

## HL-JB599II series (MIL-DTL-38999 II series) electrical connector

### Product introduction

- \* Compliant with HL-JB599A (MIL-DTL-38999K) II series
- \* Bayonet fast connection
- \* Smallest volume, lightest weight, shortest shell
- \* EMI/RFI shielding
- \* Contact parts can be removed by pressing, not prevent oblique insertion.
- \* Socket has box type, wall type, front installation, post installation and nut fastening installation and other forms
- \* The electric connector is lightweight and suitable for use in situations where it is not subjected to high strength vibration or harsh wind sand and moisture
- \* The interface and tail of the insert surface have a sealed structure, and the three anti-performance is excellent
- \* Widely used in aviation, aerospace and military systems.



### Main technical performance

#### 【Mechanical properties】

- A shell: aluminum alloy, stainless steel
- A coating:
  - Class B cadmium plating Military green class F electroless nickel plating
  - Class E stainless steel passivation
- An insulator: thermosetting plastic
- Wire body and seal ring: silicone rubber material
- A contact: copper alloy gold-plated, pressed type, welded type, printed board type
- A mechanical life: 500 times
- A vibration:
  - Random vibration frequency 100~1000Hz Power spectral density 1g/Hz
- A shock :3MS half sine wave acceleration peak 300g

#### 【Environmental performance】

- A use temperature:
  - Class B - 65°C-+175°C
  - Class E and F -65 °C ~ +200°C
- Salt spray resistance: test according to HL-JB1217 method 1001
  - Class B 500h                      Class E 1000h
  - Class F 48h
- A relative humidity: 40°C up to 98%
- A working height : 30480m
- An electric connector also has a good anti-moisture, anti-salt spray.
  - Anti-mold, anti-rain, anti-dust and other properties

#### 【Electrical properties】

- Contact resistance and rated current of a contact:

Contact specification	Working diameter mm	Contact resistance m	Rated current A
22D#	Φ0.76	≤12	5
20#	Φ1.00	≤5	7.5
16#	Φ1.60	≤2.5	13
12#	Φ2.40	≤1.5	23

- An electromagnetic interference shield:
  - When 100MHz~ 1GHz, the minimum attenuation is 45dB

- A withstand voltage: V

Job level *	M	I	II
Sea level	1300	1800	2300
21000m	800	1000	1000

Note: Different contact arrangements have different working levels, see contact arrangements for details.

- An insulation resistance:
  - Normal condition 5000M
  - Wet condition 100M
- Electrical continuity between enclosures:
  - Class B 2.5m Class F 1.0m
  - Class E < 5m

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### Model designation

Series principal name	J	27472	T	16	F	35	P	N	-H	
Type	27473- Plug (Type T only) 27484- Shielded Plug (Type T only) 27472- Wall type square front socket (Type T only) 27497- Wall type square tray rear socket (Type T only) 27513- Box Square front socket (Category E only) 27508- Box socket (Type E only) 27474- Nut mounting socket (Class T only)									
Category	T - The tail of the housing is threaded. Rear accessories can be installed E a shell tail without thread. Rear accessories cannot be installed									
Case number	08, 10, 12, 14, 16, 18, 20, 22, 24									
Shell coating	B a cadmium plating E a stainless steel passivation F- electroless nickel plating									
Contact arrangement	See the Contact Arrangement diagram for details									
Contact type	Crimp type	P - one pin					S - one jack			
	PCB type	PL - long PCB pin					SL - Long PCB jack			
		PC- Short printed board pin					SC- short printed board jack			
Key position	N-Normal keys : A,B, C, D - Variable keys									
Welding contact identification	(for welding connectors only) H - Welding contacts									

Note: 1. The model names of the national military standard HL-JB599A and the US military standard MIL-DTL-38999K are identical except that the main name is different. The main name of HL-JB599A

2. When the contact type is PC or SC, the normal key N must be marked.

3. When there are high oil resistance requirements, the connector sealing material is fluorosilicone rubber, plus C1 after the original model (example: 27472T16F35PNC1).

