RAINEON

南京睿宁电子科技有限公司

NANJING RAINEON ELECTRONIC TECHNOLOGY CO., LTD

PRODUCT CATALOGUE

Aviation Connectors | Interconnect Technology



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Features





- This series covers metric, inch and power electrical connectors.
- Quick coupling and separation, small size, light weight, good sealing and outstanding tensile performance.
- Plug cable shrouds come in seven mounting styles; shells are shielded and non-shielded.
- Cable outlets are straight or angled; termination is solder type. Wide variety, complete range.
- In accordance with GJB101A-97, GJB598A-96, MIL-C-26482 and similar standards.
- Enterprise standard: Q/LK.J(11)07-2009.

Y50X series:

- The Y50X series is the metric class of the Y50 series.
- Complies with GJB101A-97.

Environmental Performance

- Operating temperature: -55 °C ~ +125 °C
- Relative humidity: up to 95% at 40 °C
- Operating altitude: 30000 m above sea level
- Vibration: frequency 10 Hz ~ 2000 Hz, acceleration 196 m/s^2
- Shock: acceleration 490 m/s^2
- Constant acceleration: 490 m/s^2
- Sealing: 0.2 MPa pressure tight
- Salt spray, damp heat and mould resistance meet GJB101A-97.

Electrical Performance

Contact Resistance & Rated Current

Contact size (mm)	Contact resistance (mOhm)	Rated current (A)
Φ0.8	≤ 6	3
Φ1.0	≤ 5	5
Φ1.5	≤ 3	10
Φ2.0	≤ 2	20
Φ2.5	≤ 1.5	25

Electrical Performance

Rated Voltage, Dielectric Strength & Insulation Resistance

Environment	Rated voltage (V)	Dielectric strength (V)	Insulation resistance (mOhm)
Ambient temperature & pressure	500	1500	⩾ 3000
Damp heat	500	500	⩾ 20
High temp	250	–	⩾ 500
Low pressure 4.39 KPa	300	375	–

RF Attenuation

Frequency (Hz)	100	150	200	300	400	600	800	1000
Attenuation (dB)	65	60	60	55	55	50	45	45

- Shell-to-shell electrical continuity: non-shielded <= 200 mOhm, shielded <= 5 mOhm

Mechanical Performance

- Shell: high-strength aluminium alloy / stainless steel;
- Non-shielded plating: anodized, black H / green L (Ni - sand-blasted Ni); S: electroless Ni (Zn - zinc);
- Shielded plating: iridescent or military-green passivated zinc, electroless nickel, sand-blasted nickel;
- Insulator: heat-resistant thermoplastic;
- Contacts: copper alloy, gold plated;
- Mechanical life: 500 cycles.

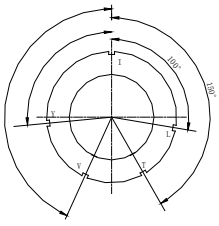
How to Order

Y50	X	II	08	02	Z	J	10	H	–	40
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(10)

(1) Series: Y50X - Y50 metric series circular electrical connectors
(2) Type code:
(3) Key position: X has 5 positions I II III IV V; III is not marked - see Key Position Marking;
(4) Shell size: 08 10 12 14 16 18 20 22 24;
(5) Contact count: 2-61;
(6) Shell class: T - plug; Z - receptacle;
(7) Contact class: J - pin; K - socket; S - through-wall contact;
(8) Plug rear style or receptacle mounting:
Plug rear style: 1 - grounding crimp; 2 - cable clamp; 3 - shielded;
4 - anti-corrosion tensile; 5 - angled strain relief; 6 - spring strain relief;
Receptacle mounting: 10 - square flange; 11 - circular flange; 14 - nut-clamped;
(9) Finish: H - black anodized; L - military-green anodized;
S - electroless nickel; Ni - sand-blasted nickel;
(10) Shell material: no mark - aluminium alloy; 40 - stainless steel;

Key Position Marking

Mark code	I	II	III	IV	V
Key position letter	V	Y	I	L	T
Angle to main key II	155°	95°	0°	100°	150°



Type Code Table

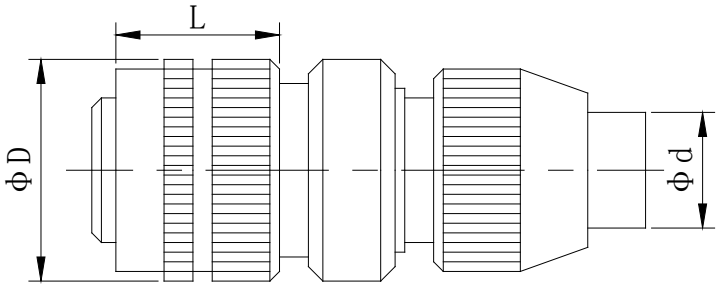
Symbol	X	Q	P	N	H	A
Meaning	Solder, potted	Crimp, potted	Solder, potted	Crimp, potted	Glass-sealed	PCB solder, potted

Mis-mating prevention

Slots at different angles are cut in the insulator; on request the factory can re-index them so plugs and receptacles of the same size but different keys cannot be mis-mated. (Viewed from the pin mating face.)

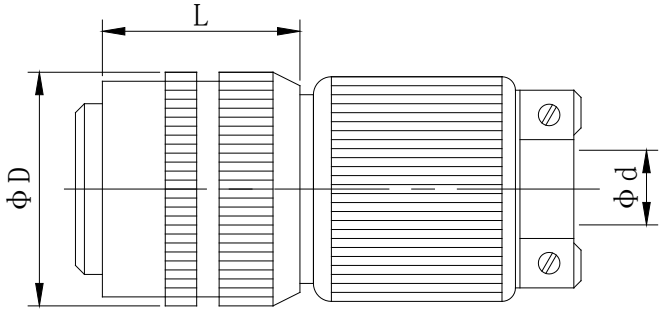
Plug Outline & Mounting

Grounding Crimp Plug Outline & Mounting



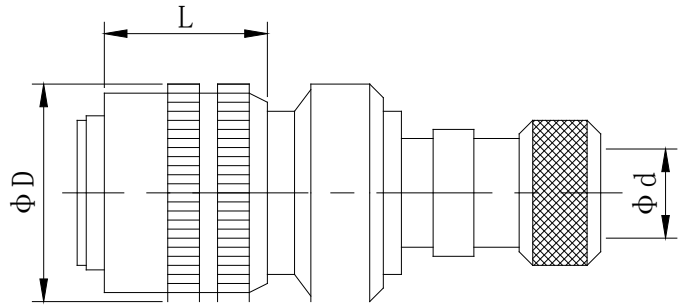
Shell No.	D	d	L
08	20	6. 1	19
10	23	7. 1	19
1912	26	11. 1	19
14	30	12. 1	19
16	33	14	19
18	36	16	19
20	39	18	19
22	43	18	19
24	45	18	19

