2224	1.1472	1.2032	.4416	.4976	.3744	.4640	1.0736	1.1296	.3968	.4624	.2991	.2337
11-35	.9488	1.0800	.3632	.4960	.2753	.4081	1.4304	1.5632	.5936	.7264	.4679	.6007	1.2480	1.3808	.5312	.6389	.3450	.4582
11-98	.9488	1.0620	.3632	.4768	.2753	.3889	1.4304	1.5440	.5936	.7072	.4679	.5815	1.2480	1.3616	.5330	.6283	.3468	.4457
13-8	1.2096	1.3888	.4800	.6592	.3696	.5488	1.9104	2.0896	.7664	.9456	.6560	.8352	1.8048	1.9840	.7936	.9728	.5237	.5952
13-35	1.2160	1.4320	.4864	.7024	.3762	.5922	1.9168	2.1328	.7728	.9888	.6136	.8296	1.8112	2.0272	.8000	.8472	.5301	.6531
13-98	1.2160	1.4016	.4864	.6720	.3762	.5618	1.9168	2.1024	.7728	.9584	.6136	.7992	1.8112	1.9968	.7978	.9856	.5244	.7157
15-5	1.5312	1.7904	.6352	.8944	.5027	.7619	2.3792	2.6384	.9728	1.2320	.7749	1.0341	2.2704	2.5456	.9632	1.1719	.6450	.8467
15-18	1.5456	1.8416	.7760	.9456	.6432	.8128	2.3936	2.6896	.9872	1.2832	.8544	1.1504	2.2848	2.5808	.9776	1.2736	.6594	.8208
15-35	1.5424	1.8768	.6464	.9808	.5139	.8483	2.3904	2.7344	.9840	1.3280	.7861	1.1301	2.2816	2.6256	1.2179	1.3184	.8961	1.0002
17-6	2.1488	2.5904	.9360	1.3776	.7812	1.2228	2.9152	3.3568	1.2336	1.6752	.9940	1.4356	2.5008	3.1024	1.1408	1.7424	.8160	1.4176
17-26	2.1344	2.5600	.9216	1.3472	.7668	1.1924	2.9008	3.3264	1.2192	1.6448	.9796	1.4052	2.4864	2.9120	1.1264	1.3343	.8017	.8062
17-35	2.1360	2.6640	.9232	1.4512	.7684	1.2964	2.9024	3.4304	1.2208	1.7488	.9812	1.5092	2.4880	3.0160	1.1280	1.5497	.8033	1.2144
19-11	2.2592	2.6656	.9696	1.4528	.7925	1.2757	3.4352	3.9184	1.4720	1.9552	1.2033	1.6865	2.9808	3.4640	1.3472	1.8304	.9632	1.4464
19-32	2.1888	2.7264	.9760	1.5136	.7989	1.3365	3.4416	3.9792	1.4784	2.0160	1.2097	1.7473	2.9872	3.5248	1.3536	1.8912	.9696	1.5072
19-35	2.1920	2.8432	.9792	1.6304	.8021	1.4533	3.4448	4.0960	1.4816	2.1328	1.2129	1.8641	2.9904	3.6416	1.3568	2.0080	.9728	1.6240
21-11	2.7456	3.4640	1.3088	2.0272	1.1088	1.8272	3.9712	4.6896	1.8128	2.5312	1.6128	2.3312	3.4448	4.1632	1.7344	2.5312	1.3039	1.8710
21-16	2.6784	3.3168	1.2416	1.8800	1.0422	1.6806	3.9040	4.5424	1.7456	2.3840	1.4505	2.0889	3.3776	4.0160	1.6672	2.3168	1.2352	1.8736
21-35	2.6672	3.4992	1.2304	2.0624	1.0310	1.8630	3.8928	4.7248	1.7344	2.5664	1.4393	2.2713	3.3664	4.1984	1.6560	2.2309	1.2255	1.8003
21-41	2.6768	3.3600	1.2400	1.9232	1.0406	1.7238	3.9024	4.5856	1.7440	2.4272	1.4489	2.1321	3.3760	3.5792	1.6656	1.8688	1.2336	1.4368
23-21	3.0352	3.8624	1.4496	2.2768	1.2279	2.0551	4.2368	5.0640	1.9440	2.7712	1.6368	2.4640	3.7920	4.6192	1.9216	2.7488	1.4637	2.2896
23-35	3.0240	4.0448	1.4384	2.4592	1.2167	2.2375	4.2256	5.2464	1.9328	2.9536	1.6256	2.6464	3.7808	4.8016	1.9104	2.6087	1.4525	2.1507
23-53	2.8992	3.9072	1.4560	2.4816	1.2343	2.2599	4.2432	5.1088	1.9504	2.8160	1.6432	2.5088	3.7984	4.6640	1.9280	2.7936	1.4672	2.2384
25-4	3.4512	4.4800	1.7312	2.8816	1.4864	2.1904	4.8048	5.8272	2.2016	3.2480	1.9568	2.8720	4.2224	5.2496	2.2128	3.2560	1.7133	2.4163
25-19	3.5312	4.7264	1.8112	3.0064	1.5664	2.7616	4.8848	6.0816	2.2816	3.4784	2.0368	3.2336	4.3024	5.4992	2.2928	3.4896	1.7933	2.7058
25-20	3.8190	4.7150	2.0173	3.1125	1.7733	2.8512	5.1430	6.0380	2.4877	3.5421	2.1872	3.2416	4.4350	5.3300	2.2580	3.0182	1.8288	2.8928
25-35	3.4416	4.6656	1.7216	2.9456	1.4776	2.7016	4.7952	6.0192	2.1920	3.4160	1.8915	3.1155	4.2128	5.4368	2.2032	3.4272	1.7037	2.9277
25-61	3.4304	4.4848	1.7282	2.7648	1.4841	2.5208	4.7840	5.8384	2.1808	3.2352	1.8803	2.9347	4.2016	5.2560	2.1920	3.2464	1.6912	2.7456

All weight measurements are for reference only.

High Frequency Contacts - 12-130

Fiber Optic Interconnect - 12-352

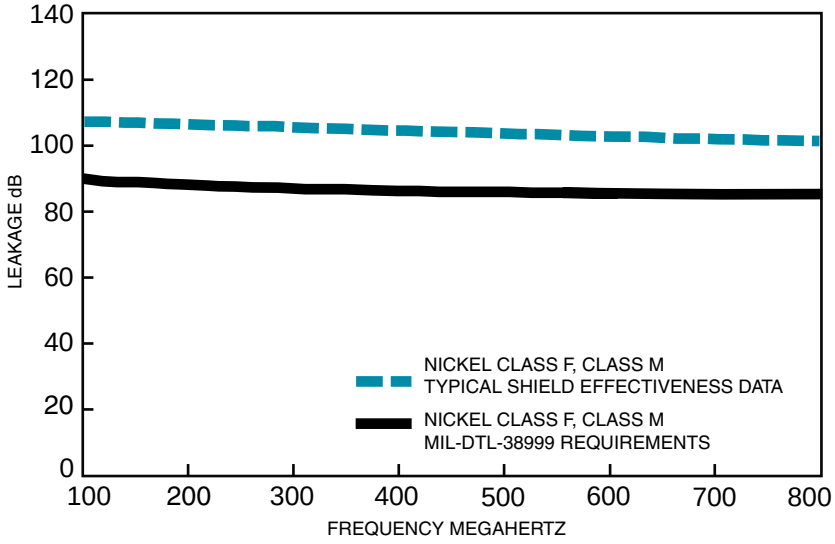


Visit www.amphenol-aerospace.com to access the following catalogs and more.

Online

TRI-START, SERIES III
TYPICAL SHIELDING EFFECTIVENESS TEST DATA

EMI/EMP SHIELDING EFFECTIVENESS dB
TESTING BY TRIAXIAL METHOD



Amphenol® Tri-Start connectors provide EMI/EMP shielding capability which exceeds MIL-DTL-38999 Series III requirements.

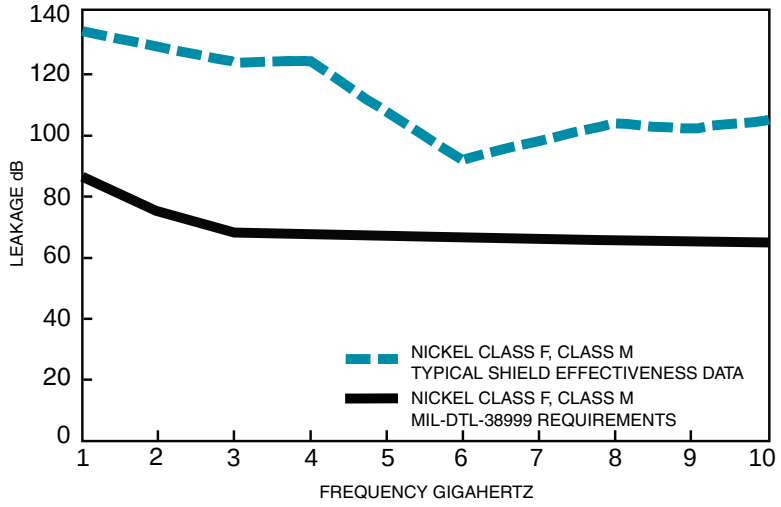
The TV and CTV Series III connector with standard solid metal to metal coupling, EMI grounding fingers and conductive finishes has proven to be the ultimate in EMI/EMP shielding effectiveness. The charts illustrate shielding effectiveness data which is typical of Tri-Start connectors tested with the nickel finish (Class F-metal, Class M-composite) over a wide frequency range.

The vibration capability of the Tri-Start Series is shown in the chart below. This illustrates the most severe vibration envelope of *any* qualified connector available today.

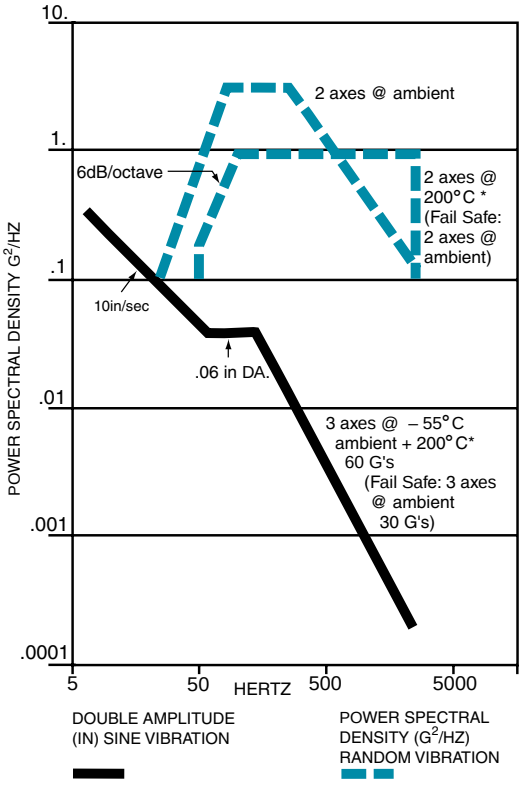
These capabilities along with a +200°C, -65°C temperature rating and superior moisture sealing protection provide the user with a connector that can withstand the most rigorous application.

TRI-START, SERIES III
TYPICAL SHIELDING EFFECTIVENESS TEST DATA

EMI/EMP SHIELDING EFFECTIVENESS dB
TESTING BY MODE STIRRING METHOD



TRI-START
VIBRATION CRITERIA



* Dependant on shell finish

Test data beyond 2GHz is subject to equipment variation.

NOTE: For test data information on the new Clutch-Lok Tri-Start, high vibration connectors, consult Amphenol Aerospace.

Amphenol Aerospace

Easy Steps to build a part number... Tri-Start Series III TV

1. Commercial	2. Shell Style	3. Service Class	4. Shell Size– Insert Arrangement	5. Contact Type	6. Alternate Keying Position	7. Special Variations
TVPS	00	RF	9-35	P	B	(XXX)
Military	**Shell Style**	**Service Class**	**Shell Size– Insert Arrangement**	**Contact Type**	**Alternate Keying Position**	
D38999/	20	J	G35	P	N	

Step 1. Select a Connector Type

	Designates
TV	Tri-Start Series Connector
TVP	Back panel mounted receptacle
TVS	200°C rated
TVPS	Panel mounted, 200°C rated receptacle
MTV	CLUTCH-LOK connector with "MS" stamping (Note: remove dashes in how to order part number when ordering CLUTCH-LOK)
CTV	Composite MIL-DTL-38999 Series III Connector
CTVP	Composite Military D38999/26 CLUTCH-LOK high vibration straight plug (available in service class RK only)
CTVS	Composite CLUTCH-LOK connector with "MS" stamping (Note: remove dashes in how to order part number when ordering CLUTCH-LOK)
CTVPS	Composite Panel mounted, 200° rated receptacle
D38999	Military MIL-DTL-38999 Series III Connector

Step 2. Select a Shell Style

Tri-Start (TV, Metal) (TV26 CLUTCH-LOK)	D38999 TV Military, Metal (MTV26 CLUTCH-LOK)	Commercial CTV, Composite	Military D38999, CTV Composite	Designates
00	20	00	20	Wall Mount Receptacle
01		01		Line Receptacle
02		02		Box Mount Receptacle
	21			Box Mount Receptacle, Hermetic
	23			Jam Nut Receptacle, Hermetic
I	25			Solder Mount Receptacle, **(Hermetic)**
06	26	06	26	Straight Plug
07	24	07	24	Jam Nut Receptacle
09				Flange Mounted Plug
HI	27			Weld Mounted Receptacle, **(Hermetic)** Only
26				Proprietary CLUTCH-LOK high vibration straight plug (service Classes RK & RS only
	29			Lanyard release plug with pin contacts
	30			Lanyard release plug with socket contacts
	31			Lanyard release plug for MIL-STD-1760 with pin contacts
	32			Plug protection cap
	33			Receptacle protection cap


Wall Mount Receptacle


Line Receptacle


Box Mount Receptacle


Straight Plug


Lanyard Release Plug


Jam Nut Receptacle


Flange Mounting Plug


Deep Reach Receptacle


Solder Mount Hermetic Receptacle

Step 3. Select a Service Class

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrg.	5. Contact Type	6. Alternate Position	7. Special Variations
		RX				

Commercial	Military	Finish	Description
RX	C	Anodic Coating	Alternate finish, Non-conductive, anodic coated aluminum, 500 hour salt spray, 200°C. Consult Amphenol, Sidney NY for details, options and availability of non-cadmium or nickel finishes.
RF-Composite/Metal	F-Metal M-Composite	Electroless Nickel	electroless nickel plated aluminum (composite) optimum EMI shielding effectiveness–65dB @ 10GHz specification min., 48 hour salt spray, 200°C (Composite-2000 hours dynamic salt spray).
RGF-Composite/Metal		Electroless Nickel	electroless nickel plated ground plane aluminum (composite), 200°C
	G		Space grade, electroless nickel, 48 hour salt spray, 200°C
RGW-Composite/Metal		Olive Drab Cadmium	Olive drab cadmium plated ground plane aluminum (composite), 175°C
RK**	K	Stainless Steel	Corrosion resistant stainless steel, fire wall capability, plus 500 hour salt spray resistance, EMI –45 dB @ 10 GHz specification min., 200°C
	L		Corrosion resistant steel, electro deposited nickel, 48 salt spray 200°C
RW-Composite/Metal	W-Metal J-Composite	Olive Drab Cadmium	Corrosion resistant olive drab cadmium plate aluminum (composite), 500 hour salt spray, EMI –50 dB @ 10 GHz specification min., 175°C (Composite-2000 hours dynamic salt spray).
Y	Y	Stainless Steel	Hermetic seal, passivated stainless steel, 200°C
RS*	S	Stainless Steel w/ Nickel Plate	(Non-hermetic connectors), Nickel plated
YN	N	Stainless Steel w/ Nickel Plate	(Hermetic connectors), Nickel plated
DT	T	Durmalon plated	Nickel-PTFE alternative to Cadmium. Corrosion resistant, 500 hour salt spray, EMI-50dB at 10GHz specification min., 175 degree

* Consult Amphenol Aerospace, Sidney, NY for availability. **Coaxial arrangements are not available in these classes.

Quadrax or Differential Twinax:

The incorporation of Quadrax or Differential Twinax contacts requires a modified connector to accommodate keyed contacts.

* D38999/26KJ20PN, is a series III stainless steel plug with twin axial and coaxial contacts that may not meet the firewall requirement of the specification. D38999/26KJ61HN, is a series III stainless steel plug with high durability contacts. However, the connector will be limited to 500 cycles of durability. Insert arrangements using multi-axial (i.e. coax, twinax, triax shielded) contacts should not be used in firewall applications.

Step 4. Select a Shell Size & Insert Arrangement see pg. 6-9

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

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrg.	5. Contact Type	6. Alternate Position	7. Special Variations
			22-2	P		

Step 5. Select a Contact Type

	Designates
P	Pin Contacts
S	Socket Contacts
H	1500 Cycle Pin Contacts
J	1500 Cycle Socket Contacts
P	500 Cycle Pin Contacts
S	500 Cycle Socket Contacts
A	Same as “P” except supplied less pin Contacts
B	Same as “S” except supplied less socket contacts (A & B designate nonstandard contact applications)

Step 6. Select an Alternate Keying Position

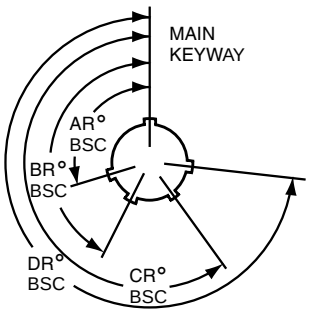
1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrg.	5. Contact Type	6. Alternate Position	7. Special Variations
					B	

Key/Keyway Position

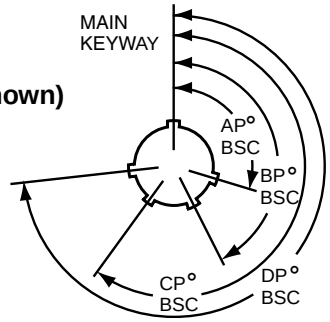
Shell Size	Key & Keyway Arrangement Identification Letter	AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
9	N*	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
	E	91	131	197	240
11, 13, and 15	N*	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
	E	51	141	184	242
17 and 19	N*	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
21, 23, and 25	N*	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
25L, 33, and 37	N*	80	142	188	293
	A	135	170	188	310
	B	49	169	188	244
	C	66	140	188	257
	D	62	145	188	280
	E	79	153	188	272

** An "N" designation is used on D38999 military part number but not on the commercial versions*

A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The angles for a given connector are the same whether it contains pins or sockets. Inserts are not rotated in conjunction with the master key/keyway.



RECEPTACLE (front face shown)



PLUG (front face shown)

Step 7. Special Variations

Consult Amphenol Aerospace, Sidney NY for variations.

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrg.	5. Contact Type	6. Alternate Position	7. Special Variations
						(xxx)

Record your part numbers here...

1. Commercial/ Military	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrg.	5. Contact Type	6. Alternate Keying Position	7. Special Variations

Easy Steps to build a part number... Boeing BACC63 CT & CU

1. Boeing Basic Number	2. Style	3. Shell Size	4. Shell Finish & Contact	5. Insert Arrangement	6. Contact Type	7. Alternate Keying Position	8. Ordering Option
BACC63	CT	15	—	19	P	N	H

Composite

Step 1. Boeing Number
BACC63

Step 2. Select a Style

	Designates
CT	Composite Plug
CU	Composite Receptacle

Step 3. Shell Size 15

	Designates
15	One Shell Size

Step 4. Select a Shell Finish & Contact

	Designates
C	**CT Style Only.** Cadmium Plated, Grounded
D	Cadmium Plated, ungrounded
G	Nickel Plated, Grounded
—	Nickel Plated, Ungrounded

Step 5. Insert Arrangements-
*Please refer to factory for Insert Arrangements available

Step 6. Select a Contact Type

	Designates
P	Pin
S	Socket

Step 7. Select an Alternate Keying Position

	Designates
N	Normal
A-E	Alternates

Step 8. Ordering Options

	Designates
H	Without Contacts & Seal Plugs
Blank	With contacts and seal plugs

Easy Steps to build a part number... Boeing BACC63 DB & DC

1. Boeing Basic Number	2. Style	3. Shell Size	4. Separator	5. Insert Arrangement	6. Contact Type	7. Alternate Keying Position	8. Ordering Option
BACC63	DB	15	—	19	P	N	H
BACC63	DC	17	—	8	P	N	H

Stainless Steel

Step 1. Boeing Number
BACC63

Step 2. Select a Style

	Designates
DB	Stainless Steel Plug
DC	Stainless Steel Receptacle

Step 3. Select a Shell Size

	Designates
9-25	Shell Size

Step 4. Separator

	Designates
—	Separator

Step 5. Insert Arrangements-
*Please refer to factory for Insert Arrangements available

Step 6. Select a Contact Type

	Designates
P	Pin
S	Socket

Step 7. Select an Alternate Keying Position

	Designates
N	Normal
A-E	Alternates

Step 8. Ordering Options

	Designates
H	Without Contacts & Seal Plugs
Blank	With contacts and seal plugs

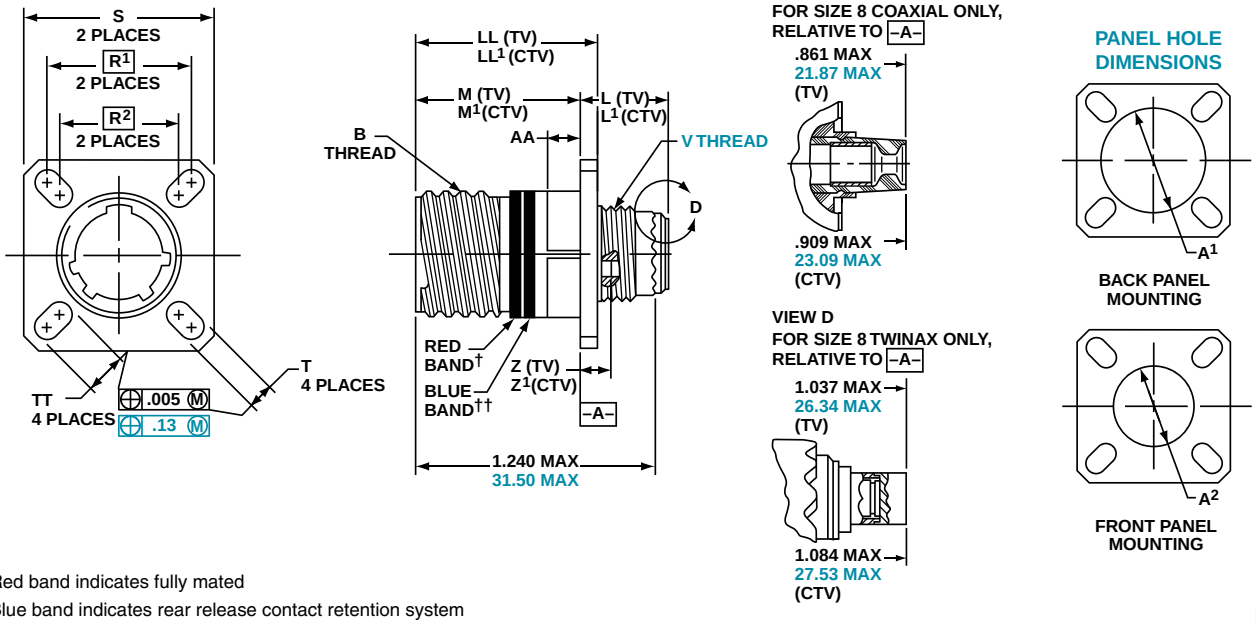
Amphenol Aerospace

Wall Mounting Receptacle

PART #

To complete, see how to order pages 21-23.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
TVP	00	RW	9-35	P	B	(453)
TVPS	00	RK	X-X	X	X	(XXX)
TVPS	00	RF	X-X	X	X	(XXX)
TVPS	00	RS	X-X	X	X	(XXX)
CTVP	00	RW	X-X	X	X	(XXX)
CTVPS	00	RF	X-X	X	X	(XXX)
D38999/	20	X	X-X	X	X	NA



† Red band indicates fully mated

†† Blue band indicates rear release contact retention system

Inches

Shell Size	MS Shell Size Code	B Thread Class 2A 0.1P=0.3L-TS (Plated)	L Max. (TV)	L1 Max. (CTV)	M +.000 –.005 (TV)	M1 +.000 –.005 (CTV)	R1	R2	S Max.	T ±.008	Z. Max. (TV)	Z1 Max. (CTV)	A1 Back Panel Mount	A2 Front Panel Mount	AA Max. Panel Thick-ness	LL +.006 –.000 (TV)	LL1 ±.005 (CTV)	TT ±.008
9	A	.6250	.469	.514	.820	.773	.719	.5	.948	.128	.153	.198	.650	.510	.234	.905	.908	.216
11	B	.7500	.469	.514	.820	.773	.812	.719	1.043	.128	.153	.198	.800	.620	.234	.905	.908	.194
13	C	.8750	.469	.514	.820	.773	.906	.812	1.137	.128	.153	.198	.910	.740	.234	.905	.908	.194
15	D	1.0000	.469	.514	.820	.773	.969	.906	1.232	.128	.153	.198	1.040	.900	.234	.905	.908	.173
17	E	1.1875	.469	.514	.820	.773	1.062	.969	1.323	.128	.153	.198	1.210	1.010	.234	.905	.908	.194
19	F	1.2500	.469	.514	.820	.773	1.156	1.062	1.449	.128	.153	.198	1.280	1.130	.234	.905	.908	.194
21	G	1.3750	.500	.545	.790	.741	1.250	1.156	1.575	.128	.183	.228	1.410	1.250	.204	.905	.904	.194
23	H	1.5000	.500	.545	.790	.741	1.375	1.250	1.701	.154	.183	.228	1.530	1.360	.204	.905	.904	.242
25	J	1.6250	.500	.545	.790	.741	1.500	1.375	1.823	.154	.183	.228	1.660	1.470	.204	.905	.904	.242

Millimeters

Shell Size	MS Shell Size Code	L Max. (TV)	L1 Max. (CTV)	M +.00 –.13 (TV)	M1 +.00 –.13 (TV)	R1	R2	S Max.	T ±.20	V Thread Metric	Z. Max. (TV)	Z1 Max. (CTV)	A1 Back Panel Mount	A2 Front Panel Mount	AA Max.	LL +.15 –.00 (TV)	LL1 ±.13 (CTV)	TT ±.20
9	A	11.91	13.06	20.83	19.63	18.26	15.09	24.1	3.25	M12X1-6g	3.89	5.03	16.66	13.11	5.94	22.99	23.06	5.49
11	B	11.91	13.06	20.83	19.63	20.62	18.26	26.5	3.25	M15X1-6g	3.89	5.03	20.22	15.88	5.94	22.99	23.06	4.93
13	C	11.91	13.06	20.83	19.63	23.01	20.62	28.9	3.25	M18X1-6g	3.89	5.03	23.42	19.05	5.94	22.99	23.06	4.93
15	D	11.91	13.06	20.83	19.63	24.61	23.01	31.3	3.25	M22X1-6g	3.89	5.03	26.59	23.01	5.94	22.99	23.06	4.39
17	E	11.91	13.06	20.83	19.63	26.97	24.61	33.7	3.25	M25X1-6g	3.89	5.03	30.96	25.81	5.94	22.99	23.06	4.93
19	F	11.91	13.06	20.83	19.63	29.36	26.97	36.9	3.25	M28X1-6g	3.89	5.03	32.94	28.98	5.94	22.99	23.06	4.93
21	G	12.70	13.84	20.07	18.82	31.75	29.36	40.1	3.25	M31X1-6g	4.65	5.79	36.12	32.16	5.18	22.99	22.96	4.93
23	H	12.70	13.84	20.07	18.82	34.93	31.75	43.3	3.91	M34X1-6g	4.65	5.79	39.29	34.93	5.18	22.99	22.96	6.15
25	J	12.70	13.84	20.07	18.82	38.10	34.93	46.4	3.91	M37X1-6g	4.65	5.79	42.47	37.69	5.18	22.99	22.96	6.15

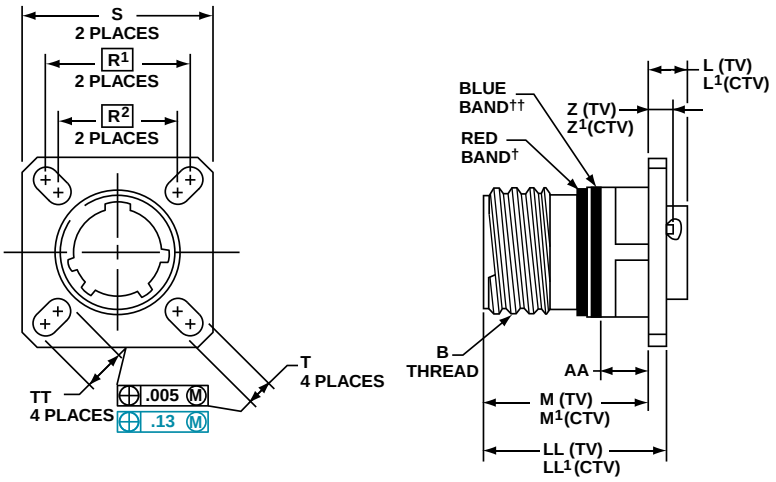
All dimensions for reference only

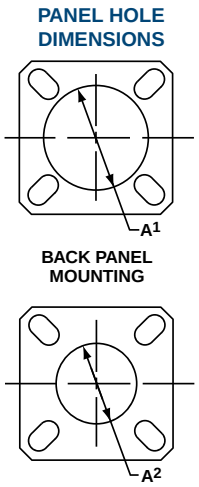
Designates true position dimensioning

PART #

To complete, see how to order pages 21-23.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
TVP	02	RW	*9-35*	*P*	*B*	*(453)*
TVPS	02	RK	*X-X*	*X*	*X*	*(XXX)*
TVPS	02	RF	*X-X*	*X*	*X*	*(XXX)*
TVPS	02	RS	*X-X*	*X*	*X*	*(XXX)*
CTVP	02	RW	*X-X*	*X*	*X*	*(XXX)*
CTVPS	02	RF	*X-X*	*X*	*X*	*(XXX)*





† Red band indicates fully mated

†† Blue band indicates rear release contact retention system

Consult Amphenol Aerospace for availability of composite box mount receptacles.

Inches

Shell Size	MS Shell Size Code	B Thread Class 2A 0.1P=0.3L-TS (Plated)	L Max. (TV)	L1 Max. (CTV)	M +.000 –.005 (TV)	M1 +.000 –.005 (TV)	R1	R2	S Max.	T ±.008	Z. Max. (TV)	Z1 Max. (CTV)	A1 Back Panel Mount	A2 Front Panel Mount	AA Max. Panel Thick-ness	LL +.006 –.000 (TV)	LL1 ±.005 (CTV)	TT ±.008
9	A	.6250	.205	.250	.820	.773	.719	.594	.948	.128	.153	.198	.650	.510	.234	.905	.908	.216
11	B	.7500	.205	.250	.820	.773	.812	.719	1.043	.128	.153	.198	.800	.620	.234	.905	.908	.194
13	C	.8750	.205	.250	.820	.773	.906	.812	1.137	.128	.153	.198	.910	.740	.234	.905	.908	.194
15	D	1.0000	.205	.250	.820	.773	.969	.906	1.232	.128	.153	.198	1.040	.900	.234	.905	.908	.173
17	E	1.1875	.205	.250	.820	.773	1.062	.969	1.323	.128	.153	.198	1.210	1.010	.234	.905	.908	.194
19	F	1.2500	.205	.250	.820	.773	1.156	1.062	1.449	.128	.153	.198	1.280	1.130	.234	.905	.908	.194
21	G	1.3750	.235	.280	.790	.741	1.250	1.156	1.575	.128	.183	.228	1.410	1.250	.204	.905	.904	.194
23	H	1.5000	.235	.280	.790	.741	1.375	1.250	1.701	.154	.183	.228	1.530	1.360	.204	.905	.904	.242
25	J	1.6250	.235	.280	.790	.741	1.500	1.375	1.823	.154	.183	.228	1.660	1.470	.204	.905	.904	.242

Millimeters

Shell Size	MS Shell Size Code	L Max. (TV)	L1 Max. (CTV)	M +.00 –.13 (TV)	M1 +.00 –.13 (TV)	R1	R2	S Max.	T ±.20	Z. Max. (TV)	Z1 Max. (CTV)	A1 Back Panel Mount	A2 Front Panel Mount	AA Max.	LL +.15 –.00 (TV)	LL1 ±.13 (CTV)	TT ±.20
9	A	5.21	6.35	20.83	19.63	18.26	15.09	24.1	3.25	3.89	5.03	16.66	13.11	5.94	22.99	23.06	5.49
11	B	5.21	6.35	20.83	19.63	20.62	18.26	26.5	3.25	3.89	5.03	20.22	15.88	5.94	22.99	23.06	4.93
13	C	5.21	6.35	20.83	19.63	23.01	20.62	28.9	3.25	3.89	5.03	23.42	19.05	5.94	22.99	23.06	4.93
15	D	5.21	6.35	20.83	19.63	24.61	23.01	31.3	3.25	3.89	5.03	26.59	23.01	5.94	22.99	23.06	4.39
17	E	5.21	6.35	20.83	19.63	26.97	24.61	33.7	3.25	3.89	5.03	30.96	25.81	5.94	22.99	23.06	4.93
19	F	5.21	6.35	20.83	19.63	29.36	26.97	36.9	3.25	3.89	5.03	32.94	28.98	5.94	22.99	23.06	4.93
21	G	5.97	7.11	20.07	18.82	31.75	29.36	40.1	3.25	4.65	5.79	36.12	32.16	5.18	22.99	22.96	4.93
23	H	5.97	7.11	20.07	18.82	34.92	31.75	43.3	3.91	4.65	5.79	39.29	34.93	5.18	22.99	22.96	6.15
25	J	5.97	7.11	20.07	18.82	38.10	34.92	46.4	3.91	4.65	5.79	42.47	37.69	5.18	22.99	22.96	6.15

All dimensions for reference only

Designates true position dimensioning

Amphenol Aerospace

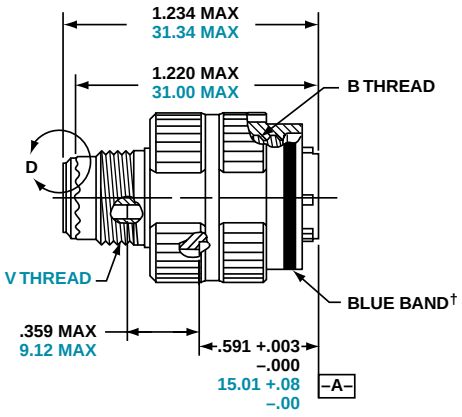
Straight Plug

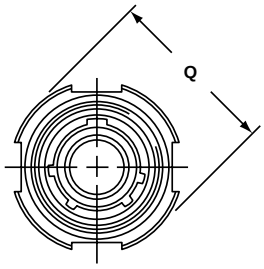
PART #

To complete, see how to order pages 21-23.

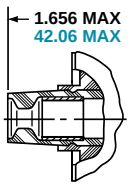
Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
TV	06	RW	9-35	P	B	(453)
TVS	06	RK	X-X	X	X	(XXX)
TVS	06	RF	X-X	X	X	(XXX)
TVS	06	RS	X-X	X	X	(XXX)
CTV	06	RW	X-X	X	X	(XXX)
CTVS	06	RF	X-X	X	X	(XXX)
D38999/	26	X	X-X	X	X	NA

METAL

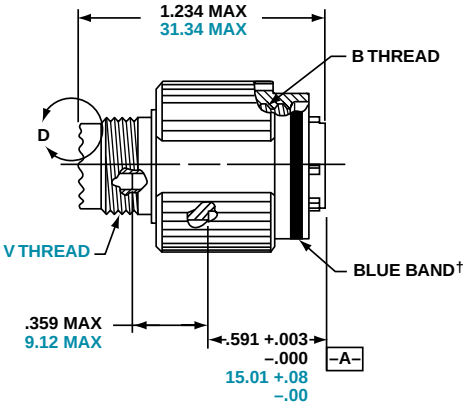


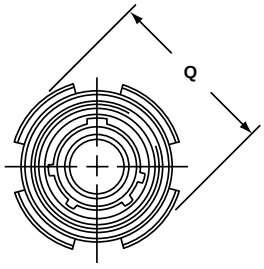


VIEW D
FOR SIZE 8 COAXIAL ONLY,
RELATIVE TO –A–



COMPOSITE





VIEW D
FOR SIZE 8 TWINAX ONLY,
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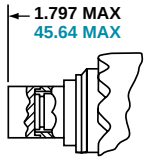


† Blue band indicates rear release contact retention system

Inches

Shell Size	MS Shell Size Code	B Thread 0.1P-0.3L-TS-2B (Plated)	Q Dia. Max.
9	A	.6250	.858
11	B	.7500	.984
13	C	.8750	1.157
15	D	1.0000	1.280
17	E	1.1875	1.406
19	F	1.2500	1.516
21	G	1.3750	1.642
23	H	1.5000	1.768
25	J	1.6250	1.890

Millimeters

Shell Size	MS Shell Size Code	Q Max.	V Thread Metric
9	A	21.8	M12X1-6g
11	B	25.0	M15X1-6g
13	C	29.4	M18X1-6g
15	D	32.5	M22X1-6g
17	E	35.7	M25X1-6g
19	F	38.5	M28X1-6g
21	G	41.7	M31X1-6g
23	H	44.9	M34X1-6g
25	J	48.0	M37X1-6g

All dimensions for reference only.

PART

To complete, see how to order pages 21-23.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
TV	26	RK	*9-35*	*P*	*N*	*(453)*
TV	26	RS	*X-X*	*X*	*N*	*(XXX)*
MTV	26	RK	*X-X*	*X*	*N*	*(XXX)*
MTV	26	RS	*X-X*	*X*	*N*	*(XXX)*

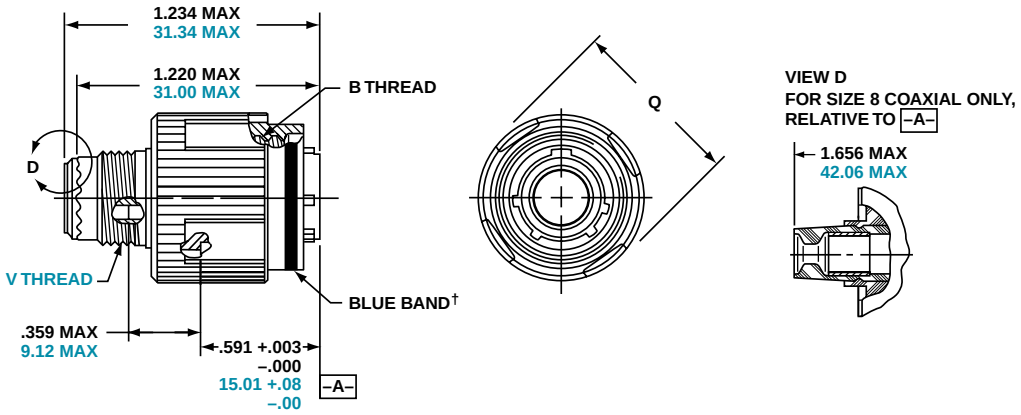
For parts with MS Stamping use MTV26( ) part number as shown above.

The latest in MIL-DTL-38999 Series III Connector technology is the CLUTCH-LOK. Designed for high vibration and harsh environments such as aircraft gas turbine engines, it is also an ideal choice for demanding applications such as aircraft, space and military ground vehicles. The unique clutch design of the Amphenol CLUTCH-LOK means that you don't have to compromise the need for quick, smooth mating of plugs and receptacles in order to get increased uncoupling torque.

The CLUTCH-LOK has proven to not only remain mated and pass all the Series III specification requirements, it also has proven to actually tighten itself under vibration. This is a powerful advantage over the traditionally high vibration application connectors. The CLUTCH-LOK is also a tremendous advantage in inaccessible, hard to reach areas where mating torque is difficult to apply and complete coupling is not verifiable by inspection.

CLUTCH-LOK features and benefits:

- High degree of differential torque
- Infinite free coupling and positive metal-to-metal bottoming with each mating
- No settling back to the next ratchet tooth
- Available with stainless steel shells and Class K firewall inserts
- All the advantages of MIL-DTL-38999 Series III including EMI/RFI shielding, electrolytic erosion resistance and contact protection with recessed pins
- Enhanced connector performance at affordable prices
- Completely intermateable with all existing MIL-DTL-38999 Series III connectors
- Fully QPL'd



† Blue band indicates rear release contact retention system

Inches

Shell Size	MS Shell Size Code	B Thread 0.1P-0.3L-TS-2B (Plated)	Q Dia. Max.
9	A	.6250	.858
11	B	.7500	.984
13	C	.8750	1.157
15	D	1.0000	1.280
17	E	1.1875	1.406
19	F	1.2500	1.516
21	G	1.3750	1.642
23	H	1.5000	1.768
25	J	1.6250	1.890

Millimeters

Shell Size	MS Shell Size Code	Q Max.	V Thread Metric
9	A	21.8	M12X1-6g
11	B	25.0	M15X1-6g
13	C	29.4	M18X1-6g
15	D	32.5	M22X1-6g
17	E	35.7	M25X1-6g
19	F	38.5	M28X1-6g
21	G	41.7	M31X1-6g
23	H	44.9	M34X1-6g
25	J	48.0	M37X1-6g

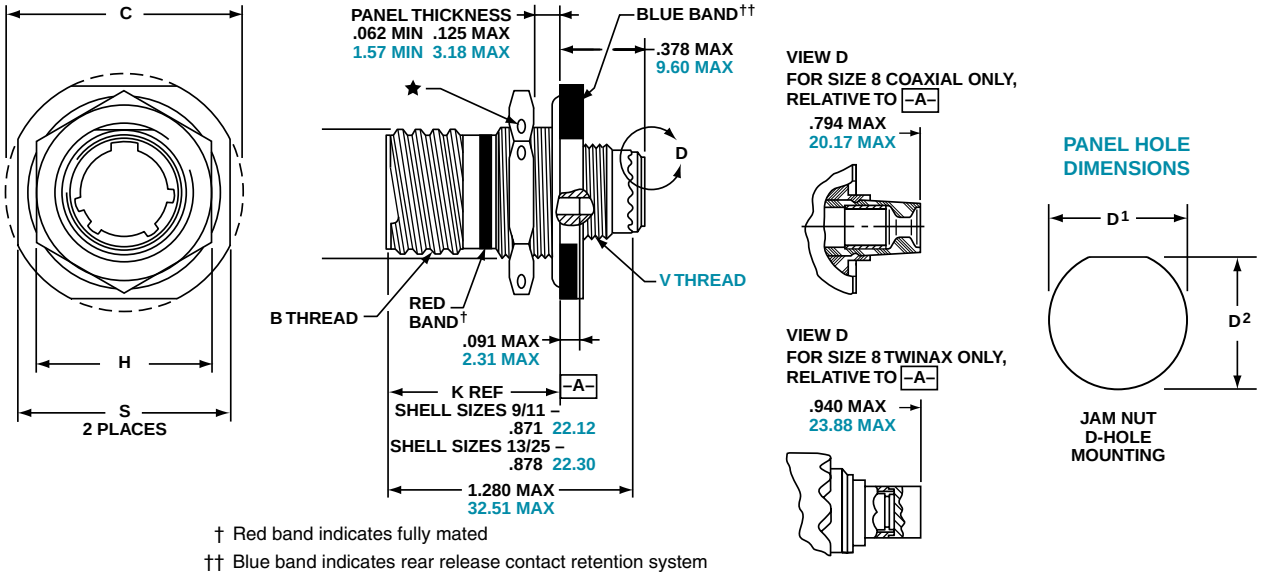
All dimensions for reference only.

Jam Nut Receptacle

PART #

To complete, see how to order pages 21-23.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
TV	07	RW	9-35	P	B	(453)
TVS	07	RK	X-X	X	X	(XXX)
TVS	07	RF	X-X	X	X	(XXX)
TVS	07	RS	X-X	X	X	(XXX)
CTV	07	RW	X-X	X	X	(XXX)
CTVS	07	RF	X-X	X	X	(XXX)
D38999/	24	X	X-X	X	X	NA



† Red band indicates fully mated

†† Blue band indicates rear release contact retention system

★ .059 dia min.
1.5 dia min., 3 lockwire holes Formed lockwire hole design (6 holes) is optional

Inches

Shell Size	MS Shell Size Code	B Thread Class 2A 0.1P-0.3L-TS (Plated)	C Max.	D¹ +.010 –.000	D² +.000 –.010	H Hex +.017 –.016	S ±.010
9	A	.6250	1.199	.700	.670	.875	1.062
11	B	.7500	1.386	.825	.770	1.000	1.250
13	C	.8750	1.511	1.010	.955	1.188	1.375
15	D	1.0000	1.636	1.135	1.085	1.312	1.500
17	E	1.1875	1.761	1.260	1.210	1.438	1.625
19	F	1.2500	1.949	1.385	1.335	1.562	1.812
21	G	1.3750	2.073	1.510	1.460	1.688	1.938
23	H	1.5000	2.199	1.635	1.585	1.812	2.062
25	J	1.6250	2.323	1.760	1.710	2.000	2.188

Millimeters

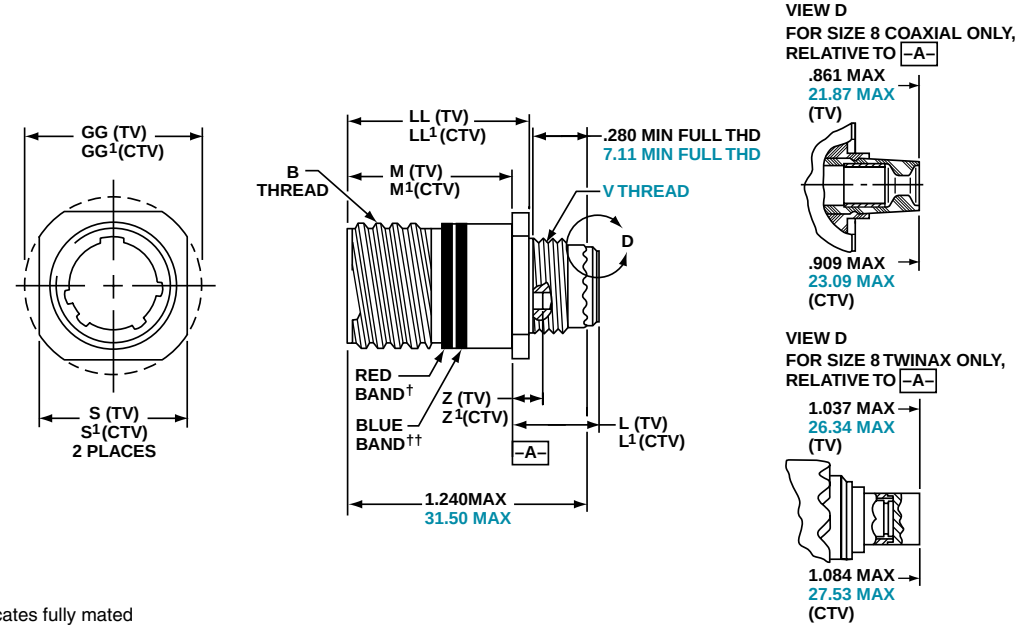
Shell Size	MS Shell Size Code	C Max.	D¹ +.25 –.00	D² +.00 –.25	H Hex +.43 –.41	S ±.25	V Thread Metric
9	A	30.45	17.78	17.02	22.23	26.97	M12X1-6g
11	B	35.20	20.96	19.59	25.40	31.75	M15X1-6g
13	C	38.38	25.65	24.26	30.18	34.93	M18X1-6g
15	D	41.55	28.83	27.56	33.32	38.10	M22X1-6g
17	E	44.73	32.01	30.73	36.53	41.28	M25X1-6g
19	F	49.50	35.18	33.91	39.67	46.02	M28X1-6g
21	G	52.65	38.35	37.08	42.80	49.23	M31X1-6g
23	H	55.85	41.53	40.26	46.02	52.37	M34X1-6g
25	J	59.00	44.70	43.43	50.80	55.58	M37X1-6g

All dimensions for reference only NOTE: Deep reach receptacles are available for panel thicknesses up to .750 max.

PART #

To complete, see how to order pages 21-23.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
TV	01	RW	9-35	P	B	(453)
TVS	01	RF	X-X	X	X	(XXX)
CTV	01	RW	X-X	X	X	(XXX)
CTVS	01	RF	X-X	X	X	(XXX)



† Red band indicates fully mated

†† Blue band indicates rear release contact retention system

Inches

Shell Size	MS Shell Size Code	B Thread 0.1P-0.3L-TS-2A (Plated)	M +.000 –.005 (TV)	M1 +.000 –.005 (CTV)	L Max. (TV)	L1 Max. (CTV)	S ±.010 (TV)	S1 ±.010 (CTV)	Z Max (TV)	Z1 Max (CTV)	GG ±.010 (TV)	GG1 ±.010 (CTV)	LL +.006 –.000 (TV)	LL1 ±.005 (CTV)
9	A	.6250	.820	.773	.469	.514	.675	.635	.153	.198	.812	.699	.905	.908
11	B	.7500	.820	.773	.469	.514	.800	.765	.153	.198	.905	.875	.905	.908
13	C	.8750	.820	.773	.469	.514	.925	.885	.153	.198	1.093	1.007	.905	.908
15	D	1.0000	.820	.773	.469	.514	1.050	1.100	.153	.198	1.219	1.140	.905	.908
17	E	1.1875	.820	.773	.469	.514	1.238	1.197	.153	.198	1.375	1.229	.905	.908
19	F	1.2500	.820	.773	.469	.514	1.300	1.260	.153	.198	1.469	1.380	.905	.908
21	G	1.3750	.790	.741	.500	.545	1.425	1.385	.183	.228	1.625	1.493	.905	.904
23	H	1.5000	.790	.741	.500	.545	1.550	1.510	.183	.228	1.750	1.626	.905	.904
25	J	1.6250	.790	.741	.500	.545	1.675	1.635	.183	.228	1.875	1.777	.905	.904

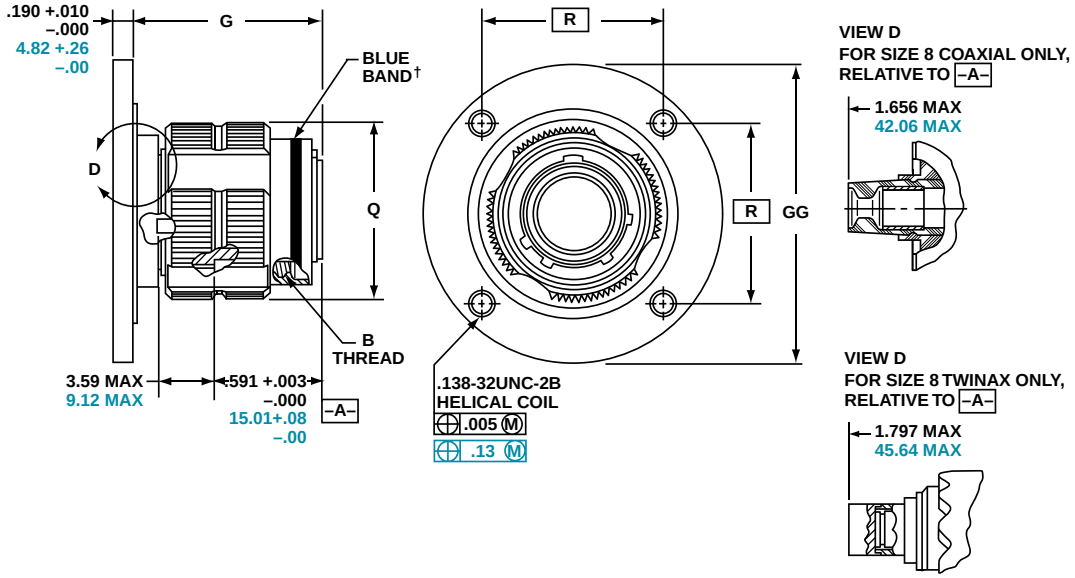
Millimeters

Shell Size	MS Shell Size Code	M +.00–.013 (TV)	M1 +.00 –.13 (CTV)	L Max. (TV)	L1 Max. (CTV)	S ±.25 (TV)	S1 ±.010 (CTV)	V Thread Metric	Z Max (TV)	Z1 Max (CTV)	GG ±.25 (TV)	GG1 ±.25 (CTV)	LL +.15 –.00 (TV)	LL1 ±.13 (CTV)
9	A	20.83	19.63	11.91	13.06	17.15	16.13	M12X1-6g	3.89	5.03	20.62	17.75	22.99	23.06
11	B	20.83	19.63	11.91	13.06	20.32	19.43	M15X1-6g	3.89	5.03	22.99	22.22	22.99	23.06
13	C	20.83	19.63	11.91	13.06	23.50	22.47	M18X1-6g	3.89	5.03	27.76	25.57	22.99	23.06
15	D	20.83	19.63	11.91	13.06	26.67	27.94	M22X1-6g	3.89	5.03	30.96	28.95	22.99	23.06
17	E	20.83	19.63	11.91	13.06	31.45	30.40	M25X1-6g	3.89	5.03	34.93	31.21	22.99	23.06
19	F	20.83	19.63	11.91	13.06	33.02	32.00	M28X1-6g	3.89	5.03	37.31	35.05	22.99	23.06
21	G	20.07	18.82	12.70	13.84	36.20	35.18	M31X1-6g	4.65	5.79	41.28	37.92	22.99	22.96
23	H	20.07	18.82	12.70	13.84	39.37	38.35	M34X1-6g	4.65	5.79	44.45	41.30	22.99	22.96
25	J	20.07	18.82	12.70	13.84	42.55	41.53	M37X1-6g	4.65	5.79	47.63	45.13	22.99	22.96

All dimensions for reference only

PART #
To complete, see how to order pages 21-23.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
TV	09	RW	9-35	P	B	(453)
TVS	09	RF	X-X	X	X	(XXX)



† Blue band indicates rear release contact retention system

Inches

Shell Size	MS Shell Size Coded	B Thread 0.1P-0.3L-TS-2A (Plated)	G ±.060	Q Dia. Max	R	GG Dia ±.005
9**	A	.6250	1.106	.859	1.038	1.838
11	B	.7500	1.106	.969	1.115	1.948
13**	C	.8750	1.106	1.141	1.240	2.124
15	D	1.0000	1.106	1.266	1.327	2.248
17	E	1.1875	1.106	1.391	1.417	2.375
19	F	1.2500	1.356	1.500	1.557	2.495
21	G	1.3750	1.356	1.625	1.624	2.568
23	H	1.5000	1.356	1.750	1.713	2.723
25	J	1.6250	1.356	1.875	1.801	2.848

Millimeters

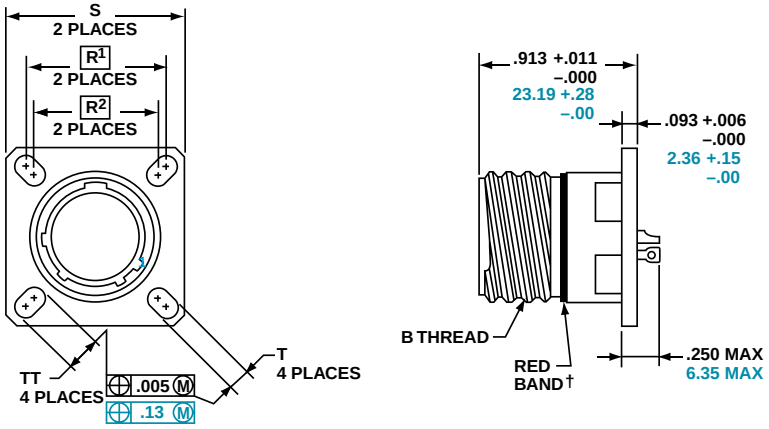
Shell Size	MS Shell Size Coded	G ±1.52	Q Dia. Max	R	GG Dia ±.13
9**	A	28.09	21.82	26.37	46.69
11	B	28.09	24.62	28.32	49.48
13**	C	28.09	28.98	31.50	53.95
15	D	28.09	32.16	33.71	57.10
17	E	28.09	35.33	35.99	60.33
19	F	34.44	38.10	39.55	63.37
21	G	34.44	41.28	41.25	65.23
23	H	34.44	44.45	43.51	69.16
25	J	34.44	47.63	45.75	72.34

All dimensions for reference only
** Partially tooled. Consult Amphenol Aerospace for availability

☐ Designates true position dimensioning

PART #
To complete, see how to order pages 21-23.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
TVPS	02	Y	9-35	P	B	(453)
TVPS	02	YN	X-X	X	X	(XXX)
D38999/	21	X	X-X	X	X	NA



† Red band indicates fully mated

NOTE: Consult Amphenol Aerospace for availability of non-glass-sealed versions with printed circuit tail contacts.

Inches

Shell Size	MS Shell Size Coded	B Thread 0.1P-0.3L-TS (Plated)	R1	R2	S ±.010	T ±.008	TT ±.008
9	A	.6250	.719	.594	.938	.128	.216
11	B	.7500	.812	.719	1.031	.128	.194
13	C	.8750	.906	.812	1.125	.128	.194
15	D	1.0000	.969	.906	1.219	.128	.173
17	E	1.1875	1.062	.969	1.312	.128	.194
19	F	1.2500	1.156	1.062	1.438	.128	.194
21	G	1.3750	1.250	1.156	1.562	.128	.194
23	H	1.5000	1.375	1.250	1.688	.154	.242
25	J	1.6250	1.500	1.375	1.812	.154	.242

Millimeters

Shell Size	MS Shell Size Coded	R1	R2	S ±.25	T ±.20	TT ±.20
9	A	18.26	15.09	23.83	3.25	5.49
11	B	20.62	18.26	26.19	3.25	4.93
13	C	23.01	20.62	28.58	3.25	4.93
15	D	24.61	23.01	30.96	3.25	4.39
17	E	26.97	24.61	33.32	3.25	4.93
19	F	29.36	26.97	36.53	3.25	4.93
21	G	31.75	29.36	39.67	3.25	4.93
23	H	34.93	31.75	42.88	3.91	6.15
25	J	38.10	34.93	46.02	3.91	6.15

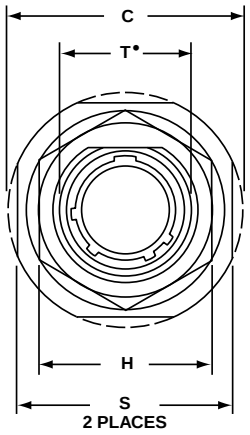
All dimensions for reference only

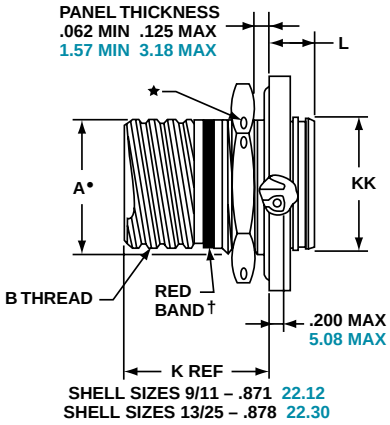
☐ Designates true position dimensioning

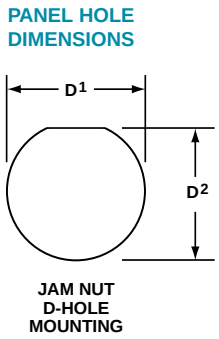
PART #

To complete, see how to order pages 21-23.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
TVS	07	Y	9-35	P	B	(453)
TVS	07	YN	X-X	X	X	(XXX)
D38999/	23	X	X-X	X	X	NA







† Red band indicates fully mated

★ . 059 dia min.
1.5 dia min. 3 lockwire holes
Formed lockwire hole design (6 holes) is optional.

Inches

Shell Size	MS Shell Size code	A• +.000 –.010	B Thread Class 2A 0.1P-0.3L-TS (Plated)	C Max	D¹ +.010 –.000	D¹ +.000 –.010	H Hex +.017 –.016	L Max	S ±.010	T• +.010 –.000	KK +.011 –.000
9	A	.669	.6250	1.199	.700	.670	.875	.357	1.062	.697	.642
11	B	.769	.7500	1.386	.825	.770	1.000	.357	1.250	.822	.766
13	C	.955	.8750	1.511	1.010	.955	1.188	.357	1.375	1.007	.892
15	D	1.084	1.0000	1.636	1.135	1.085	1.312	.357	1.500	1.134	1.018
17	E	1.208	1.1875	1.761	1.260	1.210	1.438	.357	1.625	1.259	1.142
19	F	1.333	1.2500	1.949	1.385	1.335	1.562	.381	1.812	1.384	1.268
21	G	1.459	1.3750	2.073	1.510	1.460	1.688	.381	1.938	1.507	1.392
23	H	1.575	1.5000	2.199	1.635	1.585	1.812	.381	2.062	1.634	1.518
25	J	1.709	1.6250	2.323	1.760	1.710	2.000	.381	2.188	1.759	1.642

Millimeters

Shell Size	MS Shell Size code	A• +.00 –.25	C Max	D¹ +.25 –.00	D¹ +.00 –.25	H Hex +.43 –.41	L Max	S ±.25	T• +.25 –.00	KK +.28 –.00
9	A	16.99	30.45	17.78	17.02	22.23	9.07	26.97	17.70	16.31
11	B	19.53	35.20	20.96	19.59	25.40	9.07	31.75	20.88	19.46
13	C	24.26	38.38	25.65	24.26	30.18	9.07	34.93	25.58	22.66
15	D	27.53	41.55	28.83	27.56	33.32	9.07	38.10	28.80	25.86
17	E	30.68	44.73	32.01	30.73	36.53	9.07	41.28	31.98	29.01
19	F	33.86	49.50	35.18	33.91	39.67	9.68	46.02	35.15	32.21
21	G	37.06	52.65	38.35	37.08	42.80	9.68	49.23	38.28	35.36
23	H	40.01	55.85	41.53	40.26	46.02	9.68	52.37	41.50	38.56
25	J	43.41	59.00	44.70	43.43	50.80	9.68	55.58	44.68	41.71

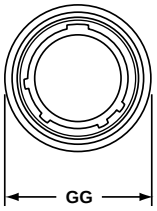
All dimensions for reference only

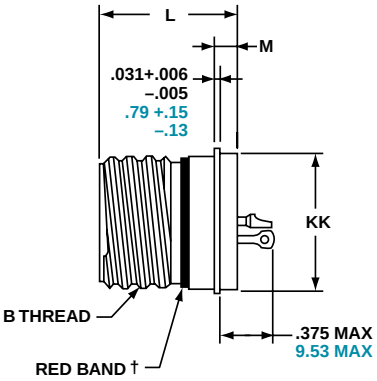
• D shaped panel cut-out dimensions

PART

To complete, see how to order pages 21-23.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
TVS	I	Y	9-35	P	B	(453)
TVS	I	YN	X-X	X	X	(XXX)
D38999/	25	X	X-X	X	X	NA





† Red band indicates fully mated

Inches

Shell Size	MS Shell Size Code	B Thread Class 2A 0.1P-0.3L-TS (Plated)	L +.011 –.005	M +.006 –.005	GG Dia. +.011 –.010	KK Dia +.011 –.005
9	A	.6250	.806	.125	.750	.672
11	B	.7500	.806	.125	.844	.781
13	C	.8750	.806	.125	.969	.906
15	D	1.0000	.806	.125	1.094	1.031
17	E	1.1875	.806	.125	1.218	1.156
19	F	1.2500	.806	.125	1.312	1.250
21	G	1.3750	.806	.125	1.438	1.375
23	H	1.5000	.838	.156	1.563	1.500
25	J	1.6250	.838	.156	1.688	1.625

Millimeters

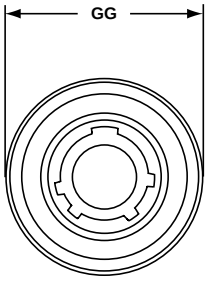
Shell Size	MS Shell Size Code	L +.28 –.00	M +.15 –.13	GG Dia. +.28 –.25	KK Dia +.03 –.13
9	A	20.47	3.18	19.05	17.07
11	B	20.47	3.18	21.44	19.84
13	C	20.47	3.18	24.61	23.01
15	D	20.47	3.18	27.79	26.19
17	E	20.47	3.18	30.94	29.36
19	F	20.47	3.18	33.32	31.75
21	G	20.47	3.18	36.53	34.93
23	H	21.29	3.96	39.70	38.10
25	J	21.29	3.96	42.88	41.28

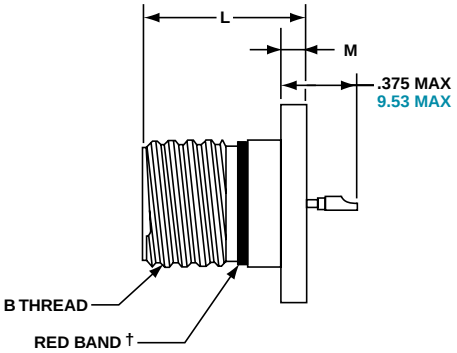
TVSHIY (D38999/27) – Hermetic, Stainless Steel

PART

See how to order pages 21-23 to complete.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
TVS	HI	Y	9-35	P	B	(453)
TVS	HI	YN	X-X	X	X	(XXX)
D38999/	27	X	X-X	X	X	NA





† Red band indicates fully mated

Inches

Shell Size	MS Shell Size Code	B Thread Class 2A 0.1P-0.3L-TS (Plated)	L +.011 –.000	M +.006 –.005	GG Dia. +.011 –.010
9	A	.6250	.806	.125	.973
11	B	.7500	.806	.125	1.095
13	C	.8750	.806	.125	1.221
15	D	1.0000	.806	.125	1.347
17	E	1.1875	.806	.125	1.434
19	F	1.2500	.806	.125	1.579
21	G	1.3750	.806	.125	1.721
23	H	1.5000	.838	.156	1.886
25	J	1.6250	.838	.156	1.973

Millimeters

Shell Size	MS Shell Size Code	L +.28 –.00	M +.15 –.13	GG Dia. +.25 –.00
9	A	20.47	3.18	24.71
11	B	20.47	3.18	27.81
13	C	20.47	3.18	31.01
15	D	20.47	3.18	34.21
17	E	20.47	3.18	36.42
19	F	20.47	3.18	40.11
21	G	20.47	3.18	43.71
23	H	21.29	3.96	47.90
25	J	21.29	3.96	50.11

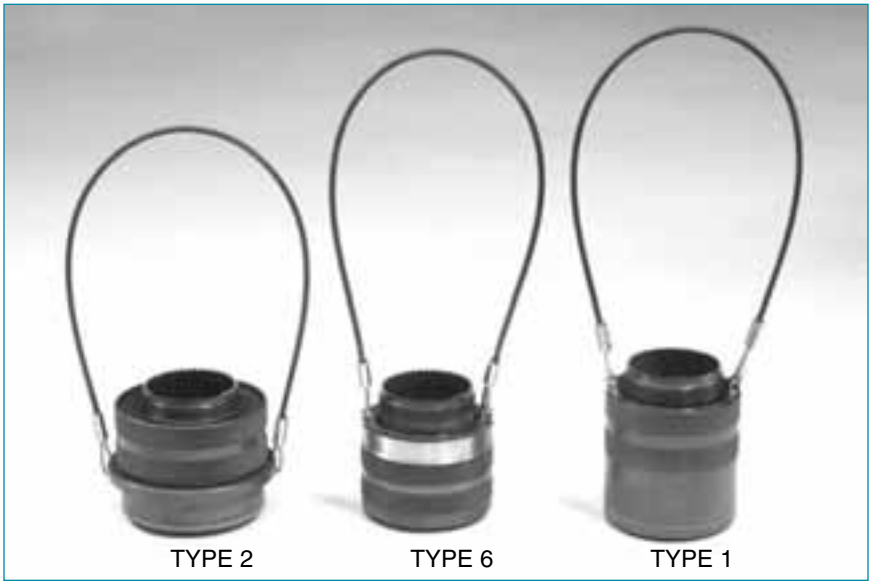
All dimensions for reference only

Amphenol® Tri-Start Breakaway Fail Safe Connectors provide unequaled performance in environments requiring instant disengagement.

Designed to provide quick disconnect of a connector plug and receptacle with an axial pull on the lanyard, the "Breakaway" Fail Safe connector family offers a wide range of electrical and mechanical features:

- Instant decoupling and damage free separation
- Completely intermateable with standard receptacles (D38999/20 and /24)
- Inventory support commonality through the use of standard insert arrangements and contacts

Breakaway un-mating is initiated by applying a pull force to the lanyard which causes the operating sleeve on the plug to move away from the receptacle. Coupling segments on the plug then move away from the mating receptacle while expanding, thus releasing the receptacle. After completion of the un-mating sequence, spring compression returns the sleeve and segments to their original positions. Un-mating of the plug may also be accomplished by normal rotation of the coupling ring without affecting the breakaway capability.



Amphenol offers a variety of lanyard plug styles including MIL-STD-1760 types 1, 2 and 6 for Stores Management applications.

The Tri-Start Breakaway Fail Safe connector exceeds the MIL-Spec Series III requirements for EMI/EMP shielding and features include:

- Solid metal-to-metal coupling
- EMI grounding fingers
- Conductive finishes

Amphenol Breakaway Fail Safe connectors are qualified to MIL-DTL-38999/29, /30 and /31 (for MIL-STD-1760 Stores Management applications). In fact, Amphenol offers more qualified Breakaway shell size and insert combinations than any other QPL supplier.

In addition to standard Breakaway connectors, Amphenol also manufactures custom breakaway connectors including those with:

- Highly durable non-metallic operating sleeves in a variety of lengths and diameters
- Increased pull-force capability
- Low-profile designs
- Custom lanyard lengths and backshells
- Low force separation capabilities
- Low insertion/separation force contacts
- Non-cadmium finishes

Whether you need a standard Breakaway, one of our custom Breakaways or, a unique Breakaway design, please contact your local Amphenol representative.

Contact Amphenol Aerospace for more information on breakaway, quick-disconnect connectors. Other Amphenol circular families (MIL-DTL-26482, MIL-DTL-83723) also offer breakaway quick-disconnect connectors.

Breakaway with Coax Contacts

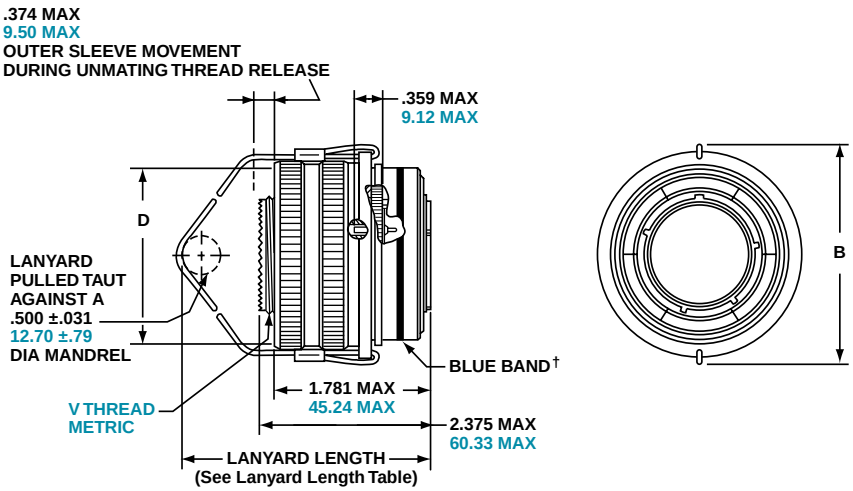
Special configuration Fail Safe used on space telescope application. Lanyard is replaced by a swivel ring for remote disconnect and "wing arms" have been added for manual actuation accessibility by gloved astronauts.

PART #

To complete, see how to order pages 37-38.

Connector Type	Shell Style	Shell Size & Insert Arrg	Lanyard Length Code	Contact Type/ Alternate Insert Rotation	
D38999	29	29	E	P	(Pins Only)
D38999	30	X-X	X	X	(Sockets Only)
88	5565	X-X	X	X	
91	5565	X-X	X	X	

METAL



† Blue band indicates rear release contact retention system

Inches

Shell Size	MS Shell Size Code	B Max	D Max Accessory Dia.
11	B	1.846	1.109
13	C	1.972	1.250
15	D	2.079	1.375
17	E	2.205	1.500
19	F	2.301	1.625
21	G	2.472	1.750
23	H	2.594	1.875
25	J	2.705	2.000

Millimeters

Shell Size	MS Shell Size Code	B Max	D Max Accessory Dia.	V Thread Metric
11	B	46.89	28.17	M15X1.0-6g
13	C	50.09	31.75	M18X1.0-6g
15	D	52.81	34.93	M22X1.0-6g
17	E	56.01	38.10	M25X1.0-6g
19	F	58.45	41.28	M28X1.0-6g
21	G	62.79	44.45	M31X1.0-6g
23	H	65.89	47.63	M34X1.0-6g
25	J	68.71	50.08	M37X1.0-6g

All dimensions for reference only

Amphenol Aerospace

Easy Steps to build a part number... Military

1. DOD Number Prefix	2. Spec Sheet Number	3. Service Class	4. Shell Size	5. Insert Arrangement	6. Lanyard Length Code	7. Alternate Keying Position
D38999/	29	F	B	35	P	N

Step 1. DOD Number Prefix

D38999/ designates MIL-DTL-38999, Series III, Tri-Start Connector

Step 2. Select a Specification Sheet Number

29	Designates Lanyard Release Plug with pin contacts
30	Designates Lanyard Release Plug with socket contacts

Step 3. Select a Service Class

F	Designates electroless nickel plated aluminum, optimum EMI shielding effectiveness –65dB@10 GHz specification min., 48 hour salt spray, 200°C
W	Designates corrosion resistant olive drab cadmium plate aluminum, 500 hour extended salt spray, EMI –50dB@10 GHz specification min., 175°C

Step 4. & 5 Insert Availability

Commercial Basic Part# Shell & Insert Arrg. Code	Shell Size- Insert Arrangement	Military Shell Size- Insert Arrangement	Service Rating	Total Contacts	Contact Size						
					22D	20	16	12	12 Coax	8 Coax	8 Twinax
88/91-556508	11-2	B-2	I	2			2				
06	11-35	B-35	M	13	13						
07	11-98	B-98	I	6		6					
10	13-4	C-4	I	4			4				
11	13-8	C-8	I	8		8					
14	13-35	C-35	M	22	22						
13	13-98	C-98	I	10		10					
18	15-5	D-5	II	5			5				
23	15-15	D-15	I	15		14	1				
22	15-18	D-18	I	18		18					
19	15-19	D-19	I	19		19					
20	15-35	D-35	M	37	37						
21	15-97	D-97	I	12		8	4				
27	17-6	E-6	I	6				6			
28	17-8	E-8	II	8			8				
29	17-26	E-26	I	26		26					
30	17-35	E-35	M	55	55						
31	17-99	E-99	I	23		21	2				
37	19-11	F-11	II	11			11				
39	19-32	F-32	I	32		32					
40	19-35	F-35	M	66	66						
47	21-11	G-11	I	11				11			
48	21-16	G-16	II	16			16				
49	21-35	G-35	M	79	79						
51	21-39	G-39	I	39		37	2				
50	21-41	G-41	I	41		41					
57	23-21	H-21	II	21			21				
58	23-35	H-35	M	100	100						
59	23-53	H-53	I	53		53					
61	23-54	H-54	M	53	40		9	4			
60	23-55	H-55	I	55		55					
71	25-4	J-4	I	56		48	8				
66	25-19	J-19	I	19				19			
74	25-20	J-20	N	30		10	13		4		3
72	25-24	J-24	I	24			12	12			
67	25-29	J-29	I	29			29				
68	25-35	J-35	M	128	128						
69	25-43	J-43	I	43		23	20				
73	25-46	J-46	I	46		40	4			2*	
70	25-61	J-61	I	61		61					

Step 6. Military/ Commercial Lanyard Length Code

Table II

Lanyard Length (in.) ± .236	Lanyard Length (mm) ± 6.0	Lanyard Length Code For Part Number
4.016	102	A
4.528	115	B
5.000	127	C
5.512	140	D
6.024	153	E
6.535	166	F
7.008	178	G
7.520	191	H
7.992	203	I
8.503	216	J
9.016	229	K
9.528	242	L
10.000	254	M
10.512	267	N
11.024	280	P
11.535	293	R
12.008	305	S
12.520	318	T
13.031	331	U
14.016	356	V
15.000	381	W
16.024	407	X
17.008	432	Y
18.031	458	Z

Step 7. Military Alternate Keying Position

For alternate positions of connector (to prevent cross-mating) see alternate positioning on page 23. (N indicates normal)

Easy Steps to build a part number... Commercial

FAIL SAFE 88-5565( ) & 91-5565( )

Ordering procedure for example part number 88-556529-EP is shown below:

1. Service Class	2. Connector Type Identification	3. Shell Size & Insert Arrg. Code	4. Required Field	5. Lanyard Length Code	6. Contact Type/Alternate Keying Position
88	5565	29	0	E	P

Step 1. Select a Service Class

88	Designates corrosion resistant olive drab cadmium plate over nickel, 500 hour extended salt spray, EMI –50dB @ 10 GHz specification min., 175°C
91	Designates electroless nickel plated aluminum, optimum EMI shielding effectiveness –65dB @ 10 GHz specification min., 48 hour salt spray, 200°C

These are standard finishes. Consult Amphenol Aerospace, Sidney, NY for other variations.

Step 2. Select a Connector Type Identification

5565	Designates MIL-DTL-38999, Series III Tri-Start Lanyard Release Plug

Step 3. Select a Commercial Shell Size & Insert Arrangement Code

MIL-DTL-38999, see insert availability chart on page 37.

Step 4. Required Field

0	The required field is always a 0

Step 5. Select a Lanyard Length Code

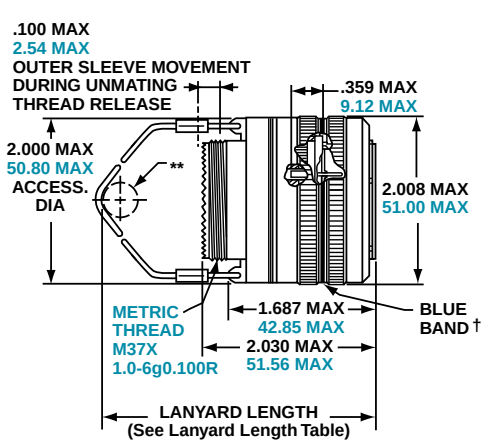
See Table II (to the left) for lanyard length code number.

Step 6. Select a Contact Type/Alternate Keying Position

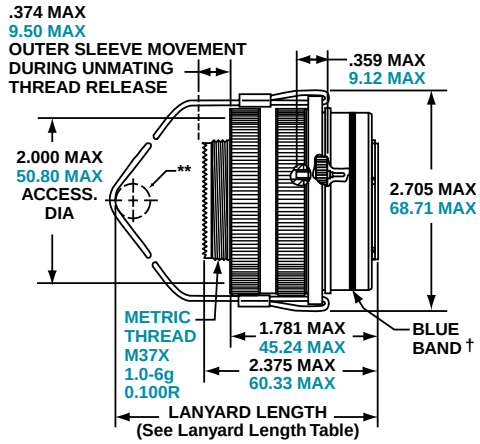
P designates pin, S designates socket for normal positioning of contacts. When an alternate position of the connector is required to prevent cross-mating, a different letter (other than P or S) is used. See alternate positioning on page 23, then convert to Amphenol Commercial coding by the following chart.

Pin Contacts		Socket Contacts	
MS Letter	Amphenol letter	MS Letter	Amphenol Letter
PN	P (normal)	SN	S (normal)
PA	G	SA	H
PB	I	SB	J
PC	K	SC	L
PD	M	SD	N
PE	R	SE	T

PIN CONTACTS ONLY,
SHELL SIZE 25 ONLY



TYPE 6



TYPE 2

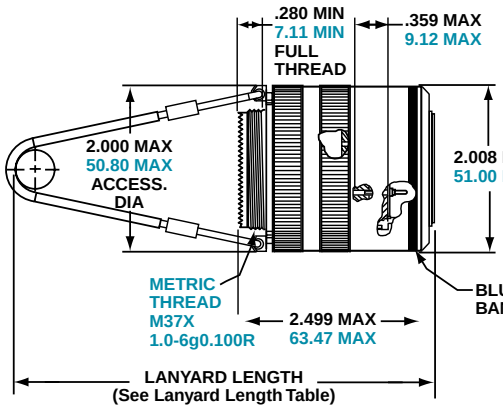
Part number reference.
To complete, see how to order page 39.

