



POLAMCO HIGH POWER CONNECTORS

38999 STYLE

Robust & reliable connectors designed for
harsh environments



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Safety operation, termination and handling of these connectors is the responsibility of the user. Refer to document ASQA0259 for assembly instructions and tooling – available on request.

TE Components . . . TE Technology . . . TE Know-how . . .
AMP | AGASTAT | CII | HARTMAN | KILOVAC | MICRODOT | NANONICS | POLAMCO | Raychem | Rochester | DEUTSCH
SEACON Phoenix | LL ROWE | Phoenix Optix | AFP | SEACON

Empower Engineers to Solve Problems, Moving the World Forward.

POLAMCO HIGH POWER CONNECTORS

38999 Style*



High power solutions for harsh environment aerospace and land systems

TE Connectivity (TE)'s POLAMCO high power connector range offers a simple and effective way of terminating power cables in a harsh environment military connector system. The product family covers cable sizes from 50mm² up to 240mm² and are available in shell sizes 19 to 25 depending on the cable being terminated. It is available with threaded termination, or a screened crimp with a straight or 90° outlet option.

MECHANICAL

- **Mechanical Endurance:** Up to 500 Mating Cycles
- **Vibration:** Def-Stan 0035 part 3.6hrs in 3 axis (with full current load)
- **Shock:** 500m/s², 11ms half sine

ENVIRONMENTAL

- **Sealing:** IP68 (2m for 1/2 hour)
- **Salt Spray:** 500 hrs (with zinc nickel plating)
- **Temperature Range:** -65°C to +175°C

ELECTRICAL

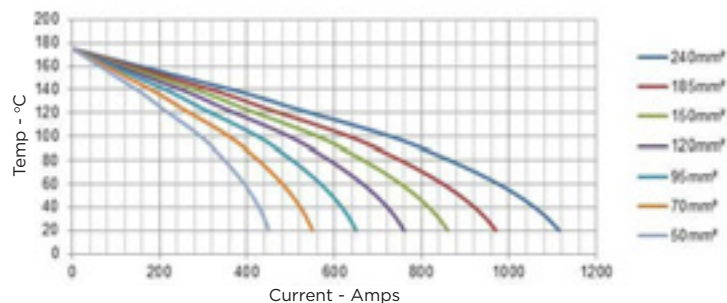
- **Test Voltage:** 1800V AC RMS 60Hz (service rating 1)
- **Shell Continuity:** <5mΩ (dependent of plating finish)
- **Current Rating:** Approximate Current Rating @ 40°C Ambient

Shell Size	Current	Contact Resistance
25	1000A	<22μΩ
23	800A	<25μΩ
21	600A	<30μΩ
19	400A	<38μΩ

See chart below for current de-rating values for each crimp contact size.

Note! It is important that a suitably rated cable for current and temperature is used with this connector. Cables should be supported a maximum of 250mm from the back of the connector.

• Crimp contact current de-rating:



MATERIALS & PLATING

- **Shell:** Aluminium Alloy/Nickel Aluminium Bronze/Stainless Steel
- **Contact Body:** Copper Alloy - Silver plated
- **Plating:** Cadmium Olive Drab/Black Zinc Nickel/Electroless Nickel
Others available on request.
- **Insulators:** Thermoplastic - PPS-GL40-UL94V-O
- **Seals:** Silicone Elastomer

HIGH POWER

- Up to 1000 amp capability

HARSH ENVIRONMENT RESISTANCE

- Rugged 38999* style connector shell systems
- IP69K version available
- Conductive Jam Nut O-Ring option available

HIGHLY VERSATILE

- Easy assembly
- Many shell styles and termination options available
- Simple adjustment of angled backshells which require no special tooling required
- Low mating force