Cable Clamp Plug Outline & Mounting



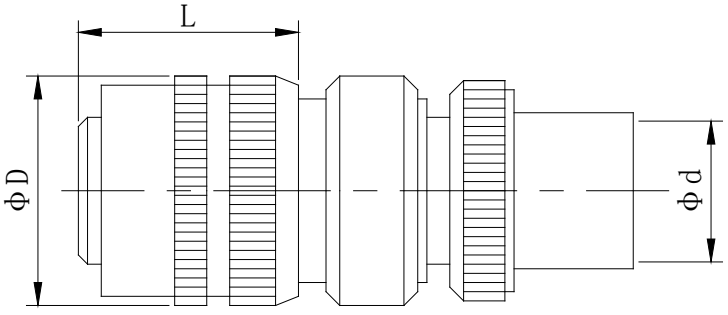
Shell No.	D	d	L
08	20	6	19
10	23	8	19
12	26	10	19
14	30	12	19
16	33	14	19
18	36	17	19
20	39	20	19
22	43	24	19
24	45	27	19

Simple Potted Plug Outline & Mounting



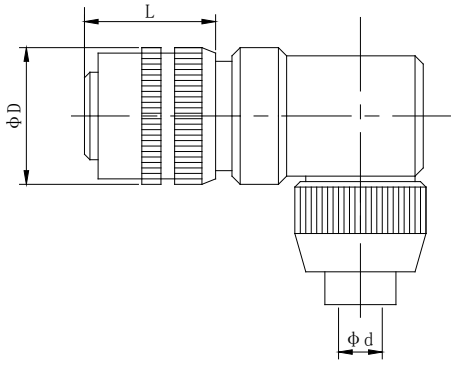
Shell No.	D	d	L
08	20	6.1	19
10	23	7.1	19
12	26	9	19
14	30	12	19
16	33	14	19
18	36	16	19
20	39	16	19
22	43	16	19
24	45	16	19

Anti-Corrosion Tensile Plug Outline & Mounting



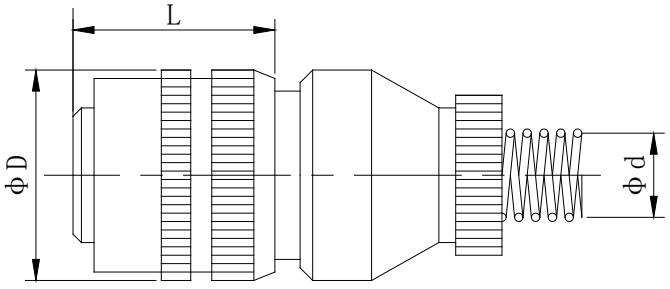
Shell No.	D	d	L
08	20	6	19
10	23	7.5	19
12	26	9	19
14	30	11.5	19
16	33	14	19
18	36	15.5	19
20	39	16	19
22	43	16	19
24	45	16	19

Angled Strain Relief Outline & Mounting



Shell No.	D	d	L
08	20	6	19
10	23	7.1	19
12	26	11.1	19
14	30	12.1	19
16	33	14	19
18	36	15.5	19
20	39	16	19
22	43	16	19
24	45	16	19

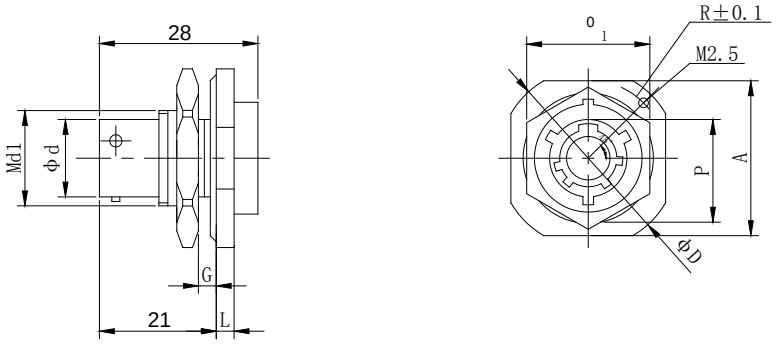
Spring Strain Relief Outline & Mounting



Shell No.	D	d	L
08	20	6	19
10	23	7.5	19
12	26	9	19
14	30	11.5	19
16	33	14	19
18	36	15.5	19
20	39	16	19
22	43	16	19
24	45	16	19

Receptacle Outline & Mounting

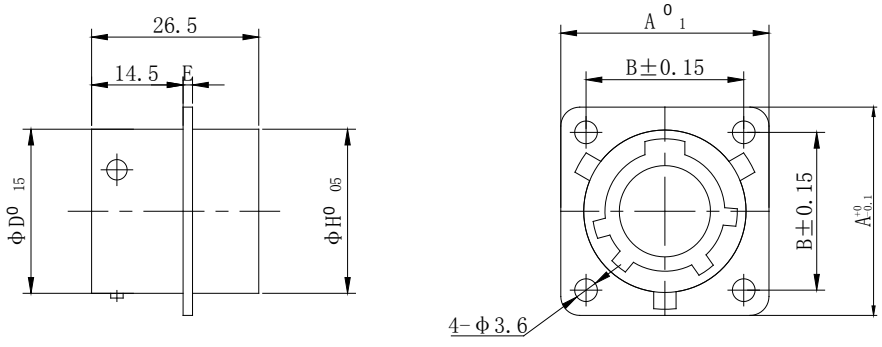
Nut-Clamped Outline & Mounting



Note: overall length of the PCB receptacle is 21+L; all other dimensions unchanged

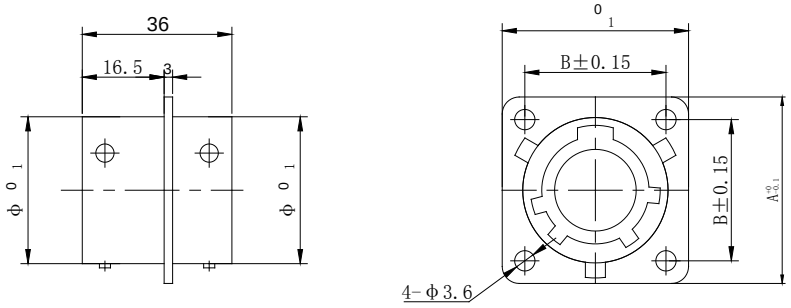
Shell No.	G		d	Md1	A	D	S	R	L	P
	min	max								
08	1.6	3.2	13	16X1	24	30	22	13.4	3	15
10	1.6	3.2	16	18X1.25	27	33.2	24	14.4	3	17
	1.6	3.2	16	20X1.5	27	33.2	24	14.4	3	17
12	1.6	3.2	20	24X1.5	32	39.2	27	17.4	3	22.2
14	1.6	3.2	23	27X1.5	35	42.2	30	18.9	3.5	25
16	1.6	3.2	26	30X1.5	38	45.2	32	20	3.5	29
18	1.6	3.2	29	33X1.5	41	48	36	21.7	3	32
20	1.6	6.4	32	36X1.5	46	50.2	41	23.2	3	34
22	1.6	6.4	35	39X1.5	50	54.2	43	25	3.5	37.5
24	1.6	6.4	38	42X1.5	53	56.2	46	26.2	3.8	41

