

# GJB599 III series differential connector

## Brief introduction

- Comply with GJB 599A (MIL-DTL-38999) III series
- Quick thread coupling with anti-decoupling device
- 8# contact cavities can be filled 8# 2-core differential contact, 8# 4-core differential contact, high frequency contact or optical contact
- 12# contact cavities can be filled with 12# power contact, 12# shielding contact or 12# coaxial contact
- 16# contact cavities can be filled with 16# power contact or 16# shielding contact
- 100% scoop-proof
- Ground spring to strengthen EMI/RFI shielding
- Transmission speed reaches 1.65Gbps
- Applicable for the high speed data transmission in aviation, military and other fierce environment
- Enterprise standard: 21E0.204.102JT



## Main technical characteristics

### [Mechanical]

—Shell: Aluminum alloy, stainless steel, composite

—Plating:

W—olive green cadmium plating, aluminum alloy

F—electroless nickel plating, aluminum alloy

K—stainless steel passive

—Insulator: Thermoplastic or thermo-set

—Grommet and seal: Silicon rubber

—Contact: gold plating, copper alloy

—Endurance: 500 cycles

—Shock: At 3 ms half sinusoid, peak value of acceleration: 300g

—Vibration:

Sinusoid: 60g, with temperature cycling

Random: under high temperature, frequency 100~1000Hz, power spectrum density  $1g^2/Hz$ , rms 41.7g

### [Environmental]

—Operating temperature:

W class: -65°C ~ 175°C

F class: -65°C ~ 200°C

—Sealing: Comply with the requirement of GJB599A low pressure immersion

—Salt spray: According to method 1001 GJB 1217, W class: 500 hours, F class: 48 hours

—Damp heat: 10 cycles in 24 hours according to GJB599A

—Resistance to fluids: Fuels, coolant, solvent

### [Electrical]

Electrical connector:

—Shell continuity: W class 2.5 mΩ, F class 1 mΩ

—Shielding efficiency: at 10GHz, 65dB (F) / 50dB(W);  
at 1GHz, 85dB (F & W)

8# differential contact:

100Ω contact parameter:

—Insert arrangement: 2 cores or 4 cores

—Characteristics impedance: 100Ω

—Transmission rate: 0~1.65Gbps

—Transmission application: differential signal  
transmission: Ethernet, AFDX, DVI, LVDS, etc.

—Withstanding voltage:

Central conductor to outer conductor 500V AC,  
between central conductors 1000V AC

—Contact resistance:  $\leq 15m\Omega$  (only central conductor)

—Insulation resistance:  $\geq 5000M\Omega$  (500Vdc)

—Rating current: central conductor 1A

110Ω contact parameter:

—Insert arrangement: 4 cores

—Characteristics impedance: 110Ω

—Transmission rate: 0~800Mbps

—Transmission application: differential signal  
transmission: AS5643, AS5706, IEEE1394b-2002

—Withstanding voltage:

Central conductor to outer conductor 500V AC,  
between central conductors 1000V AC

—Contact resistance:  $\leq 15m\Omega$  (only central conductor)

—Insulation resistance:  $\geq 5000M\Omega$  (500Vdc)

—Rating current: central conductor 1A

## Ordering information

The product ordering part number is consisted of the below 3 parts:

J599/20WJ08PFN (8—CF81/411-01)

1                      2                      3

1—Connector P/N

2—differential contact number

3—differential contact P/N (can be ordered separately)

[Connector ordering information]

Basic series	J599/	20	W	B	81	PF	N
Connector type	20-square flange receptacle 24-jam nut receptacle 26-RFI shielding plug						
Plating	W —olive green cadmium plating F — electroless nickel plating K—stainless steel passive J — composite material, olive green cadmium plating M —composite material, electroless nickel plating						
Shell size	9 11 13 17 19 21 23 25						
Index code	A to J	A	B	C	E	F	G H J
Insert arrangement	① see insert arrangement figure for details ② Plus “g” means contacts shielding						
Contact type	PF — high speed pin SF — high speed socket						
Polarization	N — normal A/B/C/D/E— alternative						

[Part number example]

J599/20WB81PFN: J599 series square flange receptacle, olive green cadmium plating, shell size 11#, insert arrangement 81, filled with high speed pins, normal polarization.

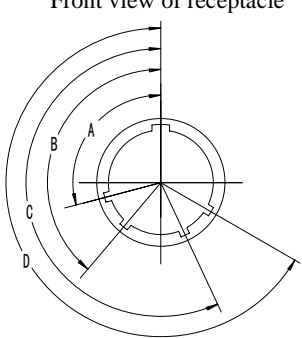
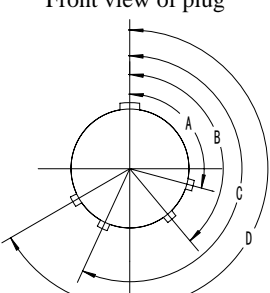
[Differential contact ordering information]

Basic series	CF	8	1 /	4	1	1	-01	-24483/SG-26
Contact size	8 - 8# contact							
Contact type	1 — pin (Characteristics impedance 100Ω) 2 —socket (Characteristics impedance 100Ω) 3 —pin (Characteristics impedance 150Ω) 4 —socket (Characteristics impedance 150Ω) 5 —pin (Characteristics impedance 110Ω) 6 —socket (Characteristics impedance 110Ω)							
Contact number	2 — 2 cores 4 — 4 cores							
Termination connection	1 — crimping 2 — straight PCB (long) 3 —straight PCB (short) 4 —right-angle PCB (long) 5 —right-angle PCB (short)							
Shielding (grounding)	1 — grounding 0 — non grounding							
Structure	01 — rear remove							
Applicable wire	① 100Ω, 2-core differential contact: HPD700001070; ② 100Ω, 4-core differential contact: CEC-RWC-18664; ③ 110Ω, 4-core differential contact: RCN8422, RCN8989; ④ If the wire type is the same, the wire part number can be omitted.							




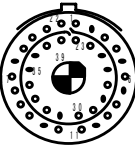
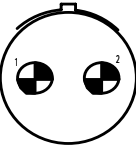
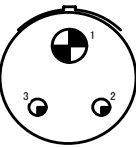
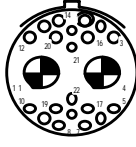
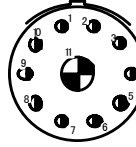
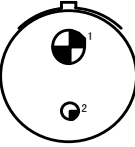
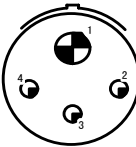
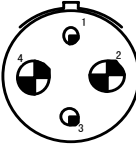
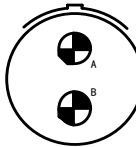
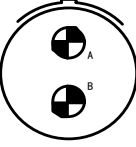
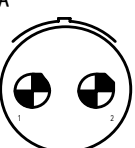
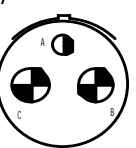
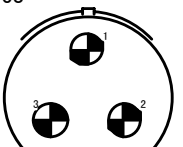
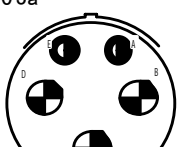
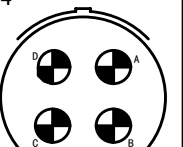
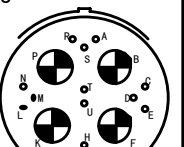
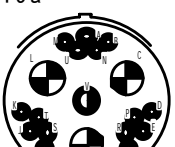
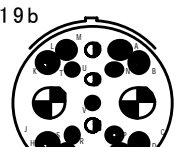
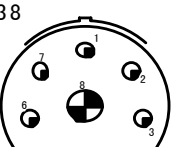
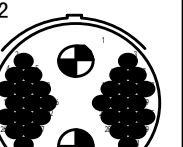
[Part number example]

CF85/411-01-24483/SG-26: differential contact CF series, 8# contacts, **Characteristics** impedance 110  $\Omega$  pin, contact number 4, crimping termination, shielding grounding, rear remove structure, applicable wire type 24483/SG-26.

**Polarization**

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

# Insert arrangement (mating view of insulator with pin)

壳体号 9 (A)	05  1-8# 共地				
	81  1-8#				
	01  1-8#				
17 (E)	02  38-22D, 1-8#	22  2-8#	23  2-12#, 1-8#	32  20-22D, 2-8#	51  10-16#, 1-8#
	52  1-12#, 1-8#	54  3-12#, 1-8#	64  2-12#, 2-8#	75  2-8#	82  2-8# 共地
	2A  2-8#	57  1-16#, 2-8#			
19 (F)	03  3-8#	05a  2-16#, 3-8#	04  4-8#	18  14-22D, 4-8#	19a  3-8#, 1-16#, 15-22D
	19b  2-8#, 4-16#, 8-20, 5-22D	38  7-12#, 1-8#	92  2-8#, 30-22D		



接 触 件 规 格 22D 20# 16# 12# 10# 8#

21 (G)	05 a  2-20#, 3-8#	15  12-20, 2-8#	24 a  20-22, 4-8#	44  42-22D, 2-8#	75  4-8#	78  6-16#, 2-8#
	05  5-8#	06  6-8#, 非标坐标	06 a  6-8#, 标准坐标	09  6-12#, 3-8#	19 a  10-22D, 4-16#, 1-12#, 4-8#	27  14-22D, 12-16#, 1-8#
23 (H)	54  38-22D, 4-16#, 4-8#	68  66-22D, 2-8#				
	07  97-22D, 2-8#	08  8-8#	17  36-22D, 6-8#	20  10-20#, 13-16#, 4-12#, 3-8#	24 b  21-20#, 1-10#, 2-8#	31  12-20#, 12-16#, 5-10#, 2-8#
25 (J)	31 a  23-20#, 7-12#, 1-8#	42  38-22D, 4-8#	44  24-22D, 12-16#, 1-12#, 3-8#	46  40-20#, 4-16#, 2-8#	48  30-22D, 15-20#, 2-12#, 1-8#	51  4-16#, 7-8#
	55  50-22D, 5-8#	65  61-22D, 1-12#, 3-8#				

接触件规格 22D 20# 16# 12# 10# 8#

## Outline dimensions

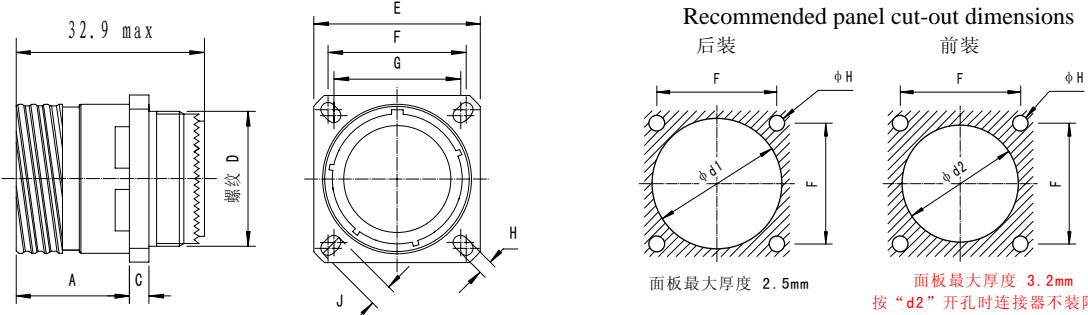
[Square flange receptacle, metal material]