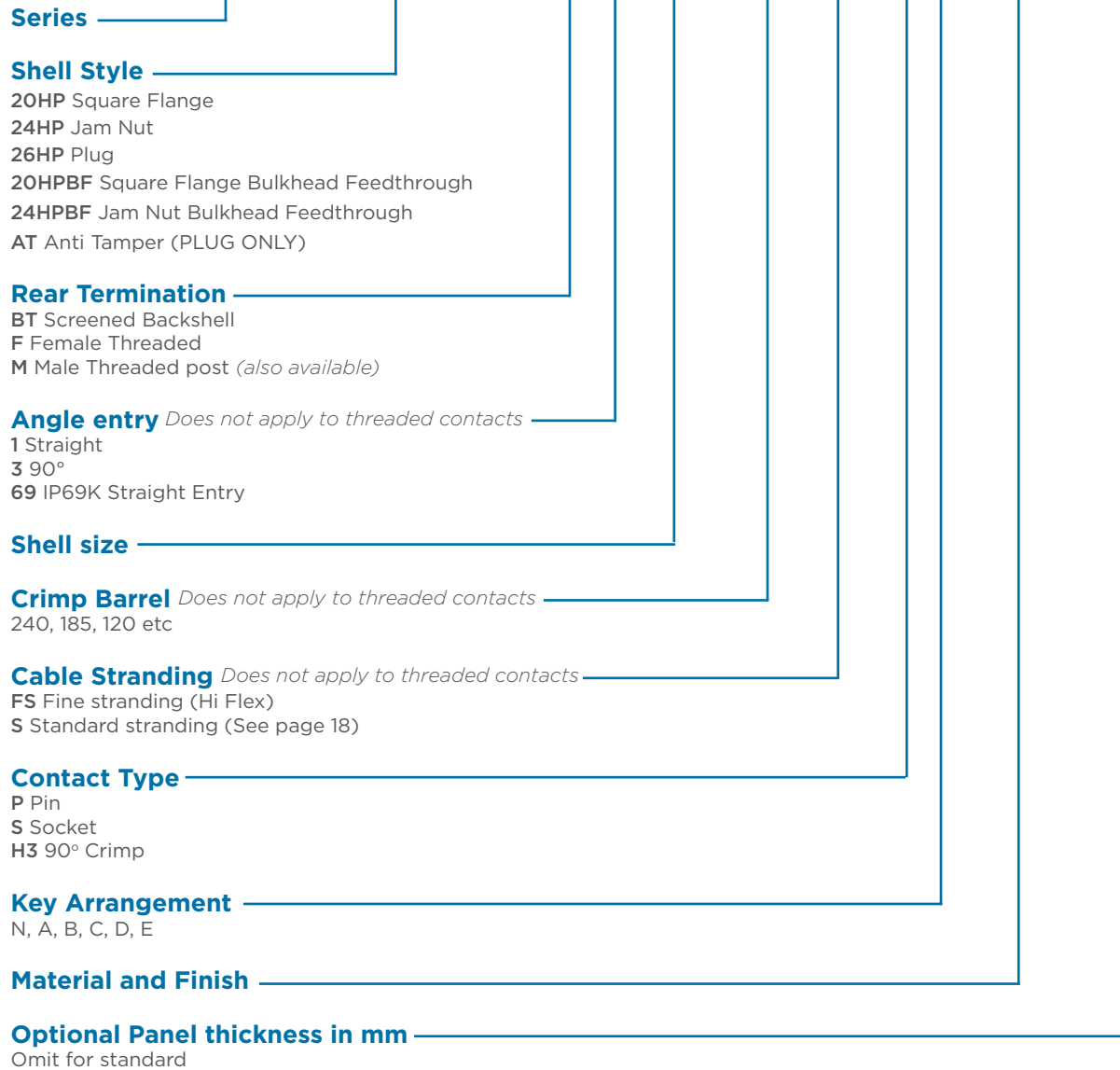
*Please note:

These connectors have not been qualified by the U.S. Defence Logistics Agency and do not appear on its Qualified Product List.



