

8D Series - MIL-DTL-38999 Series III



8D Series - Presentation

38999 Series III: 8D Series

Since the early 80's, Souriau is a major supplier of 38999 Series III, the screw-coupled version of MIL-C-38999. Present on the main international programs, Souriau has developed a range of products that meet the performance required in extreme environments:

- Civil and military aeronautics
- Ground military
- Industrial
- Marine and offshore

This evolution of MIL-C-38999 allows:

- A high contact density up to 128 contacts #22D
- A quick screw coupling with self locking mechanism
- High resistance to harsh environments (vibration, 200°C)

Always at the cutting edge of innovation, Souriau's teams have continuously improved this range of connectors:

- Composite version in the 90's (Its choice is recommended wherever weight is critical)
 - Titanium version for weight saving and very high and mechanical resistance
 - Today Souriau remains innovative with cadmium free and RoHS solutions.
- In 2009 Souriau was the first to be QPL qualified for Zinc Nickel plating.

This product family is in accordance with MIL-DTL-38999 Series III, EN 3645, CECC (standard for bronze shell), ... and also meets many customers' standards (Rolls Royce, ABS, BACC, ...)

8D Series - MIL-DTL-38999 Series III



Description

- High contact density
- Screw coupling
- Contact protection: 100% Scoop proof
- Shell size from 9 to 25
- Accessories available (protective caps, backshells, etc...)
- RFI - EMI shielding and shell to shell continuity
- Hermetic
- Protected by cadmium, nickel, green zinc cobalt or black zinc nickel plating

Applications

- Civil and Military Aerospace
- Marine and Offshore Equipment
- Defense and Ground Military
- Industrial

Standards

- MIL-DTL-38999 Series III
- EN3645
- BACC63CT/CU; BACC63DB/DC

Technical features

Mechanical

- **Shell:**
Aluminum, composite, stainless steel, bronze
- **Shells plating:**
 - . Aluminum shell:
 - Cadmium olive drab (W)
 - Nickel (F)
 - Black zinc nickel (Z)
 - Green zinc cobalt (ZO)
 - . Composite shell:
 - Cadmium olive drab (J)
 - Nickel (M)
 - Without plating (X)

- . Stainless steel shell:
 - Passivated (K)
 - Nickel (S)
 - . Titanium shell:
 - Without plating (T)
 - Nickel (TF)
 - . Bronze shell:
 - Without plating
 - **Insulator:** Thermoplastic
 - **Grommet and interfacial seal:** Silicone elastomer
 - **Contacts:** Copper alloy
 - **Contacts plating:** Gold over nickel plated
 - **Endurance:**
 - . 500 mating/unmating operations whatever the material used
 - . 1500 mating/unmating operations with composite connectors + specifics contacts
 - **Shock:**
300g, 3 ms according EN 2591-D2 method A
 - **Vibration:**
 - . Sinus:
 - . 10 à 2000 Hz, 3x12 hrs (60g, 140 - 2000 Hz) with T° cycling
 - . Random:
 - . 50 to 2000 Hz, 2x8 Hrs (1g2/ Hz, 100 - 2000Hz) at T° max.
 - . 25 to 2000 Hz, 2x8 Hrs (5g2/ Hz, 100 - 300Hz) at ambient T°
- Test with accessories in acc with EN2591-D3

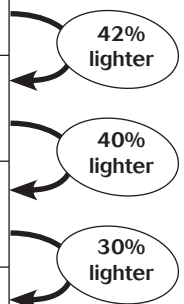
• Contact retention:

Contacts size	22	20	16	12	8	4
Min force in N	44	67	111	111	111	200

Weight comparison

Example for a plug shell size 15

Materials	Weight
Stainless steel	58.80 g
Titanium	33.90 g
Aluminum	20.35 g
Composite	14.30 g



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Electrical

• Test voltage rating (Vrms)

Service	sea level	at 21000 m
M	1 300	800
N	1 000	600
I	1 800	1 000
II	2 300	1 000

• Contact resistance

Contacts size	22	20	16	12	8	4
Resistance mΩ	14.6	7.3	3.8	3.5	3	2

• Insulation resistance:

≥ 5 000 MΩ (under 500 Vdc)

• Contact rating:

Contacts size	22	20	16	12	8	4
Rating (A)	5	7.5	13	23	45	80

• Shell continuity

- . Aluminum shell:
 - Cadmium olive drab (W): 2.5 Ωh
 - Nickel (F): 1 Ωh
 - Black zinc nickel (Z): 2.5 Ωh
 - Green zinc cobalt (ZC): 2.5 Ωh
- . Composite shell:
 - Cadmium olive drab (W): 3 Ωh
 - Nickel (M): 3 Ωh
- . Stainless steel shell:
 - Passivated (K): 10 Ωh
 - Nickel (S): 1 Ωh
- . Titanium shell:
 - Without plating (TT): 10 Ωh
 - Nickel (TF): 1 Ωh
- . Bronze shell:
 - Without plating: 5 Ωh

• Shielding:

- . Aluminum shell:
 - F: 65 db at 10 GHz
 - F: 85 db at 1 GHz
 - W: 50 db at 10 GHz
 - Z & ZC: Consult us
- . Composite shell:
 - J: 90 db at 10 GHz
 - M: 85 db at 1 GHz
- . Stainless steel shell:
 - K: 45 db at 10 GHz
 - S: 65 db at 10 GHz
- . Titanium shell:
 - TT: 45 db at 10 GHz
 - TF: 65 db at 10 GHz
- . Bronze shell:
 - 85 db at 10 GHz

Climatics

• Temperature range:

- . Aluminum shell:
 - W: -65°C +175°C
 - F: -65°C +200°C
 - Z: -65°C +200°C
 - ZC: -65°C +200°C
- . Composite shell:
 - J: -65°C +175°C
 - M: -65°C +200°C
 - Without plating (X): -65°C +175°C
- . Stainless steel shell:
 - K: -65°C +200°C
 - S: -65°C +200°C
- . Titanium shell:
 - TT: -65°C +200°C
 - TF: -65°C +200°C
- . Bronze shell:
 - Without plating: -65°C +175°C

• Sealing:

Mated connectors meet altitude immersion requirements of MIL-DTL-38999.