D38999/31

88-555875/76
91-555875/76 — **Type 6**

88-558518/19
91-558518/19 — **Type 2**

T3W-16B25-XXXX — Type 1



TYPE 1
(LONGER SHELL)

† Blue band indicates rear release contact retention system
** Lanyard pulled taut against a .500 ± .13 dia. Mandrel
All dimensions for reference only

Tri-Start Lanyard Separation Forces		
Shell Size	**Straight Plug (lbs. max.)**	**15 Degree Pull (lbs. max.)**
25	90	100

Pin Contact Data for MIL-STD-1760

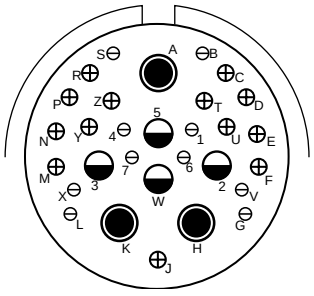
Insert Arrangement	Service Rating	Total Contacts	Contact			
			20	16	12 (Coax)	8 (Twinax)
25-20	N	30	10	13	4	3

Contacts for 25-20 Pattern

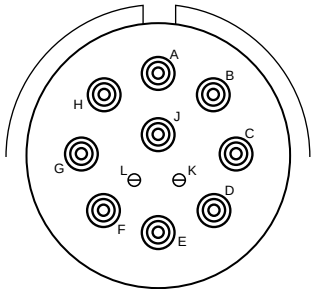
Shell Size	Arrg. Number	Number of Contacts	Size Contacts	Service Rating	Contact Location	Standard Contacts	
						Pin	Socket
25	-20	3	8	Twinax	A, H, K	M39029/90-529	M39029/91-530
		4	12	Coax	2,3	M39029/28-211	M39029/75-416
					W, 5	M39029/102-558	M39029/103-559
		13	16	N	C, D, E, F, J, M, N, P, R, T, U, Y, Z	M39029/58-364	M39029/56-352
		10	20	N	B, G, L, S, V, X, 1, 4, 6, 7	M39029/58-363	M39029/56-351

Insert Arrangement	Service Rating	Total Contacts	Contact Size	
			20	10 (power)
25-11	N	11	2	9

INSERT AVAILABILITY
FAIL SAFE D38999/31
FOR MIL-STD-1760



25-20
Primary Interface Signal Set



25-11
Auxiliary Power Signal Set

Contact Legend

8 (twinax) 10 (power) 12 (coax) 16 20

HOW TO ORDER - BY MILITARY PART NUMBER FAIL SAFE D38999/31

Ordering procedure for example part number D38999/31WE20PN1 is shown below:

Easy Steps to build a part number... Military

1. DOD Number Prefix	2. Spec Sheet Number	3. Service Class	4. Lanyard Length Code	5. Insert Arrangement	6. Contact Style	7. Alternate Keying Position	8. Type Number
D38999/	31	W	E	20	P	N	1

1. Select a DOD Number Prefix

D38999/	Designates MIL-DTL-38999, Series III Tri-Start Connectors

2. Specification Sheet Number

31	Designates Lanyard Release Plug for MIL-STD-1760 with pin contacts

3. Select a Service Class

F	Designates electroless nickel plated aluminum, optimum EMI shielding effectiveness –65dB @ 10 GHz specification min., 48 hour salt spray, 200°C
W	Designates corrosion resistant olive drab cadmium plate aluminum, 500 hour extended salt spray, EMI –50dB @ 10 GHz specification min., 175°C

4. Select a Lanyard Length Code

Lanyard Length (in.) ±.236	Lanyard Length (mm.) ± 6.0	Lanyard Length Code for Part Number
6.024	153.0	E
6.535	166.0	F
7.008	178.0	G
7.520	191.0	H
7.992	203.0	I
8.504	216.0	J
9.016	229.0	K
9.528	242.0	L

5. Select an Insert Arrangement

Only 11 or 20 are available contact arrangement numbers.
See page 39.

6. Contact Style – P & A are Valid Options

P	Replaces the “no designation” option in the PIN on revision C and earlier revision of the Mil-Spec.
A	Designates supplied less contacts.

7. Alternate Keying Position

N	Is required for normal position.

8. Type Number

Type 1, 2 or 6. See drawings on page 39.

For accessories for lanyard release plugs see page 177.

Amphenol® LJT and JT Series subminiature cylindrical connectors are qualified to MIL-DTL-38999*, Series I and II respectively. These connectors were developed to meet the needs of the aerospace industries, and provided the impetus for development of the MIL-C-38999 specifications, which recently were superseded by MIL-DTL-38999. Meeting or exceeding MIL-DTL-38999 requirements, Amphenol® JT/LJT connectors feature:

- **Lightweight, Space Saving Design**
- **Contact Protection -** 100% scoop-proof LJT design prevents bent pins and short circuits during mating
- **Quick Positive Coupling** - 3 point bayonet lock system
- **Mismating Eliminated** - with 5 key/keyway design
- **Error Proof Alternate Positioning** - insured by different key/keyway locations
- **EMI Shielding** - grounding fingers standard in LJT Series; optional in JT Series
- **Nine Shell Sizes and a Variety of Shell Styles**
- **Contact Options** - size 8, 10, 12, 16, 20, 22M and 22D Crimp, Solder, PCB, Wire wrap, Coax, Twinax, Triax, Thermocouple, Fiber Optic and Filter
- **Fixed Solder Contacts** - Amphenol MIL-DTL-38999 Series I LJT and II JT, are available in solder versions as both Commercial and Military qualified to MIL-DTL-27599
- **Hermetic** - air leakage limited to 1 X 10^{-7} cm^3 per second optional
- **"Breakaway" Lanyard Release Style** - available in LJT plugs. Provides quick disconnect of the connector plug and receptacle with axial pull on the lanyard. See pages 35-40.
- **Inventory Support Commonality** - uses standard MIL-DTL-38999 contacts, insert arrangements and application tools.
- **RoHS Compliant Product Available -** Consult Amphenol Aerospace Operations.

Where proof of high reliability and lot control is required, MS approved equivalents to most proprietary JT and LJT connectors are available.

* MIL-DTL-38999 Series I supersedes MIL-C-38999 Series I.
MIL-DTL-38999 Series II supersedes MIL-C-38999 Series II.

Components

Shell components are impact extruded or machined bar stock aluminum. Standard plating on shell components is cadmium over nickel. Many finishes are optional (see "Specifications" page 16). Hermetic seal receptacles are available in carbon steel or stainless steel shells. Dependable 5 key/keyway polarization with bayonet lock coupling is incorporated to aid and assure positive mating.

Insert material is a rigid dielectric with excellent electrical characteristics, providing durable protection for molded-in solder type contacts. Contrasting letter or number designations are used on insert faces.

A fluorinated silicone interfacial seal wafer is featured on the mating face of "crimp type pin" inserts. This assures complete electrical isolation of pins when connector halves are mated. In addition, a main joint gasket is installed in the receptacle for moisture sealing between connector halves. Both features are also available for hermetic receptacles.

Contacts

Maximum design flexibility is built into the JT/LJT Series, with a minimum of 2 to a maximum of 128 circuits per connector in a wide variety of contact arrangements. Contacts are available in sizes 8, 10, 12, 16, 20, 22, 22D and 22M with standard 50 micro inch minimum gold plating (100 micro inches optional). All socket contacts are probe proof. Crimp type rear removable contacts are featured in JT-R and LJT-R connectors. Solder termination contacts are also available, as well as PCB, wire wrap, thermocouple, fiber optic, coaxial, triaxial and twinax contact options.

Optional Features

High temperature capability of 392°F is available only in JTS or LJTS crimp type connectors. High temperature versions feature gold plated contacts, high temperature shell plating, stainless steel coupling nut spring, and epoxy inserts/fluorinated silicone grommet combination. Standard temperature capability for both solder and crimp is 302°F.

The JTN or LJTN type connectors are available for N_2O_4 resistance provided they are mated, and un-grommeted rear faces are suitably protected.
For complete listing and definition of connector types, shell styles and service classes, see How to Order, page 42. For information on Fail-Safe Lanyard Release style plugs, see pages 72-73.

Easy Steps to build a commercial part number... Series I and II

Commercial

1. Connector Series I	Type II	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrangement	5. Contact Type	6. Alternate Position	7. Strain Relief/Finish Variation Suffix	
LJT	JT	00	RT	9-35	P	B	SR	(014)

Step 1. Select a Connector Type

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrg.	5. Contact Type	6. Alternate Position	7. Special Variations
JT						

Series I	Series II	Designates
	JT	Standard Junior Tri-Lock
LJT		Long Junior Tri-Lock
LJTS	JTS	High temperature connector
LJTN	JTN	Chemical and fuel resistant
	JTL	Miniature mounting dimensions
	JTLN	Miniature mounting dimensions–Chemical resistant
	JTLS	Miniature mounting dimensions– High temperature
LJTPQ	JTPQ	Back panel mounted wall mounting receptacle
LJTP	JTP	Back panel mounted box mounting receptacle
LJTPN	JTPN	Back panel mounted–Chemical resistant
LJTPS	JTPS	Back panel mounted–High temperature
	JTG	Plug with grounding fingers*
	JTNG	Plug with grounding fingers* –Chemical resistant

*Grounding fingers standard on all LJT plugs

Step 2. Select a Shell Style... Series I & II

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrg.	5. Contact Type	6. Alternate Position	7. Special Variations
	00					

Lanyard Release Connector (See pages 72-74 for ordering)

	Designates
00	Wall mount receptacle
01	Line mount receptacle
02	Box mount receptacle
06	Straight plug
07	Jam nut receptacle
08	90 degree plug
I	Solder mount receptacle- hermetic
88	Fail safe lanyard release plug with corrosion resistant olive drab cadmium plate over nickel shells
91	Fail safe lanyard release plug with electroless nickel plated aluminum shells.

Series I LJT

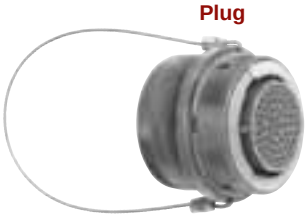

Wall Mounting Receptacle


Line Receptacle


Nut Receptacle


Straight Plug


Mounting Receptacle


Release Plug

Series II JT


Wall Mounting Receptacle


Mounting Receptacle


Straight Plug


Jam Nut Receptacle


90° Plug


Solder Mounting Receptacle

Step 3. Select a Service Class

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrg.	5. Contact Type	6. Alternate Position	7. Special Variations
		RX				

Commercial	Solder Contacts/Connectors
P	Potting applications: These connectors are supplied with a potting boot. All shells are designed with integral features to retain potting boots.
A	General Applications
A (SR)	Threaded rear design with strain relief†
C	Pressurized applications
C (SR)	Threaded rear design with strain relief.†
E	Box mount and thru-bulkhead only with no backend threads.
H	Hermetic applications- Fused compression glass sealed inserts. Leadage rate less than .01 micron cu. ft./hr. (1 x 10-7 cc/sec.) at 15 psi differential.
Y	Same as "H" with interfacial seal.
T	MS27599A applications-general duty, pressurized (receptacle only)
Commercial	**Crimp Contacts/Connectors**
RP	Potting crimp applications. Supplied with spacer grommet and potting boot.††
RE	Environmental crimp applications. Supplied with a grommet and compression nut.† Can be supplied with strain relief integral with compression nut "RE(SR)". (JT Series only)
RGF	Electroless nickel plated ground plane aluminum, 200°C
RGW	Olive drab cadmium plated ground plane aluminum, 175°C
RT	Environmental applications. Supplied without rear accessories. Design provides serrations on rear threads of shells.

† Not applicable to box mounting style or LJT Series I.
†† Not applicable to box mounting style.

Step 4. Select a Shell Size & Insert Arrangement see page 4-7

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

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrg.	5. Contact Type	6. Alternate Position	7. Special Variations
			22-2			

Step 5. Select a Contact Type

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrg.	5. Contact Type	6. Alternate Position	7. Special Variations
				P		

	Designates
P	Pin Contacts
S	Socket Contacts

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size Insert Arrg.	5. Contact Type	6. Alternate Position	7. Special Variations
					A	

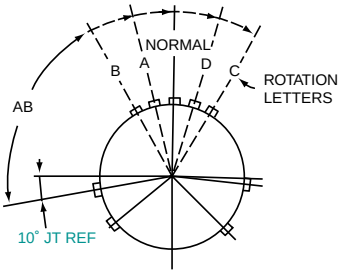
Step 6. Select an Alternate Keying Position

"A" designates Alternate keying connector assembly. Other basic alternate keys are "B", "C" and "D". No letter required for normal rotation (no rotation) position.

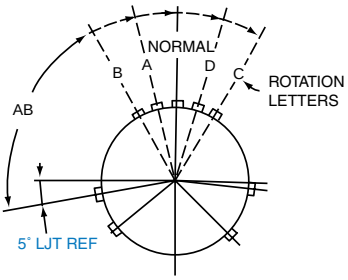
A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The AB angle for a given connector is the same whether it contains pins or sockets. Only the master key/keyway rotates in the shell, and the insert always remains in the same position relative to the minor keys.

AB angles shown are viewed from the front face of the connector, a receptacle is shown below. The angles for the plug are exactly the same except the direction of rotation is opposite of that shown for the receptacle.

The "N" designation is not referenced in part number, it is omitted.



RELATIVE POSSIBLE POSITION OF ROTATED MASTER KEYWAY (front face of receptacle shown)



RELATIVE POSSIBLE POSITION OF ROTATED MASTER KEYWAY (front face of receptacle shown)

JT Key/Keyway Rotation

AB ANGLE OF ROTATION (Degrees)					
Shell Size	Normal	A	B	C	D
8	100°	82°	-	-	118°
10	100°	86°	72°	128°	114°
12	100°	80°	68°	132°	120°
14	100°	79°	66°	134°	121°
16	100°	82°	70°	130°	118°
18	100°	82°	70°	130°	118°
20	100°	82°	70°	130°	118°
22	100°	85°	74°	126°	115°
24	100°	85°	74°	126°	115°

LJT Key/Keyway Rotation

AB ANGLE OF ROTATION (Degrees)					
Shell Size	Normal	A	B	C	D
9	95°	77°	-	-	113°
11	95°	81°	67°	123°	109°
13	95°	75°	63°	127°	115°
15	95°	74°	61°	129°	116°
17	95°	77°	65°	125°	113°
19	95°	77°	65°	125°	113°
21	95°	77°	65°	125°	113°
23	95°	80°	69°	121°	110°
25	95°	80°	69°	121°	110°

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size- Insert Arrg.	5. Contact Type	6. Alternate Position	7. Special Variations
						( )

Step 7. Select a Strain Relief Option or Finish Variation Suffix

Strain Relief Options: "SR" designates a strain relief clamp. Strain reliefs are available only on Service Class "A", "C" and "RE" (see step 3. Service Class)

Finish Variation Suffix: See finish variations available in table to your right.

Finish	Military Finish Data	Finish Suffix	Finish Plus "SR" Suffix
Cadmium plated nickel base 175° C	A		(SR)
Olive drab cadmium plate nickel base 175° C	B	(014)	(386)
Electroless nickel 200° C	F	(023)	(424)
Electroless nickel, space compatible 200° C		(453)	(467)
Anodic coating (Alumilite) 200° C	C	(005)	(300)
Chromate treated (Iridite 14-2) 125° C		(011)	(344)
Passivated steel 200° C	E	-	-
Nickel-PTFE 175° C		(038)	

Record your part numbers here...

1. Connector Type Series I	II	2. Shell Style	3. Service Class	4. Shell Size- Insert Arrangement	5. Contact Type	6. Alternate Keying Position	7. Strain Relief/Finish Variation Suffix	

Amphenol Aerospace

Easy Steps to build a Military part number... Series I and II

Military

1. MS Number	2. Service Class	3. Shell Size	4. Finish	5. Insert Arrangement	6. Contact Style (P or S)	7. Alternate Keying Position
MS27473	E	14	A	18	P	A

Step 1. Choose your Military Connector Type

1. MS Number	2. Service Class	3. Shell Size	4. Finish	5. Insert Arrangement	6. Contact Style (P or S)	7. Alternate Position
MS27473						

Series II JT

MS27472	Crimp Wall Mount Receptacle
MS27497	Crimp Wall Mount Receptacle Back Panel Mounting
MS27499	Crimp Box Mounting Receptacle
MS27513	Crimp Box Mounting Receptacle with grommet and compression nut
MS27508	Crimp Box Mounting Receptacle (Back Panel Mounting)
MS27473	Crimp Straight Plug
MS27484	Crimp Straight Plug with Grounding Fingers
MS27474	Crimp Jam Nut Receptacle
MS27500	Crimp 90° plug
MS27475	Hermetic Wall Mounting Receptacle
MS27476	Hermetic Box Mounting Receptacle
MS27477	Hermetic Jam Nut Receptacle
MS27478	Hermetic Solder Mounting Receptacle
MS27334	Solder Wall Mount Receptacle
MS27335	Solder Box Mounting Receptacle
MS27336	Solder Straight Plug
MS27337	Solder Jam Mounting Receptacle

Series I LJT

MS27466	Crimp Wall Mount Receptacle
MS27656	Crimp Wall Mount Receptacle Back Panel Mounting
MS27496	Crimp Box Mounting Receptacle
MS27505	Crimp Box Mounting Receptacle (Back Panel Mounting)
MS27467	Crimp Straight Plug
MS27468	Crimp Jam Nut Receptacle
MS27469	Hermetic Wall Mounting Receptacle
MS27470	Hermetic Jam Nut Receptacle
MS27471	Hermetic Solder Mounting Receptacle
MS20026	Solder Wall Mounting Receptacle
MS20027	Solder Line Receptacle
MS20028	Solder Straight Plug
MS20029	Solder Jam Nut Receptacle

Step 2. Select a Military Service Class

1. MS Number	2. Service Class	3. Shell Size	4. Finish	5. Insert Arrangement	6. Contact Style (P or S)	7. Alternate Position
	E					

Military	Service Class
E	Environmental crimp applications. Supplied with a grommet and compression nut.† Can be supplied with strain relief integral with compression nut "RE(SR)". (JT Series only). Box Mount versions using spacer grommets are not environmental.
P	Potting crimp applications. Supplied with spacer grommet and potting boot.††
T	Environmental applications. Supplied without rear accessories. Design provides serrations on rear threads of shells. (MS27599 applications)- General duty-pressurized (receptacles only)
Y	Hermetically interfacial seal

† Not applicable to box mounting style or LJT Series I.
†† Not applicable to box mounting style.

Step 3 & 5. Select a Shell Size and Insert Arrangement from Pages 4-7

1. MS Number	2. Service Class	3. Shell Size	4. Finish	5. Insert Arrangement	6. Contact Style (P or S)	7. Alternate Position
		14		18		

Shell Size & Insert Arrangement are together in the chart. First number represents Shell Size, second number is the Insert Arrangement. Place Shell Size in box 3 and Insert Arrangement in box 5.

Step 4. Select a Military Finish

1. MS Number	2. Service Class	3. Shell Size	4. Finish	5. Insert Arrangement	6. Contact Style (P or S)	7. Alternate Position
			A			

Finish	Military Finish Data	Finish Suffix	Finish Plus "SR" Suffix
Cadmium plated nickel base 175° C	**A**		(SR)
Olive drab cadmium plate nickel base 175° C	**B**	(014)	(386)
Electroless nickel 200° C	**F**	(023)	(424)
Electroless nickel, space compatible 200° C		(453)	(467)
Anodic coating (Alumilite) 200° C	**C**	(005)	(300)
Chromate treated (Iridite 14-2) 125° C		(011)	(344)
Passivated steel 200° C	**E**	-	-
Nickel-PTFE 175° C		(038)	

Step 6. Select a Military Contact Type

	Designates
P	Pin Contacts
S	Socket Contacts

1. MS Number	2. Service Class	3. Shell Size	4. Finish	5. Insert Arrangement	6. Contact Style (P or S)	7. Alternate Position
					P	

Step 7. Select an Alternate Keying Position

See pg 44 for information, No letter required for normal position

1. MS Number	2. Service Class	3. Shell Size	4. Finish	5. Insert Arrangement	6. Contact Style (P or S)	7. Alternate Position
						A

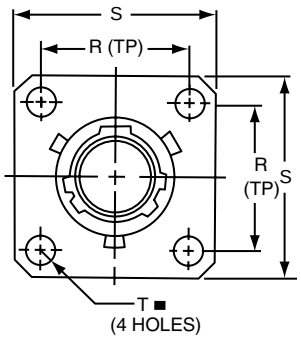
Record your Military part numbers here...

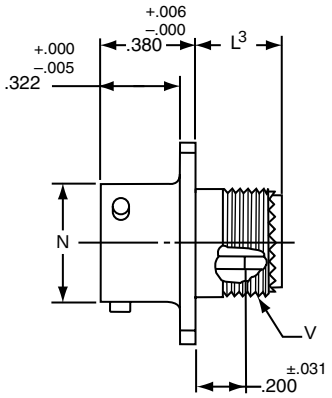
1. MS Number	2. Service Class	3. Shell Size	4. Finish	5. Insert Arrangement	6. Contact Style (P or S)	7. Alternate Keying Position

PART

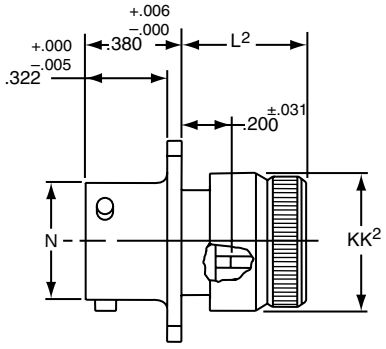
Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)

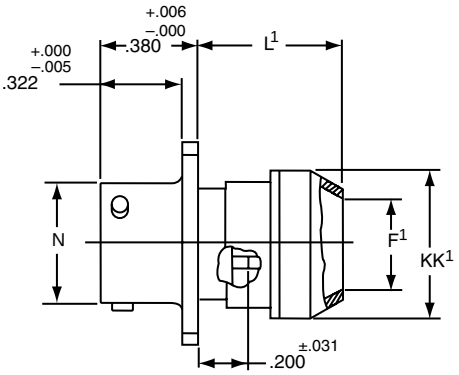




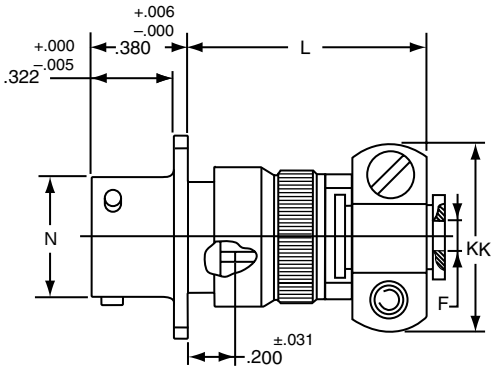
* JT00RT-XX-XXX(MS27472T)
** JTS00RT-XX-XXX(MS27479T)
*** JTN00RT-XX-XXX



* JT00RE-XX-XXX (MS27472E)
** JTS00RE-XX-XXX(MS27479E)
*** JTN00RE-XX-XXX



* JT00RP-XX-XXX(MS27472P)
** JTS00RP-XX-XXX
*** JTN00RP-XX-XXX



* JT00RE-XX-XXX (SR)
** JTS00RE-XX-XXX (SR)
*** JTN00RE-XX-XXX (SR)

■ ⊕ .005 DIA Ⓜ

* To complete order number see page 42.
** High temperature version; to complete order number see page 42.
*** Clear iridite finish (gold color), N_2O_4 resistant; to complete order number see page 42.

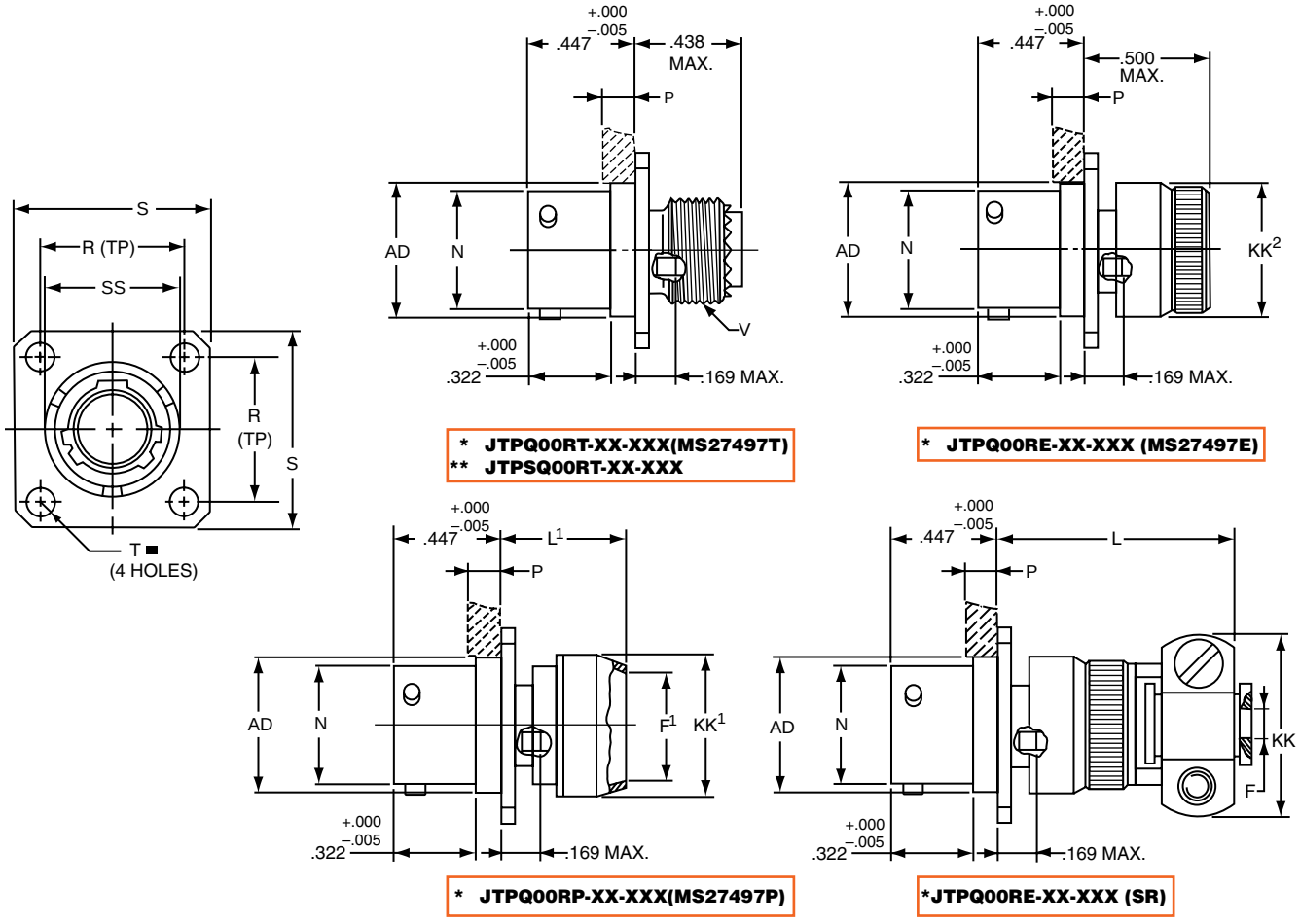
Shell Size	F Dia. +.010 −.025	F¹ Dia. ±.010	L Max.	L¹ Max.	L² Max.	L³ Max.	N +.001 −.005	R (TP)	S ±.016	T ±.005	V Thread UNEF Class 2A (Plated)	KK Max.	KK¹ Dia. Max.	KK² Dia. Max.
8	.125	.444	1.094	.609	.547	.500	.473	.594	.812	.120	.4375-28	.812	.625	.578
10	.188	.558	1.094	.609	.547	.500	.590	.719	.938	.120	.5625-24	.875	.750	.703
12	.312	.683	1.094	.609	.547	.500	.750	.812	1.031	.120	.6875-24	1.000	.875	.828
14	.375	.808	1.344	.609	.547	.500	.875	.906	1.125	.120	.8125-20	1.125	1.000	.953
16	.500	.909	1.344	.609	.547	.500	1.000	.969	1.219	.120	.9375-20	1.188	1.125	1.078
18	.625	1.034	1.344	.609	.547	.500	1.125	1.062	1.312	.120	1.0625-18	1.438	1.250	1.203
20	.625	1.159	1.344	.609	.547	.500	1.250	1.156	1.438	.120	1.1875-18	1.438	1.375	1.328
22	.750	1.284	1.469	.609	.547	.500	1.375	1.250	1.562	.120	1.3125-18	1.625	1.500	1.453
24	.800	1.409	1.469	.688	.547	.500	1.500	1.375	1.688	.147	1.4375-18	1.719	1.625	1.578

All dimensions for reference only.

PART

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)



* JTPQ00RT-XX-XXX(MS27497T)
** JTPSQ00RT-XX-XXX

* JTPQ00RE-XX-XXX (MS27497E)

* JTPQ00RP-XX-XXX(MS27497P)

*JTPQ00RE-XX-XXX (SR)

■ ⌖ .005 DIA Ⓜ

* To complete order number see page 42.
** High temperature version; to complete order number see page 42.

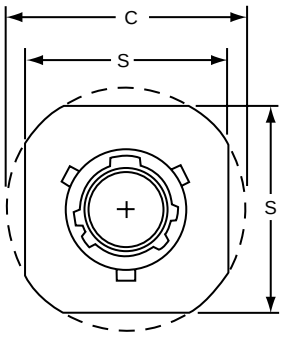
Shell Size	F Dia. +.010 −.025	F¹ Dia. ±.010	L Max.	L¹ Max.	N +.001 −.005	P Max. Panel Thick-ness	R (TP)	S ±.016	T ±.005	V Thread UNEF Class 2A (Plated)	AD Dia. ±.005	KK Max.	KK¹ Dia. Max.	KK² Dia. Max.	SS Dia. +.000 −.016
8	.125	.444	1.140	.468	.473	.142	.594	.812	.120	.4375-28	.516	.781	.625	.578	.563
10	.188	.558	1.140	.468	.590	.142	.719	.938	.120	.5625-24	.633	.844	.750	.703	.680
12	.312	.683	1.140	.468	.750	.142	.812	1.031	.120	.6875-24	.802	.969	.875	.828	.859
14	.375	.808	1.375	.468	.875	.142	.906	1.125	.120	.8125-20	.927	1.094	1.000	.953	.984
16	.500	.909	1.375	.468	1.000	.142	.969	1.219	.120	.9375-20	1.052	1.154	1.125	1.078	1.108
18	.625	1.034	1.375	.468	1.125	.142	1.062	1.312	.120	1.0625-18	1.177	1.406	1.250	1.203	1.233
20	.625	1.159	1.375	.468	1.250	.142	1.156	1.438	.120	1.1875-18	1.302	1.406	1.375	1.328	1.358
22	.750	1.284	1.516	.468	1.375	.142	1.250	1.562	.120	1.3125-18	1.427	1.594	1.500	1.453	1.483
24	.800	1.409	1.500	.540	1.500	.142	1.375	1.688	.147	1.4375-18	1.552	1.688	1.625	1.578	1.610

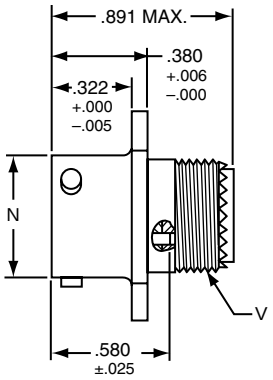
All dimensions for reference only.

PART

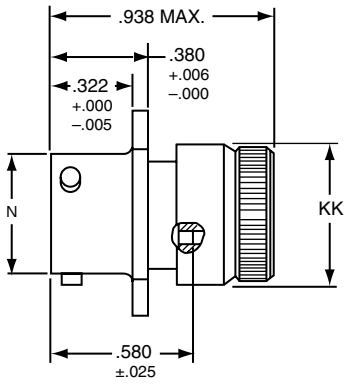
Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)

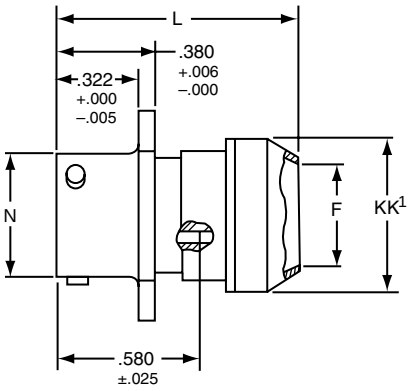




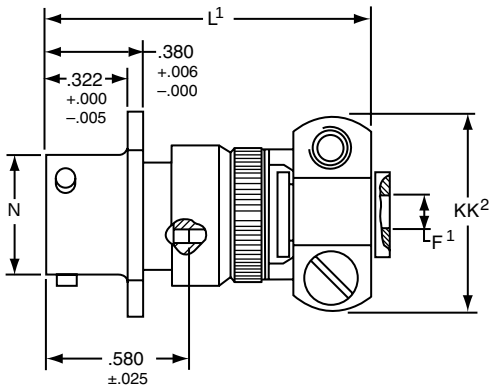
* JT01RT-XX-XXX
** JTS01RT-XX-XXX
*** JTN01RT-XX-XXX



* JT01RE-XX-XXX
** JTS01RE-XX-XXX
*** JTN01RE-XX-XXX



* JT01RP-XX-XXX
** JTS01RP-XX-XXX
*** JTN01RP-XX-XXX



* JT01RE-XX-XXX (SR)
** JTS01RE-XX-XXX (SR)
*** JTN01RE-XX-XXX (SR)

* To complete order number see page 42.
** High temperature version; to complete order number see page 42.
*** Clear iridite finish (gold color), N_2O_4 resistant; to complete order number see page 42.

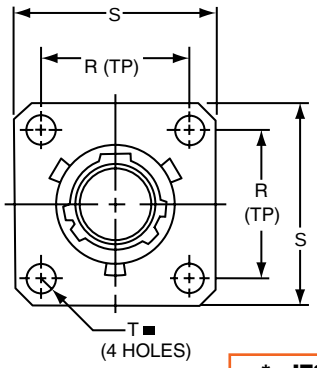
Shell Size	C Max.	F Dia. +.010	F[1] Dia. +.010 –.025	L Max.	L[1] Max.	N Dia. +.001 –.005	S +.017 –.016	V Thread UNEF Class 2A (Plated)	KK Dia. Max.	KK[1] Dia. Max.	KK[2] Max.
8	.965	.444	.125	1.031	1.562	.473	.812	.4375-28	.578	.625	.812
10	1.089	.558	.188	1.031	1.562	.590	.938	.5625-24	.703	.750	.875
12	1.183	.683	.312	1.031	1.562	.750	1.031	.6875-24	.828	.875	1.000
14	1.277	.808	.375	1.031	1.812	.875	1.125	.8125-20	.953	1.000	1.125
16	1.371	.909	.500	1.031	1.812	1.000	1.219	.9375-20	1.078	1.125	1.188
18	1.465	1.034	.625	1.031	1.812	1.125	1.312	1.0625-18	1.203	1.250	1.438
20	1.589	1.159	.625	1.031	1.812	1.250	1.438	1.1875-18	1.328	1.375	1.438
22	1.715	1.284	.750	1.031	1.938	1.375	1.562	1.3125-18	1.453	1.500	1.625
24	1.838	1.409	.800	1.109	1.938	1.500	1.688	1.4375-18	1.578	1.625	1.719

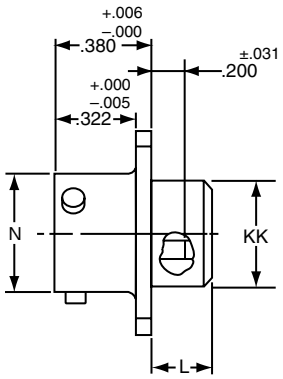
All dimensions for reference only.

PART

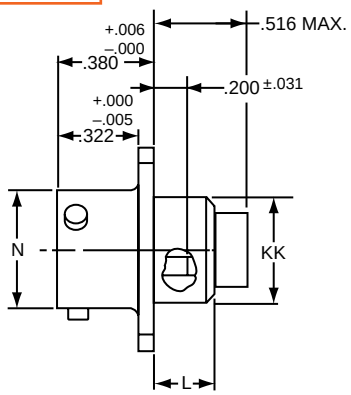
Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)





* JT02RE-XX-XXX (MS27499)
** JTS02RE-XX-XXX
*** JTN02RE-XX-XXX



* JT02RE-XX-XXX (053) (MS27513)
** JTS02RE-XX-XXX (053)
*** JTN02RE-XX-XXX (053)

■ ⊕ .005 DIA Ⓜ

* To complete order number see page 42.
** High temperature version; to complete order number see page 42.
*** Clear iridite finish (gold color), N_2O_4 resistant; to complete order number see page 42.

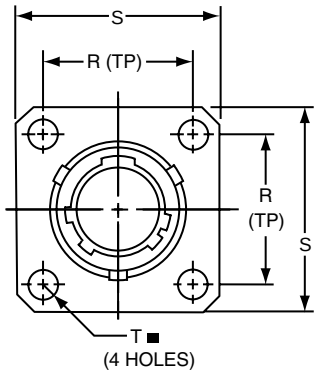
Shell Size	L Max.	N +.001 –.005	R (TP)	S ±.016	T ±.005	KK Dia. Max.
8	.286	.473	.594	.812	.120	.438
10	.286	.590	.719	.938	.120	.563
12	.286	.750	.812	1.031	.120	.688
14	.286	.875	.906	1.125	.120	.813
16	.286	1.000	.969	1.219	.120	.938
18	.286	1.125	1.062	1.312	.120	1.047
20	.286	1.250	1.156	1.438	.120	1.172
22	.286	1.375	1.250	1.562	.120	1.297
24	.286	1.500	1.375	1.688	.147	1.422

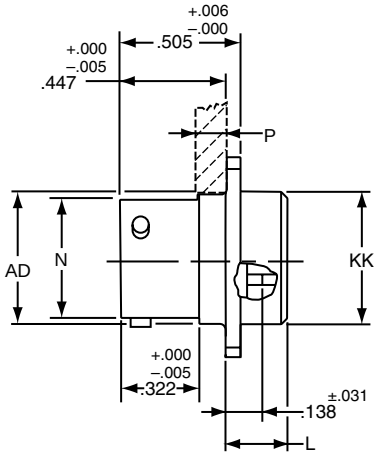
All dimensions for reference only.
NOTE: For applications requiring an environmental seal, please refer to JT00R, page 47.

PART #

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)





*** JTP02RE-XX-XXX (MS27508E)**
**** JTPS02RE-XX-XXX**
*****JTPN02RE-XX-XXX**

■ ⊕ .005 DIA Ⓜ

* To complete order number see page 42.
** High temperature version; to complete order number see page 42.
*** Clear iridite finish (gold color), N_2O_4 resistant; to complete order number see page 42.

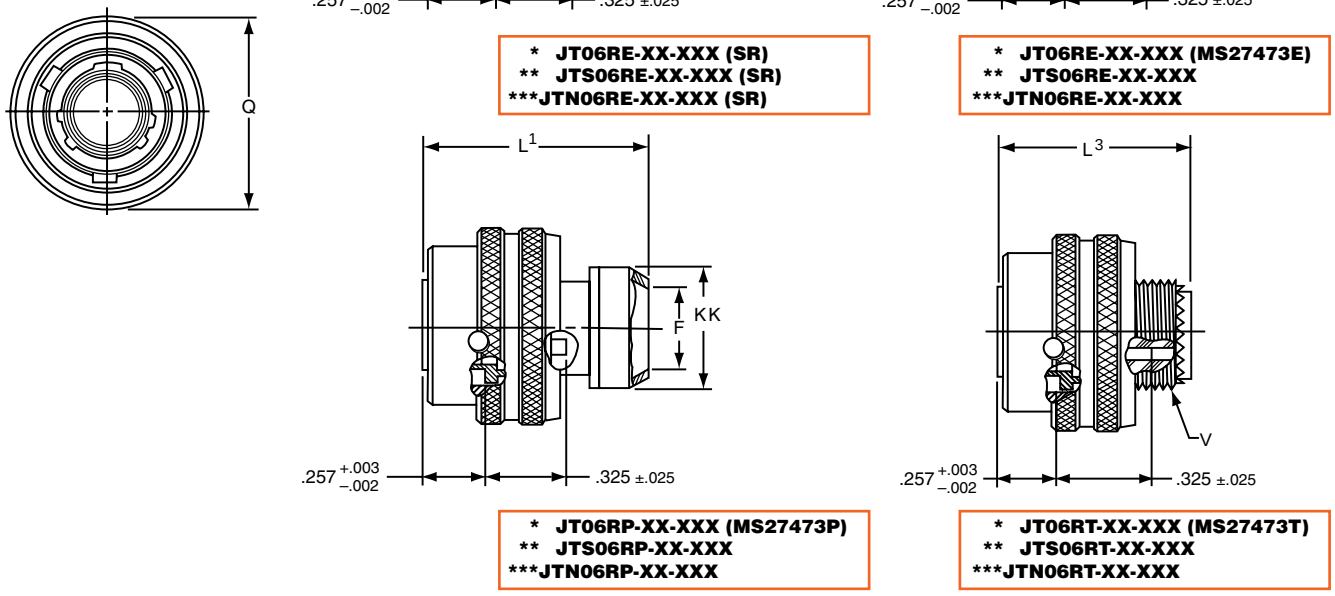
Shell Size	L Max.	N +.001 −.005	P Max. Panel Thickness	R (TP)	S ±.016	T Dia. ±.005	AD Dia. ±.005	KK Dia. Max.
8	.225	.473	.147	.594	.812	.120	.516	.531
10	.225	.590	.152	.719	.938	.120	.633	.656
12	.225	.750	.152	.812	1.031	.120	.802	.828
14	.225	.875	.152	.906	1.125	.120	.927	.953
16	.225	1.000	.152	.969	1.219	.120	1.052	1.078
18	.225	1.125	.152	1.062	1.312	.120	1.177	1.203
20	.225	1.250	.179	1.156	1.438	.120	1.302	1.328
22	.225	1.375	.179	1.250	1.562	.120	1.427	1.453
24	.225	1.500	.169	1.375	1.688	.147	1.552	1.578

All dimensions for reference only.

PART

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)



* JT06RE-XX-XXX (SR)
** JTS06RE-XX-XXX (SR)
***JTN06RE-XX-XXX (SR)

* JT06RE-XX-XXX (MS27473E)
** JTS06RE-XX-XXX
***JTN06RE-XX-XXX

* JT06RP-XX-XXX (MS27473P)
** JTS06RP-XX-XXX
***JTN06RP-XX-XXX

* JT06RT-XX-XXX (MS27473T)
** JTS06RT-XX-XXX
***JTN06RT-XX-XXX

* To complete order number see page 42
** High temperature version; to complete order number see page 42.
*** Clear iridite finish (gold color), N_2O_4 resistant; to complete order number see page 42.

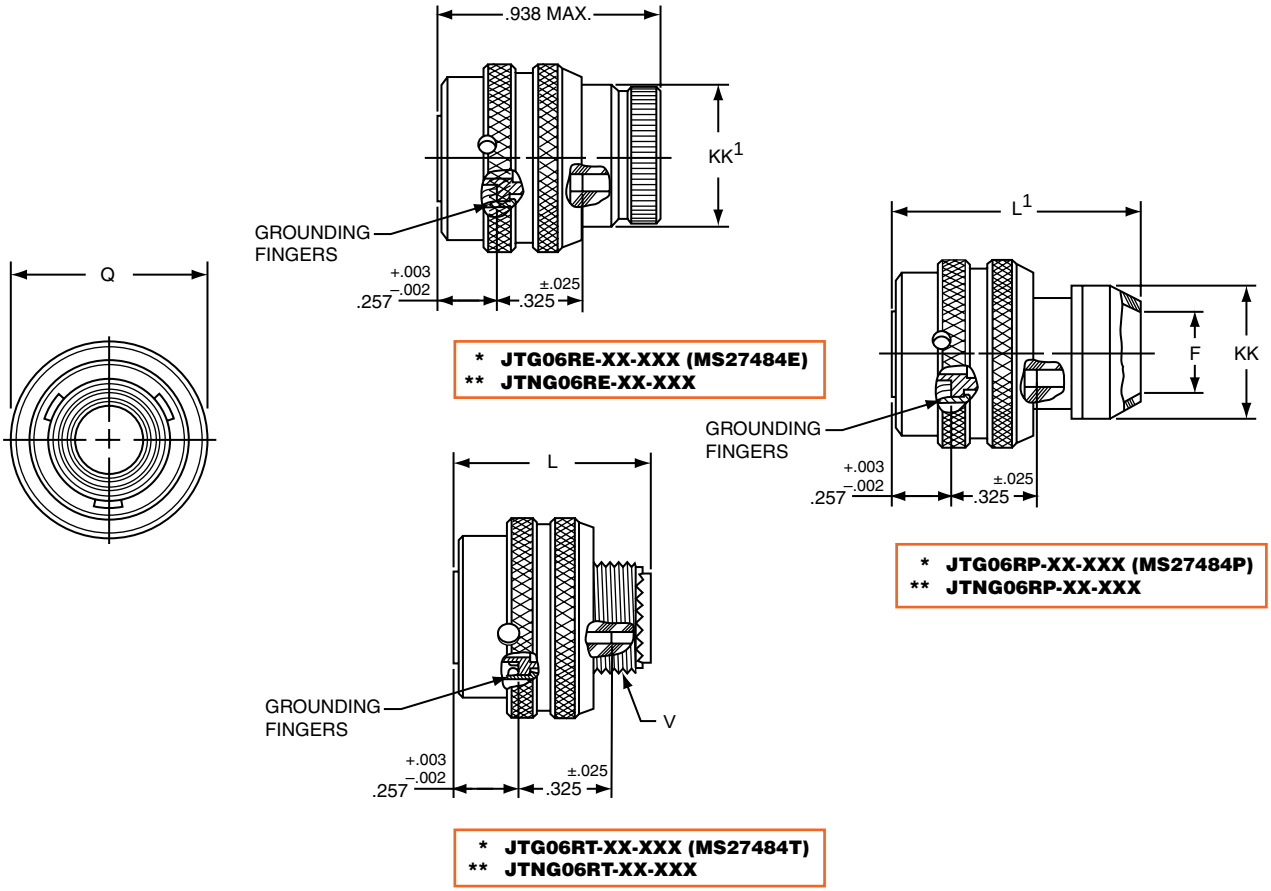
Shell Size	F Dia.	F¹ Dia. +.001 –.025	L Max.	L¹ Max.	L² Max.	L³ Max.	Q Dia Max.	V Thread Modified		KK Dia. Max.	KK¹ Max.	KK² Dia. Max.
								Class 2A UNEF	Modified Major Dia.			
8	.444	.125	1.562	1.000	.938	.891	.734	.4375-28	.421 – .417	.625	.812	.578
10	.558	.188	1.562	1.000	.938	.891	.844	.5625-24	.542 – .538	.750	.875	.703
12	.683	.312	1.562	1.000	.938	.891	1.016	.6875-24	.667 – .663	.875	1.000	.828
14	.808	.375	1.812	1.000	.938	.891	1.141	.8125-20	.791 – .787	1.000	1.125	.953
16	.909	.500	1.812	1.000	.938	.891	1.265	.9375-20	.916 – .912	1.125	1.188	1.078
18	1.034	.625	1.812	1.000	.938	.891	1.391	1.0625-18	1.034 – 1.030	1.250	1.438	1.203
20	1.159	.625	1.812	1.000	.938	.891	1.500	1.1875-18	1.158 – 1.154	1.375	1.438	1.328
22	1.284	.750	1.938	1.000	.938	.891	1.625	1.3125-18	1.283 – 1.279	1.500	1.625	1.453
24	1.409	.800	1.938	1.062	.938	.891	1.750	1.4375-18	1.408 – 1.404	1.625	1.719	1.578

All dimensions for reference only.

PART

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)



* JTG06RE-XX-XXX (MS27484E)
** JTNG06RE-XX-XXX

* JTG06RP-XX-XXX (MS27484P)
** JTNG06RP-XX-XXX

* JTG06RT-XX-XXX (MS27484T)
** JTNG06RT-XX-XXX

* To complete order number see page 42.
** Clear iridite finish (gold color), N_2O_4 resistant; to complete order number see page 42.

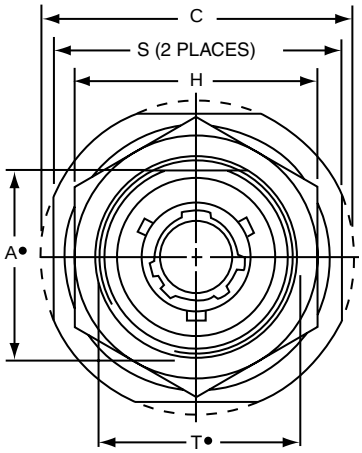
Shell Size	F Dia.	L Max.	L1 Max.	Q Dia Max.	V Thread Modified		KK Dia. Max.	KK1 Dia. Max.
					Class 2A UNEF	Modified Major Dia.		
8	.444	.891	1.000	.734	.4375-28	.421 – .417	.625	.578
10	.558	.891	1.000	.844	.5625-24	.542 – .538	.750	.703
12	.683	.891	1.000	1.016	.6875-24	.667 – .663	.875	.828
14	.808	.891	1.000	1.141	.8125-20	.791 – .787	1.000	.953
16	.909	.891	1.000	1.265	.9375-20	.916 – .912	1.125	1.078
18	1.034	.891	1.000	1.391	1.0625-18	1.034 – 1.030	1.250	1.203
20	1.159	.891	1.000	1.500	1.1875-18	1.158 – 1.154	1.375	1.328
22	1.284	.891	1.000	1.625	1.3125-18	1.283 – 1.279	1.500	1.453
24	1.409	.891	1.062	1.750	1.4375-18	1.408 – 1.404	1.625	1.578

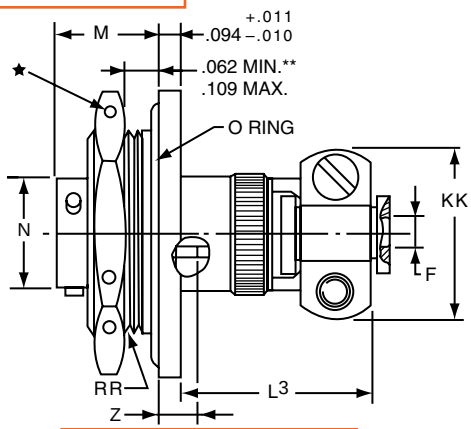
All dimensions for reference only.

PART

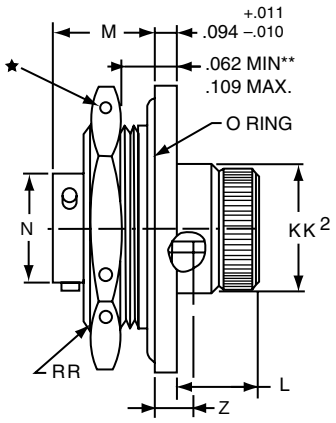
Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)

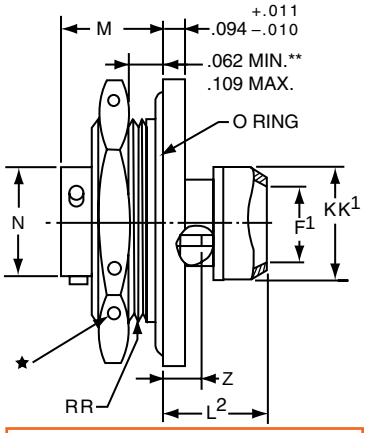




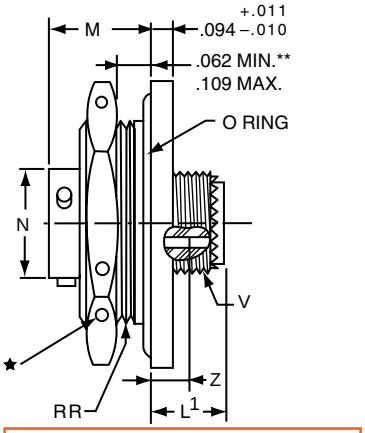
* JT07RE-XX-XXX (SR)
*** JTS07RE-XX-XXX (SR)
**** JTN07RE-XX-XXX (SR)



* JT07RE-XX-XXX (MS27474E)
*** JTS07RE-XX-XXX
**** JTN07RE-XX-XXX



* JT07RP-XX-XXX (MS27474P)
*** JTS07RP-XX-XXX
**** JTN07RP-XX-XXX



* JT07RT-XX-XXX (MS27474T)
*** JTS07RT-XX-XXX
**** JTN07RT-XX-XXX

★ .059 Dia. Min. 3 lockwire holes.
Formed lockwire hole design (6 holes) is optional.
• "D" shaped mounting hole dimensions.
* To complete order number see page 42.
** Panel Thickness
*** High temperature version; to complete order number see page 42.
****Clear iridite finish (gold color), N_2O_4 resistant; to complete order number see page 42.

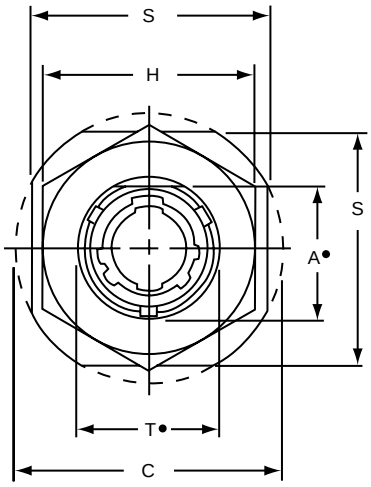
Shell Size	A• +.000 –.010	C Max.	F Dia. +.010 –.025	F¹ Dia.	H Hex +.017 –.016	L Max.	L¹ Max.	L² Max.	L³ Max.	M ±.005	N Dia. +.001 –.005	S ±.016	T• +.010 –.000	V Thread UNEF Class 2A	Z ±.031	KK Max.	KK¹ Dia. Max.	KK² Max.	RR Thread (Plated) Class 2A
8	.830	1.390	.125	.444	1.062	.484	.453	.563	1.047	.438	.473	1.250	.884	.4375-28	.144	.812	.625	.578	.8750-20UNEF
10	.955	1.515	.188	.558	1.188	.484	.453	.563	1.047	.438	.590	1.375	1.007	.5625-24	.144	.875	.750	.703	1.0000-20UNEF
12	1.084	1.640	.312	.683	1.312	.484	.453	.563	1.047	.438	.750	1.500	1.134	.6875-24	.144	1.000	.875	.828	1.1250-18UNEF
14	1.208	1.765	.375	.808	1.438	.484	.453	.563	1.297	.438	.875	1.625	1.259	.8125-20	.144	1.125	1.000	.953	1.2500-18UNEF
16	1.333	1.953	.500	.909	1.562	.484	.453	.563	1.297	.438	1.000	1.781	1.384	.9375-20	.144	1.188	1.125	1.078	1.3750-18UNEF
18	1.459	2.031	.625	1.034	1.688	.484	.453	.563	1.297	.438	1.125	1.890	1.507	1.0625-18	.144	1.438	1.250	1.203	1.5000-18UNEF
20	1.576	2.156	.625	1.159	1.812	.453	.422	.531	1.266	.464	1.250	2.016	1.634	1.1875-18	.188	1.438	1.375	1.328	1.6250-18UNEF
22	1.701	2.280	.750	1.284	2.000	.453	.422	.531	1.391	.464	1.375	2.140	1.759	1.3125-18	.188	1.625	1.500	1.453	1.7500-18UNS
24	1.826	2.405	.800	1.409	2.125	.375	.422	.609	1.391	.464	1.500	2.265	1.884	1.4375-18	.188	1.719	1.625	1.578	1.8750-16UN

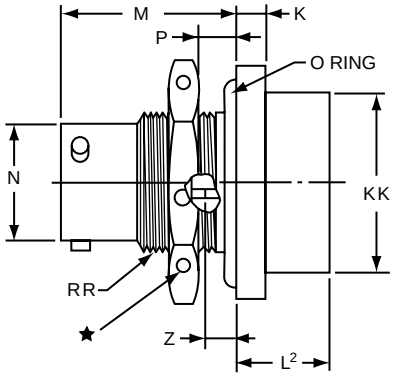
All dimensions for reference only.

PART #

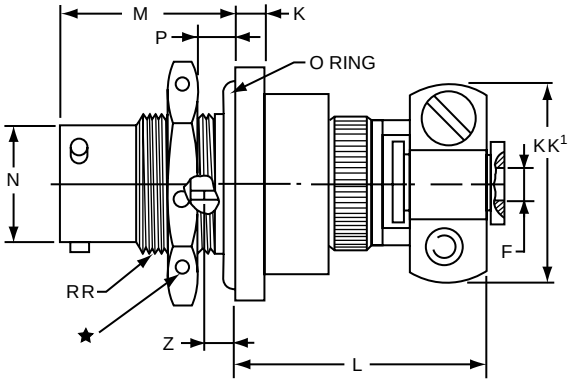
Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)

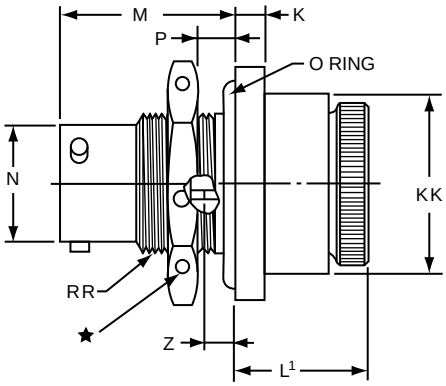




* JTL07RP-XX-XXX
*** JTLS07RP-XX-XXX
**** JTLN07RP-XX-XXX



* JTL07RE-XX-XXX (SR)
*** JTLS07RE-XX-XXX (SR)
**** JTLN07RE-XX-XXX (SR)



* JTL07RE-XX-XXX
*** JTLS07RE-XX-XXX
**** JTLN07RE-XX-XXX

★ .059 Dia. Min. 3 lockwire holes. Formed lockwire hole design (6 holes) is optional.
• "D" shaped mounting hole dimensions.
* To complete order number see page 42.
*** High temperature version; to complete order number see page 42.
****Clear iridite finish (gold color), N_2O_4 resistant; to complete order number see page 42.

Shell Size	A• +.000 –.010	C Max.	F Dia. +.010 –.025	H Hex +.017 –.016	K +.011 –.010	L Max.	L¹ Max.	L² Max.	M ±.005	N Dia. +.001 –.005	P Panel Thickness Min.	P Panel Thickness Max.	S ±.016	T• +.010 –.000	Z ±.026	KK Dia. Max.	KK¹ Max.	RR Thread Class 2A
8	.542	1.077	.125	.750	.125	1.062	.641	.375	.630	.473	.062	.125	.938	.572	.047	.688	.812	.5625-24UNEF
10	.669	1.203	.188	.875	.125	1.062	.641	.375	.630	.590	.062	.125	1.062	.697	.047	.812	.875	.6875-24UNEF
12	.830	1.390	.312	1.062	.125	1.062	.641	.375	.630	.750	.062	.125	1.250	.844	.047	.938	1.000	.8750-20UNEF
14	.955	1.515	.375	1.188	.125	1.062	.641	.375	.630	.875	.062	.125	1.375	1.007	.047	1.062	1.125	1.0000-20UNEF
16	1.084	1.640	.500	1.312	.125	1.062	.641	.375	.630	1.000	.062	.125	1.500	1.134	.047	1.188	1.188	1.1250-18UNEF
18	1.208	1.765	.625	1.438	.125	1.062	.641	.375	.630	1.125	.062	.125	1.625	1.259	.047	1.312	1.438	1.2500-18UNEF
20	1.333	1.953	.625	1.562	.156	1.062	.703	.328	.755	1.250	.062	.250	1.812	1.384	.172	1.469	1.438	1.3750-18UNEF
22	1.459	2.075	.750	1.688	.156	1.062	.703	.328	.755	1.375	.062	.250	1.938	1.507	.172	1.594	1.625	1.5000-18UNEF
24	1.575	2.203	.800	1.812	.156	1.062	.703	.328	.755	1.500	.062	.250	2.062	1.634	.172	1.719	1.719	1.6250-18UNEF

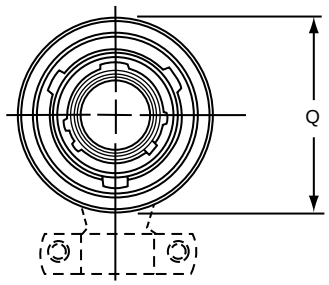
All dimensions for reference only.

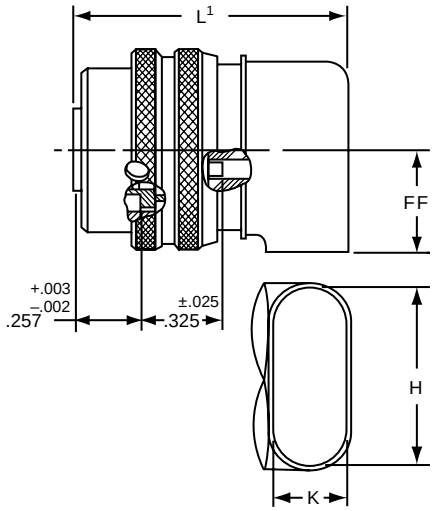
PART

Part number reference. To complete, see how to order pages 42-46.

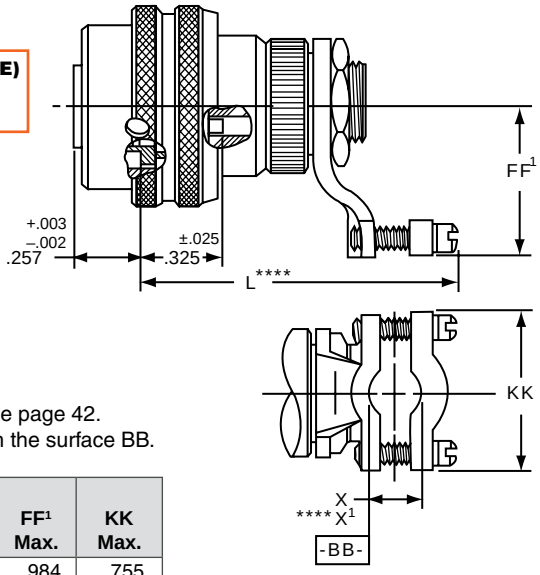
Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)

* JT08RP-XX-XXX
** JTS08RP-XX-XXX
*** JTN08RP-XX-XXX





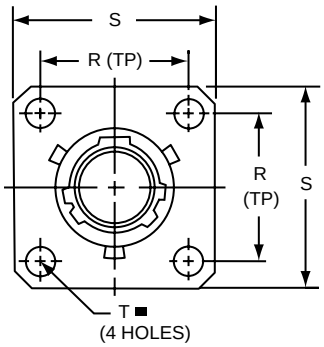
* JT08RE-XX-XXX (MS27500E)
** JTS08RE-XX-XXX
*** JTN08RE-XX-XXX

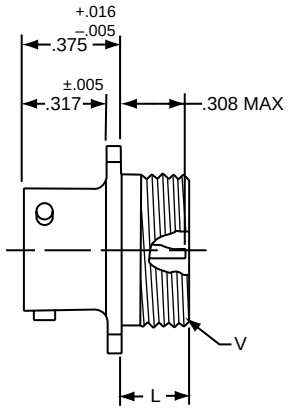


* To complete order number see page 42.
** High temperature version; to complete order number see page 42.
*** Clear iridite finish (gold color), N_2O_4 resistant; to complete order number see page 42.
****Dimensions L and X^1 are applicable when the end of the screw is flush with the surface BB.

Shell Size	H ±.010	K ±.010	L Max.	L^1 Max.	Q Dia. Max.	X Min. Cable	X^1 Max. Cable	FF Max.	FF^1 Max.	KK Max.
8	.547	.156	1.578	1.125	.734	.082	.234	.438	.984	.755
10	.709	.188	1.578	1.156	.844	.082	.234	.516	1.016	.755
12	.829	.281	1.656	1.250	1.016	.114	.328	.594	1.078	.817
14	1.000	.438	1.844	1.406	1.141	.176	.457	.656	1.203	.943
16	1.021	.500	2.000	1.469	1.265	.238	.634	.719	1.265	1.067
18	1.145	.562	2.046	1.531	1.391	.208	.614	.781	1.328	1.149
20	1.270	.625	2.125	1.594	1.500	.302	.608	.844	1.359	1.399
22	1.395	.688	2.250	1.656	1.625	.302	.823	.906	1.421	1.399
24	1.520	.750	2.422	1.797	1.750	.332	.853	.969	1.703	1.587

All dimensions for reference only.





PART #

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)

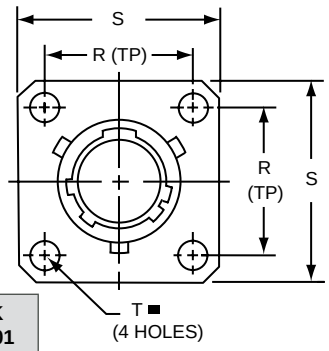
Shell Size	L Max.	N +.001 –.005	R (TP)	S ±.016	T ±.005	V Thread Class 2A
8	.234	.473	.594	.812	.120	.5625-24UNEF
10	.234	.590	.719	.938	.120	.6875-24UNEF
12	.234	.750	.812	1.031	.120	.8125-20UNEF
14	.234	.875	.906	1.125	.120	.9375-20UNEF
16	.234	1.000	.969	1.219	.120	1.0625-18UNEF
18	.234	1.125	1.062	1.312	.120	1.1875-18UNEF
20	.234	1.250	1.156	1.438	.120	1.3125-18UNEF
22	.234	1.375	1.250	1.562	.120	1.4375-18UNEF
24	.313	1.500	1.375	1.688	.147	1.5625-18UNEF

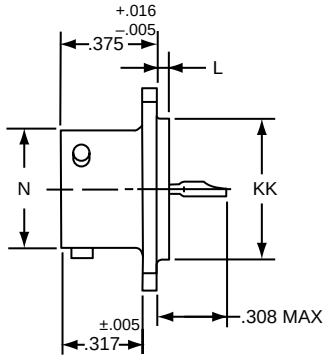
■ ⊕ .005 DIA Ⓜ

* To complete order number see page 42.
** Interfacial seal wafer; to complete order number see page 42.
*** High temperature version, interfacial seal wafer with stainless steel shell; to complete order number see page 42.

*** JT00H-XX-XXX**
**** JT00Y-XX-XXX (MS27475YXXDXXX)**
***** JTS00Y-XX-XXX (MS27482YXXEXXX)**

JT02 (MS27476) Series II – Hermetic
Box Mounting Receptacle





■ ⊕ .005 DIA Ⓜ

* To complete order number see page 42.
** Interfacial seal wafer; to complete order number see page 42.
*** High temperature version, interfacial seal wafer with stainless steel shell; to complete order number see page 42.

Shell Size	L +.006 –.015	N +.001 –.005	R (TP)	S ±.016	T ±.005	KK +.001 –.005
8	.051	.473	.594	.812	.120	.562
10	.051	.590	.719	.938	.120	.672
12	.051	.750	.812	1.031	.120	.781
14	.051	.875	.906	1.125	.120	.906
16	.051	1.000	.969	1.219	.120	1.031
18	.051	1.125	1.062	1.312	.120	1.156
20	.051	1.250	1.156	1.438	.120	1.250
22	.080	1.375	1.250	1.562	.120	1.375
24	.080	1.500	1.375	1.688	.147	1.500

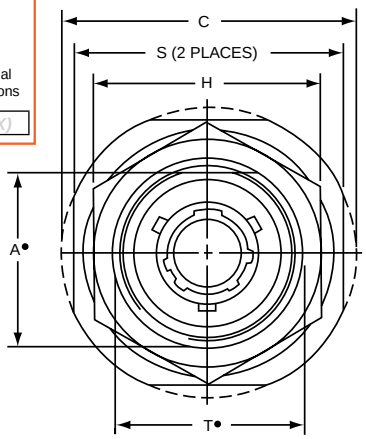
*** JT02H-XX-XXX**
**** JT02Y-XX-XXX (MS27476YXXDXXX)**
***** JTS02Y-XX-XXX (MS27476YXXEXXX)**

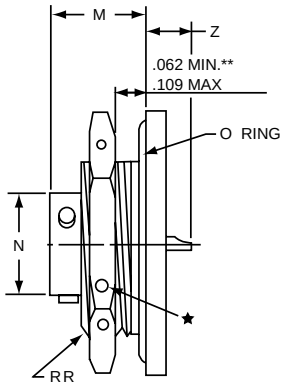
All dimensions for reference only.

PART #

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)





* To complete order number see page 42.
★.059 Dia. Min. 3 lockwire holes. Formed lockwire hole design (6 holes) is optional.
• "D" shaped mounting hole dimensions.
** Panel Thickness
*** Interfacial seal wafer; to complete order number see page 42.
****High temperature version, interfacial seal wafer with stainless steel shell; to complete order number see page 42.

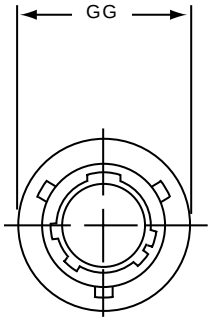
*** JT07H-XX-XXX**
***** JT07Y-XX-XX (MS27477YXXDXXX)**
****** JTS07Y-XX-XXX (MS27483YXXEXXX)**

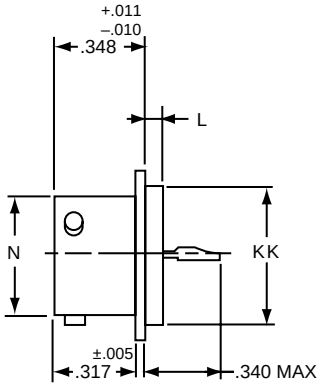
Shell Size	A• +.000 –.010	C Max.	H +.017 –.016	M ±.005	N +.001 –.005	S ±.016	T• +.010 –.000	Z Max.	RR Thread Class 2A
8	.830	1.390	1.062	.438	.473	1.250	.884	.244	.8750-20UNEF
10	.955	1.515	1.188	.438	.590	1.375	1.007	.244	1.0000-20UNEF
12	1.084	1.640	1.312	.438	.750	1.500	1.134	.244	1.1250-18UNEF
14	1.208	1.765	1.438	.438	.875	1.625	1.259	.244	1.2500-18UNEF
16	1.333	1.953	1.562	.438	1.000	1.781	1.384	.244	1.3750-18UNEF
18	1.459	2.031	1.688	.438	1.125	1.890	1.507	.244	1.5000-18UNEF
20	1.576	2.156	1.812	.464	1.250	2.016	1.634	.218	1.6250-18UNEF
22	1.701	2.280	2.000	.464	1.375	2.140	1.759	.218	1.7500-18UNS
24	1.826	2.405	2.125	.464	1.500	2.265	1.884	.218	1.8750-16UN

JTI (MS27478) Series II – Hermetic
Solder Mounting Receptacle

* To complete order number see page 42.
** Interfacial seal wafer; to complete order number see page 42.
*** High temperature version, interfacial seal wafer with stainless steel shell; to complete order number see page 42.

*** JTIH-XX-XXX**
**** JTIY-XX-XX (MS27478YXXDXXX)**
***** JTSIY-XX-XXX (MS27503YXXEXXX)**





Shell Size	L +.011 –.010	N +.001 –.005	GG +.011 –.010	KK +.001 –.005
8	.078	.473	.687	.562
10	.078	.590	.797	.672
12	.078	.750	.906	.781
14	.078	.875	1.031	.906
16	.078	1.000	1.156	1.031
18	.078	1.125	1.281	1.156
20	.078	1.250	1.375	1.250
22	.107	1.375	1.500	1.375
24	.107	1.500	1.625	1.500

All dimensions for reference only.

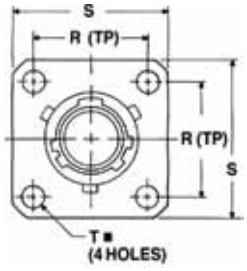
All dimensions for reference only.
Weld mounting hermetic receptacle also available. Consult Amphenol, Sidney, NY for availability and dimensions.

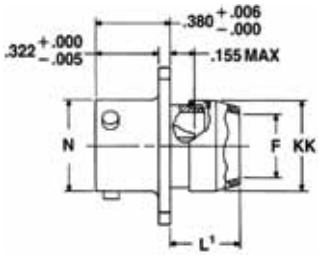
Military qualified to MIL-DTL-27599

PART #

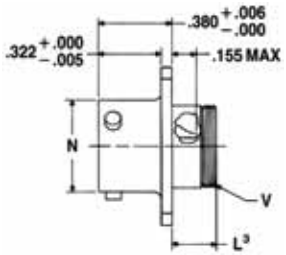
Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
JT/JT	00	RE	22-2	P	A	(XXX)

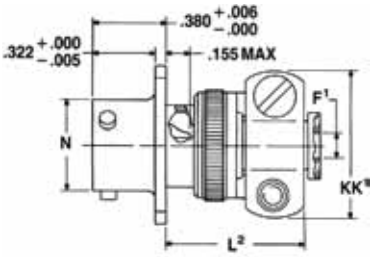




*JT00P-XX-XXX (MS27334P)
*JTN00P-XX-XXX



*JT00A-XX-XXX
*JT00C-XX-XXX (MS27334T)
*JTN00A-XX-XXX
*JTN00C-XX-XXX



*JT00A-XX-XXX(SR)
*JTN00A-XX-XXX(SR)
*JTN00C-XX-XXX(SR)

■ Ⓣ .005 DIA Ⓜ

* To complete order number see page 42.

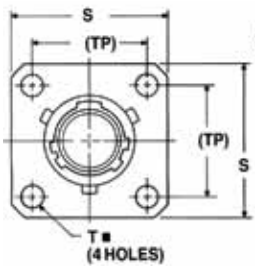
NOTE: For availability of back panel mounting types, consult Amphenol, Sidney, NY.

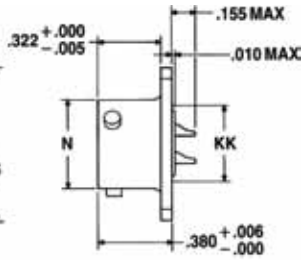
Shell Size	F Dia. Min.	F¹ +.010 –.025	L¹ Max.	L² Max.	L³ Max.	N +.001 –.005	R (TP)	S ±.016	T ±.005	V Thread Modified		KK Dia. Max.	KK¹ Max.
										Size Class 2A	Modified Major Dia.		
8	.312	.125	.422	.734	.234	.473	.594	.812	.120	.4375-28UNEF	.421 - .417	.500	.812
10	.429	.188	.422	.734	.234	.590	.719	.938	.120	.5625-24UNEF	.542 - .538	.625	.875
12	.543	.312	.422	.734	.234	.750	.812	1.031	.120	.6875-24UNEF	.667 - .663	.750	1.000
14	.668	.375	.422	.797	.234	.875	.906	1.125	.120	.8125-20UNEF	.791 - .787	.875	1.125
16	.793	.500	.422	.797	.234	1.000	.969	1.219	.120	.9375-20UNEF	.916 - .912	1.000	1.188
18	.894	.625	.422	.797	.234	1.125	1.062	1.312	.120	1.0625-18UNEF	1.034 - 1.030	1.109	1.438
20	1.019	.625	.422	.859	.234	1.250	1.156	1.438	.120	1.1875-18UNEF	1.158 - 1.154	1.234	1.438
22	1.144	.750	.422	.859	.234	1.375	1.250	1.562	.120	1.3125-18UNEF	1.283 - 1.279	1.359	1.625
24	1.269	.800	.422	.922	.313	1.500	1.375	1.688	.147	1.4375-18UNEF	1.408 - 1.404	1.484	1.719

JT02 (MS27335) Series II – Solder

Military qualified to MIL-DTL-27599

Box Mounting Receptacle





*JT02P-XX-XXX
*JT02A-XX-XXX
*JT02C-XX-XXX (MS27335T)
*JTN02P-XX-XXX
*JTN02A-XX-XXX
*JTN02C-XX-XXX

Ⓣ .005 DIA Ⓜ

* To complete order number see page 42.

NOTE: For availability of back panel mounting types, consult Amphenol, Sidney, NY.

Shell Size	N +.001 –.005	R (TP)	S ± .016	T ± .005	KK Max.
8	.473	.594	.812	.120	.391
10	.590	.719	.938	.120	.508
12	.750	.812	1.031	.120	.622
14	.875	.906	1.125	.120	.749
16	1.000	.969	1.219	.120	.872
18	1.125	1.062	1.312	.120	.976
20	1.250	1.156	1.438	.120	1.101
22	1.375	1.250	1.562	.120	1.226
24	1.500	1.375	1.688	.147	1.351

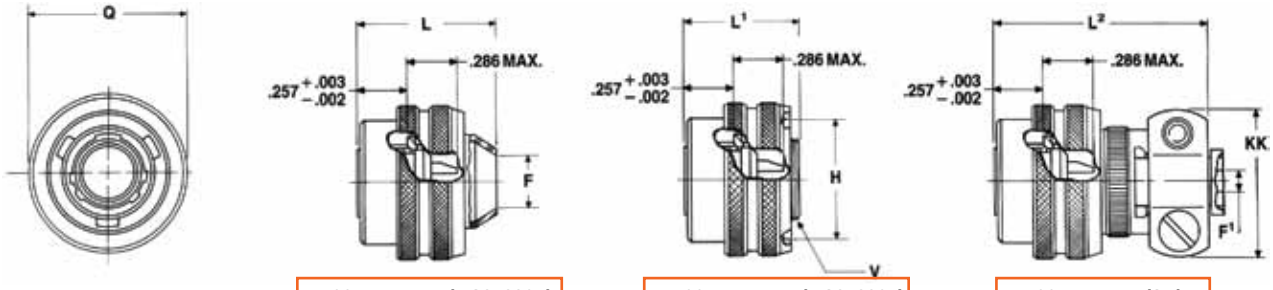
All dimensions for reference only.

PART #

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)

Military qualified to MIL-DTL-27599



*JT06P-XX-XXX (MS27336P)
*JTN06P-XX-XXX

*JT06A-XX-XXX (MS27336T)
*JTN06A-XX-XXX

*JT06A-XX-XXX(SR)
*JTN06A-XX-XXX(SR)

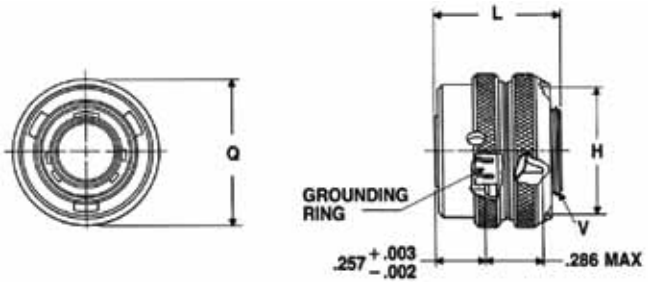
* To complete order number see page 42.

Shell Size	F Min.	F¹ +.010 –.025	H +.010 –.001	L Max.	L¹ Max.	L² Max.	Q Max.	V Thread Modified		KK Max.
								Size Class 2A	Modified Major Dia.	
8	.312	.125	.635	.812	.625	1.109	.734	.4375-28UNEF	.421 - .417	.812
10	.429	.188	.734	.812	.625	1.109	.844	.5625-24UNEF	.542 - .538	.875
12	.543	.312	.870	.812	.625	1.109	1.016	.6875-24UNEF	.667 - .663	1.000
14	.668	.375	.996	.812	.625	1.172	1.141	.8125-20UNEF	.791 - .787	1.125
16	.793	.500	1.122	.828	.625	1.172	1.265	.9375-20UNEF	.916 - .912	1.188
18	.894	.625	1.246	.828	.625	1.172	1.391	1.0625-18UNEF	1.034 - 1.030	1.438
20	1.019	.625	1.372	.828	.625	1.234	1.500	1.1875-18UNEF	1.158 - 1.154	1.438
22	1.144	.750	1.496	.828	.625	1.234	1.625	1.3125-18UNEF	1.283 - 1.279	1.625
24	1.269	.800	1.622	.906	.688	1.297	1.750	1.4375-18UNEF	1.408 - 1.404	1.719

Military qualified to MIL-DTL-27599

JTG06A Series II – Solder

Straight Plug (with grounding ring)



*JTG06A-XX-XXX
**JTNG06A-XX-XXX

* To complete order number see page 42.
** Coupling nut is clear iridite finish (gold color), shell and grounding fingers are gold plated N_2O_4 resistant.

Shell Size	H Dia. +.010 –.001	L Max.	Q Dia. Max.	V Thread Modified	
				Size Class 2A	Modified Major Dia.
8	.635	.625	.734	.4375-28UNEF	.421 - .417
10	.734	.625	.844	.5625-24UNEF	.542 - .538
12	.870	.625	1.016	.6875-24UNEF	.667 - .663
14	.996	.625	1.141	.8125-20UNEF	.791 - .787
16	1.122	.625	1.265	.9375-20UNEF	.916 - .912
18	1.246	.625	1.391	1.0625-18UNEF	1.034 - 1.030
20	1.372	.625	1.500	1.1875-18UNEF	1.158 - 1.154
22	1.496	.625	1.625	1.3125-18UNEF	1.283 - 1.279
24	1.622	.688	1.750	1.4375-18UNEF	1.408 - 1.404

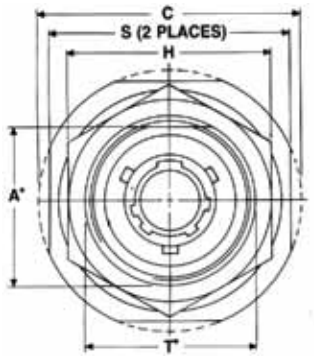
All dimensions for reference only.