Receptacle Outline & Mounting (Flange Type)



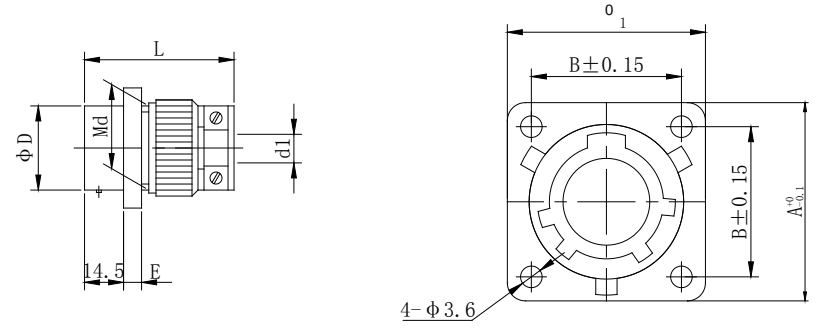
Shell No.	A	B	E	D	H
08	21	15	1.5	13	13
10	24	18	1.5	16	16
12	27	21	1.5	20	20
14	30	23	1.5	23	23
16	33	25	1.5	26	26
18	36	27	1.5	29	29
20	39	29	2.2	32	33
22	42	32	2.2	35	35
24	45	35	2.2	38	38

Bulkhead Receptacle Outline & Mounting



Shell No.	A	B	D
08	21	15	13
10	24	18	16
12	27	21	20
14	30	23	23
16	33	25	25
18	36	27	29
20	39	29	32
22	42	32	35
24	45	35	38

Flange Receptacle with Cable Shroud Outline & Mounting

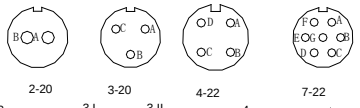


Shell No.	A	B	D	E	Md	d	L
08	21	15	13	1.5	14X1	6	41
10	24	18	16	1.5	18X1	8	41
12	27	21	20	1.5	20X1	10	43.5
14	30	23	23	1.5	24X1	12	49.5
16	33	25	26	1.5	27X1	14	49.5
18	36	27	29	1.5	30X1	17	49.5
20	39	29	32	2.2	33X1.5	20	51
22	42	32	35	2.2	36X1.5	24	51
24	45	35	38	2.2	39X1.5	27	55

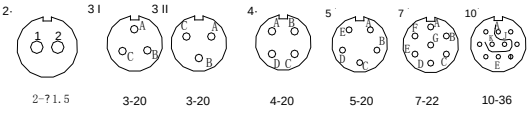
Y50X Series Circular Connector Contact Arrangement Chart