### Crimp contacts

Contact specification	Diameter mm	Pin color code	Jack color code	Wire squeeze drum Inner diameter mm	Wire squeeze drum Outer diameter mm	Adapter wire section mm	ADAPTS to American standard cable AWG	Adapter wire insulation outer diameter mm	Remove tool code
22D#	0.76	Orange-blue-black	Orange-green-yellow	0.85	1.20	0.08 0.125 0.2 0.3	28 26 24 22	0.76-1.37	M81969/ 14-01
20#	1.00	Orange-blue-orange	Orange-green-purple	1.17	1.78	0.2 0.3 0.5	24 22 20	1.02-2.11	M81969/ 14-10
16#	1.60	Orange-blue-yellow	Orange-green-grey	1.68	2.62	0.5 0.8 1.0 1.2	20 18 16	1.65-2.77	M81969/ 14-03
12#	2.40	Orange-blue-green	Orange-green-white	2.49	3.8	2.0 3.0	14 12	2.46-3.61	M81969/ 14-04

Note: The required crimping tools and instructions for use are as follows: "Instructions for crimping tools for HL-JB599 series products"

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Insulator hole arrangement (Pin insulator insertion surface view)

Shell number	08	35 M 6-22D# 	98 I 3-20# 	02 I 2-20# 	03 I 3-20# 	10 I 1-12# 	11 I 1-16# 	
	10	35 M 13-22D# 	98 I 6-20# 	05 I 5-20# 	04 I 4-20# 	01 I 1-12# 	99 I 7-20# 	02 I 2-16# 
12	35 M 22-22D# 	98 I 10-20# 	04 I 4-16# 	08 I 8-20# 	03 II 3-16# 			
	14	35 M 37-22D# 	18 I 18-20# 	05 II 5-16# 	97 I 8-20# 4-16# 	15 I 14-20# 1-16# 		
19 I 19-20# 		38 I 4-12# 						
16	35 M 55-22D# 	26 I 26-20# 	06 I 6-12# 	08 II 8-16# 	99 I 21-20# 2-16# 			
	18	35 M 66-22D# 	32 I 32-20# 	28 I 26-20# 2-16# 	11 II 11-16# 	30 I 29-20# 1-16# 		
45 M 67-22D# 		53 M 53-22D# 	96 I 9-12# 					
20	35 M 79-22D# 	41 I 41-20# 	16 II 16-16# 	39 I 37-20# 2-16# 	11 II 11-12# 			