• Salt spray:

- . Aluminum shell:
 - W: 500 Hrs
 - F: 48 Hrs
 - Z: 500 Hrs
 - ZC: 500 Hrs
- . Composite shell:
 - J: 2000 Hrs
 - M: 2000 Hrs
 - Without plating (X): 2000 Hrs
- . Stainless steel shell:
 - K: 500 Hrs
 - S: 48 Hrs
- . Titanium shell:
 - TT: 500 Hrs
 - TF: 48 Hrs
- . Bronze shell:
 - Without plating: 500 Hrs

Resistance to fluids

• According to MIL-DTL-38999 standard

- . Gasoline: JP5 (OTAN F44)
- . Mineral hydrolic fluid: MIL-H-5606 (OTAN H515)
- . Synthetic hydraulic fluid: Skydrol 500 B4

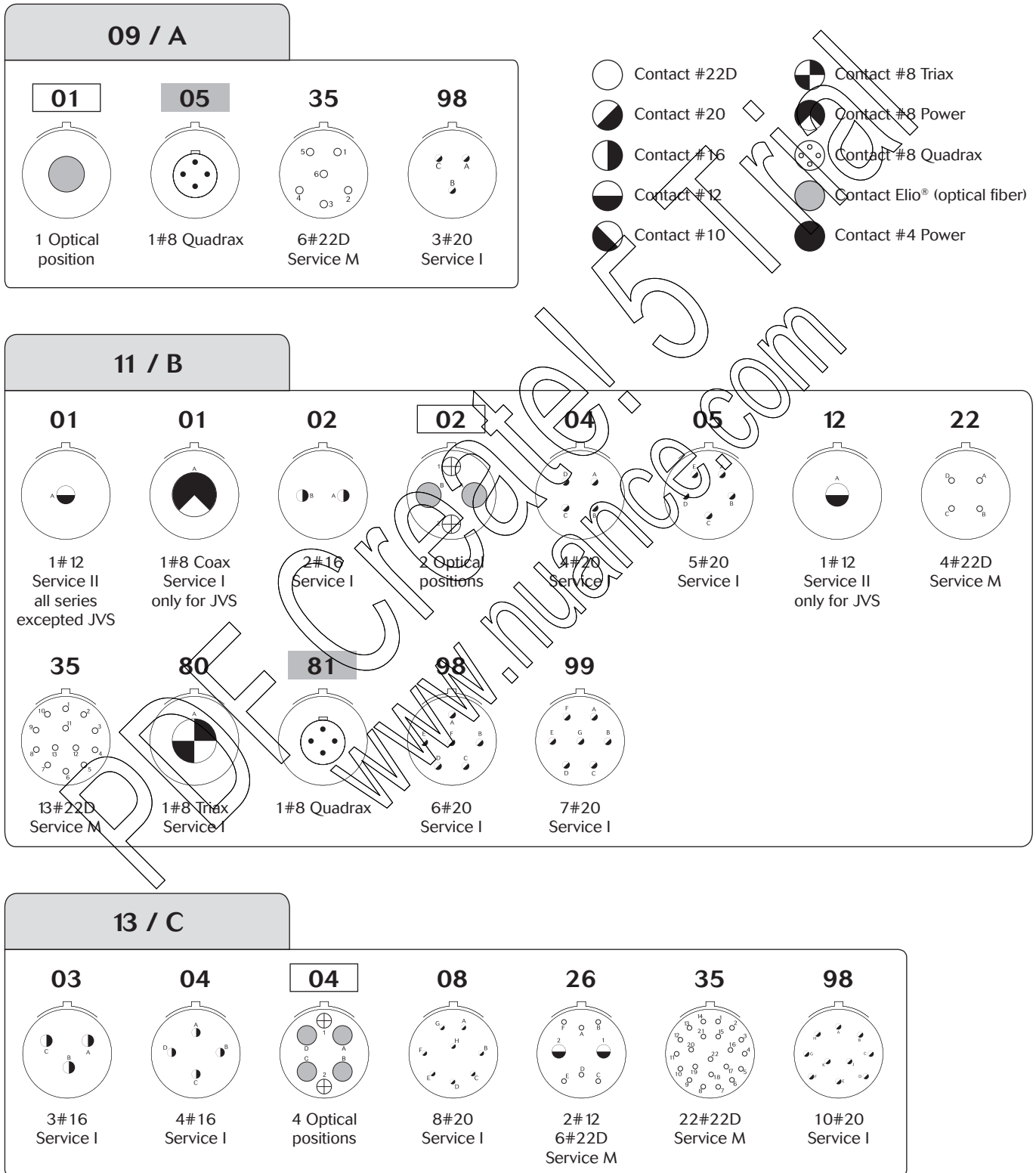
• LD4 (SAE AS 1241)

- . Mineral lubricating: MIL-L-7870A (OTAN 0142)
- . Synthetic lubricating: MIL-L-23699 (OTAN 0156), MIL-L-7808
- . Cleaning fluid: MIL-DTL-25769 diluted
- . De-icing fluid: MIL-A-8243
- . Extinguishing fluid: Chlorobrométhane
- . Cooling fluid: Coolanol

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Contact layouts



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Contact layouts

15 / D							
05 5#16 Service II	15 1#16 14#20 Service I	18 18#20 Service I	19 19#20 Service I	35 37#22D Service M	97 4#16 8#20 Service I		
17 / E							
02 38#22D 1#8 Triax Service M	06 6#12 Service I	08 8#16 Service II	20 4#12 16#22D Service M	22 2#12 2#8 Triax Service M	26 26#20 Service I	35 55#22D Service M	75 2#8 Triax Service M
80 2#12 2#8 Quadrax	81 38#22D 1#8 Quadrax	82 2#8 Quadrax	99 2#16 21#20 Service I				
19 / F							
08 8 Optical positions	11 11#16 Service II	18 14#22D 4#8 Triax Service M	28 26#20 2#16 Service I	32 32#20 Service I	35 66#22D Service M	53* 53#22D	84 14#22D 4#8 Quadrax

Elio fiber optic
 Ethernet Quadrax
 * Pending layout

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Contact layouts

21 / G

<p>11</p> <p>11#12 Service I</p>	<p>16</p> <p>16#16 Service II</p>	<p>20*</p> <p>18#20 2#8 Quadrax</p>	<p>35</p> <p>79#22D Service M</p>	<p>39</p> <p>2#16 37#20 Service I</p>	<p>41</p> <p>41#20 Service I</p>	<p>42</p> <p>2#4 Power Service I</p>	<p>48</p> <p>4#8 Power Service I</p>
<p>59</p> <p>55#22D 4#12 Service M</p>	<p>72</p> <p>2#4 Power 6#16 Service I</p>	<p>75</p> <p>4#8 Triax Service M</p>	<p>77</p> <p>17#22D 2#8 Coax Service M</p>	<p>78</p> <p>17#22D 2#8 Quadrax</p>	<p>84</p> <p>4#8 Quadrax</p>		

23 / H

<p>21</p> <p>21#16 Service II</p>	<p>32</p> <p>32#20 Service I</p>	<p>35</p> <p>100#22D Service M</p>	<p>53</p> <p>53#20 Service I</p>	<p>54</p> <p>4#12, 9#16 40#22D Service M</p>	<p>55</p> <p>55#20 Service I</p>
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Ethernet Quadrax * Pending layout