size	8	12	16	20	22	36
Pin diameter	3.6	2.4	1.6	1.0	0.8	0.6

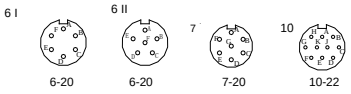
Shell size No. 06



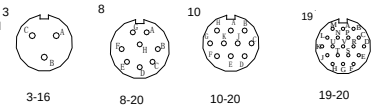
Shell size No. 08



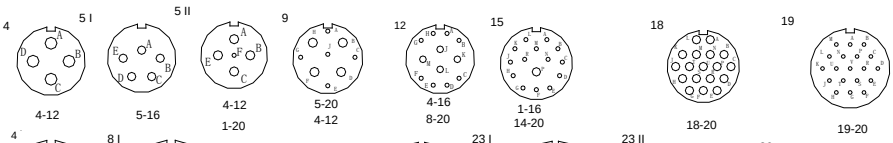
Shell size No. 10



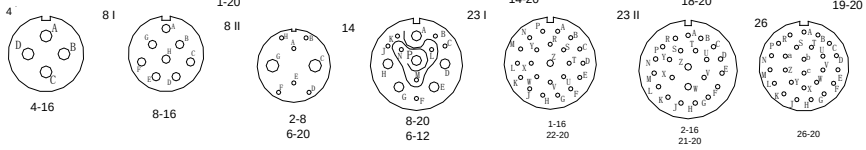
Shell size No. 12



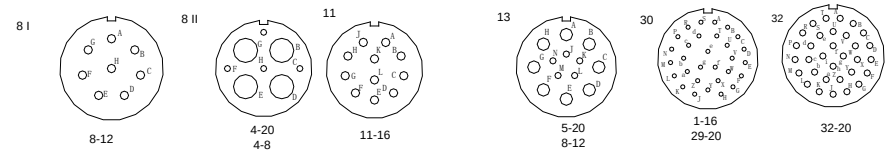
Shell size No. 14



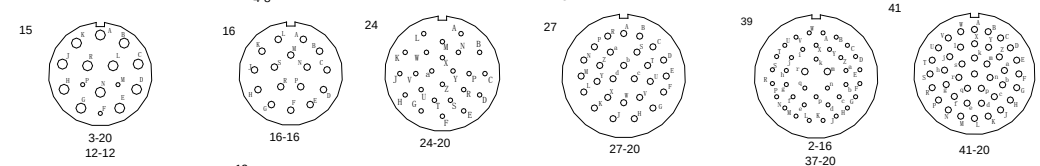
Shell size No. 16



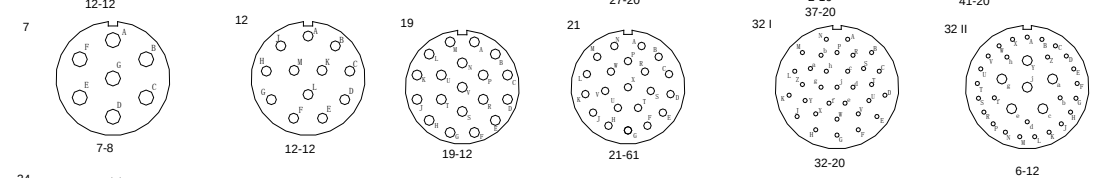
Shell size No. 18

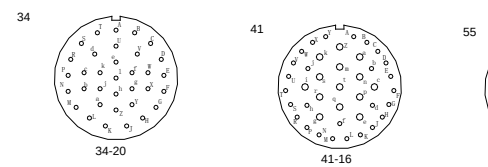


Shell size No. 20

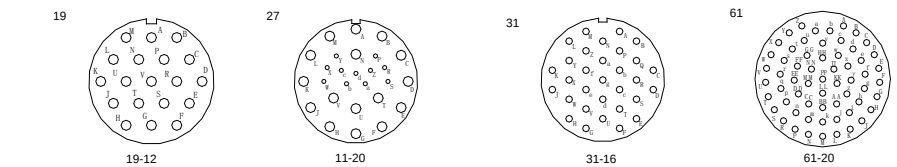


Shell size No. 22





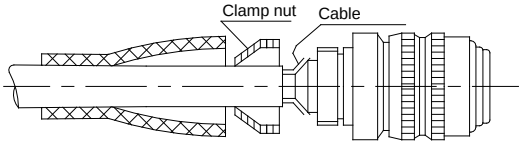
Shell size No. 24



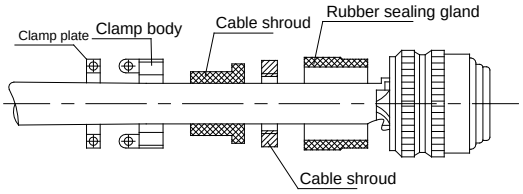
Y50 Series

Cable Termination Diagrams

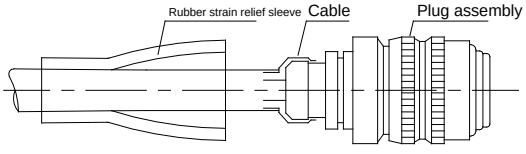
1. Grounding crimp



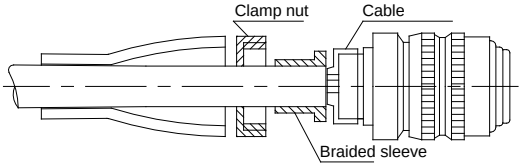
2. Cable clamp



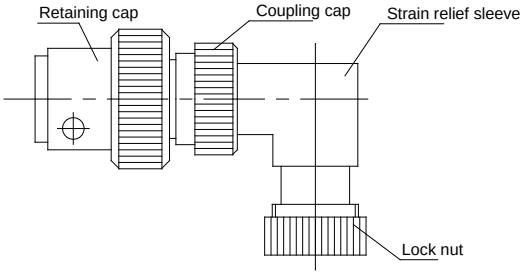
3. Simple potted



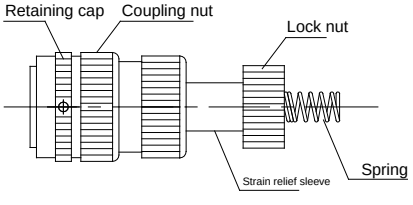
4. Anti-corrosion tensile



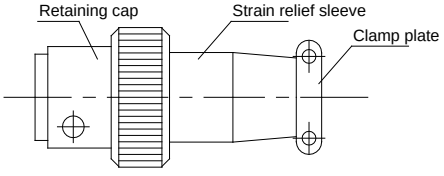
5. Angled strain relief



6. Spring strain relief



7. Clamped strain relief (same as cable clamp)



Y50DX series

This series covers connectors for internal power distribution

Environmental Performance



- Operating temperature: -55 °C ~ +125 °C
- Relative humidity: up to 95% at 40 °C
- Operating altitude: 30000 m above sea level
- Vibration: frequency 10 Hz ~ 2000 Hz, acceleration 196 m/s^2
- Shock: acceleration 490 m/s^2
- Constant acceleration: 490 m/s^2
- Sealing: 0.2 MPa pressure tight
- Salt spray, damp heat and mould resistance;
- Complies with GJB101A-97.

Electrical Performance

Contact Resistance & Rated Current

Contact size (mm)	Φ2.5	Φ3	Φ3.5	Φ4	Φ5	Φ6	Φ7	Φ9	Φ12
Contact resistance (mOhm)	⩽1	⩽1	⩽1	⩽1	⩽1	⩽1	⩽1	⩽1	⩽1
Rated current (A)	25	50	50	60	75	100	100	150	250

Rated Voltage, Dielectric Strength & Insulation

Environment	Rated voltage (V)	Dielectric strength (V)	Insulation resistance (mOhm)
Ambient temperature & pressure	500	1500	⩾3000
Damp heat	500	500	⩾20
High temp	250	—	⩾500
Low pressure 4.39 KPa	300	375	—

Mechanical Performance

- Shell: high-strength aluminium alloy, stainless steel;
- Non-shielded plating: anodized and dyed;
- Shielded plating: iridescent or military-green passivated zinc, electroless nickel, sand-blasted nickel;
- Insulator: heat-resistant thermoplastic;
- Contacts: copper alloy, gold plated;
- Mechanical : 500 cycles;

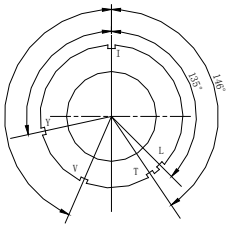
How to Order

Y50	DX	II	12	04	Z	J	10	H	–	40
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(10)

(1) Series: Y50DX - Y50 power series circular electrical connectors;
(2) Type code: D = power series; X = potted - see Type Code Table;
(3) Key position: X has 5 positions I II III IV V; III is not marked - see Key Position Marking;
(4) Shell size: 12 14 16 18 20 22 24 32 D404;
(5) Contact count: 2-6;
(6) Shell class: T - plug; Z - receptacle;
(7) Contact class: J - pin; K - socket; S - through-wall contact;
(8) Plug rear style or receptacle mounting:
Plug rear style: 1 - grounding crimp; 2 - cable clamp; 3 - shielded;
4 - anti-corrosion tensile; 5 - angled strain relief; 6 - spring strain relief;
Receptacle mounting: 10 - square flange; 11 - circular flange; 14 - nut-clamped;
(9) Finish: H - black anodized; L - military-green anodized;
S - electroless nickel; Ni - sand-blasted nickel;
(10) Shell material: no mark - aluminium alloy; 40 - stainless steel;

Key Position Marking

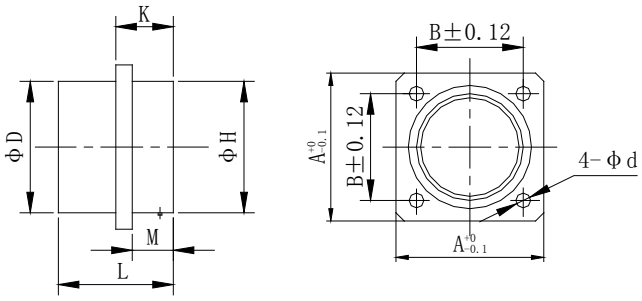
Mark code	I	II	III	IV	V
Key position letter	V	Y	I	L	T
Angle to main key II	157°	102°	0°	135°	146°