Contact specification ○ 22D# ● 20# ◐ 16# ◑ 12#

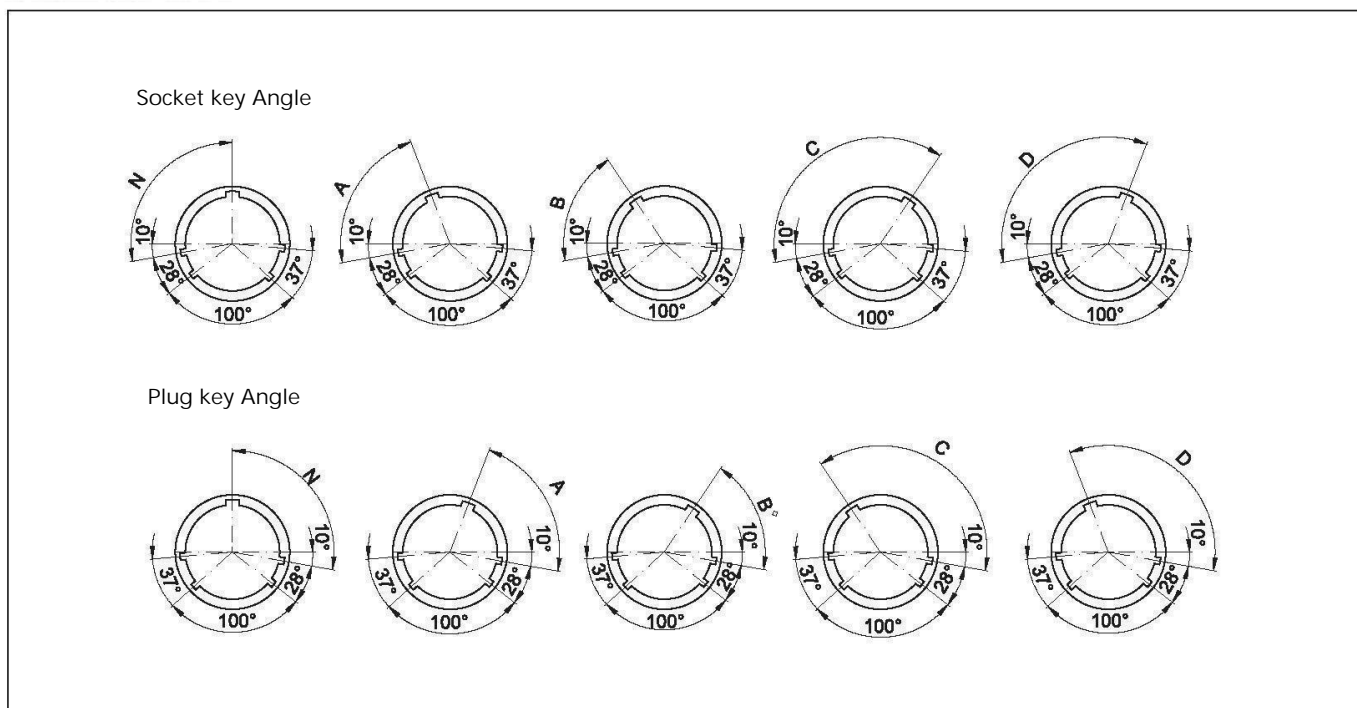
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20	27 I  27-20#	25 I  25-20#	24 I  24-20#	02 M  65-22D#
	35 M  100-22D#	53 I  53-20#	21 II  21-16#	36 I  36-20#
	55 I  55-20#	34 I  34-20#	32 I  32-20#	97 I  16-16#
	99 II  11-16#			
24	35 M  128-22D#	61 I  61-20#	04 I  48-20# 8-16#	29 I  29-16#
	24 I  12-16# 12-12#	43 I  23-20# 20-16#	19 I  19-12#	

Contact specification ○ 22D# ● 20# ● 16# ● 12#

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## Insulator hole arrangement



Key code	08	10	12	14	16	18	20	22	24
N	100°	100°	100°	100°	100°	100°	100°	100°	100°
A	82°	86°	80°	79°	82°	82°	82°	85°	85°
B	—	72°	68°	66°	70°	70°	70°	74°	74°
C	—	128°	132°	134°	130°	130°	130°	126°	126°
D	118°	114°	120°	121°	118°	118°	118°	115°	115°

## Overall dimension

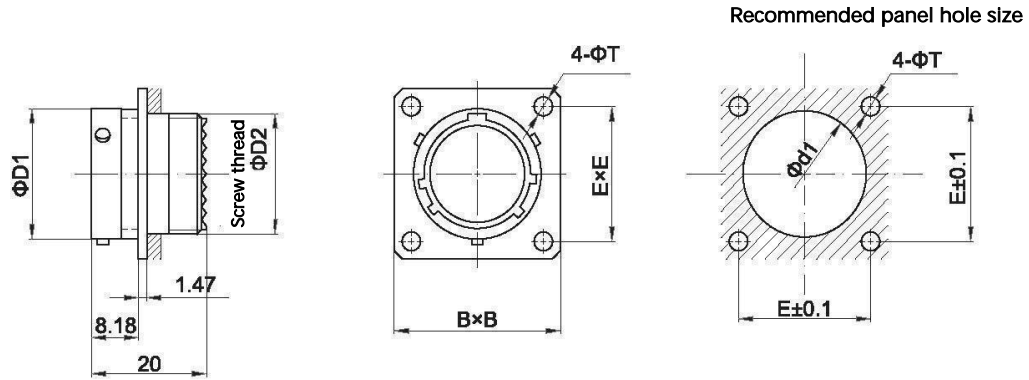
### 【Plug 27473】

Shell number	D1	Screw thread
		D2UNEf-2A
08	19,00	0,4375-28
10	21,80	0,5625-24
12	26,20	0,6875-24
14	29,30	0,8125-20
16	32,50	0,9375-20
18	35,70	1,0625-18
20	38,80	1,1875-18
22	41,68	1,3125-18
24	44,68	1,4375-18