Shell size	MS shell	A max	B max	C max	Thread D	E	F	G	H	J	d1 min	d2 min
9	A	20.9	10.6	2.5	M15×1-6g	23.8	18.26	15.09	3.25	5.49	16.66	13.11
11	B	20.9	10.6	2.5	M15×1-6g	26.2	20.62	18.26	3.25	4.93	20.22	15.88
13	C	20.9	10.6	2.5	M18×1-6g	28.6	23.01	20.62	3.25	4.93	23.42	19.05
17	E	20.9	10.6	2.5	M25×1-6g	33.3	26.97	24.61	3.25	4.93	30.96	25.81
19	F	20.9	10.6	2.5	M28×1-6g	36.5	29.36	26.97	3.25	4.93	32.94	28.98
21	G	20.1	11.4	3.2	M31×1-6g	39.7	31.75	29.36	3.25	4.93	36.12	32.18
23	H	20.1	11.4	3.2	M34×1-6g	42.9	34.93	31.75	3.91	6.15	39.29	34.93
25	J	20.1	11.4	3.2	M37×1-6g	46.0	38.10	34.93	3.91	6.15	42.47	37.69

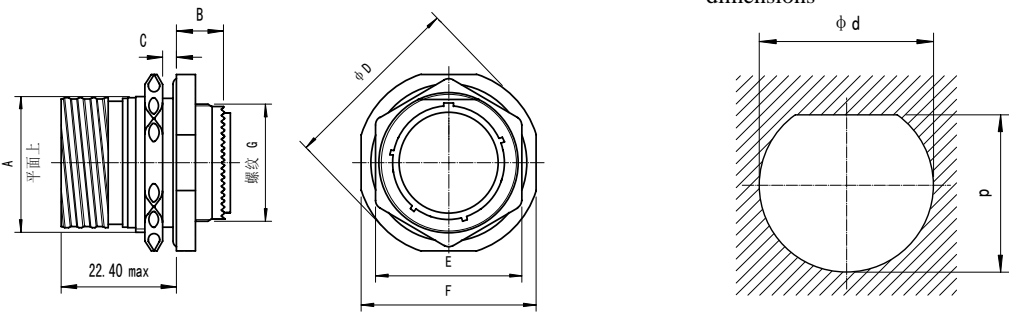
[Jam nut receptacle, metal material]

Shell size	MS shell	A	Dmax	Emax	F	Thread G	d	p
9	A	16.5	30.5	24.0	27.0	M15×1-6g	17.70	16.99
11	B	19.3	35.2	27.0	31.8	M15×1-6g	20.88	19.53
13	C	24.0	38.4	32.0	34.9	M18×1-6g	25.58	24.26
17	E	30.4	44.8	37.0	41.3	M25×1-6g	31.98	30.68
19	F	33.4	49.3	41.0	46.0	M28×1-6g	35.15	33.86
21	G	36.5	52.7	46.0	49.2	M31×1-6g	38.28	37.06
23	H	39.7	55.9	50.0	52.4	M34×1-6g	41.50	40.24
25	J	42.8	59.0	51.2	55.6	M37×1-6g	44.68	43.41

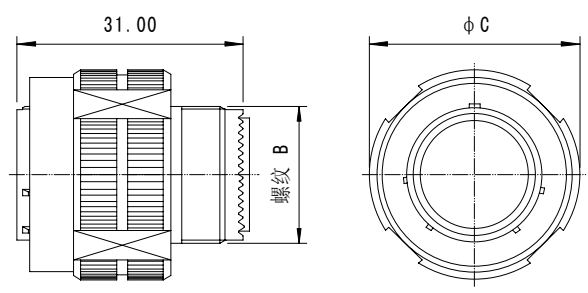
[Square flange receptacle, composite material]

											
Shell size	MS shell	A max	C max	Thread D	E	F	G	H	J	d1 min	d2 min
9	A	19.80	3.65	M12×1-6g	23.80	18.26	15.09	3.25	5.49	16.66	13.11
11	B	19.80	3.65	M15×1-6g	26.20	20.62	18.26	3.25	4.93	20.22	15.88
13	C	19.80	3.65	M18×1-6g	28.60	23.01	20.62	3.25	4.93	23.42	19.05
15	D	19.80	3.65	M22×1-6g	31.00	24.61	23.01	3.25	4.93	26.59	23.01
17	E	19.80	3.65	M25×1-6g	33.30	26.97	24.61	3.25	4.93	30.96	25.81
19	F	19.80	3.65	M28×1-6g	36.50	29.36	26.97	3.25	4.93	32.94	28.98
21	G	19.00	4.35	M31×1-6g	39.70	31.75	29.36	3.25	4.93	36.12	32.16
23	H	19.00	4.35	M34×1-6g	42.90	34.93	31.75	3.91	6.15	39.29	34.93
25	J	19.00	4.35	M37×1-6g	46.00	38.10	34.93	3.91	6.15	42.47	37.69

[Jam nut receptacle, composite material]

										
Shell size	MS shell	A	B max	C max	D max	E max	F	Thread G	d	p
9	A	16.50	9.90	3.20	30.50	24.00	27.00	M12×1-6g	17.70	16.99
11	B	19.30	9.90	3.20	35.20	27.00	31.80	M15×1-6g	20.88	19.53
13	C	24.00	9.90	3.20	38.40	32.00	34.90	M18×1-6g	25.58	24.26
15	D	27.20	9.90	3.20	41.60	36.00	38.10	M22×1-6g	28.80	27.53
17	E	30.40	9.90	3.20	44.80	37.00	41.30	M25×1-6g	31.98	30.68
19	F	33.40	9.90	3.20	49.30	41.00	46.00	M28×1-6g	35.15	33.86
21	G	36.50	9.90	3.20	52.70	46.00	49.20	M31×1-6g	38.28	37.06
23	H	39.70	9.90	3.20	55.90	50.00	52.40	M34×1-6g	41.50	40.24
25	J	42.80	9.90	3.20	59.00	51.23	55.60	M37×1-6g	44.68	43.41

[Plug]

	Shell size	MSshell	Thread B	C max
	09	A	M15×1-6g	21.80
	11	B	M15×1-6g	25.00
	13	C	M18×1-6g	29.40
	17	E	M25×1-6g	35.60
	19	F	M28×1-6g	38.50
	21	G	M31×1-6g	41.70
	23	H	M34×1-6g	44.90
	25	J	M37×1-6g	48.00

[Accessory J1784/18-××N]

Basic series	J1784 /	18-	25	N	09	A
Type	18- straight shielding cable clamp					
Shell size	see figure 1					
Shell plating	N – electroless nickel plating W – olive green cadmium plating S-- stainless steel passive					
Lead-out code	see figure 2					
Length code	see figure 3					

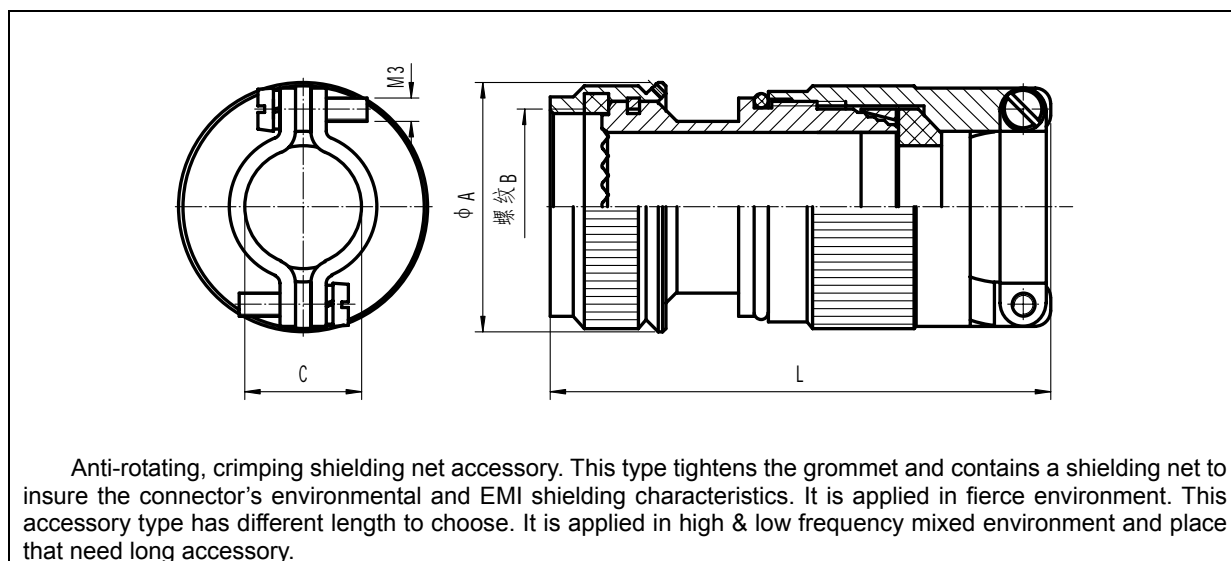


Figure 1

Shell size	Lead-out dia. No.	A	Thread B
9	01~02	19	M12×1
11	01~03	22	M15×1
13	02~04	25.1	M18×1
15	02~05	29	M22×1
17	02~06	32	M25×1
19	03~07	35	M28×1
21	03~08	38	M31×1
23	03~09	41.1	M34×1
25	04~10	44.1	M37×1

Figure 2



Lead-out dia. No.	Cable dia. range (C)
01	1.57~3.18
02	3.18~6.35
03	6.35~9.53
04	9.53~12.7
05	12.7~15.88
06	15.88~19.05
07	19.05~22.23
08	22.23~25.4
09	25.4~28.58
10	28.58~31.75

Figure3

Shell size	Length code	L
9~25	Standard (omit)	64.4
9~25	A	89.8
15~25	B	115.2
21~25	C	140.6

## Crimping operation illustration

### Tools for contacts

The tools for high speed differential contact comply with MIL-C-22520 standard, the mounting tool and remove tool is listed as below form:

Form 1. Mounting and remove tool for high speed differential contact

Contact type	Remove tool	Crimping tool		Block		Locator	
						Central pin	Central socket
8# high speed differential contact	M81969/14-12	Inner contact	YJQ-02 or M22520/2-01			XDWQ-CF02 or K709	XDWQ-CF02 or K709
	JY81969/8-14	Outer contact	M22520/5-01	Y631, A	Y143,A Y141,B Mated with RCN8989		
	M81969/8-14A						

### Central contact crimping

High speed differential contact central pin and socket use YJQ-02 or M22520/2-01 crimping tool, different wires use different gears. See the below form 2 and form 3. (The gear parameter is valued by testing, the max tensile strength is according to GJB5020-2001)。

Form 2 Different wires crimping gear

Contact type	Central contact	Wire type		Gear	Max tensile strength(N)	Outer contact tensile
		GJB(mm <sup>2</sup> )	AWG			
8# differential contact	Central pin / socket	0.08	28	3	14	66N
		0.125	26	4	23	
		0.2	24	5	36	