Type Code Table

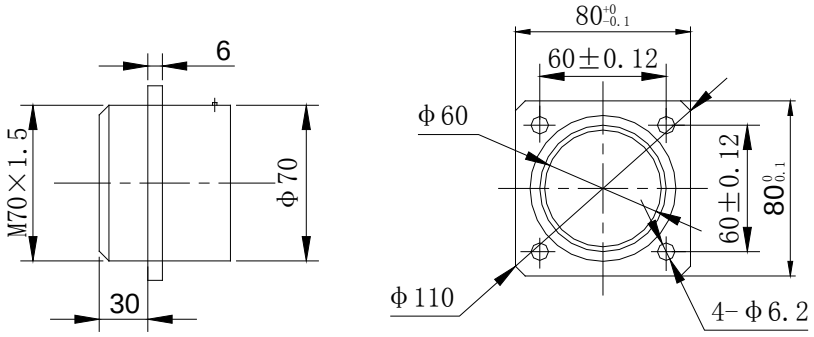
Symbol	X	Q	P	N	H	A
Meaning	Solder, potted	Crimp, potted	Solder, potted	Crimp, potted	Glass-sealed	PCB solder, potted

Receptacle Outline & Mounting

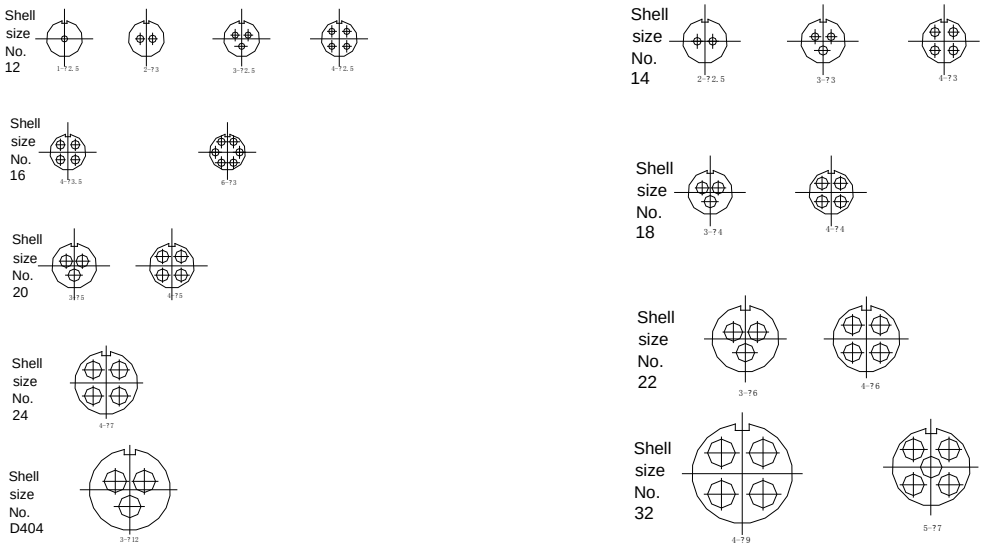


Shell No.	A	L	M	K	D	B	d	H
12	27	26.5	14.5	16	20	21	3.6	20
14	30	26.5	14.5	16	23	23	3.6	23
16	33	26.5	14.5	16	26	25	3.6	26
18	36	26.5	14.5	16	29	27	3.6	29
20	39	26.5	14.5	16.7	33	29	3.6	32
22	42	26.5	14.5	16.7	35	32	3.6	35
24	45	26.5	14.5	16.7	38	35	3.6	38
32	60	32	15	18	50	50	4.5	51

D404 Receptacle Outline & Mounting



Y50DX Series Circular Connector Contact Arrangement Chart



Y50EX series

- Products of this series comply with GJB598A-96.

Environmental Performance



- Operating temperature: -55 °C ~ +125 °C
- Relative humidity: up to 95% at 40 °C
- Operating altitude: 30000 m above sea level
- Vibration: frequency 10 Hz ~ 2000 Hz, acceleration 196 m/s^2 ^{2}
- Shock: acceleration 490 m/s^2 ^{2}
- Constant acceleration: 490 m/s^2 ^{2}
- Sealing: 0.2 MPa pressure tight
- Salt spray, damp heat and mould resistance meet GJB598A-96.

Electrical Performance

- Contact Resistance & Rated Current

Contact size (mm)	Contact resistance (mOhm)	Rated current (A)
Φ0.8	≤6	3
Φ1.0	≤5	5
Φ1.6	≤3	10
Φ2.39	≤1.5	20
Φ3.6	≤1	50

- Rated Voltage, Dielectric Strength & Insulation Resistance

Environment	Rated voltage (V)	Dielectric strength (V)	Insulation resistance (mOhm)
Ambient temperature & pressure	500	1500	≥3000
Damp heat	500	550	≥20
High temp	500	—	≥500
Low pressure 4.39 KPa	300	375	—

- RF Attenuation

Frequency (MHz)	100	150	200	300	400	600	800	1000
Attenuation (dB)	65	60	60	55	55	50	45	45

- Shell-to-shell electrical continuity: non-shielded >= 200 mOhm, shielded >= 5 mOhm

Mechanical Performance

- Shell: high-strength aluminium alloy, stainless steel
- Non-shielded plating: anodized and dyed
- Shielded plating: iridescent or military-green passivated zinc, electroless nickel, sand-blasted nickel
- Insulator: heat-resistant thermoplastic
- Contacts: copper alloy, gold plated
- Mechanical : 500 cycles

How to Order

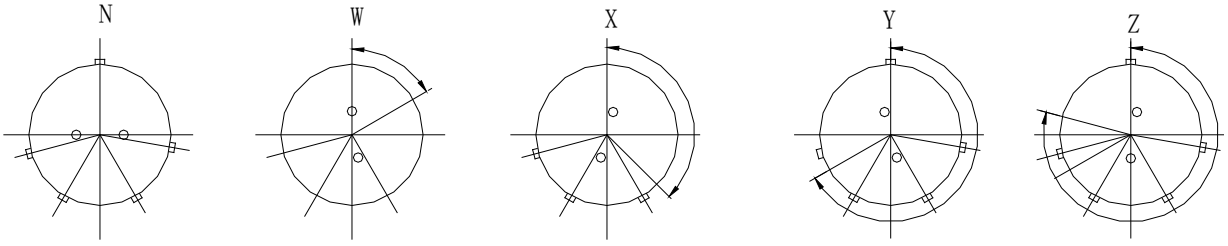
Y50	EX	W	08	02	Z	J	10	H	–	40
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(10)