Part Description System

PC420HP(AT)-BT1-25-185FS-SN-1-C-L13



Material Description Codes

MATERIAL CODE	MATERIAL DESCRIPTION
1	ALUMINIUM ALLOY 6262 / 6082
2	NICKEL ALUMINIUM BRONZE DGS 1043 / NES 833 (MARINE APPLICATIONS)
4	STAINLESS STEEL 303 S31 / 304
46	STAINLESS STEEL 316

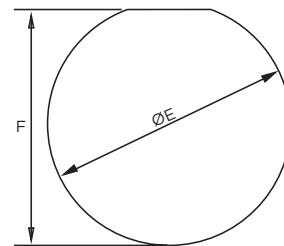
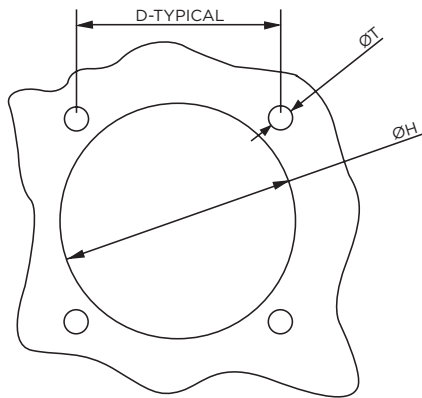


Plating Description Codes

PLATING CODE	PLATING DESCRIPTION	ROHS COMPLIANT	ENVIRONMENTAL PROTECTION CONDUCTIVITY
B	Cadmium, Olive Drab over Electroless Nickel	No	Conductive 500 Hours Salt Spray
C	Electroless Nickel	Yes	Conductive 500 Hours Salt Spray
J	Passivate (Stainless Steel only)	Yes	Conductive 500 Hours Salt Spray
Z	Shot blast for non-reflective finish (Nickel Aluminium Bronze only)	Yes	Conductive 500 Hours Salt Spray
ZB	Zinc Cobalt over Electroless Nickel with an Olive Drab Chromate Conversion	Yes	Conductive 350 Hours Salt Spray
ZN	Zinc Nickel Black Passivate over Electroless Nickel	Yes	Conductive 500 Hours Salt Spray
ZK	Zinc Cobalt over Electroless Nickel with a black chromate conversion	Yes	Conductive 500 Hours Salt Spray

Panel Cutout Information

See individual products for further information



Square Flange

SHELL SIZE	D	$\varnothing T$ + 0.13/- 0	$\varnothing H$ Min
19	29.36	3.25	32.94
21	31.75	3.25	36.12
23	34.93	3.91	39.29
25	38.10	3.81	42.47

Jam Nut

SHELL SIZE	$\varnothing E$ + 0.25/- 0	$\varnothing F$ + 0.25/- 0
19	35.18	33.91
21	38.35	37.08
23	41.53	40.26
25	44.70	43.43

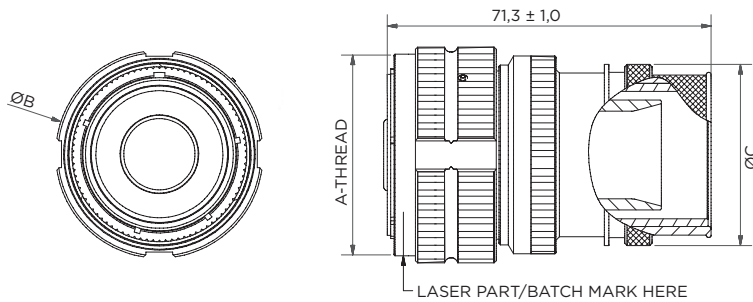
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETRES
 GENERAL TOLERANCES: LINEAR +/-0,25MM ANGULAR +/- 1°