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Contact layouts

25 / J							
<p>04</p> <p>8#16 48#20 Service I</p>	<p>07</p> <p>2#8 Triax 97#22D Service M</p>	<p>08</p> <p>8#8 Triax Service M</p>	<p>11</p> <p>2#20 9#10 Service N</p>	<p>17</p> <p>36#22D 6#8 Triax</p>	<p>19</p> <p>19#12 Service I</p>	<p>20*</p> <p>10#20, 13#16 4#12 Coax 3#8 Triax Service N</p>	<p>24</p> <p>12#16 12#12 Service II</p>
<p>24</p> <p>24 Optical positions</p>	<p>29</p> <p>29#16 Service I</p>	<p>35</p> <p>128#22D Service M</p>	<p>37</p> <p>37#16 Service I</p>	<p>41</p> <p>22#22D, 3#20 11#16, 2#12 3#8 Triax Service M</p>	<p>43</p> <p>23#20 20#16 Service I</p>	<p>44</p> <p>4#4 Power 4#16 Service I</p>	<p>46</p> <p>40#20, 4#16 2#8 Coax Service I</p>
<p>61</p> <p>61#20 Service I</p>	<p>80</p> <p>10#20 13#16 4#12 Coax 3#8 Quadrax</p>	<p>81</p> <p>22#22D 3#20, 11#16 2#12 3#8 Quadrax</p>	<p>82</p> <p>97#22D 2#8 Quadrax</p>	<p>86</p> <p>40#20 4#16 2#8 Quadrax</p>	<p>87</p> <p>36#22D 6#8 Quadrax</p>	<p>88</p> <p>8#8 Quadrax</p>	<p>90</p> <p>40#20, 4#16 2#8 Twinax Service I</p>

Elio fiber optic
 Ethernet Quadrax
 * For classes F, W, K, S only

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Contact layouts

Shell size	Layout	MIL-DTL-38999 (QPL) Aluminum, Stainless steel & Composite	8D Titanium	JVS (CECC) Bronze connectors	Hermetics	EN3645	BACC63 CT/CU DB/DC	Number of contacts	#22D	#20	#16	#12	#10	#8	#4 Power	Optical posi- tions
09 / A	09-01							1								1
	09-05 (1)	Consult us	Consult us	Consult us				1						1 Qdx		
	09-35							6	6							
	09-98							3		3						
11 / B	11-01							1								
	11-01							1						1 Coax		
	11-02							2			2					
	11-02							2								2
	11-04							4		4						
	11-05							5		5						
	11-12							1				1				
	11-22							4	4							
	11-35							13	13							
	11-80							1						1 Triax		
	11-81							1						1 Qdx		
11-98							6		6							
11-99							7		7							
13 / C	13-03							3								
	13-04							4			4					
	13-04							4								4
	13-08							8		8						
	13-26							8	6			2				
	13-35							22	22							
13-98							10		10							
15 / D	15-05							5			5					
	15-15							15		14	1					
	15-18							18		18						
	15-19							19		19						
	15-35							37	37							
	15-97							12		8	4					
17 / E	17-02							39	38					1 Triax		
	17-06							6		6						
	17-08							8			8					
	17-20							20	16			4				
	17-22							4				2		2 Triax		
	17-26							26		26						
	17-35							55	55							
	17-75							2						2 Triax		
	17-80							4				2		2 Qdx		
	17-81							39	38					1 Qdx		
	17-82							2						2 Qdx		
17-99							23		21	2						
19 / F	19-08							8								8
	19-11							11			11					
	19-18							18	14					4 Triax		
	19-28							28		26	2					
	19-32							32		32						
	19-35							66	66							
	19-53							53	53							
19-84							18	14					4 Qdx			

Souriau's layout
 Souriau's layout & Layout according to corresponding norm

(1) Grounded insert only

#8 Pow: Power; Qdx: Quadrax; Twx: Twinax

8D Series - MIL-DTL-38999 Series III



Contact layouts

Shell size	Layout	MIL-DTL-38999 (QPL) Aluminum, Stainless steel & Composite	8D Titanium	JVS (CECC) Bronze connectors	Hermetics	EN3645	BACC63 CT/CU DB/DC	Number of contacts	#22D	#20	#16	#12	#10	#8	#4 Power	Optical posi- tions	
21 / G	21-11							11				11					
	21-16							16			16						
	21-20							20			18				2 Qdx		
	21-35							79	79								
	21-39							39			39	2					
	21-41							41			41						
	21-42							2							2		
	21-48							4							4 Pow		
	21-59							59	55				4				
	21-72							8								2	
	21-75							4							4 Triax		
	21-77							19	17						2 Coax		
	21-78							19	17						2 Qdx		
	21-84							4							4 Qdx		
23 / H	23-21							21			21						
	23-32							32			32						
	23-35							100	100								
	23-53							53		53							
	23-54							53	40		9	4					
	23-55							55		55							
25 / J	25-04							66			48	8					
	25-07							99	97						2 Triax		
	25-08			(2)				8							8 Triax		
	25-11							1		2			9				
	25-17							42	36						6 Triax		
	25-19							19				19					
	25-20	(3)		(4)		(5)	(6)	30		10	13	4			3 Triax		
	25-24							24			12	12					
	25-24							24									24
	25-29							29			29						
	25-35							128	128								
	25-37							37				37					
	25-41							41	22	3	11	2			3 Triax		
	25-43							43			23	20					
	25-44							8			4					4	
	25-46							46		40	4				2 Coax		
	25-61							61		61							
	25-80							30		10	13	4			3 Qdx		
	25-81							41	22	3	11	2			3 Qdx		
	25-82							99	97							2 Qdx	
25-86							46		40	4				2 Qdx			
25-87							42	36						6 Qdx			
25-88							8							8 Qdx			
25-90							46		40	4				2 Twx			

- Souriau's layout
- Souriau's layout & Layout according to corresponding norm
- (2) For CECC, layout 25-08 only delivered without contact
- (3) For Aluminum & Stainless steel only
- (4) For classes F, W, S, K only
- (5) For classes F, W, K only
- (6) Qualified BACC63DB/DC only
- #8 Pow: Power; Qdx: Quadrax; Twx: Twinax



Aluminum Series

MIL-DTL-38999 Series III

8D - D38999 Aluminum Series



Connector part numbers

Basic Series	8D	0	-	11	W	35	P	N	-	-	L
Shell style:											
0:	Square flange receptacle										
1:	In line receptacle										
7:	Jam nut receptacle										
5:	Plug with RFI shielding										
<i>Also available:</i>											
.	Square flange receptacle with clinch nuts (see page 81)										
.	Jam nut receptacle with double flange (see page 85)										
Type:											
None:	Connectors with standard crimp contacts.										
L:	Receptacle with long PC tail (male and female size #22D, #20).										
C:	Receptacle with short PC tail (male and female #22D, #20, #16).										
S:	Receptacle with specific PC tail (male and female #22D)										
W:	Receptacle with male contacts #22D for wire wrap (3 wraps)										
T:	Receptacle with male contacts #20 for wire wrap (2 wraps)										
P:	Receptacle with solder cup - only available for Reinforced sealing Series (see page 75) - male and female size #22D; male #16 & #12; female #16 & #12 and male female #20 please consult us										
Shell size:	09, 11, 13, 15, 17, 19, 21, 23, 25										
Plating:											
W:	Olive drab cadmium										
F:	Nickel										
ZC:	Green zinc cobalt										
Z:	Black zinc nickel										
Contact layout:	See pages 11 to 14										
Contact type:											
P:	Pin										
A:	Connector supplied less pin contact or with specific contacts (connector marking: A + orientation)										
S:	Socket										
B:	Connector supplied less socket contact or with specific contacts (connector marking: B + orientation)										
Orientation:	N, A, B, C, D, E (see page 65)										
Specification:											
046:	Tinned straight PC tail										
251:	Connector provided with power contacts (layouts with contact #8)										
022:	Fuel tank										
Special custom:											
None:	Standard plastic cap										
M:	Antistatic plastic cap										
L:	For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation										