(1) Series: Y50EX - Y50 inch series circular electrical connectors;
(2) Type code: E = inch series; X = potted - see Type Code Table;
(3) Index marking: N W X Y Z; N is not marked - see Key Position Marking;
(4) Shell size: 06 08 10 12 14 16 18 20 22 24;
(5) Contact count: 2-61;
(6) Shell class: T - plug; Z - receptacle;
(7) Contact class: J - pin; K - socket; S - through-wall contact;
(8) Plug rear style or receptacle mounting:
Plug rear style: 1 - grounding crimp; 2 - cable clamp; 3 - shielded;
4 - anti-corrosion tensile; 5 - angled strain relief; 6 - spring strain relief;
Receptacle mounting: 10 - square flange; 11 - circular flange; 14 - nut-clamped;
10 - 2 square flange with cable shroud;
(9) Finish: H - black anodized; L - military-green anodized;
S - electroless nickel; Ni - sand-blasted nickel;
(10) Shell material: no mark - aluminium alloy; 40 - stainless steel;

Model Cross-Reference

No.	Feature	Mark code		Description
1	Basic designation	YL	Y	Circular electrical connectors
2	Plug / receptacle type	10/20	ZJ(K)10	Square flange mounting receptacle
		14/24	ZJ(K)14	Nut-mounted receptacle
		16/26	TJ(K)	Plug
		18/28	None	Standard plug
		19/29	ZS10	Bulkhead mounting receptacle
3	Shell surface finish	R	X	Black anodized
		W	X	Military-green anodized
		N	P	Electroless dull nickel
		Nb	P	Electroless bright nickel
		B	P	Cadmium plated
		H	P	Black cadmium plated
		S	None	Stainless steel passivated
		Y	None	Grey anodized
4	Contact type	J	J	Pin
		K	K	Socket
5	Rear accessory code	01/21	6	Straight sealed cable
		02/22/32	2	Straight cable clamp
			4	Rubber rear boot sealed
		03/23	5	Angled sealed cable
			1	Angled cable clamp
		04/24	3	Grounding crimp
		05/25		Simple potted
6	Insulator mounting position	W, X, Y, Z	W, X, Y, Z	Main key vs. auxiliary key position

Key Position Marking



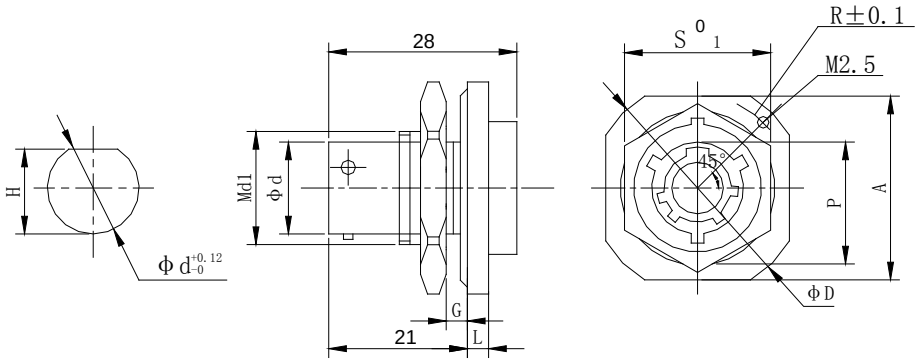
Shell size No.	6				8			10	12	14					16		18	20		22	24
Cont	2	3	4	7	3	3A	33	6	10	5	12	15	18	19	8	26	32	39	41	55	61
N	-	-	-	-																	
W	-	-	-	-	60		90	60	40	43	17	15	30	54	60	85	63	45	30	96	
X	-	-	-	-	210			155	92	90	110	90	165	152	-	138	144	126	142	180	
Y	-	-	-	-	-			27	184	-	155	180	315	180	275	222	252	225	226	270	
Z	-	-	-	-	-			295	273	-	234	270	-	331	338	265	333	-	314	324	

Type Code Table

Symbol	X	Q	P	N	H	A
Meaning	Solder, potted	Crimp, potted	Solder, potted	Crimp, potted	Glass-sealed	PCB solder, potted

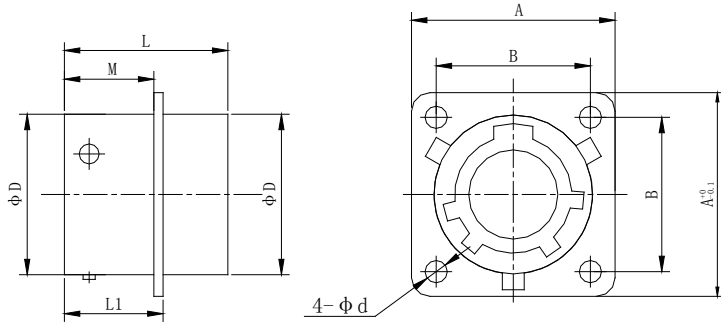
Receptacle Outline & Mounting

Nut-Clamped Receptacle Outline



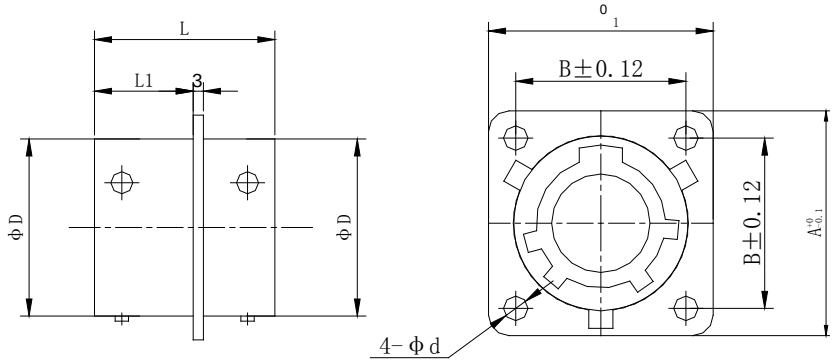
Shell No.	G		d	B	D	S	A	L	d1	H
	N(min)	N(max)								
06	1.57	3.17	10.60	2.5	20	17	17	20	12.5	11.4
08	1.57	3.17	12.04	3.0	27.25	19.3	23.8	21	14.6	13.28
10	1.57	3.17	15.00	3.0	30.5	22.4	26.95	21	17.75	16.95
12	1.57	3.17	19.00	3.0	34.5	27	32	22	22.5	20.9
14	1.57	3.17	22.20	3.0	39	30.33	35	21.5	25.7	24
16	1.57	3.17	25.41	3.0	41.25	33.3	38.24	21	28.85	27.35
18	1.57	3.17	28.60	3.0	44.6	36.7	41.5	21	32.05	30
20	1.57	6.35	31.71	3.6	49	39.8	46	26.5	35.02	33.5
22	1.57	6.35	35.00	3.6	52.24	43.13	49.24	26.5	28.4	36.94
24	1.57	6.35	38.20	3.6	55.8	46	52.5	26.5	41.55	40.5