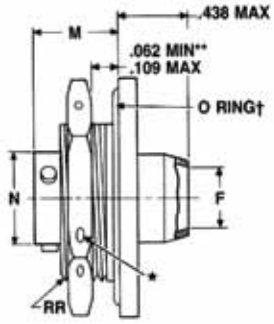
Military qualified to MIL-DTL-27599

PART #

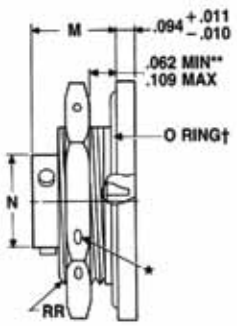
Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)

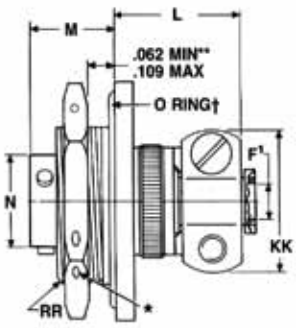




***JT07P-XX-XXX (MS27337P)**
***JTN07P-XX-XXX**



***JT07A-XX-XXX**
***JT07C-XX-XXX**
***JTN07A-XX-XXX**
***JTN07C-XX-XXX**



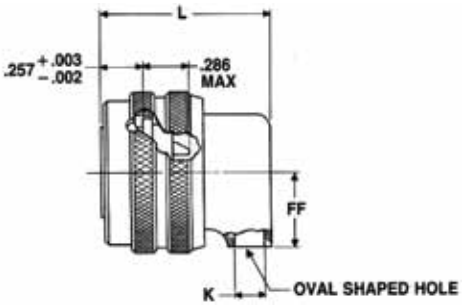
***JT07A-XX-XXX(SR)**
***JTN07A-XX-XXX(SR)**
***JTN07C-XX-XXX(SR)**

★ .059 dia. min. 3 lockwire holes
• "D" shaped mounting hole dimensions.
* To complete order number see page 42.
** Panel thickness
† O Ring not furnished with MS27337

Shell Size	A• +.000 −.010	C Max.	F Min.	F¹ +.010 −.025	H +.017 −.016	L Max.	M ±.005	N +.001 −.005	S ±.016	T• +.010 −.000	KK Max.	RR Thread Class 2A
8	.830	1.390	.312	.125	1.062	.666	.438	.473	1.250	.884	.812	.8750-20UNEF
10	.955	1.515	.429	.188	1.188	.666	.438	.590	1.375	1.007	.875	1.0000-20UNEF
12	1.084	1.640	.543	.312	1.312	.666	.438	.750	1.500	1.134	1.000	1.1250-18UNEF
14	1.208	1.765	.668	.375	1.438	.729	.438	.875	1.625	1.259	1.125	1.2500-18UNEF
16	1.333	1.953	.793	.500	1.562	.729	.438	1.000	1.781	1.384	1.188	1.3750-18UNEF
18	1.459	2.031	.894	.625	1.688	.729	.438	1.125	1.890	1.507	1.438	1.5000-18UNEF
20	1.576	2.156	1.019	.625	1.812	.765	.464	1.250	2.016	1.634	1.438	1.6250-18UNEF
22	1.701	2.280	1.144	.750	2.000	.765	.464	1.375	2.140	1.759	1.625	1.7500-18UNS
24	1.826	2.405	1.269	.800	2.125	.828	.464	1.500	2.265	1.884	1.719	1.8750-16UN

JT08 Series II – Solder
90° Plug

Military qualified to MIL-DTL-27599



***JT08P-XX-XXX**
***JTN08P-XX-XXX**

* To complete order number see page 42.

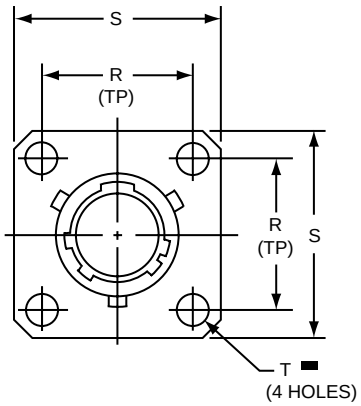
Shell Size	H Min.	K Min.	L Max.	Q Max.	FF Max.
8	.396	.126	.891	.734	.391
10	.532	.141	.906	.844	.438
12	.694	.173	.938	1.016	.516
14	.814	.266	1.031	1.141	.594
16	.985	.423	1.188	1.265	.656
18	1.006	.485	1.250	1.391	.719
20	1.130	.547	1.312	1.500	.781
22	1.255	.610	1.375	1.625	.844
24	1.380	.673	1.516	1.750	.906

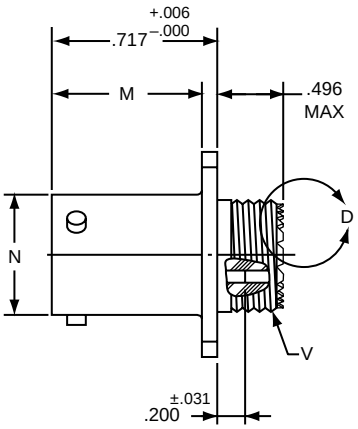
All dimensions for reference only.

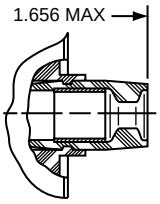
PART

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)







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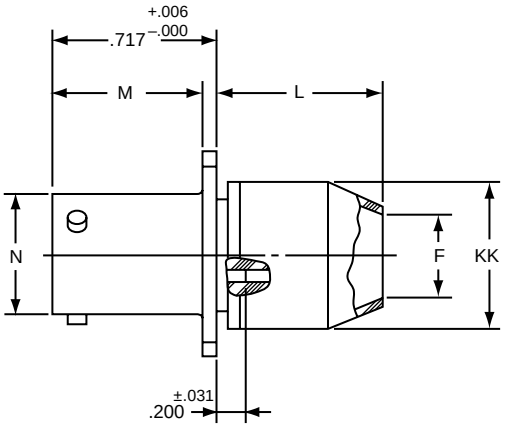
***LJT00RE-XX-XXX (MS27466E)**
***LJT00RT-XX-XXX (MS27466T)**



***LJT00RP-XX-XXX (MS27466P)**

⊕ .005 DIA Ⓜ

* To complete order number see page 42.

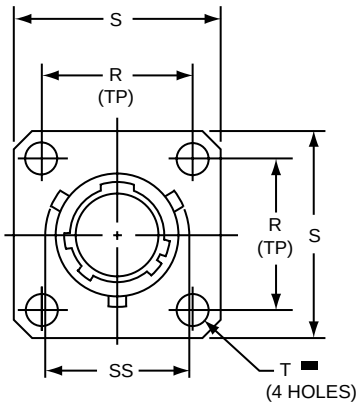
Shell Size	F Dia. ±.010	L Max.	M +.000 −.005	N +.001 −.005	R (TP)	S ±.016	T Dia. ±.005	V Thread Class 2A (Plated)	KK Dia. Max
9	.444	.813	.632	.572	.719	.938	.128	.4375-28 UNEF	.608
11	.558	.813	.632	.700	.812	1.031	.128	.5625-24 UNEF	.734
13	.683	.813	.632	.850	.906	1.125	.128	.6875-24 UNEF	.858
15	.808	.813	.632	.975	.969	1.219	.128	.8125-20 UNEF	.984
17	.909	.813	.632	1.100	1.062	1.312	.128	.9375-20 UNEF	1.110
19	1.034	.813	.632	1.207	1.156	1.438	.128	1.0625-18 UNEF	1.234
21	1.159	.906	.602	1.332	1.250	1.562	.128	1.1875-18 UNEF	1.360
23	1.284	.906	.602	1.457	1.375	1.688	.147	1.3125-18 UNEF	1.484
25	1.409	.906	.602	1.582	1.500	1.812	.147	1.4375-18 UNEF	1.610

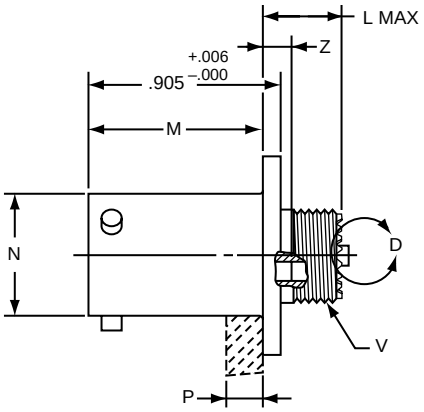
All dimensions for reference only.

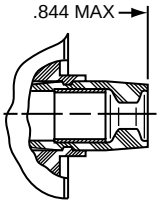
PART

Part number reference. To complete, see how to order pages 42-46.

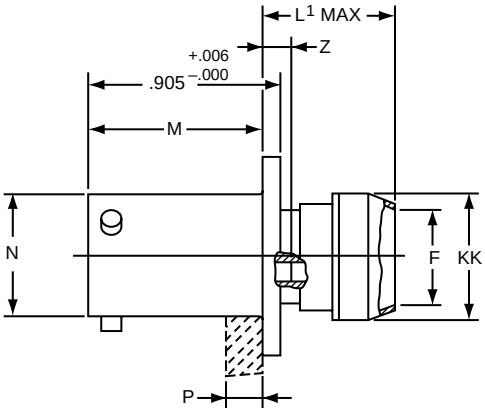
Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)







* **LJTPQ00RE-XX-XXX (MS27656E)**
* **LJTPQ00RT-XX-XXX (MS27656T)**



* **LJTPQ00RP-XX-XXX (MS27656P)**

▬ ⌖ .005 DIA Ⓜ

* To complete order number see page 42.

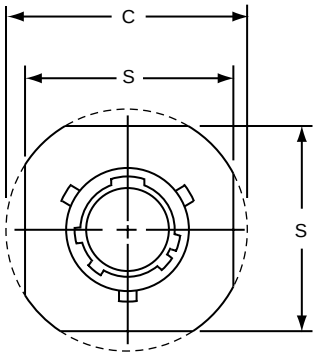
Shell Size	F Dia. ±.010	L Max.	L[1] Max.	M +.000 −.005	N Dia.	P Max. Panel Thickness	R (TP)	S +.011 −.010	T Dia. ±.005	V Thread Class 2A (Plated)	Z Max	KK Dia. Max	SS Dia. +.000 −.016
9	.444	.453	.641	.820	.572	.234	.719	.938	.128	.4375-28 UNEF	.138	.625	.662
11	.558	.453	.641	.820	.700	.234	.812	1.031	.128	.5625-24 UNEF	.138	.750	.810
13	.683	.453	.641	.820	.850	.234	.906	1.125	.128	.6875-24 UNEF	.138	.875	.960
15	.808	.453	.641	.820	.975	.234	.969	1.219	.128	.8125-20 UNEF	.138	1.000	1.085
17	.909	.453	.641	.820	1.100	.234	1.062	1.312	.128	.9375-20 UNEF	.138	1.125	1.210
19	1.034	.453	.641	.820	1.207	.234	1.156	1.438	.128	1.0625-18 UNEF	.138	1.250	1.317
21	1.159	.484	.672	.790	1.332	.204	1.250	1.562	.128	1.1875-18 UNEF	.168	1.375	1.442
23	1.284	.484	.672	.790	1.457	.204	1.375	1.688	.147	1.3125-18 UNEF	.168	1.500	1.567
25	1.409	.484	.672	.790	1.582	.193	1.500	1.812	.147	1.4375-18 UNEF	.168	1.625	1.692

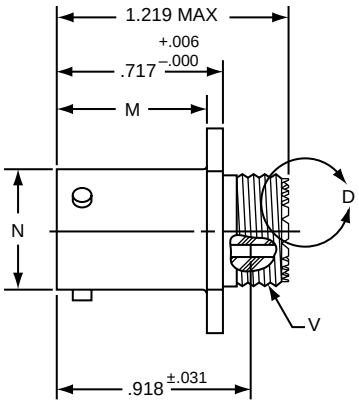
All dimensions for reference only.
Note: MS27656 superseded MS 27515.

PART

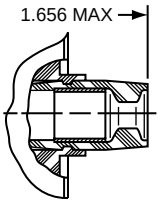
Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)





*** LJT01RE-XX-XXX**
*** LJT01RT-XX-XXX**



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*To complete order number see page 42.

Shell Size	C Max.	M +.000 −.005	N +.001 −.005	S ±.016	V Thread Class 2A (Plated)
9	1.094	.632	.572	.938	.4375-28 UNEF
11	1.188	.632	.700	1.031	.5625-24 UNEF
13	1.281	.632	.850	1.125	.6875-24 UNEF
15	1.375	.632	.975	1.219	.8125-20 UNEF
17	1.469	.632	1.100	1.312	.9375-20 UNEF
19	1.594	.632	1.207	1.438	1.0625-18 UNEF
21	1.719	.602	1.332	1.562	1.1875-18 UNEF
23	1.844	.602	1.457	1.688	1.3125-18 UNEF
25	1.969	.602	1.582	1.812	1.4375-18 UNEF

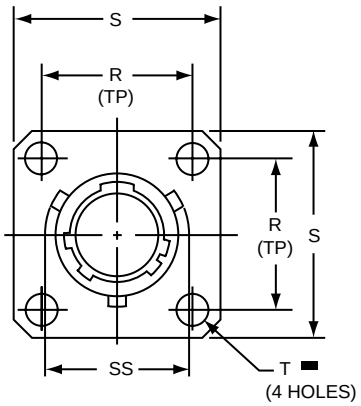
All dimensions for reference only.

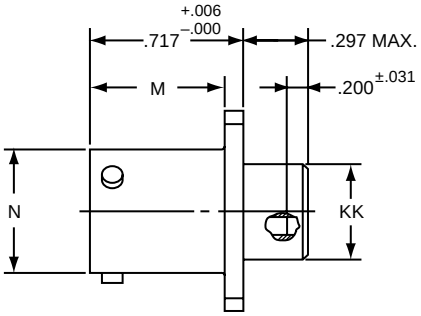
Amphenol Aerospace

PART

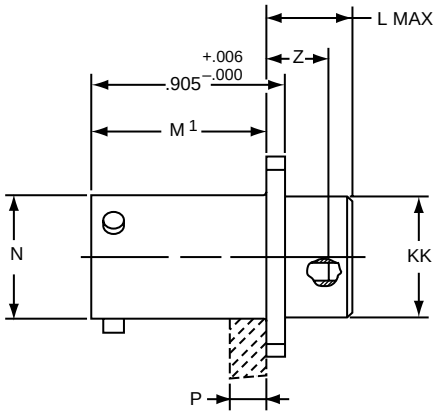
Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)





*** LJT02RE-XX-XXX (MS27496E)**



*** LJTP02RE-XX-XXX (MS27505E)**

■ ⊕ .005 DIA Ⓜ

* To complete order number see page 42.

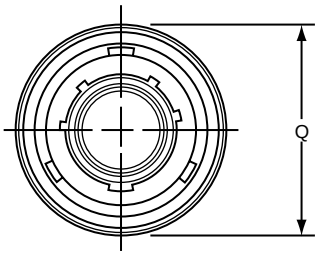
Shell Size	L Max.	M +.000 −.005	M¹ +.001 −.005	N Dia +.001 −.005	P Max. Panel Thickness	R (TP)	S +.011 −.010	T Dia. ±.005	Z ±.031	KK Dia. +.006 −.005	SS Dia. +.000 −.016
9	.203	.632	.820	.572	.234	.719	.938	.128	.107	.433	.662
11	.203	.632	.820	.700	.234	.812	1.031	.128	.107	.557	.810
13	.203	.632	.820	.850	.234	.906	1.125	.128	.107	.676	.960
15	.203	.632	.820	.975	.234	.969	1.219	.128	.107	.801	1.085
17	.203	.632	.820	1.100	.234	1.062	1.312	.128	.107	.926	1.210
19	.203	.632	.820	1.207	.234	1.156	1.438	.128	.107	1.032	1.317
21	.234	.602	.790	1.332	.204	1.250	1.562	.128	.137	1.157	1.442
23	.234	.602	.790	1.457	.204	1.375	1.688	.147	.137	1.282	1.567
25	.234	.602	.790	1.582	.193	1.500	1.812	.147	.137	1.407	1.692

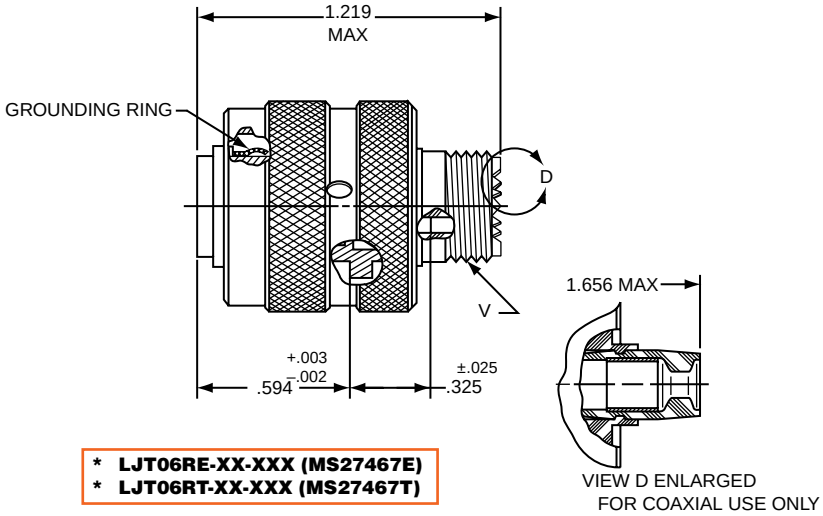
All dimensions for reference only.

PART

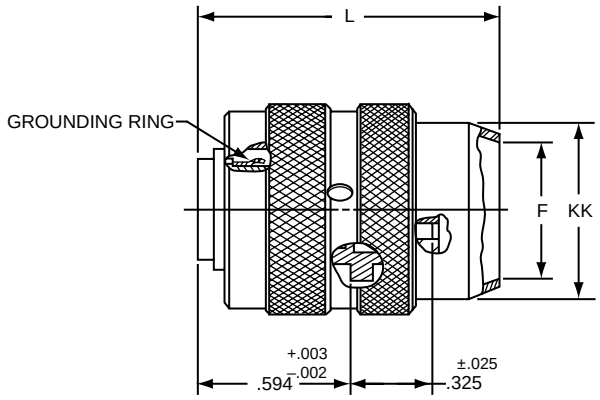
Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)





*** LJT06RE-XX-XXX (MS27467E)**
*** LJT06RT-XX-XXX (MS27467T)**



*** LJT06RP-XX-XXX (MS27467P)**

* To complete order number see page 42.

Shell Size	F Dia. ±.010	L Max.	Q Max.	V Thread Class 2A (Plated)	KK Dia. Max.
9	.444	1.531	.844	.4375-28 UNEF	.608
11	.528	1.531	.969	.5625-24 UNEF	.734
13	.683	1.531	1.141	.6875-24 UNEF	.858
15	.808	1.531	1.266	.8125-20 UNEF	.984
17	.909	1.531	1.391	.9375-20 UNEF	1.110
19	1.034	1.531	1.500	1.0625-18 UNEF	1.234
21	1.159	1.625	1.625	1.1875-18 UNEF	1.360
23	1.284	1.625	1.750	1.3125-18 UNEF	1.484
25	1.409	1.625	1.875	1.4375-18 UNEF	1.610

All dimensions for reference only.

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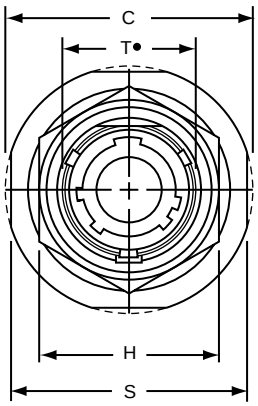
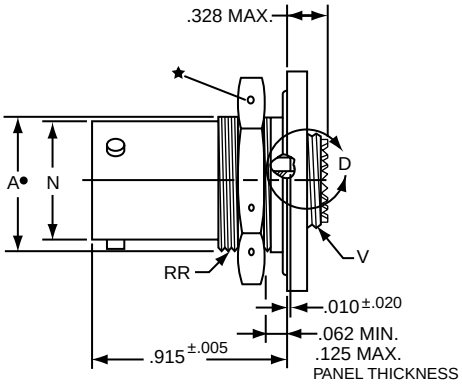
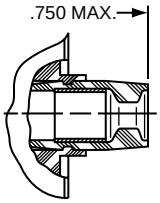
PART #

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)







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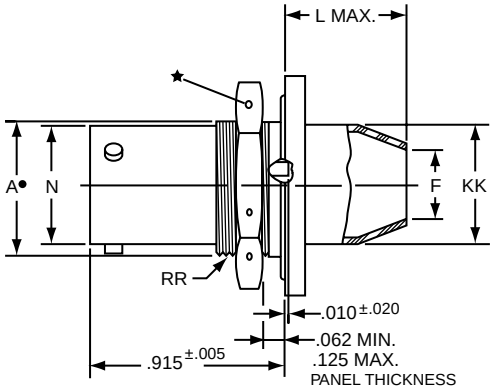
*** LJT07RE-XX-XXX (MS27468E)**
*** LJT07RT-XX-XXX (MS27468T)**



*** LJT07RP-XX-XXX (MS27468P)**

★ .059 Dia. Min. 3 lockwire holes.
Formed lockwire hole design (6 holes) is optional.
• "D" shaped mounting hole dimensions.
* To complete order number see page 42.

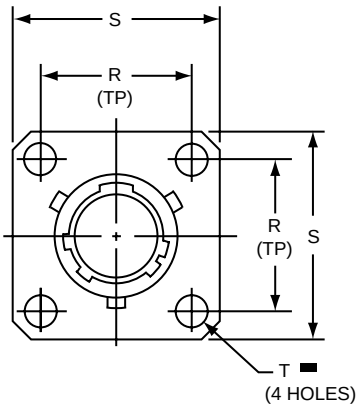
Shell Size	A• +.000 –.010	C Max.	F Dia. ±.010	H Hex +.017 –.016	L Max.	N +.001 –.005	S ±.016	T• +.010 –.000	V Thread Class 2A (Plated)	KK Dia. Max.	RR Thread Class 2A (Plated)
9	.669	1.199	.444	.875	.625	.572	1.062	.697	.4375-28 UNEF	.608	.6875-24 UNEF
11	.769	1.386	.558	1.000	.625	.700	1.250	.822	.5625-24 UNEF	.734	.8125-20 UNEF
13	.955	1.511	.683	1.188	.625	.850	1.375	1.007	.6875-24 UNEF	.858	1.0000-20 UNEF
15	1.084	1.636	.808	1.312	.625	.975	1.500	1.134	.8125-20 UNEF	.984	1.1250-18 UNEF
17	1.208	1.761	.909	1.438	.625	1.100	1.625	1.259	.9375-20 UNEF	1.110	1.2500-18 UNEF
19	1.333	1.949	1.034	1.562	.656	1.207	1.812	1.384	1.0625-18 UNEF	1.234	1.3750-18 UNEF
21	1.459	2.073	1.159	1.688	.750	1.332	1.938	1.507	1.1875-18 UNEF	1.360	1.5000-18 UNEF
23	1.580	2.199	1.284	1.812	.750	1.457	2.062	1.634	1.3125-18 UNEF	1.484	1.6250-18 UNEF
25	1.709	2.323	1.409	2.000	.750	1.582	2.188	1.759	1.4375-18 UNEF	1.610	1.7500-18 UNS

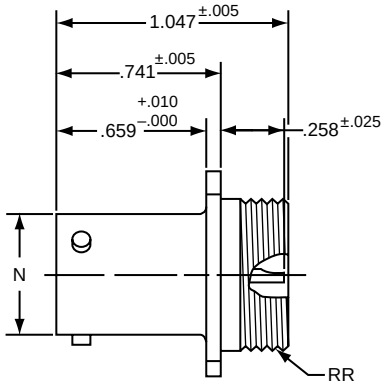
All dimensions for reference only.

PART

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	*00*	*RE*	*22-2*	*P*	*A*	*(XXX)*





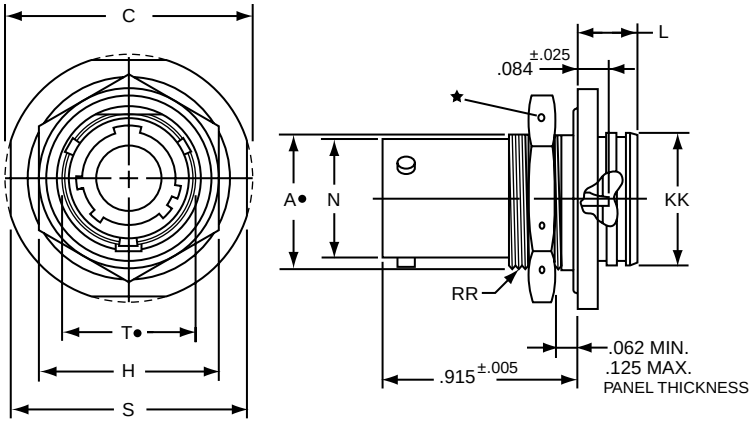
*** LJT00H-XX-XXX**
**** LJT00Y-XX-XXX (MS27469YXXD)**
***** LJTS00Y-XX-XXX (MS27469YXXE)**

⊕ .005 DIA Ⓜ

* To complete order number see page 42.
** Interfacial seal wafer; to complete order number see page 42.
*** High temperature version, interfacial seal wafer with stainless steel shell; to complete order number see page 42.

Shell Size	N Dia. +.001 –.005	R (TP)	S ±.016	T Dia. ±.005	RR Thread Class 2A
9	.572	.719	.938	.128	.6875-24 UNEF
11	.700	.812	1.031	.128	.8125-20 UNEF
13	.850	.906	1.125	.128	.9375-20 UNEF
15	.975	.969	1.219	.128	1.0625-18 UNEF
17	1.100	1.062	1.312	.128	1.1875-18 UNEF
19	1.207	1.156	1.438	.128	1.3125-18 UNEF
21	1.332	1.250	1.562	.128	1.4375-18 UNEF
23	1.457	1.375	1.688	.147	1.5625-18 UNEF
25	1.582	1.500	1.812	.147	1.6875-18 UNEF

All dimensions for reference only.



PART #

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)

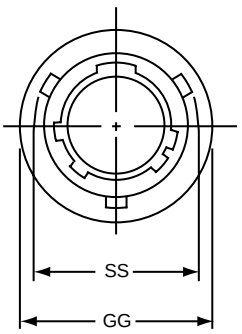
Shell Size	A• +.000 –.010	C Max.	H Hex +.017 –.016	L Max.	N +.000 –.005	S ±.016	T• +.010 –.000	KK +.011 –.000	RR Thread Class 2A (Plated)
9	.669	1.199	.875	.297	.572	1.062	.697	.642	.6875-24 UNEF
11	.769	1.386	1.000	.297	.700	1.250	.822	.766	.8125-20 UNEF
13	.955	1.511	1.188	.297	.850	1.375	1.007	.892	1.0000-20 UNEF
15	1.084	1.636	1.312	.297	.975	1.500	1.134	1.018	1.1250-18 UNEF
17	1.208	1.761	1.438	.297	1.100	1.625	1.259	1.142	1.2500-18 UNEF
19	1.333	1.949	1.562	.328	1.207	1.812	1.384	1.268	1.3750-18 UNEF
21	1.459	2.073	1.688	.328	1.332	1.938	1.507	1.392	1.5000-18 UNEF
23	1.580	2.199	1.812	.328	1.457	2.062	1.634	1.518	1.6250-18 UNEF
25	1.709	2.328	2.000	.328	1.582	2.188	1.759	1.642	1.7500-18 UNS

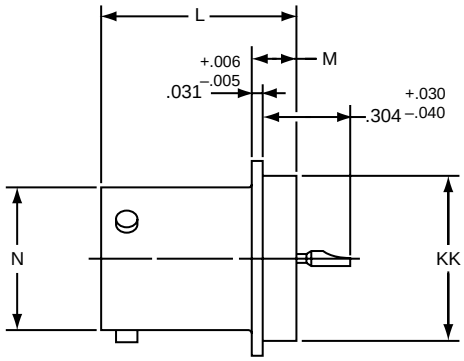
*** LJT07H-XX-XXX**
**** LJT07Y-XX-XXX (MS27470YXXD)**
***** LJTS07Y-XX-XXX (MS27470YXXE)**

★ .059 Dia. Min. 3 lockwire holes. Formed lockwire hole design (6 holes) is optional.
• "D" shaped mounting hole dimensions.
* To complete order number see page 42.
** Interfacial seal wafer; to complete order number see page 42.
*** High temperature version, interfacial seal wafer with stainless steel shell, to complete order number see page 42.

All dimensions for reference only.

LJTI (MS27471) Series I
– Hermetic Solder Mounting Receptacle





* To complete order number see page 42.
** Interfacial seal wafer; to complete order number see page 42.
*** High temperature version, interfacial seal wafer with stainless steel shell; to complete order number see page 42.

Shell Size	N Dia. +.001 –.005	SS Dia. +.000 –.016	L +.011 –.000	M +.006 –.005	GG Dia. +.011 –.010	KK Dia. +.001 –.005
9	.572	.662	.789	.125	.750	.672
11	.700	.810	.789	.125	.844	.781
13	.850	.960	.789	.125	.969	.906
15	.975	1.085	.789	.125	1.094	1.031
17	1.100	1.210	.789	.125	1.218	1.156
19	1.207	1.317	.789	.125	1.312	1.250
21	1.332	1.442	.789	.125	1.438	1.375
23	1.457	1.567	.821	.156	1.563	1.500
25	1.582	1.692	.821	.156	1.688	1.625

*** LJTIH-XX-XXX**
**** LJTIY-XX-XXX (MS27471YXXD)**
***** LJTSIY-XX-XXX (MS27471YXXE)**

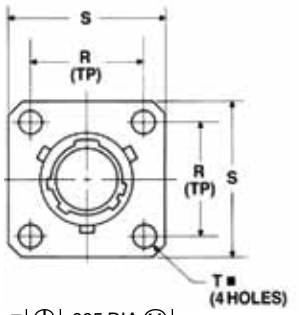
All dimensions for reference only.
Weld mounting hermetic receptacle also available.
Consult Amphenol, Sidney, NY for availability and dimensions.

PART

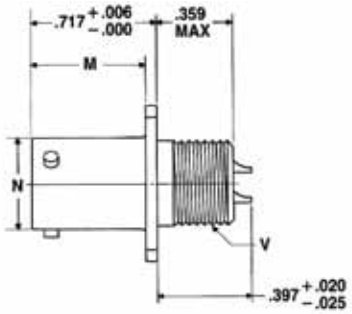
Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)

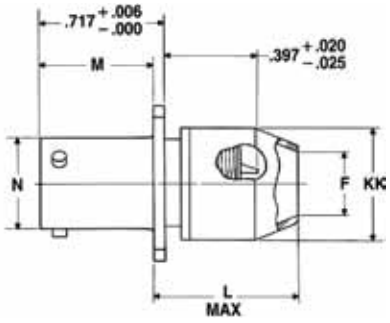
Military qualified to MIL-DTL-27599



■ Ⓣ .005 DIA Ⓜ



*LJT00T-XX-XXX (MS20026T)



*LJT00P-XX-XXX

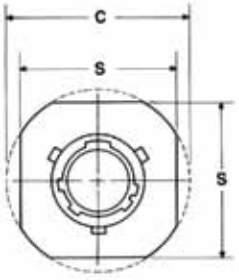
* To complete order number see page 42.

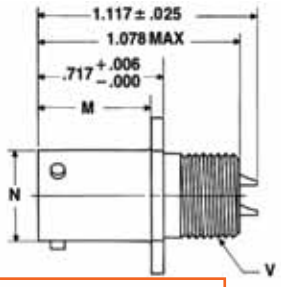
NOTE: For availability of back panel mounting types, check with nearest sales office or call Amphenol, Sidney, NY.

Shell Size	F Dia.	L Max.	M +.000 −.005	N +.001 −.005	R (TP)	S ±.016	T Dia. ±.005	V Thread Class 2A UNEF (Plated)	KK Dia. Max.
9	.327	.625	.632	.572	.719	.938	.128	.4375-28	.608
11	.444	.625	.632	.700	.812	1.031	.128	.5625-24	.734
13	.558	.625	.632	.850	.906	1.125	.128	.6875-24	.858
15	.683	.625	.632	.975	.969	1.219	.128	.8125-20	.984
17	.808	.625	.632	1.100	1.062	1.312	.128	.9375-20	1.110
19	.909	.625	.632	1.207	1.156	1.438	.128	1.0625-18	1.234
21	1.034	.703	.602	1.332	1.250	1.562	.128	1.1875-18	1.360
23	1.159	.703	.602	1.457	1.375	1.688	.147	1.3125-18	1.484
25	1.284	.703	.602	1.582	1.500	1.812	.147	1.4375-18	1.610

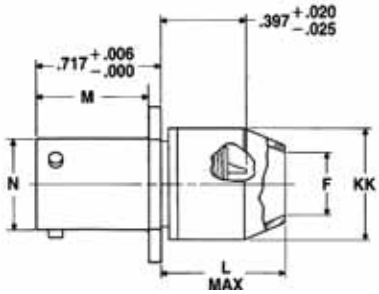
LJT01 (MS20027) Series I – Solder
Line Receptacle

Military qualified to MIL-DTL-27599





*LJT01T-XX-XXX (MS20027T)



*LJT01P-XX-XXX

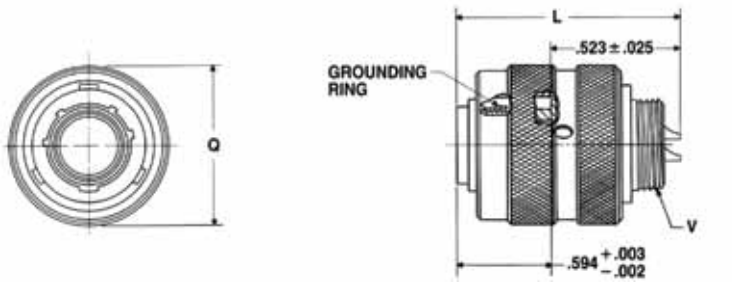
* To complete order number see page 42.

Shell Size	C Max.	F Dia.	L Max.	M +.000 −.005	N +.001 −.005	S ±.016	V Thread Class 2A UNEF (Plated)	KK Dia. Max.
9	1.094	.327	.625	.632	.572	.938	.4375-28	.608
11	1.188	.444	.625	.632	.700	1.031	.5625-24	.734
13	1.281	.558	.625	.632	.850	1.125	.6875-24	.858
15	1.375	.683	.625	.632	.975	1.219	.8125-20	.984
17	1.469	.808	.625	.632	1.100	1.312	.9375-20	1.110
19	1.594	.909	.625	.632	1.207	1.438	1.0625-18	1.234
21	1.719	1.034	.703	.602	1.332	1.562	1.1875-18	1.360
23	1.844	1.159	.703	.602	1.457	1.688	1.3125-18	1.484
25	1.969	1.284	.703	.602	1.582	1.812	1.4375-18	1.610

All dimensions for reference only.

LJT06 (MS20028) Series I – Solder
Straight Plug

Military qualified to MIL-DTL-27599

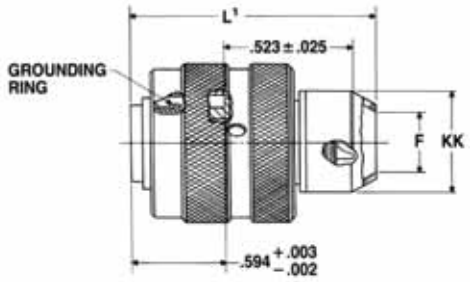


***LJT06T-XX-XXX (MS20028T)**

PART

Part number reference. To complete, see how to order pages 42-46.

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Position	Special Variations
LJT/JT	00	RE	22-2	P	A	(XXX)



***LJT06P-XX-XXX**

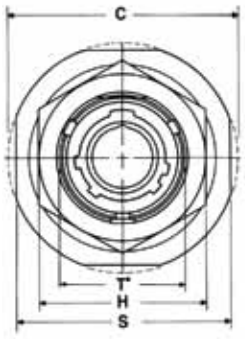
* To complete order number see page 42.

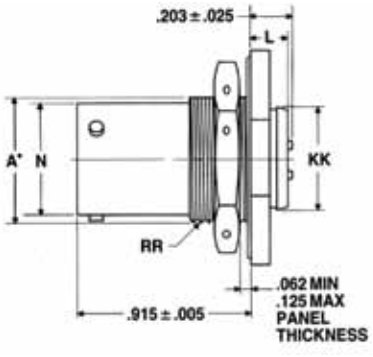
Shell Size	F Dia.	L Max.	L¹ Max.	Q Max.	V Thread Class 2A UNEF (Plated)	KK Dia. Max.
9	.327	1.128	1.488	.844	.4375-28	.608
11	.444	1.128	1.488	.969	.5625-24	.734
13	.558	1.128	1.488	1.141	.6875-24	.858
15	.683	1.128	1.488	1.266	.8125-20	.984
17	.808	1.128	1.488	1.391	.9375-20	1.110
19	.909	1.128	1.488	1.500	1.0625-18	1.234
21	1.034	1.128	1.566	1.625	1.1875-18	1.360
23	1.159	1.128	1.566	1.750	1.3125-18	1.484
25	1.284	1.191	1.644	1.875	1.4375-18	1.610

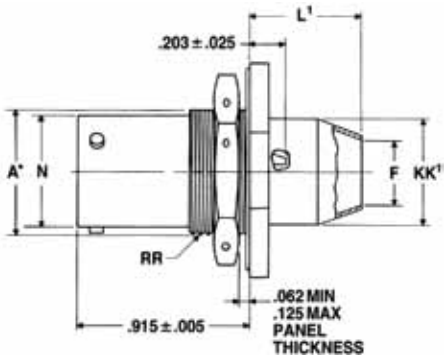
LJT07 (MS20029) Series I – Solder

Military qualified to MIL-DTL-27599

Jam Nut Receptacle







• "D" shaped mounting hole dimensions
* To complete order number see page 42.

***LJT07T-XX-XXX (MS20029T)**

***LJT07P-XX-XXX (MS20029P)**

Shell Size	A• +.000 −.010	C Max.	F Dia.	H Hex +.017 −.016	L Max.	L¹ Max.	N +.001 −.005	S ±.016	T• +.010 −.000	KK +.011 −.000	KK¹ Dia. Max.	RR Thread Class 2A (Plated)
9	.669	1.199	.327	.875	.234	.625	.572	1.062	.697	.516	.608	.6875-24UNEF
11	.769	1.386	.444	1.000	.234	.625	.700	1.250	.822	.642	.734	.8125-20UNEF
13	.955	1.511	.558	1.188	.234	.625	.850	1.375	1.007	.766	.858	1.0000-20UNEF
15	1.084	1.636	.683	1.312	.234	.625	.975	1.500	1.134	.892	.984	1.1250-18UNEF
17	1.208	1.761	.808	1.438	.234	.625	1.100	1.625	1.259	1.018	1.110	1.2500-18UNEF
19	1.333	1.949	.909	1.562	.266	.625	1.207	1.812	1.384	1.142	1.234	1.3750-18UNEF
21	1.459	2.073	1.034	1.688	.266	.656	1.332	1.938	1.507	1.268	1.360	1.5000-18UNEF
23	1.580	2.199	1.159	1.812	.266	.750	1.457	2.062	1.634	1.392	1.484	1.6250-18UNEF
25	1.709	2.323	1.284	2.000	.266	.750	1.582	2.188	1.759	1.518	1.610	1.7500-18UNS

All dimensions for reference only.

Amphenol LJT Breakaway Fail Safe Connectors provide unequaled performance in environments requiring instant disengagement.

Designed to provide quick disconnect of a connector plug and receptacle with an axial pull on the lanyard, the "Breakaway" Fail Safe connector family offers a wide range of electrical and mechanical features:

- Instant decoupling and damage free separation
- Completely intermateable with standard LJT receptacles
- Inventory support commonality through the use of standard insert arrangements and contacts

Breakaway un-mating is initiated by applying a pull force to the lanyard which causes the operating sleeve on the plug to move away from the receptacle. Coupling segments on the plug then move away from the mating receptacle while expanding, thus releasing the receptacle. After completion of the un-mating sequence, spring compression returns the sleeve and segments to their original positions. Un-mating of the plug may also be accomplished by normal rotation of the coupling ring without affecting the breakaway capability.

The LJT Breakaway Fail Safe connector features which provide EMI EMP shielding in excess of MIL-DTL-38999 Series I requirements:

- Solid metal-to-metal coupling
- EMI grounding fingers
- Conductive finishes

Contact Amphenol Aerospace for more information on breakaway, quick-disconnect connectors. Other Amphenol cylindrical families (MIL-DTL-38999 Series III, MIL-DTL-26482, MIL-DTL-83723) also offer breakaway quick-disconnect connectors.

LTJ Breakaway Fail Safe

In addition to standard Breakaway connectors, Amphenol also manufactures custom breakaway connectors including those with:

- Increased pull-force capability
- Custom lanyard lengths and backshells
- Low force separation capabilities
- Low insertion/separation force contacts
- Non-cadmium finishes
- Custom JT Series Breakaway designs have been developed for special applications; however the LJT Series is recommended over the JT Series for the quick-disconnect breakaway style.

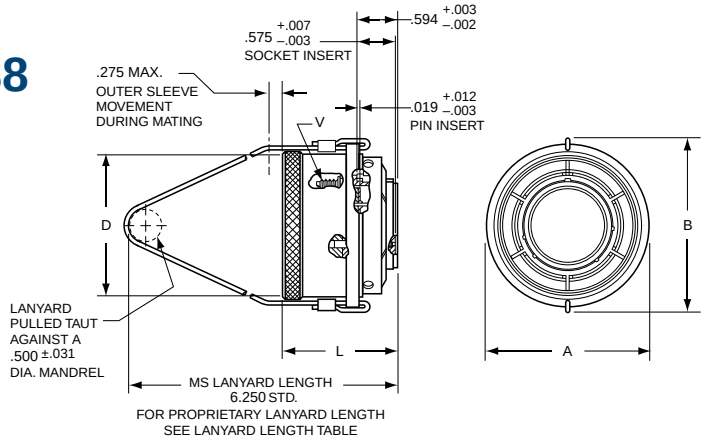
LJT Fail Safe 88-5388/91-5388 (MS27661)

Lanyard Release Plug

* To complete order number see page 74.

Shell Size	A Dia. Max.	B Max.	D Max. Accessory Dia.	L Max.	V Thread UNEF Class 2A (Plated)
11	1.393	1.797	.740	1.703	.5625-24
13	1.558	1.969	.926	1.703	.6875-24
15	1.669	2.078	1.051	1.703	.8125-20
17	1.797	2.203	1.176	1.703	.9375-20
19	1.926	2.323	1.300	1.703	1.0625-18
21	2.054	2.469	1.426	1.703	1.1875-18
23	2.183	2.594	1.551	1.703	1.3125-18
25	2.293	2.703	1.676	1.766	1.4375-18

All dimensions for reference only.



INSERT AVAILABILITY

Shell Size / Insert Arrangement	Service Rating	Total Contacts	Contact Size						
			22D	20	16	12	12 Coax	8 Coax*	8 Twinax
11-2	I	2			2				
11-35	M	13	13						
11-98	I	6		6					
13-4	I	4			4				
13-8	I	8		8					
13-35	M	22	22						
13-98	I	10		10					
15-5	II	5			5				
15-15	I	15		14	1				
15-18	I	18		18					
15-19	I	19		19					
15-35	M	37	37						
15-97	I	12		8	4				
17-6	I	6				6			
17-8	II	8			8				
17-26	I	26		26					
17-35	M	55	55						
17-99	I	23		21	2				
19-11	II	11			11				
19-32	I	32		32					
19-35	M	66	66						
21-11	I	11				11			
21-16	II	16			16				
21-35	M	79	79						
21-39	I	39		37	2				
21-41	I	41		41					
23-21	II	21			21				
23-35	M	100	100						
23-53	I	53		53					
23-54	M	53	40		9	4			
23-55	I	55		55					
25-4	I	56		48	8				
25-19	I	19				19			
25-20	N	30		10	13		4		3
25-24	I	24			12	12			
25-29	I	29			29				
25-35	M	128	128						
25-43	I	43		23	20				
25-46	I	46		40	4			2*	
25-61	I	61		61					

LJT Lanyard Separation Forces		
Shell Size	Straight Plug (lbs. max.)	15 Degree Pull (lbs. Max.)
11 13 15	45	55
17 19 21 23 25	90	100

* For RG 180/U and RG 195/U cables only. (Check Amphenol Aerospace, Sidney, NY for other cable applications). For availability of other insert arrangements and accessories consult Amphenol Aerospace.

TABLE I
INSERT ARRANGEMENT CODE

Basic Part Number	MIL-DTL-38999 Insert Arrangement
88/91-538808	11-2
06	11-35
07	11-98
10	13-4
11	13-8
13	13-98
14	13-35
18	15-5
23	15-15
22	15-18
19	15-19
20	15-35
27	17-6
28	17-8
29	17-26
30	17-35
31	17-99
37	19-11
39	19-32
40	19-35
47	21-11
48	21-16
49	21-35
50	21-41
51	21-39
57	23-21
58	23-35
59	23-53
61	23-54
60	23-55
66	25-19
74	25-20
67	25-29
68	25-35
69	25-43
70	25-61
71	25-4
72	25-24

TABLE II
LANYARD LENGTH CODES

Lanyard Length (in.) ±.250	MS	Commercial Code
4.000		40
4.250		41
4.500		42
4.750		43
5.000		50
5.250		51
5.500		52
5.750		53
6.000	No	60
6.250	Code	61
6.500		62
6.750	Std.	63
7.000	Length	70
7.250	6.250	71
7.500		72
7.750		73
8.000		80
8.250		81
8.500		82
8.750		83
9.000		90
9.250		91
9.500		92
9.750		93

HOW TO ORDER - BY MILITARY PART NUMBER FAIL SAFE MS27661

1. MS Number	2. Service Class	3. Shell Size	4. Finish	5. Insert Arrg.	6. Contact Style	7. Alternate Position
MS27661	T	17	B	35	P	A

1. MS27661 Number

MS Number designates MIL-DTL-38999, Series I LJT Lanyard Release Plug

2. Select a Service Class

E	For environmental crimp applications (inactive for new design)
T	For environmental crimp applications with serrations on rear threads of shell

3. Select a Shell Size

MIL-DTL-38999, sizes 11 through 25, see chart on page 73.

4. Select a Finish

B	Designates corrosion resistant olive drab cadmium plated aluminum, 500 hour extended salt spray, EMI shielding effectiveness –50dB @ 10 GHz specification min., 175°C
F	Designates electroless nickel plated aluminum, 48 hour salt spray, EMI shielding effectiveness –65dB @10 GHz500 specification min., 200°C

These are standard finishes. Consult Amphenol Aerospace for variations.

5. Select an Insert Arrangement

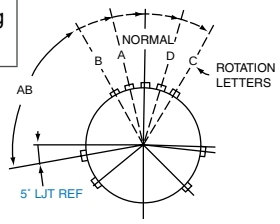
MIL-DTL-38999, see insert identification chart on page 73.

6. Select a Contact Style

P	Designates Lanyard Release plug with pin contacts
S	Designates Lanyard Release plug with socket contacts

7. Alternate Keying Position

For alternate Position of connector (to prevent cross-mating) see LJT key/keyway rotation below. (No letter is required for normal)



RELATIVE POSSIBLE POSITION OF ROTATED MASTER KEYWAY (front face of receptacle shown)

LJT Key/Keyway Rotation

AB ANGLE OF ROTATION (Degrees)					
Shell Size	Normal	A	B	C	D
9	95°	77°	-	-	113°
11	95°	81°	67°	123°	109°
13	95°	75°	63°	127°	115°
15	95°	74°	61°	129°	116°
17	95°	77°	65°	125°	113°
19	95°	77°	65°	125°	113°
21	95°	77°	65°	125°	113°
23	95°	80°	69°	121°	110°
25	95°	80°	69°	121°	110°

HOW TO ORDER - BY COMMERCIAL PART NUMBER FAIL SAFE 88-5388 OR 91-5388

1. Finish	2. Connector Type Identification	3. Shell Size & Insert Arrangement	4. Lanyard Length Code	5. Contact Type Alternate Rotation of Insert
88	5388	29	40	P

1. Select a Finish

88	Designates corrosion resistant olive drab cadmium plate over nickel, 500 hour extended salt spray, EMI –50dB @ 10 GHz specification min., 175°C
91	Designates electroless nickel plated aluminum, optimum EMI shielding effectiveness –65dB @ 10 GHz specification min., 48 hour salt spray, 200°C

These are standard finishes. Consult Amphenol Aerospace, Sidney, NY for variations.

2. Connector Type Identification

5388	Designates MIL-DTL-38999, Series I LJT Lanyard Release Plug

3. Select a Shell Size and Insert Arrangement

Shell sizes are MIL-DTL-38999, Series III from sizes 11 thru 25. The basic part number selected specifies the insert arrangement. See Table I (page 73) for coded part number that correlates to insert arrangement.

4. Select a Lanyard Length Code

See Table II (page 73) for lanyard length code number.

5. Select a Contact Type/Alternate Rotation of Insert

P	Designates Lanyard Release plug with pin contacts
S	Designates Lanyard Release plug with socket contacts

When an alternate position of the connector is required to prevent cross-mating, a different letter (other than P or S) is used. See alternate positioning for LJT (to your left), then convert to Amphenol commercial coding by the following chart below.

Pin Contacts		Socket Contacts	
MS Letter	Amphenol Letter	MS Letter	Amphenol Letter
P	P (normal)	S	S (normal)
PA	E	SA	F
PB	R	SB	T
PC	W	SC	X
PD	Y	SD	Z

Amphenol® SJT connectors combine unique design features of the scoop-proof LJT series within standard mounting dimensions of JT types. Available in a wide range of shell sizes, finishes, insert arrangements and accessories, the SJT features:

- **100% scoop-proof design –** basic MIL-DTL-38999 Series I* lengths
- **Standard mounting dimensions –** MIL-DTL-38999, Series III** dimensions
- **Compliance with European Specifications –** PAN6433-2, LN29729, VG96912

SJT

Components

Shell components are aluminum. Standard plating on shell components is cadmium over nickel with many optional finishes available. Hermetic seal receptacles are available in carbon steel or stainless steel shells. Dependable 5 key/keyway shell polarization with bayonet lock coupling is incorporated to aid and assure positive mating. Insert material is a high temperature, rigid dielectric polymer providing excellent electrical characteristics. Contrasting letter or number designations are used on insert faces. A fluorinated silicone interfacial seal is featured on the mating face of pin inserts, assuring complete electrical isolation of pins when connector halves are mated. In addition, a main joint gasket is installed in the receptacles for moisture sealing between connector halves. Serrated and threaded shells with moisture sealing pilot for back shells accept a wide range of accessories.

Contacts

Standard contact plating is 50 micro inches minimum gold. Power contacts are available in sizes 10, 12, 16, 20, 22, 22M and 22D. Size 8 and 12 Twinax contacts are also available. Concentric Twinax contact information is available in Amphenol brochure 12-130. All socket contacts are probe proof. Rear insertable/rear release crimp contacts are standard in SJT connectors. High density insert patterns are available. Coaxial contacts are available in sizes 8, 12 and 16 to accommodate a wide range of coaxial cables. For complete information see Coaxial Contact catalog 12-130 online at www.amphenol-aerospace.com/contacts.asp

Optional Features

Special adaptations of the SJT are available for hermetic and high temperature applications. The SJTS high temperature connector is rated at 392°F. SJT hermetic receptacles are described on pages 83 and 84.

Specials

Special types are available, such as connectors less contacts, and circular rack and panel connectors with solderless wrap contacts. A complete listing of connector types, shell styles and service classes appears on page 76, How to Order. For further information on special application requirements, contact Sidney N.Y.

*MIL-DTL-38999 Series I supersedes MIL-C-38999 Series I.
**MIL-DTL-38999 Series III supersedes MIL-C-38999 Series III.

CONTACT RATING

Contact Size	Test Current		Maximum Millivolt Drop Crimp*	Maximum Millivolt Drop Hermetic
	Standard	Hermetic		
22M	3	2	45	60
22D	5	3	73	85
22	5	3	73	85
20	7.5	5	55	60
16	13	10	49	85
12	23	17	42	85
10 Power	33	NA	33	NA

* When using silver plated wire

Contact Size	Crimp Well Data	
	Well Diameter	Min. Well Depth
22M	.028 ±.001	.141
22D	.0345 ±.0010	.141
22	.0365 ±.0010	.141
20	.047 ±.001	.209
16	.067 ±.001	.209
12	.100 ±.002	.209
10 (Power)	.137 ±.002	.355

SERVICE RATING**

Service Rating	Suggested Operating Voltage (Sea Level)		Test Voltage (Sea Level)	Test Voltage 50,000 Ft.	Test Voltage 70,000 Ft.	Test Voltage 110,000 Ft.
	AC (RMS)	DC				
M	400	550	1300 VRMS	550 VRMS	350 VRMS	200 VRMS
N	300	450	1000 VRMS	400 VRMS	260 VRMS	200 VRMS
I	600	850	1800 VRMS	600 VRMS	400 VRMS	200 VRMS
II	900	1250	2300 VRMS	800 VRMS	500 VRMS	200 VRMS

** Please note that the establishment of electrical safety factors is left entirely in the designer's hands, since he is in the best possible position to know what peak voltage, switching surges, transients, etc., can be expected in a particular circuit.

Easy Steps to build a part number... SJT

1.	2.	3.	4.	5.	6.	7.
Connector Type SJT	Shell Style	Service Class	Shell Size-Insert Arrangement.	Contact Type	Alternate Positions	Finish Variations Suffix
SJT	00	RT	18-66	P	A	(XXX)

Step 1. Select a Connector Type

	Designates
SJT	Standard scoop-proof Junior Tri-Lock Connector
SJTS	High Temperature Connector
SJTG	Plug with Grounding Fingers
SJTP	Back Panel Mounted

Step 2. Select a Shell Style

	Designates
00	Wall Mount Receptacle
06	Straight Plug
07	Jam Nut Receptacle
I	Solder Mount Receptacle – Hermetic

Step 3. Select a Service Class

	Designates
Y	For hermetic applications. . . Fused compression glass sealed inserts. Leakage rate less than 1.0 x 10^{-6} cc/sec. at 15 psi differential; with interfacial seal.
RT	For environmental applications – supplied without rear accessories. Design provides serrations on rear threads of shells with moisture sealing pilot for back shells.

For additional information defining complete description of service class, consult Amphenol, Sidney, NY.

Step 4. Select a Shell Size & Insert Arrangement from chart on pg. 77. To view Insert Arrangement illustrations see pgs. 8-12.

Shell Size & Insert Arrangements are together in one chart. First number represents Shell Size, second number is the Insert Arrangement. Only selected illustrations are available for SJT on pages 8-12

Step 5. Select a Contact Type

	Designates
P	Pin Contacts
S	Socket Contacts

Step 6. Select an Alternate Positions

SJT ALTERNATE ROTATIONS

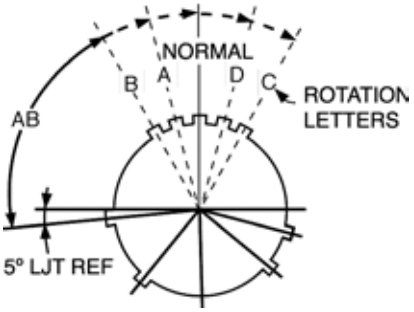
A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The AB angle for a given connector is the same whether it contains pins or sockets. Inserts are not rotated in conjunction with the master key/keyway.

AB angles shown are viewed from the front face of the connector. A receptacle is shown at right. The angles for the plug are exactly the same, except the direction of rotation is opposite of that shown for the receptacle.

Master Key/Keyway Rotation

Table 1: AB ANGLE OF ROTATION (Degrees)

Shell Size	Normal	A	B	C	D
8	95				
10	95	81	67	123	109
12	95	75	63	127	115
14	95	74	61	129	116
16	95	77	65	125	113
18	95	77	65	125	113
20	95	77	65	125	113
22	95	80	69	121	110
24	95	80	69	121	110



RELATIVE POSSIBLE POSITION OF ROTATED MASTER KEYWAY (front face of receptacle shown)

Step 7. Select a Finish Variation Suffix

FINISH DATA

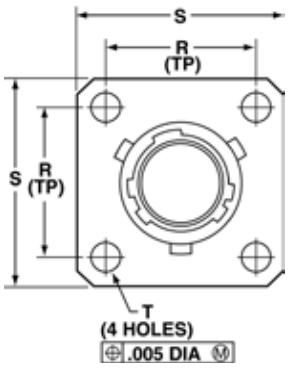
Aluminum Shell Components Non-Hermetic		
Finish	Suffix	Indicated Finish Standard for SJT Types
Bright Cadmium Plated Nickel Base		SJT/SJTG
Anodic Coating (Alumilite)	(005)	
Chromate Treated (Iridite 14-2)	(011)	
Olive Drab Cadmium Plate Nickel Base	(014)	
Electroless Nickel Coating	(023)	
Hermetic Connectors		
Carbon Steel Shell, Tin Plated Shell and Contacts		SJT( )Y
Stainless Steel Shell, Gold Plated Contacts	Consult Sidney, NY	

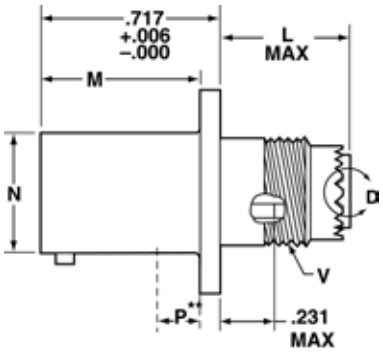
Shell Size	Crimp	Hermetics* Class Y	Service Rating	Total Contacts	Contact Size									
					22D	22M	22	20	16	12	12 (Coax)	10 (Power)	8 (Coax)	8††† (Twinax)
8-6	X		M	6		6								
8-35	X		M	6	6									
8-44	X		M	4			4							
8-98	X		I	3				3						
10-2	X		I	2					2					
10-4	✦		I	4				4						
10-5	X		I	5				5						
10-13	X		M	13		13								
10-35	X		M	13	13									
10-98	X		I	6				6						
12-4	X		I	4					4					
12-8	X		I	8				8						
12-22	X		M	22		22								
12-35	X		M	22	22									
12-98	X	X	I	10				10						
14-5	X		II	5					5					
14-15	X		I	15				14	1					
14-18	X		I	18				18						
14-19	X	X	I	19				19						
14-35	X	X	M	37	37									
14-37	X	X	M	37		37								
14-97	X		I	12				8	4					
16-2	✦		M	39	38									1**
16-6	X		I	6						6				
16-8	X		II	8					8					
16-13	✦		I	13					13					
16-26	X		I	26				26						
16-35	X		M	55	55									
16-42	X		M	42			42							
16-55	X		M	55		55								
16-99	X	X	I	23				21	2					
18-11	X		II	11					11					
18-32	X		I	32				32						
18-35	X	X	M	66	66									
18-66	X	X	M	66		66								
20-1	X	X	M	79		79								
20-2	X		M	65			65							
20-11	X		I	11						11				
20-16	X		II	16					16					
20-35	X	X	M	79	79									
20-39	X		I	39				37	2					
20-41	X		I	41				41						
20-75	✦		M	4									4††	
20-79	✦		II	19	17								2†	
22-1	X	X	M	100		100								
22-2	X		M	85			85							
22-21	X		II	21					21					
22-35	X	X	M	100	100									
22-53	X		I	53				53						
24-1	X		M	128		128								
24-2	X		M	100			100							
24-4	X		I	56				48	8					
24-7	X		M	99	97									2**
24-11	✦		N	11				2				9		
24-19	X		I	19						19				
24-20	✦		N	30				10	13***		4			3
24-24	X		I	24					12	12				
24-29	X		I	29					29					
24-35	X		M	128	128									
24-37	X		I	37					37					
24-43	✦		I	43				23	20					
24-46	✦		I	46				40	4				2††	
24-61	X		I	61				61						

✦ Not tooled for 02-RE
* Pin inserts only (contact Sidney, NY for socket availability).
** twinax contacts for MIL-C-17/176-00002 cable.
*** Two size 16 contacts dedicated to fiber optics. Consult Sidney, NY or Catalog Section 12-352 for fiber optic information.

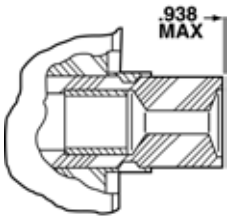
† Must be ordered separately
†† Coax Contacts for RG180 or RG195 cable.
††† Size 8 Coax and Twinax are interchangeable.
For availability of size 12 twinax contacts, consult Amphenol, Sidney, NY

PART #	Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Positions	Special Variations
*To complete, see how to order pages 76-77.	SJT	00	RT	X-X	X	X	(XXX)





*SJT00RT



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** Standard wall mount may be back panel mounted where panel thickness does not exceed these dimensions. For thicker panel applications, SJTP00RT should be used, page 79.

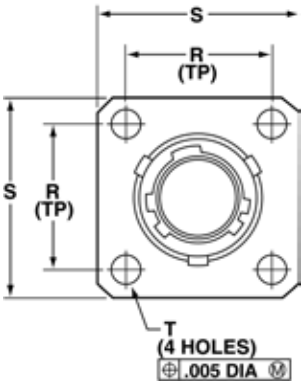
Shell Size	L Max	M +.000 –.005	R (TP)	S ±.016	T ±.005	V Thread Modified Class 2A UNEF (Plated)	V Thread Modified Modified Major Dia.		N +.001 –.005	P** Max
8	.500	.632	.594	.812	.120	.4375-28	.421 –	.417	.473	.117
10	.500	.632	.719	.938	.120	.5625-24	.542 –	.538	.590	.117
12	.500	.632	.812	1.031	.120	.6875-24	.667 –	.663	.750	.117
14	.500	.632	.906	1.125	.120	.8125-20	.791 –	.787	.875	.117
16	.500	.632	.969	1.219	.120	.9375-20	.916 –	.912	1.000	.117
18	.500	.632	1.062	1.312	.120	1.0625-18	1.034 –	1.030	1.125	.117
20	.500	.602	1.156	1.438	.120	1.1875-18	1.158 –	1.154	1.250	.087
22	.500	.602	1.250	1.562	.120	1.3125-18	1.283 –	1.279	1.375	.087
24	.550	.602	1.375	1.688	.147	1.4375-18	1.408 –	1.404	1.500	.055

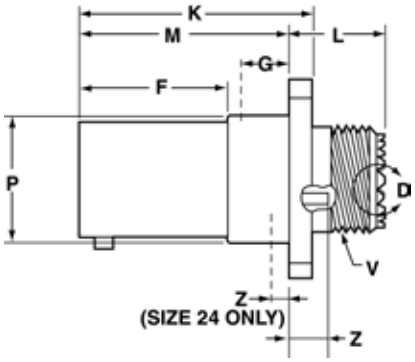
All dimensions for reference only.

PART #

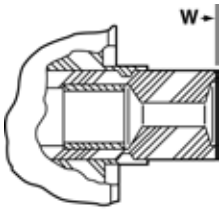
Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Positions	Special Variations
SJTP	00	RT	X-X	X	X	(XXX)

***To complete, see how to order pages 76-77.**





***SJTP00RT**



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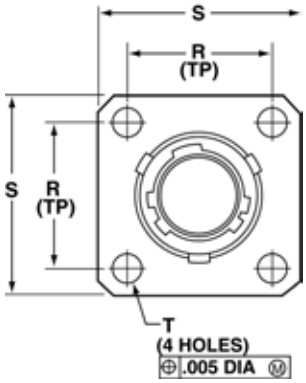
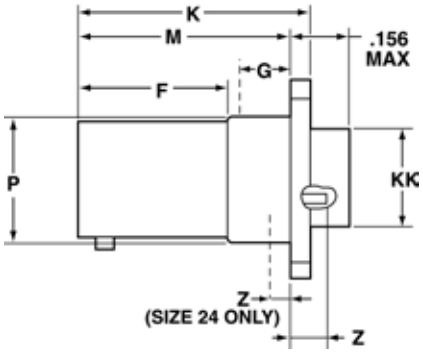
Shell Size	F +.000 –.005	K +.006 –.000	L Max.	M +.000 –.005	R (TP)	S +.011 –.010	T ±.005	Z ±.031	V Thread Class 2A (Plated) UNEF	P Dia. +.001 –.005	W Max.	G Max.
8	.609	.945	.539	.860	.594	.812	.120	.062	.4375-28	.516	.812	.345
10	.609	.945	.539	.860	.719	.938	.120	.062	.5625-24	.633	.812	.345
12	.609	.945	.539	.860	.812	1.031	.120	.062	.6875-24	.802	.812	.345
14	.609	.945	.539	.860	.906	1.125	.120	.062	.8125-20	.927	.812	.345
16	.609	.945	.539	.860	.969	1.219	.120	.062	.9375-20	1.052	.812	.345
18	.609	.945	.539	.860	1.062	1.312	.120	.062	1.0625-18	1.177	.812	.345
20	.609	.945	.539	.860	1.156	1.438	.120	.062	1.1875-18	1.302	.812	.345
22	.609	.945	.539	.860	1.250	1.562	.120	.062	1.3125-18	1.427	.812	.345
24	.750	1.085	.493	1.000	1.375	1.688	.147	.078	1.4375-18	1.552	.781	.452

All dimensions for reference only.

PART #	Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Positions	Special Variations
*To complete, see how to order pages 76-77.	SJTP	02	RE	X-X	X	X	(XXX)





*SJTP02RE

Shell Size	F +.000 –.005	K +.006 –.000	M +.000 –.005	R (TP)	S +.011 –.010	T ±.005	Z ±.031	P Dia. +.001 –.005	KK Dia. +.005 –.002	G Max.
8	.609	.945	.860	.594	.812	.120	.062	.516	.417	.345
10	.609	.945	.860	.719	.938	.120	.062	.633	.538	.345
12	.609	.945	.860	.812	1.031	.120	.062	.802	.663	.345
14	.609	.945	.860	.906	1.125	.120	.062	.927	.787	.345
16	.609	.945	.860	.969	1.219	.120	.062	1.052	.912	.345
18	.609	.945	.860	1.062	1.312	.120	.062	1.177	1.030	.345
20	.609	.945	.860	1.156	1.438	.120	.062	1.302	1.154	.345
22	.609	.945	.860	1.250	1.562	.120	.062	1.427	1.279	.345
24	.750	1.085	1.000	1.375	1.688	.147	.078	1.552	1.404	.452

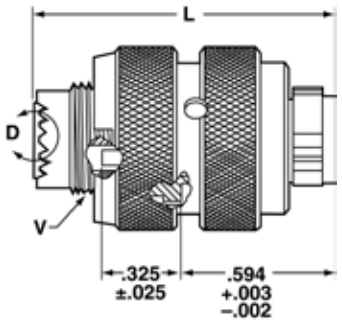
All dimensions for reference only.

Amphenol Aerospace

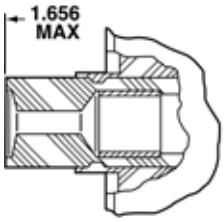
PART #

***To complete, see how to order pages 76-77.**

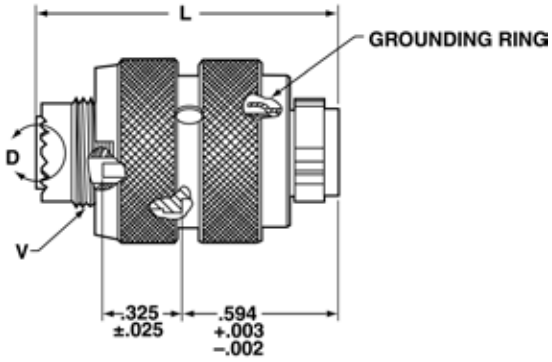
Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Positions	Special Variations
SJT	06	RT	X-X	X	X	(XXX)
SJTG	06	RT	X-X	X	X	(XXX)



***SJT06RT**



VIEW D ENLARGED
FOR SIZE 8 COAXIAL USE ONLY



***SJTG06RT**

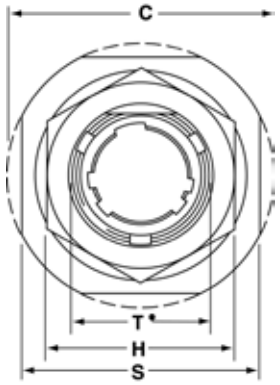
Shell Size	L Max	Q Dia. Max.	V Thread Class 2A UNEF (Plated)	V Thread Modified Major Dia.	
8	1.219	.734	.4375-28	.421 –	.417
10	1.219	.844	.5625-24	.542 –	.538
12	1.219	1.016	.6875-24	.667 –	.663
14	1.219	1.141	.8125-20	.791 –	.787
16	1.219	1.265	.9375-20	.916 –	.912
18	1.219	1.391	1.0625-18	1.034 –	1.030
20	1.219	1.500	1.1875-18	1.158 –	1.154
22	1.219	1.625	1.3125-18	1.283 –	1.279
24	1.258	1.750	1.4375-18	1.408 –	1.404

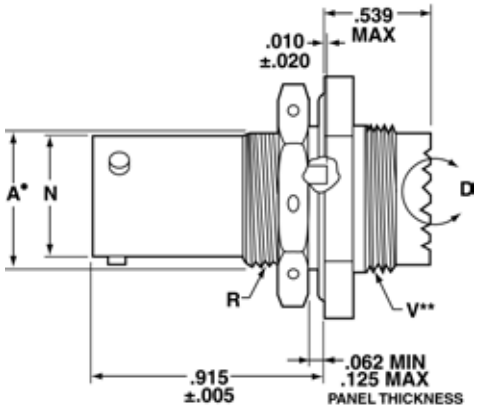
All dimensions for reference only.

PART #

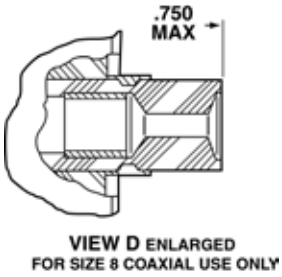
Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Positions	Special Variations
SJT	07	RT	X-X	X	X	(XXX)

***To complete, see how to order pages 76-77.**





***SJT07RT**



VIEW D ENLARGED
FOR SIZE 8 COAXIAL USE ONLY

• "D" shaped panel cut-out dimensions
** Oversize threads. Check accessory threads before ordering

Shell Size	A• +.000 –.010	H Hex +.017 –.016	S ±.016	V Thread Class 2A UNEF (Plated)	R Thread Class 2A UNEF (Plated)	N +.001 –.005	C Max.	T• +.010 –.000
8	.542	.750	.938	.5625-24	.5625-24	.473	1.078	.572
10	.669	.875	1.062	.6875-24	.6875-24	.590	1.203	.697
12	.830	1.062	1.250	.8125-20	.8750-20	.750	1.391	.884
14	.955	1.188	1.375	.9375-20	1.0000-20	.875	1.515	1.007
16	1.084	1.312	1.500	1.0625-18	1.1250-18	1.000	1.641	1.134
18	1.208	1.438	1.625	1.1875-18	1.2500-18	1.125	1.766	1.259
20	1.333	1.562	1.812	1.3125-18	1.3750-18	1.250	1.953	1.384
22	1.459	1.688	1.938	1.4375-18	1.5000-18	1.375	2.078	1.507
24	1.580	1.812	2.062	1.4375-18	1.6250-18	1.500	2.203	1.634

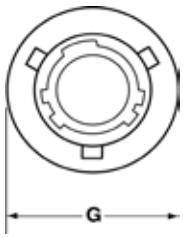
All dimensions for reference only.

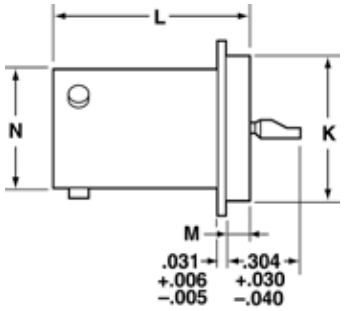
Amphenol Aerospace

PART #

***To complete, see how to order pages 76-77.**

Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Positions	Special Variations
SJT	I	Y	X-X	X	X	(XXX)



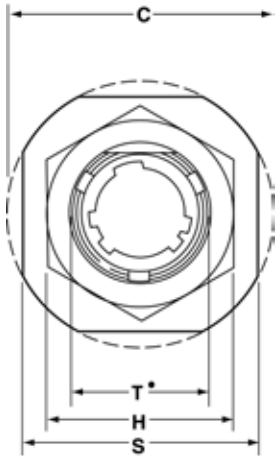


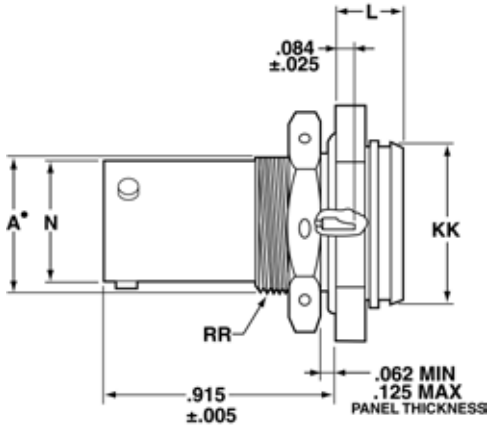
***SJTIY**

Shell Size	L +.011 −.000	M +.006 −.005	G Dia. +.011 −.010	K Dia. +.001 −.005	N +.001 −.005
8	.789	.125	.687	.562	.473
10	.789	.125	.797	.672	.590
12	.789	.125	.906	.781	.750
14	.789	.125	1.031	.906	.875
16	.789	.125	1.156	1.031	1.000
18	.789	.125	1.281	1.156	1.125
20	.789	.125	1.375	1.250	1.250
22	.821	.156	1.500	1.375	1.375
24	.821	.156	1.625	1.500	1.500

All dimensions for reference only.

PART #	Connector Type	Shell Style	Service Class	Shell Size & Insert Arrg	Contact Type	Alternate Positions	Special Variations
*To complete, see how to order pages 76-77.	SJT	07	Y	X-X	X	X	(XXX)





*SJT07Y

- "D" shaped panel cut-out dimensions

Shell Size	N +.001 –.005	C Max.	A• +.000 –.010	L Max.	H Hex +.017 –.016	S ±.016	KK +.011 –.000	RR Thread Class 2A UNEF (Plated)	T• +.010 –.000
8	.473	1.078	.542	.297	.750	.938	.642	.5625-24	.572
10	.590	1.203	.669	.297	.875	1.062	.766	.6875-24	.697
12	.750	1.391	.830	.297	1.062	1.250	.892	.8750-20	.884
14	.875	1.515	.955	.297	1.188	1.375	1.018	1.0000-20	1.007
16	1.000	1.641	1.084	.297	1.312	1.500	1.142	1.1250-18	1.134
18	1.125	1.766	1.208	.328	1.438	1.625	1.268	1.2500-18	1.259
20	1.250	1.953	1.333	.328	1.562	1.812	1.392	1.3750-18	1.384
22	1.375	2.078	1.459	.328	1.688	1.938	1.518	1.5000-18	1.507
24	1.500	2.203	1.580	.328	1.812	2.062	1.642	1.6250-18	1.634

All dimensions for reference only.

Amphenol Aerospace

Amphenol provides three popular connector series with PC tail contacts. The following key points give a quick overview of these series. For more detail, there are series catalogs available as listed below*. Go to **www.amphenol-aerospace.com** to view and download these catalogs. There is a guide to selecting a circular connector with printed circuit board contacts on the following page to assist you further.

MIL-DTL-38999 CONNECTORS, METAL & COMPOSITE

- Lightweight, compact, high density and high reliability cylindrical
- Operating voltage to 900 VAC (RMS) at sea level
- Environmentally resistant
- Solder or crimp rear release contacts in mating plug
- Series I (LJT) - Bayonet coupling
  - Scoop-proof (recessed pins) offers maximum contact protection
- Series II (JT) - Bayonet coupling
  - For applications requiring maximum weight/space savings and reliability
- Series III (Tri-Start) - Threaded, quick coupling in one complete turn
  - Designed for general duty as well as severe environmental applications
  - Superior EMI shielding with grounding fingers and metal-to-metal mating
  - Filter/Transient protection versions available
  - Scoop-proof contact protection
  - Stainless steel firewall versions, and composite versions
  - Available in Hermetics

Note: MIL-DTL-38999 supersedes MIL-C-38999.

38999 Series III Box Mount Connector with PC Tails

Special 38999 Connector with Stand-off Shell and PC Tails

38999 Series III Connector with a Special Configuration Composite Shell and PC Tails

How to Measure the PCB Tail Length

The tail length of the PCB is the portion of the contact that extends beyond the rear of the shell. This length will vary in relationship to the mounting flange, depending on the series of connector selected. Standard lengths are shown on the connector shell style drawings in this catalog. These shell style drawing pages also provide how to order part numbering for standard PCB cylindrical connectors. When computing the desired tail length, it is important to take into consideration the following factors:

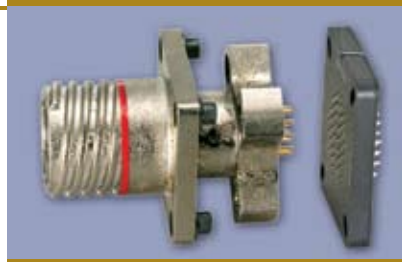
- The connector series and shell style.
- The mounting style of the receptacle; jam nut (D hole) or panel mount (four holes). This can affect the overall length of the tail.
- The extension of the tail beyond the opposite side of the board or the flex.
- The space required to adequately clean flux from between the board or flex and the rear of the connector shell. Connectors that are mounted flush against the board may trap soldering flux which could lead to corrosion of the solder joints.

Stand-off Adapter on a Jam Nut Receptacle.

Would Alignment Discs, Headers or Special Stand-off Shells be Beneficial?

The answer is yes, any mechanical methods needed to stabilize the board or flex to the connector and/or the panel is beneficial. The PCB tails shown in this catalog are of one diameter. Stepped tails or PCB tails with an increased diameter on a designated portion may be required for certain applications.

Alignment discs are available which provide ease of alignment of pins to boards, protection during shipment and optimized electrical circuit separation. Header assemblies (see pages 195 & 196) are available which provide time and cost saving potentials. Standoffs may be required for certain applications. Amphenol has developed a new stand-off adapter (see page 124) which may eliminate the need for special stand-off shell designs. Connectors with clinch nuts can be provided. Please call Amphenol to discuss any optional designs or any special requirements.



Universal Header Assemblies are available for Flex Print/PC Board Mounting. Beneficial especially when electrical testing of the connector requires it to be removed and reattached.

What Determines the Diameter of the PCB Tail?

The outside diameter of the PCB tail is determined by the inside diameter of the plated through-hole on the board or flex print. The standard or most popular diameters are shown in the chart on the next page and are called out in the connector illustrations in this catalog.

Standard diameters of PCB tails

Connector Series	Size 16 Contact	Size 20 Contact	Size 22D Contact
MIL-DTL-38999	.062 ±.001	.019 ±.001	.019 ±.001

For availability of other contact diameters, consult Amphenol, Sidney NY.

Compliant Pin Contacts in a Bayonet 38999 Catalog

Should PCB Tails be Gold Plated or Pre-tinned?

The standard PCB tails for MIL-DTL-38999 receptacles have gold plating,.00005 inches over nickel. Amphenol can substitute a pre-tinned version of these tails to facilitate the termination process. This pre-tinning is a 60/40 lead-tin alloy. Call Amphenol for further information on pre-tinning and any other plating of contacts not covered in this catalog.

Would Flex Assemblies be Necessary or Beneficial for the Application?

Flex print can radically simplify the assembly of a connector to a system, as well as eliminate wiring errors. Amphenol offers connector flex assemblies through APC, Amphenol Printed Circuits division. Features and benefits of using flex technology include:

- Available for MIL-DTL-38999 (including filter EMI/EMP types), circular connectors
- Sculptures® Flexible Circuits with built-in terminations
- Eliminates failures associated with crimped or solder-on contacts
- Geometrically fit tight space requirements and create a self-locking terminal pad

Should Other PC Tail Contact Types be Considered?

Press-Fit Connectors with compliant pins are available which engage the plated through-holes in the board without the need for soldering. This optional contact style offers the following benefits:

- Improved board processing time
- Excellent temperature performance
- Ideal for low-lead applications

For more information on Press-Fit connectors with compliant pins see page 202.

Special Quadrax contacts have been designed with PC tails. Coax, twinax and triax contacts can also have PC tails. Refer to Amphenol catalog 12-130. Go online at www.amphenol-aerospace.com or consult Amphenol Aerospace for further information.

Special Design with Longer PC Tails in a 38999 Composite Shell Connector. Also shows an Alignment Disc.

Flex Termination for Attachment to PC Boards

Quadrax PC Tail Contacts Combined with Standard PC Tail Contacts

Quadrax Contacts with PC Tails in a 38999 Connector with Special Stand-off Shell

The following table lists the most commonly used insert arrangements for printed circuit board application of MIL-DTL-38999 circular connectors. This represents the most readily available patterns within these series. See illustrations of these selected patterns on the following pages. If you require other arrangements than what are shown here, consult Amphenol for further availability.

Example: Shell Size is the first number (8–3) Insert Arrangement is second number.

MIL-DTL-38999			Service Rating	Total Contacts	Contact Size*		
JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III			22D	20	16
8-3	9-3		M/I	3		3	
8-35	9-35	9-35	M	6	6		
8-98	9-98	9-98	I	3		3	
10-5	11-5	11-5	I	5		5	
10-35	11-35	11-35	M	13	13		
12-3	13-3		II	3			3
12-35	13-35	13-35	M	22	22		
14-18	15-18	15-18	I	18		18	
14-19	15-19	15-19	I	19		19	
14-35	15-35	15-35	M	37	37		
16-26	17-26	17-26	I	26		26	
16-35	17-35	17-35	M	55	55		
18-11	19-11	19-11	II	11			11
18-32	19-32	19-32	I	32		32	
18-35	19-35	19-35	M	66	66		
20-27	21-27		I	27		27	
20-35	21-35	21-35	M	79	79		
20-41	21-41	21-41	I	41		41	
22-35	23-35	23-35	M	100	100		
22-55	23-55	23-55	I	55		55	
24-31			I	31			31
24-35	25-35	25-35	M	128	128		
24-61	25-61	25-61	I	61		61	

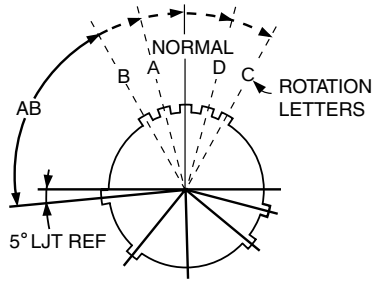
* For information on size 12 PC tail contacts consult Amphenol Aerospace.