8D - D38999 Aluminum Series



MIL-DTL-38999 part numbers*

Basic Series	D38999	20	W	B	35	P	N	L
Shell style:								
20: Square flange receptacle								
24: Jam nut receptacle								
26: Plug with RFI shielding.								
Plating:								
W: Olive drab cadmium								
F: Nickel								
Shell size: A, B, C, D, E, F, G, H, J								
Contact layout: See page 15 for layout according to MIL-DTL-38999								
Contact type:								
P: Pin								
A: Connector supplied less pin contact or with specific contacts (connector marking: A + orientation)								
S: Socket								
B: Connector supplied less socket contact or with specific contacts (connector marking: B + orientation)								
Orientation: N, A, B, C, D, E (see page 65)								
L: For P or S contact type only, connector delivered without contacts, connector marking P or S (without L)								

* Note: To place an order of MIL connectors delivered without MIL removable crimp contacts and keep P or S plus orientation marking, it must be specify clearly on the order (by adding a suffix L at the end of the P/N or specified in comment).

EN3645 part numbers

Basic Series	EN3645	W	6	G	N	35	B	N
Plating:								
W: Olive drab cadmium								
F: Nickel								
Shell style:								
0: Square flange receptacle								
6: Plug								
7: Jam nut receptacle								
Shell size:								
09=A, 11=B, 13=C, 15=D, 17=E, 19=F, 21=G, 23=H, 25=J								
Grounding:								
N: Standard insert not grounded								
Contact layout:								
See page 15 for layout according to EN3645								
Contact type:								
A: Connector supplied less pin contact								
B: Connector supplied less socket contact								
F: Socket								
M: Pin								
Orientation:								
N, A, B, C, D, E (see page 65)								

8D - D38999 Aluminum Series



Dimensions

Receptacle type 0

Shell size	A Max	B Max	C Max	D Thread	$E_{\pm 0.3}$	F	G	$H_{\pm 0.2}$	$J_{\pm 0.2}$
09 (A)	20.9	10.72	2.5	M12 x 1-6g	28.8	18.26	15.09	3.25	5.49
11 (B)				M15 x 1-6g	26.2	20.62	18.26		4.93
13 (C)				M18 x 1-6g	28.6	23.01	20.62		4.4
15 (D)				M22 x 1-6g	31	24.61	23.01		4.93
17 (E)				M25 x 1-6g	33.3	26.97	24.61		4.93
19 (F)				M28 x 1-6g	36.5	29.36	26.97		4.93
21 (G)	20.1	11.54	3.2	M31 x 1-6g	39.7	31.75	29.36	3.91	6.15
23 (H)				M34 x 1-6g	42.9	34.93	31.75		
25 (J)				M37 x 1-6g	46	38.1	34.93		

Receptacle type 7

Shell size	$A_{\pm 0.15}$	B Max	C Max	D Max	E Max	$F_{\pm 0.4}$	G Thread
09 (A)	16.53	9.9	3.2	30.5	23	27	M12 x 1-6g
11 (B)	19.07			35.2	26	31.8	M15 x 1-6g
13 (C)	23.82			38.4	31	34.9	M18 x 1-6g
15 (D)	26.97			41.6	34	38.1	M22 x 1-6g
17 (E)	30.15			44.8	37	41.3	M25 x 1-6g
19 (F)	33.32			49.5	41	46	M28 x 1-6g
21 (G)	36.50			52.7	46	49.2	M31 x 1-6g
23 (H)	39.67			55.9	47	52.4	M34 x 1-6g
25 (J)	42.85			59	52	55.6	M37 x 1-6g

Recommended coupling torque on panel for jam nut receptacle (type 7)

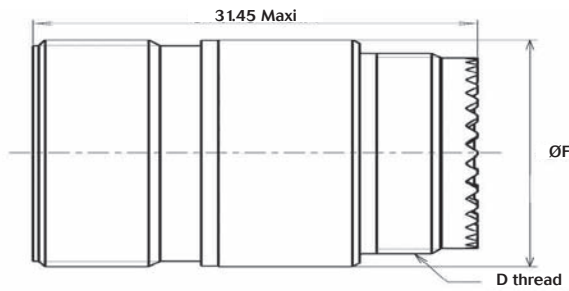
Shell	09 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
Coupling torque (± 0.5 N.m)	4	5	7	8	9	10	12	13	14

Note: All dimensions are in millimeters (mm)

8D - D38999 Aluminum Series

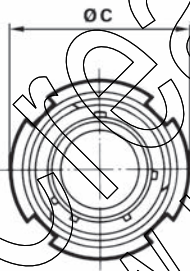
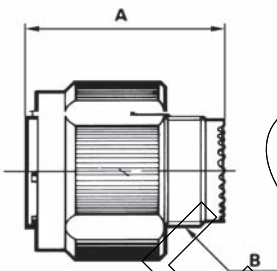


In line receptacle type 1



Shell size	D thread	Ø F
09 (A)	M12 x 1-6g	15.90
11 (B)	M15 x 1-6g	19.05
13 (C)	M18 x 1-6g	22.25
15 (D)	M22 x 1-6g	25.40
17 (E)	M25 x 1-6g	30.15
19 (F)	M28 x 1-6g	31.75
21 (G)	M31 x 1-6g	34.75
23 (H)	M34 x 1-6g	37.10
25 (J)	M37 x 1-6g	41.30

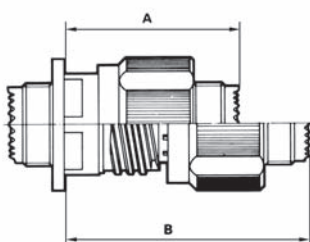
Plug type 5



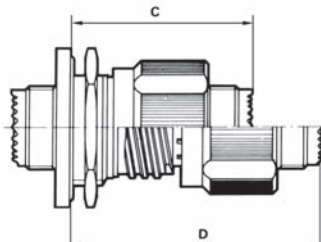
Shell size	A Max.	B thread	C Max.
09 (A)	31.00	M12 x 1-6g	21.80
11 (B)	31.00	M15 x 1-6g	25.00
13 (C)	31.00	M18 x 1-6g	29.40
15 (D)	31.00	M22 x 1-6g	32.50
17 (E)	31.00	M25 x 1-6g	35.70
19 (F)	31.00	M28 x 1-6g	38.50
21 (G)	31.00	M31 x 1-6g	41.70
23 (H)	31.00	M34 x 1-6g	44.90
25 (J)	31.00	M37 x 1-6g	48.00

Mated connectors dimensions

Type 0 with plug



Type 7 with plug



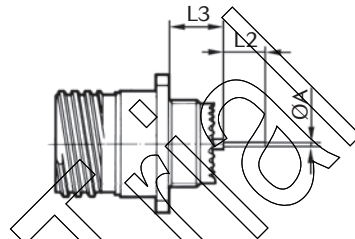
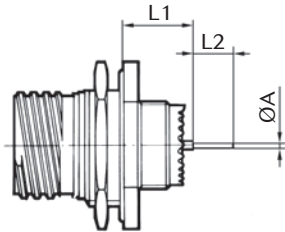
Shell size	A Max.	B Max.	C Max.	D Max.
09 (A)	37.00	52.30	38.30	53.60
11 (B)	37.00	52.30	38.30	53.60
13 (C)	37.00	52.30	38.50	53.80
15 (D)	37.00	52.30	38.50	53.80
17 (E)	37.00	52.30	38.50	53.80
19 (F)	37.00	52.30	38.50	53.80
21 (G)	36.00	51.30	38.50	53.80
23 (H)	36.00	51.30	38.50	53.80
25 (J)	36.00	51.30	38.50	53.80