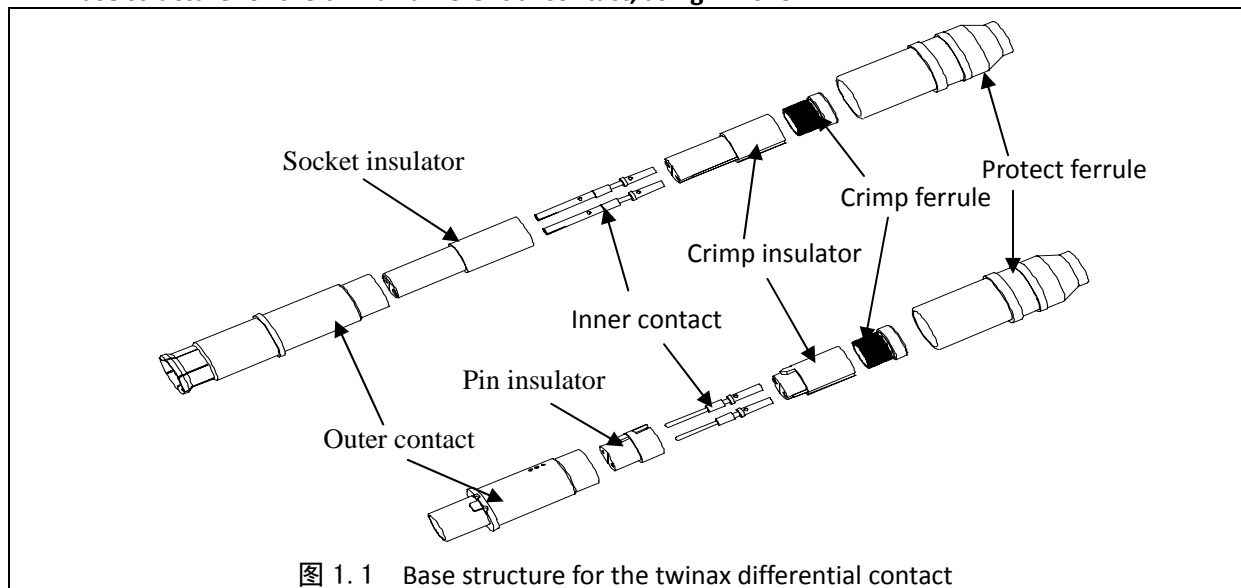
Form 3 Recommended crimping gear

Contact type	Central contact	Wire type	Gear	Max tensile strength(N)	Outer contact tensile
8# differential contact	Central pin / socket	HPD700001070 Habia (2 cores, AWG28)	3	14	66N
		CEC-RWC-18664 (4 cores, AWG 24)	5	36	
		RCN8989 (4 cores, AWG 24)	5	36	

## 1. Assemble guide for 8# twinax differential contact

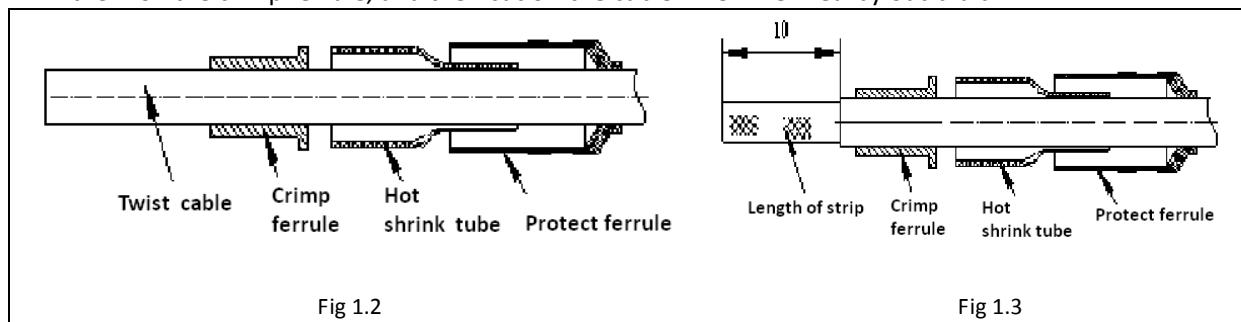
Cable type: HPD700001070 Habia

1.1 Base structure for the twinax differential contact, as fig 1.1 shown.

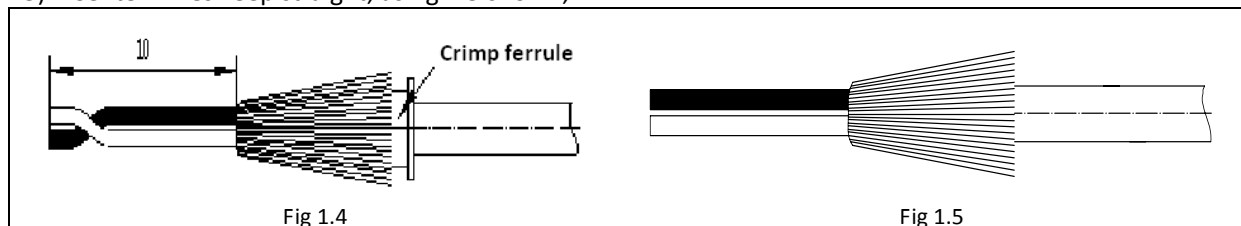


### 1.2 Stripping the cable

- 1) Slide hot shrink tube, protect ferrule and crimp ferrule over cable outer jacket in proper order as fig 1.2 shown.
- 2) Strip cable jacket as illustrated, fig 1.3, 1.4 (Note: The length of stripping the cable is different when the contacts type are different. Socket—15mm, Pin—10mm), then comb the cable outer braid, reflexed them on the crimp ferrule, and then cut off the cable inner filler nearby out braid.

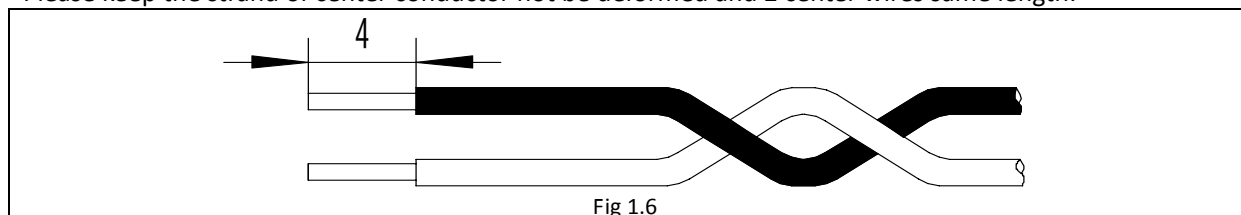


- 3) Center wires keep straight, as fig 1.5 shown;



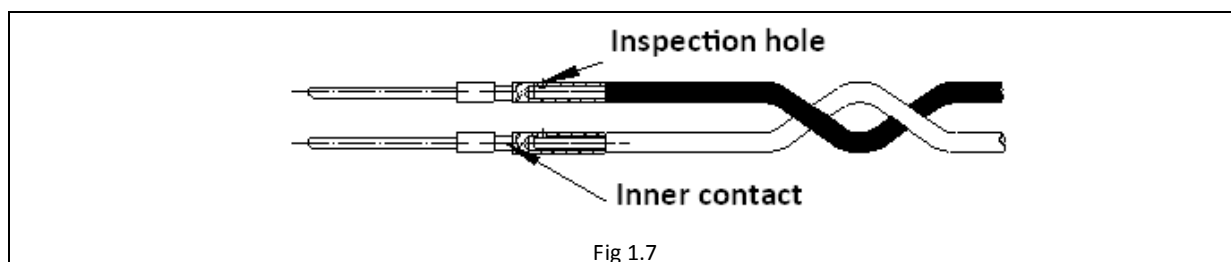
- 4) Strip the insulation of the center wires, as fig 1.6 shown.

Please keep the strand of center conductor not be deformed and 2 center wires same length.



### 1.3 Inner contact crimping

Put the center conductor into inner contact correctly, as the following steps, fig 1.7

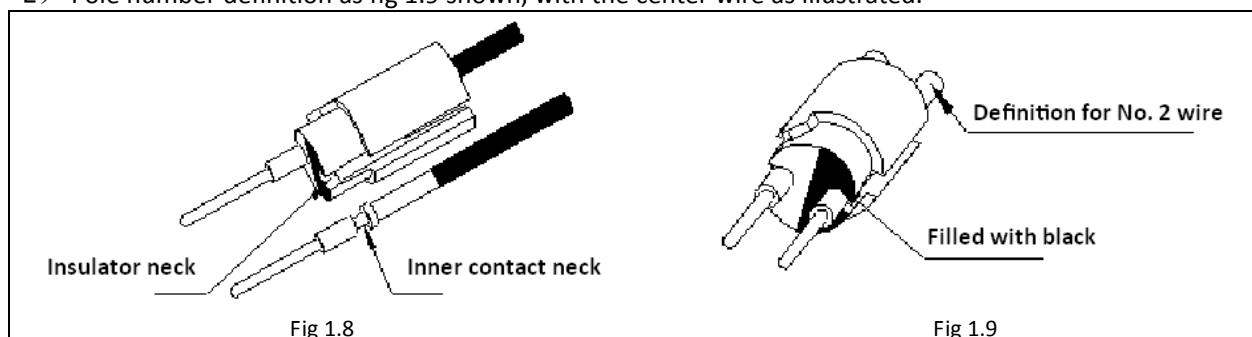


- 1) Cable center conductor must be visible through the inspection hole in the inner contact wire well; Using the crimping tool which listed in Table 1(YJQ-02 or M22520/2-01) and Positioner (XDWQ-CF02 or K709), and following the instruction of Table 2 to adjust the tap position of the crimping tool.
- 2) Then put the inner contact into the crimping tool, keep the cable center conductor in the right position,3;
- 3) Clench and press the hand shank of the crimping tool till it reach the complete position, and then the hand shank will flick automatically.
- 4) Please inspect crimping appearance, should be meet the requirements as below:
  - The assembly inner contact should be clean, no stain and corrosion etc;
  - Only the dents with crimping tool can be visible, other dents are not allow;
  - The deformation, warp etc. which will influence the assembly inner contact are not allow; and should not be unexpected sharp edge, desquamation, burr, cut and planting damage etc.
  - The cable center conductor should be all cover in the crimp ferrule, do not allow miss.