To avoid cross-plugging problems in applications requiring the use of more than one connector of the same series, size and arrangement, alternate rotations are available as indicated in the accompanying charts.

In MIL-DTL-38999 Series I, II and III connectors the rotation is based on rotating the master key/keyway in the connector shell. A plug with a given rotation letter will mate with a receptacle with the same rotation letter. Only the master key/keyway rotates in the shell, and the insert always remains in the same position relative to the minor keys. Refer to diagrams below for each connector series.

LJT (MIL-DTL-38999 Series I) KEY/KEYWAY ROTATION

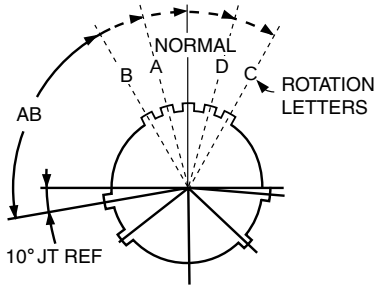
AB ANGLE OF ROTATION (Degrees)					
Shell Size	Normal°	A°	B°	C°	D°
9	95	77	–	–	113
11	95	81	67	123	109
13	95	75	63	127	115
15	95	74	61	129	116
17	95	77	65	125	113
19	95	77	65	125	113
21	95	77	65	125	113
23	95	80	69	121	110
25	95	80	69	121	110



RELATIVE POSSIBLE POSITION OF ROTATED MASTER KEYWAY (front face of LJT connector receptacle shown)

JT (MIL-DTL-38999 Series II) KEY/KEYWAY ROTATION

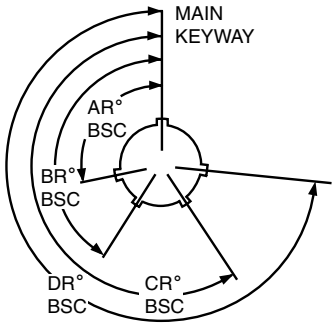
AB ANGLE OF ROTATION (Degrees)					
Shell Size	Normal°	A°	B°	C°	D°
8	100	82	–	–	118
10	100	86	72	128	114
12	100	80	68	132	120
14	100	79	66	134	121
16	100	82	70	130	118
18	100	82	70	130	118
20	100	82	70	130	118
22	100	85	74	126	115
24	100	85	74	126	115



RELATIVE POSSIBLE POSITION OF ROTATED MASTER KEYWAY (front face of JT connector receptacle shown)

Tri-Start (MIL-DTL-38999 Series III) KEY/KEYWAY ROTATION

Shell Size	Key & Keyway Arrangement Identification Letter	AR° BSC	BR° BSC	CR° BSC	DR° BSC
9	N	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
	E	91	131	197	240
11, 13, and 15	N	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
	E	51	141	184	242
17 and 19	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
21, 23, and 25	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272



RELATIVE POSSIBLE POSITION OF ROTATED MASTER KEYWAY (front face of Tri-Start connector receptacle shown)

MIL-DTL-38999 SERIES I LJT & SERIES II JT CONNECTORS ALTERNATE ROTATION CROSS REFERENCE LETTERS

Pins in Alternate Rotations	Sockets in Alternate Rotations
PA = E	SA = F
PB = R	SB = T
PC = W	SC = X
PD = Y	SD = Z

Explanation:
Use P at end of part number for pin contacts in Normal position. Use S at end of part number for socket contacts in Normal position. Use cross reference letters given in chart above for alternate rotations.

MIL-DTL-38999 SERIES III, TRI-START CONNECTORS ALTERNATE ROTATION CROSS REFERENCE LETTERS

Pins in Alternate Rotations	Sockets in Alternate Rotations
PA = G	SA = H
PB = I	SB = J
PC = K	SC = L
PD = M	SD = N
PE = R	SE = T

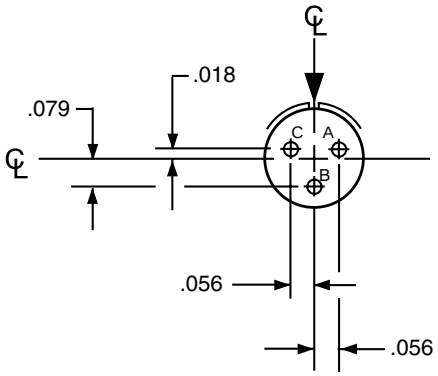
Explanation:
Use P at end of part number for pin contacts in Normal position. Use S at end of part number for socket contacts in Normal position. Use cross reference letters given in chart above for alternate rotations.

Insert Arrangement #8-3 / 9-3

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	8-3	9-3	NA

Number of Contacts	Contact Size	Service Rating
3	20	M

Contact Locations
Front face of pin insert shown



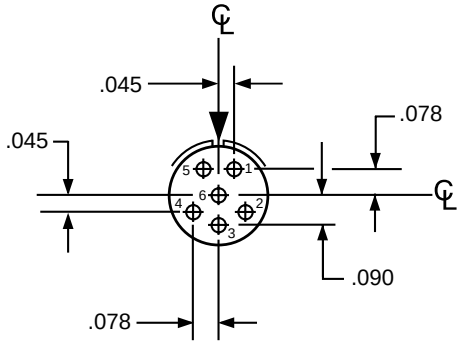
*Service Rating: M for MIL-DTL-38999

Insert Arrangement #8-35 / 9-35

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	8-35	9-35	9-35

Number of Contacts	Contact Size	Service Rating
6	22D	M

Contact Locations
Front face of pin insert shown



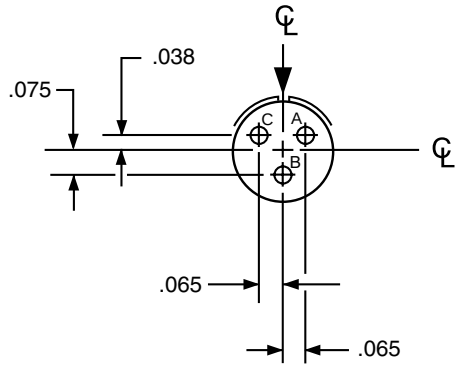
All dimensions for reference only. For alternate rotations see page 88 .
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #8-98 / 9-98

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	8-98	9-98	9-98

Number of Contacts	Contact Size	Service Rating
3	20	I

Contact Locations
Front face of pin insert shown

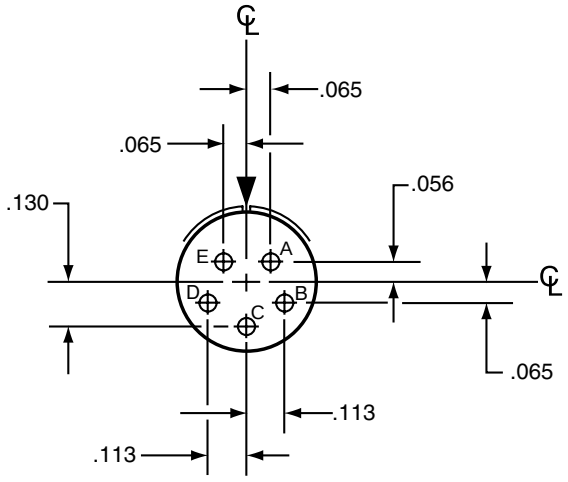


Insert Arrangement #10-5 / 11-5

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	10-5	11-5	11-5

Number of Contacts	Contact Size	Service Rating
5	20	I

Contact Locations
Front face of pin insert shown



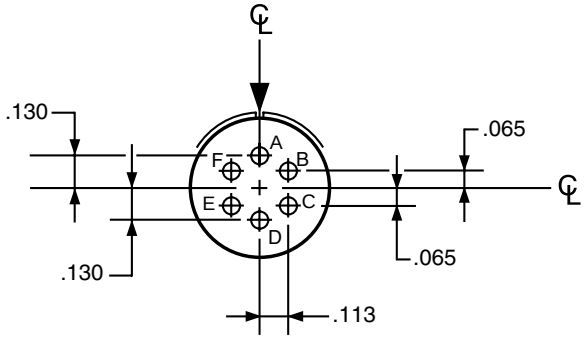
All dimensions for reference only. For alternate rotations see page 88 .
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #10-6 / 11-6

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	NA	11-6	NA

Number of Contacts	Contact Size	Service Rating
6	20	I

Contact Locations
Front face of pin insert shown

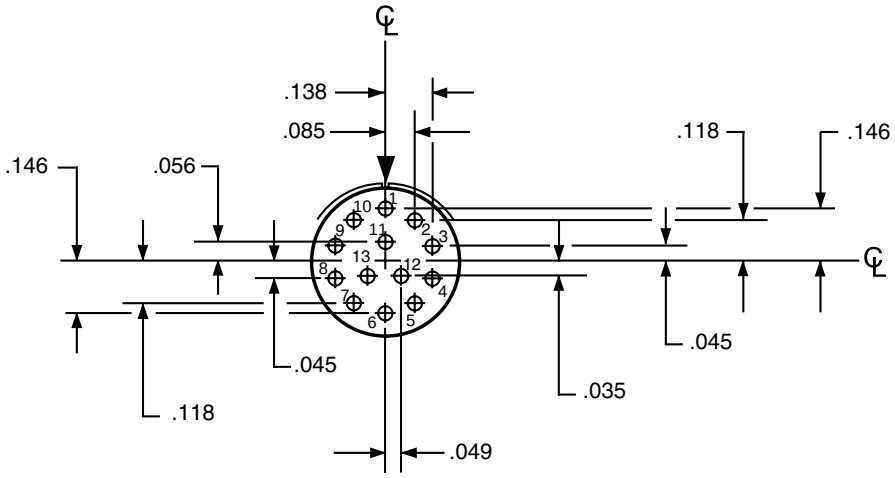


Insert Arrangement #10-35 / 11-35

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	10-35	11-35	11-35

Number of Contacts	Contact Size	Service Rating
13	22D	M

Contact Locations
Front face of pin insert shown



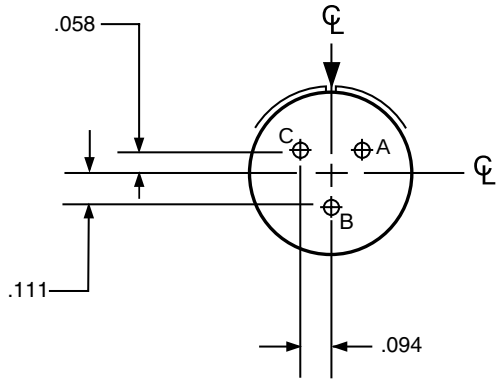
All dimensions for reference only. For alternate rotations see page 88 .
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #12-3 / 13-3

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	12-3	13-3	NA

Number of Contacts	Contact Size	Service Rating
3	16	II

Contact Locations
Front face of pin insert shown

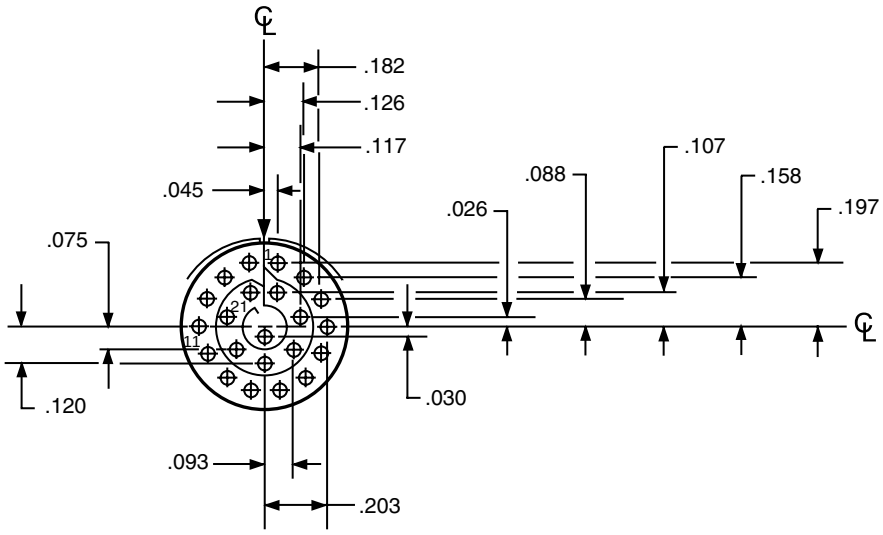


Insert Arrangement #12-35 / 13-35

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	12-35	13-35	13-35

Number of Contacts	Contact Size	Service Rating
22	22D	M

Contact Locations
Front face of pin insert shown

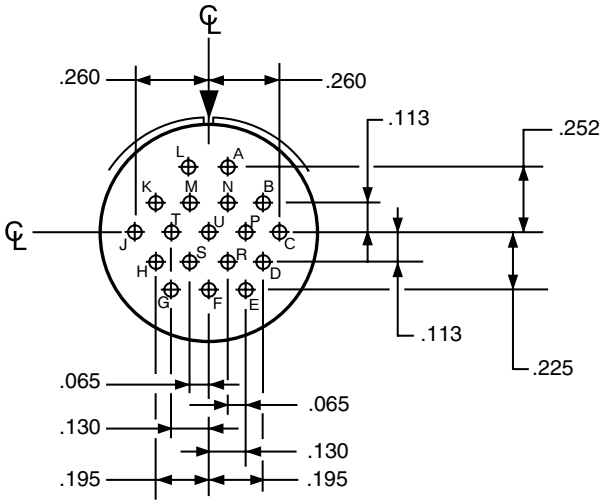


All dimensions for reference only. For alternate rotations see page 88 .
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #14-18 / 15-18

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III	Number of Contacts	Contact Size	Service Rating
Insert Designation:	14-18	15-18	15-18	18	20	I

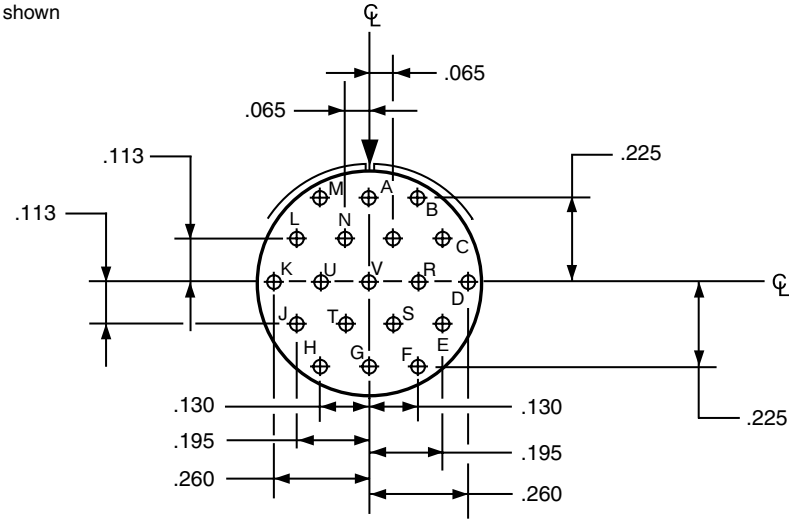
Contact Locations
Front face of pin insert shown



Insert Arrangement #14-19 / 15-19

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III	Number of Contacts	Contact Size	Service Rating
Insert Designation:	14-19	15-19	15-19	19	20	I

Contact Locations
Front face of pin insert shown



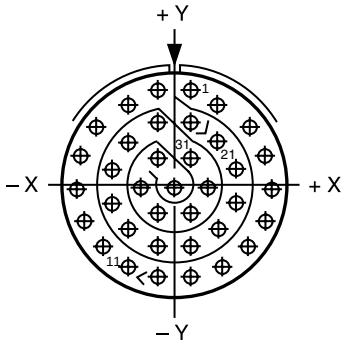
All dimensions for reference only. For alternate rotations see page 88 .
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #14-35 / 15-35

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	14-35	15-35	15-35

Number of Contacts	Contact Size	Service Rating
37	22D	M

Contact Locations
Front face of pin insert shown



Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
1	+.045	+.262
2	+.123	+.217
3	+.211	+.160
4	+.254	+.080
5	+.266	–.010
6	+.247	–.098
7	+.200	–.175
8	+.130	–.232
9	+.045	–.262
10	–.045	–.262
11	–.130	–.232
12	–.200	–.175
13	–.247	–.098
14	–.266	–.010
15	–.254	+.080
16	–.211	+.160
17	–.123	+.217
18	–.045	+.262
19	+.045	+.172
20	+.123	+.119

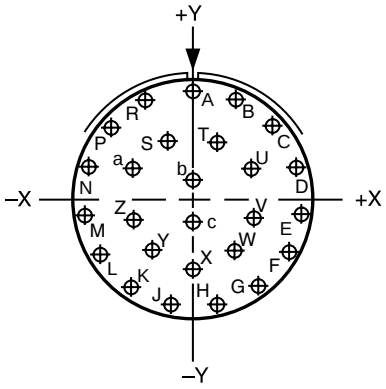
Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
21	+.170	+.040
22	+.170	–.050
23	+.123	–.127
24	+.045	–.172
25	–.045	–.172
26	–.123	–.127
27	–.170	–.050
28	–.170	+.040
29	–.123	+.119
30	–.045	+.172
31	+.045	+.074
32	+.090	–.004
33	+.045	–.082
34	–.045	–.082
35	–.090	–.004
36	–.045	+.074
37	.000	–.004

Insert Arrangement #16-26 / 17-26

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	NA	17-26	17-26

Number of Contacts	Contact Size	Service Rating
26	20	I

Contact Locations
Front face of pin insert shown



Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
A	.000	+.321
B	+.131	+.293
C	+.239	+.214
D	+.305	+.099
E	+.319	–.034
F	+.278	–.161
G	+.189	–.260
H	+.067	–.314
J	–.067	–.314
K	–.189	–.260
L	–.278	–.161
M	–.319	–.034
N	–.305	+.099
P	–.239	+.214

Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
R	–.131	+.293
S	–.070	+.177
T	+.070	+.177
U	+.175	+.094
V	+.178	–.036
W	+.119	–.151
X	.000	–.203
Y	–.119	–.151
Z	–.178	–.036
a	–.175	+.094
b	.000	+.065
c	.000	–.065

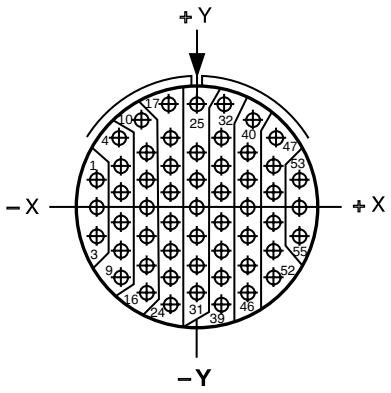
All dimensions for reference only. For alternate rotations see page 88 .
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #16-35 / 17-35

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	16-35	17-35	17-35

Number of Contacts	Contact Size	Service Rating
55	22D	M

Contact Locations
Front face of pin insert shown



Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
1	–.312	+.086
2	–.312	–.004
3	–.312	–.094
4	–.242	+.221
5	–.234	+.131
6	–.234	+.041
7	–.234	–.049
8	–.234	–.139
9	–.234	–.229
10	–.172	+.279
11	–.156	+.176
12	–.156	+.086
13	–.156	–.004
14	–.156	–.094
15	–.156	–.184
16	–.156	–.274
17	–.089	+.316
18	–.078	+.221
19	–.078	+.131
20	–.078	+.041
21	–.078	–.049
22	–.078	–.139
23	–.078	–.229
24	–.078	–.319
25	.000	+.329
26	.000	+.176
27	.000	+.086
28	.000	–.004
29	.000	–.094
30	.000	–.184

Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
31	.000	–.274
32	+.089	+.316
33	+.078	+.221
34	+.078	+.131
35	+.078	+.041
36	+.078	–.049
37	+.078	–.139
38	+.078	–.229
39	+.078	–.319
40	+.172	+.279
41	+.156	+.176
42	+.156	+.086
43	+.156	–.004
44	+.156	–.094
45	+.156	–.184
46	+.156	–.274
47	+.242	+.221
48	+.234	+.131
49	+.234	+.041
50	+.234	–.049
51	+.234	–.139
52	+.234	–.229
53	+.312	+.086
54	+.312	–.004
55	+.312	–.094

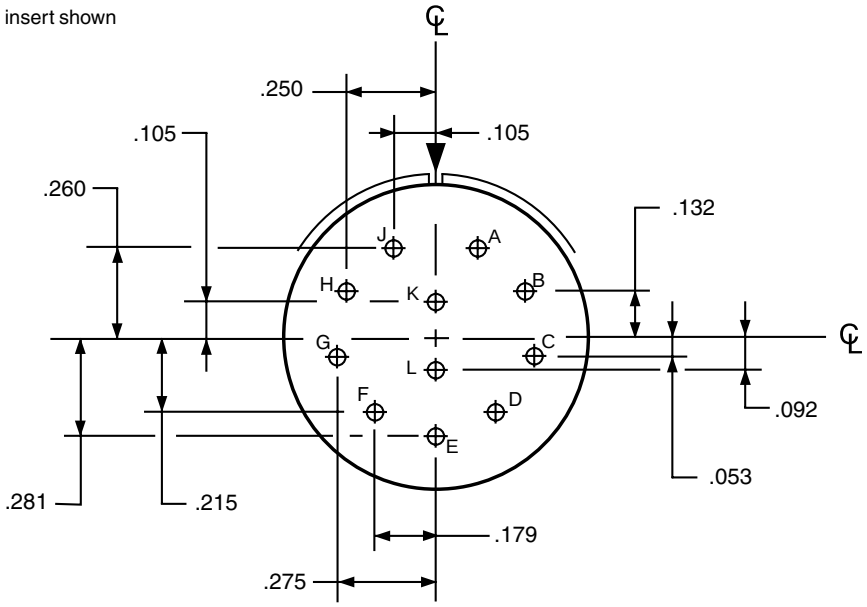
All dimensions for reference only. For alternate rotations see page 88.
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #18-11 / 19-11

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	18-11	19-11	19-11

Number of Contacts	Contact Size	Service Rating
11	16	II

Contact Locations
Front face of pin insert shown

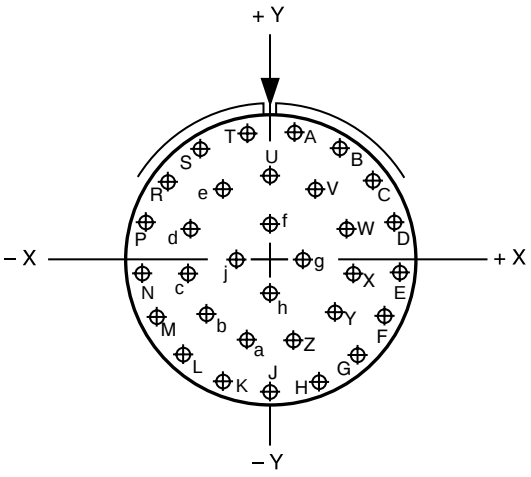


Insert Arrangement #18-32 / 19-32

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	18-32	19-32	19-32

Number of Contacts	Contact Size	Service Rating
32	20	I

Contact Locations
Front face of pin insert shown



Contact Hole Locations		
Contact Letter	Location	
	X Axis	Y Axis
A	+.066	+.353
B	+.189	+.305
C	+.286	+.217
D	+.345	+.098
E	+.357	–.033
F	+.321	–.160
G	+.242	–.265
H	+.130	–.335
J	.000	–.359
K	–.130	–.335
L	–.242	–.265
M	–.321	–.160
N	–.357	–.033
P	–.345	+.098
R	–.286	+.217
S	–.189	+.305

Contact Hole Locations		
Contact Letter	Location	
	X Axis	Y Axis
T	–.066	+.353
U	.000	+.230
V	+.124	+.193
W	+.209	+.095
X	+.228	–.033
Y	+.174	–.151
Z	+.065	–.221
a	–.065	–.221
b	–.174	–.151
c	–.228	–.033
d	–.209	+.095
e	–.124	+.193
f	.000	+.096
g	+.096	.000
h	.000	–.096
j	–.096	.000

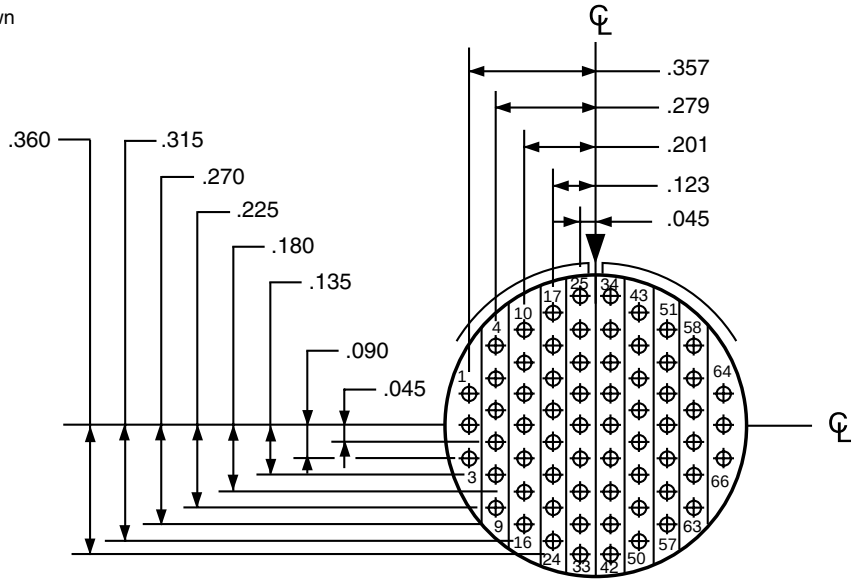
All dimensions for reference only. For alternate rotations see page 88.
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #18-35 / 19-35

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	18-35	19-35	19-35

Number of Contacts	Contact Size	Service Rating
66	22D	M

Contact Locations
Front face of pin insert shown

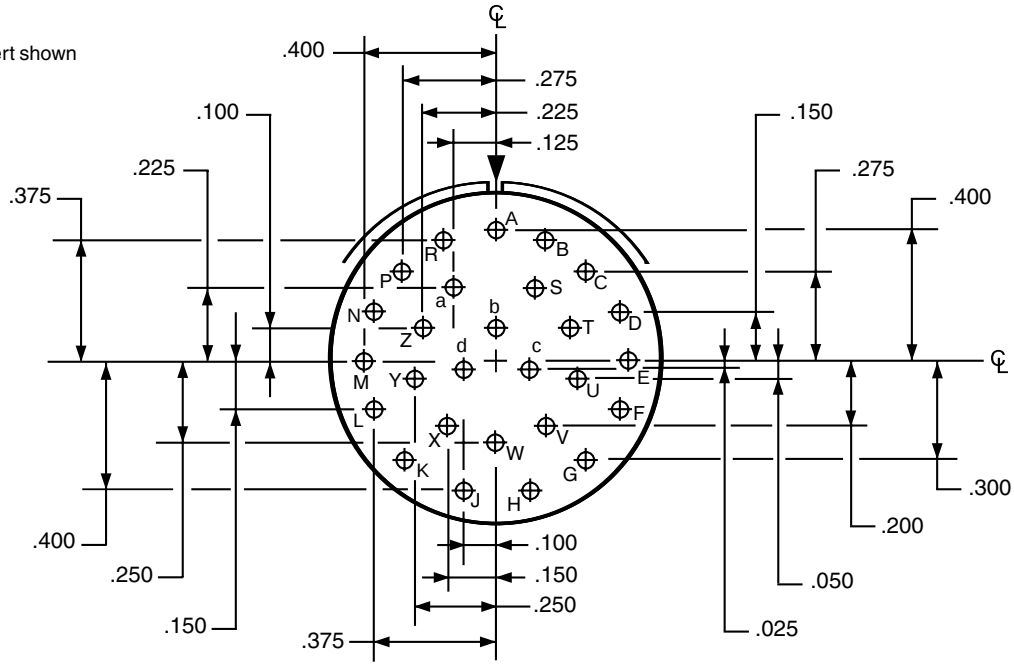


Insert Arrangement #20-27 / 21-27

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	20-27	21-27	NA

Number of Contacts	Contact Size	Service Rating
27	20	I

Contact Locations
Front face of pin insert shown



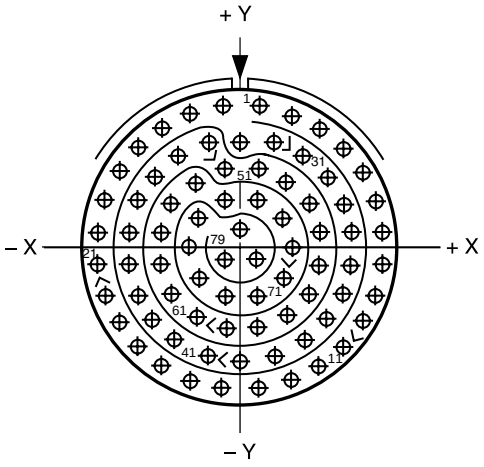
All dimensions for reference only. For alternate rotations see page 88.
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #20-35 / 21-35

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	20-35	21-35	21-35

Number of Contacts	Contact Size	Service Rating
79	22D	M

Contact Locations
Front face of pin insert shown



Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
1	+.053	+.426
2	+.146	+.404
3	+.232	+.362
4	+.306	+.302
5	+.365	+.227
6	+.406	+.141
7	+.427	+.048
8	+.427	–.048
9	+.406	–.141

Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
10	+.365	–.227
11	+.306	–.302
12	+.232	–.362
13	+.146	–.404
14	+.053	–.426
15	–.053	–.426
16	–.146	–.404
17	–.232	–.362
18	–.306	–.302
19	–.365	–.227
20	–.406	–.141
21	–.427	–.048
22	–.427	+.048
23	–.406	+.141
24	–.365	+.227
25	–.306	+.302
26	–.232	+.362
27	–.146	+.404
28	–.053	+.426
29	.000	+.323
30	+.098	+.322
31	+.184	+.280
32	+.258	+.220
33	+.311	+.141
34	+.332	+.048
35	+.332	–.048
36	+.311	–.141
37	+.258	–.220
38	+.184	–.280
39	+.098	–.322
40	.000	–.347
41	–.098	–.322
42	–.184	–.280
43	–.258	–.220
44	–.311	–.141

Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
45	–.332	–.048
46	–.332	+.048
47	–.311	+.141
48	–.258	+.220
49	–.184	+.280
50	–.098	+.322
51	–.048	+.241
52	+.048	+.241
53	+.134	+.199
54	+.208	+.139
55	+.237	+.048
56	+.237	–.048
57	+.208	–.139
58	+.134	–.199
59	+.048	–.241
60	–.048	–.241
61	–.134	–.199
62	–.208	–.139
63	–.237	–.048
64	–.237	+.048
65	–.208	+.139
66	–.134	+.199
67	–.048	+.146
68	+.048	+.146
69	+.125	+.090
70	+.155	.000
71	+.125	–.090
72	+.048	–.146
73	–.048	–.146
74	–.125	–.090
75	–.155	.000
76	–.125	+.090
77	.000	+.053
78	+.048	–.029
79	–.048	–.029

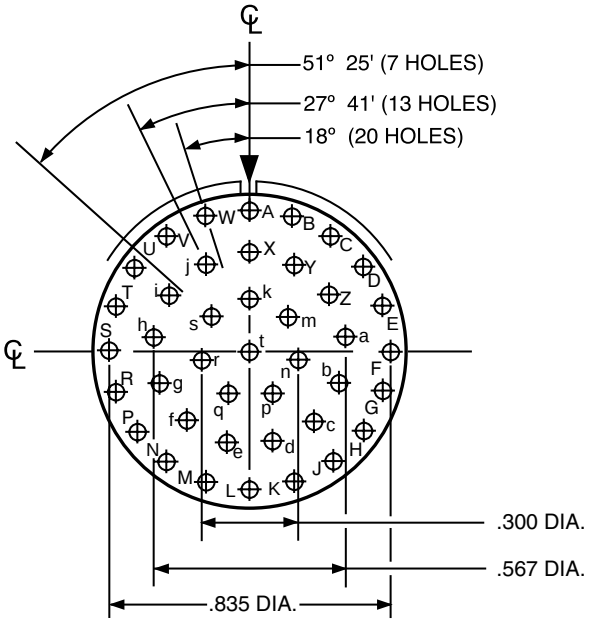
All dimensions for reference only. For alternate rotations see page 88.
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #20-41 / 21-41

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	20-41	21-41	21-41

Number of Contacts	Contact Size	Service Rating
41	20	I

Contact Locations
Front face of pin insert shown



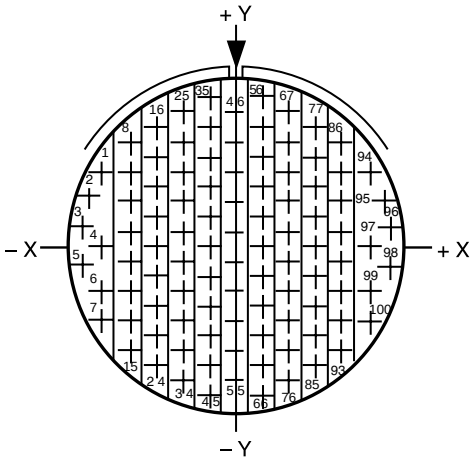
All dimensions for reference only. For alternate rotations see page 88.
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #22-35 / 23-35

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	22-35	23-35	23-35

Number of Contacts	Contact Size	Service Rating
100	22D	M

Contact Locations
Front face of pin insert shown



Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
1	–.428	+.241
2	–.467	+.154
3	–.488	+.061
4	–.415	.000
5	–.488	–.061
6	–.428	–.142
7	–.428	–.237
8	–.332	+.333
9	–.332	+.238
10	–.332	+.143
11	–.332	+.048
12	–.332	–.047
13	–.332	–.142
14	–.332	–.237
15	–.332	–.332
16	–.249	+.380
17	–.249	+.285
18	–.249	+.190
19	–.249	+.095
20	–.249	.000

Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
21	–.249	–.095
22	–.249	–.190
23	–.249	–.285
24	–.249	–.380
25	–.166	+.428
26	–.166	+.333
27	–.166	+.238
28	–.166	+.143
29	–.166	+.048
30	–.166	–.047
31	–.166	–.142
32	–.166	–.237
33	–.166	–.332
34	–.166	–.427
35	–.083	+.475
36	–.083	+.380
37	–.083	+.285
38	–.083	+.190
39	–.083	+.095
40	–.083	.000
41	–.083	–.095
42	–.083	–.190
43	–.083	–.285
44	–.083	–.380
45	–.083	–.475
46	.000	+.428
47	.000	+.333
48	.000	+.238
49	.000	+.143
50	.000	+.048
51	.000	–.047
52	.000	–.142
53	.000	–.237
54	.000	–.332
55	.000	–.427
56	+.083	+.475
57	+.083	+.380
58	+.083	+.285
59	+.083	+.190
60	+.083	+.095

Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
61	+.083	.000
62	+.083	–.095
63	+.083	–.190
64	+.083	–.285
65	+.083	–.380
66	+.083	–.475
67	+.166	+.428
68	+.166	+.333
69	+.166	+.238
70	+.166	+.143
71	+.166	+.048
72	+.166	–.047
73	+.166	–.142
74	+.166	–.237
75	+.166	–.332
76	+.166	–.427
77	+.249	+.380
78	+.249	+.285
79	+.249	+.190
80	+.249	+.095
81	+.249	.000
82	+.249	–.095
83	+.249	–.190
84	+.249	–.285
85	+.249	–.380
86	+.332	+.333
87	+.332	+.238
88	+.332	+.143
89	+.332	+.048
90	+.332	–.047
91	+.332	–.142
92	+.332	–.237
93	+.332	–.332
94	+.428	+.241
95	+.467	+.154
96	+.488	+.061
97	+.415	.000
98	+.488	–.061
99	+.428	–.142
100	+.428	–.237

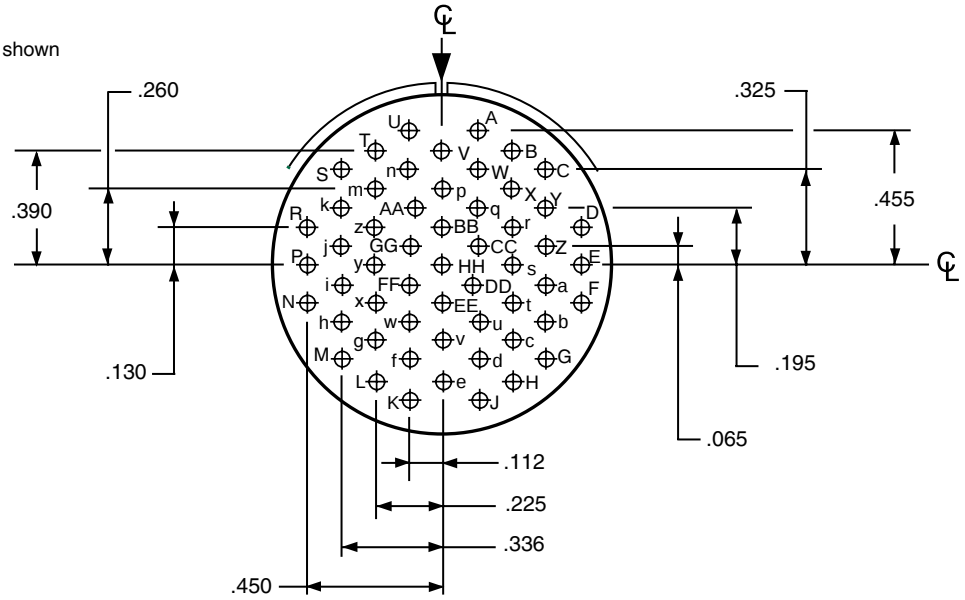
All dimensions for reference only. For alternate rotations see page 88.
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #22-55 / 23-55

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	22-55	23-55	23-55

Number of Contacts	Contact Size	Service Rating
55	20	I

Contact Locations
Front face of pin insert shown

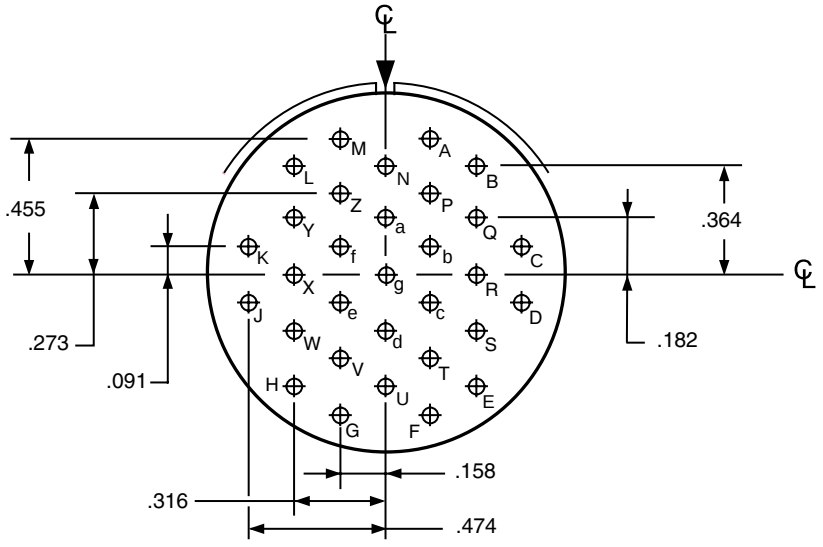


Insert Arrangement #24-31 / 25-31

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	24-31	NA	NA

Number of Contacts	Contact Size	Service Rating
31	16	I

Contact Locations
Front face of pin insert shown



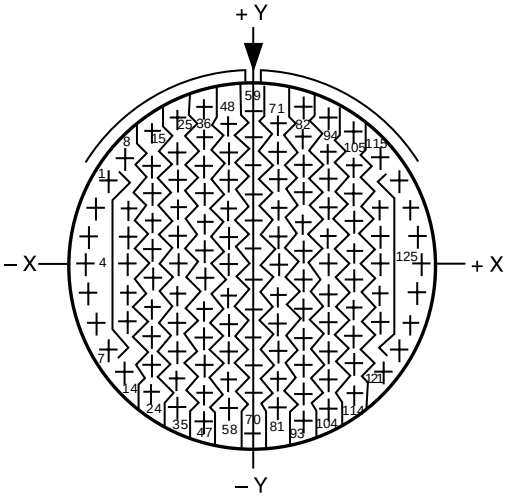
All dimensions for reference only. For alternate rotations see page 88.
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #24-35 / 25-35

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	24-35	25-35	25-35

Number of Contacts	Contact Size	Service Rating
128	22D	M

Contact Locations
Front face of pin insert shown



Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
1	–.479	+.279
2	–.520	+.190
3	–.546	+.095
4	–.555	.000
5	–.546	–.095
6	–.520	–.190
7	–.479	–.279
8	–.424	+.357
9	–.415	+.190
10	–.415	+.095
11	–.415	.000
12	–.415	–.095
13	–.415	–.190
14	–.424	–.357
15	–.332	+.444
16	–.332	+.332
17	–.332	+.237
18	–.332	+.142
19	–.332	+.047
20	–.332	–.047
21	–.332	–.142
22	–.332	–.237
23	–.332	–.332
24	–.332	–.427
25	–.249	+.496
26	–.249	+.380
27	–.249	+.285
28	–.249	+.190

Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
29	–.249	+.095
30	–.249	.000
31	–.249	–.095
32	–.249	–.190
33	–.249	–.285
34	–.249	–.380
35	–.249	–.475
36	–.160	+.531
37	–.166	+.427
38	–.166	+.332
39	–.166	+.237
40	–.166	+.142
41	–.166	+.047
42	–.166	–.047
43	–.166	–.142
44	–.166	–.237
45	–.166	–.332
46	–.166	–.427
47	–.166	–.522
48	–.083	+.475
49	–.083	+.380
50	–.083	+.285
51	–.083	+.190
52	–.083	+.095
53	–.083	.000
54	–.083	–.095
55	–.083	–.190
56	–.083	–.285
57	–.083	–.380
58	–.083	–.475
59	.000	+.522
60	.000	+.427
61	.000	+.332
62	.000	+.237
63	.000	+.142
64	.000	+.047
65	.000	–.047
66	.000	–.142
67	.000	–.237
68	.000	–.332
69	.000	–.427
70	.000	–.555
71	+.083	+.475
72	+.083	+.380
73	+.083	+.285
74	+.083	+.190
75	+.083	+.095
76	+.083	.000
77	+.083	–.095
78	+.083	–.190

Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
79	+.083	–.285
80	+.083	–.380
81	+.083	–.475
82	+.160	+.531
83	+.166	+.427
84	+.166	+.332
85	+.166	+.237
86	+.166	+.142
87	+.166	+.047
88	+.166	–.047
89	+.166	–.142
90	+.166	–.237
91	+.166	–.332
92	+.166	–.427
93	+.166	–.522
94	+.249	+.496
95	+.249	+.380
96	+.249	+.285
97	+.249	+.190
98	+.249	+.095
99	+.249	.000
100	+.249	–.095
101	+.249	–.190
102	+.249	–.285
103	+.249	–.380
104	+.249	–.475
105	+.332	+.444
106	+.332	+.332
107	+.332	+.237
108	+.332	+.142
109	+.332	+.047
110	+.332	–.047
111	+.332	–.142
112	+.332	–.237
113	+.332	–.332
114	+.332	–.427
115	+.424	+.357
116	+.415	+.190
117	+.415	+.095
118	+.415	.000
119	+.415	–.095
120	+.415	–.190
121	+.424	–.357
122	+.479	+.279
123	+.520	+.190
124	+.546	+.095
125	+.555	.000
126	+.546	–.095
127	+.520	–.190
128	+.479	–.279

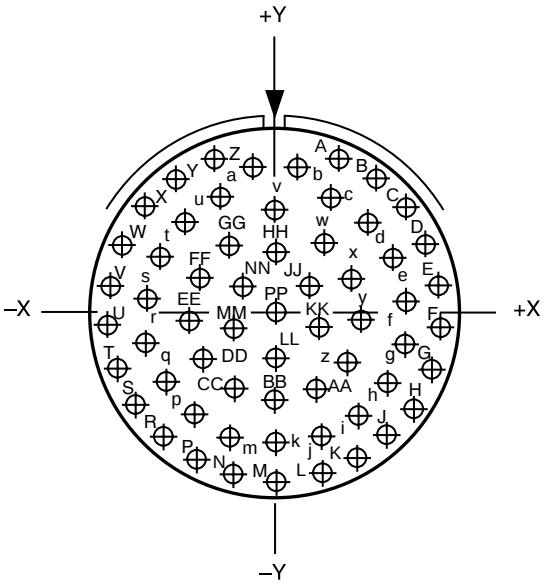
All dimensions for reference only. For alternate rotations see page 88.
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Insert Arrangement #24-61 / 25-61

Connector Type:	JT MIL-DTL-38999 Series II	LJT MIL-DTL-38999 Series I	Tri-Start MIL-DTL-38999 Series III
Insert Designation:	24-61	25-61	25-61

Number of Contacts	Contact Size	Service Rating
61	20	I

Contact Locations
Front face of pin insert shown

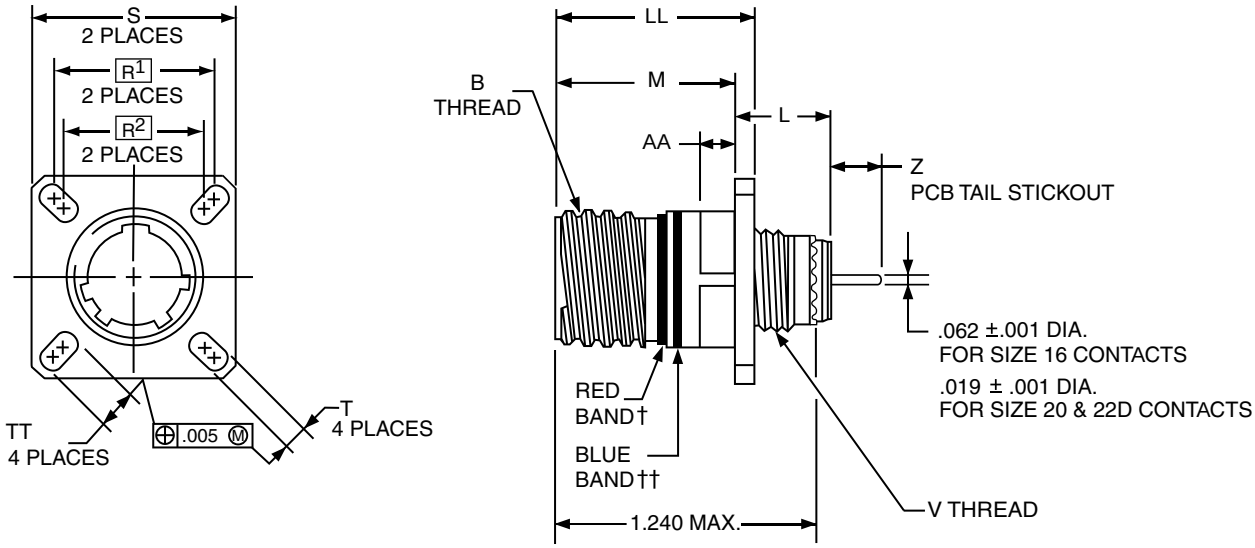


Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
A	+.196	+.500
B	+.314	+.435
C	+.413	+.343
D	+.485	+.230
E	+.527	+.101
F	+.536	–.030
G	+.511	–.164
H	+.454	–.287
J	+.368	–.391
K	+.259	–.470
L	+.134	–.519
M	.000	–.537
N	–.134	–.519
P	–.259	–.470
R	–.368	–.391
S	–.454	–.287
T	–.511	–.164
U	–.536	–.030
V	–.527	+.101
W	–.485	+.230
X	–.413	+.343
Y	–.314	+.435
Z	–.196	+.500
a	–.068	+.454
b	+.068	+.454
c	+.173	+.363
d	+.285	+.283
e	+.362	+.175
f	+.399	+.046

Contact Hole Locations		
Contact Number	Location	
	X Axis	Y Axis
g	+.392	–.088
h	+.341	–.213
i	+.251	–.314
j	+.133	–.379
k	.000	–.402
m	–.133	–.379
n	–.251	–.314
p	–.341	–.213
q	–.392	–.088
r	–.399	+.046
s	–.362	+.175
t	–.285	+.283
u	–.173	+.363
v	.000	+.338
w	+.147	+.223
x	+.237	+.122
y	+.267	–.010
z	+.228	–.139
AA	+.131	–.233
BB	.000	–.267
CC	–.131	–.233
DD	–.228	–.139
EE	–.267	–.010
FF	–.237	+.122
GG	–.147	+.223
HH	.000	+.200
JJ	+.105	+.094
KK	+.135	–.041
LL	.000	–.132
MM	–.135	–.041
NN	–.105	+.094
PP	.000	.000

All dimensions for reference only. For alternate rotations see page 88.
Note: Shown in this catalog are the most common insert patterns for PCB applications. For availability of other arrangements, consult Amphenol Corp., Sidney, NY.

Series III TV



	1.	2.	3.	4.	5.
PART #	Shell Finish	Base Number	Shell Size	Insert Arrangement	Arrg Rotation
See chart below	88	**569**	761	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

569	Base Number

3. Select a Shell Size:

See chart below **761-769**, designates size 9-25 shell size.
Example: **761**= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

Shell Size	Part Number	B Thread Class 2A (Plated) 0.1P-0.3L-TS	L Max.	M +.000 –.005	R¹	R²	S Max.	T +.008 –.006	V Thread Metric	AA Max. Panel Thickness	LL +.006 –.000	TT +.008 –.006	Z Size 16 & 20 Contacts	Z Size 22D Contacts
9	88/91-**569**761-XXX	.6250	.469	.820	.719	.594	.948	.128	M12X1-6g	.234	.905	.216	.228–.178	.242–.181
11	**762**-XXX	.7500	.469	.820	.812	.719	1.043	.128	M15X1-6g	.234	.905	.194	.228–.178	.242–.181
13	**763**-XXX	.8750	.469	.820	.906	.812	1.137	.128	M18X1-6g	.234	.905	.194	.228–.178	.242–.181
15	**764**-XXX	1.0000	.469	.820	.969	.906	1.232	.128	M22X1-6g	.234	.905	.173	.228–.178	.242–.181
17	**765**-XXX	1.1875	.469	.820	1.062	.969	1.323	.128	M25X1-6g	.234	.905	.194	.228–.178	.242–.181
19	**766**-XXX	1.2500	.469	.820	1.156	1.062	1.449	.128	M28X1-6g	.234	.905	.194	.228–.178	.242–.181
21	**767**-XXX	1.3750	.500	.790	1.250	1.156	1.575	.128	M31X1-6g	.204	.905	.194	.228–.178	.242–.181
23	**768**-XXX	1.5000	.500	.790	1.375	1.250	1.701	.154	M34X1-6g	.204	.905	.242	.228–.178	.242–.181
25	**769**-XXX	1.6250	.500	.790	1.500	1.375	1.823	.154	M37X1-6g	.204	.905	.242	.228–.178	.242–.181

All dimensions for reference only.
Composite Series III connectors are available; consult Amphenol, Sidney, NY.
• Z dimension is determined by contact type in the insert arrangement.
• Most common options are shown; other options are available.

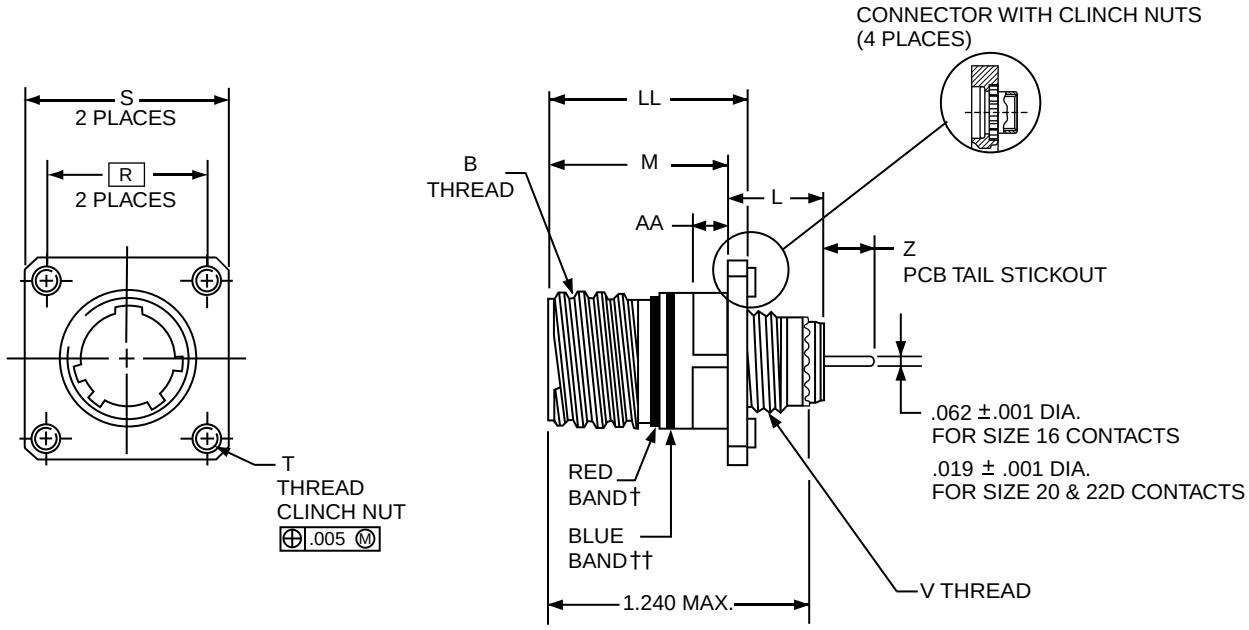
□ Designates true position dimensioning
† Red band indicates fully mated
†† Blue band indicates rear release contact retention system

TVP00R Wall Mounting Receptacle

(back panel mounting) (with clinch nuts)

Amphenol Aerospace

Series III TV



PART # See chart below	1. Shell Finish	2. Base Number	3. Shell Size	4. Insert Arrangement	5. Arrg Rotation
	88	628	741	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

628	Base Number

3. Select a Shell Size:

See chart below **741-749**, designates size 9-25 shell size.
Example: **741**= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

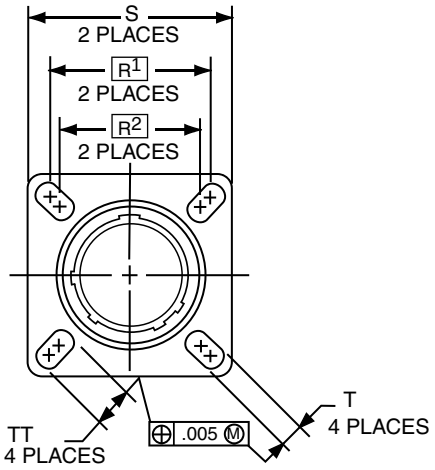
P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

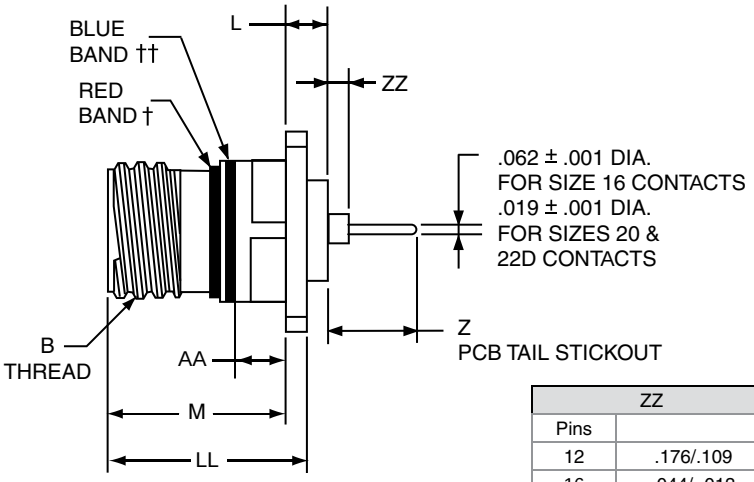
Shell Size	Part Number with Clinch Nuts	B Thread Class 2A (Plated) 0.1P-0.3L-TS	L Max.	M +.000 –.005	R	S Max.	T Thread	V Thread Metric	AA Max. Panel Thickness	LL +.006 –.000	Z	
											Size 16 & 20 Contacts	Size 22D Contacts
9	88/91-**628**741-XXX	.6250	.469	.820	.719	1.094	.112-40UNC-3B	M12X1-6g	.234	.905	.228–.178	.242–.181
11	**742**-XXX	.7500	.469	.820	.812	1.187	.112-40UNC-3B	M15X1-6g	.234	.905	.228–.178	.242–.181
13	**743**-XXX	.8750	.469	.820	.906	1.281	.112-40UNC-3B	M18X1-6g	.234	.905	.228–.178	.242–.181
15	**744**-XXX	1.0000	.469	.820	.969	1.344	.112-40UNC-3B	M22X1-6g	.234	.905	.228–.178	.242–.181
17	**745**-XXX	1.1875	.469	.820	1.062	1.437	.112-40UNC-3B	M25X1-6g	.234	.905	.228–.178	.242–.181
19	**746**-XXX	1.2500	.469	.820	1.156	1.531	.112-40UNC-3B	M28X1-6g	.234	.905	.228–.178	.242–.181
21	**747**-XXX	1.3750	.500	.790	1.250	1.625	.112-40UNC-3B	M31X1-6g	.204	.905	.228–.178	.242–.181
23	**748**-XXX	1.5000	.500	.790	1.375	1.750	.138-32UNC-3B	M34X1-6g	.204	.905	.228–.178	.242–.181
25	**749**-XXX	1.6250	.500	.790	1.500	1.875	.138-32UNC-3B	M37X1-6g	.204	.905	.228–.178	.242–.181

All dimensions for reference only.
* Consult Amphenol for more information on ordering connectors with clinch nuts.
Composite Series III connectors are available; consult Amphenol, Sidney, NY.
• Z dimension is determined by contact type in the insert arrangement.
• Most common options are shown; other options are available.

☐ Designates true position dimensioning
† Red band indicates fully mated
†† Blue band indicates rear release contact retention system

Series III TV





ZZ	
Pins	
12	.176/.109
16	.044/-.013
20	.161/.094
22D	.092/.025
Socket	
12	.176/.109
16	.092/.035
20	.161/.094
22D	.159/.088

PART #
See chart below

1. Shell Finish	2. Base Number	3. Shell Size	4. Insert Arrangement	5. Arrg Rotation
88	569	771	-35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

569	Base Number

3. Select a Shell Size:

See chart below **771-779**, designates size 9-25 shell size.
Example: **771**= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

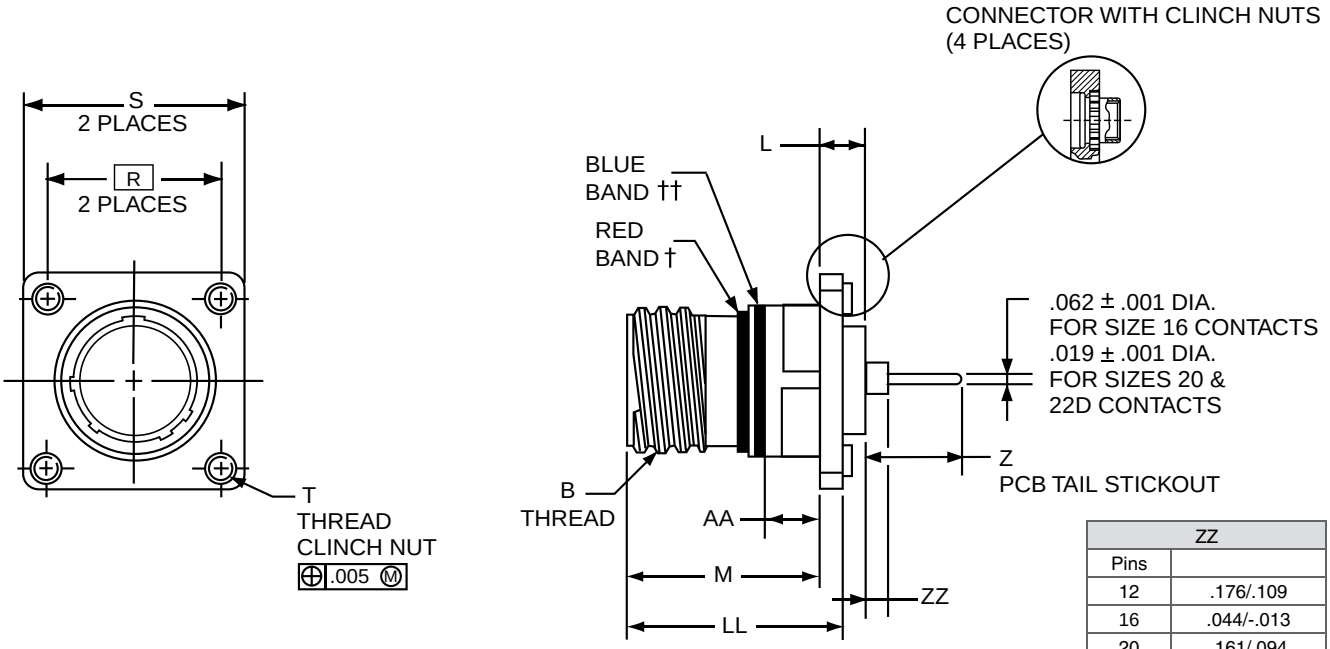
Shell Size	Part Number	B Thread Class 2A (Plated) 0.1P-0.3L-TS	L Max.	M +.000 –.005	R1	R2	S Max.	T +.008 –.006	AA Max. Panel Thickness	LL +.006 –.000	TT +.008 –.006	Z Size 16 & 20 Contacts	Z Size 22D Contacts
9	88/91-**569**771-XXX	.6250	.205	.820	.719	.594	.948	.128	.234	.905	.216	.460–.375	.471–.399
11	**772**-XXX	.7500	.205	.820	.812	.719	1.043	.128	.234	.905	.194	.460–.375	.471–.399
13	**773**-XXX	.8750	.205	.820	.906	.812	1.137	.128	.234	.905	.194	.460–.375	.471–.399
15	**774**-XXX	1.0000	.205	.820	.969	.906	1.232	.128	.234	.905	.173	.460–.375	.471–.399
17	**775**-XXX	1.1875	.205	.820	1.062	.969	1.323	.128	.234	.905	.194	.460–.375	.471–.399
19	**776**-XXX	1.2500	.205	.820	1.156	1.062	1.449	.128	.234	.905	.194	.460–.375	.471–.399
21	**777**-XXX	1.3750	.235	.790	1.250	1.156	1.575	.128	.204	.905	.194	.460–.375	.471–.399
23	**778**-XXX	1.5000	.235	.790	1.375	1.250	1.701	.154	.204	.905	.242	.460–.375	.471–.399
25	**779**-XXX	1.6250	.235	.790	1.500	1.375	1.823	.154	.204	.905	.242	.460–.375	.471–.399

All dimensions for reference only.
Composite Series III connectors are available; consult Amphenol, Sidney, NY.
• Z dimension is determined by contact type in the insert arrangement.
• Most common options are shown; other options are available.

□ Designates true position dimensioning
† Red band indicates fully mated
†† Blue band indicates rear release contact retention system

(with clinch nuts)

Series III TV



ZZ	
Pins	
12	.176/.109
16	.044/-.013
20	.161/.094
22D	.092/.025
Socket	
12	.176/.109
16	.092/.035
20	.161/.094
22D	.159/.088

PART # See chart below

1. Shell Finish	2. Base Number	3. Shell Size	4. Insert Arrangement	5. Arrg Rotation
88	628	751	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

628	Base Number

3. Select a Shell Size:

See chart below 751-759, designates size 9-25 shell size.
Example: 751= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

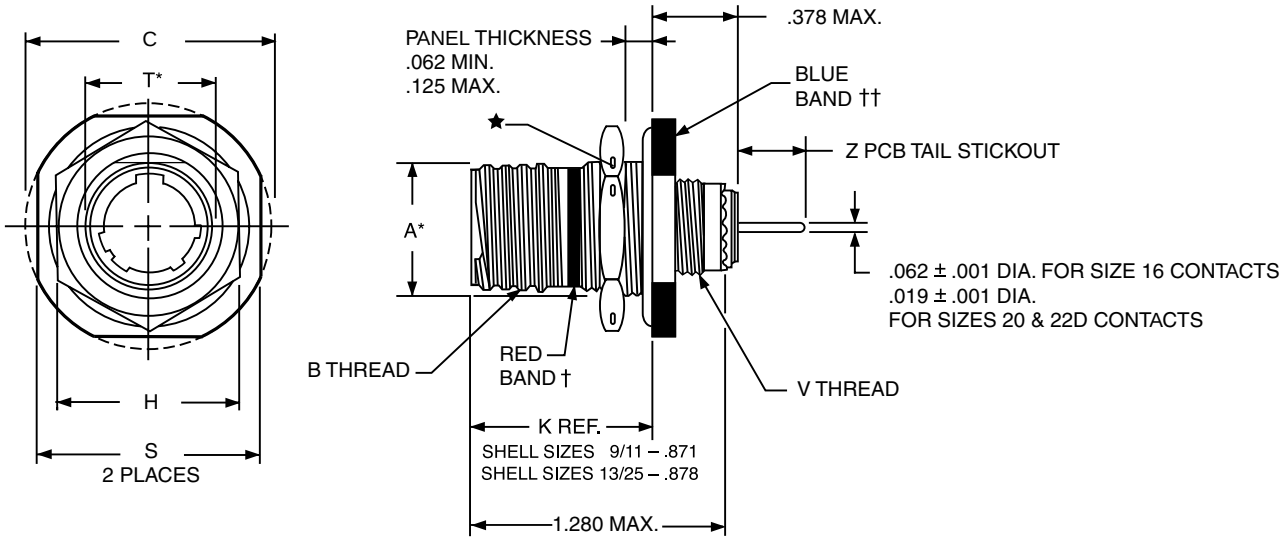
P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

Shell Size	Part Number with Clinch Nuts	B Thread Class 2A (Plated) 0.1P-0.3L-TS	L Max.	M +.000 –.005	R	S Max.	T Thread	AA Max. Panel Thickness	LL +.006 –.000	Z Size 16 & 20 Contacts	Z Size 22D Contacts
9	88/91-628751-XXX	.6250	.205	.820	.719	1.031	.112-40UNC-3B	.234	.905	.460–.375	.471–.399
11	752-XXX	.7500	.205	.820	.812	1.125	.112-40UNC-3B	.234	.905	.460–.375	.471–.399
13	753-XXX	.8750	.205	.820	.906	1.172	.112-40UNC-3B	.234	.905	.460–.375	.471–.399
15	754-XXX	1.0000	.205	.820	.969	1.281	.112-40UNC-3B	.234	.905	.460–.375	.471–.399
17	755-XXX	1.1875	.205	.820	1.062	1.375	.112-40UNC-3B	.234	.905	.460–.375	.471–.399
19	756-XXX	1.2500	.205	.820	1.156	1.469	.112-40UNC-3B	.234	.905	.460–.375	.471–.399
21	757-XXX	1.3750	.235	.790	1.250	1.562	.112-40UNC-3B	.204	.905	.460–.375	.471–.399
23	758-XXX	1.5000	.235	.790	1.375	1.750	.112-40UNC-3B	.204	.905	.460–.375	.471–.399
25	759-XXX	1.6250	.235	.790	1.500	1.875	.112-40UNC-3B	.204	.905	.460–.375	.471–.399

All dimensions for reference only.
* Consult Amphenol for more information on ordering connectors with clinch nuts.
Composite Series III connectors are available; consult Amphenol, Sidney, NY.
• Z dimension is determined by contact type in the insert arrangement.
• Most common options are shown; other options are available.

□ Designates true position dimensioning
† Red band indicates fully mated
†† Blue band indicates rear release contact retention system

Series III TV



	1.	2.	3.	4.	5.
PART # See chart below	Shell Finish	Base Number	Shell Size	Insert Arrangement	Arrg Rotation
	88	569	781	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

569	Base Number

3. Select a Shell Size:

See chart below **781-789**, designates size 9-25 shell size.
Example: **781**= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

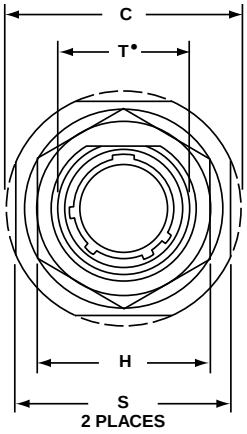
Shell Size	Part Number	A* +.000 –.000	B Thread Class 2A (Plated) 0.1P-0.3L-TS	C Max.	H Hex +.017 –.016	S ±.010	T +.010 –.000	V Thread Metric	Z Size 16 & 20 Contacts	Z Size 22D Contacts
9	88/91-**569**781-XXX	.669	.6250	1.199	.875	1.062	.697	M12X1-6g	.244 – .200	.258 – .206
11	**782**-XXX	.769	.7500	1.386	1.000	1.250	.822	M15X1-6g	.244 – .200	.258 – .206
13	**783**-XXX	.955	.8750	1.511	1.188	1.375	1.007	M18X1-6g	.244 – .200	.258 – .206
15	**784**-XXX	1.084	1.0000	1.636	1.312	1.500	1.134	M22X1-6g	.244 – .200	.258 – .206
17	**785**-XXX	1.208	1.1875	1.761	1.438	1.625	1.259	M25X1-6g	.244 – .200	.258 – .206
19	**786**-XXX	1.333	1.2500	1.949	1.562	1.812	1.384	M28X1-6g	.222 – .177	.236 – .180
21	**787**-XXX	1.459	1.3750	2.073	1.688	1.938	1.507	M31X1-6g	.222 – .177	.236 – .180
23	**788**-XXX	1.575	1.5000	2.199	1.812	2.062	1.634	M34X1-6g	.222 – .177	.236 – .180
25	**789**-XXX	1.709	1.6250	2.323	2.000	2.188	1.759	M37X1-6g	.222 – .177	.236 – .180

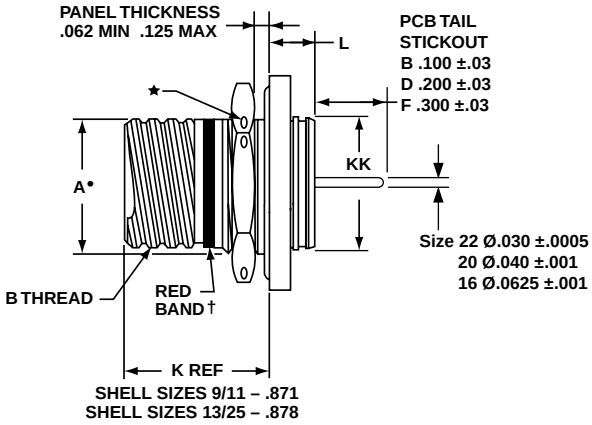
All dimensions for reference only.
Composite Series III connectors are available; consult Amphenol, Sidney, NY.
- Z dimension is determined by contact type in the insert arrangement.
- Most common options are shown; other options are available.

† Red band indicates fully mated
†† Blue band indicates rear release contact retention system
★ .059 dia. min. 3 lockwire holes. Formed lockwire hole design (6 holes) is optional.
* "D" shaped mounting hole dimensions

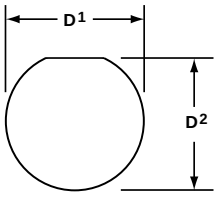
Amphenol Aerospace

Series III TV





PANEL HOLE DIMENSIONS



JAM NUT
D-HOLE
MOUNTING

	1.	2.	3.	4.	5.	6.
PART # See chart below	Base Number	Shell Size	Insert Arrg.	Arrg Rotation	Shell Finish	Tail Length
	10-626	471	-35	P	1	B

HOW TO ORDER

1. Base Number:

10-626	Base Number for MIL-DTL-38999 Series III Hermetic with PCB Tail

2. Select a Shell size:

See chart below **471-479**, designates size 9-25 shell size

3. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

4. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

5. Select a Shell Finish:

1	Hermetic seal, passivated Stainless Steel, 200°C
2	Hermetic seal, Stainless Steel w/Nickel Plate
3	Carbon Steel w/reflowed tin plate

6. Select a Tail Length:

B	.100±.03
D	.200±.03
F	.300±.03

† Red band indicates fully mated

★ . 059 dia min.
1.5 dia min. 3 lockwire holes
Formed lockwire hole design (6 holes) is optional.

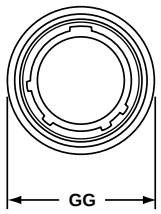
Shell Size	Part Number	A• +.000 –.010	B Thread Class 2A 0.1P-0.3L-TS (Plated)	C Max	D¹ +.010 –.000	D¹ +.000 –.010	H Hex +.017 –.016	L Max	S ±.010	T• +.010 –.000	KK +.011 –.000
9	**10-626**471-XXX	.669	.6250	1.199	.700	.670	.875	.357	1.062	.697	.642
11	472-XXX	.769	.7500	1.386	.825	.770	1.000	.357	1.250	.822	.766
13	473-XXX	.955	.8750	1.511	1.010	.955	1.188	.357	1.375	1.007	.892
15	474-XXX	1.084	1.0000	1.636	1.135	1.085	1.312	.357	1.500	1.134	1.018
17	475-XXX	1.208	1.1875	1.761	1.260	1.210	1.438	.357	1.625	1.259	1.142
19	476-XXX	1.333	1.2500	1.949	1.385	1.335	1.562	.381	1.182	1.384	1.268
21	477-XXX	1.459	1.3750	2.073	1.510	1.460	1.688	.381	1.938	1.507	1.392
23	478-XXX	1.575	1.5000	2.199	1.635	1.585	1.812	.381	2.062	1.634	1.518
25	479-XXX	1.709	1.6250	2.323	1.760	1.710	2.000	.381	2.188	1.759	1.642

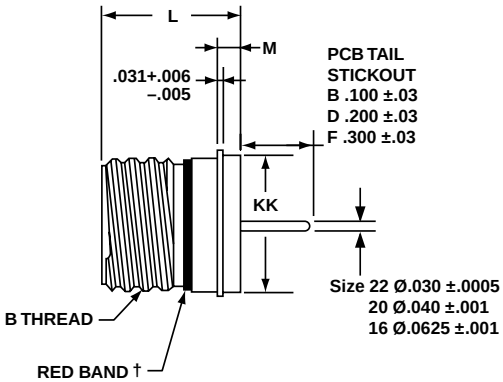
Series III TV

Solder Mounting Receptacle

PART # See chart below	1. Base Number	2. Shell Size	3. Insert Arrg.	4. Arrg Rotation	5. Shell Finish	6. Tail Length
	10-626	481	-35	P	1	B

Follow HOW TO ORDER instructions below.





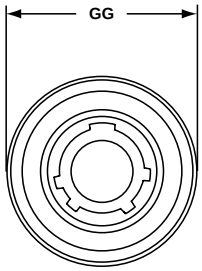
† Red band indicates fully mated

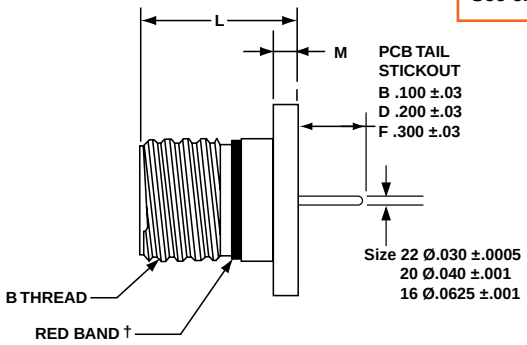
Shell Size	Part Number	B Thread Class 2A 0.1P-0.3L-TS (Plated)	L +.011 –.005	M +.006 –.005	GG Dia. +.011 –.010	KK Dia +.011 –.005
9	10-626481-XXX	.6250	.806	.125	.750	.672
11	482-XXX	.7500	.806	.125	.844	.781
13	483-XXX	.8750	.806	.125	.969	.906
15	484-XXX	1.0000	.806	.125	1.094	1.031
17	485-XXX	1.1875	.806	.125	1.218	1.156
19	486-XXX	1.2500	.806	.125	1.312	1.250
21	487-XXX	1.3750	.806	.125	1.438	1.375
23	488-XXX	1.5000	.838	.156	1.563	1.500
25	489-XXX	1.6250	.838	.156	1.688	1.625

38999, Series III Hermetic, Stainless Steel - PCB Contacts

TVSHIY Weld Mounting Receptacle

PART # See chart below	1. Base Number	2. Shell Size	3. Insert Arrg.	4. Arrg Rotation	5. Shell Finish	6. Tail Length
	10-626	491	-35	P	1	B





† Red band indicates fully mated

Shell Size	Part Number	B Thread Class 2A 0.1P-0.3L-TS (Plated)	L +.011 –.000	M +.006 –.005	GG Dia. +.011 –.010
9	10-626491-XXX	.6250	.806	.125	.973
11	492-XXX	.7500	.806	.125	1.095
13	493-XXX	.8750	.806	.125	1.221
15	494-XXX	1.0000	.806	.125	1.347
17	495-XXX	1.1875	.806	.125	1.434
19	496-XXX	1.2500	.806	.125	1.579
21	497-XXX	1.3750	.806	.125	1.721
23	498-XXX	1.5000	.838	.156	1.886
25	499-XXX	1.6250	.838	.156	1.973

* Not available for weld mount

HOW TO ORDER

1. Base Number:

10-626	Base Number for MIL-DTL-38999 Series III Hermetic with PCB Tail

2. Select a Shell size:

See chart below 491-499, designates size 9-25 shell size

3. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. The second number is the Insert Arrangement.

-35	Designates number of Inserts in Arrangement

4. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

5. Select a Shell Finish:

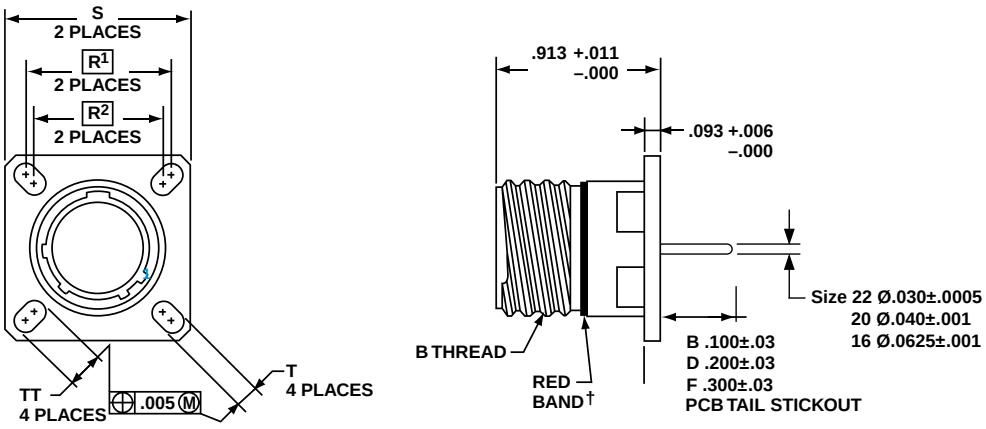
1	Hermetic seal, passivated Stainless Steel, 200°C
2	Hermetic seal, Stainless Steel w/Nickel Plate
3	*Carbon Steel w/reflowed tin plate

6. Select a Tail Length:

B	.100±.03
D	.200±.03
F	.300±.03

Amphenol Aerospace

Box Mounting Receptacle



PART # See chart below	1. Base Number	2. Shell Size	3. Insert Arrg.	4. Arrg Rotation	5. Shell Finish	6. Tail Length
	10-626	501	-35	P	1	B

HOW TO ORDER

1. Base Number:

10-626	Base Number for MIL-DTL-38999 Series III Hermetic with PCB Tail

2. Select a Shell size:

See chart below **501-509**, designates size 9-25 shell size.
Example: **501**= Size 9 Shell

3. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. The second number is the Insert Arrangement.

-35	Designates number of Inserts in Arrangement

4. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

5. Select a Shell Finish:

1	Hermetic seal, passivated Stainless Steel, 200°C
2	Hermetic seal, Stainless Steel w/Nickel Plate
3	Carbon Steel w/reflowed tin plate

6. Select a Tail Length:

B	.100±.03
D	.200±.03
F	.300±.03

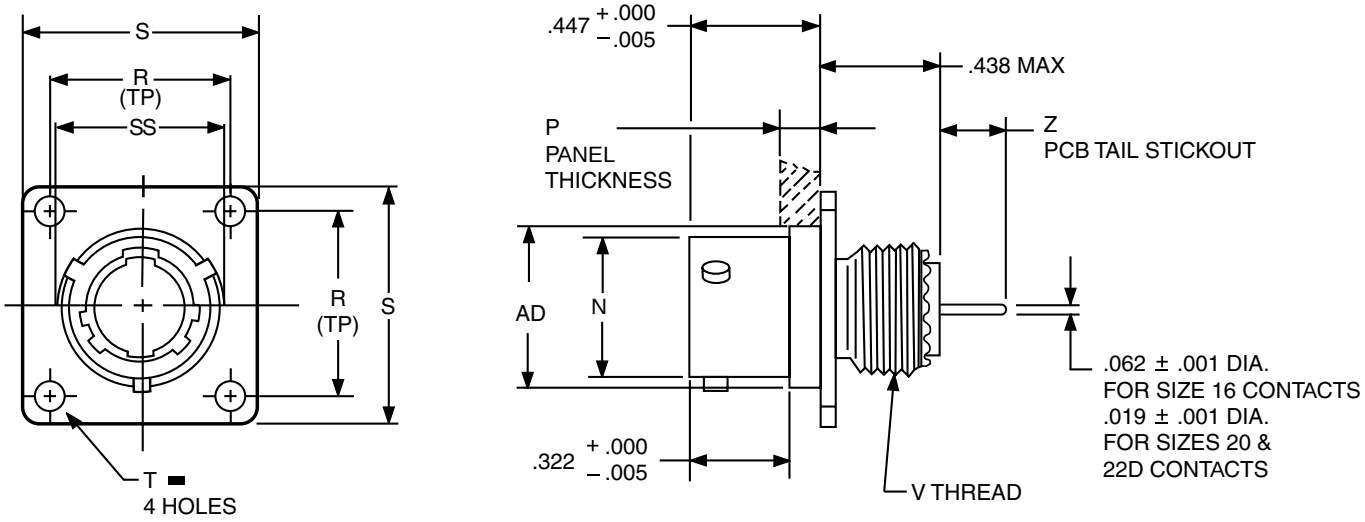
Shell Size	Part Number	B Thread 0.1P-0.3L-TS (Plated)	R1	R2	S ±.010	T ±.008	TT ±.008
9	10-626501-XXX	.6250	.719	.594	.938	.128	.216
11	502-XXX	.7500	.812	.719	1.031	.128	.194
13	503-XXX	.8750	.906	.812	1.125	.128	.194
15	504-XXX	1.0000	.969	.906	1.219	.128	.173
17	505-XXX	1.1875	1.062	.969	1.312	.128	.194
19	506-XXX	1.2500	1.156	1.062	1.438	.128	.194
21	507-XXX	1.3750	1.250	1.156	1.562	.128	.194
23	508-XXX	1.5000	1.375	1.250	1.688	.154	.242
25	509-XXX	1.6250	1.500	1.375	1.812	.154	.242

† Red band indicates fully mated NOTE: Consult Amphenol Aerospace for availability of non-glass-sealed versions with printed circuit tail contacts.