Note: All dimensions are in millimeters (mm)

8D - D38999 Aluminum Series



Receptacle with straight PC tail contacts



		Shell size			09 (A)	11 (B)	13 (C)	15 (C)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
		Contact size	Contact type	PC tail type									
A		#22D	M & F	L & C					0.70				
		#22D	M & F	S					0.50				
		#20	M & F	C					0.70				
		#16	M & F	C					1.15				
L1	Min	#22D	M	L & C	10.52					10.34			
	Max	#22D	M	L & C	11.46					11.28			
	Min	#22D	F	L & C	10.19					10.01			
	Max	#22D	F	L & C	11.46					11.28			
	Min	#22D	M	S	10.19					10.01			
	Max	#22D	M	S	11.46					11.28			
	Min	#22D	F	S	10.69					10.51			
	Max	#22D	F	S	11.63					11.45			
	Min	#20	M	C	10.36					10.18			
	Max	#20	M	C	11.63					11.45			
	Min	#20	F	C	10.69					10.51			
	Max	#20	F	C	11.63					11.45			
	Min	#16	M	C	10.69					10.51			
	Max	#16	M	C	11.63					11.45			
	Min	#16	F	C	10.69					10.51			
	Max	#16	F	C	11.63					11.45			
L2		#22D	M & F	L					8.50				
		#22D	M & F	C					4.00				
		#22D	M & F	S					5.10				
		#20	M & F	C					5.10				
		#16	M & F	C					5.10				
L3	Min	#22D	M	L & C			9.48					9.59	
	Max	#22D	M	L & C			10.58					10.69	
	Min	#22D	F	L & C			9.15					9.26	
	Max	#22D	F	L & C			10.58					10.69	
	Min	#22D	M	S			9.65					9.76	
	Max	#22D	M	S			10.75					10.86	
	Min	#22D	F	S			9.15					9.26	
	Max	#22D	F	S			10.75					10.86	
	Min	#20	M	C			9.65					9.76	
	Max	#20	M	C			10.75					10.86	
	Min	#20	F	C			9.65					9.76	
	Max	#20	F	C			10.75					10.86	
	Min	#16	M	C			9.65					9.76	
	Max	#16	M	C			10.75					10.86	
	Min	#16	F	C			9.65					9.76	
	Max	#16	F	C			10.75					10.86	

M: Male contact

F: Female contact

L: Long PC tail

C: Short PC tail

S: Specific PC tail

Dimensions in millimeters

8D - D38999 Aluminum Series



Souriau backshells part numbers

Basic Series									8D	102	B	02
Shell style:												
09	11	13	15	17	19	21	23	25				
101	102	103	104	105	106	107	108	109				
Plating:												
B: Olive drab cadmium												
F: Nickel												
Backshell type:												
01: Back nut (please consult us)												
02: Straight cable clamp												
03: 90° cable clamp												
13: Backshell for heat shrink boots												

Cross reference table

Backshell type	AS85049 Standard	Souriau Part Numbers
Back nut	M85049/14-**-x	8D101x01
Straight cable clamp	M85049/38-**-x	8D101x02
90° cable clamp	M85049/39-**-x	8D101x03
Backshell for heat shrink boots	M85049/69-**-x	8D101x13
Backshell for screen termination and cable clamp	M85049/19-**-x	N/A

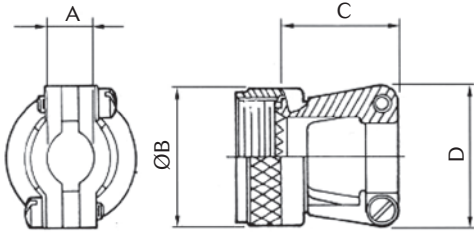
x: Plating **: Shell size: see pages 11 to 14

8D - D38999 Aluminum Series

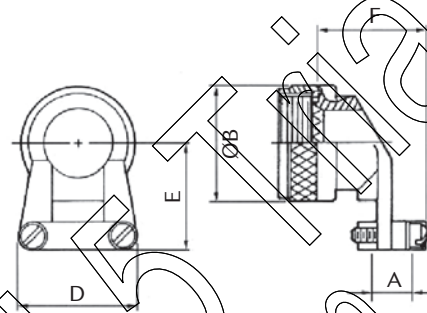


Backshells - Cable clamp

Straight cable clamp (Type 38)



90° cable clamp (Type 39)



Shell size	A		ØB Max	C Max	D Max	E	F
	Min	Max					
09	2.50	5.90	21.80	23.10	21.60	25.40	25.70
11	3.90	5.90	25.00	23.10	22.90	27.90	25.70
13	4.80	8.30	29.40	25.70	27.90	27.90	30.70
15	6.60	11.60	32.50	26.90	29.20	31.80	32.00
17	7.20	15.60	35.70	29.50	33.00	33.00	35.80
19	8.30	16.10	38.50	35.80	38.10	34.30	38.40
21	8.70	17.70	41.70	38.40	40.60	40.60	42.20
23	9.70	20.90	44.90	42.20	43.20	44.50	44.70
25	10.60	21.70	48.00	44.70	45.70	47.00	48.50

Basic Series

M85049

38

-

11

W

Backshell type:

- 38: Straight cable clamp
- 39: 90° cable clamp

Nut type:

- : Without self-locking
- S: With self-locking

Shell size:

09, 11, 13, 15, 17, 19, 21, 23, 25

Plating:

Type 38 & 39:

- A: Black anodized (500 hours salt spray)
- W: Olive drab cadmium over nickel (500 hours salt spray)

Type 38S & 39S:

- W: Olive drab cadmium over nickel (500 hours salt spray)
- N: Nickel (48 hours salt spray)

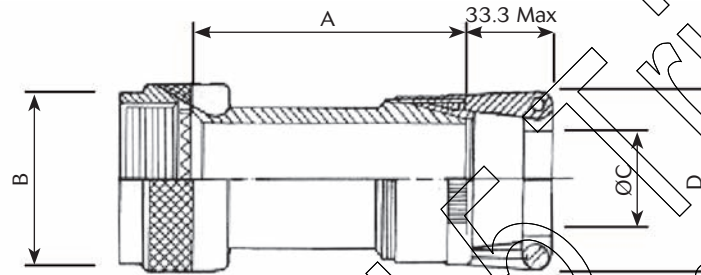
Note: All dimensions are in millimeters (mm)

8D - D38999 Aluminum Series



Backshell for screen termination and cable clamp

Backshell for screen termination and cable clamp (Type 19)