SECTION 1: Plugs

1.1 - Shielded Crimp Plugs

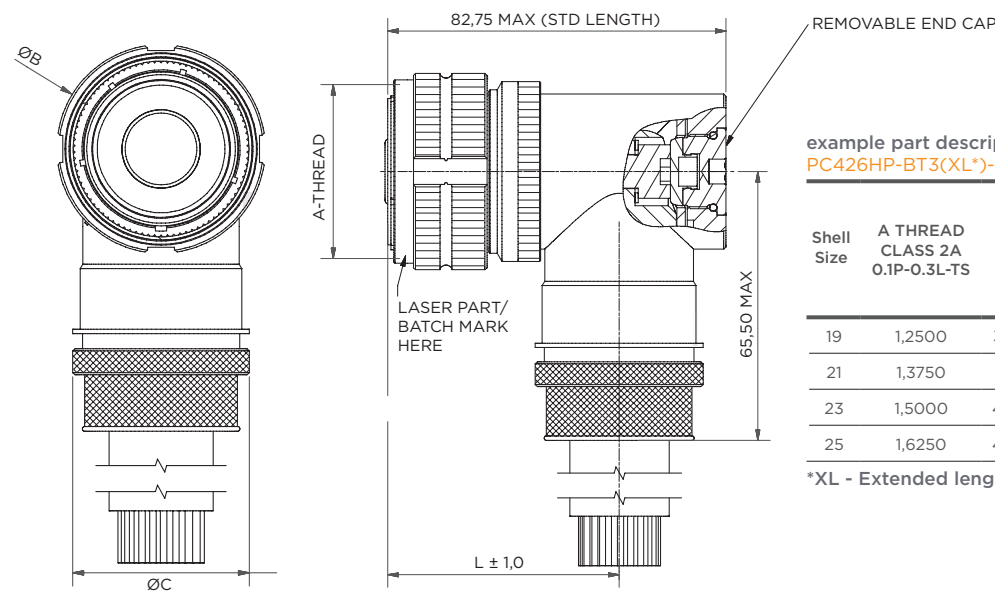
Straight Shielded Crimp Plug PC426HP



example part description:
PC426HP-BT1-25-185FS-PN-1-ZN

Shell Size	A THREAD CLASS 2A 0.1P-0.3L-TS	Ø B MAX	Ø C MAX	MAX CRIMP (CSA) STANDARD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE
19	1,2500	38,50	27,60	70	70
21	1,3750	41,70	31,10	120	95
23	1,5000	44,90	36,00	185	150
25	1,6250	48,00	39,84	240	185

90° Shielded Crimp Plug PC426HP-BT3

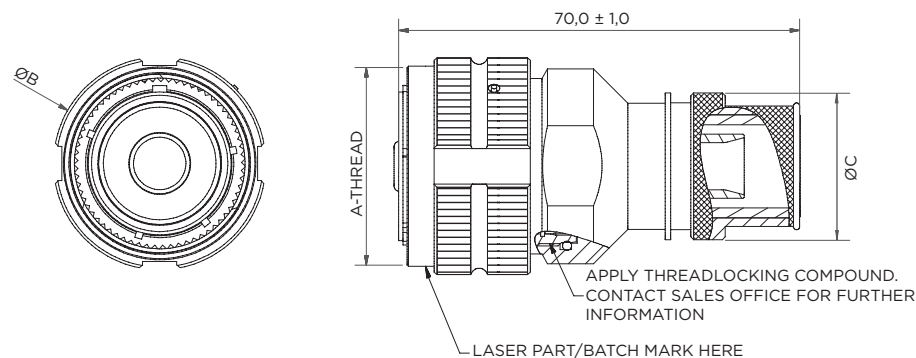


example part description:
PC426HP-BT3(XL*)-25-185FS-PN-1-ZN

Shell Size	A THREAD CLASS 2A 0.1P-0.3L-TS	Ø B MAX	Ø C MAX	L (STD)	L (EXT)	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE
19	1,2500	38,50	31,60	52,0	98,0	70	70
21	1,3750	41,70	34,50	54,0	103,0	120	95
23	1,5000	44,90	38,50	56,0	108,0	185	150
25	1,6250	48,00	40,64	56,0	112,0	240	185

*XL - Extended length, omit for standard

Straight Shielded Crimp Plug - IP69K PC426HP-BT69



example part description:
PC426HP-BT69-19-35FS-SN-1-ZN

Shell Size	A THREAD CLASS 2A 0.1P-0.3L-TS	Ø B MAX	Ø C MAX	MAX CRIMP (CSA) STANDARD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE
19	1,2500	38,50	27,60	70	70
21	1,3750	41,70	31,10	120	95
23	1,5000	44,90	36,00	185	150
25	1,6250	48,00	39,84	240	185

All dimensions in MM unless otherwise stated.