All dimensions for reference only

☐ Designates true position dimensioning

Series II JT



PART #	1. Shell Finish	2. Base Number	3. Shell Size	4. Insert Arrangement	5. Arrg Rotation
See chart below	88	569	731	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

569	Base Number

3. Select a Shell Size:

See chart below 731-739, designates size 9-25 shell size.
Example: 731= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

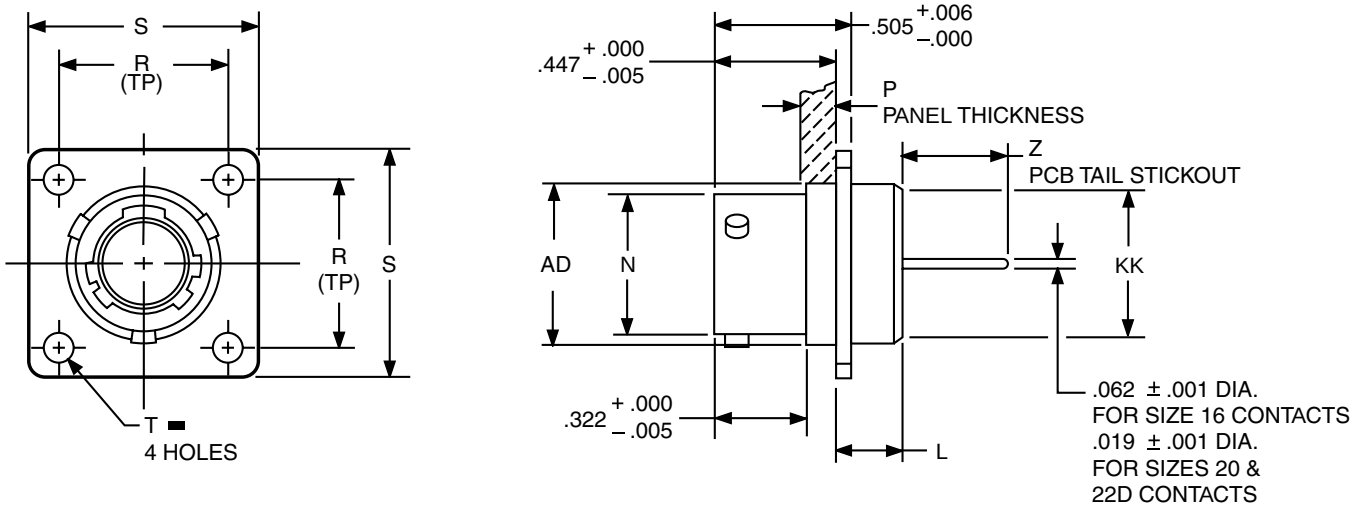
▬ Ⓣ .005 DIA Ⓜ

Shell Size	Part Number	N +.001 –.005	P Max. Panel Thickness	R (TP)	S ±.016	T Dia. ±.005	V Thread Class 2A (Plated)	AD Dia. ±.005	SS Dia. +.000 –.016	Z Size 16 & 20 Contacts	Z Size 22D Contacts
8	88/91-569731-XXX	.473	.142	.594	.812	.120	.4375-28 UNEF	.516	.563	.257 – .200	.268 – .178
10	732-XXX	.590	.142	.719	.938	.120	.5625-24 UNEF	.633	.680	.257 – .200	.268 – .178
12	733-XXX	.750	.142	.812	1.031	.120	.6875-24 UNEF	.802	.859	.257 – .200	.268 – .178
14	734-XXX	.875	.142	.906	1.125	.120	.8125-20 UNEF	.927	.984	.257 – .200	.268 – .178
16	735-XXX	1.000	.142	.969	1.219	.120	.9375-20 UNEF	1.052	1.108	.257 – .200	.268 – .178
18	736-XXX	1.125	.142	1.062	1.312	.120	1.0625-18 UNEF	1.177	1.233	.257 – .200	.268 – .178
20	737-XXX	1.250	.142	1.156	1.438	.120	1.1875-18 UNEF	1.302	1.358	.257 – .200	.268 – .178
22	738-XXX	1.375	.142	1.250	1.562	.120	1.3125-18 UNEF	1.427	1.483	.257 – .200	.268 – .178
24	739-XXX	1.500	.142	1.375	1.688	.147	1.4375-18 UNEF	1.552	1.610	.257 – .200	.268 – .178

All dimensions for reference only.
• Z dimension is determined by contact type in the insert arrangement.
• Most common options are shown; other options are available.

JTP02R Box Mounting Receptacle

(back panel mounting)



	1.	2.	3.	4.	5.
PART #	Shell Finish	Base Number	Shell Size	Insert Arrangement	Arrg Rotation
See chart below	88	**569**	741	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

569	Base Number

3. Select a Shell Size:

See chart below **741-749**, designates size 9-25 shell size.
Example: **741**= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

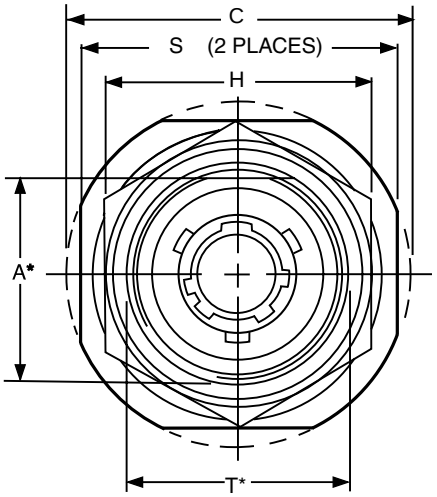
P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

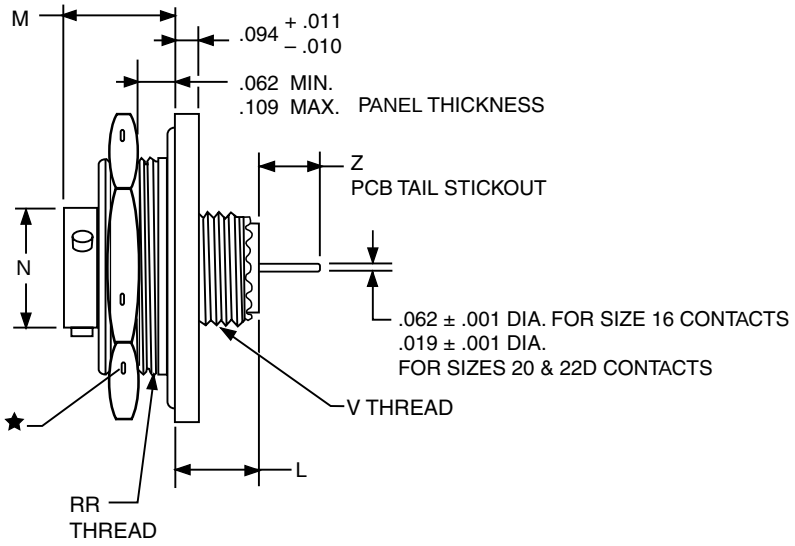
▬ Ⓣ .005 DIA Ⓜ

Shell Size	Part Number	L Max.	N +.001 –.005	P Max. Panel Thickness	R (TP)	S ±.016	T Dia. ±.005	AD Dia. ±.005	KK Dia. Max.	Z Size 16 & 20 Contacts	Z Size 22D Contacts
8	88/91-**569**741-XXX	.225	.473	.147	.594	.812	.120	.516	.531	.455 – .403	.466 – .409
10	**742**-XXX	.225	.590	.152	.719	.938	.120	.633	.656	.455 – .403	.466 – .409
12	**743**-XXX	.225	.750	.152	.812	1.031	.120	.802	.828	.455 – .403	.466 – .409
14	**744**-XXX	.225	.875	.152	.906	1.125	.120	.927	.953	.455 – .403	.466 – .409
16	**745**-XXX	.225	1.000	.152	.969	1.219	.120	1.052	1.078	.455 – .403	.466 – .409
18	**746**-XXX	.225	1.125	.152	1.062	1.312	.120	1.177	1.203	.455 – .403	.466 – .409
20	**747**-XXX	.225	1.250	.179	1.156	1.438	.120	1.302	1.328	.455 – .403	.466 – .409
22	**748**-XXX	.225	1.375	.179	1.250	1.562	.120	1.427	1.453	.455 – .403	.466 – .409
24	**749**-XXX	.225	1.500	.169	1.375	1.688	.147	1.552	1.578	.455 – .403	.466 – .409

All dimensions for reference only.
• Z dimension is determined by contact type in the insert arrangement.
• Most common options are shown; other options are available.

Series II JT





PART # See chart below	1. Shell Finish	2. Base Number	3. Shell Size	4. Insert Arrangement	5. Arrg Rotation
	88	569	751	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

569	Base Number

3. Select a Shell Size:

See chart below 751-759, designates size 9-25 shell size.
Example: 751= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

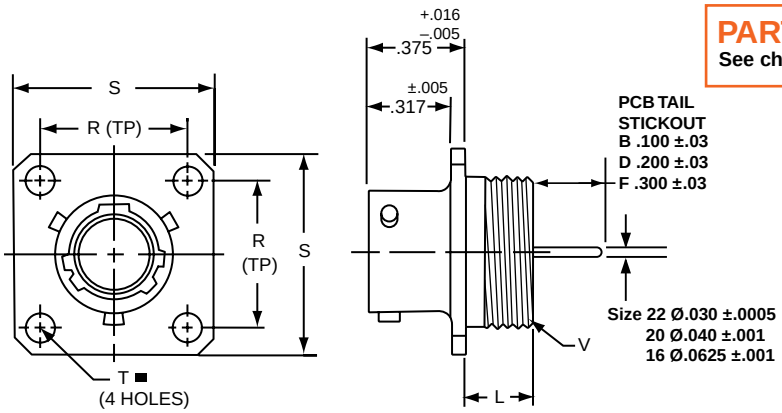
Shell Size	Part Number	A* +.000 –.010	C Max.	H Hex +.017 –.016	L Max.	M ±.005	N +.001 –.005	S ±.016	T* +.010 –.000	V Thread Class 2A (Plated)	RR Thread Class 2A (Plated)	Z Size 16 & 20 Contacts	Z Size 22D Contacts
8	88/91-569751-XXX	.830	1.390	1.062	.453	.438	.473	1.250	.884	.4375-28 UNEF	.8750-20 UNEF	.272 – .200	.283 – .178
10	752-XXX	.955	1.515	1.188	.453	.438	.590	1.375	1.007	.5625-24 UNEF	1.0000-20 UNEF	.272 – .200	.283 – .178
12	753-XXX	1.084	1.640	1.312	.453	.438	.750	1.500	1.134	.6875-24 UNEF	1.1250-18 UNEF	.272 – .200	.283 – .178
14	754-XXX	1.208	1.765	1.438	.453	.438	.875	1.625	1.259	.8125-20 UNEF	1.2500-18 UNEF	.272 – .200	.283 – .178
16	755-XXX	1.333	1.953	1.562	.453	.438	1.000	1.781	1.384	.9375-20 UNEF	1.3750-18 UNEF	.272 – .200	.283 – .178
18	756-XXX	1.459	2.031	1.688	.453	.438	1.125	1.890	1.507	1.0625-18 UNEF	1.5000-18 UNEF	.272 – .200	.283 – .178
20	757-XXX	1.576	2.156	1.812	.422	.464	1.250	2.016	1.634	1.1875-18 UNEF	1.6250-18 UNEF	.272 – .200	.283 – .178
22	758-XXX	1.701	2.280	2.000	.422	.464	1.375	2.140	1.759	1.3125-18 UNEF	1.7500-18 UNS	.272 – .200	.283 – .178
24	759-XXX	1.826	2.405	2.125	.422	.464	1.500	2.265	1.884	1.4375-18 UNEF	1.8750-16 UN	.272 – .200	.283 – .178

All dimensions for reference only.
• Z dimension is determined by contact type in the insert arrangement.
• Most common options are shown; other options are available.

★ .059 dia. min. 3 lockwire holes. Formed lockwire hole design (6 holes) is optional.
* "D" shaped mounting hole dimensions

Amphenol Aerospace

PART # See chart below	1. Base Number	2. Shell Size	3. Insert Arrg.	4. Arrg Rotation	5. Shell Finish	6. Tail Length
	10-626	431	-35	P	1	B



.005 DIA M

Shell Size	Part Number	L Max.	N +.001 −.005	R (TP)	S ±.016	T ±.005	V Thread Class 2A
8	10-626431-XXX	.234	.473	.594	.812	.120	.5625-24UNEF
10	432-XXX	.234	.590	.719	.938	.120	.6875-24UNEF
12	433-XXX	.234	.750	.812	1.031	.120	.8125-20UNEF
14	434-XXX	.234	.875	.906	1.125	.120	.9375-20UNEF
16	435-XXX	.234	1.000	.969	1.219	.120	1.0625-18UNEF
18	436-XXX	.234	1.125	1.062	1.312	.120	1.1875-18UNEF
20	437-XXX	.234	1.250	1.156	1.438	.120	1.3125-18UNEF
22	438-XXX	.234	1.375	1.250	1.562	.120	1.4375-18UNEF
24	439-XXX	.313	1.500	1.375	1.688	.147	1.5625-18UNEF

HOW TO ORDER

Series II JT

1. Base Number:

10-626	Base Number for MIL-DTL-38999 Series III Hermetic with PCB Tail

2. Select a Shell size:

See chart below 431-439, designates size 8-24 shell size

3. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. The second number is the Insert Arrangement.

-35	Designates number of Inserts in Arrangement

4. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

5. Select a Shell Finish:

1	Hermetic seal, passivated Stainless Steel, 200°C
2	Hermetic seal, Stainless Steel w/Nickel Plate
3	Carbon Steel w/reflowed tin plate

6. Select a Tail Length:

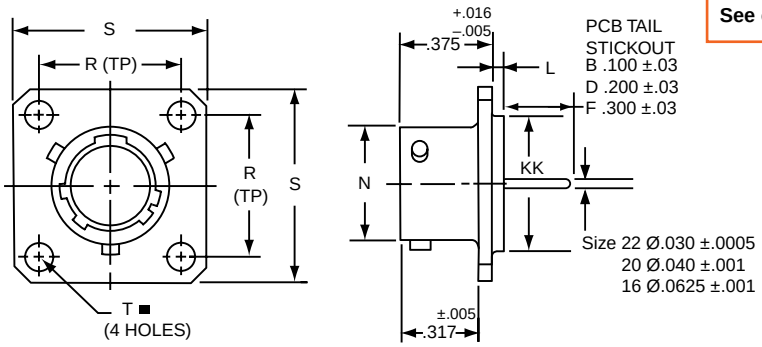
B	.100±.03
D	.200±.03
F	.300±.03

38999, Series II Hermetic – PCB Contacts

JT02 Box Mounting Receptacle

PART # See chart below	1. Base Number	2. Shell Size	3. Insert Arrg.	4. Arrg Rotation	5. Shell Finish	6. Tail Length
	10-626	461	-35	P	1	B

Follow HOW TO ORDER instructions above.



.005 DIA M

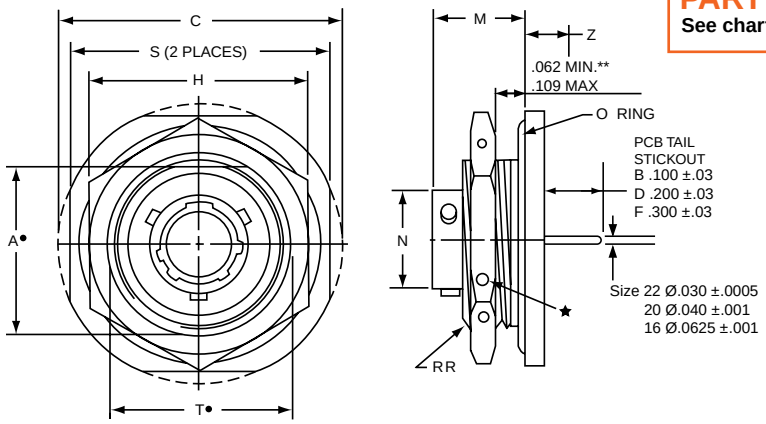
Shell Size	Part Number	L +.006 −.015	N +.001 −.005	R (TP)	S ±.016	T ±.005	KK +.001 −.005
8	10-626461-XXX	.051	.473	.594	.812	.120	.562
10	462-XXX	.051	.590	.719	.938	.120	.672
12	463-XXX	.051	.750	.812	1.031	.120	.781
14	464-XXX	.051	.875	.906	1.125	.120	.906
16	465-XXX	.051	1.000	.969	1.219	.120	1.031
18	466-XXX	.051	1.125	1.062	1.312	.120	1.156
20	467-XXX	.051	1.250	1.156	1.438	.120	1.250
22	468-XXX	.080	1.375	1.250	1.562	.120	1.375
24	469-XXX	.080	1.500	1.375	1.688	.147	1.500

All dimensions for reference only.

PART # See chart below	1. Base Number	2. Shell Size	3. Insert Arrg.	4. Arrg Rotation	5. Shell Finish	6. Tail Length
	10-626	441	-35	P	1	B

Follow HOW TO ORDER instructions below.

Series II JT



Shell Size	Part Number	A• +.000 −.010	C Max.	H +.017 −.016	M ±.005	N +.001 −.005	S ±.016	T• +.010 −.000	Z Max.	RR Thread Class 2A
8	10-626441-XXX	.830	1.390	1.062	.438	.473	1.250	.884	.244	.8750-20UNEF
10	442-XXX	.955	1.515	1.188	.438	.590	1.375	1.007	.244	1.0000-20UNEF
12	443-XXX	1.084	1.640	1.312	.438	.750	1.500	1.134	.244	1.1250-18UNEF
14	444-XXX	1.208	1.765	1.438	.438	.875	1.625	1.259	.244	1.2500-18UNEF
16	445-XXX	1.333	1.953	1.562	.438	1.000	1.781	1.384	.244	1.3750-18UNEF
18	446-XXX	1.459	2.031	1.688	.438	1.125	1.890	1.507	.244	1.5000-18UNEF
20	447-XXX	1.576	2.156	1.812	.464	1.250	2.016	1.634	.218	1.6250-18UNEF
22	448-XXX	1.701	2.280	2.000	.464	1.375	2.140	1.759	.218	1.7500-18UNS
24	449-XXX	1.826	2.405	2.125	.464	1.500	2.265	1.884	.218	1.8750-16UN

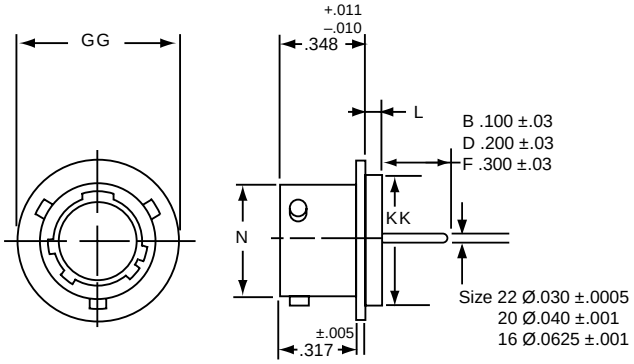
★.059 Dia. Min. 3 lockwire holes. Formed lockwire hole design (6 holes) is optional.
• "D" shaped mounting hole dimensions.
** Panel Thickness

All dimensions for reference only.

38999, Series II Hermetic – PCB Contacts

JTI Solder Mounting Receptacle

PART # See chart below	1. Base Number	2. Shell Size	3. Insert Arrg.	4. Arrg Rotation	5. Shell Finish	6. Tail Length
	10-626	451	-35	P	1	B



Shell Size	Part Number	L +.011 −.010	N +.001 −.005	GG +.011 −.010	KK +.001 −.005
8	10-626451-XXX	.078	.473	.687	.562
10	452-XXX	.078	.590	.797	.672
12	453-XXX	.078	.750	.906	.781
14	454-XXX	.078	.875	1.031	.906
16	455-XXX	.078	1.000	1.156	1.031
18	456-XXX	.078	1.125	1.281	1.156
20	457-XXX	.078	1.250	1.375	1.250
22	458-XXX	.107	1.375	1.500	1.375
24	459-XXX	.107	1.500	1.625	1.500

All dimensions for reference only. Weld mounting hermetic receptacle also available. Consult Amphenol, Sidney, NY for availability and dimensions.

HOW TO ORDER

1. Base Number:

10-626	Base Number for MIL-DTL-38999 Series III Hermetic with PCB Tail

2. Select a Shell size:

See chart below 451-459, designates size 8-24 shell size

3. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. The second number is the Insert Arrangement.

-35	Designates number of Inserts in Arrangement

4. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

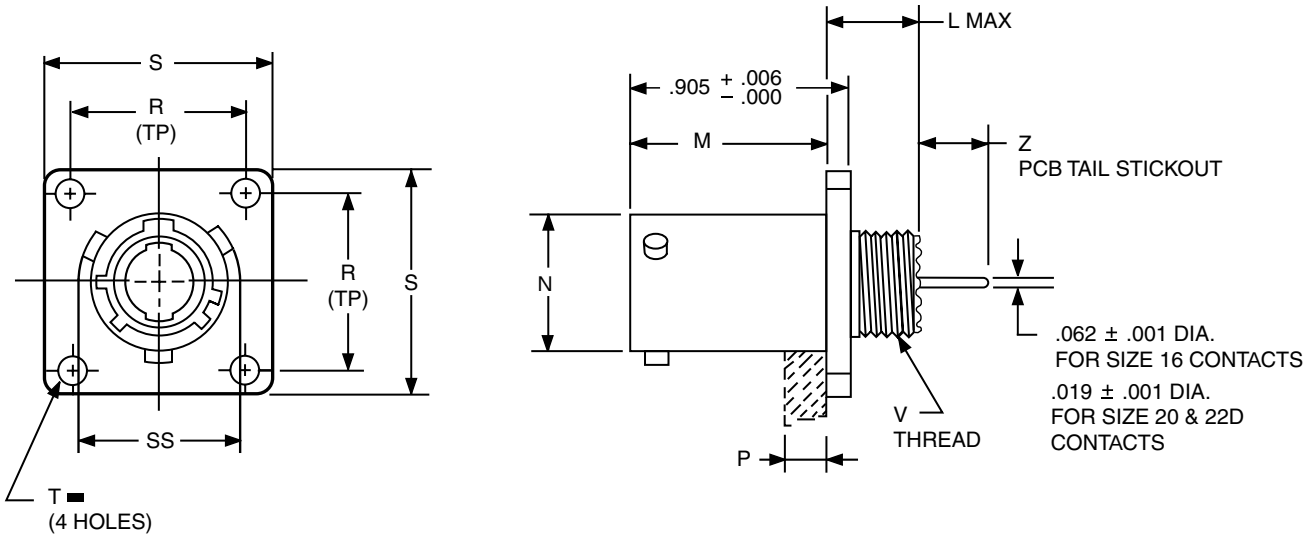
5. Select a Shell Finish:

1	Hermetic seal, passivated Stainless Steel, 200°C
2	Hermetic seal, Stainless Steel w/Nickel Plate
3	Carbon Steel w/reflowed tin plate

6. Select a Tail Length:

B	.100±.03
D	.200±.03
F	.300±.03

(back panel mounting)



PART #	1. Shell Finish	2. Base Number	3. Shell Size	4. Insert Arrangement	5. Arrg Rotation
See chart below	88	569	701	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

569	Base Number

3. Select a Shell Size:

See chart below 701-709, designates size 9-25 shell size.
Example: 701= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

▬ Ⓢ .005 DIA Ⓜ

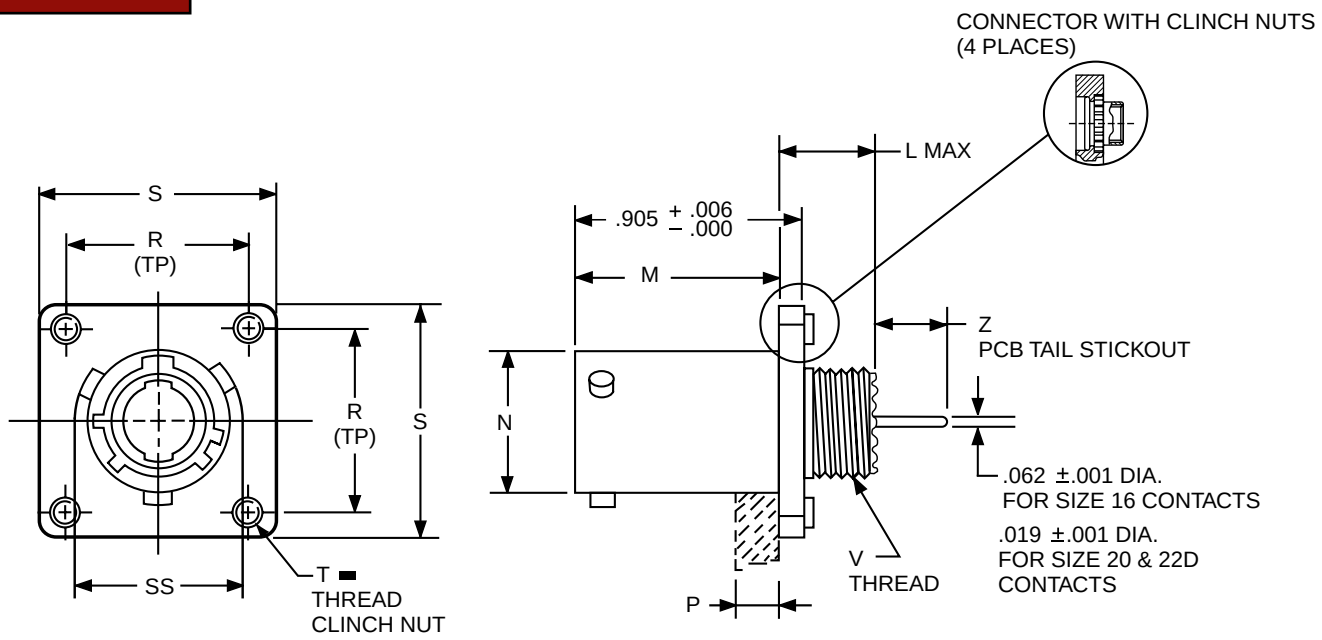
Shell Size	Part Number	L Max.	M +.000 –.005	N Dia.	P Max. Panel Thickness	R (TP)	S +.011 –.010	T Dia. ±.005	V Thread Class 2A (Plated)	SS Dia. +.000 –.016	Z Size 16 & 20 Contacts	Z Size 22D Contacts
9	88/91-**569**701-XXX	.453	.820	.572	.234	.719	.938	.128	.4375-28 UNEF	.662	.281 – .235	.249 – .188
11	702-XXX	.453	.820	.700	.234	.812	1.031	.128	.5625-24 UNEF	.810	.281 – .235	.249 – .188
13	703-XXX	.453	.820	.850	.234	.906	1.125	.128	.6875-24 UNEF	.960	.281 – .235	.249 – .188
15	704-XXX	.453	.820	.975	.234	.969	1.219	.128	.8125-20 UNEF	1.085	.281 – .235	.249 – .188
17	705-XXX	.453	.820	1.100	.234	1.062	1.312	.128	.9375-20 UNEF	1.210	.281 – .235	.249 – .188
19	706-XXX	.453	.820	1.207	.234	1.156	1.438	.128	1.0625-18 UNEF	1.317	.281 – .235	.249 – .188
21	707-XXX	.484	.790	1.332	.204	1.250	1.562	.128	1.1875-18 UNEF	1.442	.281 – .235	.249 – .188
23	708-XXX	.484	.790	1.457	.204	1.375	1.688	.147	1.3125-18 UNEF	1.567	.281 – .235	.249 – .188
25	709-XXX	.484	.790	1.582	.193	1.500	1.812	.147	1.4375-18 UNEF	1.692	.281 – .235	.249 – .188

All dimensions for reference only.
• Z dimension is determined by contact type in the insert arrangement.
• Most common options are shown; other options are available.

LJTPQ00R Wall Mounting Receptacle

(back panel mounting) (with clinch nuts)

Series I LJT



	1.	2.	3.	4.	5.
PART #	Shell Finish	Base Number	Shell Size	Insert Arrangement	Arrg Rotation
See chart below	88	**628**	701	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

628	Base Number

3. Select a Shell Size:

See chart below **701-709**, designates size 9-25 shell size.
Example: **701**= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

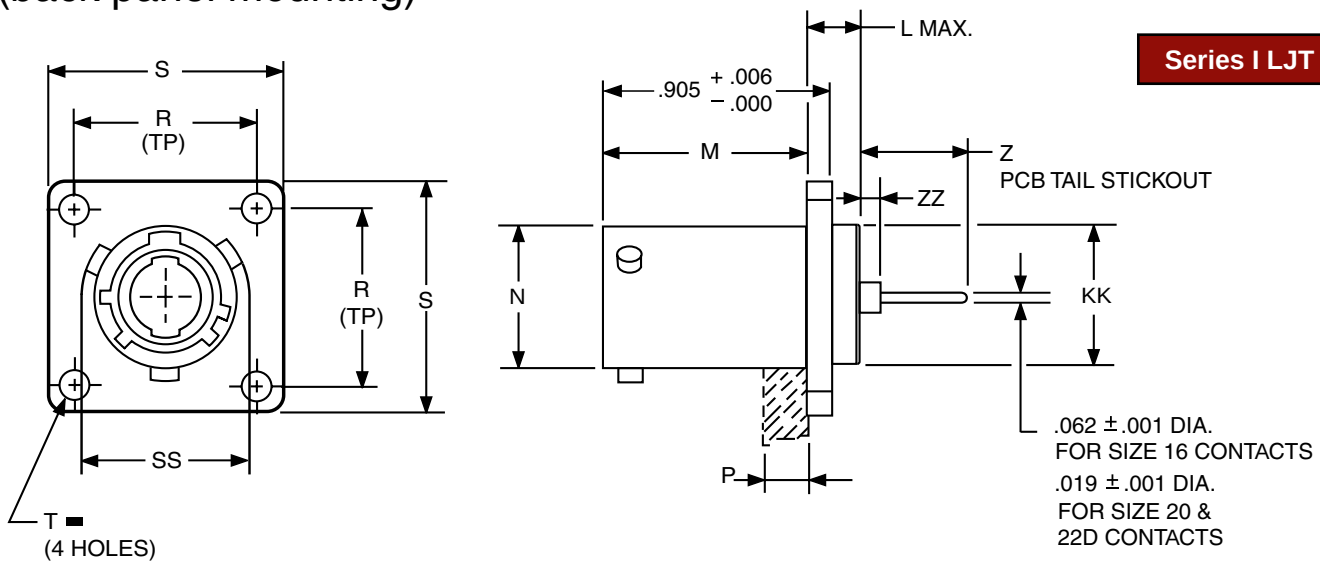
■ Ⓟ .005 DIA Ⓜ

Shell Size	Part Number with Clinch Nuts*	L Max.	M +.000 −.005	N Dia.	P Max. Panel Thickness	R (TP)	S +.011 −.010	T Thread	V Thread Class 2A (Plated)	SS Dia. +.000 −.016	Z Size 16 & 20 Contacts	Z Size 22D Contacts
9	88/91-**628**701-XXX	.453	.820	.572	.234	.719	.938	.112-40UNJC-3B	.4375-28 UNEF	.662	.281 – .235	.249 – .188
11	**702**-XXX	.453	.820	.700	.234	.812	1.031	.112-40UNJC-3B	.5625-24 UNEF	.810	.281 – .235	.249 – .188
13	**703**-XXX	.453	.820	.850	.234	.906	1.125	.112-40UNJC-3B	.6875-24 UNEF	.960	.281 – .235	.249 – .188
15	**704**-XXX	.453	.820	.975	.234	.969	1.219	.112-40UNJC-3B	.8125-20 UNEF	1.085	.281 – .235	.249 – .188
17	**705**-XXX	.453	.820	1.100	.234	1.062	1.312	.112-40UNJC-3B	.9375-20 UNEF	1.210	.281 – .235	.249 – .188
19	**706**-XXX	.453	.820	1.207	.234	1.156	1.438	.112-40UNJC-3B	1.0625-18 UNEF	1.317	.281 – .235	.249 – .188
21	**707**-XXX	.484	.790	1.332	.204	1.250	1.562	.112-40UNJC-3B	1.1875-18 UNEF	1.442	.281 – .235	.249 – .188
23	**708**-XXX	.484	.790	1.457	.204	1.375	1.688	.138-32UNJC-3B	1.3125-18 UNEF	1.567	.281 – .235	.249 – .188
25	**709**-XXX	.484	.790	1.582	.193	1.500	1.812	.138-32UNJC-3B	1.4375-18 UNEF	1.692	.281 – .235	.249 – .188

All dimensions for reference only.
* Consult Amphenol for more information on ordering connectors with clinch nuts. There is also a 3mm clinch nut available (part number 88/91-628401/409)
• Z dimension is determined by contact type in the insert arrangement.
• Most common options are shown; other options are available.

Amphenol Aerospace

(back panel mounting)



Series I LJT

ZZ	
Pins	
12	.176/.115
16	.044/-.007
20	.161/.100
22D	.092/.031
Socket	
12	.176/.112
16	.092/.038
20	.161/.097
22D	.200/.129

	1.	2.	3.	4.	5.
PART # See chart below	Shell Finish	Base Number	Shell Size	Insert Arrangement	Arrg Rotation
	88	**569**	711	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

569	Base Number

3. Select a Shell Size:

See chart below **711-719**, designates size 9-25 shell size.
Example: **711**= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

▬ Ⓟ .005 DIA Ⓜ

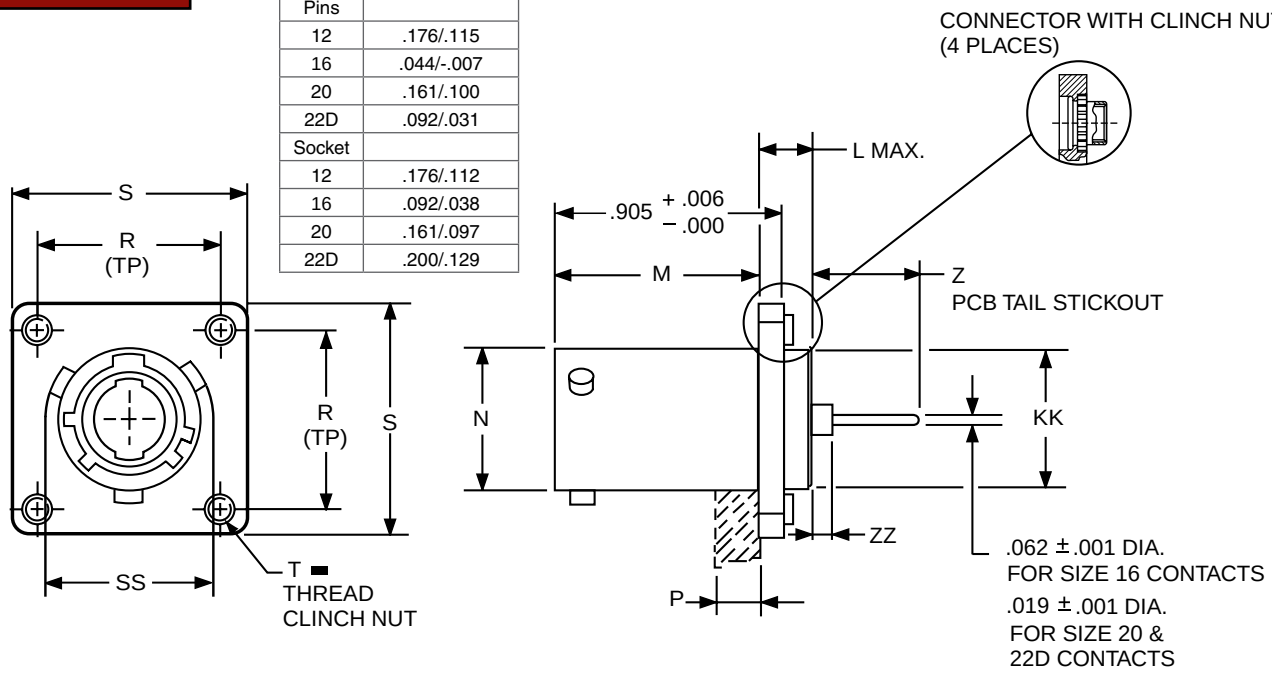
Shell Size	Part Number	L Max.	M +.000 –.005	N +.001 –.005	P Max. Panel Thickness	R (TP)	S +.011 –.010	T Dia. ±.005	KK Dia. +.006 –.005	SS Dia. +.000 –.016	Z Size 16 & 20 Contacts	Z Size 22D Contacts
9	88/91-**569**711-XXX	.203	.820	.572	.234	.719	.938	.128	.433	.662	.454 – .401	.468 – .406
11	**712**-XXX	.203	.820	.700	.234	.812	1.031	.128	.557	.810	.454 – .401	.468 – .406
13	**713**-XXX	.203	.820	.850	.234	.906	1.125	.128	.676	.960	.454 – .401	.468 – .406
15	**714**-XXX	.203	.820	.975	.234	.969	1.219	.128	.801	1.085	.454 – .401	.468 – .406
17	**715**-XXX	.203	.820	1.100	.234	1.062	1.312	.128	.926	1.210	.454 – .401	.468 – .406
19	**716**-XXX	.203	.820	1.207	.234	1.156	1.438	.128	1.032	1.317	.454 – .401	.468 – .406
21	**717**-XXX	.234	.790	1.332	.204	1.250	1.562	.128	1.157	1.442	.454 – .401	.468 – .406
23	**718**-XXX	.234	.790	1.457	.204	1.375	1.688	.147	1.282	1.567	.454 – .401	.468 – .406
25	**719**-XXX	.234	.790	1.582	.193	1.500	1.812	.147	1.407	1.692	.454 – .401	.468 – .406

All dimensions for reference only.
- Z dimension is determined by contact type in the insert arrangement.
- Most common options are shown; other options are available.

(back panel mounting) (with clinch nuts)

Series I LJT

ZZ	
Pins	
12	.176/.115
16	.044/-.007
20	.161/.100
22D	.092/.031
Socket	
12	.176/.112
16	.092/.038
20	.161/.097
22D	.200/.129



PART # See chart below	1. Shell Finish	2. Base Number	3. Shell Size	4. Insert Arrangement	5. Arrg Rotation
	88	628	761	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

628	Base Number

3. Select a Shell Size:

See chart below 711-719, designates size 9-25 shell size.
Example: 711= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

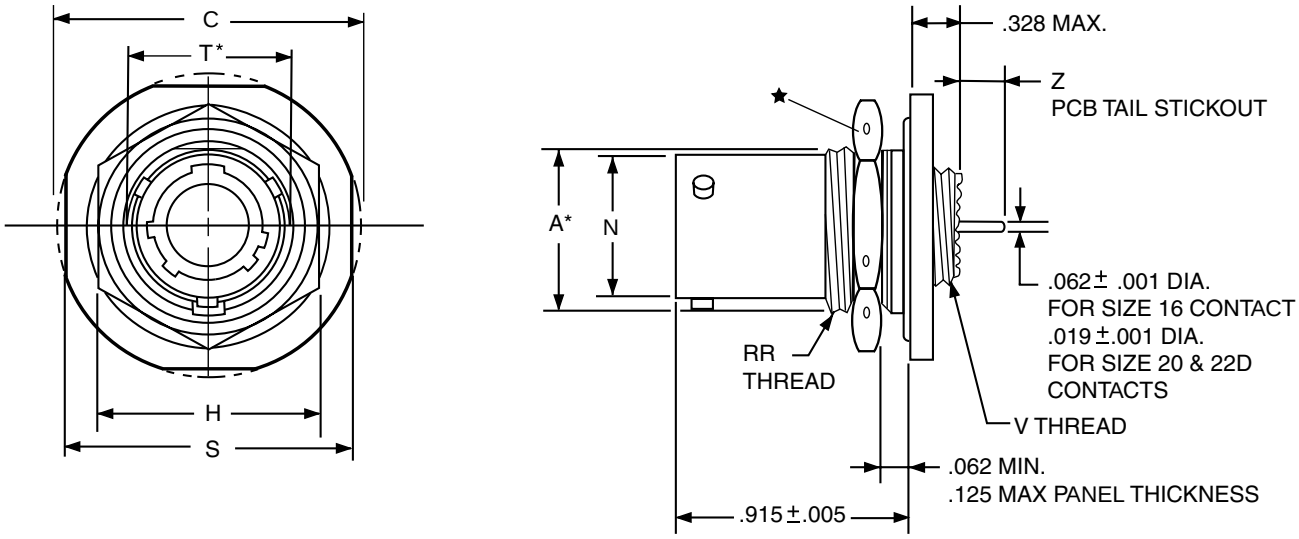
▬ Ⓣ .005 DIA Ⓜ

Shell Size	Part Number with Clinch Nuts	L Max.	M +.000 –.005	N +.001 –.005	P Max. Panel Thickness	R (TP)	S +.011 –.010	T Thread	KK Dia. +.006 –.005	SS Dia. +.000 –.016	Z Size 16 & 20 Contacts	Z Size 22D Contacts
9	88/91-628711-XXX	.203	.820	.572	.234	.719	1.031	.112-40UNJC-3B	.433	.662	.454 – .401	.468 – .406
11	712-XXX	.203	.820	.700	.234	.812	1.125	.112-40UNJC-3B	.557	.810	.454 – .401	.468 – .406
13	713-XXX	.203	.820	.850	.234	.906	1.172	.112-40UNJC-3B	.676	.960	.454 – .401	.468 – .406
15	714-XXX	.203	.820	.975	.234	.969	1.281	.112-40UNJC-3B	.801	1.085	.454 – .401	.468 – .406
17	715-XXX	.203	.820	1.100	.234	1.062	1.375	.112-40UNJC-3B	.926	1.210	.454 – .401	.468 – .406
19	716-XXX	.203	.820	1.207	.234	1.156	1.469	.112-40UNJC-3B	1.032	1.317	.454 – .401	.468 – .406
21	717-XXX	.234	.790	1.332	.204	1.250	1.625	.112-40UNJC-3B	1.157	1.442	.454 – .401	.468 – .406
23	718-XXX	.234	.790	1.457	.204	1.375	1.750	.138-32UNJC-3B	1.282	1.567	.454 – .401	.468 – .406
25	719-XXX	.234	.790	1.582	.193	1.500	1.875	.138-32UNJC-3B	1.407	1.692	.454 – .401	.468 – .406

All dimensions for reference only.
* Consult Amphenol for more information on ordering connectors with clinch nuts. There is also a 3mm clinch nut available (part number 88/91-628410/419)
• Z dimension is determined by contact type in the insert arrangement.
• Most common options are shown; other options are available.

Amphenol Aerospace

Series I LJT



PART #	1. Shell Finish	2. Base Number	3. Shell Size	4. Insert Arrangement	5. Arrg Rotation
See chart below	88	569	761	- 35	P

HOW TO ORDER

1. Select a Shell Finish:

88	Designates olive drab cadmium plated connector shell
91	Designates electroless nickel plated connector shell

2. Base Number:

569	Base Number

3. Select a Shell Size:

See chart below 721-729, designates size 9-25 shell size.
Example: 721= Size 9 Shell

4. Select an Insert Arrangement:

Refer to insert availability chart on page 87 and pin-out illustrations on pages 89-103. First number represents the Shell size and the second number is the insert Arrangement.

-35	Designates number of Inserts in Arrangement

5. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.

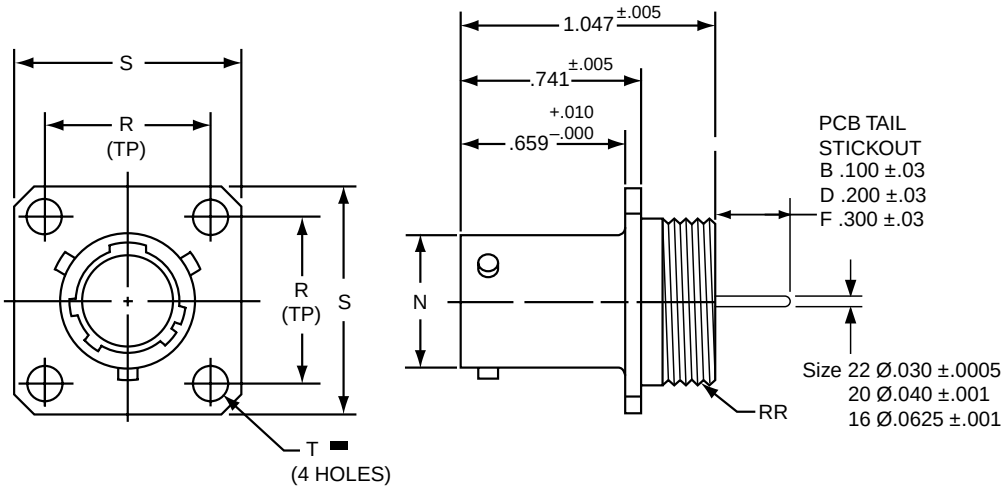
P	Designates Pin Contacts in Normal Position
S	Designates Socket Contacts in Normal Position

Shell Size	Part Number	A* +.000 –.010	C Max.	H Hex +.017 –.016	L Max.	N +.001 –.005	S ±.016	T* +.010 –.000	V Thread Class 2A (Plated)	RR Thread Class 2A (Plated)	Z Size 16 & 20 Contacts	Z Size 22D Contacts
9	88/91-569721-XXX	.669	1.199	.875	.625	.572	1.062	.697	.4375-28 UNEF	.6875-24 UNEF	.229 – .175	.243 – .182
11	722-XXX	.769	1.386	1.000	.625	.700	1.250	.822	.5625-24 UNEF	.8125-20 UNEF	.229 – .175	.243 – .182
13	723-XXX	.955	1.511	1.188	.625	.850	1.375	1.007	.6875-24 UNEF	1.0000-20 UNEF	.229 – .175	.243 – .182
15	724-XXX	1.084	1.636	1.312	.625	.975	1.500	1.134	.8125-20 UNEF	1.1250-18 UNEF	.229 – .175	.243 – .182
17	725-XXX	1.208	1.761	1.438	.625	1.100	1.625	1.259	.9375-20 UNEF	1.2500-18 UNEF	.229 – .175	.243 – .182
19	726-XXX	1.333	1.949	1.562	.656	1.207	1.812	1.384	1.0625-18 UNEF	1.3750-18 UNEF	.207 – .158	.221 – .165
21	727-XXX	1.459	2.073	1.688	.750	1.332	1.938	1.507	1.1875-18 UNEF	1.5000-18 UNEF	.207 – .158	.221 – .165
23	728-XXX	1.580	2.199	1.812	.750	1.457	2.062	1.634	1.3125-18 UNEF	1.6250-18 UNEF	.207 – .158	.221 – .165
25	729-XXX	1.709	2.323	2.000	.750	1.582	2.188	1.759	1.4375-18 UNEF	1.7500-18 UNS	.207 – .158	.221 – .165

All dimensions for reference only.
- Z dimension is determined by contact type in the insert arrangement.
- Most common options are shown; other options are available.

★ .059 dia. min. 3 lockwire holes.
Formed lockwire hole design (6 holes) is optional.
* "D" shaped mounting hole dimensions

Series I LJT



PART #	1. Base Number	2. Shell Size	3. Arrg Rotation	4. Shell Finish	5. Tail Length
See chart below	10-626	401	P	1	B

HOW TO ORDER

1. Base Number:

10-626	Base Number for MIL-DTL-38999 Series III Hermetic with PCB Tail

2. Select a size:

See chart below **401-409**, designates size 9-25 shell size

3. Arrangement Rotation:

Refer to page 88 for alternate rotation letters to use.
Use P for pin contacts in Normal Position.
Use S for socket contacts in Normal Position.

4. Select a Shell Finish:

1	Hermetic seal, passivated Stainless Steel, 200°C
2	Hermetic seal, Stainless Steel w/Nickel Plate
3	Carbon Steel w/reflowed tin plate

5. Select a Tail Length:

B	.100±.03
D	.200±.03
F	.300±.03

⌖ .005 DIA Ⓜ

Shell Size	Part Number	N Dia. +.001 –.005	R (TP)	S ±.016	T Dia. ±.005	RR Thread Class 2A
9	**10-626401**-XXX	.572	.719	.938	.128	.6875-24 UNEF
11	**402**-XXX	.700	.812	1.031	.128	.8125-20 UNEF
13	**403**-XXX	.850	.906	1.125	.128	.9375-20 UNEF
15	**404**-XXX	.975	.969	1.219	.128	1.0625-18 UNEF
17	**405**-XXX	1.100	1.062	1.312	.128	1.1875-18 UNEF
19	**406**-XXX	1.207	1.156	1.438	.128	1.3125-18 UNEF
21	**407**-XXX	1.332	1.250	1.562	.128	1.4375-18 UNEF
23	**408**-XXX	1.457	1.375	1.688	.147	1.5625-18 UNEF
25	**409**-XXX	1.582	1.500	1.812	.147	1.6875-18 UNEF

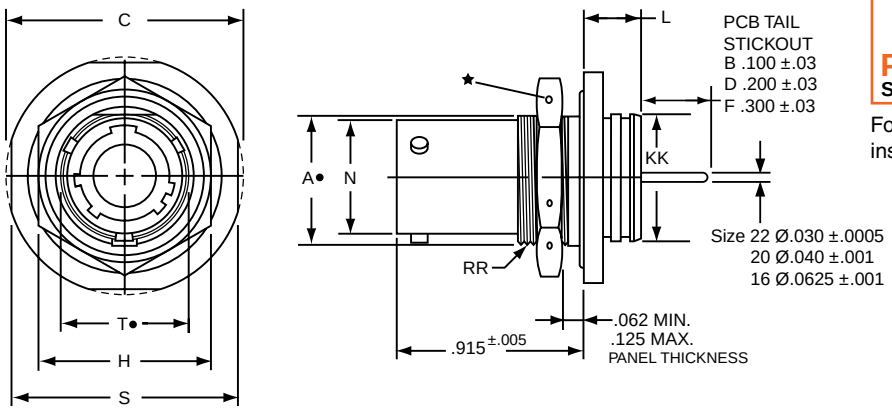
Amphenol Aerospace

1. Base Number	2. Shell Size	3. Arrg Rotation	4. Shell Finish	5. Tail Length
10-626	411	P	1	B

PART #
See chart below

Follow HOW TO ORDER instructions below

Series I LJT



Shell Size	Part Number	A• +.000 –.010	C Max.	H Hex +.017 –.016	L Max.	N +.000 –.005	S ±.016	T• +.010 –.000	KK +.011 –.000	RR Thread Class 2A (Plated)
9	10-626411-XXX	.669	1.199	.875	.297	.572	1.062	.697	.642	.6875-24 UNEF
11	412-XXX	.769	1.386	1.000	.297	.700	1.250	.822	.766	.8125-20 UNEF
13	413-XXX	.955	1.511	1.188	.297	.850	1.375	1.007	.892	1.0000-20 UNEF
15	414-XXX	1.084	1.636	1.312	.297	.975	1.500	1.134	1.018	1.1250-18 UNEF
17	415-XXX	1.208	1.761	1.438	.297	1.100	1.625	1.259	1.142	1.2500-18 UNEF
19	416-XXX	1.333	1.949	1.562	.328	1.207	1.812	1.384	1.268	1.3750-18 UNEF
21	417-XXX	1.459	2.073	1.688	.328	1.332	1.938	1.507	1.392	1.5000-18 UNEF
23	418-XXX	1.580	2.199	1.812	.328	1.457	2.062	1.634	1.518	1.6250-18 UNEF
25	419-XXX	1.709	2.328	2.000	.328	1.582	2.188	1.759	1.642	1.7500-18 UNS

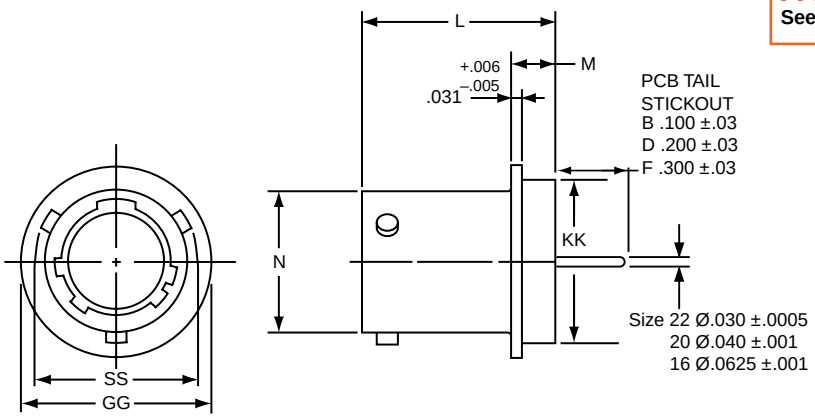
All dimensions for reference only.

38999, Series I Hermetic – PCB Contacts

LJTI Solder Mounting Receptacle

1. Base Number	2. Shell Size	3. Arrg Rotation	4. Shell Finish	5. Tail Length
10-626	421	P	1	B

PART #
See chart below



Shell Size	Part Number	N Dia. +.001 –.005	SS Dia. +.000 –.016	L +.011 –.000	M +.006 –.005	GG Dia. +.011 –.010	KK Dia. +.001 –.005
9	10-626421-XXX	.572	.662	.789	.125	.750	.672
11	422-XXX	.700	.810	.789	.125	.844	.781
13	423-XXX	.850	.960	.789	.125	.969	.906
15	424-XXX	.975	1.085	.789	.125	1.094	1.031
17	425-XXX	1.100	1.210	.789	.125	1.218	1.156
19	426-XXX	1.207	1.317	.789	.125	1.312	1.250
21	427-XXX	1.332	1.442	.789	.125	1.438	1.375
23	428-XXX	1.457	1.567	.821	.156	1.563	1.500
25	429-XXX	1.582	1.692	.821	.156	1.688	1.625

HOW TO ORDER

1. **Base Number:**

10-626	Base Number for MIL-DTL-38999 Series III Hermetic with PCB Tail

2. **Select a size:** See chart below **421-429**, designates size 9-25 shell size

3. **Arrangement Rotation:**
Refer to page 88 for alternate rotation letters to use.
Use P for pin contacts in Normal Position.
Use S for socket contacts in Normal Position.

4. **Select a Shell Material**

1	Hermetic seal, passivated Stainless Steel, 200°C
2	Hermetic seal, Stainless Steel w/Nickel Plate
3	Carbon Steel w/reflowed tin plate

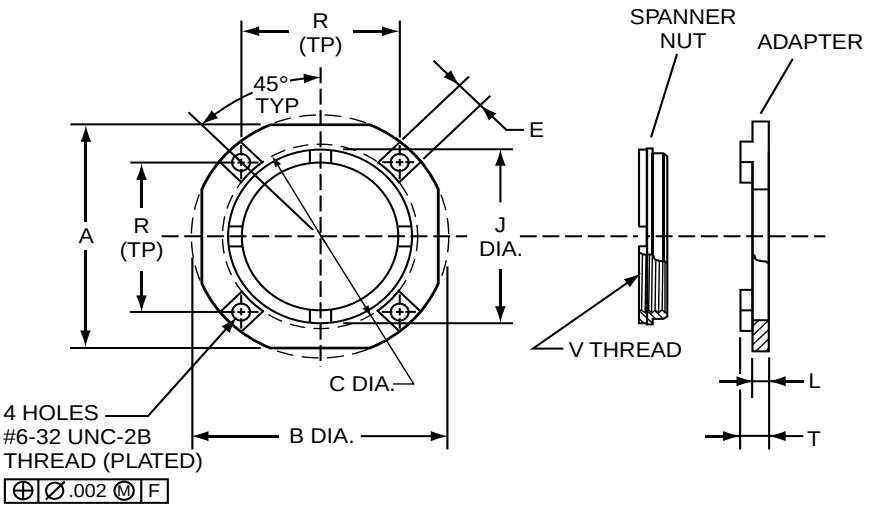
5. **Select a Tail Length:**

B	.100±.03
D	.200±.03
F	.300±.03

All dimensions for reference only.
Weld mounting hermetic receptacle also available.
Consult Amphenol, Sidney, NY for availability and dimensions.

Series III TV **Series II JT** **Series I LJT**

Amphenol's stand-off adapter and spanner nut assembly allows any MIL-DTL-38999 jam nut receptacle to support PCB contacts and may eliminate the need for special stand-off shell design. Consult Amphenol for more information.



Tri-Start MIL-DTL-38999 Jam Nut Connector with Stand-off Adapter

FINISH DATA**	
Suffix Designation	**Description**
9	Olive drab cadmium plate, nickel base plate
G	Electroless nickel plate
None	Passivated Stainless Steel
8	Nickel Plated

**Other finishes available; consult Amphenol for further information.

- HOW TO ORDER
- Order by applicable 10- part number in table below. Last digit designates finish - see finish table.

Shell Size	Part Number	A ± .003	B Dia. ± .003	C Dia. +.005 –.001	E ±.005	J Dia. +.005 –.000	L ±.003	R (TP)	T* ±.002	V Thread Metric Plated
9	10-658266-01( )	1.062	1.188	.750	.200	.625	.150	.688	.325	M12 X 1-6H
11	10-658266-02( )	1.250	1.375	.900	.200	.744	.150	.813	.325	M15 X 1-6H
13	10-658266-03( )	1.375	1.500	.975	.200	.862	.150	.860	.325	M18 X 1-6H
15	10-658266-04( )	1.500	1.625	1.125	.200	1.019	.150	.968	.325	M22 X 1-6H
17	10-658266-05( )	1.625	1.750	1.250	.200	1.137	.150	1.062	.325	M25 X 1-6H
19	10-658266-06( )	1.812	1.938	1.375	.200	1.255	.150	1.188	.325	M28 X 1-6H
21	10-658266-07( )	1.938	2.062	1.469	.200	1.373	.150	1.250	.325	M31 X 1-6H
23	10-658266-08( )	2.062	2.188	1.625	.200	1.492	.150	1.344	.325	M34 X 1-6H
25	10-658266-09( )	2.188	2.312	1.750	.200	1.610	.150	1.438	.325	M37 X 1-6H
9	10-658266-10( )	1.062	1.188	.750	.200	.625	.150	.688	.362	M12 X 1-6H
11	10-658266-11( )	1.250	1.375	.900	.200	.744	.150	.813	.362	M15 X 1-6H
13	10-658266-12( )	1.375	1.500	.975	.200	.862	.150	.860	.362	M18 X 1-6H
15	10-658266-13( )	1.500	1.625	1.125	.200	1.019	.150	.968	.362	M22 X 1-6H
17	10-658266-14( )	1.625	1.750	1.250	.200	1.137	.150	1.062	.362	M25 X 1-6H
19	10-658266-15( )	1.812	1.938	1.375	.200	1.255	.150	1.188	.362	M28 X 1-6H
21	10-658266-16( )	1.938	2.062	1.469	.200	1.373	.150	1.250	.362	M31 X 1-6H
23	10-658266-17( )	2.062	2.188	1.625	.200	1.492	.150	1.344	.362	M34 X 1-6H
25	10-658266-18( )	2.188	2.312	1.750	.200	1.610	.150	1.438	.362	M37 X 1-6H

All dimensions for reference only.
* For information on additional 'T' dimension lengths, consult Amphenol.
Consult Amphenol Aerospace in Sidney, NY for stainless steel availability & part numbers.

EMI/EMP Filter Protection Connectors

For protection of sensitive circuits

Amphenol® EMI/EMP Protection Connectors offer the versatility of standard connectors with EMI/EMP protection for sensitive circuits. Internal housing of the EMI/EMP devices eliminates costly and bulky exterior discrete protection devices.

Virtually all major MIL-Spec circulars can be incorporated with filter devices:

- MIL-DTL-38999
- MIL-DTL-26482
- MIL-DTL-83723
- MIL-DTL-5015
- MIL-DTL-27599
- MIL-DTL-26500

Amphenol offers filter connectors that include:

- EMP protection using diodes
- EMP protection utilizing metal oxide varistors (MOV's)
- Filtered plug connectors
- Filtered hermetic connectors
- Filter connectors with ESD protection
- EMI & EMP Protected Connectors
- Combinations of filtering devices within one connector package

This catalog focuses on the cylindrical connector offerings from Amphenol with EMI/EMP filter transient protection. There are also many rectangular filter connectors that are offered by Amphenol which include:

- MIL-DTL-24308 D-Sub
- MIL-DTL-83513 Micro D
- ARINC 404/600
- DOD-83527 Rack and Panel
- MIL-DTL-83733 Rack and Panel

Rectangular filter interconnects are manufactured and supplied by Amphenol Canada.

Advantages of Filter Connectors:

- Reduction in overall weight and space with the elimination of external filter circuits
- Reduction of solder junctions
- Increase in reliability due to fewer connections
- Fragile filter elements protected from handling and environmental damage
- Pre-testing from factory and ready for installation

FTV

Subminiature Tri-Start, MIL-DTL-38999 Series III, Metal or Composite shells with Filter Protection.

FLJT

Subminiature LJT, MIL-DTL-38999 Series I with Filter Protection.

Filter AN Connector

MIL-DTL-5015 Type Connectors with Filter Protection.

See Catalog 12-120

FJT

Subminiature JT, MIL-DTL-38999 Series II with Filter Protection.

FCTV with Stand-off Flange

Filtered Tri-Start connectors with composite shells for attachment to printed circuit boards.

FPT

Miniature MIL-C-26482 Series I with Filter Protection.

See Catalog 12-120

Filter Contacts Combined with High Speed Contacts

Filter Connectors can incorporate high frequency coax, twinax, triax, quadrax and differential twinax contacts.

MOV Connectors

MOV's act as a variable resistor to efficiently dissipate energy. MOV can be packaged singularly or in combinations with other EMI

Header Assemblies

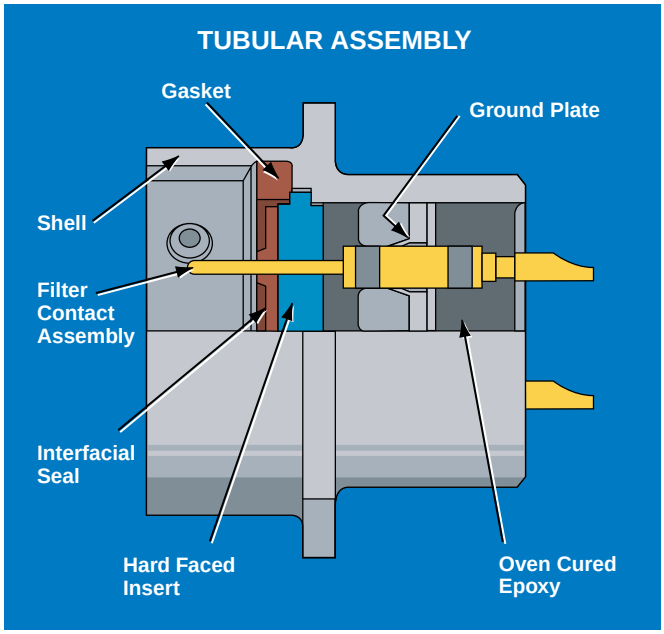
Allow for easy separation and easy termination of connectors when attaching to flex or printed circuit boards. Allow for electrical testing that would adversely affect sensitive diodes, MOV's or filter capacitors.

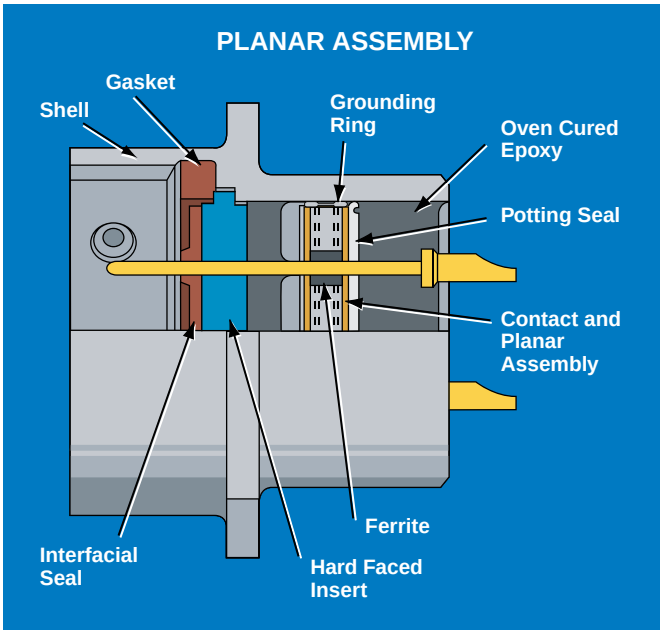
The Amphenol® EMI filter connector utilizes two manufacturing technologies to provide the user with the most cost effective performance across the frequency range. (For EMP performance data, see pages 172-175).

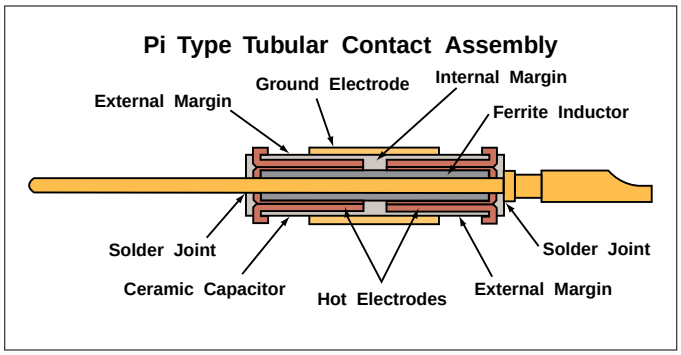
The tubular design offers over 40 years of proven field reliability. All filter contacts within the connector share a common ground plane, which is connected to the connector shell. The pin to pin isolation is 85 dB minimum at 100 MHz. The planar design joins pins to a multi-layered ceramic forming an array sub-assembly, with a peripheral ground which is connected to the connector shell via a ground spring. Pin to pin capacitance is less than 50 pf with a pin to pin isolation of 85 dB minimum at 100 MHz. Filter contacts for both designs contain either a pi passive element network comprised of a ferrite inductor and ceramic capacitor, or a single capacitor.

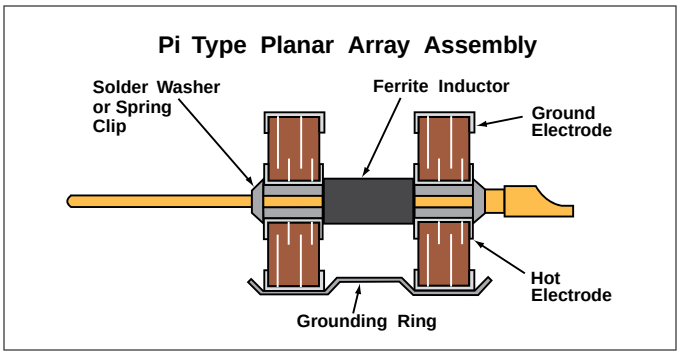
For planar designs other filter networks are available, ie. T Type, L-C Type, C-L Type and C Type. An encapsulant of oven-cured epoxy in the rear provides:

- Mechanical and thermal insulation of the ceramic elements – mechanical loading can be accomplished without capacitor damage. Pins can be bent 90° and straightened with no damage to the filter.
- Hermeticity (4.6×10^{-3} cc/sec) – prevents water from entering through the rear of the connector in high humidity environments. Amphenol recommends using metal protection caps during cleaning operations.









Amphenol provides a wide range of filtering solutions. You can select your options for your particular interference threats - VHF, UHF, HF or other filter ranges, then couple with a connector package of your choice. Or give Amphenol your custom shell design requirements for assistance in designing your unique filter solution.

EMI Filter connectors are intended for use in temperatures from –55°C to +125°C. Attenuation will change with feed-through current and temperature.*

To assure reliability, connectors may be subjected to an attenuation performance test verifying proper assembly and grounding of the filters. Attenuation data on filter performance is stated in reference to a 50 ohm impedance system in order to allow filter performance to be more easily translated into real world impedances. Those interested in determining the expected filter performance in an impedance system other than 50 ohms may refer to page 131 of this catalog or may contact Amphenol Aerospace for further assistance.

It is suggested that the user analyze his system requirements for EMI protection in the following areas:

- Working voltage (DC or AC and Frequency)
- Peak voltage
- Desired attenuation at a given frequency level
- Any special capacitance limitations

Definition of Filter Contacts:

MF	Medium Frequency 50 dB performance between 300 - 2999 KHz
HF	High Frequency 50 dB performance between 3 - 29 MHz
VHF	Very High Frequency 50 dB performance between 30 - 2999 MHz
UHF	Ultra High Frequency 50 dB performance between 300 - 2999 MHz

Filter contacts can be provided in most frequencies in contact sizes 22 or larger. Consult Amphenol Aerospace for availability.

Tubular connector designs will meet 3 amps RF current from –55°C through +125°C. Planar connector designs will meet 5 amps.

* More in-depth information on attenuation is available in:
L-1146, General Design Guideline for EMI Filters and/or TVS (Transient Voltage Suppression) Connectors.
Also for further information ask for:
L-1145, How to Specify Filter Connectors.

Planars, MOV's, Tubular and Diode Contacts

Planar Array Assembly

Capacitor and MOV Planars

Tubular Filters and Diode Contacts

Contact Options

- Coaxial, concentric twinax, triax and quadrax contacts can be included in arrangements of filtered contacts for signal or power circuits (See Amphenol catalog 12-130, High Frequency Contacts for Multi-Pin Connectors).
- Filter contacts with differing cut-off frequencies can be mixed in any given insert arrangement. (ratio 100:1 typical)
- Ground, insulated or filter contacts can be combined within the same connector to meet unique or changing frequency protection requirements.
- Thermocouple contacts
- Diodes for EMP

Methods of Wire Termination

- Solder cup - wire termination
- PCB termination (Pre-tinning is available)
- Solderless wrap
- Amphenol® UTS (Universal Termination System) allows crimp termination. It uses crimp insertable socket contacts on conductor wires. Sockets mate with filter pins within the connector body. (Socket type M39029/57). (For further contact information, see section, MIL-DTL-38999 Series I & II).
- Weld terminal for thermocouple contacts

Adapters

Filter adapters eliminate replacement of either existing mated pair. The adapter provides the circuit protection at the MF, VHF and UHF levels, and is an effective and economical method of introducing EMI/EMP protection to an installed system. Adapters are to be placed between mating faces. (See pages 171).

Printed Circuit Board Mount

Receptacle shell modifications that allow mounting directly to a PC board or flex header. Stand-off shells are available in different configurations. These offer improved reliability by eliminating external spacers and washers. (See pages 140, 141, 146, 147,160 and 163).

Hermetic

The hermetic filter connector, while only approximately 1/2 inch longer than standard series connectors, provides all the benefits of a hermetic connector, plus EMI protection for sensitive circuits. The filter assembly is protected by a fused glass insert within a unique steel housing. This design provides the capability to tolerate high level static pressure while maintaining a low level leakage rate. Consult Amphenol Aerospace for more information.

Composite

Composite shell filter connectors meet the MIL-DTL-38999, Series III dimensional length, and offer a light-weight, corrosion resistant, durable connector with the same high performance features as its metal counterpart. The composite filter connector utilizes planar technology to accommodate VHF-1 or better electrical performance characteristics. (See pages 138-141).

ESD Protection

Filter connectors with ESD (Electrostatic Discharge) protection are available. These MIL-DTL-38999 Series I and III connectors have an added feature of a Faraday Cage to shunt electrostatic discharge events to the conductive enclosure on which the connector is mounted.
(See page 203).

Filtered Plugs

Filtered Plugs are designed for applications where EMI protection is essential, but access to the receptacle is denied. Designed with the same components as a standard filter receptacle, the filtered plug offers the option of being mounted on the cable harness. It is a cost effective method of achieving EMI protection when length restrictions prohibit inclusion of an adapter to the system. Consult Amphenol Aerospace for availability.

Diode Connectors

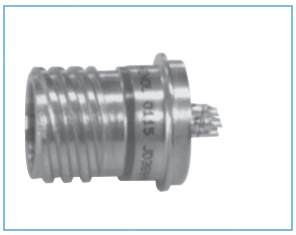
Diode Connectors offer versatility with transient protection for sensitive circuits, such as TTL lines. Diodes can stand alone or be combined with other filters. (Pages 174-175).

Shunting Assembly

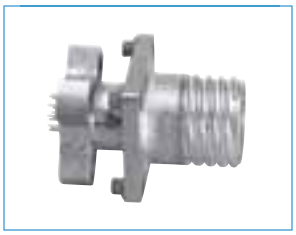
Amphenol's Energy Shunting Assembly is a simple, compact unit which provides lightning and electromagnetic pulse protection of systems in which many signal lines enter sensitive electronic equipment. (Page 176).

Cylindrical Filter Protection Connectors are offered in a wide range of styles, with custom designs for special applications.

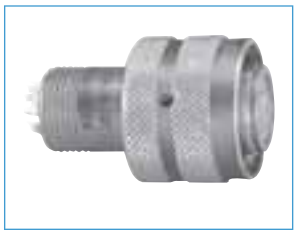
Filter Adapters can be attached to connectors to provide EMI/EMP protection.



Hermetic filter connector



Composite shell stand-off Filter 38999 connector



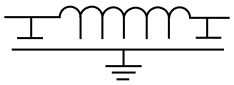
Filtered plug

Diode Connectors

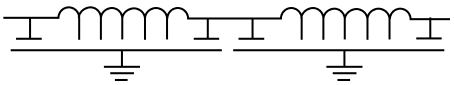
ESA - Energy Shunting Assembly

Amphenol® EMI Connectors are produced with several types of filters.
They are all low band pass filters with the following configurations:

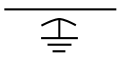
Pi -
Typical of the VHF, UHF and MF filter



Cascaded Pi -
Typical of the HF filter. It consists of two VHF Pi filters on a common pin and is available in tubular designs only.



Capacitor *-
Consists of a feed-through capacitor without any ferrite. It can be 50pf to 1µf and carry the MF, HF and VHF designation depending on its typical 50dB performance.



L-C *-
Typical of HF, VHF and UHF filter. Low source / high load impedance.

C-L *-
Typical of HF, VHF and UHF filter. High load impedance / low source.

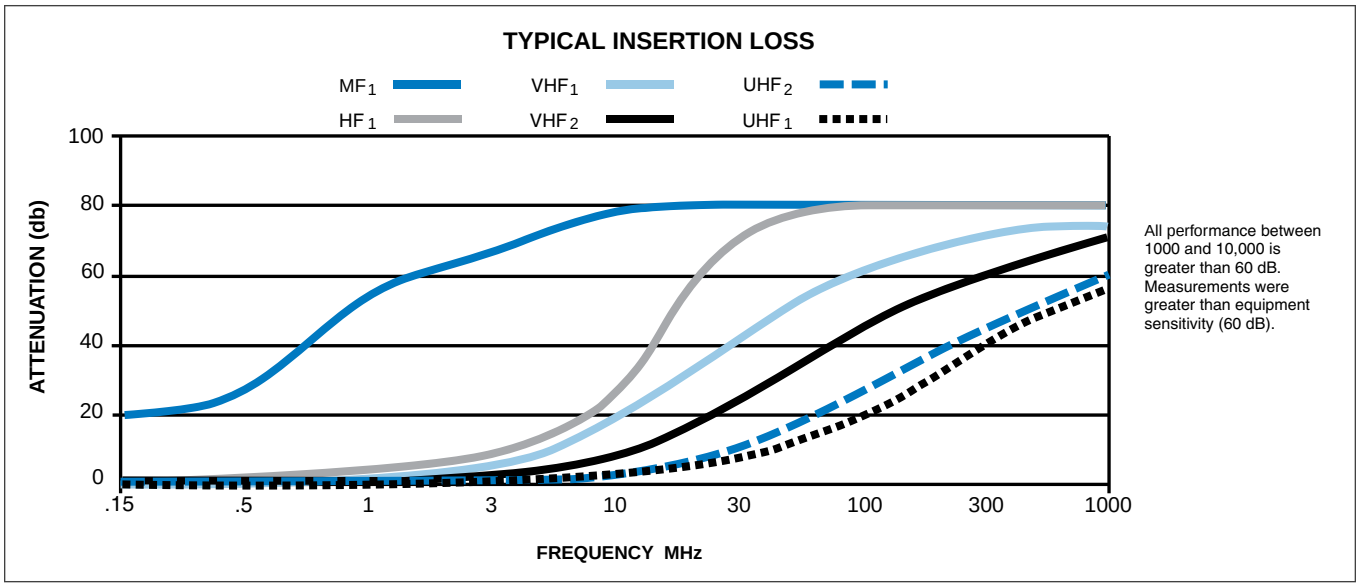
T *-
Typical of HF, VHF and UHF filter. Low source / low load impedance.

* Consult factory for attenuation performance values.

Parameters		Medium Frequency Filter✦	High Frequency Filter✦	Very High Frequency Filter		Ultra High Frequency Filter	
		MF1 (Pi)	HF1 (Cascaded Pi)	VHF1 (Pi)	VHF2† (Pi)	UHF1† (Pi)	UHF2† (Pi)
Minimum Attenuation (Test Points)*	150kHz	20dB	–	–	–	–	–
	15MHz	–	50dB	–	–	–	–
	50MHz	–	80dB	–	–	–	–
	100MHz	80dB	–	62dB	46dB	18dB	28dB
Maximum Working Voltage (User must specify DC or AC)††††	DC†††	50VDC	200VDC	200VDC	200VDC	200VDC	200VDC
Dielectric Withstanding Voltage Capability (for 5 sec. with 10 milliamperes max. charging current)✦✦		100 volts DC	500 volts DC	500 volts DC	500 volts DC	500 volts DC	500 volts DC
Maximum Feed-thru Current (DC and/or Audio Frequency R.M.S.)	Size 16 contacts	13.0 amps	13.0 amps	13.0 amps	13.0 amps	13.0 amps	13.0 amps
	Size 20 contacts	7.5 amps	7.5 amps	7.5 amps	7.5 amps	7.5 amps	7.5 amps
	Size 22 contacts	not available	not available	5.0 amps	5.0 amps	5.0 amps	5.0 amps
Maximum RF Current		3.0 amps	3.0 amps	3.0 amps	3.0 amps	3.0 amps	3.0 amps
Minimum Insulation Resistance		250 megohms	10 gigaohms	10 gigaohms	10 gigaohms	10 gigaohms	10 gigaohms
Typical Capacitance**		1.0 microfarad	16 nanofarads	7 nanofarads	2.5 nanofarads	375 picofarads	710 picofarads
Air Leakage††		4.6×10^{-3} cc/sec					
Operating Temperature Range		–55°C to +125°C					

* When tested at 25°C per MIL-STD-220.
** When measured at a frequency of 1 ±.1kHz and a voltage not exceeding 1.0 V.A.C.R.M.S. at +25°C.
† Consult Amphenol, Sidney, NY or your Amphenol representative for part number.
†† Lower leakage rates are available upon request.
††† Summation of the DC and low level AC super-imposed peak voltage.
†††† Consult Amphenol, Sidney, NY whenever AC voltage is present.
✦ Consult Amphenol, Sidney, NY or your Amphenol representative for availability.
✦✦ Higher DWV ratings are available upon request. Consult Amphenol, Sidney, NY.

Note: Below are typical capacitance values. Other capacitance values are available from 5pf to 400 NF in one capacitor element. Please consult factory for part numbers.



TYPICAL INSERTION LOSS (dB)
PER MIL-STD-220, 5 ADC, 25°C

Capacitance	1MHz	3MHz	10MHz	30MHz	100MHz	300MHz	1000MHz
375 pf UHF_1	0	0	1	8	16	–	–
750 pf UHF_2	0	0	3	10	19	–	–
2500 pf VHF_2	0	2	8	20	28	–	–
7000 pf VHF_1	5	9	17	23	40	–	–
16000 pf HF_1	6	14	20	24	80	–	–

Most filter attenuation curves and capacitance values are expressed at 25° C. However, temperature can affect the capacitance of a titanate filter element, affecting the insertion loss that the element will cause.
In order to assist the user in anticipating the effect of various temperatures, the following charts applicable to Amphenol® filter connectors utilizing MF_1, HF_1, VHF_1, VHF_2, UHF_1 and UHF_2 filters are provided. Please note that all insertion loss (attenuation) values given were measured with no load applied. The band designations refer to MIL-STD-2120.