Shell size	A Max	B Max	Clamp indicator base on shell size
09	38.10	19.10	01 - 02
11		21.60	01 - 02 - 03
13		25.40	02 - 03 - 04
15		27.90	02 - 03 - 04 - 05
17		31.80	02 - 03 - 04 - 05 - 06
19		35.60	03 - 04 - 05 - 06 - 07
21		38.10	03 - 04 - 05 - 06 - 07 - 08
23		41.90	03 - 04 - 05 - 06 - 07 - 08
25		44.50	04 - 05 - 06 - 07 - 08 - 10

Clamp size indicator	C		D
	Min	Max	
01	1.60	3.20	20.30
02	3.20	6.35	25.40
03	6.35	9.50	27.90
04	7.90	12.70	30.50
05	11.10	15.90	31.80
06	14.30	19.00	35.60
07	17.45	22.20	38.10
08	20.60	24.40	41.90
09	23.80	28.60	44.50
10	27.00	31.75	48.30

Basic Series M85049 19 11 W 03

Shell style:
19: Backshell for screen termination and cable clamp

Shell size:
09, 11, 13, 15, 17, 19, 21, 23, 25

Plating:
W: Olive drab cadmium
N: Nickel

Clamp size indicator:
See tables above

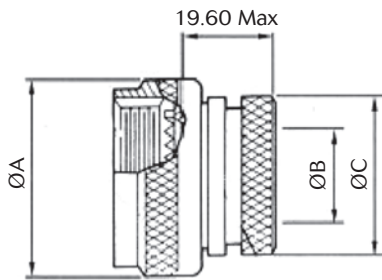
Note: All dimensions are in millimeters (mm)

8D - D38999 Aluminum Series



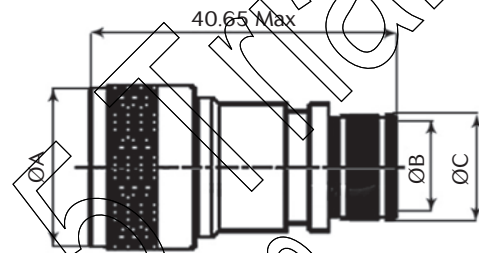
Backshells for heat shrink boots

Backshell for heat shrink boots (Type 69)



Shell size	ØA Max	ØB Max	ØC Max
09	19.10	6.35	13.55
11	21.60	9.50	15.40
13	25.40	12.70	19.70
15	29.20	15.90	21.30
17	31.80	19.00	24.50
19	35.60	20.60	26.50
21	39.40	23.80	30.90
23	41.90	27.00	34.40
25	47.00	30.20	36.65

Straight backshell for heat shrink boots (Type 88)



Shell size	ØA Max	ØB ^(0.10) Entry size		ØC	
		02	03	02	03
09	21.79	N/A	6.35	N/A	10.03
11	24.99	N/A	7.92	N/A	11.61
13	29.30	7.92	11.13	11.61	14.81
15	32.49	11.13	14.27	14.81	17.96
17	35.71	12.70	15.88	16.38	19.56
19	38.51	15.88	19.05	19.56	22.73
21	41.71	15.88	20.62	19.56	24.30
23	44.91	17.47	23.83	21.06	27.51
25	47.98	19.05	25.40	22.73	29.08

Basic Series M85049 69 11 A D

Backshell type:
 69: Backshell for heat shrink boots
 88: Straight backshell for heat shrink boots

Shell size:
 09, 11, 13, 15, 17, 19, 21, 23, 25

Plating:
Type 69:
 A: Black anodised (500 hours salt spray)
Type 88:
 J: Olive drab cadmium over electroless nickel
 M: Electroless nickel

Option (Type 69 only):
 Empty: Without drain hole
 D: With drain hole

Entry size (Type 88 only):
 02: See table above
 03: See table above

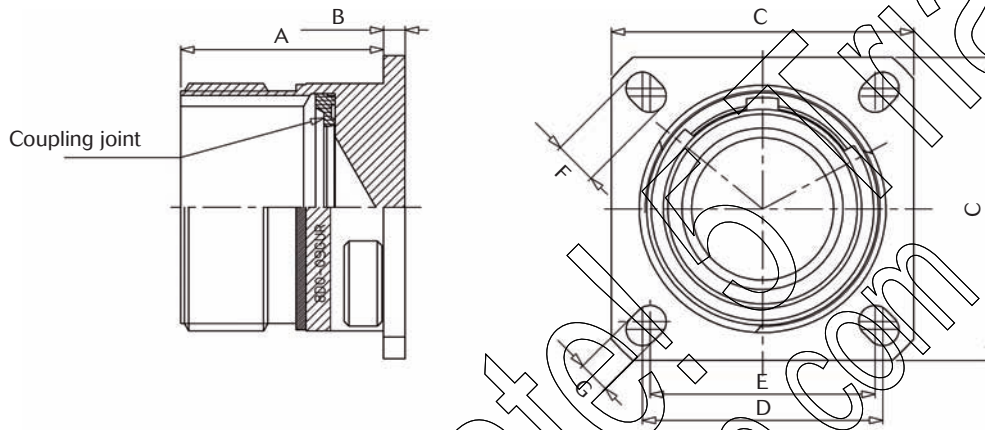
Note: All dimensions are in millimeters (mm)

8D - D38999 Aluminum Series



Dummy receptacle

Dimensions



Shell size	Souriau Part number *	A Max	B Max	C ^{±0.30}	D	E	F ^{±0.20}	G ^{±0.20}
09	8D0-09GUR 8D0-09FUR	20.90	2.50	23.80	18.26	15.09	4.49	3.25
11	8D0-11GUR 8D0-11FUR	20.90	2.50	26.20	20.62	18.26	4.93	3.25
13	8D0-13GUR 8D0-13FUR	20.90	2.50	28.60	23.01	20.62	4.93	3.25
15	8D0-15GUR 8D0-15FUR	20.90	2.50	31.00	24.61	23.01	4.93	3.25
17	8D0-17GUR 8D0-17FUR	20.90	2.50	33.30	26.97	24.61	4.93	3.25
19	8D0-19GUR 8D0-19FUR	20.90	2.50	36.50	26.97	24.61	4.93	3.25
21	8D0-21GUR 8D0-21FUR	20.10	3.20	39.70	31.75	29.36	4.93	3.25
23	8D0-23GUR 8D0-23FUR	20.10	3.20	42.90	34.93	31.75	6.15	3.91
25	8D0-25GUR 8D0-25FUR	20.10	3.20	46.00	38.10	34.93	6.15	3.91

* G: Olive green cadmium
F: Nickel

Note: All dimensions are in millimeters (mm)

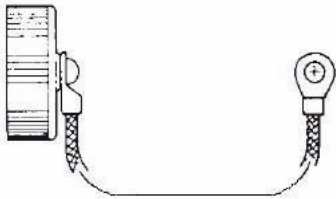
8D - D38999 Aluminum Series



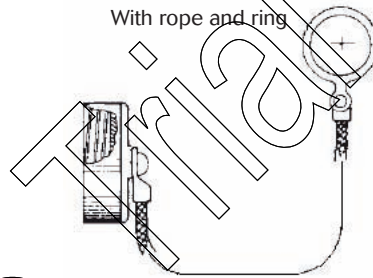
Caps

Caps for receptacle (D38999/33 - S2453)