Flange Receptacle Outline



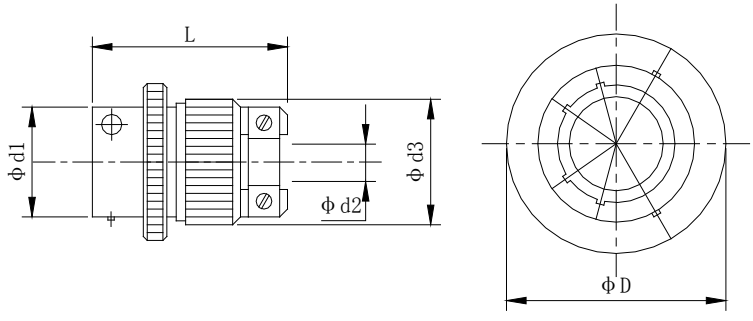
Shell No.	A	B	D	d	M (front mount)	L1 (front mount)	M (rear mount)	L1 (rear mount)	L
06	19	13	10.60	3.2	11	12.5	14.5	16	20
08	21	15.09	12.04	3.2	11	12.5	14.5	16	21.5
10	24.2	18.28	15.01	3.2	11	12.5	14.5	16	21.5
12	26.54	20.62	19.00	3.2	11	12.5	14.5	16	21.5
14	28.6	23	22.20	3.2	11	12.5	14.5	16	22.5
16	31.3	24.6	25.40	3.2	11	12.5	14.5	16	21.5
18	33.69	27	28.60	3.2	11	12.5	14.5	16	23
20	36.89	29.36	31.75	3.2	11	12.5	14.5	16	27.5
22	39.95	31.75	35	3.2	11	12.5	14.5	16	27.5
24	43.15	34.93	38.2	3.2	11	12.5	14.5	16	27.5

Bulkhead Receptacle Outline



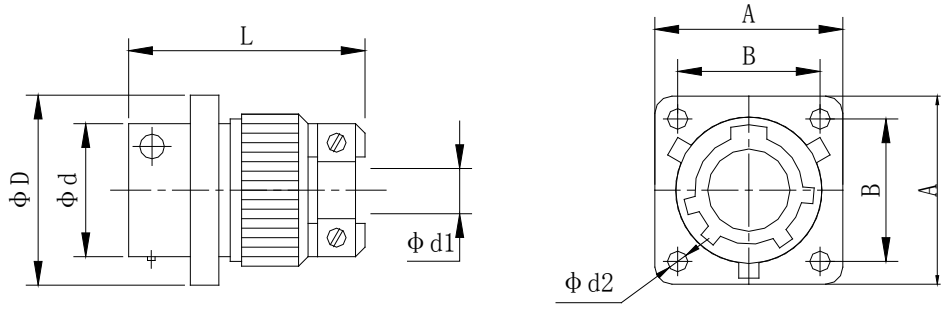
Shell No.	A	B	L1	D	d	L
06	19	15 13		10.6	3.2	33
08	21	15.09	15	12.04	3.2	33
10	24.2	18.26	15	15	3.2	33
12	26.54	20.62	15	19	3.2	33
14	28.6	23	15	22.2	3.2	33
16	31.3	24.6	15	25.4	3.2	33
18	33.69	27	15	28.6	3.2	33
20	36.89	29.36	16.5	31.71	3.2	36
22	39.95	31.75	16.5	35	3.2	36
24	43.15	34.93	16.5	38.2	3.2	36

Circular Flange Receptacle with Cable Shroud Outline & Mounting



Shell No.	D	d1	d2	L	d3
06	19	10.6	5	36.5	15
08	20	12.04	6	36.5	16
10	23	15.00	8	36.5	19.5
12	27	19	10	38.5	22.5
14	30	22.2	12	43	25.5
16	33	25.4	14	43	27.9
18	36.5	28.6	17	44.5	30.5
20	40	31.7	20	49	34.5
22	43	35	24	49	38.5
24	47	38.2	27	53	41.5

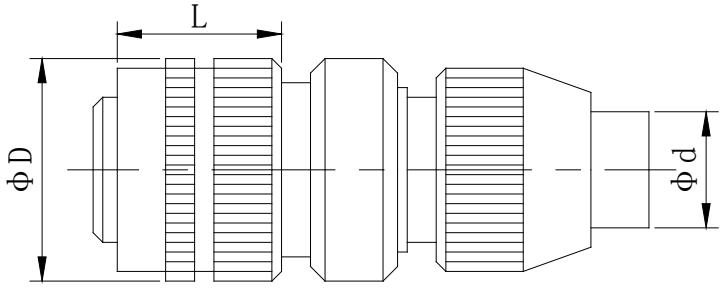
Square Flange Receptacle with Cable Shroud Outline & Mounting



Shell No.	A	B	D	d	d1	d2	L
06	19	13	15	10.6	5	3.2	36.5
08	21	15.1	16	12.04	6	3.2	36.5
10	24.2	18.3	19.5	15.00	8	3.2	36.5
12	26.5	20.6	22.5	19.00	10	3.2	38.5
14	28.6	23	25.5	22.2	12	3.2	43
16	31.3	24.6	27.9	25.4	14	3.2	43
18	33.7	27	30.5	28.6	17	3.2	44.5
20	36.9	29.4	34.5	31.71	20	3.2	49
22	39.9	31.8	38.5	35	24	3.2	49
24	43.2	34.9	41.5	38.2	27	3.2	53

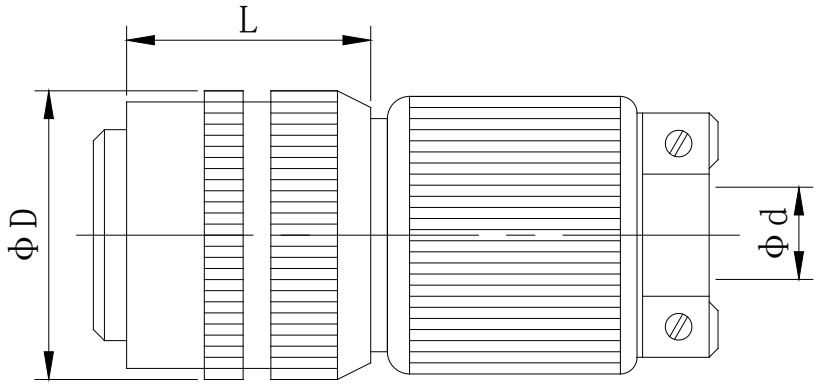
Plug Outline

Grounding Crimp Cable Rear Accessory



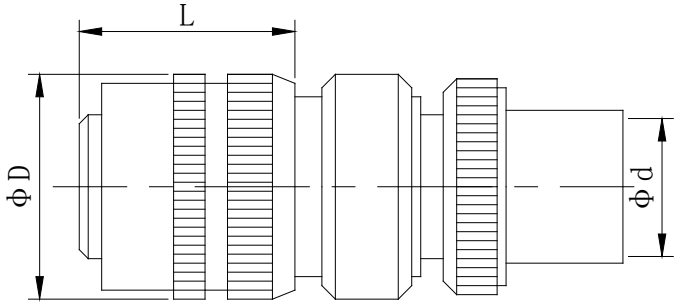
Shell No.	D	d	L
06	15.5	5	18
08	19	6.1	18
10	22	7.1	18
12	25	11.1	18
14	30	12.1	18
16	32	14	18
18	35	14	18
20	39	16	19
22	42	16	19
24	45.5	16	19