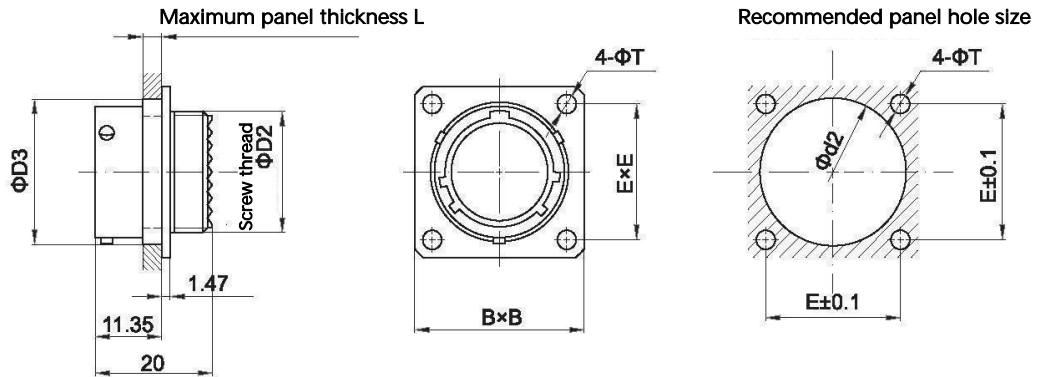
## HL-JB599II series (MIL-DTL-38999 II series) electrical connector

【Wall socket 27472 / 27497】

Wall type square front socket (27472)



Wall type square tray rear socket (27497)

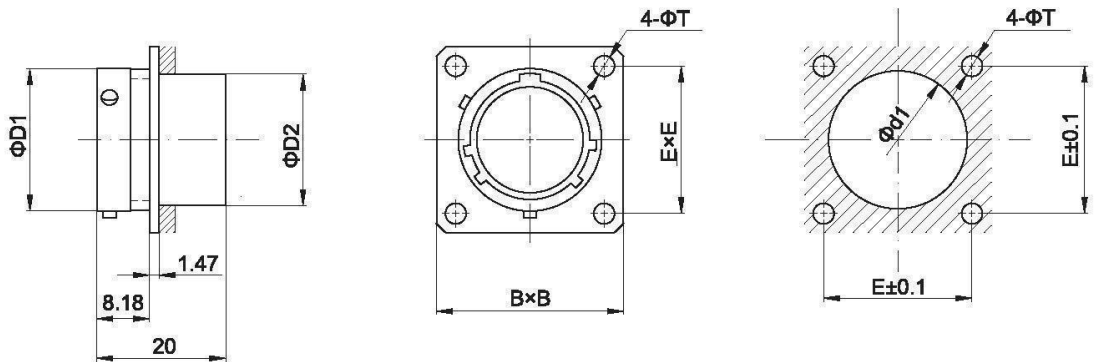


Housing number D1	D1	Thread D2UNEF-2A	D3	L Max	B	E	T	d1	d2
08	12.00	0.4375-28	13.20	3.71	21.00	15.09	3.2	12.5	14.2
10	15.00	0.5625-24	16.14	3.71	24.10	18.26	3.2	15.5	17.5
12	19.05	0.6875-24	20.50	3.71	26.50	20.62	3.2	19.5	21.3
14	22.23	0.8125-20	23.60	3.71	28.90	23.01	3.2	21.5	25.0
16	25.40	0.9375-20	26.80	3.71	31.21	24.61	3.2	25.0	27.3
18	28.58	1.0625-18	30.00	3.71	33.60	26.97	3.2	28.0	31.3
20	31.75	1.1875-18	33.20	4.27	36.80	29.36	3.2	31.5	34.5
22	34.93	1.3125-18	36.35	4.27	40.00	31.75	3.2	34.5	37.5
24	38.10	1.4375-18	39.50	4.27	43.10	34.93	3.9	37.5	40.6