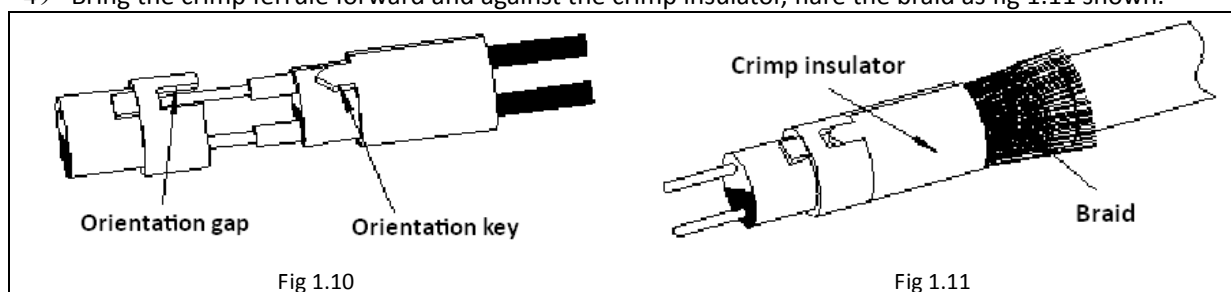
#### 1.4 Assemble for the inner contact

Put the assembly inner contact into the crimp insulator correctly, then the whole assembly install into outer contact, as following steps:

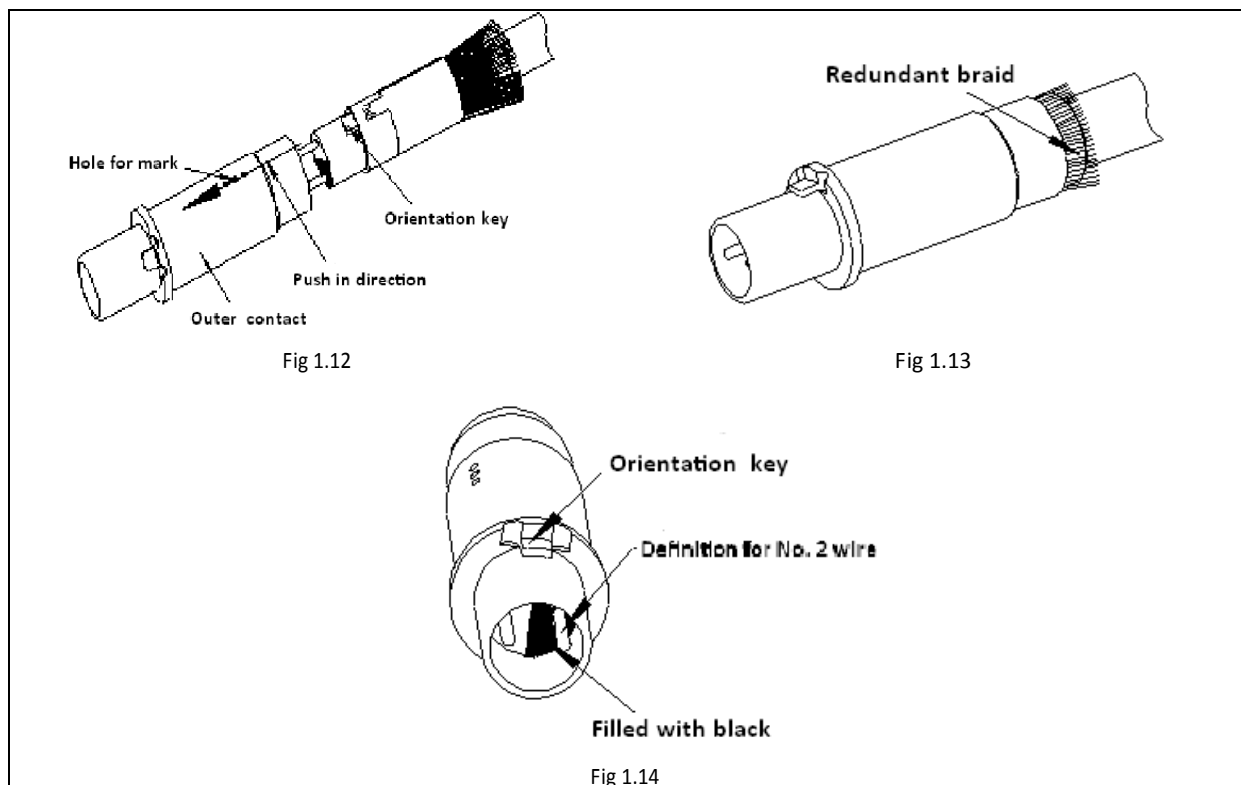
- 1) Put the inner contact into the crimp insulator, keep the inner contact neck mate with the insulator neck as fig 1.8 shown;
- 2) Pole number definition as fig 1.9 shown, with the center wire as illustrated.



- 3) Orientation key for crimp insulator must be mated with the orientation gap of the socket insulator, as fig 1.10 shown;
- 4) Bring the crimp ferrule forward and against the crimp insulator, flare the braid as fig 1.11 shown.

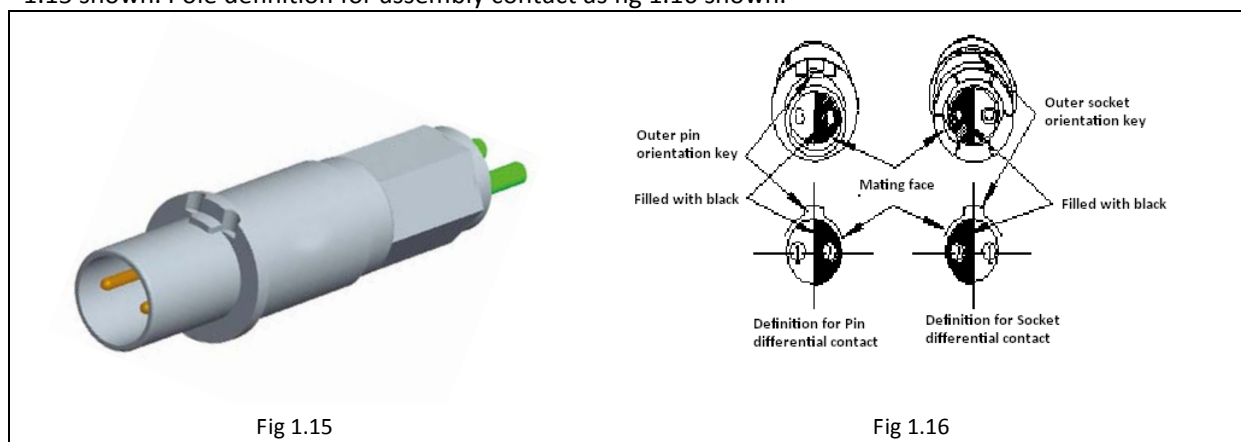


- 5) Socket assembly must be aligned with the hole for mark on outer contact and push in outer contact, then forward the crimp ferrule as illustrated, as fig 1.12, 1.13, 1.14 shown.



### 2.1.5 Outer contact crimping

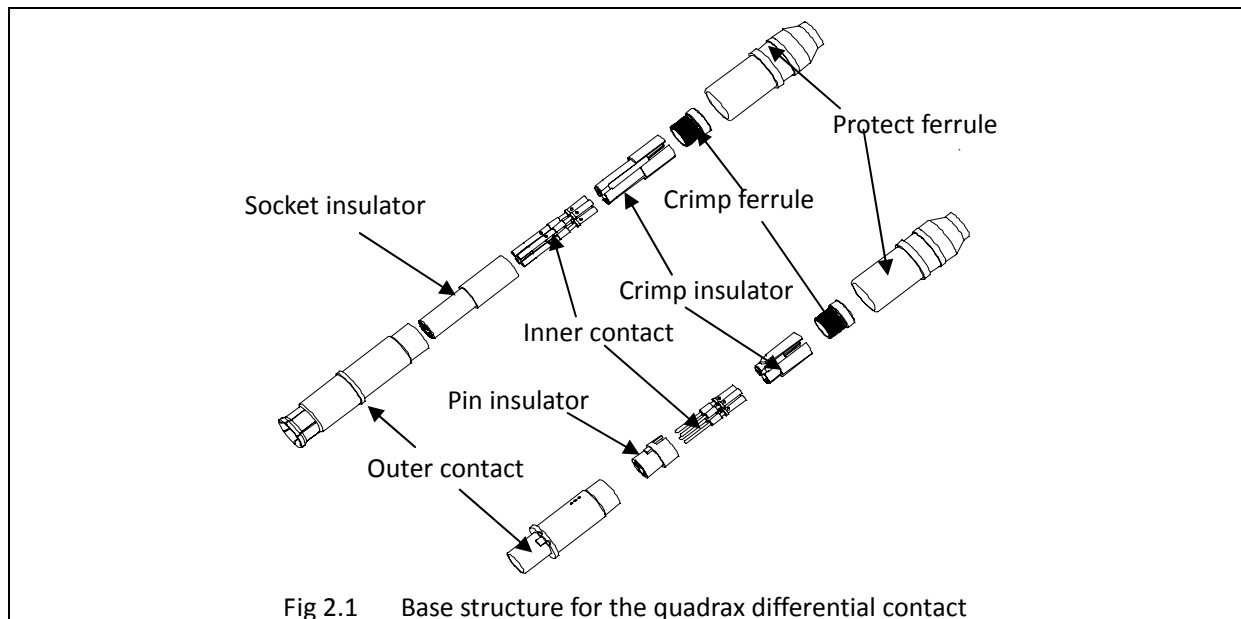
Crimp outer contact well using crimp tool listed in Table1 (M22520/5-01 & Y631), crimp the end of outer contact to hexagon, then cut off the redundant braid and shrink the hot shrink tube, complete ones as fig 1.15 shown. Pole definition for assembly contact as fig 1.16 shown.



## 2. Assemble guide for 8# quadrax differential contact

### 2.1 Cable type: RAYCHEN CEC-RWC-18664 A-B

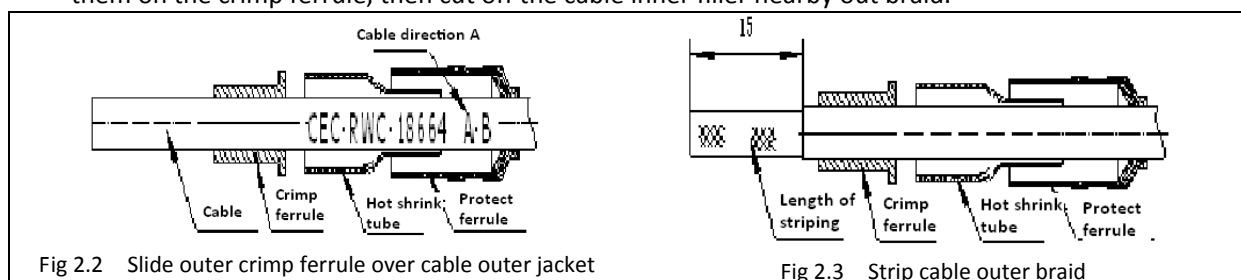
#### 2.1.1 Base structure for the quadrax differential contact, as fig 2.1 shown.