Cable Clamp Rear Accessory



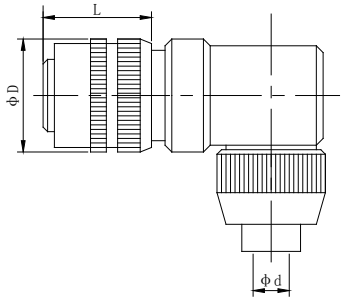
Shell No.	D	d	L
06	15.5	5	18
08	19	6	18
10	22	8	18
12	25	10	18
14	30	12	18
16	32	14	18
18	35	17	18
20	39	20	19
22	42	24	19
24	45.5	27	19

Anti-Corrosion Tensile Rear Accessory



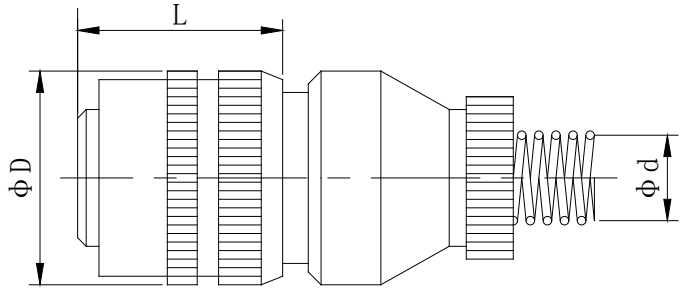
Shell No.	D	d	L
06	15.5	5	18
08	19	6	18
10	22	7	18
12	25	9	18
14	30	11.5	18
16	32	14	18
18	35	14	18
20	39	16	19
22	42	16	19
24	45.5	16	19

Angled Strain Relief Rear Accessory



Shell No.	D	d	L
06	15.5	5	18
08	19	6	18
10	22	7	18
12	25	11.1	18
14	30	12.1	18
16	32	14	18
18	35	14	18
20	39	16	19
22	42	16	19
24	45.5	16	19

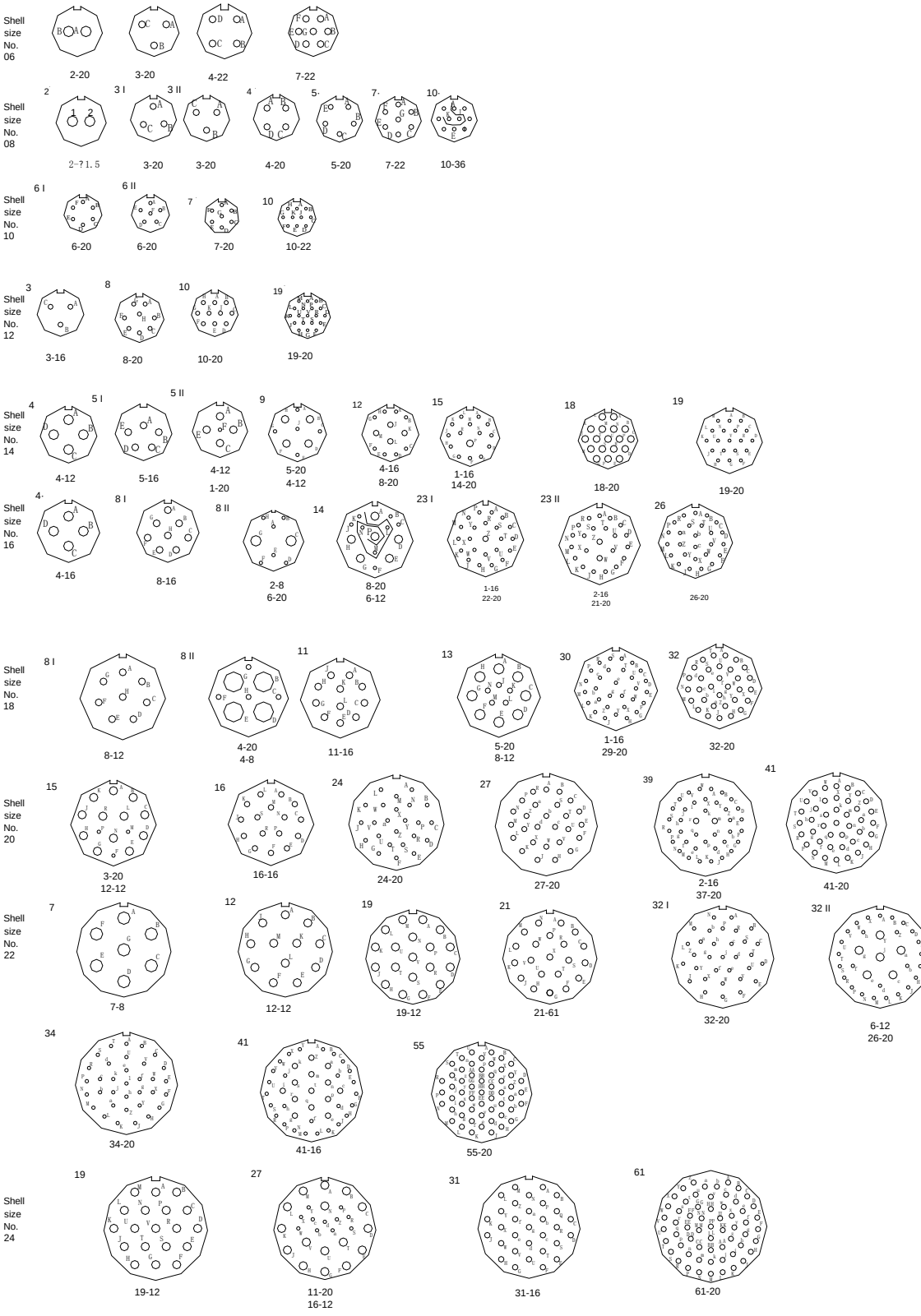
Spring Strain Relief Rear Accessory



Shell No.	D	d	L
06	15.5	5	18
08	19	6	18
10	22	7	18
12	25	9	18
14	30	11.5	18
16	32	14	18
18	35	14	18
20	39	16	19
22	42	16	19
24	45.5	16	19

Y50EX Series Circular Connector Contact Arrangement Chart

size	8	12	16	20	22	36
Pin diameter	3.6	2.4	1.6	1.0	0.8	0.6



This drawing is the front view of the connector pin mating face. · marks arrangements not specified by national military standards, designed by our company.