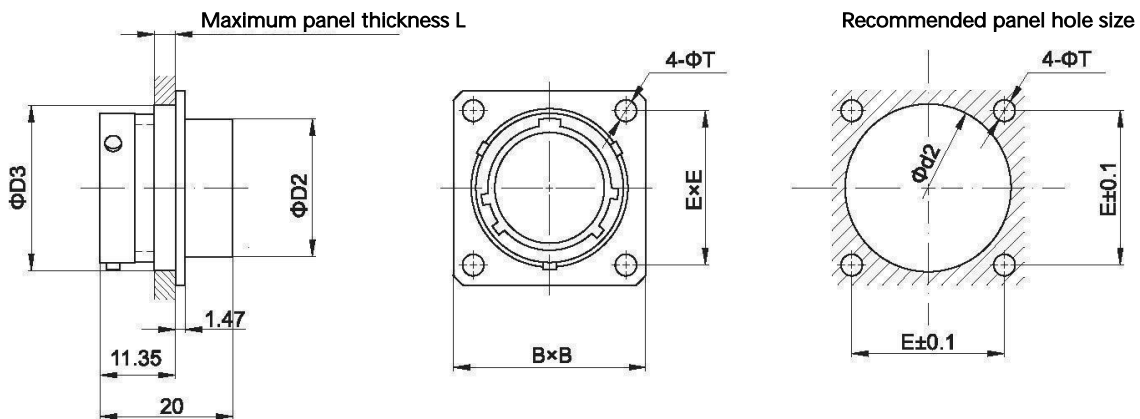
## HL-JB599II series (MIL-DTL-38999 II series) electrical connector

### 【Box socket 27513 / 27508】

Box front socket (27513)



Box type Square Tray rear socket (27508)