MF_1 *
Typical Capacitance = 1,000,000 pf Min. 800,000 pf Max. 1,600,000 pf
Type Pi

Temp.	Fco	1MHz	3MHz	10MHz	30MHz	100MHz	300MHz	1000MHz
–55°C	–	18	–	64	80	80	80	80
Room	7.94K	55	–	80	80	80	80	80
+125°C	–	22	–	70	80	80	80	80

VHF_2
Typical Capacitance = 2,500 pf Min. 1,900 pf Max. 4,000 pf
Band E, Type Pi

Temp.	Fco	1MHz	3MHz	10MHz	30MHz	100MHz	300MHz	1000MHz
–55°C	–	0	2	7	17	40	58	71
Room	3.3M	0	2	8	24	46	61	71
+125°C	–	0	3	10	26	46	63	69

HF_1 *
Typical Capacitance = 16,000 pf Min. 9,800 pf Max. 24,000 pf
Type Cascaded Pi

Temp.	Fco	1MHz	3MHz	15MHz	50MHz	100MHz	300MHz	1000MHz
–55°C	–	2	6	24	62	80	80	80
Room	648K	3	9	50	80	80	80	80
+125°C	–	0	6	30	62	80	80	80

UHF_2
Typical Capacitance = 750 pf Min. 500 pf Max. 1,100 pf
Band C, Type Pi

Temp.	Fco	1MHz	3MHz	10MHz	30MHz	100MHz	300MHz	1000MHz
–55°C	–	0	0	3	9	25	46	61
Room	12.7M	0	0	3	10	28	46	61
+125°C	–	0	0	3	10	24	42	60

VHF_1
Typical Capacitance = 7,000 pf Min. 4,900 pf Max. 12,000 pf
Band G, Type Pi

Temp.	Fco	1MHz	3MHz	10MHz	30MHz	100MHz	300MHz	1000MHz
–55°C	–	1	2	8	21	44	61	65
Room	1.27M	1	6	18	42	62	72	75
+125°C	–	0	2	9	24	45	62	64

UHF_1
Typical Capacitance = 375 pf Min. 290 pf Max. 450 pf
Band B, Type Pi

Temp.	Fco	1MHz	3MHz	10MHz	30MHz	100MHz	300MHz	1000MHz
–55°C	–	0	0	1	6	21	43	58
Room	21.9M	0	0	1	8	18	42	56
+125°C	–	0	0	1	8	17	38	50

Note: F_{co} = Cut-off Frequency
* Consult Amphenol, Sidney, NY for availability.

Impedance Matching Formula
(your system to a 50 ohm system)

The following formula and example are offered in order to determine the expected filter performance in an impedance system other than 50 ohms.

With the attenuation expressed in 50 ohms and the transfer impedance curve shown in Figure 1 below, a designer can relate the expressed attenuation to the input and output impedance of his circuit.

Example:

(1) Noise is 40dB above specification level at 100 MHz
(2) Input and output impedance are 10 and 100 ohms respectively
(3) Amphenol® VHF 7000 pf filter has a 65 dB minimum attenuation at 100 MHz and +25°C

Formula (Taken from Figure 1):

1.4×10^{-2}= transfer impedance for 65 dB in a 50 ohm system

$$\text{Atten (dB)} = 20 \log_{10} \left[1 + \frac{Z_S Z_L}{Z_{12}(Z_S + Z_L)} \right]$$

Z_S = source impedance
Z_L = load impedance
Z_{12} = transfer impedance

Atten = filter performance in a system other than 50 ohms

$$\text{Atten (dB)} = 20 \log_{10} \left[1 + \frac{10(100)}{1.4 \times 10^{-2} (10 + 100)} \right]$$

Attenuation = 56.3dB

In this case, the 7000 pf VHF filter will give 56.3 dB which is 16.3dB below the desired reduction in noise (40dB) as stated in the above problem.

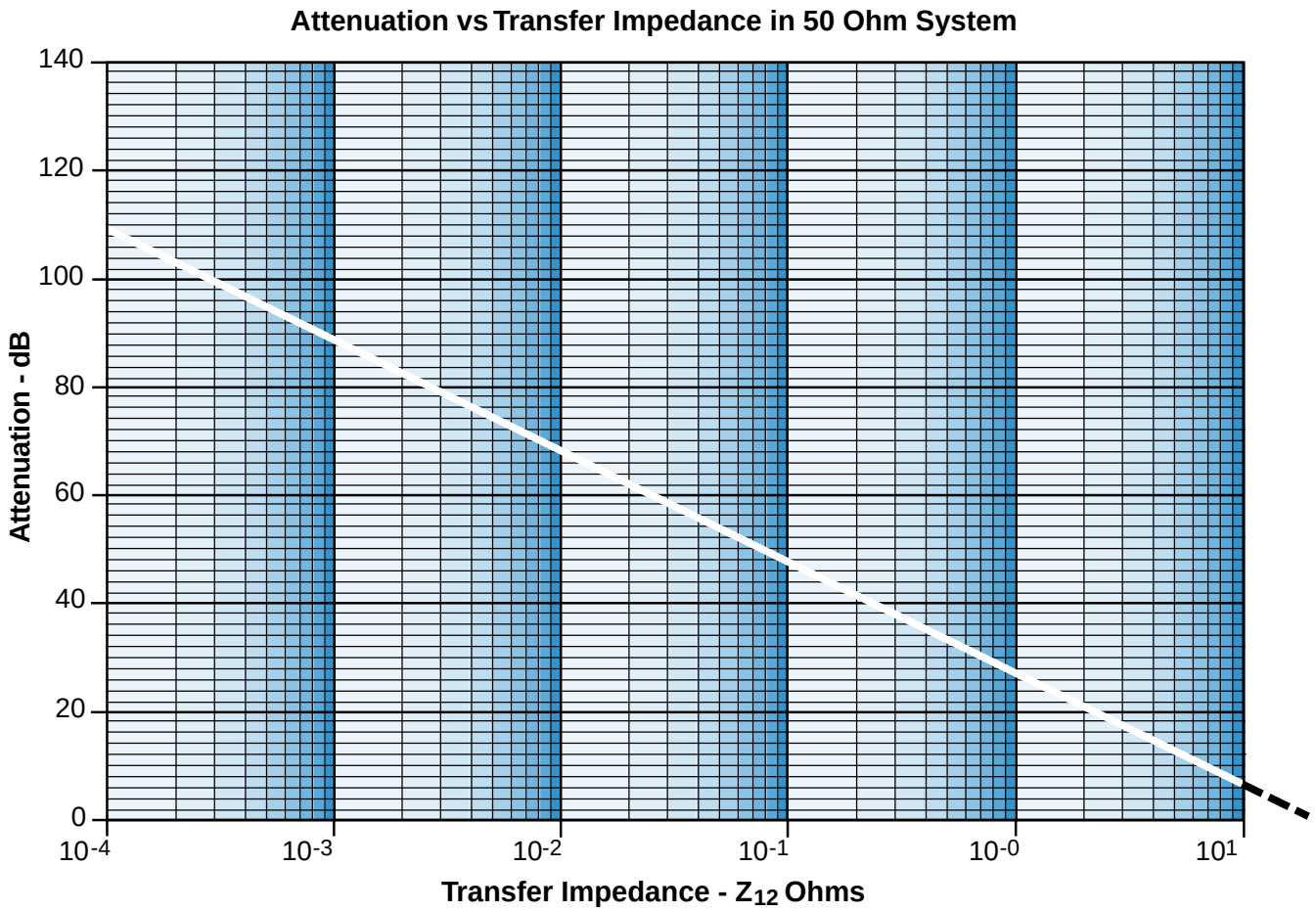


Figure 1

Acceptance Testing

All filter connectors undergo extensive acceptance testing to assure product quality. An outline of standard acceptance testing performed is as follows:

Mechanical Inspection

- Dimensional inspection of shells, keys, keyways and mounting surfaces by either in-process inspection of components or inspection of final assemblies.
- Visual inspection of contacts, inserts and seals, gaskets and surface finish of shells and hardware.

Electrical Tests

- Insulation resistance of filter contacts is checked 100% **at the working voltage and to the test limit** listed for each filter in the filter selection data table.
- Dielectric withstanding voltage is tested on 100% of filter contacts at the voltage listed in the filter selection data table.
- Capacitance is tested 100% at 1KHz.

Special Tests/Processes

In addition to the standard acceptance testing and processes, the following additional production testing and processing can be provided upon request:

- Attenuation testing (through 100 MHz)
- Leakage inspection
- Thermal cycling/shock
- Burn-in
- De-gassing

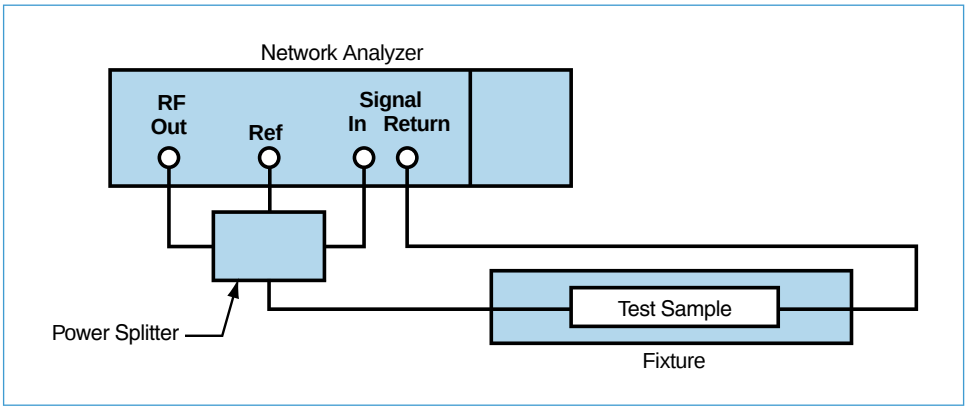
Consult Amphenol Aerospace for further information.

Qualifications

Amphenol® filter connectors have been qualified and are on periodic requalification to specification BSF-1 (available from your Amphenol representative). This is patterned after MIL-DTL-38999, modified to include mechanical and environmental testing and electrical parameters important to filter connector performance.

These acceptance tests, along with exhaustive in-process inspection and testing, give Amphenol® filter connectors their reputation for reliability.

ATTENUATION TEST CIRCUIT



There are multiple test stations located on the Amphenol production floor that support all in-process, final electric and qualification testing as necessary.

Step 1.

Fill out the EMI Filter Connector Check list on page 134.

This check list page can be copied, filled out and sent to an Amphenol technical support person. Fax it to 607-563-5157 and a filter connector specialist will help you.

Step 2.

Choose the Contact and Attenuation Characteristics requirements on page 130 and 131

Step 3.

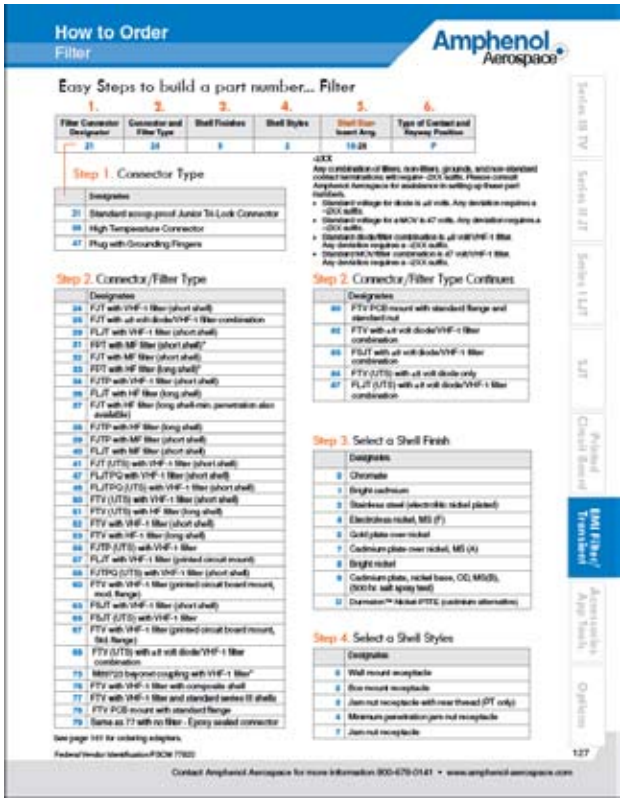
Choose the Shell Style that fits your application

Refer to each of the style sections in this catalog.

Filter Connector Type	Filter Connector Brief Description	Pages
FCTV	MIL-DTL-38999 Series III with Composite shell	137-141
FTV	MIL-DTL-38999 Series III with Metal shell (Aluminum)	142-147
FJT	MIL-DTL-38999, Series II	148-154
FLJT	MIL-DTL-38999 Series I	155-164
FSJT	Commercial 38999 type	165-168
FBL	MIL-DTL-38999, Series IV	169-170

Step 4.

See How to Order on page135



1. Fill out the EMI Filter Connector Check list

Date _____

Ref. Filter P/N _____ **Ref. Mil-Spec** _____

Filter Requirements:

Filter Type (Pi, C, LC, T, LL, other) _____

Capacitance (locations) _____

Capacitance (locations) _____

Capacitance (locations) _____

Ground Contacts (locations) _____

Insulated feed-thru (locations) _____

Frequency (MHz)	Insertion Loss (dB)
1	
3	
10	
30	
100	

Electrical Requirements:

Working Voltage (VDC or VAC and frequency) _____

Dielectric Withstand Voltage (VDC) _____

Modified Shell: (Flange moved, clinch nuts, heilicoils, stand offs, etc.) _____

Special Requirements: (AC voltage, spike voltage, attenuation testing, thermal cycling, burn-in, capacitor lot traceability, water immersion, etc.) _____

Contact Termination:

UTS (Crimp) _____

Solder Cup _____

Wire Wrap Flat dim. _____

Stickout dim. _____

PCB tail:

Diameter dim. _____

Stickout dim. _____

Pre-tin? _____

What is terminated to connector (ie. flex, rigid flex, PCB, etc.)? _____

Special Cleaning _____

(if so, recommend a protective cap with an environmental gasket)

Special Stamping: _____

Customer: _____

Program: _____

Forecast: _____

Requested by: _____

Comments: _____

Fax a completed copy to 607-563-5157

Amphenol Aerospace

Easy Steps to build a part number... Filter

1. Filter Connector Designator	2. Connector and Filter Type	3. Shell Finish	4. Shell Styles	5. Shell Size – Insert Arrg.	6. Type of Contact and Keyway Position
21	24	9	2	16-26	P

Step 1. Select a Connector Type

	Designates
21	Standard scoop-proof Junior Tri-Lock Connector
36	High Temperature Connector
47	Plug with Grounding Fingers

Step 2. Select a Connector/Filter Type

	Designates
20	FPT with VHF-1 filter (short shell)*
22	FPTE with VHF-1 filter (short shell)*
24	FJT with VHF-1 filter (short shell)
25	FJT with ±8 volt diode/VHF-1 filter combination
26	FAN with VHF-1 filter**
29	FLJT with VHF-1 filter (short shell)
31	FPT with MF filter (short shell)*
32	FJT with MF filter (short shell)
33	FPT with HF filter (long shell)*
34	FJTP with VHF-1 filter (short shell)
36	FLJT with HF filter (long shell)
37	FJT with HF filter (long shell-min. penetration also available)
38	FJTP with HF filter (long shell)
39	FJTP with MF filter (short shell)
40	FLJT with MF filter (short shell)
41	FJT (UTS) with VHF-1 filter (short shell)
46	FPT (UTS) with VHF-1 filter *
47	FLJTPQ with VHF-1 filter (short shell)
48	FLJTPQ (UTS) with VHF-1 filter (short shell)
50	FTV (UTS) with VHF-1 filter (short shell)
51	FTV (UTS) with HF filter (long shell)
52	FTV with VHF-1 filter (short shell)
53	FTV with HF-1 filter (long shell)
56	FJTP (UTS) with VHF-1 filter
57	FLJT with VHF-1 filter (printed circuit mount)
58	FJTPQ (UTS) with VHF-1 filter (short shell)
60	FTV with VHF-1 filter (printed circuit board mount, mod. flange)
61	FBL with VHF-1 filter (short shell)
63	FSJT with VHF-1 filter (short shell)
64	FBL (UTS) with VHF-1 filter
65	FSJT (UTS) with VHF-1 filter
67	FTV with VHF-1 filter (printed circuit board mount, Std. flange)
68	FTV (UTS) with ±8 volt diode/VHF-1 filter combination

*See catalog 12-120 for more information

-2XX

Any combination of filters, non-filters, grounds, and non-standard contact terminations will require -2XX suffix. Please consult Amphenol Aerospace for assistance in setting up these part numbers.

- Standard voltage for diode is ±8 volts. Any deviation requires a –2XX suffix.
- Standard voltage for a MOV is 47 volts. Any deviation requires a –2XX suffix.
- Standard diode/filter combination is ±8 volt/VHF-1 filter. Any deviation requires a –2XX suffix.
- Standard MOV/filter combination is 47 volt/VHF-1 filter. Any deviation requires a –2XX suffix.

Step 2. Select Connector/Filter Type Continues

	Designates
73	M83723 bayonet coupling with VHF-1 filter*
76	FTV with VHF-1 filter with composite shell
77	FTV with VHF-1 filter and standard series III shells
78	FTV PCB mount with standard flange
79	Same as 77 with no filter - Epoxy sealed
80	FTV PCB mount with standard flange and standard nut
82	FTV with ±8 volt diode/VHF-1 filter combination
83	FSJT with ±8 volt diode/VHF-1 filter combination
84	FTV (UTS) with ±8 volt diode only
87	FLJT (UTS) with ±8 volt diode/VHF-1 filter combination

Step 3. Select a Shell Finish

	Designates
0	Chromate
1	Bright cadmium
2	Stainless steel (electrolitic nickel plated)
4	Electroless nickel, MS (F)
5	Gold plate over nickel
7	Cadmium plate over nickel, MS (A)
8	Bright nickel
9	Cadmium plate, nickel base, OD, MS(B), (500 hr. salt spray test)
D	Durmalon™ Nickel-PTFE (cadmium alternative)

Step 4. Select a Shell Styles

	Designates
0	Wall mount receptacle
2	Box mount receptacle
3	Jam nut receptacle with rear thread (PT only)
4	Minimum penetration jam nut receptacle
7	Jam nut receptacle

See page 171 for ordering adapters.
Federal Vendor Identification/FSCM 77820

Step 5. Select a Shell Size & Insert Arrangement

Shell Size	Designates
8 –24	Shell sizes available for FJT, Series I
9–25	Shell sizes available for FLJT, Series II and TV, Series III

For Shell Sizes & Insert Arrangements see charts on pages 4-7.
To view Insert Arrangement Illustrations see pages 8-14.

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

Step 6. Select the type of Contact and Keyway Position

Shell Size	Designates
P	Pins in a normal rotation
S	Socket in a normal rotation

For alternate rotations go to the table below for suffix letter.

ALTERNATE ROTATION SUFFIX LETTERS

FJT, FLJT or FSJT			FTV or FCTV		
Alternate Position	Suffix Letter		Alternate Position	Suffix Letter	
	Pins	Sockets		Pins	Sockets
Normal	P	S	Normal	P	S
A	E	F	A	G	H
B	R	T	B	I	J
C	W	X	C	K	L
D	Y	Z	D	M	N
			E	R	T

See page 171 for ordering adapters; page 195 for ordering universal headers.

Record your part numbers here...

1. Filter Connector Designator	2. Connector and Filter Type	3. Shell Finish	4. Shell Styles	5. Shell Size – Insert Arrangements	6. Type of Contact and Keyway Position

The Amphenol® FTV Series III, demonstrates unsurpassed technical leadership. With added filter features, the high performance general duty threaded connector is designed to withstand the pressures of severe environment applications. The FCTV Series is the Composite Series III with filtering for EMI/EMP protection. It offers the same high performance as its metal counterpart, the FTV, but with a lightweight, corrosion resistance shell.

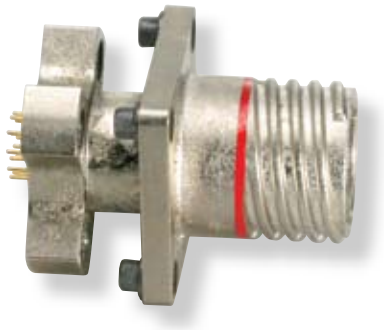
Intermateable with MIL-DTL-38999 Series III Connectors (See section Series III TV, MIL-DTL-38999) FTV & FCTV Composite

- Quick Mating - completely mates in a 360° turn of the coupling nut
- Lockwiring Eliminated - incorporates anti-decoupling device
- Contact Protection - 100% "scoop-proof"
- Improved Moisture Resistance - prevents electrolytic erosion of contacts
- Lightweight Composite Shell - 17% – 70% weight savings over metal
- Corrosion Resistant - available in standard MIL-DTL-38999 olive drab cadmium (175°C) and electroless nickel plating (200°C), both withstanding 2000 hours of salt spray exposure. The base material is able to withstand an indefinite exposure to salt spray.
- Durability - 1500 couplings minimum (in reference to connector couplings, not contacts)

FTV & FCTV Master Key/Keyway Rotation

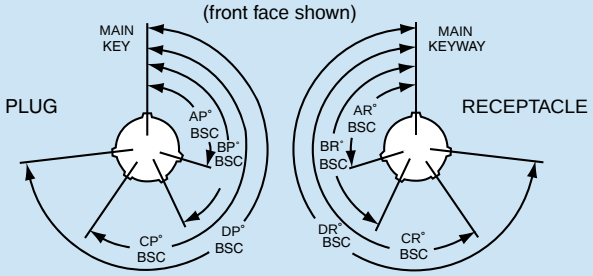
Shell Size	Key & Keyway arrangement identification letter	AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
9	N	105	140	215	265
	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
	E	91	131	197	240
11, 13, 15	N	95	141	208	236
	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
	E	51	141	184	242
17 and 19	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
21, 23, 25	N	80	142	196	293
	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272

All angles are BSC
The insert arrangement does not rotate with main key/keyway.



FTV

Composite FCTV Connector for PCB board mounting. Amphenol is currently the only supplier of one-piece composite PCB stand-off shells.

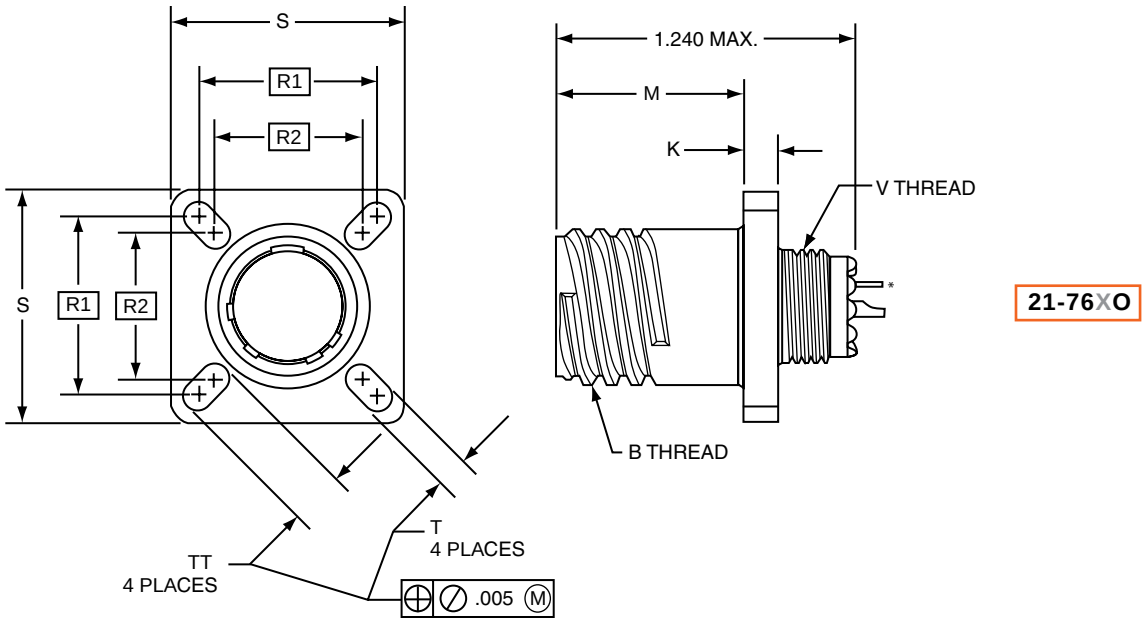


FCTV

PART #

To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	**76**	X	**0**	XX-XX	X



21-76XO

* Printed Circuit Tail available. Consult Amphenol Aerospace factory for Part Number.

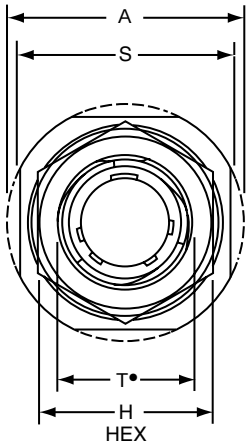
Shell Size	B Thread Class 2A 0.1P-0.3L-TS (Plated)	M +.000 –.005	K ±.0025	R¹ TP	R² TP	S +.011 –.010	T +.008 –.006	TT +.008 –.006	V Thread Metric (Plated)
9	.6250	.773	.1378	.719	.594	.938	.128	.216	M12X1-6g0.100R
11	.7500	.773	.1378	.812	.719	1.031	.128	.194	M15X1-6g0.100R
13	.8750	.773	.1378	.906	.812	1.125	.128	.194	M18X1-6g0.100R
15	1.0000	.773	.1378	.969	.906	1.219	.128	.173	M22X1-6g0.100R
17	1.1875	.773	.1378	1.062	.969	1.312	.128	.194	M25X1-6g0.100R
19	1.2500	.773	.1378	1.156	1.062	1.438	.128	.194	M28X1-6g0.100R
21	1.3750	.741	.1654	1.250	1.156	1.562	.128	.194	M31X1-6g0.100R
23	1.5000	.741	.1654	1.375	1.250	1.688	.154	.242	M34X1-6g0.100R
25	1.6250	.741	.1654	1.500	1.375	1.812	.154	.242	M37X1-6g0.100R

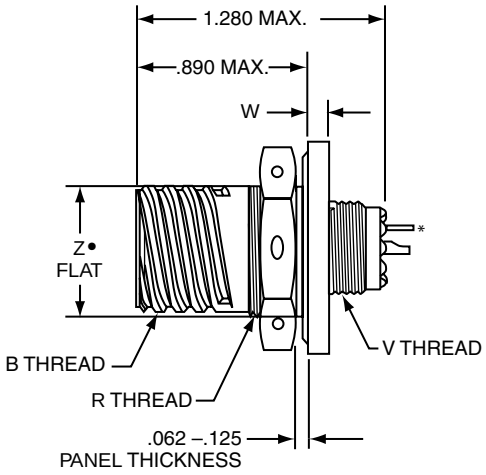
All dimensions for reference only.

PART #

To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	76	X	7	XX-XX	X





21-76X7

** Printed Circuit Tail available. Consult Amphenol Aerospace factory for Part Number.

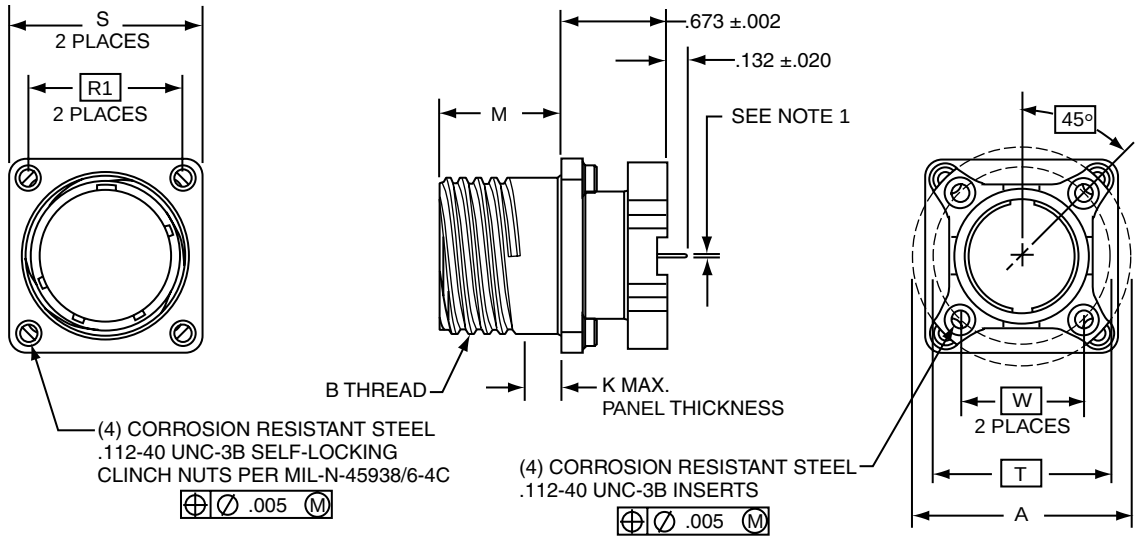
• D shaped mounting hole dimensions

Shell Size	A Dia. ±.010	B Thread Class 2A 0.1P-0.3L-TS (Plated)	H Hex +.017 –.016	R Thread Metric (Plated)	S ±.015	T• +.010 –.000	V Thread Metric (Plated)	W +.035 –.004	Z• Flat +.000 –.010
9	1.188	.6250	.875	M17X1-6g0.100R	1.062	.697	M12X1-6g0.100R	.086	.669
11	1.375	.7500	1.000	M20X1-6g0.100R	1.250	.822	M15X1-6g0.100R	.086	.769
13	1.500	.8750	1.188	M25X1-6g0.100R	1.375	1.007	M18X1-6g0.100R	.086	.955
15	1.625	1.0000	1.312	M28X1-6g0.100R	1.500	1.134	M22X1-6g0.100R	.086	1.084
17	1.750	1.1875	1.438	M32X1-6g0.100R	1.625	1.259	M25X1-6g0.100R	.086	1.208
19	1.937	1.2500	1.562	M35X1-6g0.100R	1.812	1.384	M28X1-6g0.100R	.118	1.333
21	2.062	1.3750	1.688	M38X1-6g0.100R	1.938	1.507	M31X1-6g0.100R	.118	1.459
23	2.188	1.5000	1.812	M41X1-6g0.100R	2.062	1.634	M34X1-6g0.100R	.118	1.575
25	2.312	1.6250	2.000	M44X1-6g0.100R	2.188	1.759	M37X1-6g0.100R	.118	1.709

All dimensions for reference only.

PART #
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	78	X	2	XX-XX	X



21-78X2

1. Standard tail for size 22 is .020 ±.001 dia.
   Standard tail for size 20 is .030 ±.001 dia.

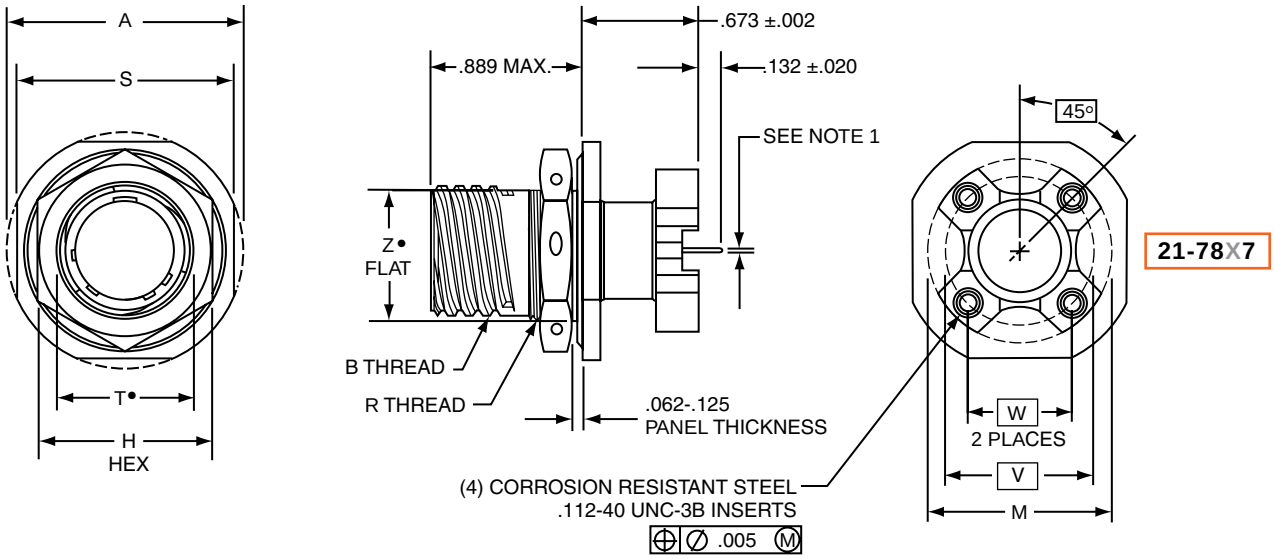
Shell Size	A Dia. ±.005	B Thread Class 2A 0.1P-0.3L-TS (Plated)	M +.003 –.003	K Max. Panel Thickness	R[1] TP	S +.011 –.010	PCB Mounting Dimensions	
							T Dia. TP	W TP
9	1.016	.6250	.770	.234	.719	.938	.752	.532
11	1.148	.7500	.770	.234	.812	1.031	.850	.601
13	1.250	.8750	.770	.234	.906	1.125	.994	.703
15	1.375	1.0000	.770	.234	.969	1.219	1.119	.791
17	1.500	1.1875	.770	.234	1.062	1.312	1.237	.875
19	1.625	1.2500	.770	.234	1.156	1.438	1.379	.975
21	1.750	1.3750	.738	.204	1.250	1.562	1.489	1.053
23	1.875	1.5000	.738	.204	1.375	1.688	1.619	1.145
25	2.000	1.6250	.738	.204	1.500	1.812	1.744	1.233

All dimensions for reference only.

(Printed circuit board mount)

PART #
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	78	X	7	XX-XX	X



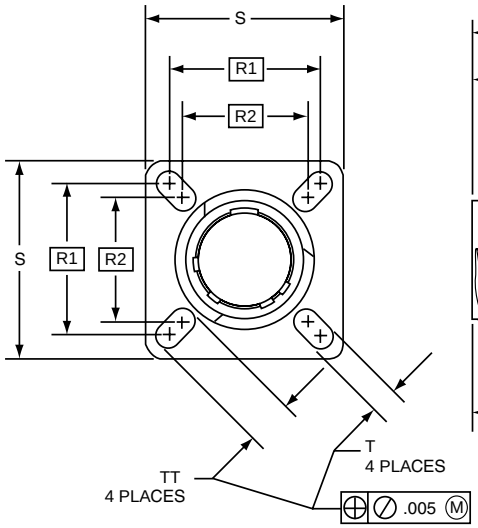
1. Standard tail for size 22 is .020±.001
   Standard tail for size 20 is .030±.001

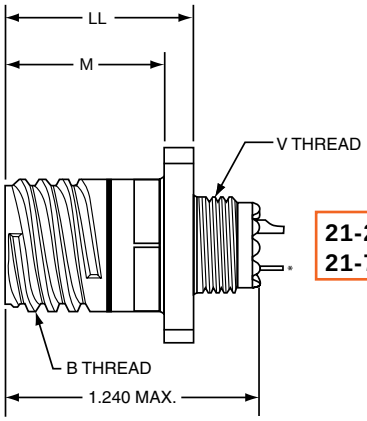
- "D" shaped mounting hole dimensions

Shell Size	A Dia. ±.005	B Thread Class 2A 0.1P-0.3L-TS (Plated)	H Hex +.017 –.016	M Dia. ±.005	R Thread Metric (Plated)	S +.011 –.010	T• Dia. +.010 –.000	PCB Mounting Dimensions W TP	PCB Mounting Dimensions V Dia. TP	Z• Flat +.000 –.010
9	1.188	.6250	.875	1.016	M17X1-6g0.100R	1.062	.697	.532	.752	.669
11	1.375	.7500	1.000	1.148	M20X1-6g0.100R	1.250	.822	.601	.850	.769
13	1.500	.8750	1.188	1.250	M25X1-6g0.100R	1.375	1.007	.703	.994	.955
15	1.625	1.0000	1.312	1.375	M28X1-6g0.100R	1.500	1.134	.791	1.119	1.084
17	1.750	1.1875	1.438	1.500	M32X1-6g0.100R	1.625	1.259	.875	1.237	1.208
19	1.937	1.2500	1.562	1.625	M35X1-6g0.100R	1.812	1.384	.975	1.379	1.333
21	2.062	1.3750	1.688	1.750	M38X1-6g0.100R	1.937	1.507	1.053	1.489	1.459
23	2.188	1.5000	1.812	1.875	M41X1-6g0.100R	2.062	1.634	1.145	1.619	1.575
25	2.312	1.6250	2.000	2.000	M44X1-6g0.100R	2.188	1.759	1.233	1.744	1.709

All dimensions for reference only.

PART #			
To complete, see how to order page 135.	Filter Connector Designator	21	21
	Connect/ Filter Type	77	79
	Shell Finish	X	X
	Shell Style	0	0
(Solder Cup)	Shell Size & Insert Arrg	XX-XX	XX-XX
* Mil Spec length	Type of Contact/ Keyway Position	X	X



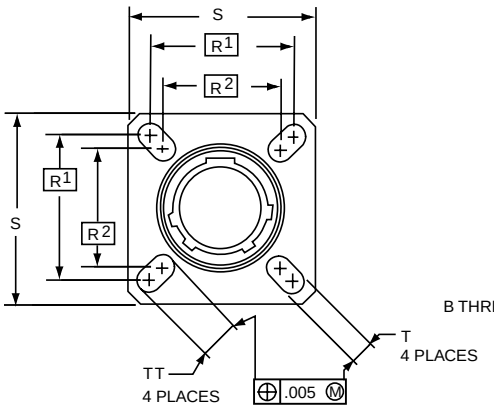


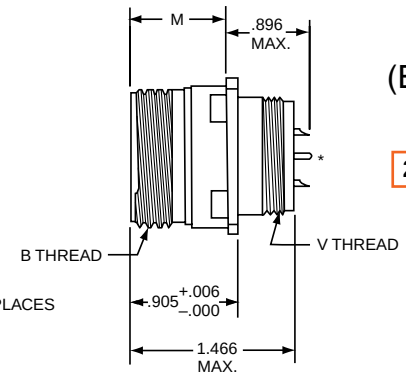
21-21X0
21-79X0

* Printed Circuit Tail available. Consult Amphenol Aerospace, Sidney, NY for Part Number.

Shell Size	B Thread Class 2A 0.1P-0.3L-TS (Plated)	M +.000 –.005	LL +.006 –.000	R¹ TP	R² TP	S Max	T +.008 –.006	V Thread Metric (Plated)	TT +.008 –.006
9	.6250	.820	.905	.719	.594	.948	.128	M12X1-6g0.100R	.216
11	.7500	.820	.905	.812	.719	1.043	.128	M15X1-6g0.100R	.194
13	.8750	.820	.905	.906	.812	1.137	.128	M18X1-6g0.100R	.194
15	1.0000	.820	.905	.969	.906	1.232	.128	M22X1-6g0.100R	.173
17	1.1875	.820	.905	1.062	.969	1.323	.128	M25X1-6g0.100R	.194
19	1.2500	.820	.905	1.156	1.062	1.449	.128	M28X1-6g0.100R	.194
21	1.3750	.790	.905	1.250	1.156	1.575	.128	M31X1-6g0.100R	.194
23	1.5000	.790	.905	1.375	1.250	1.701	.154	M34X1-6g0.100R	.242
25	1.6250	.790	.905	1.500	1.375	1.823	.154	M37X1-6g0.100R	.242

All dimensions for reference only.





FTV – MIL-DTL-38999, Series III

Wall Mounting Receptacle (Extended length shell**) Aluminum

21-52X0

PART #		
To complete, see how to order page 135.	Filter Connector Designator	21
	Connect/ Filter Type	52
	Shell Finish	X
	Shell Style	0
	Shell Size & Insert Arrg	XX-XX
	Type of Contact/ Keyway Position	X

* Printed Circuit Tail available. Consult Amphenol Aerospace, Sidney, NY for Part Number.

Shell Size	B Thread Class 2A 0.1P-0.3L-TS (Plated)	M +.000 –.005	R¹ TP	R² TP	S ±.010	T +.008 –.006	V Thread Metric (Plated)	TT +.008 –.006
9	.6250	.820	.719	.594	.938	.128	M12X1-6g0.100R	.216
11	.7500	.820	.812	.719	1.031	.128	M15X1-6g0.100R	.194
13	.8750	.820	.906	.812	1.125	.128	M18X1-6g0.100R	.194
15	1.0000	.820	.969	.906	1.219	.128	M22X1-6g0.100R	.173
17	1.1875	.820	1.062	.969	1.312	.128	M25X1-6g0.100R	.194
19	1.2500	.820	1.156	1.062	1.438	.128	M28X1-6g0.100R	.194
21	1.3750	.790	1.250	1.156	1.562	.128	M31X1-6g0.100R	.194
23	1.5000	.790	1.375	1.250	1.688	.154	M34X1-6g0.100R	.242
25	1.6250	.790	1.500	1.375	1.812	.154	M37X1-6g0.100R	.242

**To accommodate higher voltage and/or higher capacitance applications

Plug movement required to clear FTV receptacles: .625 min.

(UTS crimp)

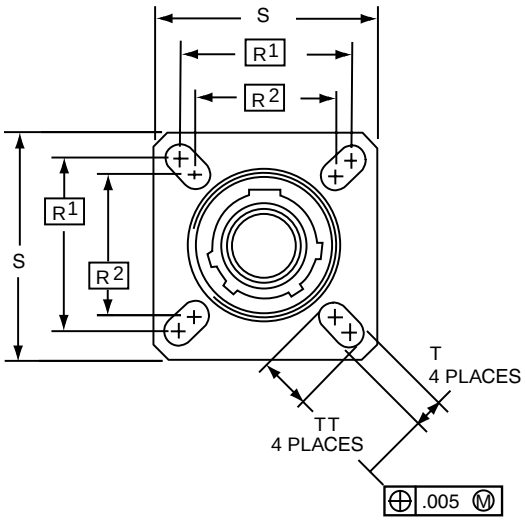
PART #

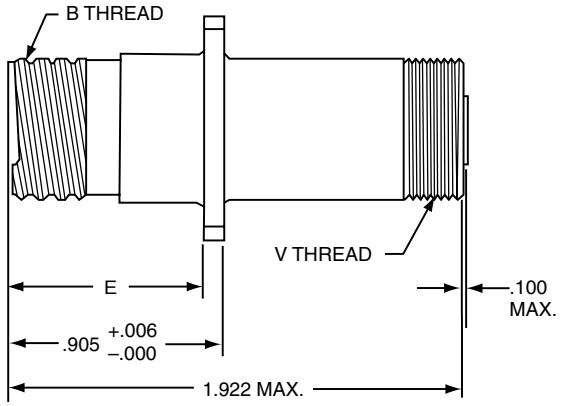
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	50	X	0	XX-XX	X

UTS (Crimp) Contact SAE AS39029/57

21-50X0
UTS (Crimp) Contact
SAE AS39029/57





Shell Size	B Thread Class 2A 0.1P-0.3L-TS (Plated)	E +.000 –.005	R¹ TP	R² TP	S ±.010	T +.008 –.006	V Thread Metric (Plated)	TT +.008 –.006
9	.6250	.820	.719	.594	.938	.128	M15X1-6g0.100R	.216
11	.7500	.820	.812	.719	1.031	.128	M18X1-6g0.100R	.194
13	.8750	.820	.906	.812	1.125	.128	M22X1-6g0.100R	.194
15	1.0000	.820	.969	.906	1.219	.128	M25X1-6g0.100R	.173
17	1.1875	.820	1.062	.969	1.312	.128	M28X1-6g0.100R	.194
19	1.2500	.820	1.156	1.062	1.438	.128	M31X1-6g0.100R	.194
21	1.3750	.790	1.250	1.156	1.562	.128	M34X1-6g0.100R	.194
23	1.5000	.790	1.375	1.250	1.688	.154	M37X1-6g0.100R	.242
25	1.6250	.790	1.500	1.375	1.812	.154	M41X1-6g0.100R	.242

All dimensions for reference only.

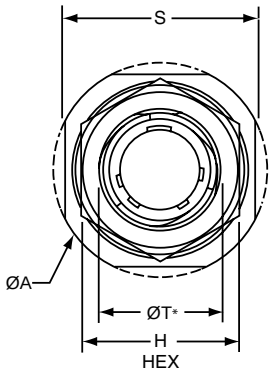
PART #

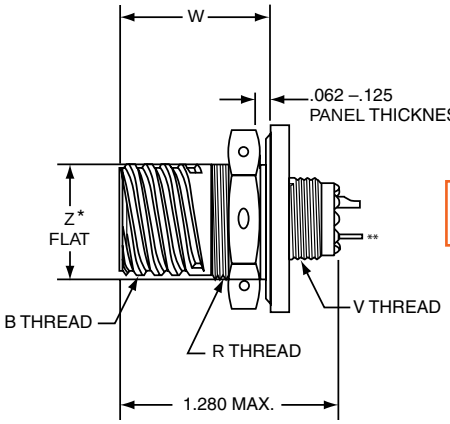
To complete, see how to order page 135.

(Solder Cup)

*** Mil Spec length**

Filter Connector Designator	21	21
Connect/ Filter Type	77	79
Shell Finish	X	X
Shell Style	7	7
Shell Size & Insert Arrg	XX-XX	XX-XX
Type of Contact/ Keyway Position	X	X





21-77X7
21-79X7

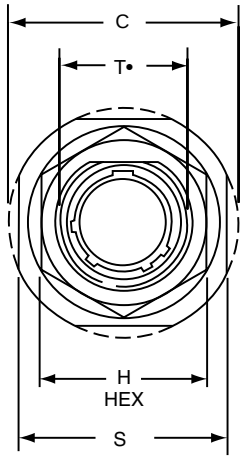
** Printed Circuit Tail available. Consult Amphenol Aerospace factory for P/N. * "D" shaped mounting hole dimensions

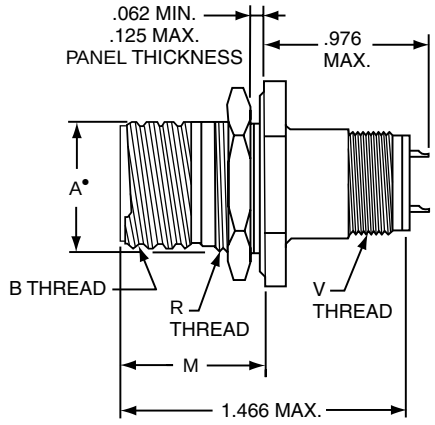
Shell Size	ØA• Max	B Thread Class 2A 0.1P-0.3L-TS (Plated)	H Hex +.017 –.016	R Thread Matric (Plated)	S ±.010	ØT* +.010 –.000	V Thread Metric (Plated)	W +.011 –.010	Z* Flat +.000 –.010
9	1.199	.6250	.875	M17X1-6g0.100R	1.062	.697	M12X1-6g0.100R	.871	.669
11	1.386	.7500	1.000	M20X1-6g0.100R	1.250	.822	M15X1-6g0.100R	.871	.769
13	1.511	.8750	1.188	M25X1-6g0.100R	1.375	1.007	M18X1-6g0.100R	.878	.955
15	1.636	1.0000	1.312	M28X1-6g0.100R	1.500	1.134	M22X1-6g0.100R	.878	1.084
17	1.761	1.1875	1.438	M32X1-6g0.100R	1.625	1.259	M25X1-6g0.100R	.878	1.208
19	1.949	1.2500	1.562	M35X1-6g0.100R	1.812	1.384	M28X1-6g0.100R	.878	1.333
21	2.073	1.3750	1.688	M38X1-6g0.100R	1.938	1.507	M31X1-6g0.100R	.878	1.459
23	2.199	1.5000	1.812	M41X1-6g0.100R	2.062	1.634	M34X1-6g0.100R	.878	1.575
25	2.323	1.6250	2.000	M44X1-6g0.100R	2.188	1.759	M37X1-6g0.100R	.878	1.709

All dimensions for reference only.

FTV – MIL-DTL-38999, Series III

(Extended length shell**) Jam Nut Receptacle





21-52X7

PART #

To complete, see how to order page 135.

Filter Connector Designator	21
Connect/ Filter Type	52
Shell Finish	X
Shell Style	7
Shell Size & Insert Arrg	XX-XX
Type of Contact/ Keyway Position	X

• "D" shaped mounting hole dimensions Plug movement required to clear FTV receptacles: .625 min.

Shell Size	A• +.000 –.010	B Thread Class 2A 0.1P-0.3L-TS (Plated)	C Max	H Hex +.017 –.016	M +.011 –.010	R Thread (Plated)	S +.011 –.010	T• +.010 –.000	V Thread Metric (Plated)
9	.669	.6250	1.199	.875	.871	M17X1-6g0.100R	1.062	.697	M12X1-6g0.100R
11	.769	.7500	1.386	1.000	.871	M20X1-6g0.100R	1.250	.822	M15X1-6g0.100R
13	.955	.8750	1.511	1.188	.878	M25X1-6g0.100R	1.375	1.007	M18X1-6g0.100R
15	1.084	1.0000	1.636	1.312	.878	M28X1-6g0.100R	1.500	1.134	M22X1-6g0.100R
17	1.208	1.1875	1.761	1.438	.878	M32X1-6g0.100R	1.625	1.259	M25X1-6g0.100R
19	1.333	1.2500	1.949	1.562	.878	M35X1-6g0.100R	1.812	1.384	M28X1-6g0.100R
21	1.459	1.3750	2.073	1.688	.878	M38X1-6g0.100R	1.938	1.507	M31X1-6g0.100R
23	1.575	1.5000	2.199	1.812	.878	M41X1-6g0.100R	2.062	1.634	M34X1-6g0.100R
25	1.709	1.6250	2.323	2.000	.878	M44X1-6g0.100R	2.188	1.759	M37X1-6g0.100R

**To accommodate higher voltage and/or higher capacitance applications

All dimensions for reference only.

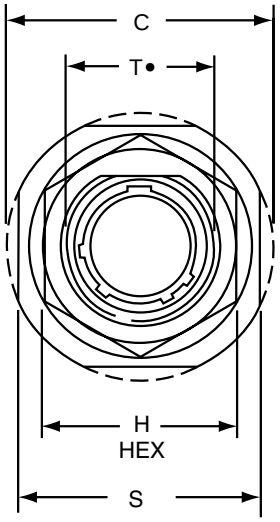
(UTS crimp)

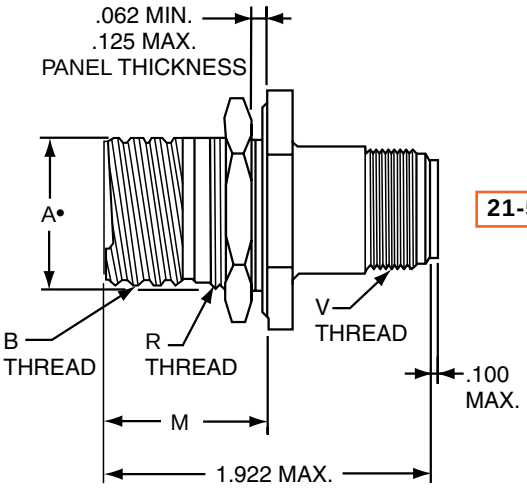
PART #

To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	50	X	7	XX-XX	X

UTS (Crimp) Contact SAE AS39029/57





21-50X7

• "D" shaped mounting hole dimensions
Plug movement required to clear FTV receptacles: .625 min.

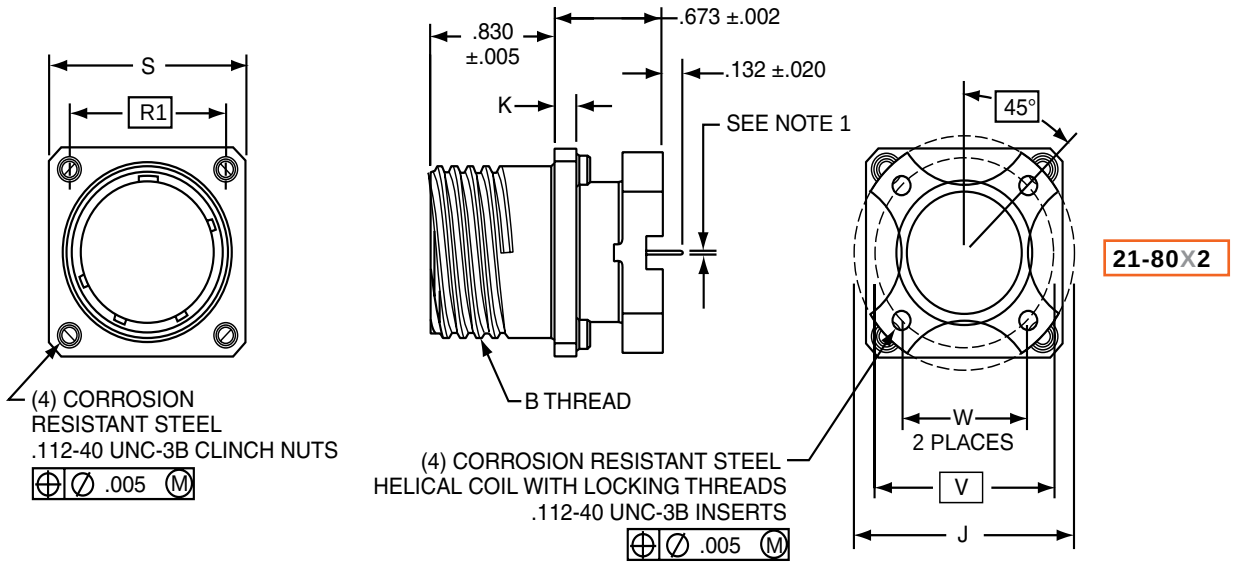
Shell Size	A• +.000 –.010	B Thread Class 2A 0.1P-0.3L-TS (Plated)	C Max	H Hex +.017 –.016	M ±.005	R Thread (Plated)	S +.011 –.010	T• +.010 –.000	V Thread Metric (Plated)
9	.669	.6250	1.199	.875	.871	M17X1-6g0.100R	1.062	.697	M15X1-6g0.100R
11	.769	.7500	1.386	1.000	.871	M20X1-6g0.100R	1.250	.822	M18X1-6g0.100R
13	.955	.8750	1.511	1.188	.878	M25X1-6g0.100R	1.375	1.007	M22X1-6g0.100R
15	1.084	1.0000	1.636	1.312	.878	M28X1-6g0.100R	1.500	1.134	M25X1-6g0.100R
17	1.208	1.1875	1.761	1.438	.878	M32X1-6g0.100R	1.625	1.259	M28X1-6g0.100R
19	1.333	1.2500	1.949	1.562	.878	M35X1-6g0.100R	1.812	1.384	M31X1-6g0.100R
21	1.459	1.3750	2.073	1.688	.878	M38X1-6g0.100R	1.938	1.507	M34X1-6g0.100R
23	1.575	1.5000	2.199	1.812	.878	M41X1-6g0.100R	2.062	1.634	M37X1-6g0.100R
25	1.709	1.6250	2.323	2.000	.878	M44X1-6g0.100R	2.188	1.759	M41X1-6g0.100R

All dimensions for reference only.

PART #

To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	80	X	2	XX-XX	X



21-80X2

1. Standard tail for size 22 is .020 ±.001.
   Standard tail for size 20 is 030 ±.001.

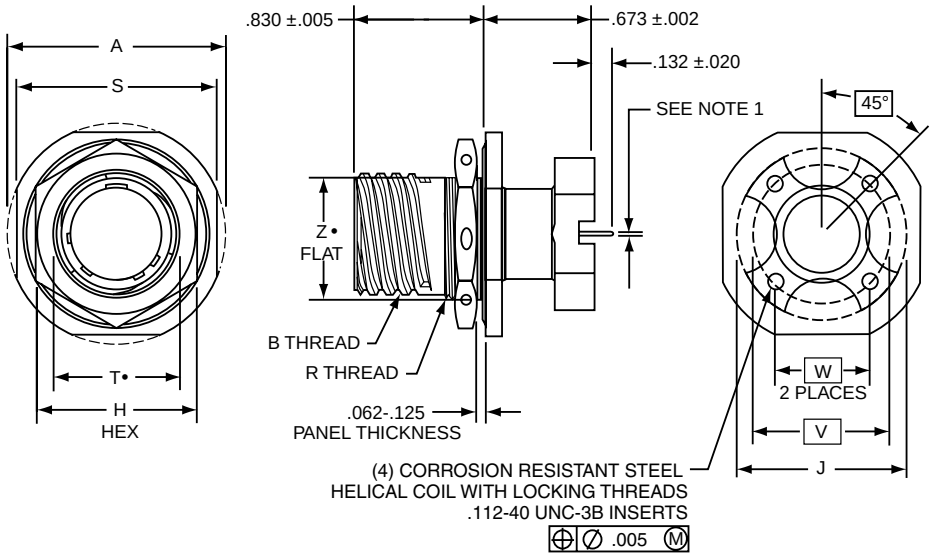
Shell Size	B Thread Class 2A 0.1P-0.3L-TS (Plated)	J Dia. ±.005	K ±.005	R[1] TP	S ±.010	PCB Mounting Dimensions W TP	PCB Mounting Dimensions V Dia. TP
9	.6250	1.016	.085	.719	.938	.532	.752
11	.7500	1.062	.085	.812	1.031	.601	.850
13	.8750	1.250	.085	.906	1.125	.703	.994
15	1.0000	1.375	.085	.969	1.219	.791	1.119
17	1.1875	1.500	.085	1.062	1.312	.875	1.237
19	1.2500	1.625	.085	1.156	1.438	.975	1.379
21	1.3750	1.750	.115	1.250	1.562	1.053	1.489
23	1.5000	1.875	.115	1.375	1.688	1.145	1.619
25	1.6250	2.000	.115	1.500	1.812	1.233	1.744

All dimensions for reference only.

(printed circuit board mount)

PART #
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	80	X	7	XX-XX	X



21-80X7

1. Standard tail for size 22 is .020 ±.001.
   Standard tail for size 20 is .030 ±.001.

- "D" shaped mounting hole dimensions

Shell Size	A Dia. ±.010	B Thread Class 2A 0.1P-0.3L-TS (Plated)	H Hex +.017 –.016	J Dia. ±.005	R Thread Metric (Plated)	S ±.015	T• Dia. +.010 –.000	PCB Mounting Dimensions W TP	PCB Mounting Dimensions V Dia. TP	Z• Flat +.000 –.010
9	1.188	.6250	.875	1.016	M17X1-6g0.100R	1.062	.697	.532	.752	.669
11	1.375	.7500	1.000	1.062	M20X1-6g0.100R	1.250	.822	.601	.850	.769
13	1.500	.8750	1.188	1.250	M25X1-6g0.100R	1.375	1.007	.703	.994	.955
15	1.625	1.0000	1.312	1.375	M28X1-6g0.100R	1.500	1.134	.791	1.119	1.084
17	1.750	1.1875	1.438	1.500	M32X1-6g0.100R	1.625	1.259	.875	1.237	1.208
19	1.937	1.2500	1.562	1.625	M35X1-6g0.100R	1.812	1.384	.975	1.379	1.333
21	2.062	1.3750	1.688	1.750	M38X1-6g0.100R	1.937	1.507	1.053	1.489	1.459
23	2.188	1.5000	1.812	1.875	M41X1-6g0.100R	2.062	1.634	1.145	1.619	1.575
25	2.312	1.6250	2.000	2.000	M44X1-6g0.100R	2.188	1.759	1.233	1.744	1.709

All dimensions for reference only.

The Amphenol® FJT Series space and weight saving design, coupled with a filter, gives high reliability.

- Intermateable with MIL-DTL-38999/27599 Series II connectors (see section Series II JT)
- Quick positive coupling – 3 point bayonet locking
- Error-proof alternate positioning of shell keyways
- Higher reliability and greater durability with permanently encapsulated contacts
- Environmental resistant
- Aluminum shells with several finish options

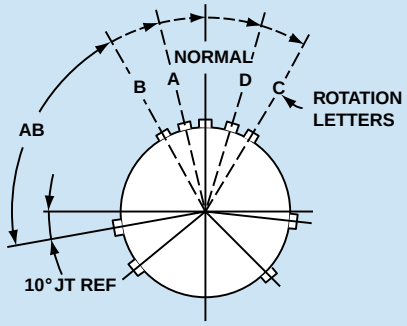
FJT

FJT Master Key/Keyway Rotation

Shell Size	AB Angle of Rotation (Degrees)				
	Normal	A	B	C	D
8	100	82	–	–	118
10	100	86	72	128	114
12	100	80	68	132	120
14	100	79	66	134	121
16	100	82	70	130	118
18	100	82	70	130	118
20	100	82	70	130	118
22	100	85	74	126	115
24	100	85	74	126	115

A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The AB angle for a given connector is the same whether it contains pins or sockets. Inserts are not rotated in conjunction with the master key/keyway.

AB angles shown are viewed from the front face of the connector. A receptacle is shown at right. The angles for the plug are exactly the same, except the direction of rotation is opposite of that shown for the receptacle.



RELATIVE POSSIBLE POSITION OF ROTATED MASTER KEYWAY (front face of receptacle shown)

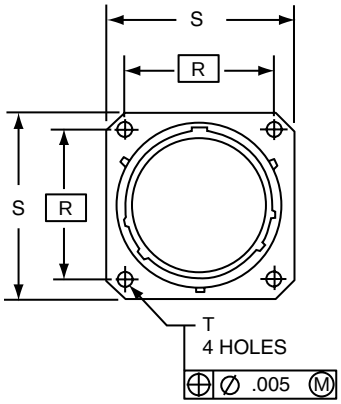
Amphenol Aerospace

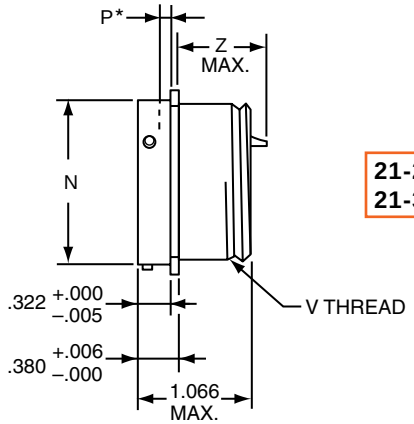
PART #

To complete, see how to order page 135.

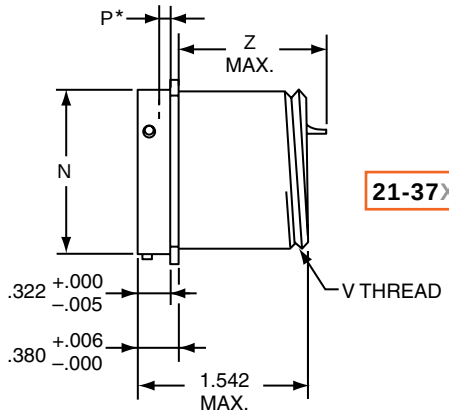
Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	24	X	0	XX-XX	X
21	32	X	0	XX-XX	X
21	37	X	0	XX-XX	X

(MS27334)





21-24X0 (MS27334)
21-32X0 (MS27334)



21-37X0 (MS27334)

Plug movement required to clear FJT receptacles: .281 min.
* Acceptable panel thickness for back panel mounting a standard receptacle.

Shell Size	N Dia +.001 –.005	P* Max.	R (TP)	S +.011 –.010	T Dia. ±.005	V Thread UNEF-2A (Plated)	SHORT SHELL VHF/UHF/MF Filters			LONG SHELL HF Filters	
							Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 22 Contact Z Max.	Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.
8	.473	.022	.594	.812	.120	.4375-28	.937	.952	.902	1.300	1.496
10	.590	.027	.719	.938	.120	.5625-24	.937	.952	.902	1.300	1.496
12	.750	.027	.812	1.031	.120	.6875-24	.937	.952	.902	1.300	1.496
14	.875	.027	.906	1.125	.120	.8125-20	.937	.952	.902	1.300	1.496
16	1.000	.027	.969	1.219	.120	.9375-20	.937	.952	.902	1.300	1.496
18	1.125	.027	1.062	1.312	.120	1.0625-18	.937	.952	.902	1.300	1.496
20	1.250	.054	1.156	1.438	.120	1.1875-18	.937	.952	.902	1.300	1.496
22	1.375	.054	1.250	1.562	.120	1.3125-18	.937	.952	.902	1.300	1.496
24	1.500	.054	1.375	1.688	.147	1.4375-18	.937	.952	.902	1.300	1.496

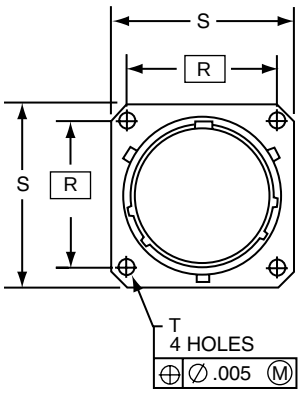
All dimensions for reference only.

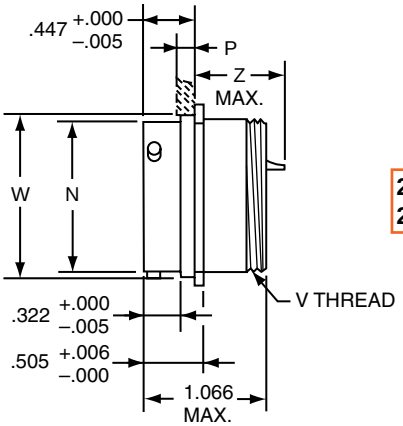
PART #

To complete, see how to order page 135.

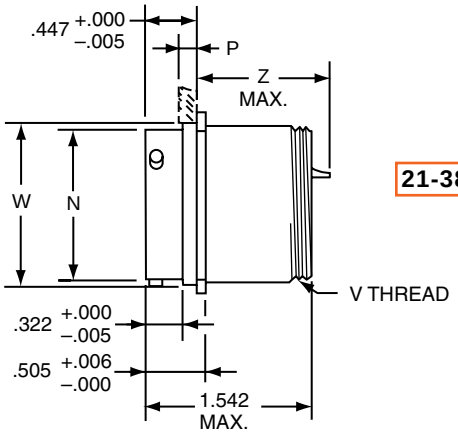
Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	34	X	0	XX-XX	X
21	39	X	0	XX-XX	X
21	38	X	0	XX-XX	X

(MS27497)





21-34X0 (MS27497)
21-39X0 (MS27497)



21-38X0 (MS27497)

Plug movement required to clear FJT receptacles: .281 min.

Shell Size	N Dia +.001 –.005	P Max. Panel Thickness	R (TP)	S +.011 –.010	T Dia. ±.005	V Thread UNEF-2A (Plated)	W Dia. +.001 –.005	SHORT SHELL VHF/UHF/MF Filters		LONG SHELL HF Filters	
								Size 16 or 16 & 20 Contacts Z Max.	Size 20 or 22 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 20 Contact Z Max.
8	.473	.147	.594	.812	.120	.4375-28	.516	.900	.875	1.385	1.285
10	.590	.152	.719	.938	.120	.5625-24	.633	.900	.875	1.385	1.285
12	.750	.152	.812	1.031	.120	.6875-24	.802	.900	.875	1.385	1.285
14	.875	.152	.906	1.125	.120	.8125-20	.927	.900	.875	1.385	1.285
16	1.000	.152	.969	1.219	.120	.9375-20	1.052	.900	.875	1.385	1.285
18	1.125	.152	1.062	1.312	.120	1.0625-18	1.177	.900	.875	1.385	1.285
20	1.250	.179	1.156	1.438	.120	1.1875-18	1.302	.900	.875	1.385	1.285
22	1.375	.179	1.250	1.562	.120	1.3125-18	1.427	.900	.875	1.385	1.285
24	1.500	.179	1.375	1.688	.147	1.4375-18	1.552	.900	.875	1.385	1.285

All dimensions for reference only.

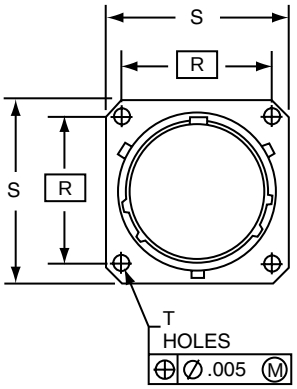
Amphenol Aerospace

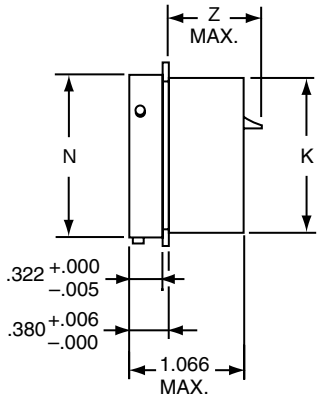
PART #

To complete, see how to order page 135.

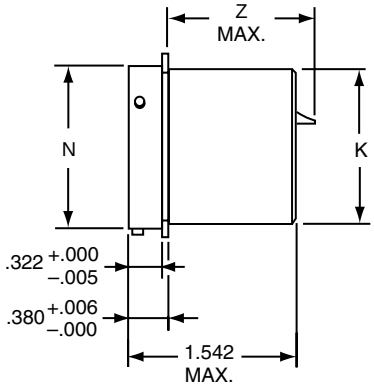
Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	24	X	2	XX-XX	X
21	32	X	2	XX-XX	X
21	37	X	2	XX-XX	X

(MS27335)





21-24X2 (MS27335)
21-32X2 (MS27335)



21-37X2 (MS27335)

Plug movement required to clear FJT receptacles: .281 min.

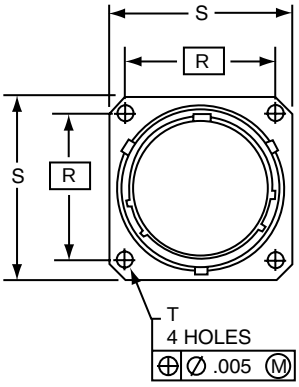
Shell Size	K Dia. +.000 −.007	N Dia +.001 −.005	R (TP)	S +.011 −.010	T Dia. ±.005	SHORT SHELL VHF/UHF/MF Filters			LONG SHELL HF Filters	
						Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 22 Contact Z Max.	Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.
8	.438	.473	.594	.812	.120	.937	.952	.902	1.300	1.496
10	.562	.590	.719	.938	.120	.937	.952	.902	1.300	1.496
12	.688	.750	.812	1.031	.120	.937	.952	.902	1.300	1.496
14	.812	.875	.906	1.125	.120	.937	.952	.902	1.300	1.496
16	.938	1.000	.969	1.219	.120	.937	.952	.902	1.300	1.496
18	1.062	1.125	1.062	1.312	.120	.937	.952	.902	1.300	1.496
20	1.188	1.250	1.156	1.438	.120	.937	.952	.902	1.300	1.496
22	1.312	1.375	1.250	1.562	.120	.937	.952	.902	1.300	1.496
24	1.438	1.500	1.375	1.688	.147	.937	.952	.902	1.300	1.496

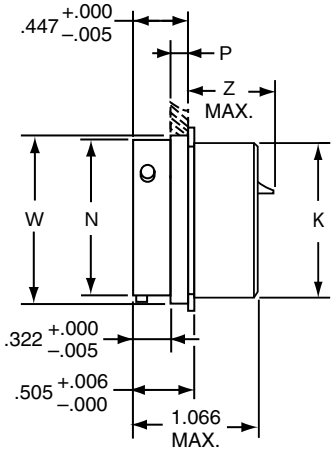
All dimensions for reference only.

PART #
To complete, see how to order page 135.

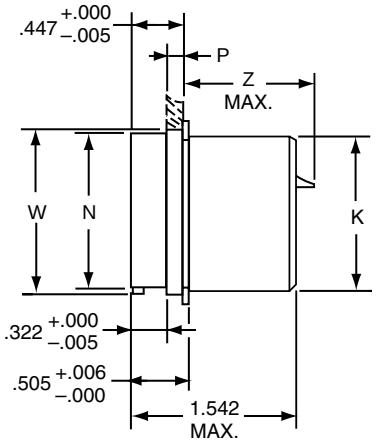
Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	34	X	2	XX-XX	X
21	39	X	2	XX-XX	X
21	38	X	2	XX-XX	X

(MS27508)





21-34X2 (MS27508)
21-39X2 (MS27508)



21-38X2 (MS27508)

Plug movement required to clear FJT receptacles: .281 min.

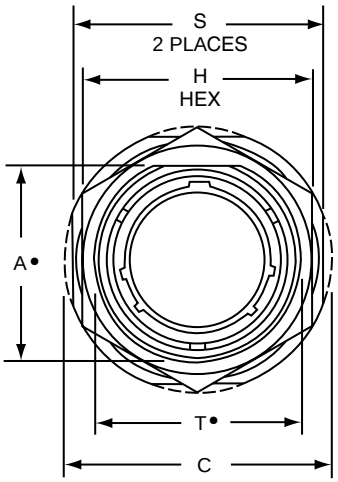
Shell Size	K Dia. +.000 –.007	N Dia +.001 –.005	P Max. Panel Thickness	R (TP)	S +.011 –.010	T Dia. ±.005	W Dia. +.001 –.005	SHORT SHELL VHF/UHF/MF Filters		LONG SHELL HF Filters	
								Size 16 or 16 & 20 Contacts Z Max.	Size 20 or 22 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 20 Contact Z Max.
8	.438	.473	.147	.594	.812	.120	.516	.900	.875	1.385	1.285
10	.562	.590	.152	.719	.938	.120	.633	.900	.875	1.385	1.285
12	.688	.750	.152	.812	1.031	.120	.802	.900	.875	1.385	1.285
14	.812	.875	.152	.906	1.125	.120	.927	.900	.875	1.385	1.285
16	.938	1.000	.152	.969	1.219	.120	1.052	.900	.875	1.385	1.285
18	1.062	1.125	.152	1.062	1.312	.120	1.177	.900	.875	1.385	1.285
20	1.188	1.250	.179	1.156	1.438	.120	1.302	.900	.875	1.385	1.285
22	1.312	1.375	.179	1.250	1.562	.120	1.427	.900	.875	1.385	1.285
24	1.438	1.500	.179	1.375	1.688	.147	1.552	.900	.875	1.385	1.285

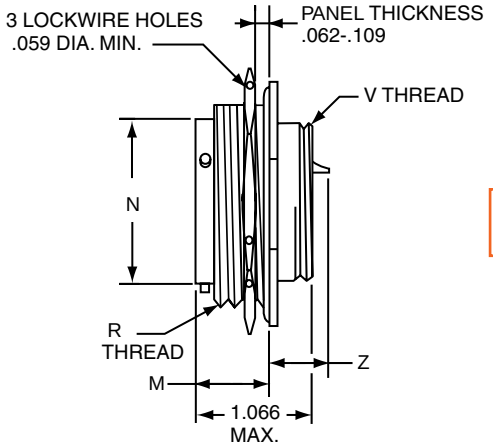
All dimensions for reference only.

PART #
To complete, see how to order page 135.

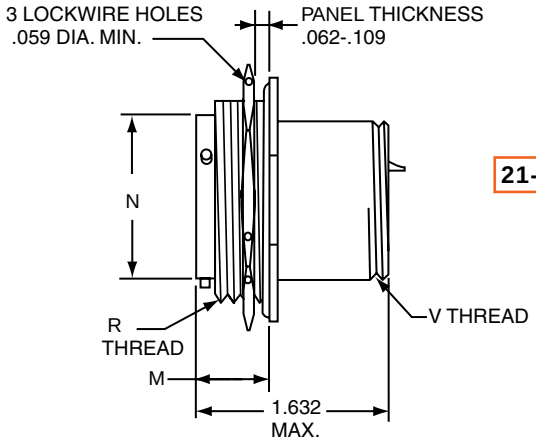
Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	24	X	7	XX-XX	X
21	32	X	7	XX-XX	X
21	37	X	7	XX-XX	X

(MS27337)





21-24X7 (MS27337)
21-32X7 (MS27337)



21-37X7 (MS27337)

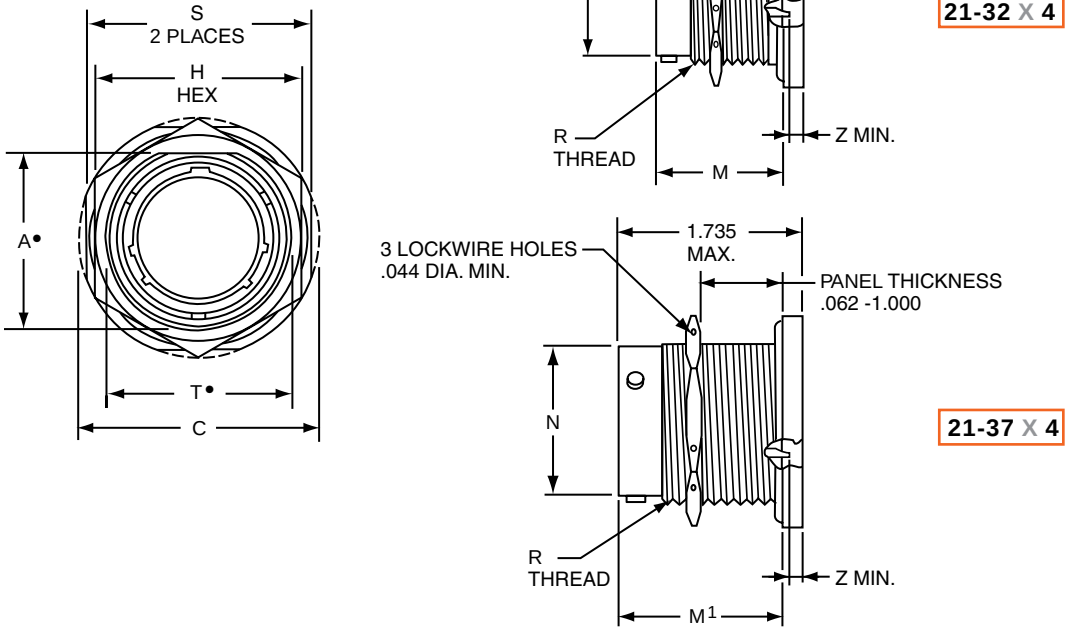
• "D" shaped mounting hole dimensions
Plug movement required to clear FJT receptacles: .281 min.

Shell Size	A• Flat +.000 –.010	C Dia. +.011 –.010	H Hex +.017 –.016	M ±.005	N Dia +.001 –.005	R Thread (Plated) Class -2A	S ±.010	T• Dia. +.010 –.000	V Thread UNEF-2A (Plated)	SHORT SHELL VHF/UHF/MF Filters			LONG SHELL HF Filters	
										Size 16 or 16 & 20 Contacts Z Max.	Size 20 Contact Z Max.	Size 22 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 20 Contact Z Max.
8	.830	1.375	1.062	.438	.473	.8750-20UNEF	1.250	.884	.4375-28	.900	.884	.849	1.443	1.276
10	.955	1.500	1.188	.438	.590	1.0000-20UNEF	1.375	1.007	.5625-24	.900	.884	.849	1.443	1.276
12	1.084	1.625	1.312	.438	.750	1.1250-18UNEF	1.500	1.134	.6875-24	.900	.884	.849	1.443	1.276
14	1.208	1.750	1.438	.438	.875	1.2500-18UNEF	1.625	1.259	.8125-20	.900	.884	.849	1.443	1.276
16	1.333	1.938	1.562	.438	1.000	1.3750-18UNEF	1.781	1.384	.9375-20	.900	.884	.849	1.443	1.276
18	1.459	2.016	1.688	.438	1.125	1.5000-18UNEF	1.890	1.507	1.0625-18	.900	.884	.849	1.443	1.276
20	1.576	2.141	1.812	.464	1.250	1.6250-18UNEF	2.016	1.634	1.1875-18	.874	.858	.823	1.443	1.276
22	1.701	2.265	2.000	.464	1.375	1.7500-18UNS	2.140	1.759	1.3125-18	.874	.858	.823	1.417	1.250
24	1.826	2.390	2.125	.464	1.500	1.8750-16UN	2.265	1.884	1.4375-18	.874	.858	.823	1.417	1.250

All dimensions for reference only.

PART #
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	24	X	4	XX-XX	X
21	32	X	4	XX-XX	X
21	37	X	4	XX-XX	X



• "D" shaped mounting hole dimensions
Plug movement required to clear FJT receptacles: .281 min.

Shell Size	A• Flat +.000 –.010	C Dia. +.011 –.010	H Hex +.017 –.016	M ±.005	M1 ±.005	N Dia +.001 –.005	R Thread UNEF-2A (Plated)	S +.011 –.010	T• Dia. +.010 –.000	SHORT SHELL VHF/UHF/MF Filters			LONG SHELL HF Filters	
										Size 16 or 16 & 20 Contacts Z Max.	Size 20 Contact Z Max.	Size 22 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 20 Contact Z Max.
8	.542	1.062	.750	1.220	1.594	.473	.5625-24	.938	.572	.000	.022	.057	.000	.000
10	.669	1.188	.875	1.220	1.594	.590	.6875-24	1.062	.697	.000	.022	.057	.000	.000
12	.830	1.375	1.062	1.220	1.594	.750	.8750-20	1.250	.844	.000	.022	.057	.000	.000
14	.955	1.500	1.188	1.220	1.594	.875	1.0000-20	1.375	1.007	.000	.022	.057	.000	.000
16	1.084	1.625	1.312	1.220	1.594	1.000	1.1250-18	1.500	1.134	.000	.022	.057	.000	.000
18	1.208	1.750	1.438	1.220	1.594	1.125	1.2500-18	1.625	1.259	.000	.022	.057	.000	.000
20	1.333	1.938	1.562	1.188	1.563	1.250	1.3750-18	1.812	1.384	.000	.022	.057	.000	.000
22	1.459	2.062	1.688	1.188	1.563	1.375	1.5000-18	1.938	1.507	.000	.022	.057	.000	.000
24	1.575	2.188	1.812	1.188	1.563	1.500	1.6250-18	2.062	1.634	.000	.022	.057	.000	.000

All dimensions for reference only.