1.2 - Anti Tamper Crimp Plugs

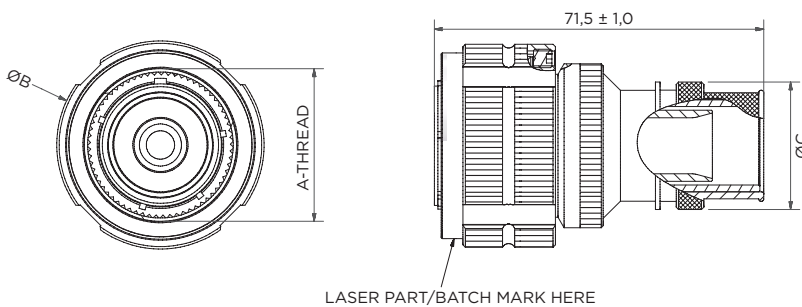
ANTI TAMPER LOCKING SCREW

A separate tool is used to free the nut outer, helping it to rotate freely without releasing the plug. The plug cannot be removed until the tool is used to re-engage the drive.

This provides an additional safety feature, to help prevent unauthorised users from disconnecting the plug and accidentally removing the connector.



Straight Anti Tamper Crimp Plug PC426HP-AT

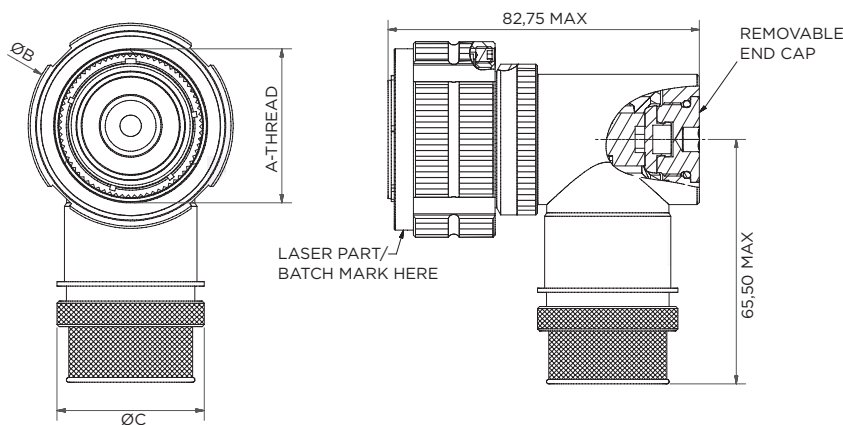


example part description:

PC426HP-AT-BT1-19-70FS-PN-1-ZN

Shell Size	A THREAD CLASS 2A 0.1P-0.3L-TS	Ø B MAX	Ø C MAX	MAX CRIMP (CSA) STANDARD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE
19	1,2500	44,00	27,60	70	70
21	1,3750	48,00	31,10	120	95
23	1,5000	52,00	36,00	185	150
25	1,6250	55,40	39,84	240	185

90° Anti Tamper Crimp Plug PC426HP-BT3



example part description:

PC426HP-AT-BT3-21-95FS-PN-1-ZN

Shell Size	A THREAD CLASS 2A 0.1P-0.3L-TS	Ø B MAX	Ø C MAX	MAX CRIMP (CSA) STANDARD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE
19	1,2500	44,00	31,60	70	70
21	1,3750	48,00	34,50	120	95
23	1,5000	52,00	38,50	185	150
25	1,6250	55,40	40,64	240	185

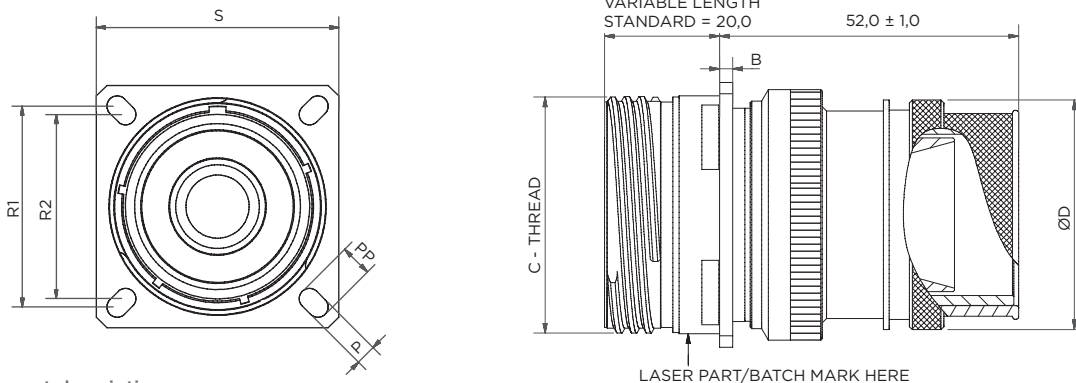
All dimensions in MM unless otherwise stated.