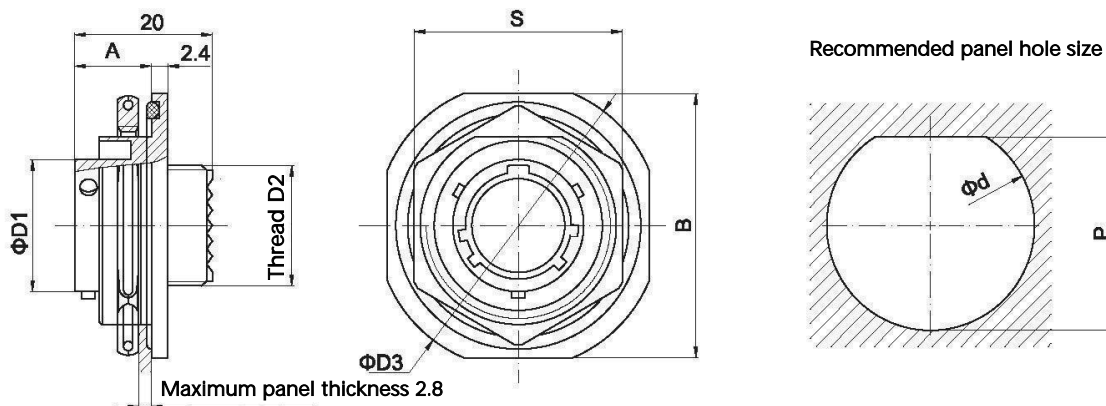


Shell number	D1	D2	D3	L Max	B	E	T	d1	d2
08	12.00	11.00	13.20	3.71	21.00	15.09	3.2	12.5	14.2
10	15.00	14.68	16.14	3.71	24.23	18.26	3.2	15.5	17.5
12	19.05	17.35	20.50	3.71	26.50	20.62	3.2	19.5	21.3
14	22.23	20.52	23.60	3.71	28.90	23.01	3.2	21.5	25.0
16	25.40	23.77	26.80	3.71	31.21	24.61	3.2	25.0	27.3
18	28.58	26.95	30.00	3.71	33.60	26.97	3.2	28.0	31.3
20	31.75	30.18	33.20	4.27	36.80	29.36	3.2	31.5	34.5
22	34.93	33.3	36.35	4.27	40.00	31.75	3.2	34.5	37.5
24	38.10	36.47	39.50	4.27	43.10	34.93	3.9	37.5	40.6

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**【Nut mounting socket 27474】**

Nut mounting socket (27474)

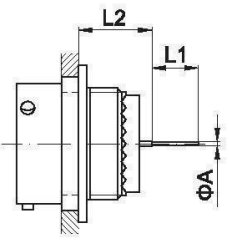
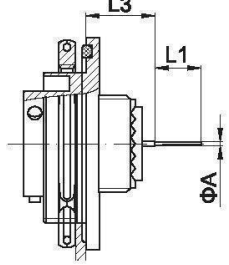


Shell number	D1	Thread D2UNEF-2A	D3	A	B	S	d	p
08	12.00	0.4375-28	34.95	11.1	31.75	27.41	22.46	21.08
10	15.00	0.5625-24	38.10	11.1	34.95	30.61	25.58	24.26
12	19.05	0.6875-24	41.28	11.1	38.10	33.75	28.80	27.53
14	22.23	0.8125-20	44.45	11.1	41.28	36.96	31.98	30.68
16	25.40	0.9375-20	49.23	11.1	45.24	40.10	35.15	33.86
18	28.58	1.0625-18	51.21	11.1	48.00	43.3	38.28	37.06
20	31.75	1.1875-18	54.38	11.8	51.21	46.45	41.50	40.03
22	34.93	1.3125-18	57.53	11.8	54.36	51.23	44.68	43.21
24	38.10	1.4375-18	60.71	11.8	57.53	54.41	47.85	46.38



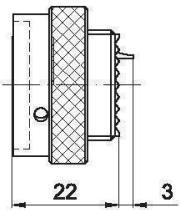
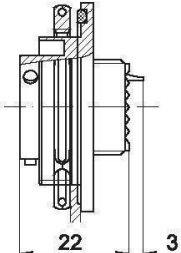
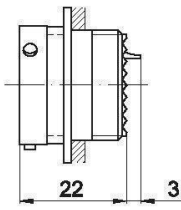
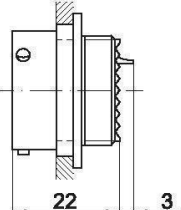
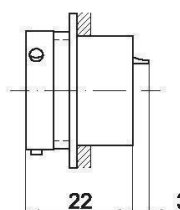
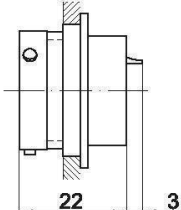
## HL-JB599II series (MIL-DTL-38999 II series) electrical connector

### 【HL-JB599I series socket with printed board type contact】

27497 socket		27474 socket		Printed board type contact specifications		L1	A
		22D#	Long printed board contact	8.5	0.7		
			Short printed board contact	4.0			
		20#	Long printed board contact	8.5	0.7		
			Short printed board contact	5.1			
		16#	Long printed board contact	8.5	1.15		
			Short printed board contact	5.1			

The dimensions of the contact parts with different specifications		Shell number 08-10-12-14-16-18	Shell number 20-22-24
L2	Install 22D# pins and jacks	13.40	13.40
	When installing 20# or 16# pins and jacks	13.57	13.57
L3	Install 22D# pins and jacks	13.61	12.95
	When installing 20# or 16# pins and jacks	13.78	13.12