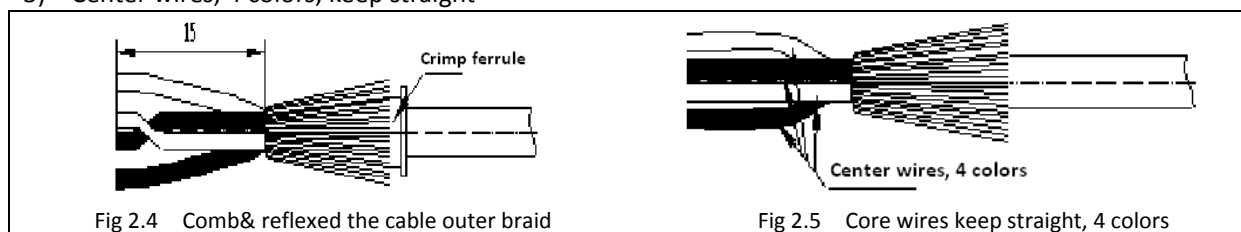
### 2.1.2 Stripping the cable

The cable part number is RAYCHEN CEC-RWC-18664 A-B (4 cores), A-B means for the cable direction. Direction A is for socket, Direction B is for pin. This is socket installation instruction, as an example.

- 1) Assemble socket use the direction A of the cable as the fig 2.2 shown. Slide hot shrink tube, protect ferrule and crimp ferrule over cable outer jacket in proper order as fig 2.2 shown.
- 2) Strip cable jacket as illustrated, fig 2.3 (Note: The length of stripping the cable is different when the contacts type are different. Socket—10mm, Pin—15mm), then comb the cable outer braid, reflexed them on the crimp ferrule, then cut off the cable inner filler nearby out braid.

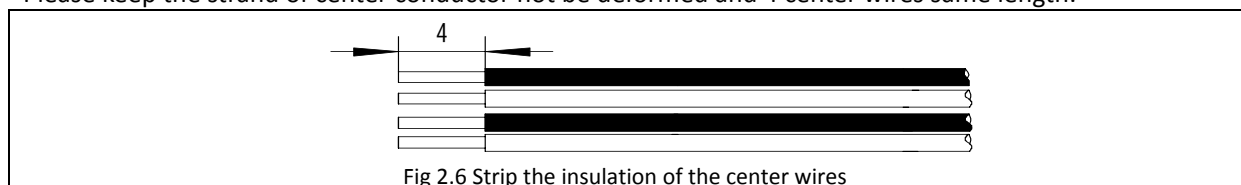


- 3) Center wires, 4 colors, keep straight



- 4) Strip the insulation of the center wires, 4 colors, as fig 2.6 shown.

Please keep the strand of center conductor not be deformed and 4 center wires same length.



### 2.1.3 Inner contact crimping

Put the center conductor into inner contact correctly, as the following steps, fig 2.7

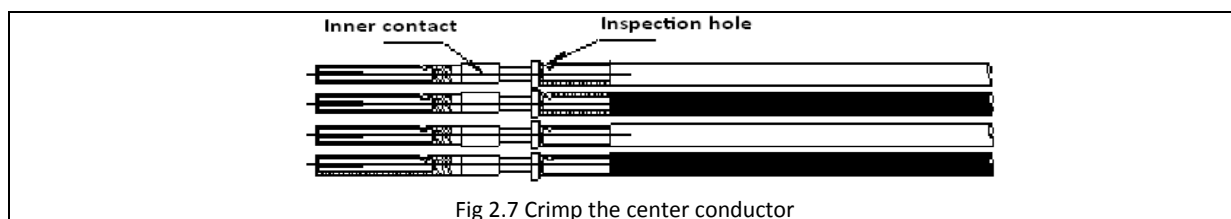


Fig 2.7 Crimp the center conductor

- 1) Cable center conductor must be visible through the inspection hole in the inner contact wire well; Using the crimping tool which listed in Table 1(YJQ-02 or M22520/2-01) and Positioner (XDWQ-CF02 or K709), and following the instruction of Table 2 to adjust the tap position of the crimping tool.
- 2) Then put the inner contact into the crimping tool, keep the cable center conductor in the right position,5;
- 3) Clench and press the hand shank of the crimping tool till it reach the complete position, and then the hand shank will flick automatically.
- 4) Please inspect crimping appearance, should be meet the requirements as below:
  - The assembly inner contact should be clean, no stain and corrosion etc;
  - Only the dents with crimping tool can be visible, other dents are not allow;
  - The deformation, warp etc. which will influence the assembly inner contact are not allow; and should not be unexpected sharp edge, desquamation, burr, cut and planting damage etc.
  - The cable center conductor should be all cover in the crimp ferrule, do not allow miss.

#### 2.1.4 Assemble for the inner contact

Put the assembly inner contact into the crimp insulator correctly, then the whole assembly install into outer contact, as following steps:

- 6) Put the inner contact into the crimp insulator, keep the inner contact neck mate with the insulator neck as fig 2.8 shown;
- 7) Pole number definition as fig 2.9 shown, with the center wire as illustrated. (Note: When assemble the 8# differential contact to the left plug, the definition for the pole is same with pin contact.)

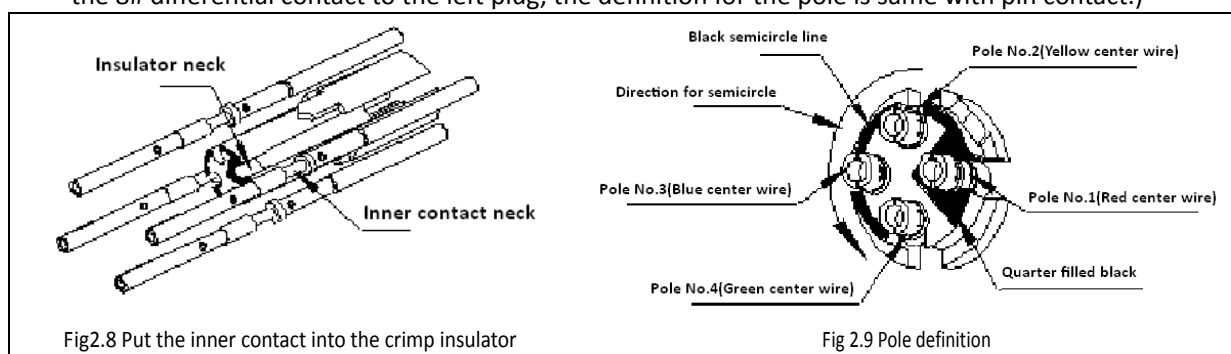


Fig2.8 Put the inner contact into the crimp insulator

Fig 2.9 Pole definition

- 8) Orientation key for crimp insulator must be mated with the orientation gap of the socket insulator, as fig 2.10 shown;
- 9) Bring the crimp ferrule forward and against the crimp insulator, flare the braid as fig 2.11 shown.

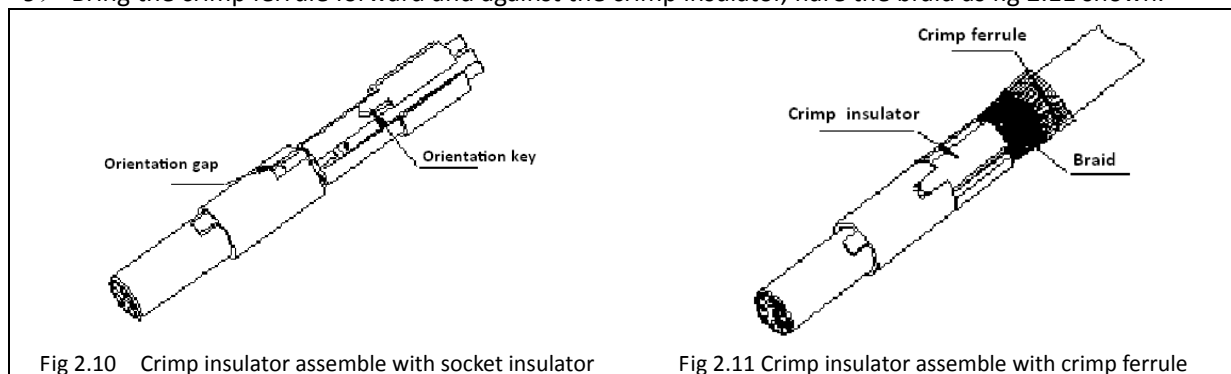
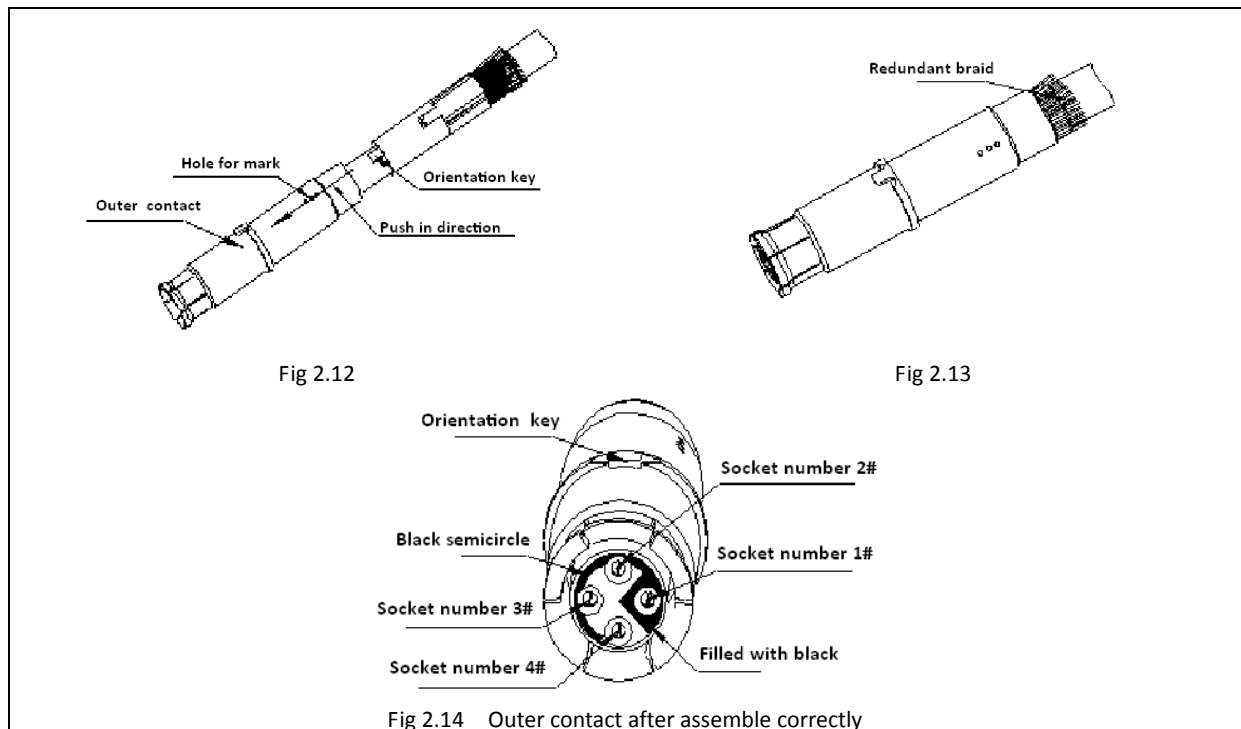


Fig 2.10 Crimp insulator assemble with socket insulator

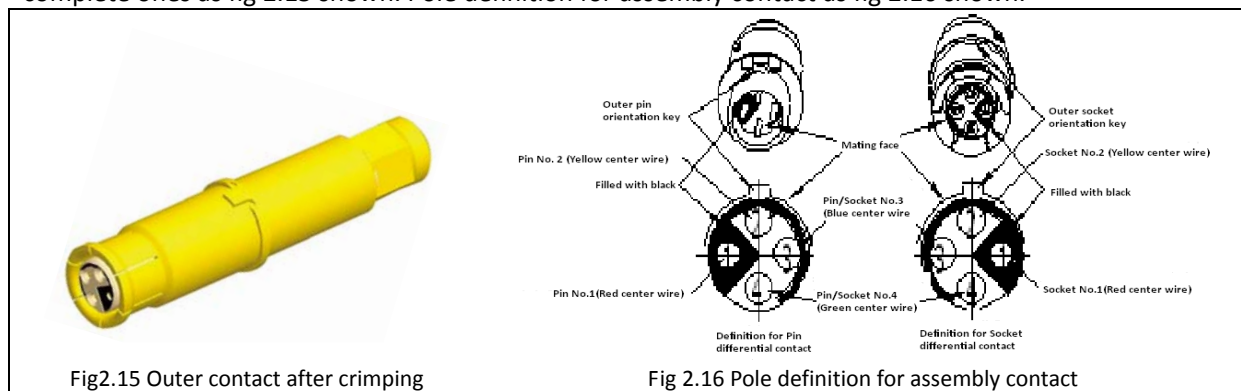
Fig 2.11 Crimp insulator assemble with crimp ferrule

- 10) Socket assembly must be aligned with the hole for mark on outer contact and push in outer contact, then forward the crimp ferrule as illustrated, as fig 2.12, 2.13, 2.14 shown.