With rope and eyelet



With rope and ring

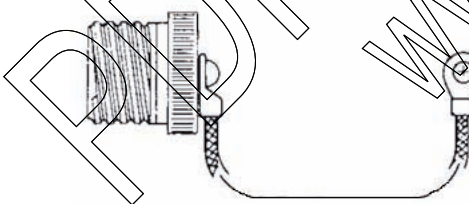


Shell size	Part numbers	
	Plating **	Olive green plating
9	S2453-09W-**	D38999/33 W 09 R
11	S2453-11W-**	D38999/33 W 11 R
13	S2453-13W-**	D38999/33 W 13 R
15	S2453-15W-**	D38999/33 W 15 R
17	S2453-17W-**	D38999/33 W 17 R
19	S2453-19W-**	D38999/33 W 19 R
21	S2453-21W-**	D38999/33 W 21 R
23	S2453-23W-**	D38999/33 W 23 R
25	S2453-25W-**	D38999/33 W 25 R

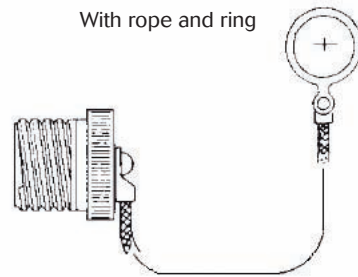
Shell size	Part numbers	
	Plating **	Olive green plating
9	S2453-09W**-1	D38999/33 W 09 N
11	S2453-11W**-1	D38999/33 W 11 N
13	S2453-13W**-1	D38999/33 W 13 N
15	S2453-15W**-1	D38999/33 W 15 N
17	S2453-17W**-1	D38999/33 W 17 N
19	S2453-19W**-1	D38999/33 W 19 N
21	S2453-21W**-1	D38999/33 W 21 N
23	S2453-23W**-1	D38999/33 W 23 N
25	S2453-25W**-1	D38999/33 W 25 N

Caps for plug (D38999/32 - S2454)

With rope and eyelet



With rope and ring



Shell size	Part numbers	
	Plating **	Olive green plating
9	S2454-09F-** S	D38999/32 W 09 R
11	S2454-11F-** S	D38999/32 W 11 R
13	S2454-13F-** S	D38999/32 W 13 R
15	S2454-15F-** S	D38999/32 W 15 R
17	S2454-17F-** S	D38999/32 W 17 R
19	S2454-19F-** S	D38999/32 W 19 R
21	S2454-21F-** S	D38999/32 W 21 R
23	S2454-23F-** S	D38999/32 W 23 R
25	S2454-25F-** S	D38999/32 W 25 R

Shell size	Part numbers	
	Plating **	Olive green plating
9	S2454-09W**-S	D38999/32 W 09 N
11	S2454-11W**-S	D38999/32 W 11 N
13	S2454-13W**-S	D38999/32 W 13 N
15	S2454-15W**-S	D38999/32 W 15 N
17	S2454-17W**-S	D38999/32 W 17 N
19	S2454-19W**-S	D38999/32 W 19 N
21	S2454-21W**-S	D38999/32 W 21 N
23	S2454-23W**-S	D38999/32 W 23 N
25	S2454-25W**-S	D38999/32 W 25 N

** Plating - 34 : Olive green cadmium. Plating - 12 : Nickel.

Note: Method of attachment to cover and ring is optional. Please consult us.