The Amphenol® FLJT Series offers all the design features of the FJT plus a 100% "scoop-proof" contact protection design.

- Intermountable with MIL-DTL-38999/27599 Series I connectors (see section Series I LJT)
- Contact Protection - shell design prevents contact damage
- Quick Positive Coupling – 3 point bayonet locking
- Higher reliability and greater durability with permanently encapsulated contacts
- Environmental Resistant
- Aluminum shells with several finish options
- Error-proof alternate positioning of shell keyways
- Corrosion Resistant - 500 hour salt spray olive drab cadmium over nickel plating, class T (aluminum), electroless nickel plating, class F (aluminum) or stainless steel shells

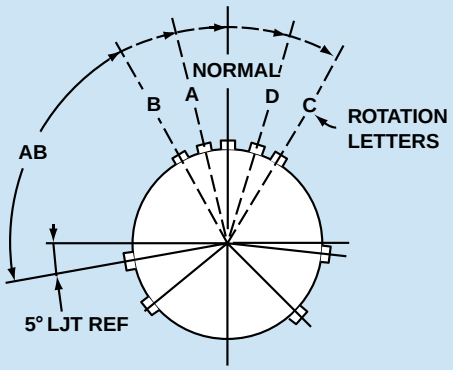
FLJT

FLJT Master Key/Keyway Rotation

Shell Size	AB Angle of Rotation (Degrees)				
	Normal	A	B	C	D
9	95	77	–	–	113
11	95	81	67	123	109
13	95	75	63	127	115
15	95	74	61	129	116
17	95	77	65	125	113
19	95	77	65	125	113
21	95	77	65	125	113
23	95	80	69	121	110
25	95	80	69	121	110

A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The AB angle for a given connector is the same whether it contains pins or sockets. Inserts are not rotated in conjunction with the master key/keyway.

AB angles shown are viewed from the front face of the connector. A receptacle is shown at right. The angles for the plug are exactly the same, except the direction of rotation is opposite of that shown for the receptacle.

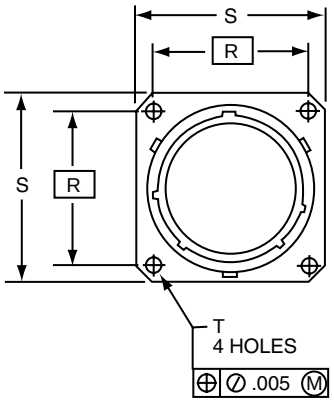


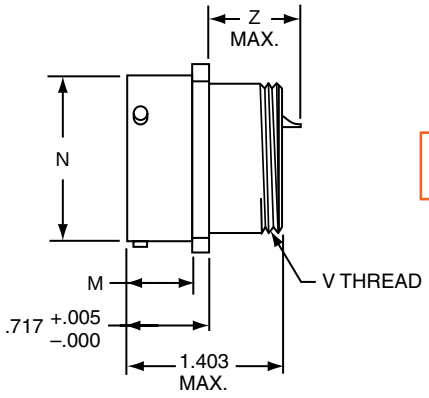
RELATIVE POSSIBLE POSITION OF ROTATED MASTER KEYWAY (front face of receptacle shown)

PART #

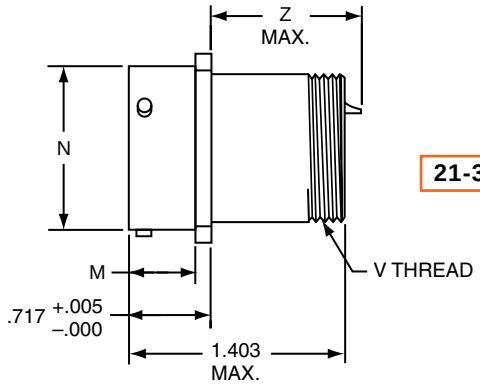
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	29	X	0	XX-XX	X
21	40	X	0	XX-XX	X
21	36	X	0	XX-XX	X





21-29X0
21-40X0



21-36X0

Plug movement required to clear FLJT receptacles: .625 min.

Shell Size	M +.000 –.006	N Dia. +.001 –.005	R (TP)	S +.011 –.010	T Dia. ±.005	V Thread UNEF-2A (Plated)	SHORT SHELL VHF/UHF/MF Filters			LONG SHELL HF Filters	
							Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 22 Contact Z Max.	Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.
9	.632	.572	.719	.938	.128	.4375-28	.865	.950	.820	1.324	1.394
11	.632	.700	.812	1.031	.128	.5625-24	.865	.950	.820	1.324	1.394
13	.632	.850	.906	1.125	.128	.6875-24	.865	.950	.820	1.324	1.394
15	.632	.975	.969	1.219	.128	.8125-20	.865	.950	.820	1.324	1.394
17	.632	1.100	1.062	1.312	.128	.9375-20	.865	.950	.820	1.324	1.394
19	.632	1.207	1.156	1.438	.128	1.0625-18	.865	.950	.820	1.324	1.394
21	.602	1.332	1.250	1.562	.128	1.1875-18	.865	.950	.820	1.324	1.394
23	.602	1.457	1.375	1.688	.147	1.3125-18	.865	.950	.820	1.324	1.394
25	.602	1.582	1.500	1.812	.147	1.4375-18	.865	.950	.820	1.324	1.394

All dimensions for reference only.

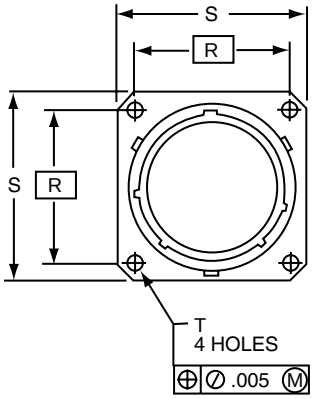
(back panel mounting, UTS crimp)

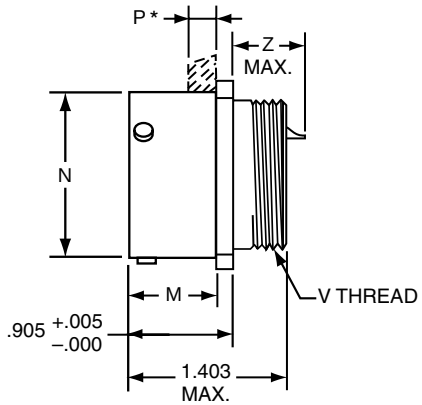
PART #

To complete, see how to order page 135.

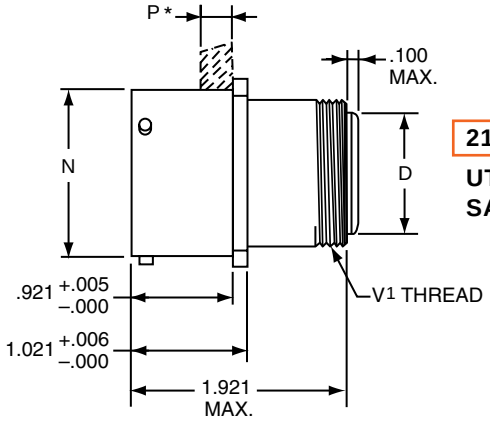
Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	47	X	0	XX-XX	X
21	48	X	0	XX-XX	X

UTS (Crimp) Contact SAE AS39029/57





21-47X0



21-48X0

UTS (Crimp) Contact SAE AS39029/57

Plug movement required to clear FLJT receptacles: .625 min.
* Acceptable panel thickness for back panel mounting a standard receptacle.

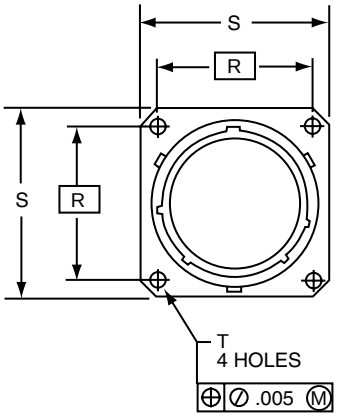
Shell Size	D Dia. ±.005	M +.000 –.006	N Dia. +.001 –.005	P Max. Panel Thickness	R (TP)	S +.011 –.010	T Dia. ±.005	V Thread UNEF-2A (Plated)	V1 Thread UNEF-2A (Plated)	SHORT SHELL VHF/UHF Filters		
										Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 22 Contact Z Max.
9	.299	.820	.572	.234	.719	.938	.128	.4375-28	.5625-24	.672	.763	.632
11	.427	.820	.700	.234	.812	1.031	.128	.5625-24	.6875-24	.672	.763	.632
13	.541	.820	.850	.234	.906	1.125	.128	.6875-24	.8125-20	.672	.763	.632
15	.666	.820	.975	.234	.969	1.219	.128	.8125-20	.9375-20	.672	.763	.632
17	.791	.820	1.100	.234	1.062	1.312	.128	.9375-20	1.0625-18	.672	.763	.632
19	.897	.820	1.207	.234	1.156	1.438	.128	1.0625-18	1.1875-18	.672	.763	.632
21	1.022	.790	1.332	.204	1.250	1.562	.128	1.1875-18	1.3125-18	.672	.763	.632
23	1.147	.790	1.457	.204	1.375	1.688	.147	1.3125-18	1.4375-18	.672	.763	.632
25	1.272	.790	1.582	.193	1.500	1.812	.147	1.4375-18	1.5625-18	.672	.763	.632

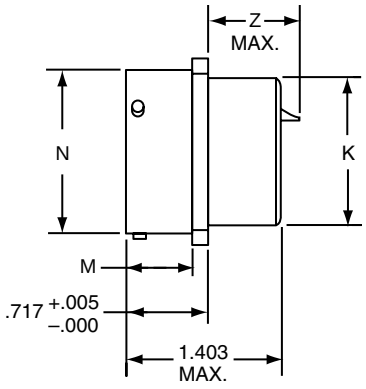
All dimensions for reference only.

PART #

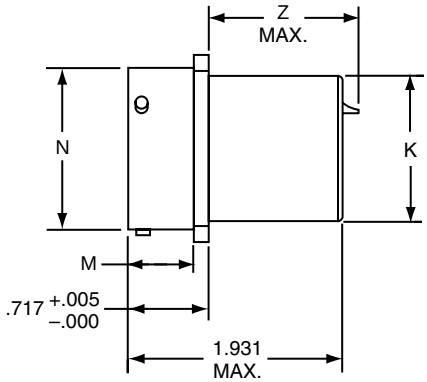
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	29	X	2	XX-XX	X
21	40	X	2	XX-XX	X
21	36	X	2	XX-XX	X





21-29X2
21-40X2



21-36X2

Plug movement required to clear FLJT receptacles: .625 min.

Shell Size	K Dia. +.001 –.006	M +.000 –.006	N Dia. +.001 –.005	R (TP)	S +.011 –.010	T Dia. ±.005	SHORT SHELL VHF/UHF/MF Filters			LONG SHELL HF Filters	
							Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 22 Contact Z Max.	Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.
9	.436	.632	.572	.719	.938	.128	.865	.950	.820	1.324	1.394
11	.560	.632	.700	.812	1.031	.128	.865	.950	.820	1.324	1.394
13	.686	.632	.850	.906	1.125	.128	.865	.950	.820	1.324	1.394
15	.810	.632	.975	.969	1.219	.128	.865	.950	.820	1.324	1.394
17	.936	.632	1.100	1.062	1.312	.128	.865	.950	.820	1.324	1.394
19	1.060	.632	1.207	1.156	1.438	.128	.865	.950	.820	1.324	1.394
21	1.186	.602	1.332	1.250	1.562	.128	.865	.950	.820	1.324	1.394
23	1.310	.602	1.457	1.375	1.688	.147	.865	.950	.820	1.324	1.394
25	1.436	.602	1.582	1.500	1.812	.147	.865	.950	.820	1.324	1.394

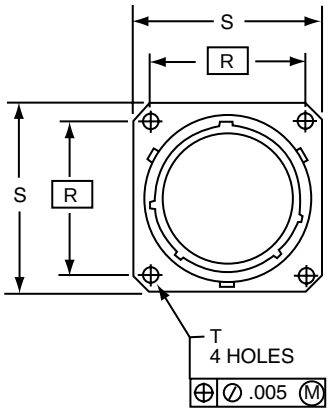
All dimensions for reference only.

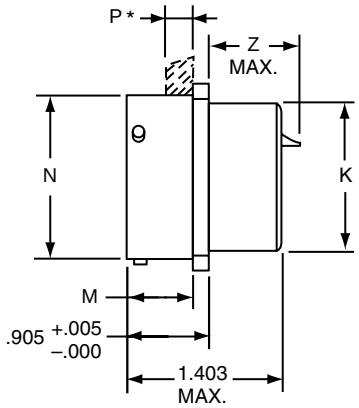
(back panel mounting, UTS crimp)

PART #
To complete, see how to order page 135.

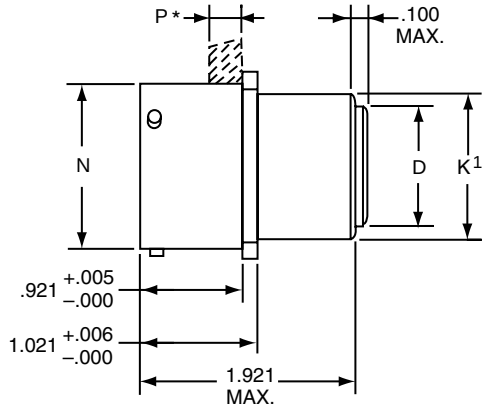
Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	47	X	2	XX-XX	X
21	48	X	2	XX-XX	X

UTS (Crimp) Contact SAE AS39029





21-47X2



21-48X2

UTS (Crimp) Contact SAE AS39029

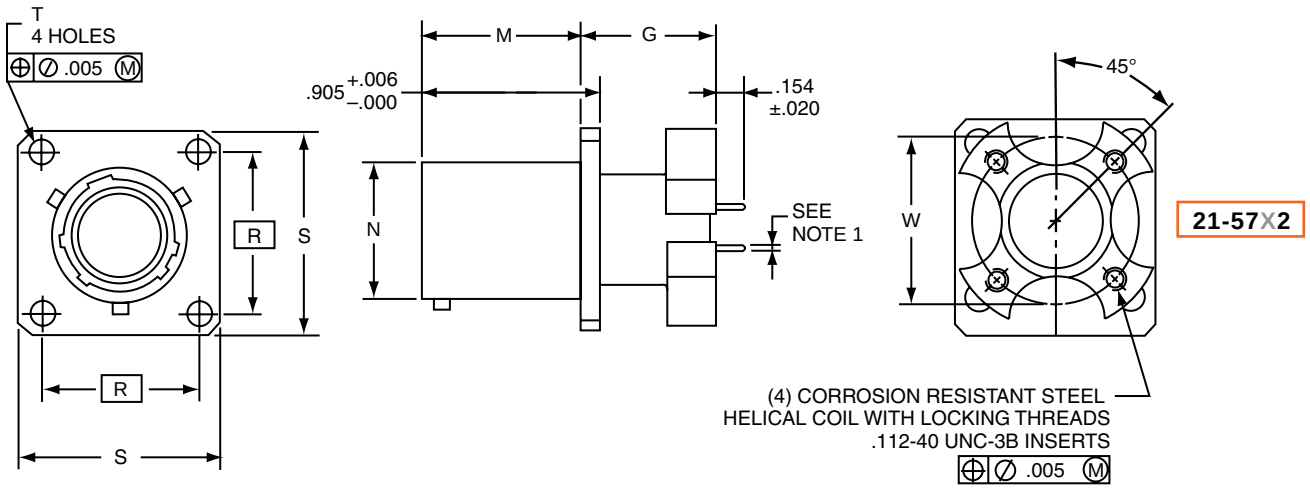
Plug movement required to clear FLJT receptacles: .625 min.
* Acceptable panel thickness for back panel mounting a standard receptacle.

Shell Size	D Dia. ±.005	K Dia. +.000 –.006	K¹ Dia. +.000 –.007	M +.000 –.006	N Dia. +.001 –.005	P Max. Panel Thickness	R (TP)	S +.011 –.010	T Dia. ±.005	SHORT SHELL VHF/UHF Filters		
										Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 22 Contact Z Max.
9	.299	.437	.561	.820	.572	.234	.719	.938	.128	.672	.763	.632
11	.427	.562	.687	.820	.700	.234	.812	1.031	.128	.672	.763	.632
13	.541	.688	.811	.820	.850	.234	.906	1.125	.128	.672	.763	.632
15	.666	.812	.937	.820	.975	.234	.969	1.219	.128	.672	.763	.632
17	.791	.938	1.061	.820	1.100	.234	1.062	1.312	.128	.672	.763	.632
19	.897	1.062	1.187	.820	1.207	.234	1.156	1.438	.128	.672	.763	.632
21	1.022	1.188	1.312	.790	1.332	.204	1.250	1.562	.128	.672	.763	.632
23	1.147	1.312	1.437	.790	1.457	.204	1.375	1.688	.147	.672	.763	.632
25	1.272	1.438	1.562	.790	1.582	.193	1.500	1.812	.147	.672	.763	.632

All dimensions for reference only.

PART #
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	57	X	2	XX-XX	X



1. Standard tail for size 22 is .020 ±.001 dia.
   Standard tail for size 20 is .030 ±.001 dia.

Plug movement required to clear FLJT receptacles: .625 min.

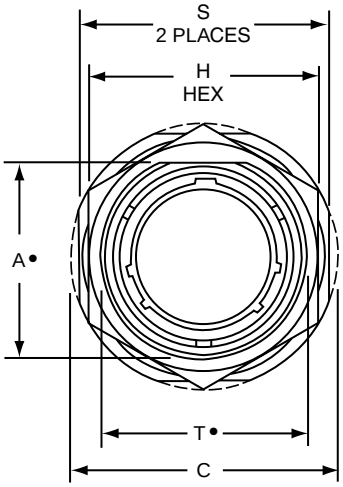
Shell Size	G +.006 –.005	M +.000 –.005	N Dia. +.001 –.005	R (TP)	S +.011 –.010	T Dia. +.004 –.003	W
11	.689	.820	.700	.812	1.031	.128	.850
13	.689	.820	.850	.906	1.125	.128	.994
15	.689	.820	.975	.969	1.219	.128	1.119
17	.689	.820	1.100	1.062	1.312	.128	1.237
19	.689	.820	1.207	1.156	1.438	.128	1.379
21	.689	.790	1.332	1.250	1.562	.128	1.489
23	.719	.790	1.457	1.375	1.688	.147	1.619
25	.719	.790	1.582	1.500	1.812	.147	1.744

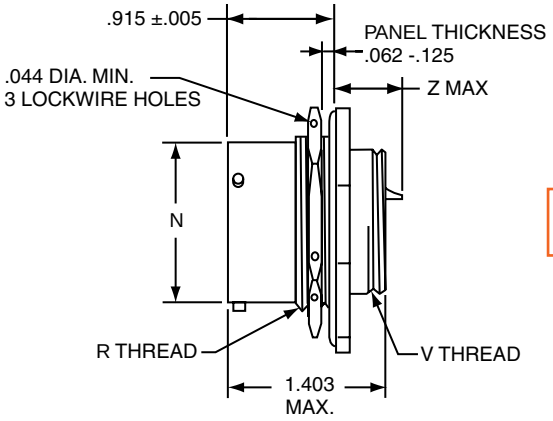
All dimensions for reference only.

PART #

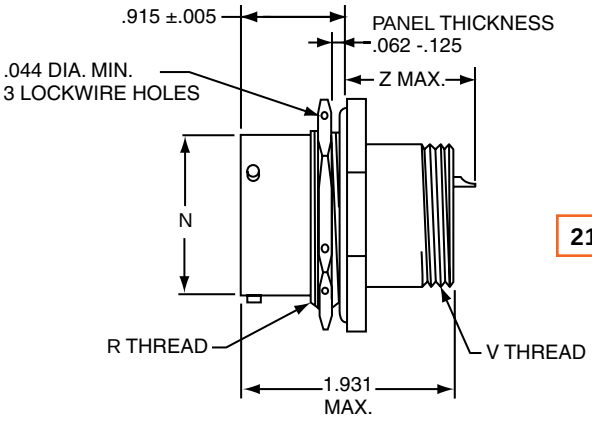
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	29	X	7	XX-XX	X
21	40	X	7	XX-XX	X
21	36	X	7	XX-XX	X





21-29X7
21-40X7



21-36X7

• "D" shaped mounting hole dimensions
Plug movement required to clear FLJT receptacles: .625 min.

Shell Size	A• Flat +.000 –.010	C Dia. +.011 –.010	H Hex +.017 –.016	N Dia +.001 –.005	R Thread (Plated) Class -2A	S +.016 –.015	T• Dia. +.010 –.000	V Thread UNEF-2A (Plated)	SHORT SHELL VHF/UHF/MF Filters			LONG SHELL HF Filters	
									Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 22 Contact Z Max.	Size 20 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.
9	.669	1.188	.875	.572	.6875-24UNEF	1.062	.697	.4375-28	.667	.756	.616	1.228	1.201
11	.769	1.375	1.000	.700	.8125-20UNEF	1.250	.822	.5625-24	.667	.756	.616	1.228	1.201
13	.955	1.500	1.188	.850	1.0000-20UNEF	1.375	1.007	.6875-24	.667	.756	.616	1.228	1.201
15	1.084	1.625	1.312	.975	1.1250-18UNEF	1.500	1.134	.8125-20	.667	.756	.616	1.228	1.201
17	1.208	1.750	1.438	1.100	1.2500-18UNEF	1.625	1.259	.9375-20	.667	.756	.616	1.228	1.201
19	1.333	1.938	1.562	1.207	1.3750-18UNEF	1.812	1.384	1.0625-18	.667	.756	.616	1.228	1.201
21	1.459	2.062	1.688	1.332	1.5000-18UNEF	1.938	1.507	1.1875-18	.667	.756	.616	1.228	1.201
23	1.580	2.188	1.812	1.457	1.6250-18UNEF	2.062	1.634	1.3125-18	.667	.756	.616	1.228	1.201
25	1.709	2.312	2.000	1.582	1.7500-18UNS	2.188	1.759	1.4375-18	.667	.756	.616	1.228	1.201

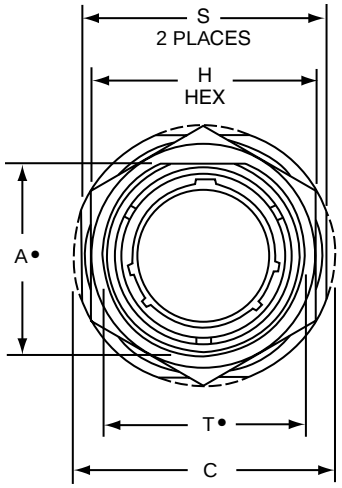
All dimensions for reference only.

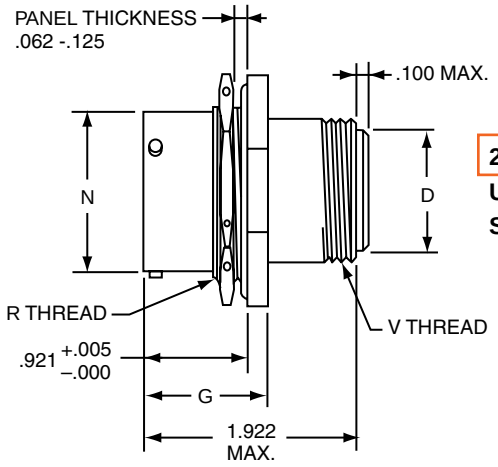
PART #

To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	48	X	7	XX-XX	X

UTS (Crimp) Contact SAE AS39029/57





21-48X7
UTS (Crimp) Contact SAE AS39029/57

• "D" shaped mounting hole dimensions
Plug movement required to clear FLJT receptacles: .625 min.

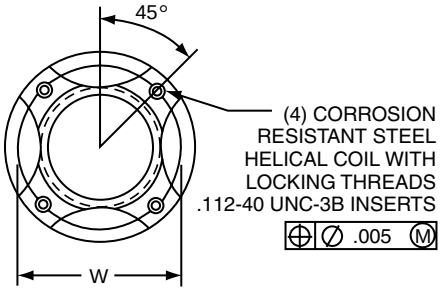
Shell Size	A• Flat +.000 –.010	C Dia. +.011 –.010	D Dia. ±.005	G +.006 –.005	H Hex +.017 –.016	N Dia +.001 –.005	R Thread (Plated) Class -2A	S +.016 –.015	T• Dia. +.010 –.000	V Thread UNEF-2A (Plated)
9	.669	1.188	.299	1.030	.875	.572	.6875-24UNEF	1.062	.697	.5625-24
11	.769	1.375	.427	1.030	1.000	.700	.8125-20UNEF	1.250	.822	.6875-24
13	.955	1.500	.541	1.030	1.188	.850	1.0000-20UNEF	1.375	1.007	.8125-20
15	1.084	1.625	.666	1.030	1.312	.975	1.1250-18UNEF	1.500	1.134	.9375-20
17	1.208	1.750	.791	1.030	1.438	1.100	1.2500-18UNEF	1.625	1.259	1.0625-18
19	1.333	1.938	.897	1.061	1.562	1.207	1.3750-18UNEF	1.812	1.384	1.1875-18
21	1.459	2.062	1.022	1.061	1.688	1.332	1.5000-18UNEF	1.938	1.507	1.3125-18
23	1.580	2.188	1.147	1.061	1.812	1.457	1.6250-18UNEF	2.062	1.634	1.4375-18
25	1.709	2.312	1.272	1.061	2.000	1.582	1.7500-18UNS	2.188	1.759	1.5625-18

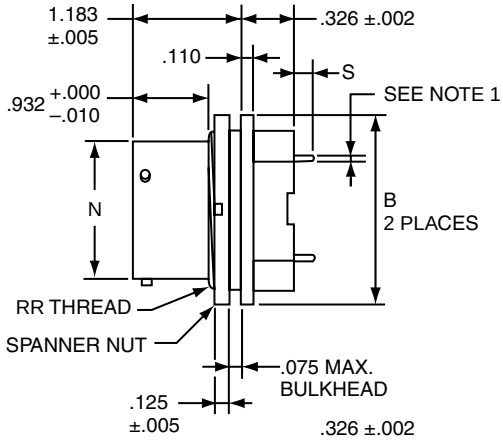
All dimensions for reference only.

(printed circuit board mount)

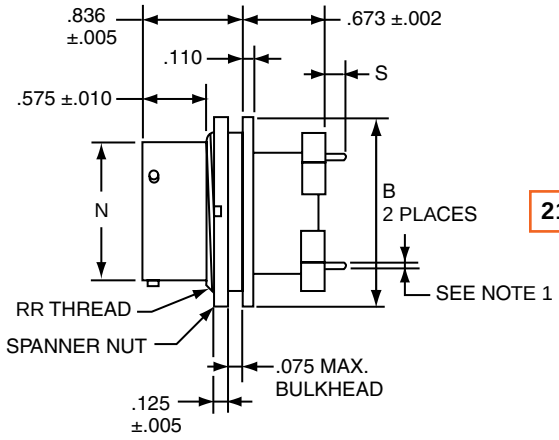
PART #
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	57	X	4	XX-XX	X
21	57	X	7	XX-XX	X





21-57X4



21-57X7

1. Standard tail for size 22 is .020 ±.001 dia.
   Standard tail for size 20 is .030 ±.001 dia.

Plug movement required to clear FLJT receptacles: .625 min.

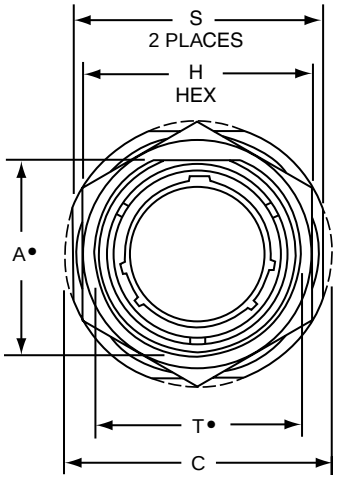
Shell Size	B Dia. ±.005	N Dia. +.001 −.005	S ±.020	W	RR Thread UNEF-2A
11	1.062	.700	.132	.850	.8125-20
13	1.250	.850	.132	.994	1.0000-20
15	1.375	.975	.132	1.119	1.1250-20
17	1.500	1.100	.132	1.237	1.2500-18
19	1.625	1.207	.132	1.379	1.3750-18
21	1.750	1.332	.132	1.489	1.5000-18
23	1.875	1.457	.132	1.619	1.6250-18
25	2.000	1.582	.132	1.744	1.7500-18

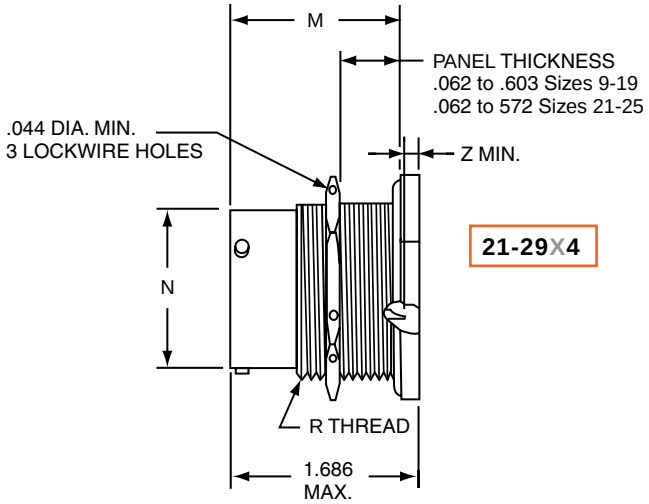
All dimensions for reference only.

PART #

To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	29	X	4	XX-XX	X





• "D" shaped mounting hole dimensions
Plug movement required to clear FLJT receptacles: .625 min.

Shell Size	A• Flat +.000 –.010	C Dia. +.011 –.010	H Hex +.017 –.016	M ±.005	N Dia +.001 –.005	R Thread (Plated) Class -2A	S +.016 –.015	T• Dia. +.010 –.000	SHORT SHELL VHF/UHF Filters			
									Size 16 Contact Z Max.	Size 16 or 16 & 20 Contacts Z Max.	Size 20 Contact Z Max.	Size 22 Contact Z Max.
9	.669	1.188	.875	1.557	.572	.6875-24UNEF	1.062	.697	.000	.000	.000	.000
11	.769	1.375	1.000	1.557	.700	.8125-20UNEF	1.250	.822	.000	.000	.000	.000
13	.955	1.500	1.188	1.557	.850	1.0000-20UNEF	1.375	1.007	.000	.000	.000	.000
15	1.084	1.625	1.312	1.557	.975	1.1250-18UNEF	1.500	1.134	.000	.000	.000	.000
17	1.208	1.750	1.438	1.557	1.100	1.2500-18UNEF	1.625	1.259	.000	.000	.000	.000
19	1.333	1.938	1.562	1.557	1.207	1.3750-18UNEF	1.812	1.384	.000	.000	.000	.000
21	1.459	2.062	1.688	1.525	1.332	1.5000-18UNEF	1.938	1.507	.000	.000	.000	.000
23	1.580	2.188	1.812	1.525	1.457	1.6250-18UNEF	2.062	1.634	.000	.000	.000	.000
25	1.709	2.312	2.000	1.525	1.582	1.7500-18UNS	2.188	1.759	.000	.000	.000	.000

All dimensions for reference only.

The Amphenol® FSJT Series combines the unique design features of the scoop-proof FLJT Series with the standard mounting dimensions of JT types.

- 100% scoop-proof design
- Standard mounting dimensions
- Compliance with European Specifications PAN6433-2, LN29729, VG96912
- Uses proven filter technology with available components from other series
- EMP protection versions available

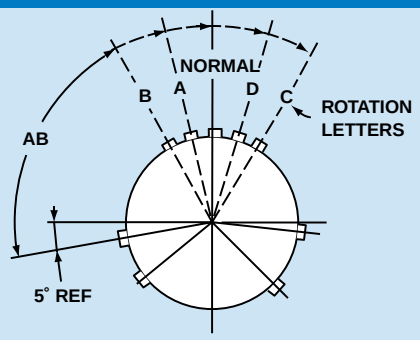
FSJT

FSJT Master Key/Keyway Rotation

Shell Size	AB Angle of Rotation (Degrees)				
	Normal	A	B	C	D
8	95	–	–	–	–
10	95	81	67	123	109
12	95	75	63	127	115
14	95	74	61	129	116
16	95	77	65	125	113
18	95	77	65	125	113
20	95	77	65	125	113
22	95	80	69	121	110
24	95	80	69	121	110

A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The AB angle for a given connector is the same whether it contains pins or sockets. Inserts are not rotated in conjunction with the master key/keyway.

AB angles shown are viewed from the front face of the connector. A receptacle is shown at right. The angles for the plug are exactly the same, except the direction of rotation is opposite of that shown for the receptacle.

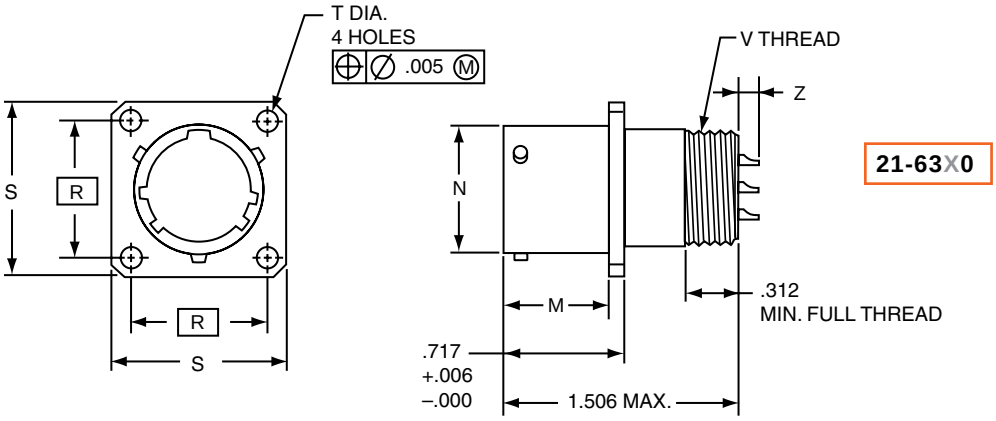


RELATIVE POSSIBLE POSITION
OF ROTATED MASTER KEYWAY
(front face of receptacle shown)

PART #

To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	63	X	0	XX-XX	X



Plug movement required to clear FSJT receptacles: .625 min.

Shell Size	M +.000 –.005	N Dia. +.001 –.005	R (TP)	S +.021 –.020	T Dia. +.004 –.003	V Thread UNEF-2A	Z Max. Size 20 Contact	Z Max. Size 16 or 16 & 20 Contacts	Z Max. Size 22 Contact
10	.632	.590	.719	.938	.120	.5625-24	.165	.265	.134
12	.632	.750	.812	1.031	.120	.6875-24	.165	.265	.134
14	.632	.875	.906	1.125	.120	.8125-20	.165	.265	.134
16	.632	1.000	.969	1.219	.120	.9375-20	.165	.265	.134
18	.632	1.125	1.062	1.312	.120	1.0625-18	.165	.265	.134
20	.602	1.250	1.156	1.438	.120	1.1875-18	.165	.265	.134
22	.602	1.375	1.250	1.562	.120	1.3125-18	.165	.265	.134
24	.602	1.500	1.375	1.688	.147	1.4375-18	.165	.265	.134

All dimensions for reference only.

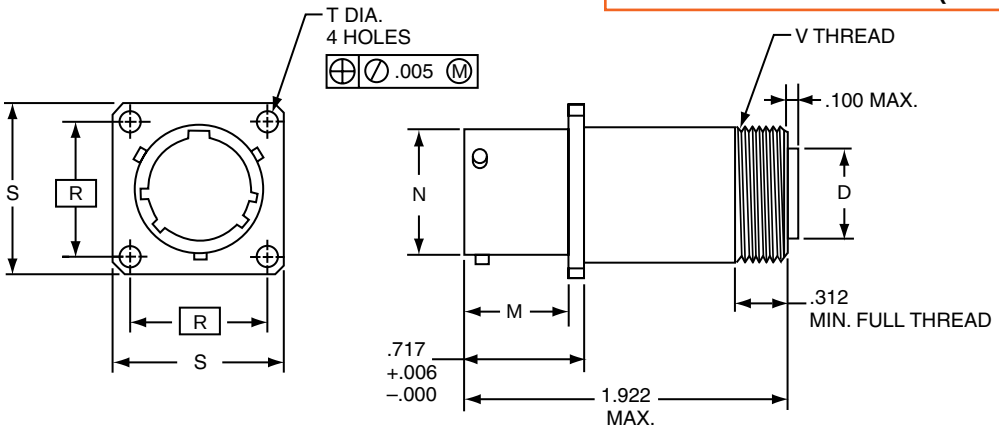
Amphenol Aerospace

Aluminum

PART #
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	65	X	0	XX-XX	X
21	63	X	2	XX-XX	X

UTS (Crimp) Contact SAE AS39029/57



21-65X0

UTS (Crimp) Contact SAE AS39029/57

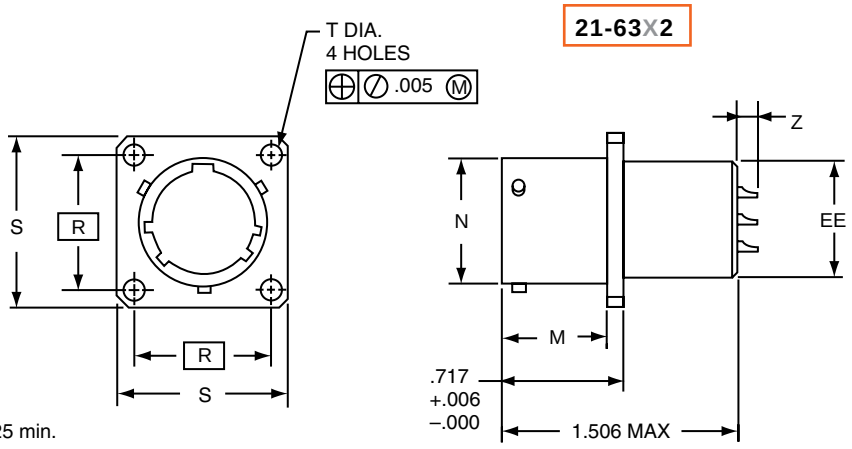
Shell Size	D Dia. ±.005	M +.000 −.005	N Dia. +.001 −.005	R (TP)	S +.021 −.020	T Dia. +.004 −.003	V Thread UNEF-2A
10	.427	.632	.590	.719	.938	.120	.6875-24
12	.541	.632	.750	.812	1.031	.120	.8125-20
14	.666	.632	.875	.906	1.125	.120	.9375-20
16	.791	.632	1.000	.969	1.219	.120	1.0625-18
18	.897	.632	1.125	1.062	1.312	.120	1.1875-18
20	1.022	.602	1.250	1.156	1.438	.120	1.3125-18
22	1.147	.602	1.375	1.250	1.562	.120	1.4375-18
24	1.272	.602	1.500	1.375	1.688	.147	1.5625-18

All dimensions for reference only.

Plug movement required to clear FSJT receptacles: .625 min.

FSJT
MIL-DTL-38999
Box Mounting Receptacle Aluminum

21-63X2



Plug movement required to clear FSJT receptacles: .625 min.

Shell Size	M +.000 −.005	N Dia. +.001 −.005	R (TP)	S +.021 −.020	T Dia. +.004 −.003	EE +.001 −.005	Z Max. Size 16 Contact	Z Max. Size 20 Contact	Z Max. Size 16 or 16 & 20 Contacts	Z Max. Size 22 Contact
10	.632	.590	.719	.938	.120	.562	.265	.165	.265	.134
12	.632	.750	.812	1.031	.120	.687	.265	.165	.265	.134
14	.632	.875	.906	1.125	.120	.812	.265	.165	.265	.134
16	.632	1.000	.969	1.219	.120	.937	.265	.165	.265	.134
18	.632	1.125	1.062	1.312	.120	1.062	.265	.165	.265	.134
20	.602	1.250	1.156	1.438	.120	1.187	.265	.165	.265	.134
22	.602	1.375	1.250	1.562	.120	1.312	.265	.165	.265	.134
24	.602	1.500	1.375	1.688	.147	1.437	.265	.165	.265	.134

All dimensions for reference only.

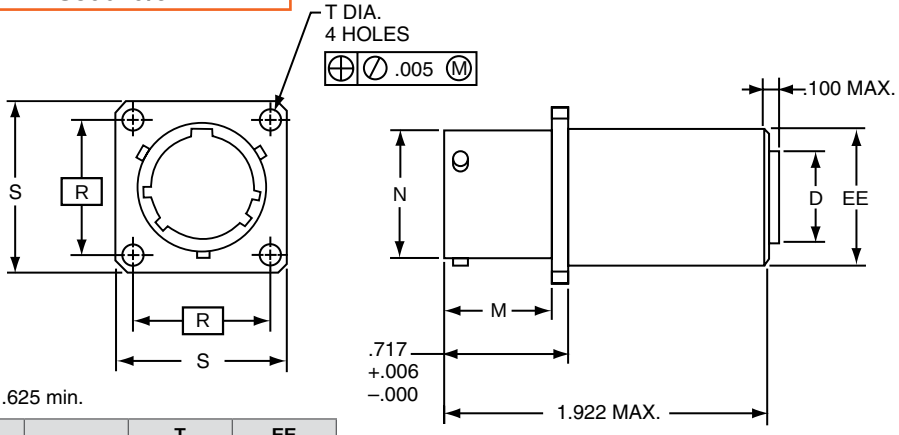
PART #
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	65	X	2	XX-XX	X
21	63	X	7	XX-XX	X

UTS (Crimp) Contact SAE AS39029/57

21-65X2

UTS (Crimp) Contact SAE AS39029/57

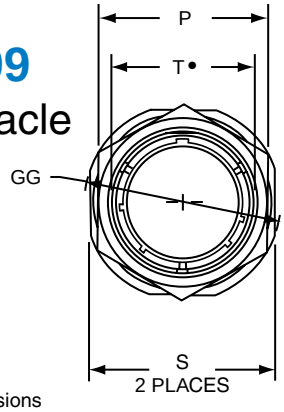


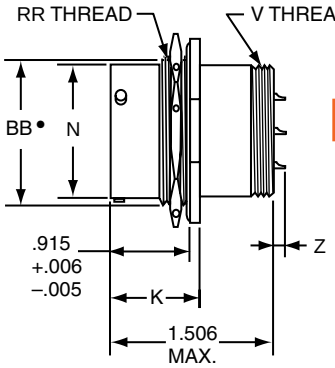
Plug movement required to clear FSJT receptacles: .625 min.

Shell Size	D Dia. ±.005	M +.000 –.005	N Dia. +.001 –.005	R (TP)	S +.021 –.020	T Dia. +.004 –.003	EE Dia. +.001 –.005
10	.427	.632	.590	.719	.938	.120	.687
12	.541	.632	.750	.812	1.031	.120	.811
14	.666	.632	.875	.906	1.125	.120	.937
16	.791	.632	1.000	.969	1.219	.120	1.061
18	.897	.632	1.125	1.062	1.312	.120	1.187
20	1.022	.602	1.250	1.156	1.438	.120	1.312
22	1.147	.602	1.375	1.250	1.562	.120	1.437
24	1.272	.602	1.500	1.375	1.688	.147	1.562

All dimensions for reference only.

FSJT
MIL-DTL-38999
Jam Nut Receptacle Aluminum





21-63X7

• "D" shaped mounting hole dimensions
Plug movement required to clear FSJT receptacles: .625 min.

Shell Size	K +.006 –.005	N Dia. +.001 –.005	P Hex	S ±.016	T• +.010 –.000	V Thread UNEF Class 2A	Z ±.020	BB• +.000 –.010	GG Max.	RR Thread UNEF Class 2A	SS +.001 –.016
10	1.024	.590	.875	1.062	.697	.5625-24	.150	.669	1.203	.6875-24	.680
12	1.024	.750	1.062	1.250	.884	.6875-24	.150	.830	1.391	.8750-20	.859
14	1.024	.875	1.188	1.375	1.007	.8125-20	.150	.955	1.515	1.0000-20	.984
16	1.024	1.000	1.312	1.500	1.134	.9375-20	.150	1.084	1.641	1.1250-18	1.108
18	1.055	1.125	1.438	1.625	1.259	1.0625-18	.150	1.208	1.766	1.2500-18	1.233
20	1.055	1.250	1.562	1.812	1.384	1.1875-18	.150	1.333	1.953	1.3750-18	1.358
22	1.055	1.375	1.688	1.938	1.507	1.3125-18	.150	1.459	2.078	1.5000-18	1.483
24	1.055	1.500	1.812	2.062	1.634	1.4375-18	.150	1.580	2.203	1.6250-18	1.610

All dimensions for reference only.

Components designed to meet the severe mechanical and environmental requirements of MIL-DTL-38999 Series III are now available to Series IV users. Modifications of the connector are available with EMP protection, incorporating MOV's, diodes or a combination of both.

- Intermateable with MIL-DTL-38999 Series IV plugs
- Maintains all the features of standard MIL-DTL-38999 Series IV receptacles
- Scoop-proof pins provide contact protection
- Uses insert patterns from MIL-DTL-38999 Series III

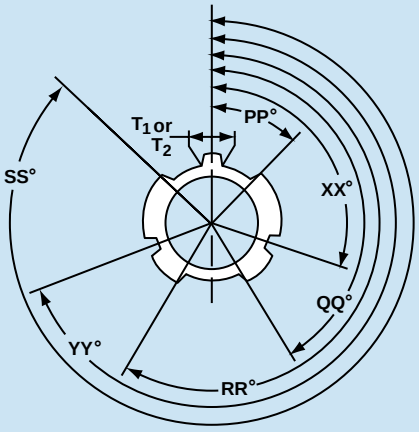
FBL

Polarity Dimensions

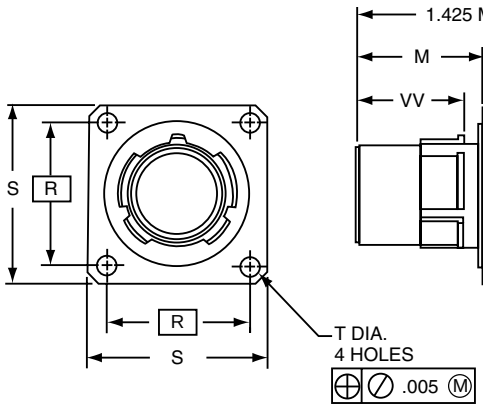
Key and Keyway Arrangement	XX°	YY°
N	110°	250°
A	100°	260°
B	90°	270°
C	80°	280°
D	70°	290°
K	120°	255°

FBL Master Key/Keyway Rotation

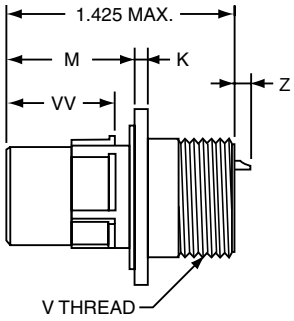
Shell Size	Receptacle Key Position				Main Key Receptacle/Basic	
	PP°	QQ°	RR°	SS°	Socket Contact T_1	Pin Contact T_2
11	44°28'	151°6'	208°54'	315°32'	.075	.109
13	44°25'	150°31'	209°29'	315°35'	.076	.112
15	44°33'	150°24'	209°36'	315°27'	.096	.132
17	44°36'	150°22'	209°38'	315°24'	.096	.134
19	44°33'	150°27'	209°33'	315°27'	.117	.154
21	44°34'	150°23'	209°37'	315°26'	.118	.155
23	44°34'	150°20'	209°40'	315°26'	.138	.176
25	44°42'	150°22'	209°48'	315°18'	.139	.177



RELATIVE POSSIBLE POSITION OF KEYWAYS (front face of receptacle shown)



BOX MOUNT
21-61X2XX-XXX



WALL MOUNT
21-61X0XX-XXX

Shell Size	K ±.010	M ±.020	R (TP)	S +.021 –.020	T Dia. +.004 –.003	V Thread (Plated) –.006	EE Dia. +.001 –.005	VV ±.003	Z Max. Size 16 Contact	Size 20 Contact	Size 16 or 16 & 20 Contacts	Size 22 Contact
11	.092	.791	.812	1.029	.128	M15X1-6g0.100R	.589	.672	.265	.165	.265	.134
13	.092	.791	.906	1.124	.128	M18X1-6g0.100R	.707	.672	.265	.165	.265	.134
15	.092	.791	.969	1.218	.128	M22X1-6g0.100R	.865	.672	.265	.165	.265	.134
17	.092	.791	1.062	1.313	.128	M25X1-6g0.100R	.983	.672	.265	.165	.265	.134
19	.092	.791	1.156	1.439	.128	M28X1-6g0.100R	1.101	.662	.265	.165	.265	.134
21	.124	.791	1.250	1.561	.128	M31X1-6g0.100R	1.219	.662	.265	.165	.265	.134
23	.124	.791	1.375	1.687	.147	M34X1-6g0.100R	1.337	.662	.265	.165	.265	.134
25	.124	.791	1.500	1.813	.147	M37X1-6g0.100R	1.455	.662	.265	.165	.265	.134

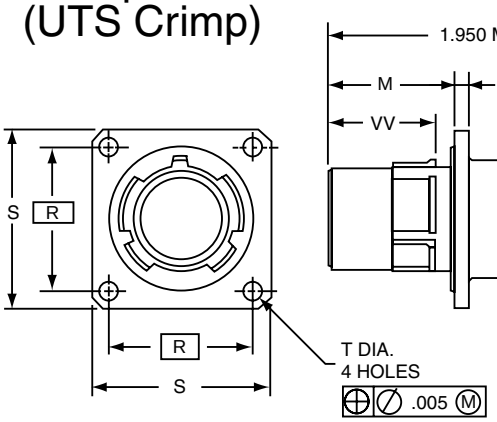
All dimensions for reference only.

FBL – MIL-DTL-38999

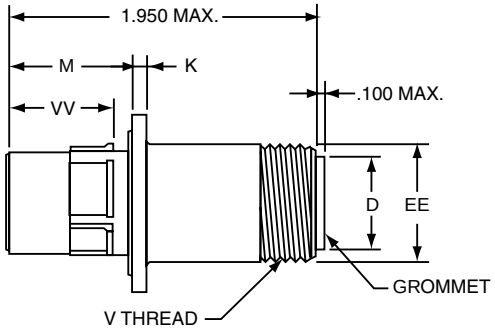
Box and Wall Mounting Receptacle (UTS Crimp)

PART #
To complete, see how to order page 135.

Filter Connector Designator	Connect/ Filter Type	Shell Finish	Shell Style	Shell Size & Insert Arrg	Type of Contact/ Keyway Position
21	64	X	2	XX-XX	X



BOX MOUNT
21-64X2XX-XXX
UTS (Crimp) Contact
MIL-C-39029/57



WALL MOUNT
21-64X0XX-XXX
UTS (Crimp) Contact
MIL-C-39029/57

Shell Size	D Dia. ±.005	K ±.010	M ±.020	R (TP)	S +.021 –.020	T Dia. +.004 –.003	V Thread (Plated) –.006	EE Dia. +.001 –.005	VV ±.003
11	.427	.092	.791	.812	1.029	.128	M18X1-6g0.100R	.687	.672
13	.541	.092	.791	.906	1.124	.128	M22X1-6g0.100R	.811	.672
15	.666	.092	.791	.969	1.218	.128	M25X1-6g0.100R	.937	.672
17	.791	.092	,791	1.062	1.313	.128	M28X1-6g0.100R	1.061	.672
19	.897	.092	.791	1.156	1.439	.128	M31X1-6g0.100R	1.187	.662
21	1.022	.124	.791	1.250	1.561	.128	M34X1-6g0.100R	1.312	.662
23	1.147	.124	.791	1.375	1.687	.147	M37X1-6g0.100R	1.437	.662
25	1.272	.124	.791	1.500	1.813	.147	M41X1-6g0.100R	1.562	.662

Amphenol® Filter Adapters

Circuit Protection for Existing Applications

Amphenol Aerospace

Filter adapters present an effective and economical method of introducing EMI/EMP protection to an installed system. The adapter series of filter connectors from Amphenol are available to intermate with all the popular MIL-Specs.

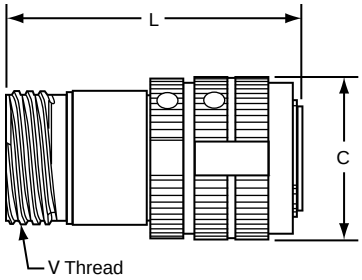
Features of the Amphenol Adapter include:

- Planar technology from the industry's leader in circulars
- Filter products
- MOV or diode capability for transient protection
- Wide range of tooled patterns
- Space qualified components

Installation of the adapter is quick and efficient, requiring no tools, fixtures or extended downtime. Simply unmate the existing cable harness from the receptacle; attach the coupling nut to the receptacle on the unit; then mate the cable harness to the receptacle side of the adapter. Several design alternatives are available that will help ensure that the adapter remains permanently attached to either the cable harness or the unit receptacle.

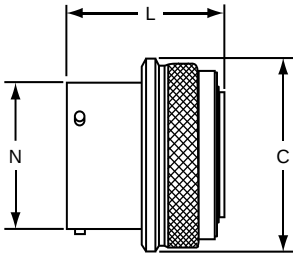
Adapters

FTV Adapter
21-900529-XXX



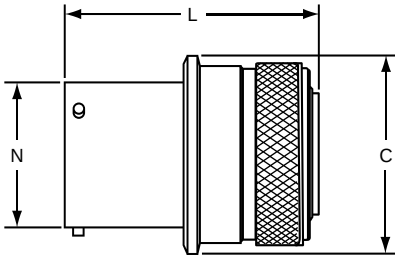
FTV Shell Size	C Dia. Ref.	V Thread 0.1P-0.3L-TS Class 2A	L Max.
9	.845	.6250	2.257
11	.950	.7500	2.257
13	1.121	.8750	2.257
15	1.249	1.0000	2.257
17	1.386	1.1875	2.257
19	1.493	1.2500	2.257
21	1.620	1.3750	2.257
23	1.737	1.5000	2.257
25	1.864	1.6250	2.257

FJT Adapter
21-900393-XXX



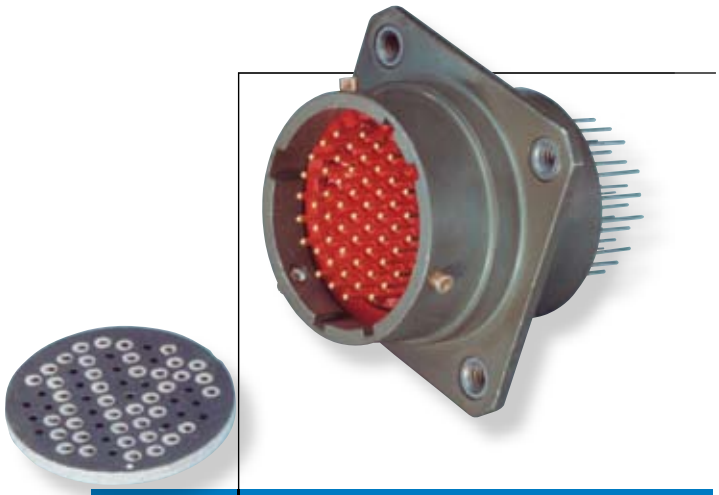
FJT Shell Size	C Dia. +.011 –.010	N Dia. +.001 –.005	L Max.
8	.847	.473	1.397
10	.969	.590	1.397
12	1.143	.750	1.397
14	1.255	.875	1.397
16	1.388	1.000	1.397
18	1.510	1.125	1.397
20	1.633	1.250	1.397
22	1.756	1.375	1.397
24	1.878	1.500	1.397

FLJT Adapter
21-900423-XXX



FLJT Shell Size	C Dia. +.011 –.010	N Dia. +.001 –.005	L Max.
9	.920	.572	2.038
11	1.045	.700	2.038
13	1.246	.850	2.038
15	1.371	.975	2.038
17	1.496	1.100	2.038
19	1.616	1.207	2.038
21	1.743	1.332	2.038
23	1.866	1.457	2.038
25	1.991	1.582	2.038

All dimensions for reference only.
Consult Amphenol, Sidney, NY for ordering information.



MOV

- **Filter connector size package**
- **Protection for 14, 31, 38 DC voltage circuits**
- **Radiation hardened**
- **No additional circuits required**
- **Low impedance**
- **Increased reliability**
- **Nanosecond response time**
- **Elimination of costly external suppression assemblies**

The Amphenol ® MOV Connector offers the versatility of a standard connector, with transient protection for sensitive circuits.Transients in electrical circuits caused by a sudden release of stored energy can originate within or outside of the circuit and may be repeatable or random.

Regardless of frequency or origin, transient caused failures generated by load switching, lightning, electrostatic discharge (ESD) and electromagnetic pulse (EMP) can destroy unprotected IC components.

Compatible with present filter connector assembly procedures, MOVs can be combined with existing filters. Internal housing of the MOV offers weight and space savings over other protection methods available today, and eliminates costly and bulky exterior suppression mechanisms in appropriate situations. MOVs are presently available in contact sizes 22, 20 and 16.

Transient protection can be provided in receptacle, plug or adapter configuration. These connectors are intermateable and intermountable with the following MIL-Specs:

- MIL-DTL-5015
- MIL-DTL-26482
- MIL-DTL-26500
- MIL-DTL-27599
- MIL-DTL-38999
- MIL-DTL-83723

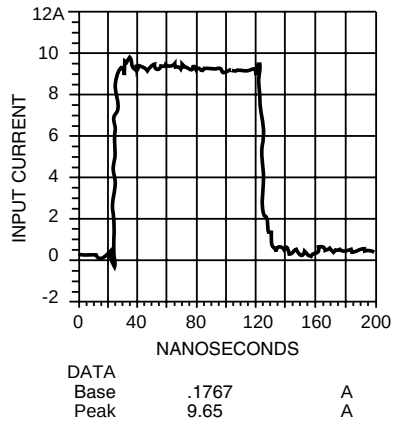
Amphenol Aerospace

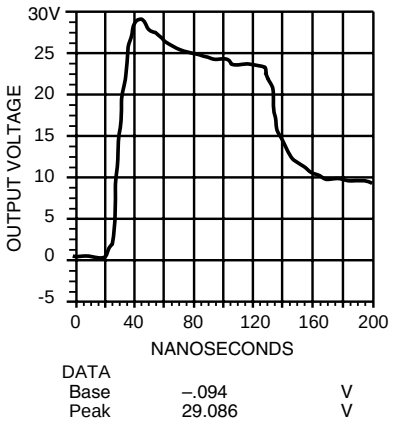
M.O.V. PERFORMANCE CHARACTERISTICS

Designation	Contact Size	Maximum Rating (125°C)				Specifications (25°C)							Maximum Leakage Current at V_t (dc)		
		Continuous		Transient		Varistor Voltage at 1mA (DC)			Maximum Clamping Voltage V_c at Test Current Ip (8/20µS)		Capacitance at 1 MHz		I_L Max.	I_L Max.	V_t
		DC Voltage	RMS Voltage	Energy (10/1000µS)	Peak Current (8/20µS)						Picofarads		25°C	125°C	
		V_m Volts	V_m Volts	W_{tm} Joules	I_{tm} Amperes	Min. Volts	V_n (dc) Volts	Max. Volts	V_c Volts	I_p Amps	Min.	Max.	µA	µA	DC Volts
F14	22	**14**	10	1.5	250	18.5	**22**	25.5	42	10	800	2000	5	50	14
F31	22	**31**	25	1.5	250	35	**39**	48	85	5	400	1400	5	50	28
F38	22	**38**	30	1.5	250	42	**47**	58	100	5	200	1000	5	50	36
F45	22	**45**	35	1.5	250	53	**59**	68	100	5	200	850	5	50	45
F31	20	**31**	25	2	300	35	**39**	48	85	10	400	1400	5	50	28
F38	20	**38**	30	2	300	42	**47**	58	100	10	200	1000	5	50	36
F45	20	**45**	35	2	300	53	**59**	68	100	10	200	850	5	50	45
F38	16	**38**	30	3	350	42	**47**	58	100	20	200	1000	5	50	36
F45	16	**45**	35	3	350	53	**59**	68	100	20	200	850	5	50	45

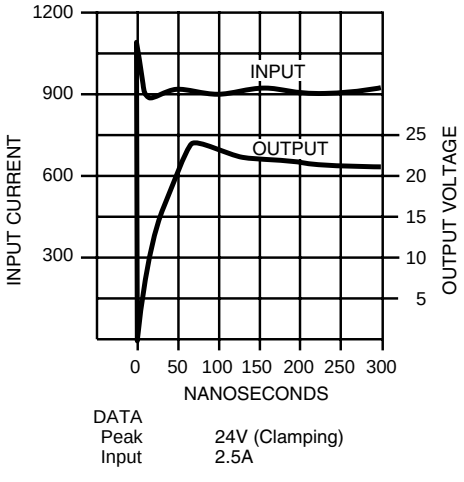
NOTE: Continuous voltage ratings are based on 1000 hour reliability assurance tests at 125°C rated ambient terperature per MIL-STD-202 method 108. Contact Amphenol Sidney for options not listed in chart.

The following charts show the typical MOV response to an input pulse open circuit of 1000V and 10A peak square wave with a 5 nanosecond rise time in a 50 Ohm system.





The following chart shows response time and output voltage of a typical MOV with 1000V, 5 nanosecond, 2.5A input pulse mounted in an LJT 13–35P connector. Test was performed without load.



- **Clamping voltage as low as 11.9 volts**
- **Low capacitance – suitable for high frequency applications**
- **Unipolar or bipolar – using existing proven diode technology**
- **Protection for 5.8 to 60 VDC circuits**
- **No additional circuits required**
- **Low impedance – high frequency response**
- **Increased reliability**
- **Nanosecond response time**
- **Elimination of costly external suppression assemblies**
- **Screening to applicable requirements of MIL-S-19500TX/TXV available**
- **Keeps transients outside of the box**
- **Minimizes fast transient voltage overshoot**

The Amphenol® Diode Connector offers the versatility of a standard connector, with transient protection for sensitive circuits, such as TTL Lines.

Transients in electrical circuits caused by a sudden release of stored energy can originate within or outside of the circuit and may be repeatable or random.

Regardless of frequency or origin, transient caused failures generated by load switching, lightning, electrostatic discharge (ESD) and electromagnetic pulse (EMP) can destroy unprotected IC components.

Compatible with present filter connector assembly procedures, diodes can stand alone or can be combined in series with filters. Internal housing of the diode offers weight and space savings over other protection methods available today, and eliminates costly and bulky exterior suppression mechanisms in appropriate situations. Diodes are presently available in contact sizes 22 and 20.

Transient protection can be provided in receptacle, plug or adapter configurations. These connectors are intermateable and intermountable with the following MIL-Specs:

- MIL-DTL-5015
- MIL-DTL-26482
- MIL-DTL-26500
- MIL-DTL-27599
- MIL-DTL-38999
- MIL-DTL-83723

Diode

Diode Connector and Adapter

Close-up View of Diode Contact

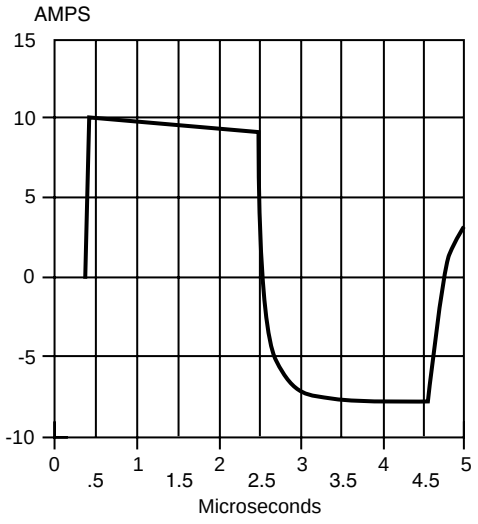
Amphenol Aerospace

STANDARD DIODE CONNECTOR CHARACTERISTICS AT 25°C

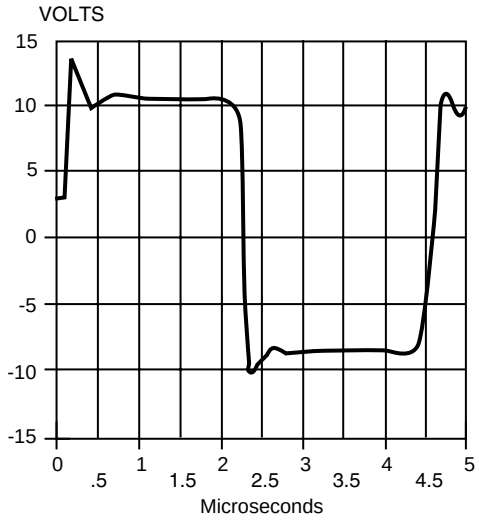
Stand-off Voltage † (VDC)	Max. Capacitance* (pf)	Breakdown Voltage at 1 mA (VDC)	Max. Clamping Voltage (8 x 20µ sec. pulse)	Leakage Current at Stand-off Voltage (µA)	Power Capability † 20µs Exp. Impulse (Peak) (Watts)
+ 5.8	1600	+ 6.45 to + 7.1**	+11.9	<100	1000
± 5.8	1000	± 6.45 to ± 7.1**	±11.9	<150	1000
± 7.0	750	± 7.3 to ± 9.3	±13.5	<10	1000
± 8.0	750	± 8.2 to ±10.6	±15.4	<5	1000
+ 8.0	1500	+ 8.5 to +10.6	+15.4	<5	1000
±10.0	500	±11.1 to ±12.3	±17.0	<1	1000
+10.0	1100	+11.1 to +12.3	+17.0	<1	1000
±15.0	500	±16.7 to ±18.5	±24.9	<1	1000
+15.0	750	+16.2 to +19.2	+24.9	<1	1000
–15.0	750	–16.2 to –19.2	–24.9	<1	1000
±17.0	500	±18.9 to ±23.0	±32.0	<1	1000
+17.1	600	+19.0 to +21.0	+27.7	<1	1000
±22.0	500	±25.7 to ±28.4	±38.0	<1	1000
±25.0	500	±27.8 to ±30.7	±40.5	<1	1000
+28.0	500	+30.5 to +35.7	+46.4	<1	1000
±33.3	500	+37.1 to +41.0	±53.9	<1	1000
+33.3	500	+37.1 to +41.0	+53.9	<1	1000
±40.0	500	±44.4 to ±49.1	±64.5	<1	1000
±45.0	500	±47.1 to ±58.1	±84.2	<1	1000
+57.8	500	+64.6 to +71.4	+95.2	<1	1000
±57.8	500	±64.6 to ±71.4	±95.2	<1	1000

Clamping Time -
Unipolar: Less than 1 nanosecond, 0V to breakdown
Bipolar: Less than 5 nanoseconds, 0V to breakdown
* Lower capacitance devices available; consult Amphenol, Sidney, NY.
** This device only measured at 10ma
† Higher power ratings also available

DIODE CONTACT PULSE TEST, ±5.8 DIODE



INPUT CURRENT ±10A
TO CONTACT



OUTPUT VOLTAGE +14V
TO -10V AFTER DIODE

The Amphenol ® Energy Shunting Assembly (ESA) is a simple, compact unit which provides lightning and electromagnetic pulse (EMP) protection of systems in which many signal lines enter sensitive electronic equipment. The efficient packaging of the ESA circumvents the concept of one protective device per line. It provides a surge arrestor which has the advantage of space saving and simplified assembly when compared to current protective devices which range from diodes to large spark gaps.

The current ESA design consists of two 53-pin contact, Mil-Standard, hermetic connectors assembled back to back, and encompassing a ground plate. A sealed chamber is formed within this thru-bulkhead unit, housing 53 in-line spark gaps. Introducing a controlled atmosphere enhances fast rise breakdown.

The ESA can be integrated with an EMI filter connector which can improve its performance. These two assemblies provide a method to help protect against lightning, EMP, EMI and TEMPEST effects.

ESA Energy Shunting Assembly

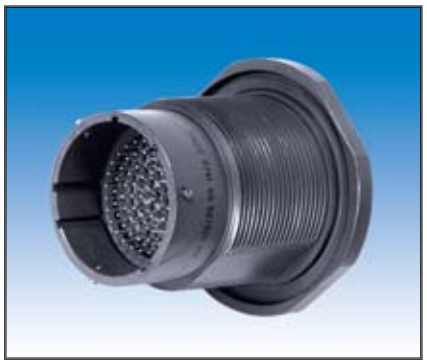
Performance Characteristics

1. DC breakdown voltage		230 Volts
2. Maximum rated surge discharge current (8 x 20 microsecond pulse)		5,000 Amperes per pin
3. Insulation resistance		10^{10} ohms minimum
4. Capacitance between each electrode and the ground plane		Less than 2 pf
5. Rate-of-rise breakdown voltage	Maximum Breakdown Voltage (Volts)	Rate of Rise (Volts/microsecond)
	600 800 1,500 2,000	10 1,000 10,000 1000,000
6. Surge breakdown unbalance (at 100 Volts/microseconds)		180 Volts
7. Surge life (500 Ampere – 10 x 1,000 microsecond)		400 Surges
8. Hold-over voltage		100 Volts
9. Arcing voltage		40 Volts
10. Glow to arc transition point		1 Ampere
11. Temperature range		–40°F to 150°F (233°K to 339°K)

Amphenol Aerospace

The Hermetic Filter Connector

While only approximately 1/2 inch longer than standard series connectors, the hermetic filter connector provides all the benefits of a hermetic connector, as well as EMI protection for sensitive circuits. The filter assembly is protected by a fused glass insert within a unique steel housing. This design accounts for the connector's capability intolerating high level static pressure, while maintaining a low level leakage rate. Applications include pressurized test equipment, environmental and toxic gas chambers, and moisture sealing on industrial equipment and missiles.



Hermetic Filter Connector

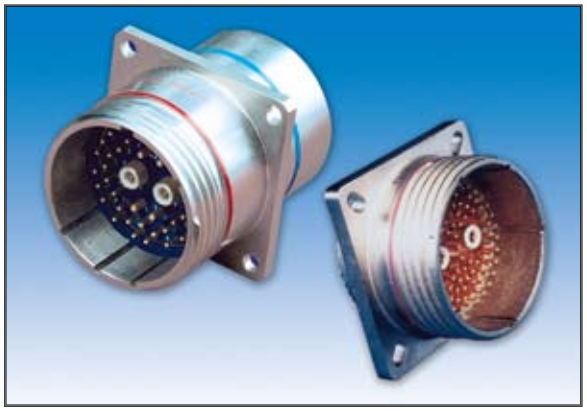
Filtered Plug

This connector is designed for applications where EMI protection is essential, but access to the receptacle is denied. The filtered plug presents an alternative for the electrical engineer. The filter plug is designed with the same components as a standard filter receptacle, but offers the option of being mounted on the cable harness. This device is a cost effective method of achieving EMI protection when length restrictions prohibit inclusion of an adapter to the system.

Filtered Plug

Filter Connectors can also incorporate high frequency coax, twinax, triax, quadrax and differential twinax contacts.

Amphenol MIL-DTL-38999 Series III connectors are the most commonly used connectors for incorporation of shielded contacts along with traditional crimp contacts. High performance shielded coaxial, twinax and triax contacts are available to fit various RG and special cables. They eliminate discontinuities or impedance variations due to movement of parts under axial load. Size 8 quadrax and differential twinax contacts provide high speed data transfers.



Filter Connectors with Coax Shielded Contacts

Filter Connectors with Flex Termination

Flex circuits are available for MIL-DTL-38999, MIL-DTL-5015 and MIL-DTL-26482 filter connectors. They are offered in flat or sculptured styles and provide flexibility in assembling to printed circuit boards. Through Amphenol's Advanced Circuit Technology division, these strong and rigid, yet highly flexible circuits eliminate the need to purchase and attach individual pins or connectors. Thus they promote system automation, reduce space requirements and lower installation costs. Sculptured® Flexible Circuits have built-interminations which eliminate the failure associated with crimped or soldered-on contacts, and geometrically fit the tight space requirements within a unit.

Flex Circuitry for Attachment to Printed Circuit Boards

MIL-DTL-38999 with Quadrax Contacts

For more information on these specials, consult Amphenol Aerospace and see our website at www.amphenol-aerospace.com.

Amphenol Aerospace is the leader in Interconnect solutions and provides companies with a product portfolio of connectors, accessories, cable assemblies and system integration for most applications across various industries. With connectors conforming to Military, Aerospace and Industrial standards in US, Europe and Asia, Amphenol assumes the leadership in meeting the interconnect needs of these market segments.

MIL-DTL-38999 Series III TV Tri-Start

- Backshells Accessories
- Dummy Contacts
- Wire Combs
- Receptacle Protection Cap
- Plug Protection Cap
- Dummy Receptacle
- Cable Clamps
- Contacts-Printed Circuit Board Wire Wrap
- Header Assembly

Application Tools

- Crimp Tools
- Insertion Tools
- Removal Tools

MIL-DTL-38999 Series II JT

- Receptacle Protection Cap
- Plug Protection Cap
- Strain Relief (Solder/Crimp Type)
- Contacts-Printed Circuit Board Wire Wrap
- Header Assembly

Application Tools

- Crimp Tools
- Insertion Tools
- Removal Tools

MIL-DTL-38999 Series I LJT

- Receptacle Protection Cap
- Plug Protection Cap
- Dummy Receptacle
- Cable Clamps
- Contacts-Printed Circuit Board Wire Wrap
- Header Assembly

Application Tools

- Crimp Tools
- Insertion Tools
- Removal Tools

SJT

- Receptacle Protection Cap
- Plug Protection Cap
- Dummy Receptacle
- Cable Clamps

Application Tools

- Crimp Tools
- Insertion Tools
- Removal Tools

Amphenol Aerospace

Series III TV

Amphenol offers a full range of accessories that are designed to enhance the performance of Amphenol Breakaway connectors.

Low Profile Backshells in shell size 25 with the following features:

- Olive drab cadmium finish
- 90 degree termination
- Low profile design with three heights ranging from 1.010 to 1.660
- Rear access covers to help ease harness assembly and repairability
- Amphenol part numbers: 10-640000-XXX

Backshells are offered for use with Breakaway Fail Safe Connectors in three heights.

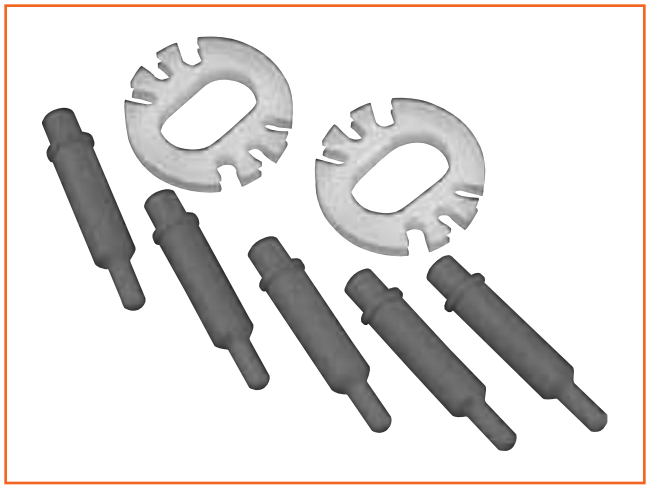
Dummy Contacts

- Available in size 12 and size 8
- Provide a cost effective alternative for sealing unused contact cavities
- Size 8 part number: T3-4008-59P
- Size 12 part number: T3-4012-59P

Wire Combs

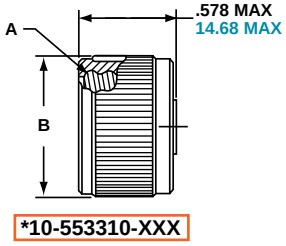
- Available for the 25-20 insert pattern to help to stabilize and prevent contact side loading
- Amphenol part number: 21-33626-XXX

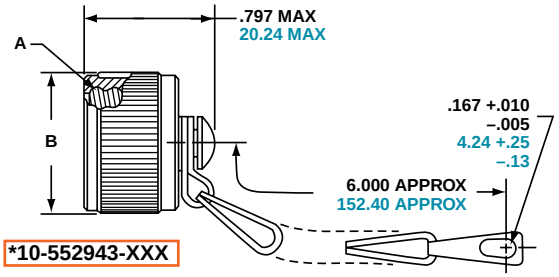
For information on how to order these accessory products for Breakaway Fail Safe connectors consult Amphenol Aerospace.

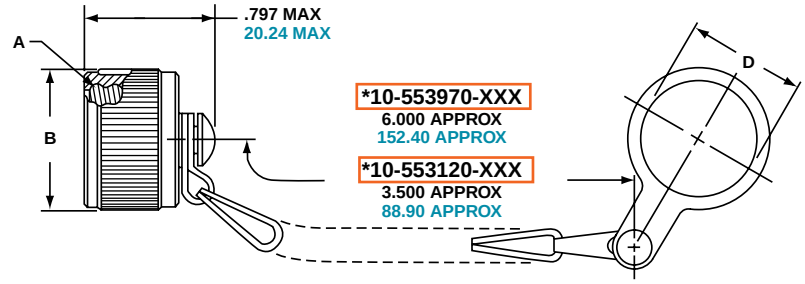


Accessory products for Breakaway Connectors: Dummy Contacts and Wire Combs

Series III TV







* To complete order number, add shell size and suffix number. For example, shell size 11 with olive drab cadmium nickel base, 10-552943-119

Inches

Shell Size	A Thread Class 2B 0.1P-0.3L-TS	B Dia. Max.	D Dia. +.010 –.000
9	.6250	.875	.703
11	.7500	1.000	.844
13	.8750	1.125	1.016
15	1.0000	1.250	1.141
17	1.1875	1.438	1.266
19	1.2500	1.500	1.391
21	1.3750	1.625	1.516
23	1.5000	1.750	1.641
25	1.6250	1.875	1.766

Finish	10-No Suffix
Olive Drab, Cadmium, Nickel base	-XX9
Electroless Nickel	-XXG

Consult Amphenol Aerospace for availability of stainless steel protection caps.

All dimensions for reference only.
For MS protection caps, see page 184.

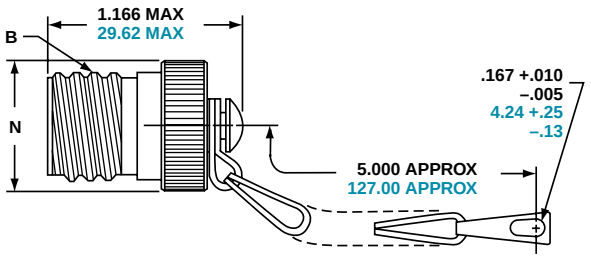
Millimeters

Shell Size	MS Shell Size Code	B Dia. Max.	D Dia. +.25 –.00
9	A	22.23	17.86
11	B	25.40	21.44
13	C	28.58	25.81
15	D	31.75	28.98
17	E	36.53	32.16
19	F	38.10	35.33
21	G	41.28	38.51
23	H	44.45	41.68
25	J	47.63	44.86

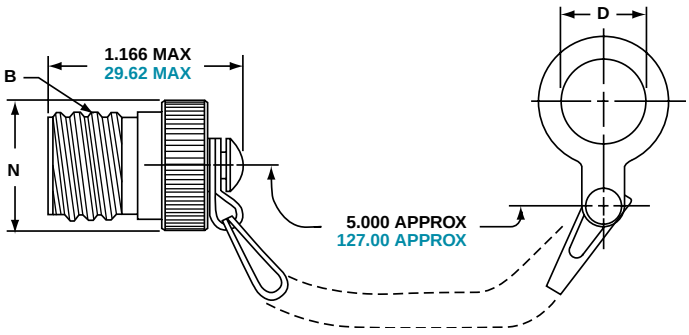
Amphenol Aerospace

Series III TV

*10-552944-XXX



*10-553998-XXX



* To complete order number, add shell size and suffix number. For example, shell size 11 with olive drab cadmium nickel base, 10-552944-119

Inches

Shell Size	A Thread Class 2B 0.1P-0.3L-TS	D Dia. +.010 –.000	N Dia. Max.
9	.6250	.516	.895
11	.7500	.641	1.000
13	.8750	.766	1.171
15	1.0000	.891	1.299
17	1.1875	1.016	1.436
19	1.2500	1.141	1.543
21	1.3750	1.266	1.670
23	1.5000	1.343	1.787
25	1.6250	1.516	1.914

Finish	10-No Suffix
Olive Drab, Cadmium, Nickel base	-XX9
Electroless Nickel	-XXG

Consult Amphenol Aerospace for availability of stainless steel protection caps.

All dimensions for reference only.
For MS protection caps, see page 184.

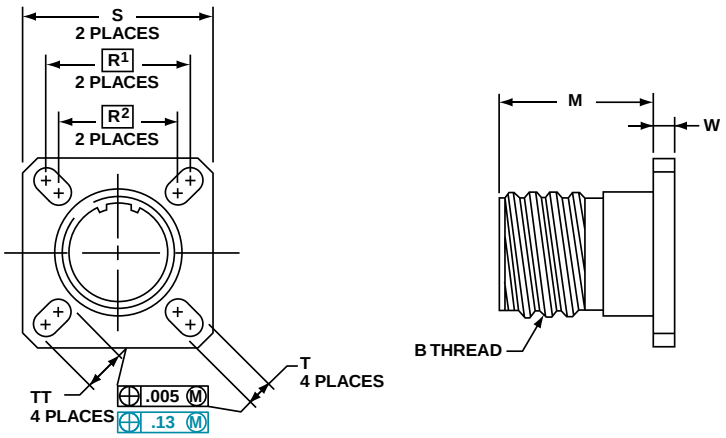
Millimeters

Shell Size	MS Shell Size Code	D Dia. +.25 –.00	N Dia. Max.
9	A	13.11	22.73
11	B	16.28	25.40
13	C	19.46	29.74
15	D	22.63	32.99
17	E	25.81	36.47
19	F	28.98	39.19
21	G	32.16	42.42
23	H	34.11	45.39
25	J	38.51	48.62

Series III TV

Part number reference.
See note below to complete.