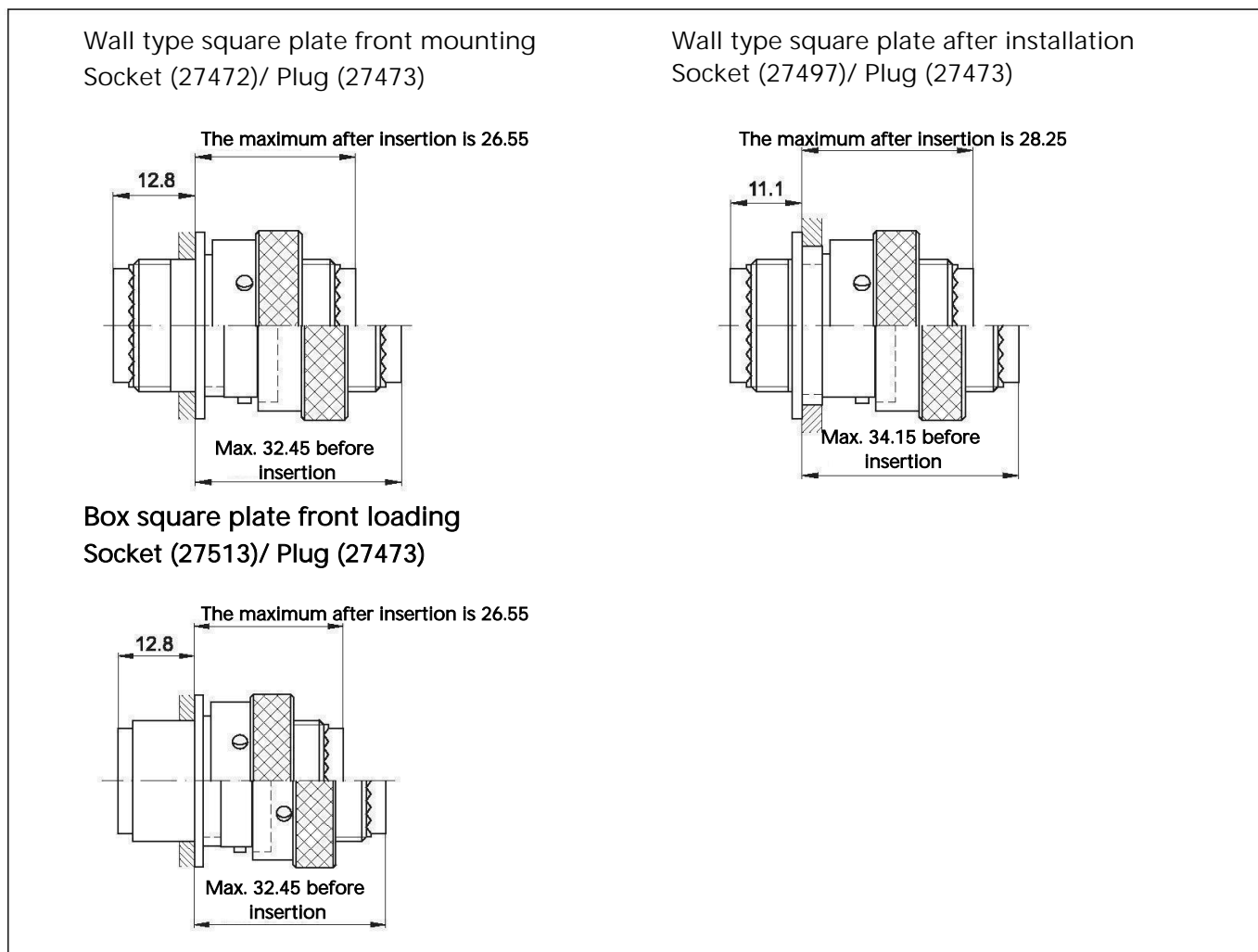
### 【HL-JB599 II series welding products】

<p>27473 plug</p> 		<p>27474 socket</p> 		<p>27472 socket</p> 	
<p>27497 socket</p> 		<p>27513 socket</p> 		<p>27508 socket</p> 	
Welded contact specifications		Inside diameter of welded wire cup		Maximum Adapter Wire Gauge (AWG)	
22D#		Φ0.9		22	
20#		Φ1.1		20	
16#		Φ1.9		16	
12#		Φ2.9		12	

Note: Coaxial contact without welded contact.