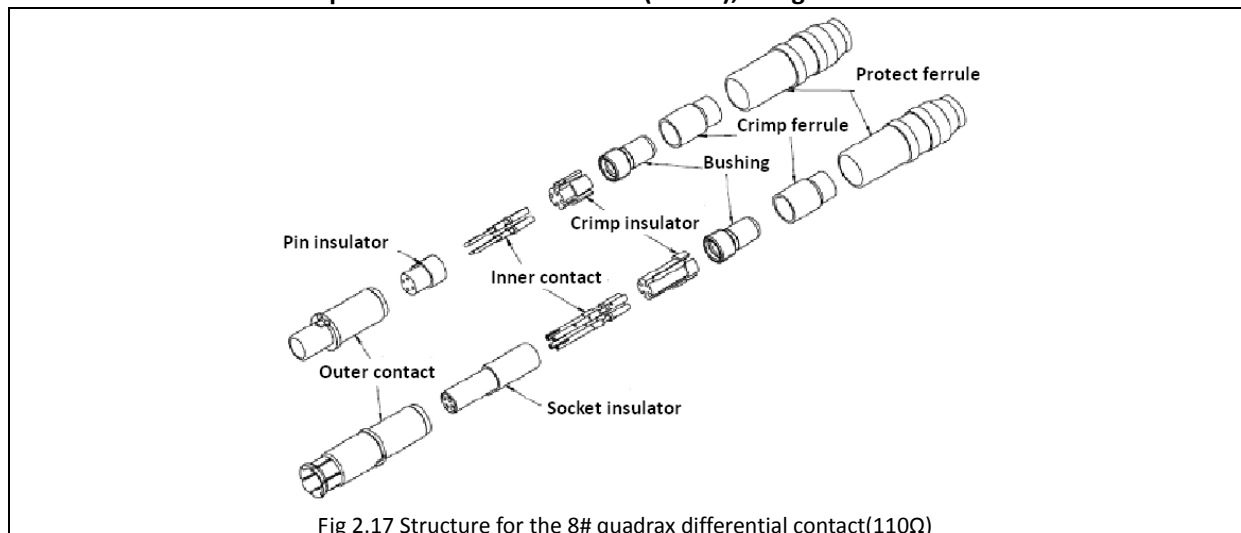
### 2.1.5 Outer contact crimping

Crimp outer contact well using crimp tool listed in Table1 (M22520/5-01 & A position of Y631), crimp the end of outer contact to hexagon, then cut off the redundant braid and shrink the hot shrink tube, complete ones as fig 2.15 shown. Pole definition for assembly contact as fig 2.16 shown.



## 2.2 Cable: GORE RCN8989

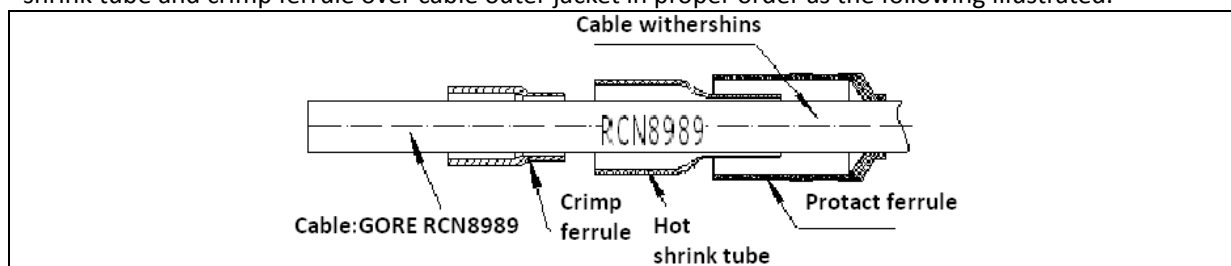
### 2.2.1 Structure for the 8# quadrax differential contact(110Ω), as fig 2.17 shown.





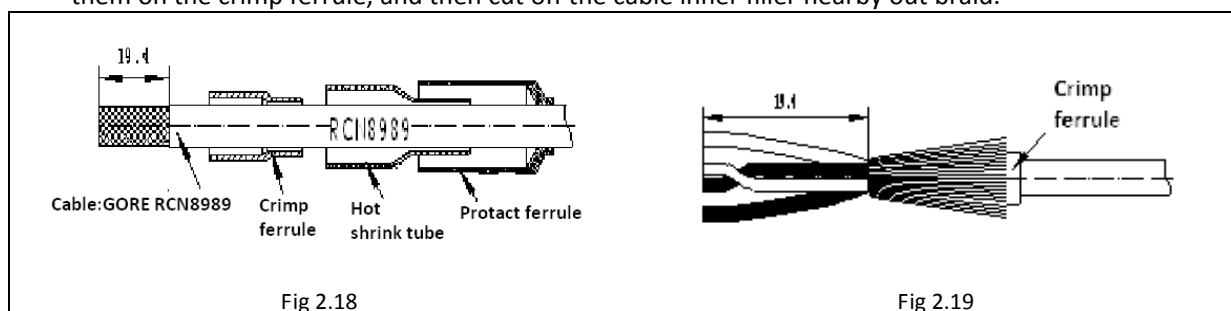
### 2.2.2 Stripping the cable

Assemble socket use the withershins of the cable as the following illustrated. Slide the protect ferrule, hot shrink tube and crimp ferrule over cable outer jacket in proper order as the following illustrated.

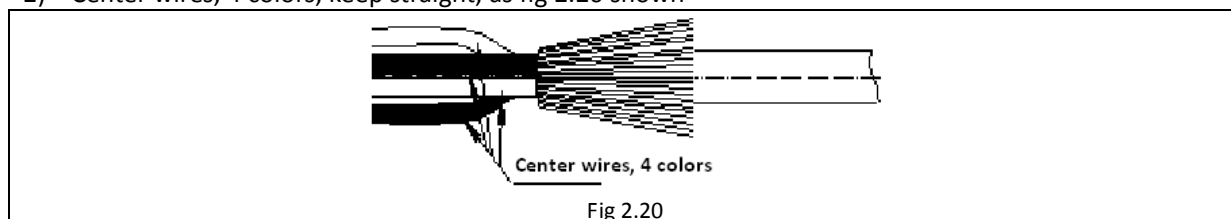


### 2.2.3 Accessory assemble

- 1) Strip cable jacket as illustrated, fig 2.18 (Note: The length of stripping the cable is different when the contacts type are different. Socket—19.4mm, Pin—16mm), then comb the cable outer braid, reflexed them on the crimp ferrule, and then cut off the cable inner filler nearby out braid.

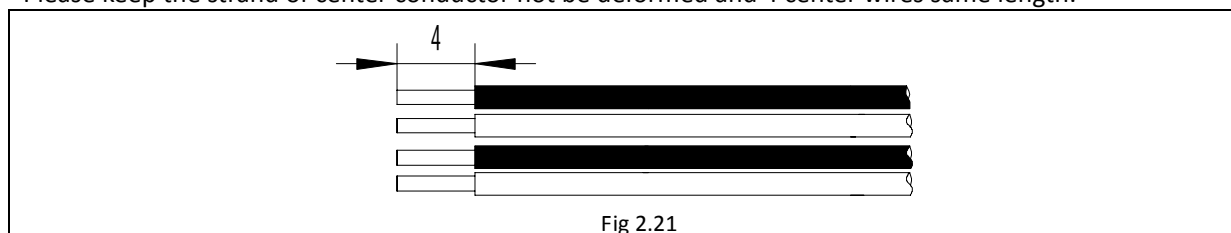


- 2) Center wires, 4 colors, keep straight, as fig 2.20 shown



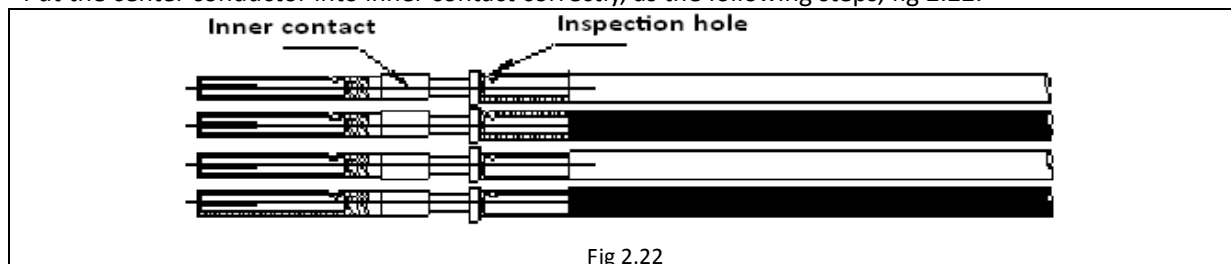
- 3) Strip the insulation of the center wires, 4 colors, as fig 2.21 shown.

Please keep the strand of center conductor not be deformed and 4 center wires same length.



### 2.2.4 Inner contact crimping

Put the center conductor into inner contact correctly, as the following steps, fig 2.22.