8D - D38999 Aluminum Series



Connectors weight

	With contacts						Without contact					
	Plug (type 5)		Receptacle (type 0)		Receptacle (type 7)		Plug (type 5)		Receptacle (type 0)		Receptacle (type 7)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
09 - 35	11.47	13.05	9.15	10.73	13.91	15.49	11.05	11.55	8.73	9.23	13.49	13.99
09 - 98	11.47	12.77	9.15	10.45	13.91	15.21	11.05	11.57	8.73	9.25	13.49	14.01
11 - 01	14.98	17.92	12.01	14.95	18.17	21.11	14.32	16.82	11.35	13.35	17.51	19.51
11 - 02	14.61	17.15	11.64	14.18	17.80	20.34	13.99	15.89	11.02	12.62	17.18	18.78
11 - 04	14.80	17.86	11.83	14.89	17.99	21.05	14.24	16.26	11.27	13.29	17.43	19.45
11 - 05	14.83	18.04	11.86	15.07	19.48	21.23	14.13	16.04	11.16	13.07	17.32	19.23
11 - 22	14.47	16.89	11.50	13.92	17.66	20.08	14.19	15.89	11.22	12.92	17.38	19.08
11 - 35	14.73	18.20	11.76	15.23	17.68	21.39	13.82	14.95	10.85	11.98	17.01	18.14
11 - 80	18.30	21.90	15.30	18.90	21.50	28.39	18.80	14.90	10.80	11.90	17.00	18.10
11 - 98	14.70	17.46	11.73	14.49	17.89	20.65	13.86	15.06	10.89	12.09	17.05	18.25
11 - 99	14.87	18.09	11.90	15.12	18.06	21.28	13.89	15.29	10.92	12.32	17.08	18.48
13 - 04	21.04	24.82	15.71	19.49	24.14	27.92	19.80	21.70	14.47	16.37	22.90	24.80
13 - 08	21.42	26.60	16.09	21.27	24.52	29.70	20.30	23.40	14.97	18.07	23.40	26.50
13 - 26	21.79	27.44	16.46	22.11	24.89	30.54	20.05	22.74	14.72	17.41	23.15	25.84
13 - 35	21.22	26.99	15.89	21.66	24.32	30.09	19.68	21.49	14.35	16.16	22.78	24.59
13 - 98	21.08	25.70	15.75	20.37	24.18	28.80	19.68	21.70	14.35	16.37	22.78	24.80
15 - 05	26.04	31.38	19.54	24.88	29.82	34.86	24.49	27.48	17.99	20.98	28.07	31.06
15 - 15	26.84	34.00	20.34	27.50	30.42	37.58	24.57	27.62	18.07	21.12	28.15	31.20
15 - 18	27.05	35.93	20.55	29.43	30.63	39.51	24.53	28.73	18.03	22.23	28.11	32.31
15 - 19	26.58	34.31	20.08	27.81	30.16	37.89	23.82	26.71	17.42	20.21	27.50	30.29
15 - 35	26.68	35.92	20.18	29.42	30.26	39.50	24.09	26.67	17.59	20.17	27.67	30.25
15 - 97	26.51	33.56	20.01	27.06	30.09	37.14	24.15	27.24	17.65	20.74	27.73	30.82
17 - 02	32.96	46.30	31.26	44.60	42.06	55.40	25.80	29.80	24.10	28.10	34.90	38.90
17 - 06	29.90	39.50	28.21	37.81	39.00	48.60	25.94	29.90	24.25	28.21	35.04	39.00
17 - 08	28.89	37.62	27.20	35.93	37.99	46.72	26.41	31.38	24.72	29.69	35.51	40.48
17 - 26	29.47	40.26	27.78	38.57	38.57	49.36	25.83	29.86	24.14	28.17	34.93	38.96
17 - 35	29.71	43.26	28.02	41.57	38.81	52.36	25.86	29.51	24.17	27.82	34.96	38.61
17 - 75	35.31	46.60	33.62	44.91	44.41	55.70	26.31	32.60	24.62	30.91	35.41	41.70
17 - 99	29.52	40.08	27.83	38.39	38.62	49.18	25.96	30.12	24.27	28.43	35.06	39.22
19 - 11	37.77	51.36	31.07	44.66	44.62	58.21	34.36	42.78	27.66	46.43	30.86	49.63
19 - 32	36.98	50.38	30.28	43.68	43.83	57.23	32.50	37.58	25.80	41.23	29.00	44.43
19 - 35	37.29	53.74	30.59	47.04	44.14	44.09	32.67	37.24	25.97	40.89	29.17	44.09
21 - 11	45.51	65.35	39.31	59.16	53.19	73.03	38.25	47.75	32.05	51.93	35.55	55.43
21 - 16	42.61	57.89	36.41	51.69	50.29	65.57	37.65	45.41	31.45	49.59	34.95	53.09
21 - 35	42.89	63.55	36.69	57.35	50.57	71.23	37.36	43.80	31.16	47.98	34.66	51.48
21 - 39	44.27	64.60	38.07	58.40	51.95	72.28	38.47	48.24	32.27	52.42	35.77	55.92
21 - 41	42.81	60.18	36.61	64.36	50.49	67.86	37.07	43.78	30.87	47.96	34.37	51.46
21 - 48	49.59	49.93	43.39	43.73	55.27	57.61	36.48	43.38	30.28	37.18	44.16	51.06
21 - 75	54.48	71.38	48.28	65.18	62.16	79.06	36.48	43.38	30.28	37.18	44.16	51.06
23 - 21	50.49	73.74	44.19	67.44	59.23	82.48	43.98	57.36	37.68	62.20	41.58	66.10
23 - 35	48.85	75.00	42.55	68.70	57.59	83.74	41.85	50.00	35.55	54.84	39.45	58.74
23 - 53	48.91	71.10	42.61	64.80	57.65	79.84	41.49	49.90	35.19	54.74	39.09	58.64
23 - 55	49.66	72.73	43.36	66.43	58.40	81.47	41.96	50.73	35.66	55.57	39.56	59.47
25 - 07	61.89	90.70	55.73	85.10	71.15	99.10	46.41	56.20	40.25	61.26	44.45	65.46
25 - 11	54.48	71.38	48.28	65.18	62.16	79.06	36.48	43.38	42.94	55.94	58.36	71.36
25 - 19	59.76	91.77	53.60	85.61	69.02	101.03	47.22	61.37	41.06	66.43	45.26	70.63
25 - 24	59.26	90.62	53.10	84.46	68.52	99.88	47.62	62.06	41.46	67.12	45.66	71.32
25 - 29	57.58	86.55	51.42	80.39	66.84	95.81	48.59	63.93	42.43	68.99	46.63	73.19
25 - 35	55.37	88.20	49.21	82.04	64.63	97.46	46.41	56.20	40.25	61.26	44.45	65.46
25 - 37	57.57	89.86	51.41	59.36	66.83	90.06	46.10	61.00	39.94	60.50	55.36	61.20
25 - 44	52.80	67.61	46.53	65.39	62.05	83.39	44.40	59.22	38.14	57.00	53.66	75.00
25 - 43	57.62	88.30	51.46	82.14	66.88	97.56	48.20	63.50	42.04	68.56	46.24	72.76
25 - 46	59.92	83.76	53.76	77.60	69.18	93.02	45.28	55.44	39.12	60.50	43.32	64.70
25 - 61	54.67	81.42	48.51	75.26	63.93	90.68	46.13	57.02	39.97	62.08	44.17	66.28
25 - 08	81.00	112.83	74.84	106.67	90.26	122.09	45.00	56.83	38.84	61.69	43.04	66.09
25 - 20	66.02	96.24	59.86	90.08	75.28	105.50	44.45	54.70	38.29	59.76	42.49	63.96
25 - 04	58.42	88.27	52.26	82.11	67.68	97.53	49.22	62.83	43.06	67.89	47.26	72.09

Weight in gram (+/- 15%)

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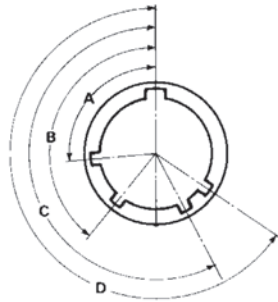


Composite Series
MIL-DTL-38999 Series III

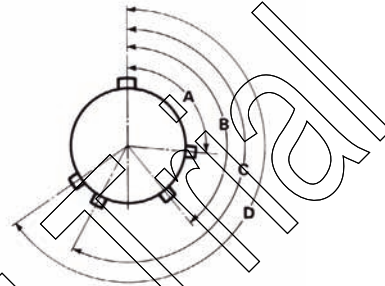
Common Section



Orientations



Viewed from front face of receptacle

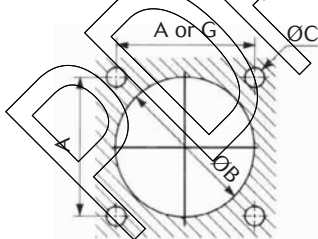


Viewed from front face of plug

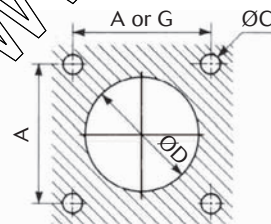
Shell size	Angles	N	A	B	C	D	E
9 (A)	A°	105	102	80	35	64	91
	B°	140	132	118	140	155	131
	C°	215	248	230	205	234	197
	D°	265	320	312	275	304	240
11 (B), 13 (C) & 15 (D)	A°	95	113	90	53	119	51
	B°	141	156	145	156	146	141
	C°	208	182	195	220	176	184
	D°	236	292	252	255	298	242
17 (E), 19 (F), 21 (G), 23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

Panel cut-out

Square flange receptacle (Type 0)

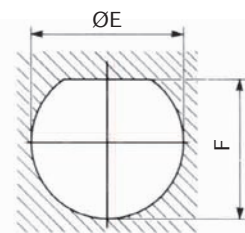


Rear mounting



Front mounting

Jam nut receptacle (Type 7)



Shell size	A	G	B min.	C ±0.13	D min.	E ±0.25	F
9 (A)	18.26	15.09	16.66	3.25	13.11	17.78	17.02
11 (B)	20.62	18.26	20.22		15.88	20.96	19.59
13 (C)	23.01	20.62	23.42		19.05	25.65	24.26
15 (D)	24.61	23.01	26.59		23.01	28.83	27.56
17 (E)	26.97	24.61	30.96		25.81	32.01	30.73
19 (F)	29.36	26.97	32.94		28.98	35.18	33.91
21 (G)	31.75	29.36	36.12		32.16	38.35	37.08
23 (H)	34.93	31.75	39.29	3.91	34.93	41.53	40.26
25 (J)	38.10	34.94	42.47		37.69	44.70	43.43

Max. thickness panel for receptacle: Type 0: front mounting = 3.2 mm, rear mounting = 2.5 mm
Type 7: 3.2 mm

Note: All dimensions are in millimeters (mm)