*** 10-553974-XXX**



* To complete order number, add shell size and suffix number. For example, shell size 11 with olive drab cadmium nickel base, 10-553974-119

Inches

Shell Size	MS Shell Size Coded	B Thread 0.1P-0.3L-TS (Plated)	M +.020 –.000	R1	R2	S ±.010	T ±.008 –.006	W ±.010	TT ±.008 –.006
9	A	.6250	.822	.719	.594	.938	.128	.098	.216
11	B	.7500	.822	.812	.719	1.031	.128	.098	.194
13	C	.8750	.822	.906	.812	1.125	.128	.098	.194
15	D	1.0000	.822	.969	.906	1.219	.128	.098	.173
17	E	1.1875	.822	1.062	.969	1.312	.128	.098	.194
19	F	1.2500	.822	1.156	1.062	1.438	.128	.098	.194
21	G	1.3750	.791	1.250	1.156	1.562	.128	.125	.194
23	H	1.5000	.791	1.375	1.250	1.688	.154	.125	.242
25	J	1.6250	.791	1.500	1.375	1.812	.154	.125	.242

Finish	10-No Suffix
Olive Drab, Cadmium, Nickel base	-XX9
Electroless Nickel	-XXG

Millimeters

Shell Size	MS Shell Size Coded	M +.51 –.00	R1	R2	S ±.25	T +.20 –.15	W ±.25	TT +.20 –.15
9	A	20.88	18.26	15.09	23.83	3.25	2.49	5.49
11	B	20.88	20.62	18.26	26.19	3.25	2.49	4.93
13	C	20.88	23.01	20.62	28.58	3.25	2.49	4.93
15	D	20.88	24.61	23.01	30.96	3.25	2.49	4.93
17	E	20.88	26.97	24.61	33.32	3.25	2.49	4.93
19	F	20.88	29.36	26.97	36.53	3.25	2.49	4.93
21	G	20.09	31.75	29.36	39.67	3.25	3.18	4.93
23	H	20.09	34.93	31.75	42.88	3.91	3.18	6.15
25	J	20.09	38.10	34.93	46.02	3.91	3.18	6.15

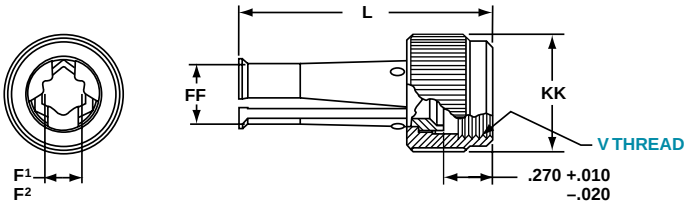
All dimensions for reference only

Designates true position dimensioning

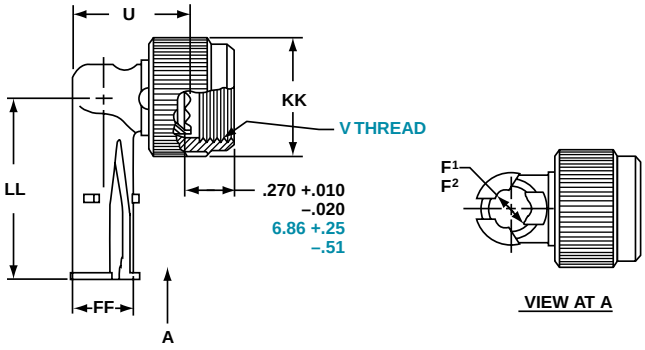
Amphenol Aerospace

Series III TV

Straight Style
***10-552681-XXX metal coupling**



90 Degree Elbow Style
***10-552682-XXX metal coupling**



* To complete order number, see suffix chart below. Examples: Clamp with metal coupling nut for shell size 11 with olive drab cadmium nickel base, 10-552681-119.

Inches

Shell Size	MS Shell Size Code	F¹ Min. Dia. Cable	F² Max. Dia. Cable	L Max.	U Max.	FF Dia. Max.	KK Dia. Max.	LL Max.
9	A	.094	.203	1.431	.656	.347	.629	1.015
11	B	.141	.250	1.431	.688	.394	.756	1.062
13	C	.172	.323	1.431	.750	.467	.883	1.125
15	D	.203	.422	1.431	.859	.566	1.011	1.328
17	E	.234	.500	1.431	.937	.644	1.138	1.392
19	F	.265	.562	1.431	1.000	.706	1.265	1.453
21	G	.297	.625	1.492	1.062	.769	1.393	1.609
23	H	.328	.703	1.492	1.141	.847	1.488	1.656
25	J	.359	.765	1.492	1.203	.909	1.616	1.719

Finish	10-No Suffix
Olive Drab, Cadmium Nickel Base	-XX9
Electroless Nickel	-XXG

Millimeters

Shell Size	MS Shell Size Code	F¹ Min. Dia. Cable	F² Max. Dia. Cable	L Max.	U Max.	V Thread Metric	FF Dia. Max.	KK Dia. Max.	LL Max.
9	A	2.39	5.16	36.35	16.66	M12X1-6H	8.81	15.98	25.78
11	B	3.58	6.35	36.35	17.48	M15X1-6H	10.01	19.20	26.97
13	C	4.37	8.20	36.35	19.05	M18X1-6H	11.86	22.43	28.58
15	D	5.16	10.72	36.35	21.82	M22X1-6H	14.38	25.68	33.73
17	E	5.94	12.70	36.35	23.80	M25X1-6H	16.36	28.91	35.36
19	F	6.73	14.27	36.35	25.40	M28X1-6H	17.93	32.13	36.91
21	G	7.54	15.88	37.90	26.97	M31X1-6H	19.53	35.38	40.87
23	H	8.83	17.86	37.90	28.98	M34X1-6H	21.51	37.80	42.06
25	J	9.12	19.43	37.90	30.56	M37X1-6H	23.09	41.05	43.66

All dimensions for reference only.

Series III TV

STANDARD 500 CYCLE CONTACTS FOR TV AND CTV, P & S

Contact Size	TV/CTV Pins		TV/CTV Sockets	
	Military No.	Supersedes	Military No.	Supersedes
8 (Coax)*	M39029/60-367	MS27536	M39029/59-366	MS27535
8 (Power)	Contact Factory	"	"	"
8 (Twinax)	M39029/90-529**	N/A	M39029/91-530	N/A
10 (Power)	M39029/58-528	N/A	M39029/56-527	N/A
12	M39029/58-365	MS27493-12	M39029/56-353	MS27490-12
16	M39029/58-364	MS27493-16	M39029/56-352	MS27490-16
20	M39029/58-363	MS27493-20	M39029/56-351	MS27490-20
22D	M39029/58-360	MS27493-22D	M39029/56-348	MS27490-22D
4	N/A	N/A	N/A	N/A
0	N/A	N/A	N/A	N/A

Above part numbers include standard 500 cycle finish designation - gold plating over suitable underplate in accordance with MIL-C-39029. For other finish variations, consult Sidney, NY.
*For use with RG180B/U and RG195A/U cable. For other size 8 coax or optional sizes 12 and 16 coax contacts available for use in MIL-DTL-38999 Series III connectors, see catalog 12-130 or consult Amphenol, Sidney, NY

** For use with M17/M176-00002 cable.
† Optional design - see slash sheet MS39029.
For other contact options available for use in Tri-Start connectors, (wire wrap, thermocouple, fiber optic) consult Amphenol. Wire wrap data given on next page.

1500 CYCLE CONTACTS FOR CTV, CLASSES H & J

Contact Size	CTV Pins			CTV Sockets		
	Commercial No.	Military No.	Supersedes	Commercial No.	Military No.	Supersedes
12	10-597072-2X	M39029/107-623	–	10-597073-2X	M39029/106-617	–
16	10-597068-2X	M39029/107-622	–	10-597069-2X	M39029/106-616	–
20	10-597064-2X	M39029/107-621	–	10-597065-2X	M39029/106-615	–
22D	10-597058-3X	M39029/107-620	–	10-597061-2X	M39029/106-614	–

PLASTIC PROTECTION CAPS

Shell Size	Plug	Receptacle
9	10-70506-14	10-70500-10
11	10-70506-16	10-70500-12
13	10-70500-18	10-70500-14
15	10-70500-20	10-70500-16
17	10-70500-22	10-70500-19
19	10-70500-24	10-70500-20
21	10-70524-1	10-70500-22
23	10-70506-28	10-70500-24
25	10-70500-28	10-70524-1

MS METAL PROTECTION CAPS

Shell Size	MS Shell Size Code	MS Plug Protection Cap	MS Receptacle Protection Cap
9	A	D38999/32W9X*	D38999/33W9X*
11	B	D38999/32W11X*	D38999/33W11X*
13	C	D38999/32W13X*	D38999/33W13X*
15	D	D38999/32W15X*	D38999/33W15X*
17	E	D38999/32W17X*	D38999/33W17X*
19	F	D38999/32W19X*	D38999/33W19X*
21	G	D38999/32W21X*	D38999/33W21X*
23	H	D38999/32W23X*	D38999/33W23X*
25	J	D38999/32W25X*	D38999/33W25X*

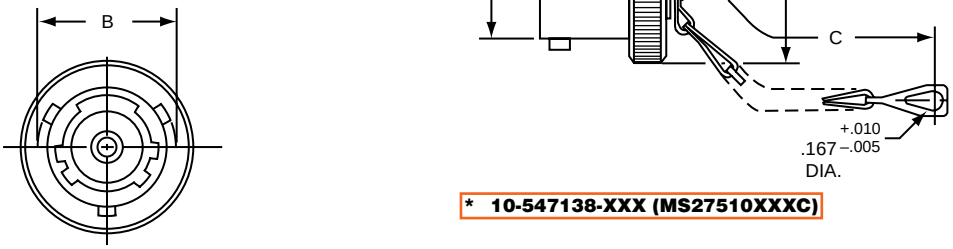
* To complete order number, replace X with applicable letter as follows:
R - designates eyelet type
N - designates washer type
MS metal protection caps are supplied with service class W which designates corrosion resistant olive drab cadmium plate aluminum.
Consult Amphenol, Sidney, NY for more detailed information on ordering MS Metal protection caps.

SEALING PLUGS

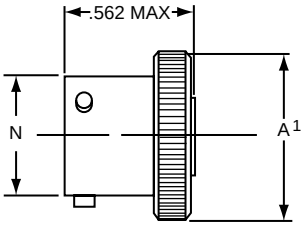
Contact Size	Commercial No.	Military No.
8 (Coax)	10-482099-8	N/A
8 (Twinax)	T3-4008-59P	N/A
8 (Power)	10-405996-83	MS27488-8-3
10 (Power)	T3-4010-59P	M85049/81-10
12	10-405996-122	MS27488-12-2
16	10-405996-162	MS27488-16-2
20	10-405996-202	MS27488-20-2
22D	10-405996-222	MS27488-22-2
4	10-405996-43	MS27488-4-3
0	10-405996-03	MS27488-0-3

Amphenol Aerospace

Series II JT



*** 10-547138-XXX (MS27510XXXC)**



*** 10-241853-XXX (MS27510XXXA)**

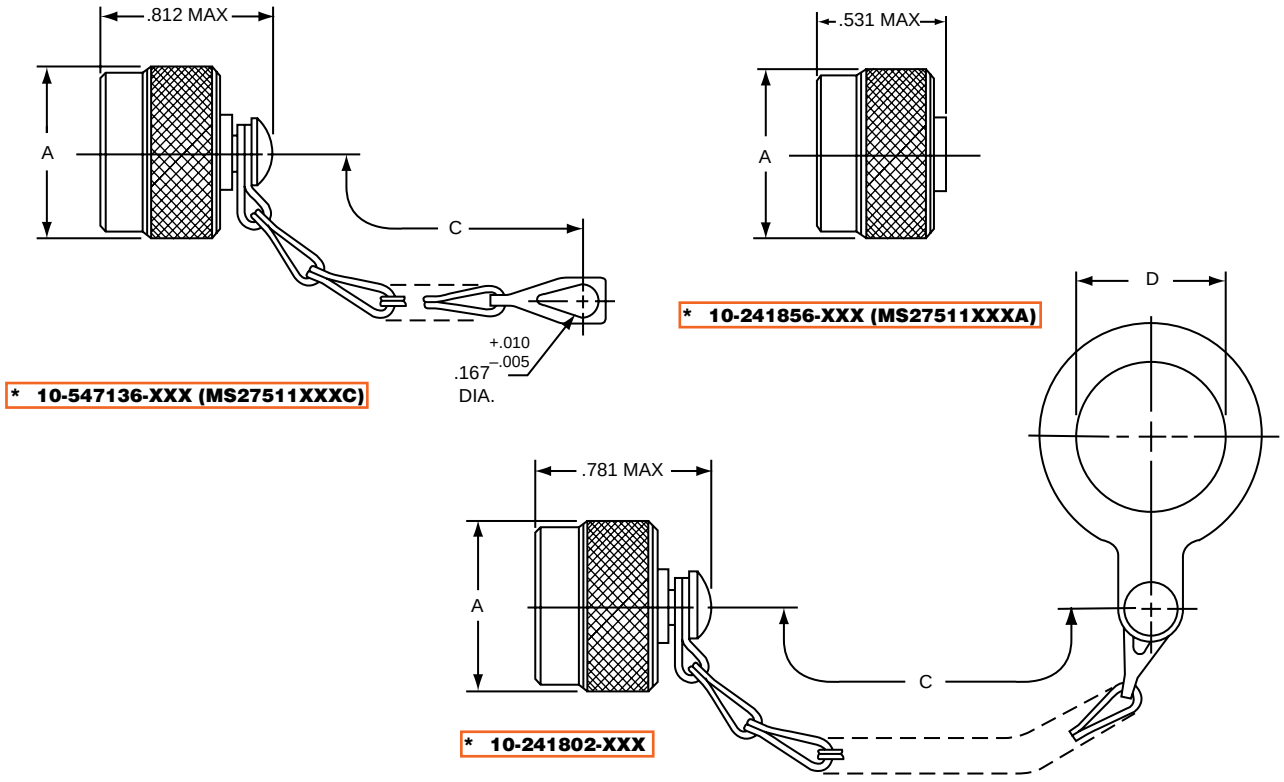
For MS stamping identification, accessories must be ordered by MS part number.
If ordered by 10- part number, they will be stamped with said number.
* To complete order number, add shell size and suffix number.
For example, shell size 10 with cadmium plate, nickel base would be 10-241801-107, MS27510A10C or MS27510A10A).

Shell Size	A Dia. Max.	A[1] Dia. Max.	B +.000 –.016	C Approx.	N Dia. +.001 –.005
8	.719	.703	.563	3.000	.473
10	.844	.828	.680	3.000	.590
12	1.000	.984	.859	3.500	.750
14	1.125	1.109	.984	3.500	.875
16	1.250	1.234	1.108	3.500	1.000
18	1.375	1.359	1.233	3.500	1.125
20	1.500	1.484	1.358	4.000	1.250
22	1.625	1.609	1.483	4.000	1.375
24	1.750	1.734	1.610	4.000	1.500

All dimensions for reference only.

Finish	10-Number Suffix	MS Number Suffix with chain	MS Number Suffix without chain
Chromate treat	-XX0		
Anodic coating	-XX5	CXXC	CXXA
Cadmium Plate Nickel base	-XX7	AXXC	AXXA
Olive Drab, Cadmium, Nickel base	-XX9	BXXC	BXXA
Electroless Nickel	-XXG	FXXC	FXXA

Series II JT



For MS stamping identification, accessories must be ordered by MS part number.
If ordered by 10- part number, they will be stamped with said number.
* To complete order number, add shell size and suffix number.
For example, shell size 10 with cadmium plate, nickel base would be 10-241800-107, MS27511A10C, MS27511A10A

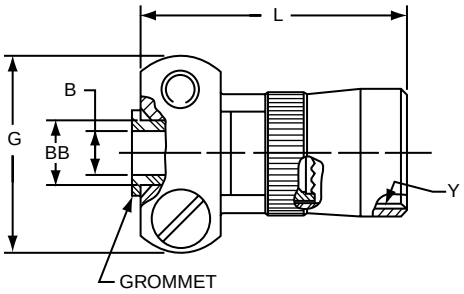
Shell Size	A Dia. Max.	C Approx.	D +.010 –.000
8	.719	3.000	.891
10	.844	3.000	1.016
12	1.000	3.500†	1.141
14	1.125	3.500	1.266
16	1.250	3.500	1.391
18	1.375	3.500	1.516
20	1.500	4.000	1.641
22	1.625	4.000	1.766
24	1.750	4.000	1.891

†3.000 for MS27511
All dimensions for reference only.

Finish	10-Number Suffix	MS Number Suffix with chain	MS Number Suffix without chain
Chromate treat	-XX0		
Anodic Coating	-XX5	CXXC	CXXA
Cadmium Plate Nickel Base	-XX7	AXXC	AXXA
Olive Drab, Cadmium, Nickel base	-XX9	BXXC	BXXA
Electroless nickel	-XXG	FXXC	FXXA

Amphenol Aerospace

Series II JT | Series I LJT



*** 10-405982-XXX (MS27506XXX-2 reference M85049/49)**

For MS stamping identification, accessories must be ordered by MS part number.
If ordered by 10-part number, they will be stamped with said number.

*To complete order number, add shell size and suffix number.

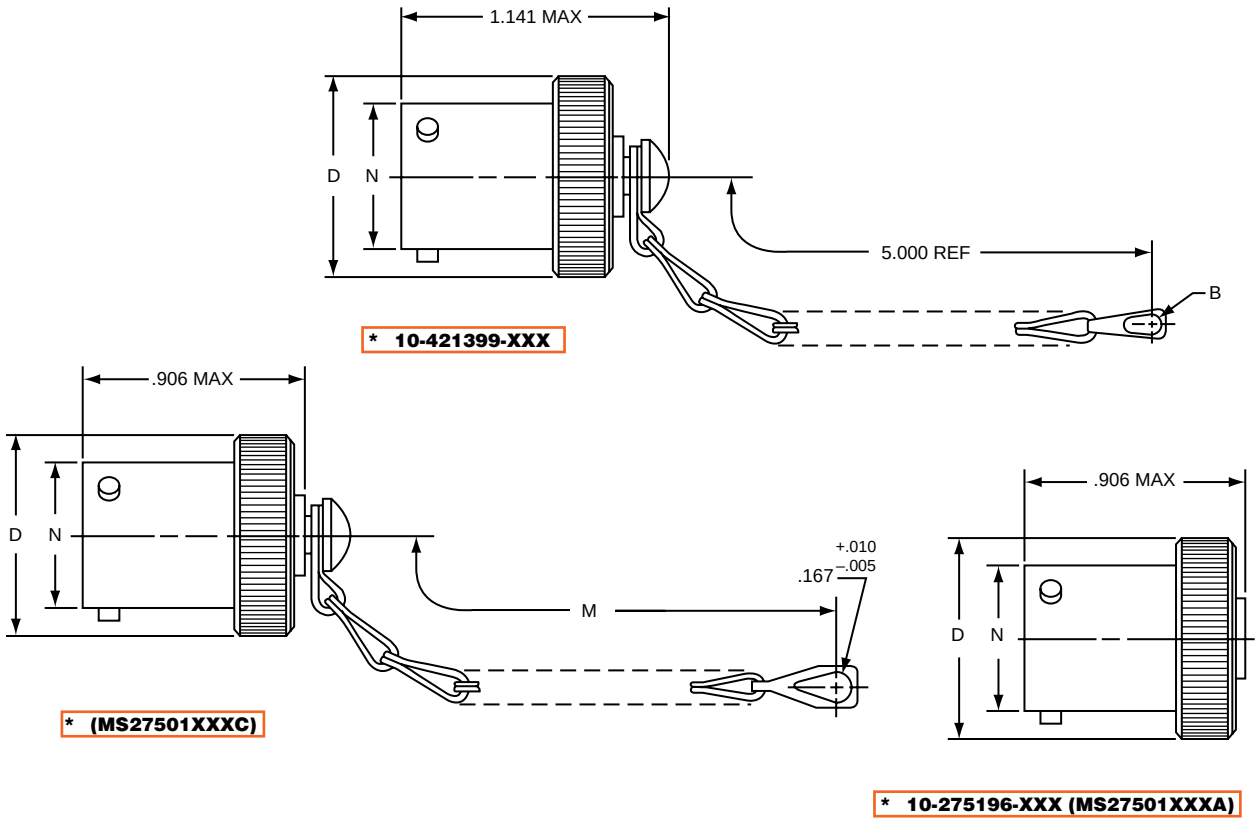
Finish	10-Number Suffix	MS27506 Suffix	M85049/49 Suffix
Chromate treat	-XX0		NA
Anodic coating	-XX5	CXX-2	(-2-XXA)
Cadmium plate nickel base	-XX7	AXX-2	NA
Olive drab, cadmium, nickel base	-XX9	BXX-2	(-2-XXW)
Electroless nickel	-XXG	FXX-2	(-2-XXN)

For example: Shell size 10 with cadmium plate, nickel base would be 10-405982-107 or M85049/49-2-10W

Shell Size	B Dia. +.010–.025	G Max.	L Max.	Y Thread (Modified)		BB Dia. +.000 –.011	Screw Size
				Size Class 2B	Modified Minor Dia.		
8	.125	.775	.984	.4375-28UNEF	.399 – .405	.250	6-32UNC
10	.188	.837	.984	.5625-24UNEF	.524 – .529	.312	6-32UNC
12	.312	.963	.984	.6875-24UNEF	.649 – .654	.438	6-32UNC
14	.375	1.087	1.234	.8125-20UNEF	.766 – .771	.562	6-32UNC
16	.500	1.150	1.234	.9375-20UNEF	.891 – .896	.625	6-32UNC
18	.625	1.400	1.234	1.0625-18UNEF	1.002 – 1.007	.750	8-32UNC
20	.625	1.400	1.234	1.1875-18UNEF	1.135 – 1.140	.750	8-32UNC
22	.750	1.587	1.359	1.3125-18UNEF	1.252 – 1.257	.938	8-32UNC
24	.800	1.681	1.281	1.4375-18UNEF	1.377 – 1.382	1.000	8-32UNC

All dimensions for reference only.
Note: For solder type cable clamp 10-241055-XXX (M85049/49) consult Amphenol, Sidney, NY.

Series I LJT



*To complete order number, add shell size and suffix number.
For example, shell size 11 with cadmium plate, nickel base would be 10-421399-117, MS27501A11C, MS27501A11A.

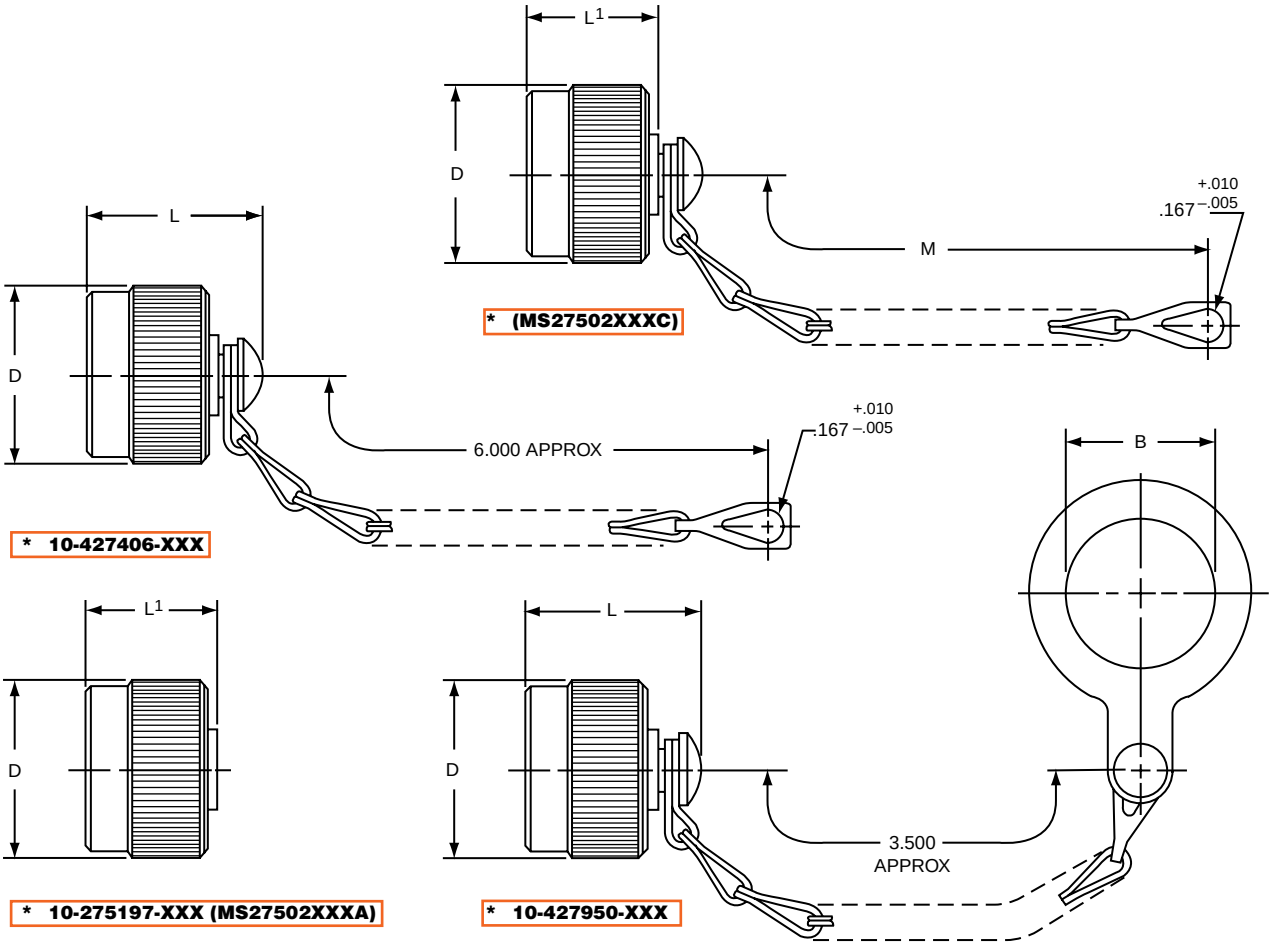
Shell Size	B Dia. Ref	D Dia. Max.	M ±.250	N Dia. +.001 –.005
9	.180	.812	3.000	.572
11	.180	.938	3.000	.700
13	.180	1.062	3.500	.850
15	.180	1.188	3.500	.975
17	.180	1.312	3.500	1.100
19	.209	1.438	3.500	1.207
21	.209	1.562	4.000	1.332
23	.209	1.688	4.000	1.457
25	.209	1.812	4.000	1.582

All dimensions for reference only.

Finish	10- Number Suffix	MS Number Suffix with chain	MS Number Suffix without chain
Chromate treat	-XX0		
Anodic coating	-XX5		
Cadmium Plate Nickel base	-XX7	AXXC	AXXA
Olive Drab, Cadmium, Nickel base	-XX9	BXXC	BXXA
Electroless nickel	-XXG	FXXC	FXXA

Amphenol Aerospace

Series I LJT



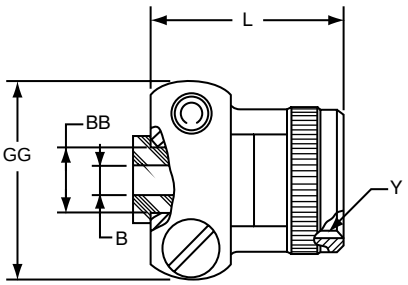
For MS stamping identification, accessories must be ordered by MS part number.
If ordered by 10- part number, they will be stamped with said number.
*To complete order number, add shell size and suffix number.
For example, shell size 11 with cadmium plate, nickel base would be 10-427406-117, MS27502A11C, MS27502A11A.

Shell Size	B Dia. +.010 –.000	D Dia. Max.	L Max.	L¹ Max	M ±.250
9	.703	.844	1.070	.844	3.000
11	.844	.969	1.070	.844	3.000
13	1.016	1.125	1.070	.844	3.500
15	1.141	1.250	1.070	.844	3.500
17	1.266	1.406	1.070	.844	3.500
19	1.391	1.500	1.070	.844	3.500
21	1.516	1.625	1.070	.844	4.000
23	1.641	1.750	1.070	.844	4.000
25	1.766	1.875	1.089	.875	4.000

All dimensions for reference only.

Finish	10-Number Suffix	MS Number Suffix with chain	MS Number Suffix without chain
Chromate treat	-XX0		
Anodic coating	-XX5	CXXC	CXXA
Cadmium Plate Nickel base	-XX7	AXXC	AXXA
Olive Drab, Cadmium, Nickel base	-XX9	BXXC	BXXA
Electroless Nickel	-XXG	FXXC	FXXA

Series I LJT



*** 10-436792-XXX**

For military type cable clamp see MS27506 or M85049/49 on page 178.

*To complete order number, add shell size and suffix number.

Finish	10-Number Suffix
Chromate treat	-XX0
Anodic coating	-XX5
Cadmium Plate Nickel base	-XX7
Olive Drab, Cadmium, Nickel base	-XX9
Electroless Nickel	-XXG

For example: Shell size 11 with cadmium plate, nickel base would be 10-436792-117.

Shell Size	B Dia. +.010 –.025	L Max.	Y Thread Class 2B (Plated)	GG Max.	BB Dia. +.000 –.011
9	.125	.859	.4375-28 UNEF	.775	.250
11	.188	.859	.5625-24 UNEF	.837	.312
13	.312	.859	.6875-24 UNEF	.963	.438
15	.375	1.109	.8125-20 UNEF	1.087	.562
17	.500	1.109	.9375-20 UNEF	1.150	.625
19	.625	1.109	1.0625-18 UNEF	1.400	.750
21	.625	1.109	1.1875-18 UNEF	1.400	.750
23	.750	1.234	1.3125-18 UNEF	1.587	.938
25	.800	1.234	1.4375-18 UNEF	1.681	1.000

All dimensions for reference only.

Amphenol Aerospace

Series II JT | Series I LJT

THERMOCOUPLE CONTACTS

Contact Size	Material	JT/LJT Pins	JT Sockets	LJT Sockets
20	Chromel	10-407862-310	10-407863-310	10-407236-310
	Alumel	10-407862-320	10-407863-320	10-407865-320
	Iron	10-407862-335	10-407863-335	10-407865-335
	Constantan	10-407862-342	10-407863-342	10-407865-342

Partial Listing. If you do not see the contact for your application, consult Amphenol Aerospace, Sidney, N.Y.

THERMOCOUPLE CONTACTS PYLE VERSION

Contact Size	Pins (JT/LJT)		Sockets (LJT)		Material
	Spec Number	Pyle Number	Spec Number	Pyle Number	
22D	M39029/87-472	T3-4022-10P	M39029/88-484	T3-4122-10P	CHROMEL
22D	M39029/87-471	T3-4022-10R	M39029/88-483	T3-4122-10R	ALUMEL
20	M39029/87-476	T3-4020-10P	M39029/88-488	TS-4120-10P	CHROMEL
20	M39029/87-475	T3-4020-10R	M39029/88-487	T3-4120-10R	ALUMEL
16	M39029/87-480	T3-4016-10P	M39029/88-492	T3-4016-10P	CHROMEL
16	M39029/87-479	T3-4016-10R	M39029/88-491	T3-4016-10R	ALUMEL

PLASTIC PROTECTION CAPS

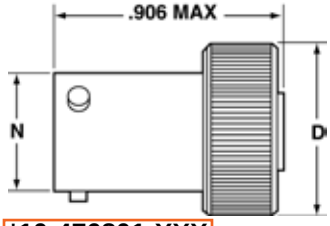
Shell Size		Plug	Receptacle
8		10-70500-10	10-70506-10S
	9	10-70506-14	10-70500-10
10		10-70506-14	10-70506-12
	11	10-70506-16	10-70500-12
12		10-70506-16	10-70506-14
	13	10-70506-18	10-70500-14
14		10-70506-18	10-70506-16
	15	10-70506-20	10-70500-16
16		10-70506-20	10-70506-18
	17	10-70506-22	10-70500-18
18		10-70506-22	10-70506-20
	19	10-70506-24	10-70500-20
20		10-70506-24	10-70506-22
	21	10-70576-24	10-70500-22
22		10-70576-24	10-70506-24
	23	10-70506-28	10-70500-24
24		10-70506-28	10-70576-24
	25	10-558651-25	10-70506-28

SEALING PLUGS

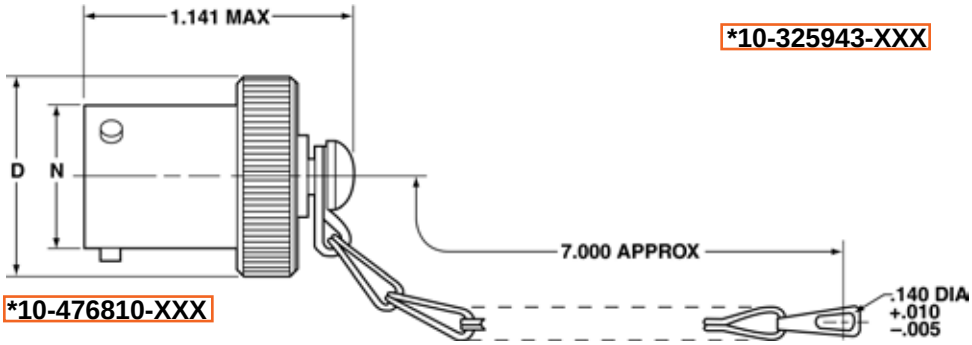
Contact Size	Commercial No.	Military No.
8 (Coax)	10-482099-8	MS27488-8
8 (Twinax)	T3-4008-59P	N/A
10 (Power)	10-576225	N/A
12	10-405996-12	MS27488-12
16	10-405996-16	MS27488-16
20	10-405996-20	MS27488-20
22	10-405996-22	MS27488-22
22M	10-405996-22	MS27488-22
22D	10-405996-22	MS27488-22

SJT

PLUG PROTECTION CAP

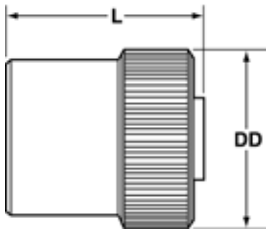


*10-476801-XXX



*10-476810-XXX

RECEPTACLE PROTECTION CAP



*10-325943-XXX

*To complete order number, add shell size and suffix number. For example, shell size 10 with bright cadmium plated nickel base, 10-476810-107.

Plug Shell Size	D Dia. Max.	N Dia. +.001 –.005
8	.688	.473
10	.812	.590
12	.969	.750
14	1.094	.875
16	1.219	1.000
18	1.344	1.125
20	1.469	1.250
22	1.594	1.375
24	1.719	1.500

All dimensions for reference only

*To complete order number, add shell size and suffix number. For example, shell size 10 with bright cadmium plated nickel base, 10-325943-107.

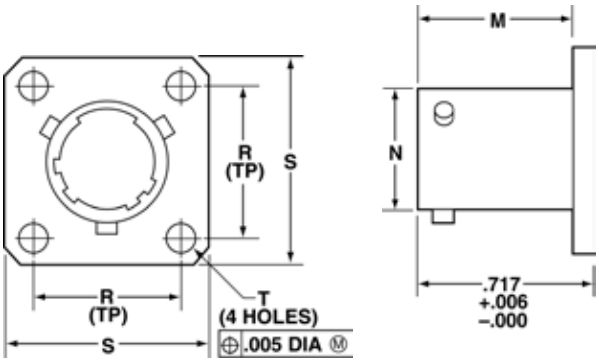
Receptacle Shell Size	DD Dia. Max.	L Max.
8	.734	.828
10	.844	.828
12	1.016	.828
14	1.141	.828
16	1.265	.828
18	1.391	.828
20	1.500	.828
22	1.625	.828
24	1.750	.859

Finish	Suffix
Bright Cadmium Plated Nickel Base	XX7
Anodic Coating (Alumilite)	XX5
Chromate Treated (Iridite 14-2)	XX0
Olive Drab Cadmium Plate Nickel Base	XX9
Electroless Nickel Coating	XXG

Amphenol Aerospace

SJT

DUMMY RECEPTACLE



***10-476807-XXX**

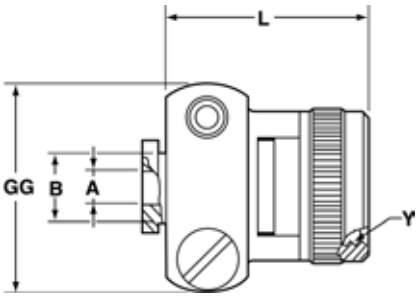
Finish	Suffix
Bright Cadmium Plated Nickel Base	XX7
Anodic Coating (Alumilite)	XX5
Chromate Treated (Iridite 14-2)	XX0
Olive Drab Cadmium Plate Nickel Base	XX9
Electroless Nickel Coating	XXG

* To complete order number, add shell size and suffix number. For example, shell size 10 with bright cadmium plated nickel base, 10-476807-107.

Dummy Receptacle Shell Size	D Dia. Max.	L Max.
8	.734	.828
10	.844	.828
12	1.016	.828
14	1.141	.828
16	1.265	.828
18	1.391	.828
20	1.500	.828
22	1.625	.828
24	1.750	.859

All dimensions for reference only

CABLE CLAMP



***10-476808-XXX**

Finish	Suffix
Bright Cadmium Plated Nickel Base	XX7
Anodic Coating (Alumilite)	XX5
Chromate Treated (Iridite 14-2)	XX0
Olive Drab Cadmium Plate Nickel Base	XX9
Electroless Nickel Coating	XXG

* To complete order number, add shell size and suffix number. For example, shell size 10 with bright cadmium plated nickel base, 10-476808-107.

Cable Clamp Shell Size	A Dia. +.010 –.025	B Dia. +.000 –.011	L Max.	Y Thread Class 2B UNEF (Plated)	GG Max.
8	.125	.250	.922	.4375-28	.775
10	.188	.312	.922	.5625-24	.837
12	.312	.438	.922	.6875-24	.963
14	.375	.562	1.172	.8125-20	1.087
16	.500	.625	1.172	.9375-20	1.150
18	.625	.750	1.172	1.0625-18	1.400
20	.625	.750	1.172	1.1875-18	1.400
22	.750	.938	1.297	1.3125-18	1.587
24	.800	1.000	1.297	1.4375-18	1.681

All dimensions for reference only

SJT

CONTACTS & SEALING PLUGS

Contact Size	SJT Pins	SJT Sockets	Sealing Plugs
8 (Coax)	21-33102-21**	21-33101-21**	10-482099-8
8 (Twinax)	21-33190-529†	21-33191-530†	10-482099-8
10 (Power)	10-251415-105	10-407035-105	Not Available
12	10-251415-12H	10-407035-125	10-405996-12 Yellow
16	10-251415-165	10-407035-165	10-405996-16 Blue
20	10-251415-205	10-407035-205 10-497403-205††	10-405996-20 Red
22*	10-251415-225	10-407035-225	10-405996-22 Black
22M*	10-251415-235	10-407035-235	10-405996-22 Black
22D	10-251415-725	10-407035-725	10-405996-22 Black

Above part numbers include standard finish designation – gold plating over suitable underplate in accordance with MIL-C-39029. For other finish variations, consult Amphenol, Sidney, NY.

* Inactive for new design.

** 21-33102-21 and 21-33101-21 are for use with RG180B/U and RG195A/U cable. For other size 8 coax or optional sizes 12 and 16 coax contacts available for use in SJT connectors, see catalog 12-130 or consult Amphenol, Sidney, NY.

† 21-33190-529 and 21-33191-530 are for use with M17/176-00002 cable.

†† Optional design – see slash sheet MS39029.

For other contact options available for use in SJT connectors, (wire-wrap, thermocouple, fiber optic) consult Amphenol, Sidney, NY.

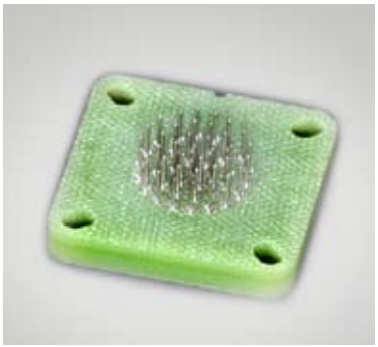
PLASTIC PROTECTION CAPS

Shell Size	Plug	Receptacle
8	10-70500-10	10-70506-10S
10	10-70500-14	10-70506-12
12	10-70500-16	10-70506-14
14	10-70500-18	10-70506-16
16	10-70500-20	10-70506-18
18	10-70500-22	10-70506-20
20	10-70500-24	10-70506-22
22	10-70524-1	10-70506-24
24	10-70506-28	10-70524-1

for flex print or PC Board

Series III TV | Series II JT | Series I LJT

Mounts to all MIL-DTL-38999 and MIL-C-26482 Connectors



Termination of PC tail connectors to a flex print or a printed circuit board represents a major cost in the manufacturing process for users. When adding flex or printed circuit board assemblies to an expensive filter or filter/transient protection connector, the total cost of a failed solder joint, a bent pin, or an unanticipated electrical failure becomes prohibitive. The universal header assembly from Amphenol provides for easy separation of the connector from the board on these occasions. The header assembly is comprised of a short pin/socket contact. The tail end of the contact is soldered to the through hole of the flex or printed circuit board. The socket is embedded in the insulator, making electrical contact with the printed circuit tail of the connector.

Headers provide easy separation of the connector from the PC board.

Header Assemblies Provide Cost Savings

Incorporation of the header assembly provides the user with time and cost saving potentials. These header assemblies can be vapor phase or wave soldered to flex or printed circuit boards prior to the receipt of the EMI/EMP connector. Headers can be installed to standard connectors, allowing for electrical testing that would adversely affect the sensitive diodes, MOV’s or capacitors in the EMI/EMP connectors. Expensive connector assemblies can be easily removed from and reattached to the header assembly as the manufacturing process dictates.

Mounting Applications

Shell modifications are recommended, but are not necessary. The header assembly can be attached to connectors with standard flange placement or directly to the circuit board. The ideal application would involve either a single flange moved all the way to the rear of the connector or a double flange. Cinch nuts can be installed in either flange to allow easier mounting to the panel or the header assembly. The forward flange would mount the connector to the panel; the rear flange would be used to mount the header assembly. Various types of captivated or loose attaching screws can be utilized for unique applications.

Amphenol universal headers are slotted to allow mounting to all series of MIL-DTL-38999 or MIL-DTL-26482 connectors without special alterations. They are of similar dimension as the flange of the mounting connector and are approximately .185 inches (4.70 mm) thick.

Cylindrical Configuration

- 3 PCB stickout dimensions are available.
- Size 22 contacts use .175 thick headers
- Size 16 to 20 contacts use .195 thick headers
- Consult Amphenol, Sidney NY for additional configurations.
- Headers for cylindrical connectors accommodate up to 128 pins. See pages 6-9 for available insert arrangement charts and pages 10-16 for insert arrangement illustrations.

Mounting to Rectangular ARINC Connectors

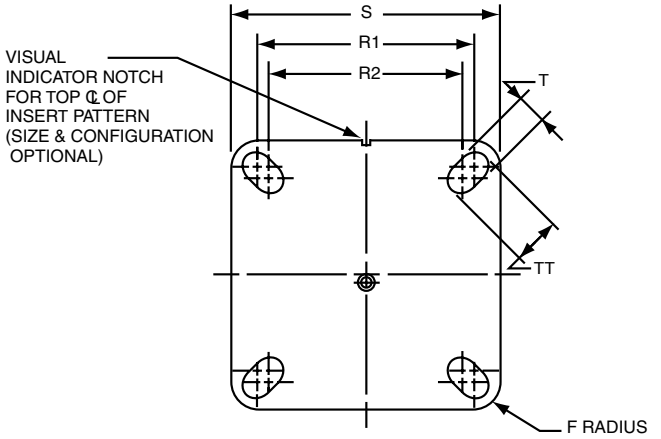
- Headers for ARINC connector arrangements accommodate up to 150 pins
- Consult Amphenol, Sidney, NY for ARINC configurations and detailed dimensions.

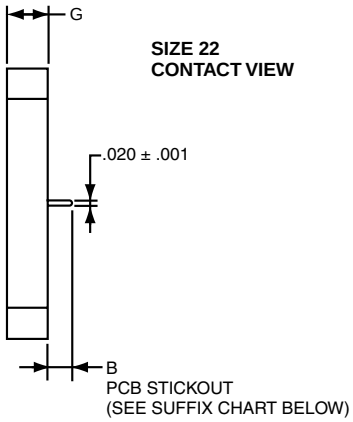
Materials

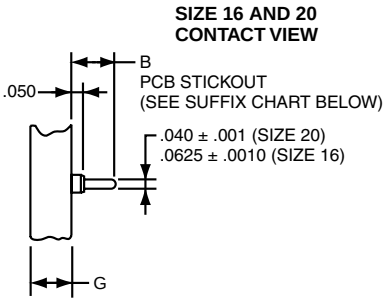
- Body is molded or machined from FR-4.
- Electrical engagement areas of the header contact are plated with .00003 inches minimum of gold over .00005 inches minimum of nickel.

See drawing of standard header on next page.

The drawing below shows the standard header assembly for use with MIL-DTL-38999 connectors. Consult Amphenol Aerospace, Sidney NY for drawings of headers for ARINC configurations.







Assembly Part Number	Shell Size	F Radius	G ± .005	S ± .005	T + .008 – .006	R1 TP†	R2 TP†	TT + .008 – .006
21-904008-XX( )	8/9	.094		.938	.128	.719	.594	.216
21-904010-XX( )	10/11	.094		1.031	.128	.812	.719	.194
21-904012-XX( )	12/13	.094		1.125	.128	.906	.812	.194
21-904014-XX( )	14/15	.125		1.219	.128	.969	.906	.173
21-904016-XX( )	16/17	.125		1.312	.128	1.062	.969	.194
21-904018-XX( )	18/19	.125		1.438	.128	1.156	1.062	.194
21-904020-XX( )	20/21	.125		1.562	.128	1.250	1.156	.194
21-904022-XX( )	22/23	.125		1.688	.154	1.375	1.250	.242
21-904024-XX( )	24/25	.125		1.812	.154	1.500	1.375	.242

See Suffix Chart

Assemblies containing Size 22 contacts only: .175
Assemblies containing Size16 or 20 contacts: .195

† TP designates true position dimensioning.

NOTE:
Size 22 accepts .018 to .022 dia. PCB tails.
Size 16 accepts .048 to .064 dia. PCB tails.
Size 20 accepts .037 to .043 dia. PCB tails.

HOW TO ORDER INFORMATION
For Header Assembly with MIL-DTL-38999 Connectors

Use coded number as follows:

21-9040 XX - XX X

- Designates Amphenol Header Assembly
- Shell size designation for MIL-DTL-38999 Series I, II, III and IV see Suffix chart.
- Arrangement number - See MIL-STD-1560 or MIL-STD-1669. See insert availability charts on pages 4-7.
- Contact PCB Stickout designation See Suffix chart.

For how to order information on adapters to be used with ARINC connectors, consult Amphenol, Sidney NY.

ASSEMBLY NUMBER SUFFIX CHART

Shell Size Designation*	Arrangement Number Suffix***	Contact PCB Stickout***	
		Suffix	B ± .015 Stickout
08	Insert Arrangement Suffix from MIL-STD-1560 or MIL-STD-1669	1	.120
10		2	.185
12		3	.270
14			
16			
18			
20			
22			
24			

*Shell size designation for MIL-DTL-38999 Series I, II, III and IV and MIL-DTL-26482 Series 1 and 2.
Examples: Shell size 9 use 08. Shell size 25 use 24.

** Size 22 contacts available in all 3 stickout lengths.
Size 16 and 20 contacts available only in .185 and .270 lengths.

*** Insert arrangement 14-97 and 15-97 are not available at this time.
Consult Amphenol, Sidney NY for information.

Amphenol Aerospace

The following data includes information pertaining to the application tools which have been established for crimping, inserting, and removing contacts incorporated in the TV, CTV and MIL-DTL-38999 Series III connectors. For additional information on coax, twinax and triax contact tools see catalog 12-130.

All crimping tools included are the "full cycling" type and when used as specified in the installation instructions (L-624 and L-844) covering the TV, CTV and MS series connectors, will provide reliable crimped wire to contact terminations. There is a possibility of additional crimping tools other than those included being available at present or in the future for this specific application.

CRIMPING TOOLS

Contact Size/Type	Crimping Tool	Turret Die or Positioner
12 Pin and Socket	M22520/1-01	M22520/1-04
16 Pin and Socket	M22520/1-01 M22520/7-01	M22520/1-04 M22520/7-04
20 Pin and Socket	M22520/1-01 M22520/2-01 M22520/7-01	M22520/1-04 M22520/2-10 M22520/7-08
22, 22D, 22M Pin	M22520/2-01 M22520/7-01	M22520/2-09 M22520/7-07
22, 22D, 22M Socket Series I, III	M22520/2-01 M22520/7-01	M22520/2-07 M22520/7-05
22D Socket Series II	M22520/2-01 M22520/7-01	M22520/2-06 M22520/7-06
8 Twinax Center Pin and Socket	M22520/2-01	M22520/2-37
8 Twinax Intermediate Outer Pin & Socket	M22520/5-01	M22520/5-200

Where 2 or 3 tools are listed for a contact size, only one tool and its die or positioner are required to crimp the contact. The above crimping tools and positioners are available from the approved tool manufacturer.

Contact Size/Type	Crimping Tool	Turret Die or Positioner
8 Coaxial Inner Pin and Socket	M22520/2-01	M22520/2-31
8 Coaxial Outer Pin and Socket	M22520/5-01	M22520/5-05 Die Closure B
	M22520/5-01	M22520/5-41 Die Closure B
	M22520/10-01	M22520/10-07 Die Closure B
16 Coaxial Inner Pin and Socket	M22520/2-01	M22520/2-35
16 Coaxial Outer Pin and Socket	M22520/4-01	M22520/4-02
12 Coaxial Inner Pin and Socket	M22520/2-01	M22520/2-34
12 Coaxial Outer Pin and Socket	M22520/31-01	M22520/31-02
10 (Power)	TP201423	1716P-1

INSERTION TOOLS

Use with Contact Size	Plastic Tools		Metal Tools			
			Angle Type		Straight Type	
	MS Part Number	Color	MS Part No.	Commercial Part No.	Commercial Part No.	Color
10 (Power	M81969/14-05*	Gray / (White)	M81969/8-11	†	†	Green
12	M81969/14-04*	Yellow / (White)	M81969/8-09	11-8674-12	11-8794-12	Yellow
16	M81969/14-03*	Blue / (White)	M81969/8-07	11-8674-16	11-8794-16	Blue
20	M81969/14-10*	Red / (Orange)	M81969/8-05	11-8674-20	11-8794-20	Red
22	M81969/14-09	Brown/White	M81969/8-03	11-8674-22	11-8794-22	Brown
22D, 22M	M81969/14-01*	Green / (White)	M81969/8-01	11-8674-24	11-8794-24	Black
8 Coaxial	None Required					
8 Twinax	None		M81969/46-06**	None		Red

REMOVAL TOOLS

Use with Contact Size	Plastic Tools		Metal Tools				
				Angle Type		Straight Type	
	MS Part Number	Color	For Unwired Contacts Commercial Part No.	MS Part No.	Commercial Part No.	Commercial Part No.	Color
10 (Power)	M81969/14-05*	(Gray) / White	†	M81969/8-12	†	†	Green / White
12	M81969/14-04*	(Yellow) / White	11-10050-11	M81969/8-10	11-8675-12	11-8795-12	Yellow / White
16	M81969/14-03*	(Blue) / White	11-10050-10	M81969/8-08	11-8675-16	11-8795-16	Blue / White
20	M81969/14-10*	(Orange) / Red	11-10050-9	M81969/8-06	11-8675-20	11-8795-20	Red / Orange
22	M81969/14-09*	(Brown)/White	11-10050-8	M81969/8-04	11-8675-22	11-8795-22	Brown/White
22D, 22M	M81969/14-01*	(Green) / White	11-10050-7	M81969/8-02	11-8675-24	11-8795-24	Green / White
8 Coaxial	M81969/14-12	Green	None	None	11-9170	DRK264-8††	N/A
8 Twinax	M81969/14-12	Green	None	M81969/46-12**	11-9170	N/A	N/A

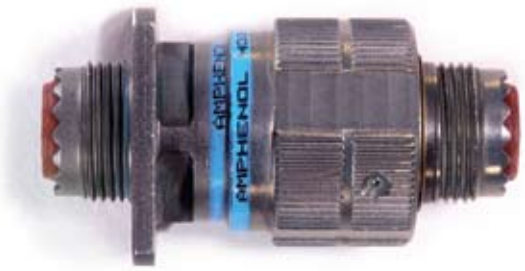
The M81969/8, 11-8674, 11-8675, and 11-8794 metal contact insertion and removal tools will accommodate wires having the maximum outside diameter as follows: Contact size 12: dia. is .155, size 16: dia. is .109, size 20: dia. is .077, size 22D: dia. is .050. When wire diameters exceed those specified, the plastic tools must be used.

* Double end insertion/removal tool.
** Twinax insertion tools are available only in a straight type, metal version.

† To be determined.
†† Contact Daniels Manufacturing Co. for availability.

HD38999 High Density

The HD38999 family of connectors was designed to work with existing mil-specified 38999 shells. To the end users familiar with standard 38999 connectors, this family of high density connectors will look, feel, and perform just like the mil-qualified connectors. Utilizing an existing mil-qualified 39029 size 23 contact and mil-qualified shells, the new system will be, in many cases, a drop-in connector. Even though the HD38999 has 30% more contacts, it still performs to minimum electrical requirements of standard 38999 connectors.

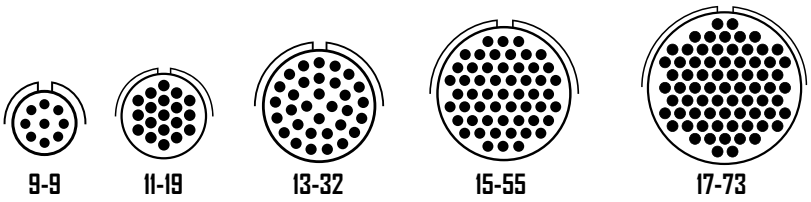


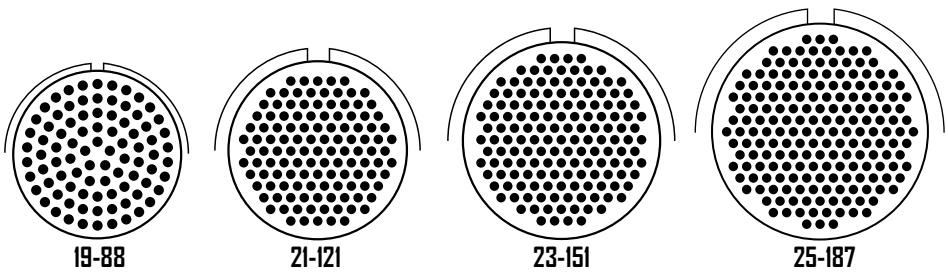
HD38999 is available in nine arrangements see below

- Aluminum
- Composite
- Stainless Steel
- Sealed
- Filtered

CRIMP CONTACT SIZE	CURRENT CAPABILITY	MAXIMUM MILIVOLT DROP
SAE 39029, Size 23	Crimp: 5 amp	Crimp:73 milivolt
CRIMP BARREL DIAMETER (INCHES)	**CRIMP BARREL DEPTH (INCHES)**	**WIRE GAUGE**
.033" - .035"	1.49" - 1.55"	24 awg - 28 awg

INSERT ARRANGEMENTS





For more information e-mail:
hd38999info@amphenol-aao.com

Specifications, descriptions and illustrations in this literature are as accurate as known at the time of publication, but are subject to change without notice.

Amphenol Aerospace

Easy Steps to build a part number... HD38999

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size-Insert Arrg.	5. Contact Type	6. Alternate Positions	7. PCB Contacts
(P)TV	06	RW	23-51	P	B	P25

Step 1. Select a Connector Type

	Designates
TV	Tri-Start Series Connector
TVP	Back panel mounted receptacle
(P)	Potted version, sealing compound that prevents moisture up to 4.6 x 10^{-3} cc/sec
(H)	Hermetic - designates glass sealed version, provides air leakage limited to 1 x 10^{-7} cm^3 per second

Step 2. Select a Shell Style

	Designates
00	Wall mount receptacle
01	Line receptacle
06	Straight plug
07	Jam nut receptacle

Step 3. Select a Service Class

	Designates
RF	Electroless nickel plated aluminum, optimum EMI shielding effectiveness -65dB @ 10GHz specification min., 48 hour salt spray, 175°C
RW	Corrosion resistant olive drab cadmium plate aluminum, 500 hour extended salt spray, EMI -50dB @ 10GHz specification min., 175°C
DT	Durmalon plated, alternative to Cadmium. Corrosion resistant, 500 hour extended salt spray, EMI -50dB @ 10GHz specification min.
Y	Hermetic seal, passivated stainless steel, 200° C
YN	(Hermetic Connectors), nickel plated stainless steel, 200° C

Step 4. Select a Shell Size and Insert Arrangement

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

Shell Size	Insert Arrg.
9-	9
11-	19
13-	32
15-	55

Shell Size	Insert Arrg.
17-	73
19-	88
21-	121
23-	151
25-	187

Step 5. Select a Contact Type

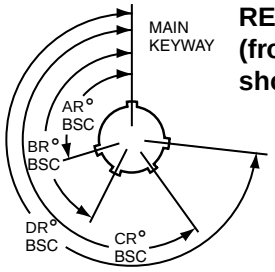
	Designates
(P)	Pin contacts
(S)	Socket contacts

Step 6. Select Alternate Positions

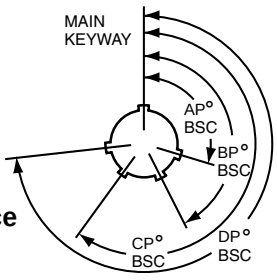
A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The angles for a given connector are the same whether it contains pins or sockets. Inserts are not rotated in conjunction with the master key/keyway.

Shell Size	Key & keyway arrangement identification letter	AR° or AP° BSC	BR° or BP° BSC	CR° or CP° BSC	DR° or DP° BSC
	N*	105	140	215	265
9	A	102	132	248	320
	B	80	118	230	312
	C	35	140	205	275
	D	64	155	234	304
	E	91	131	197	240
11, 13, and 15	A	113	156	182	292
	B	90	145	195	252
	C	53	156	220	255
	D	119	146	176	298
	E	51	141	184	242
	N*	80	142	196	293
17 and 19	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
	N*	80	142	196	293
21, 23, and 25	A	135	170	200	310
	B	49	169	200	244
	C	66	140	200	257
	D	62	145	180	280
	E	79	153	197	272
	N*	80	142	188	293

Blank for normal



RECEPTACLE (front face shown)



PLUG (front face shown)

Step 7. Select a PCB Contacts

	Designates
P1	PCB tail stickout .100" nominal +/-.030 inch
P2	PCB tail stickout .200" nominal
P25	PCB tail stickout .250" nominal

Amphenol Aerospace now offers DC to 40 GHz size 8 coaxial contacts for the D38999 housing and standard inserts. These contacts can be terminated to a multiple of cable types depending on the application. By using standard interfaces that are based on MIL-STD-348 and can be installed in any D38999 size 8 insert, Amphenol has transformed the circular connector industry. This technology will allow any application to continue to use the D38999 connector and be able to expand the use to include the microwave transmission lines within the multiport configuration without change to a custom connector.

The high frequencies are maintained by Amphenol's unique "Float Mount" technology designed into the contacts. This technology allows for consistent microwave performance while maintaining tight mechanical tolerances. This consistency provides superior electrical performance and, unlike other blindmate connectors, will maintain an accurate phase length when mated.

Specifications
Electrical (Mated pair-RG405 Semi-Rigid Cable

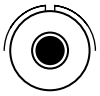
Impedance	50 W
Frequency Range	DC-40 GHz
VSWR	1.05+.01 (freq. GHz)
Insertion Loss	0.03 (freq. GHz)
Insulation Resistance (Min.)	10,000 MW
Contact Resistance (Max.)	
center conductor:	6.0 mW
outer conductor:	3.0 mW
outer to cable:	0.5 mW
DWV	1,000 VRMS
Corona Extinction Voltage	250 VRMS
RF High Potential Voltage	500 VRMS
RF Leakage	-(80-freq. GHz)

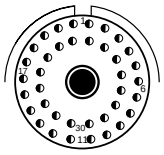
Materials and Finish

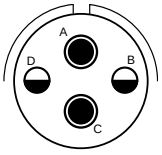
Body and Sleeve	Stainless steel per AMS-5640 Alloy UNS S30300 Type 1
Ferrule	Brass per ASTM B16, Alloy UNS C36000
Contact and Lock Ring	Beryllium Copper per ASTM B196 Alloy UNS C17300, Td04
Insulator	PTFE per ASTM D1710, Type 1, Grade 1, Class B
Spring	Stainless steel per ASTM A313, Type 631
Rear Body and Contacts	Gold per ASTM B488 Type II, Code C, Class 1.27 over Nickel per AMS-QQ-N-290 Class 1 (60m inches) over Copper per MIL_C-14550 (10m inches) Passivated per AMS-2700, Type 2

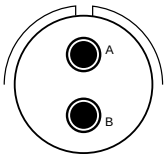
Environmental

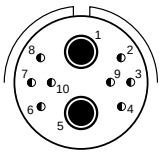
Temperature Range	-65°C to +125°C
Corrosion (Salt Spray)	MIL-STD-202, Method 101, Condition B
Vibration	MIL-STD-202, Method 204, Condition D, 20Gs
Shock	MIL-STD-202, Method 213, Condition 1, 100Gs
Thermal Shock	MIL-STD-202, Method 107, Condition B, -65°C to +125°C
Moisture Resistance	MIL-STD-202, Method 106, Less step 7B
Barometric Pressure (Altitude)	MIL-STD-202, Method 105, Condition C, 70,000 ft.



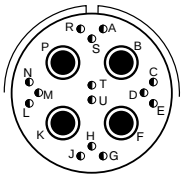


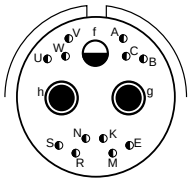


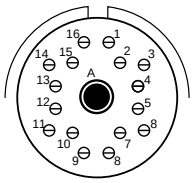


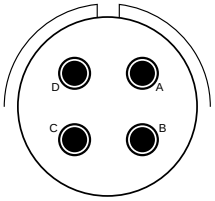


Insert Arrangement	9-5	11-1	17-2	17-22	17-52	17-60
Number of Contacts	1	1	38 1	2 2	2	8 2
Contact Size	8 Grounded	8	22D 8	12 8	8	22D 8

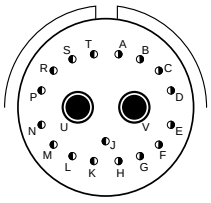


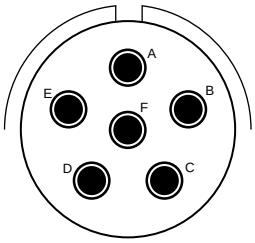


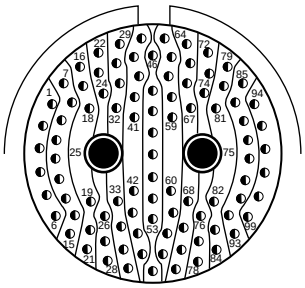


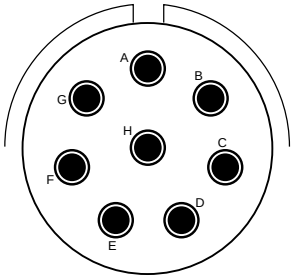


Insert Arrangement	19-18	19-31	19-AD	21-75
Number of Contacts	14 4	2 1 12	16 1	4
Contact Size	22D 8	8 12 12D	20 8	8

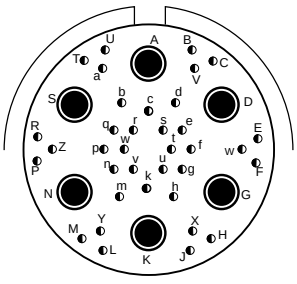


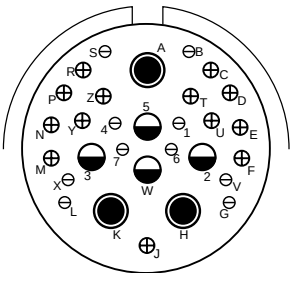


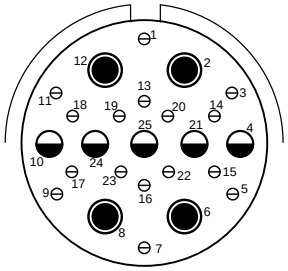


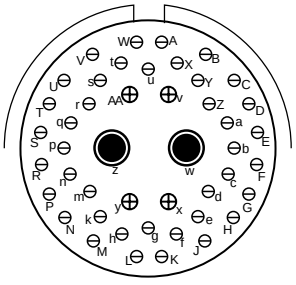


Insert Arrangement	21-79	23-6	25-7	25-8
Number of Contacts	17 2	6	97 2	8
Contact Size	22D 8	8	22D 8	8









Insert Arrangement	25-17	25-20	25-26	25-46
Number of Contacts	36 6	10 13 3 4	16 5 4	40 4 2
Contact Size	22D 8	20 16 8 12	20 12 8	20 16 8

CONTACT LEGEND 8 10 12 16 20 22D

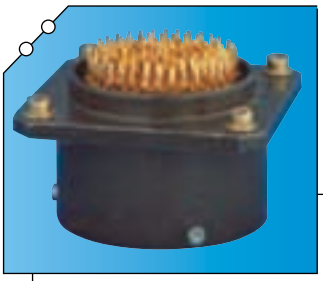
Amphenol manufactures a complete series of MIL-DTL-38999 Series I, II, and III Connectors with Press Fit compliant pin contacts for solderless mounting on printed circuit boards. Both pin and socket contacts are available in any MIL-DTL-38999 Series I, II or III insert pattern having contact size 16, 20 or 22D. Available in Mil-Spec and custom shell configurations.

See section “Series III TV”, “Series II JT”, and “Series I LJT” for MIL-DTL-38999 Circular Connectors’ inserts and shell styles.

Benefits include:

- High speed, low cost board assembly
- Elimination of soldering thermal stress
- No cold soldered joints
- No short circuits by soldered connections
- No cleaning of excess flux
- Optional contact for piercing conformal board coating is available

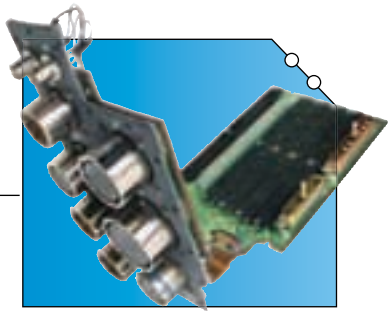
Press fit connectors accommodate boards with minimum 0.090 inch thickness and 0.040 +/– .003 plated through holes. The insertion force for mounting the connector on the board is 7 to 16 pounds per contact. Refer to L-40450-207 for installation instructions. Contact Amphenol Aerospace for ordering information.



Amphenol Press Fit Connectors for Solderless mounting on printed circuit boards.

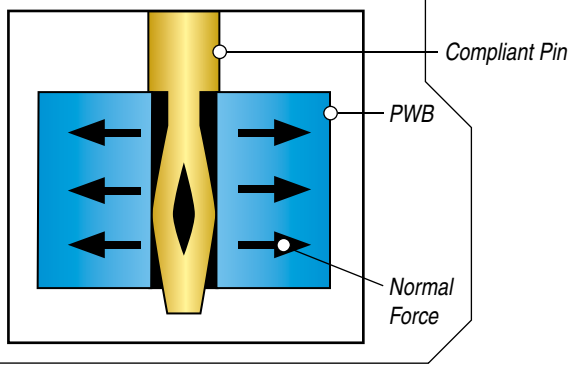
Press Fit

Press Fit Connectors on Printed Circuit Board



Amphenol Press Fit Contact Technology

- Beryllium copper tail, heat treated to spring hardness
- The compliant eye is a natural 2 beam spring
- The eye is oversized relative to the plated through hole and is compressed upon insertion
- After insertion the spring exerts a normal force on the hole creating an electrical path via a tight friction fit



Amphenol has developed cylindrical and rectangular connectors which protect sensitive components from Electrostatic Discharge (ESD) without diodes, varistors, gas tubes, or "experimental" semiconductive materials.

These connectors utilize the Faraday Cage principal to shunt electrostatic discharge events to the conductive enclosure on which the connector is mounted, thus never allowing the high voltage, high current discharge event to reside on any contacts.

The ESD protected connectors have the same physical envelope as their standard counterparts, and do not require special mounting or terminating techniques. All of the contacts remain fully functional, and electrical characteristics such as capacitance are not effected.

Product Features:

- Connector envelope identical to unprotected design for most applications
- Exceeds protection requirements of IEC 801-2 and MIL-STD-1686:
- Ensures that all components within a conductive enclosure will be subjected to a maximum of 10V during electrostatic discharges between –26 KV and +26 KV
- Voltage observed on contacts during ESD events – <10V (at 1 megohm)
- Current observed on contacts during ESD events – <100 milliamperes (at 2 ohms)
- Response time – instantaneous (voltage and current are maximum values)
- Maximum ESD voltage – tested to ±26KV
- No capacitive loading
- Eliminates the need for discrete components (such as diodes) and maximizes printed circuit board real estate for equipment housed in conductive enclosures which require ESD protection as free-standing units
- Operating voltage of connectors not effected for most designs
- Pulse life – infinite

What is Electrostatic Discharge (ESD)?

Electrostatic Discharge (ESD) is the rapid transfer of a static electric charge from one body to another. A static electric charge consists of either a surplus or depletion of electrons on a body, which gives that body a potential or voltage relative to ground (or another body). The discharge is extremely fast (less than 1 nanosecond risetime) and the current flow may exceed 100 amps!

Static electricity is normally the result of two materials transferring charges when rubbed or separated, such as shoes scuffing across a dry carpet, or sheets of untreated plastic being separated. This phenomena is commonly referred to as the triboelectric effect.

The voltage developed due to the ***triboelectric effect*** depends on the materials involved, the quantity and type of contact, and relative humidity. In a dry environment a person can accumulate a charge of up to 25 KV! In a moist environment a person's potential is reduced due to the effect of moisture on the insulating properties of materials.

For further information see:
Amphenol Product Data Sheet #171-1 Amphenol Electrostatis Discharge (ESD) Protected Connectors.
Amphenol Publication L-2075, "ESD Attenuation Test Procedure for Connectors with Faraday Cage Protective Structures"
* For further information on Amphenol LRM connectors with ESD protection consult Amphenol Aerospace, Sidney, NY.

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

ESD Testing on MIL-DTL-38999, Series III Filter Cylindrical Connector (Actual Photo)

What is a Faraday Cage?

A ***Faraday cage*** is a conductive enclosure. It may be solid in form such as a sheet–metal enclosure, or it may be full of apertures, such as a wire cloth box. When a charge is placed on a faraday cage the electrons which make up the charge, having like polarity, try to position themselves as far as possible from each other. This places the electrons on the outer surface of the enclosure, leaving the inner surface uncharged. The charge on the outer surface does not induce a charge on any neutral object inside of the faraday cage, and therefore does not try to transfer itself onto the internal object. Neutral objects (such as IC's) inside of a faraday cage are thereby protected from ESD activity external to the faraday cage.

The voltage and current observed on neutral objects within a faraday cage during ESD events are due to the secondary effects of ESD. These include Electromagnetic Interference (EMI), magnetic and electrical field coupling. The faraday cage of the Amphenol ESD Protected Connectors has been designed to minimize these effects.

The Amphenol® ESD Protected Connectors

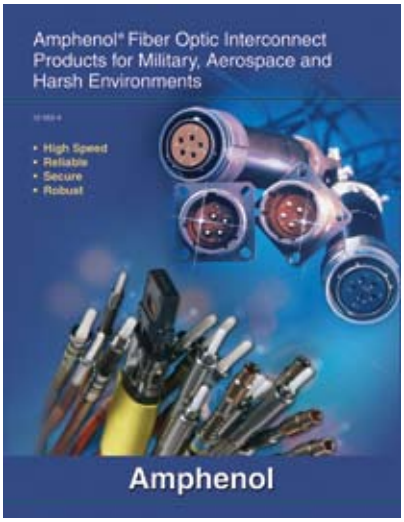
The Amphenol® ESD Protected Connectors have a faraday cage at the mating interface. The faraday cage has been specifically designed to intercept electrostatic discharges from the contacts in the unmated state, while maintaining each contact's isolation when the connector is mated. When the ESD Protected Connectors have been mounted to a conductive enclosure, a faraday cage is created which will protect components located within the enclosure from electrostatic discharges. This eliminates the need for discrete components such as diodes and gas discharge tubes, and saves printed circuit board real estate. Amphenol ESD Protected Connectors have also been applied to Line Replaceable Modules (LRM).*

Fiber Optics in MIL-DTL-38999 Series III Connectors

Amphenol Aerospace offers a wide range of fiber optic interconnect solutions for use in the harsh environments experienced in military and aerospace applications. Amphenol Aerospace has established the rugged and reliable MIL-DTL-38999 as a common connector shell platform that houses a wide variety of fiber optic termini including MIL-PRF-29504*, HD20, ARINC 801 and MT ferrules.

MIL-DTL-38999 Series III Tri-Start connectors are available in various insert arrangements, materials and finishes to meet any type of environmental requirement. Our MIL-PRF-29504 and HD20 termini can be combined with most of our copper contacts to create a large assortment of hybrid fiber/copper connector combinations.

Amphenol's newest offering of fiber optic products is the ARINC 801 series of connectors and termini. Adopted by the commercial air market, the ARINC 801 insert is incorporated into the D38999 Series III shell and is designed specifically for fiber optics.



Amphenol's Fiber Optic Termini Product Offering

MIL-PRF-29504 - Pin and socket termini that feature high precision, pre-radiused ceramic ferrules to help improve insertion loss performance and reduce polishing time. Products are available in both single mode and multi-mode versions. The socket has a plastic protective shroud over the ceramic alignment sleeve that incorporates a built-in anti-rotation feature.

HD20 termini - Pin and socket termini that have the same benefits of the MIL-PRF-29504 termini, but in a smaller, size 20 contact that allows for increased density in D38999 connector shells.

90° termini - Pin and socket 90° multi-mode termini in size 16 are available. Consult Amphenol Aerospace for availability of 90° size 20 termini.

ARINC 801 termini - Genderless fiber optic termini that use a precision 1.25 mm ceramic ferrule. Precision inserts with guide pins and keyed termini maximize multi-mode and single mode performance. ARINC 801 termini facilitate an angled polish which is advantageous for lower return loss.

MT ferrules - Industry-standard, very high density plastic ferrules available in either 12-fiber or 24-fiber versions, in multi-mode PC, single mode PC, and single mode APC configurations.

*MIL-PRF-29504 supersedes MIL-T-29504. (MIL-T-29504 is still available; consult Amphenol Aerospace for more information.)

Please visit www.amphenol-aerospace.com to access the Fiber Optic Interconnect's Catalog 12-352

Amphenol Aerospace

Amphenol's cable assembly expertise dates back to the first industry standard fiber optic connector, over 25 years ago. Our depth of understanding of connector and termini design, and the complete control of connector materials, make Amphenol Fiber Optic cable assemblies one of the best in the industry. Amphenol offers a comprehensive line of single mode and multi-mode cable assemblies in a variety of cable configurations. From simplex jumpers to multi-fiber custom assemblies, Amphenol can design and supply all of your cable needs.

D38999 Fiber Optic Connectors and Cables

High quality polishing processes have been developed to meet and exceed industry standard specifications for insertion loss, return loss and end-face geometry. All assemblies are designed to intermateability standards for optical and physical performance criteria.

Amphenol can assemble, polish and test many harsh environment and commercial grade connectors including:

- MIL-PRF-29504
- HD20
- MTC/MP0
- ARINC 801
- ST
- LC
- FC
- SC

ARINC 801 Connectors and Cables

Explosion Proof Amphe-EX™ Connectors and Cable

Connector and cable materials are extensively inspected prior to assembly. Every completed cable assembly receives 100% inspection for both insertion loss and visual defects. Interferometers are used for accurate end-face geometry testing.

You specify the optical and mechanical requirements of the cable assembly and Amphenol's fiber optic application's engineers will develop an "end-to-end" interconnect solution. Design creativity, experience and an understanding of harsh environments will ensure a functional and manufacturable design.

D38999 Fiber Optic Connectors with Strain Reliefs, Cables and Cable Clamps

Custom Hermetic Connectors

Amphenol glass sealed hermetic connectors are available in a wide variety of Mil-Spec and custom configurations.

Features and benefits:

- Leakage rate of 1x10-7 cc of He/sec or less
- Fused glass insert in steel shell

Options include:

- Special flanges
- PC board mounting stand-offs
- PC board mounting tails
- EMI filtering
- Through bulkhead configurations
- Crimp termination

Applications:

- Pressurized avionics boxes
- Environmental sealed boxes
- Moisture sealing for industrial equipment and missiles

(Contact your Amphenol representative for information regarding custom configurations)

Epoxy Sealed Connectors

Amphenol epoxy sealed connectors are a light weight alternative to glass sealed hermetic connectors for use in avionics and other weight-sensitive applications where a high level of sealing is required. Epoxy sealed connectors are an optimal solution when increasingly stringent water immersion requirements must be met in radio and vetronics applications.

- Same epoxy as used in EMI filter connectors
- Less than 1x10-4 cc of He/sec leak rate
- Maintained after temperature cycling, 5 cycles -55 to +125°C
- Custom designs available with lower leak rates upon request
- Available in standard and custom configurations including PC tail, solder cup, and crimp termination, board mounting stand-offs, and through bulkhead configurations.

(Contact your Amphenol representative for information regarding custom configurations)

Amphenol Aerospace

DURMALON™

Alternative to Cadmium

Cadmium has been applied to numerous components of land, sea and air weapon systems and NASA systems for many years, due to its desirable functional qualities. Cadmium provides sacrificial corrosion protection for steels and excellent lubricity for threaded applications. In addition, Cadmium is easily electroplated onto a number of different metallic substrates and various geometries including internal diameters, threads, and more complex components.

However, Cadmium is a toxic metal and a known carcinogen. In addition, Cadmium is plated from an aqueous bath containing cyanide salts. For these reasons many companies are seeking to reduce dependence on or eliminate Cadmium from use on new applications.

Recently, Defense Supply Center, Columbus (DSCC) added three Cadmium alternative finishes to MIL-DTL-38999, Rev L (and other connector specs):

- Nickel-PTFE (Polytetrafluoroethylene)
- Pure Dense Electro-Deposited Aluminum (Alumiplate)
- Zinc-Nickel

Amphenol's Durmalon

The Olive-Drab Cadmium plating (Class W) over aluminum shells has long been the preferred finish for Military and Aerospace applications. Class W meets 500 hours of Salt Spray, combined with 500 mating cycles and maintains less than a 2.5 millivolt drop shell-to-shell conductivity.

Of all platings tested Durmalon has been proven to meet this requirement and several newer requirements:

- Sulphur Dioxide (SO2) corrosion requirement of the JSF Program
- Potassium Formate- Deicer fluid testing performed by Boeing

RoHS

The European Union Directive 2002/95/EC- RoHS (Regulation of Hazardous Substances) has put a ban on both Cadmium and hexavalent Chromium, which is a top layer post treatment on the OD Cad plating. Durmalon is RoHS compliant.

Applications

A number of Amphenol customers are currently using Durmalon. Lockheed Martin has tested and approved it for use on the F-35 Joint Strike Fighter program.

They are currently evaluating Amphenol's Durmalon plated 38999 connectors in 2000 hour salt spray testing and 500 hour SO2 testing.

Testing

Amphenol Aerospace has performed extensive testing on 14 alternative platings with the most consistent performer being the Durmalon.

The most recent testing is documented in Amphenol Test Report ER-8799. Please contact Amphenol Principal Engineer Eric Shepler at eshepler@amphenol-aao.com for more information or test data on Durmalon.

Requirements	Cadmium	Durmalon™	Zinc Nickel	Alumiplate℠	Zinc Cobalt	Stainless Steel	Electroless Nickel
Coupling Torque Post 500 hr salt	■	■		■	NA	■	NA
Shell-to-Shell Conductivity <1 millivolts							■
<2.5 millivolts	■	■	■	■			
<10 millivolts	■	■	■	■	■	■	
Cycles of Durability 500 mates	■	■	■	■		■	■
Salt Spray 48 hours	■	■	■	■	■	■	■
Dynamic-500 hours	■	■		■		■	
1000 hours		■*					
Temperature Rating 175° C	■	■	■	■	■	■	
200° C		■	■	■		■	
>200° C		■				■	
Non-Reflective	■	■	■	■	■		
RoHs Compliant		■				■	
Non-Magnetic	■	■	■	■	■	■	■
Available on Composite	■	■	■	■	■		■
Contains CrVI	■		■	■	■		■
Sulfur Dioxide Resistance F35-336 hours	■	■*					
Aviform De-Icing Fluid		■				■	

** Durmalon XP*

Notice: Specifications are subject to change without notice.