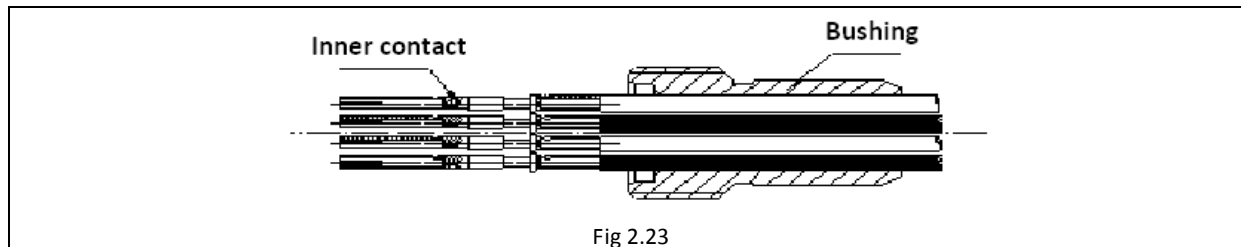
- 1) Cable center conductor must be visible through the inspection hole in the inner contact wire well; Using the crimping tool which listed in Table 1(YJQ-02 or M22520/2-01) and Positioner (XDWQ-CF02 or K709), and following the instruction of Table 2 to adjust the tap position of the crimping tool.
- 2) Then put the inner contact into the crimping tool, keep the cable center conductor in the right

position,5;

- 3) Clench and press the hand shank of the crimping tool till it reach the complete position, and then the hand shank will flick automatically.
- 4) Please inspect crimping appearance, should be meet the requirements as below:
  - The assembly inner contact should be clean, no stain and corrosion etc;
  - Only the dents with crimping tool can be visible, other dents are not allow;
  - The deformation, warp etc. which will influence the assembly inner contact are not allow; and should not be unexpected sharp edge, desquamation, burr, cut and planting damage etc.
  - The cable center conductor should be all cover in the crimp ferrule, do not allow miss.

#### 2.25 Slide the bushing over the inner contact and center wires

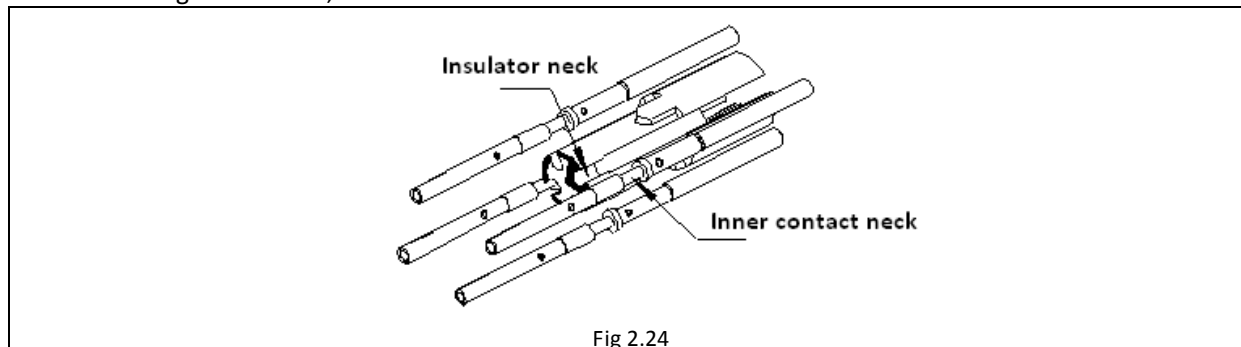
Slide the bushing over the assembly inner contact as fig 2.23 shown, please keep the center wires as the twist status and twist direction



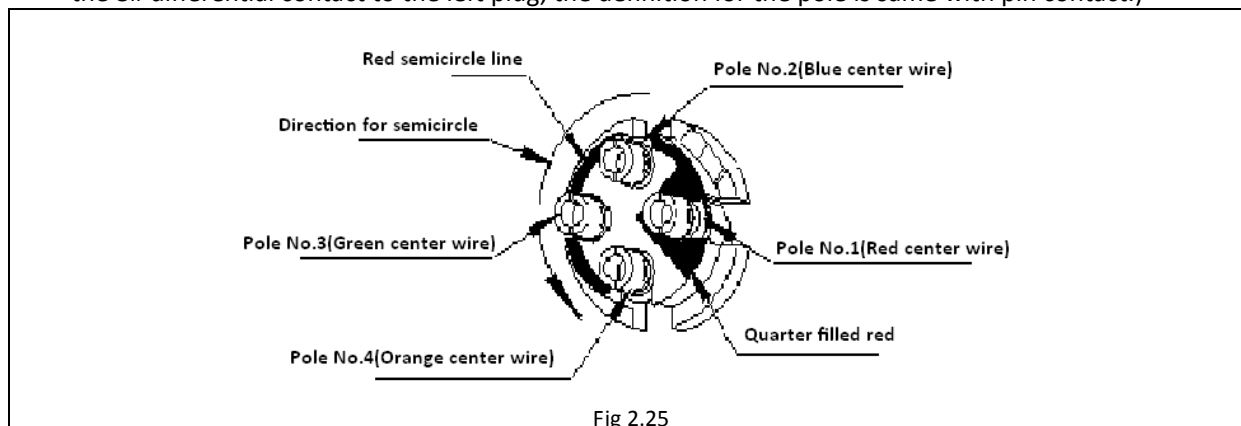
#### 2.2.6 Assemble for the inner contact

Put the assembly inner contact into the crimp insulator correctly, then the whole assembly install into outer contact, as following steps:

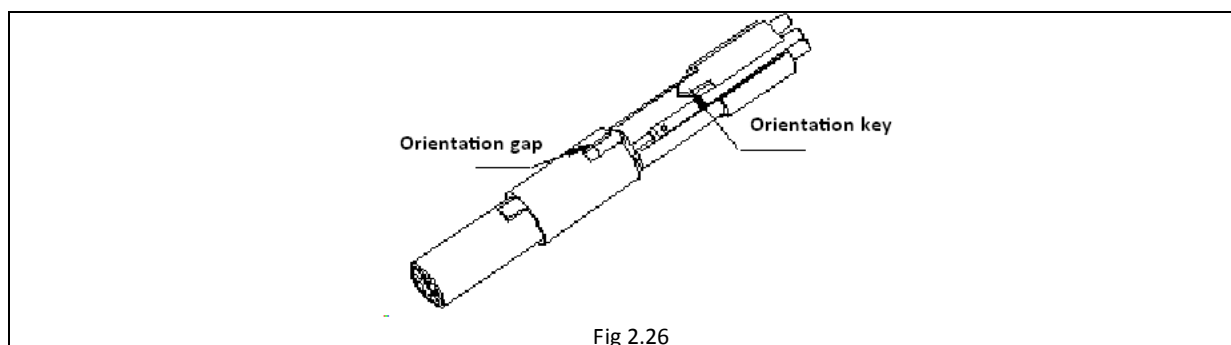
- 1) Put the inner contact into the crimp insulator, keep the inner contact neck mate with the insulator neck as fig 2.24 shown;



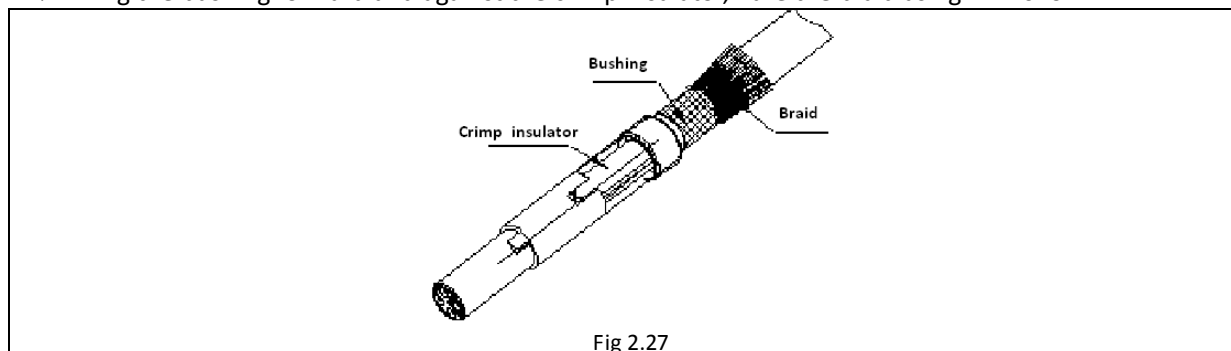
- 2) Pole number definition as fig 2.25 shown, with the center wire as illustrated. (Note: When assemble the 8# differential contact to the left plug, the definition for the pole is same with pin contact.)



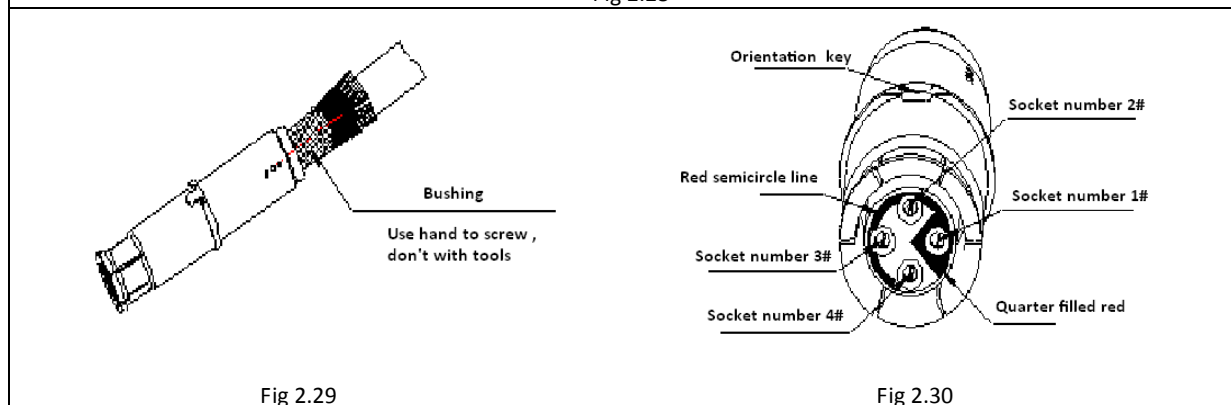
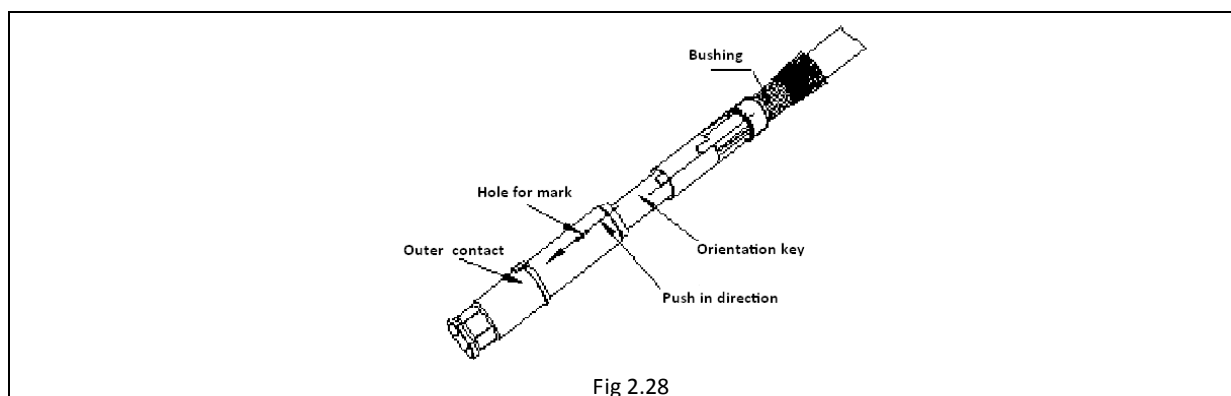
- 3) Orientation key for crimp insulator must be mated with the orientation gap of the socket insulator, as fig 2.26 shown;



4) Bring the bushing forward and against the crimp insulator, flare the braid as fig 2.27 shown.