## HL-JB599II series (MIL-DTL-38999 II series) electrical connector

### 【Plug socket fitting size】



### Plug socket seal cover

#### Model designation

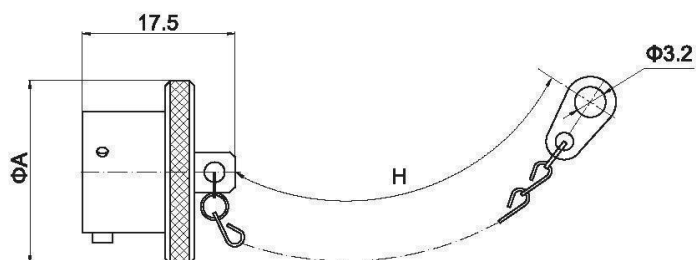
Base element number	27510- Plug seal cover (corresponding to US military component number MS27510) 27511- Socket seal cover (corresponding to the US military component number MS27511)	J27510	F	10	C	L
Surface coating	B- Cadmium plated army green    F- electroless nickel plating    E-stainless steel passivation					
Shell number	08, 10, 12, 14, 16, 18, 20, 22.24					
Shell coating	A - No chain                                  N - stainless steel twisted chain belt ring C - stainless steel twisted chain        R - silk rope                                  S - stainless steel wire rope					
Length marker	Unmarked a standard length L- Chain length is 127mm M-chain length 152.4mm (only for 27510)N - Chain length 177.8mm (27511 only)					

Note: The seal cover should be ordered separately, not supplied with the connector.

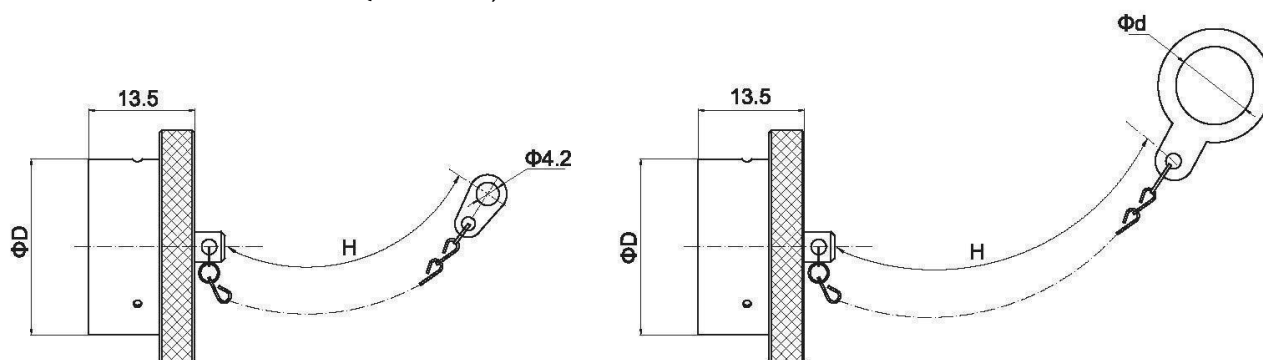
## HL-JB599II series (MIL-DTL-38999 II series) electrical connector

### Overall dimension

Plug Seal Cap 27510 (MS27510)



Socket seal cover 27511 (MS27511)



Shell number		08	10	12	14	16	18	20	22	24
A	MAX	18.2	21.5	25.4	28.7	31.7	35.0	38.1	41.4	44.4
D	MAX	18.5	21.7	25.3	29.0	31.6	34.8	38.0	41.1	44.2
d	MIN	22.6	26.0	29.0	32.4	35.5	38.6	42.0	44.7	48.5
H	MAX	76.2	76.2	92.9	92.9	92.9	92.9	101.6	101.6	101.6

### Tail attachment

Note: The optional tail attachment is the same as the HL-JB599 I series tail attachment.