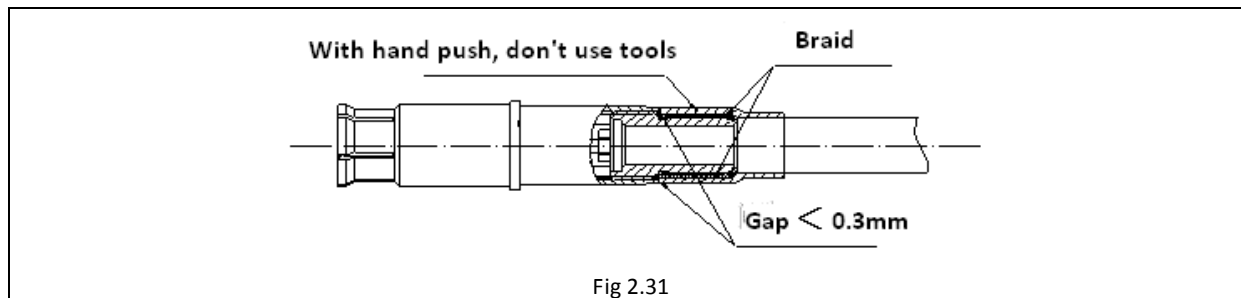


5) Socket assembly must be aligned with the hole for mark on outer contact and push in outer contact, then use hand screw the bushing to compress the insulator as illustrated, fig 2.12, 2.13, 2.14 shown. (Note: Do not use tool to screw the bushing, avoid to damage the insulator)



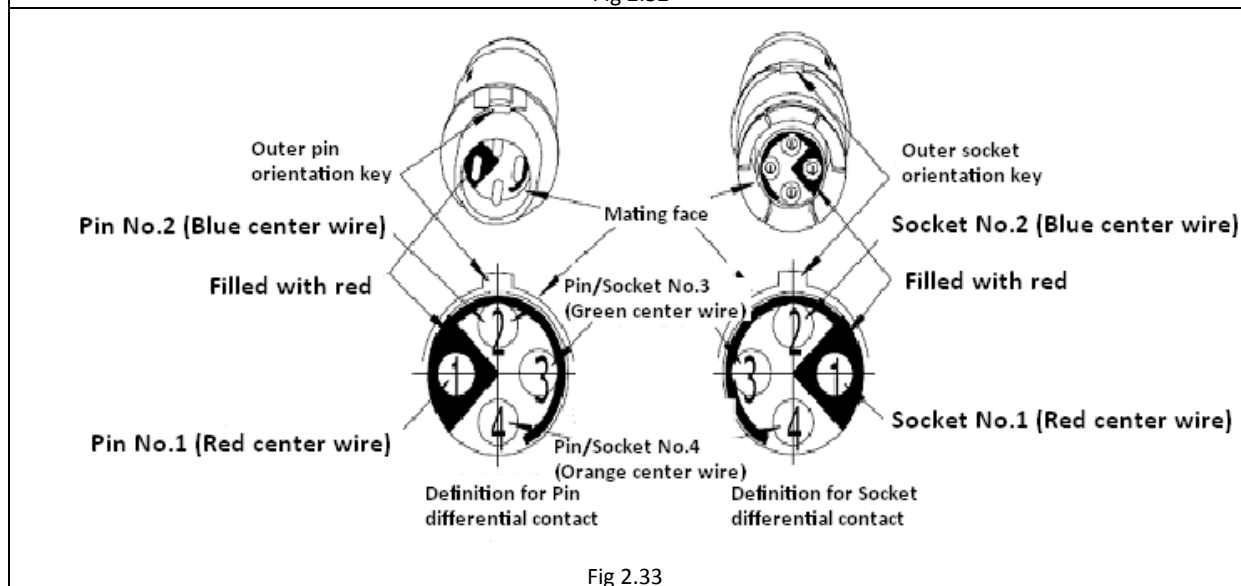
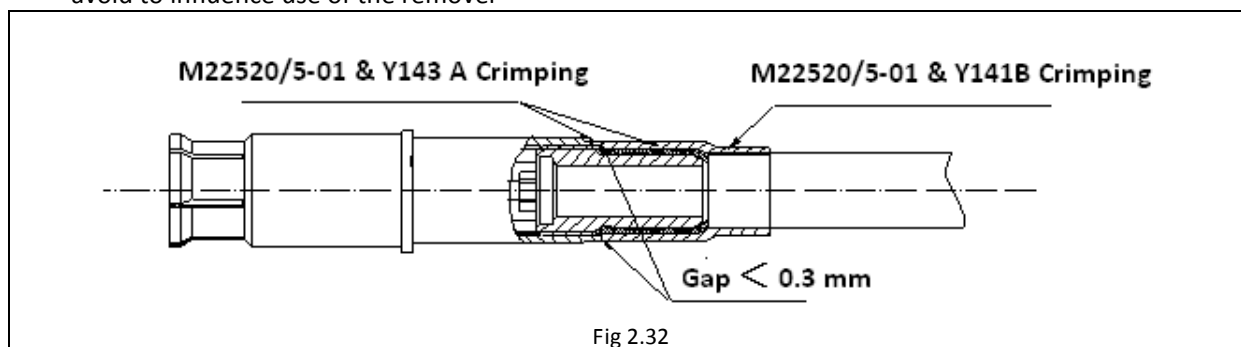
## 2.2.7 Crimp ferrule assemble

Keep the braid covered the bushing evenly, and then forward the crimp ferrule over the bushing, cut off the redundant braid. Please note not damage the contact, as fig 2.31 shown.



### 2.2.8 Outer contact crimping

- 1) Crimp outer contact well using crimp tool listed in Table1 (M22520/5-01 & A position of Y631), crimp the outer contact to hexagon crimp position as fig 2.32 shown;
- 2) Then using crimp tool listed in Table1 (M22520/5-01 & B position of Y141), crimp the outer contact to hexagon crimp position as fig 2.32 shown;
- 3) Shrink the hot shrink tube cover 2 hexagon crimp position, but don't cover the no crimping position , avoid to influence use of the remover

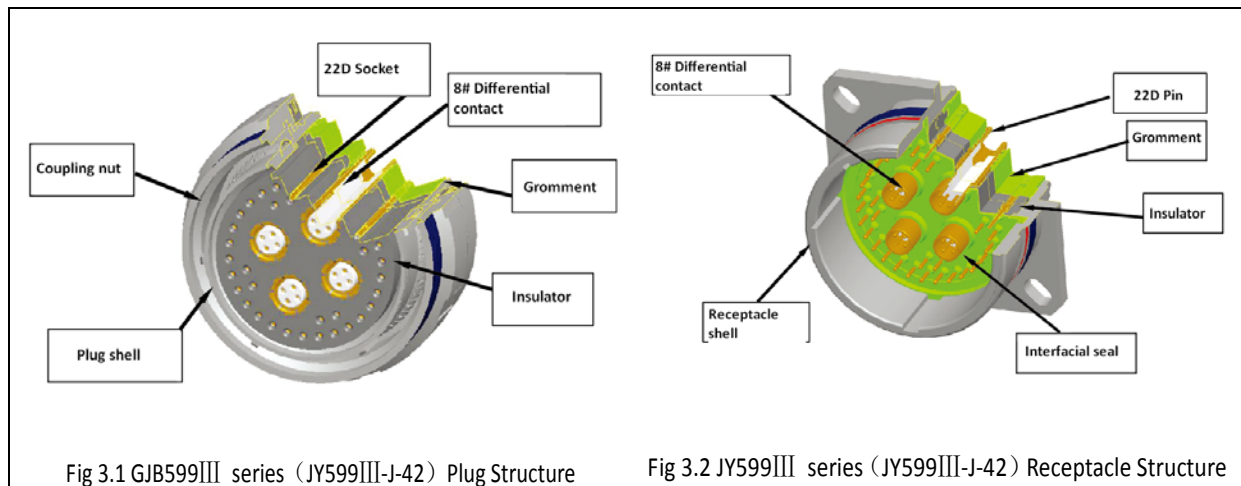


## 3. 8# Differential Product

### Product structure of GJB599 series

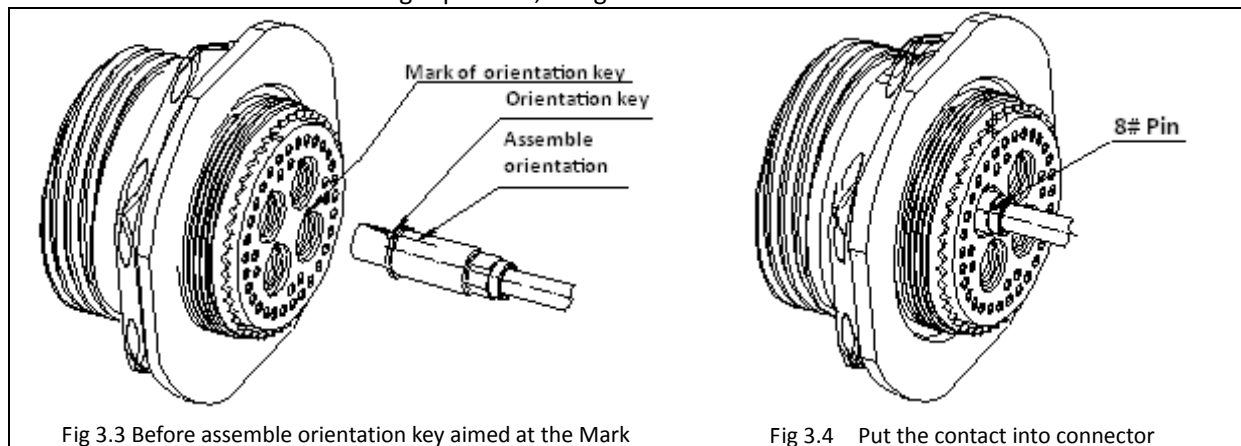
3.1. 8# differential contact is mainly use for GJB599 series

- ♦ Structure of plug as fig 3.1 shown: the same structure with GJB599 III series plug, Anti-decoupling device allows high vibration performance. Common contacts and 8# differential contacts both fixed in connector by contact retention clips, common contacts can be rear released.
- ♦ Structure of receptacle as fig 3.2 shown: the same structure with GJB599 III series receptacle, square flange or jam nut type.



3.2. GJB599 series with 8# differential contact, JY599III-J-42-CF assembly with 8# differential contacts as an example

- 1) After crimping the differential contact, it should be assemble in connector. Before assemble, orientation key must be aimed at the mark, as fig 3.3 shown;
- 2) Remain the orientation, put the contact into connector, until hear a obviously sound "click", that means the contact is in the right position, as fig 3.4 shown.



3) Plug & Receptacle with quadrax contacts, as fig3.5, 3.6 shown