SECTION 2: Receptacles

2.1 - Shielded Receptacles

Straight Receptacle - Square Flange PC420HP-BT1

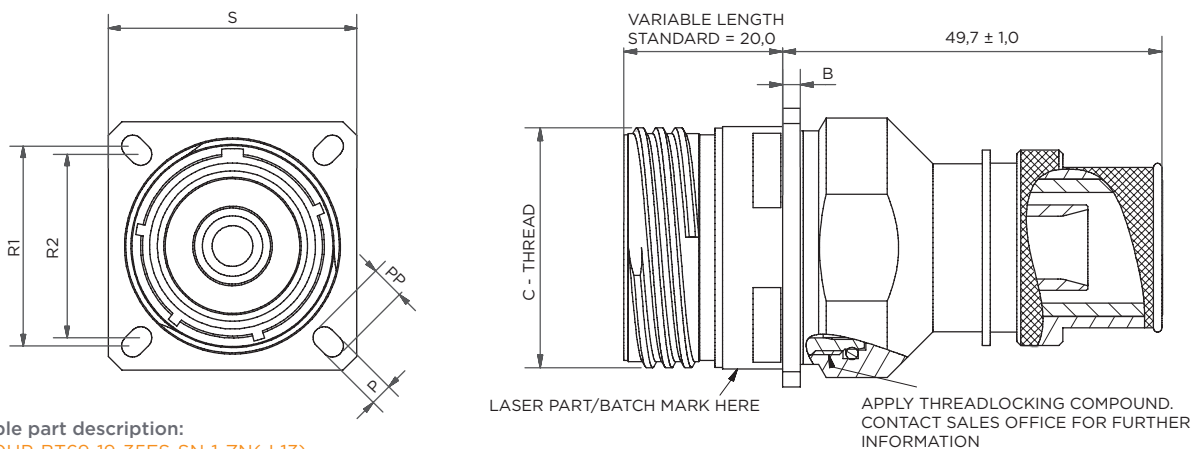


example part description:

PC420HP-BT1-25-185FS-SN-1-ZN(-L13)

SHELL SIZE	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE	Ø B ±0.2	C THREAD 0.1P-0.3L-TS	Ø D MAX	P ±0.2	PP ±0.2	R1	R2	S ±0.3
19	70	70	2,3	1,2500	27,60	3,25	4,93	29,36	26,97	36,5
21	120	95	3,0	1,3750	31,10	3,25	4,93	31,75	29,36	39,7
23	185	150	3,0	1,5000	36,00	3,91	6,15	34,93	31,75	42,9
25	240	185	3,0	1,6250	39,84	3,91	6,15	38,10	34,93	46,0

Straight Receptacle - IP69K Square Flange PC420HP-BT69



example part description:

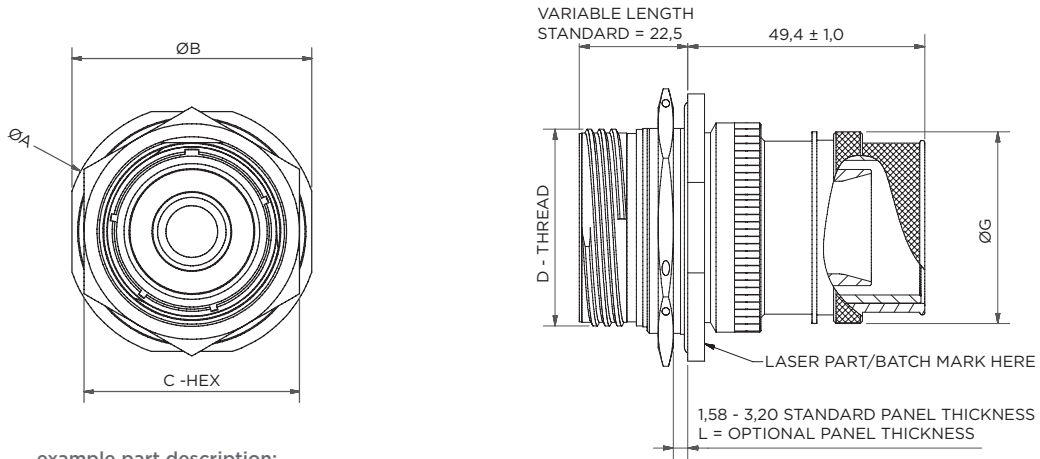
PC420HP-BT69-19-35FS-SN-1-ZN(-L13)

SHELL SIZE	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE	Ø B ±0.2	C THREAD 0.1P-0.3L-TS	Ø D MAX	P ±0.2	PP ±0.2	R1	R2	S ±0.3
19	70	70	2,3	1,2500	27,60	3,25	4,93	29,36	26,97	36,5
21	120	95	3,0	1,3750	31,10	3,25	4,93	31,75	29,36	39,7
23	185	150	3,0	1,5000	36,00	3,91	6,15	34,93	31,75	42,9
25	240	185	3,0	1,6250	39,84	3,91	6,15	38,10	34,93	46,0

All dimensions in MM unless otherwise stated.



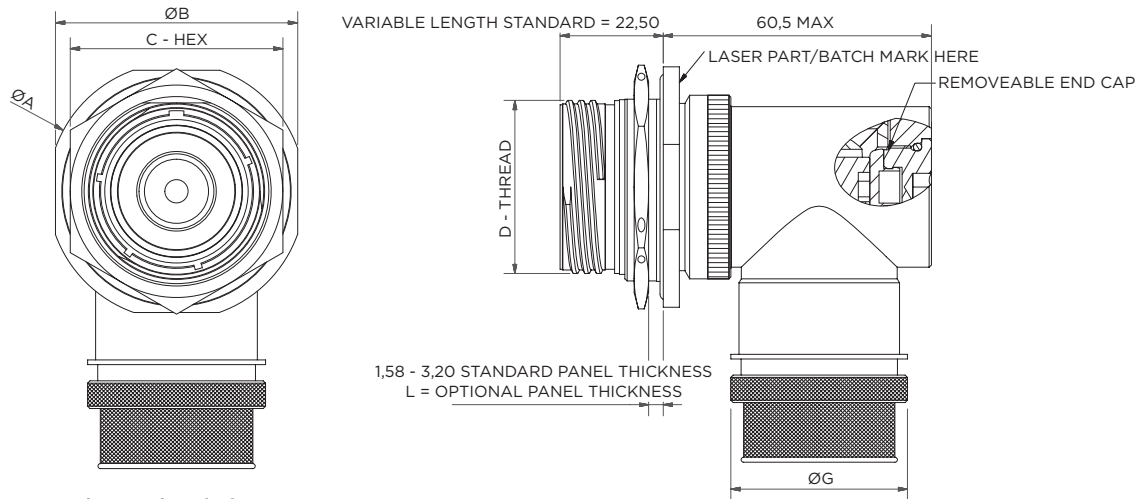
Straight Receptacle - Jam Nut PC424HP-BT1



example part description:
PC424HP-BT1-25-185FS-SN-1-ZN(-L13)

SHELL SIZE	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE	Ø A ±0.3	Ø B ±0.2	C HEX +0,25/-0	D THREAD 0.1P-0.3L-TS	Ø G MAX
19	70	70	49,2	46,0	40,0	1,2500	27,60
21	120	95	52,4	49,2	43,0	1,3750	31,60
23	185	150	55,6	52,4	46,0	1,5000	36,00
25	240	185	58,7	55,6	50,0	1,6250	39,84

90° Receptacle - Jam Nut PC424HP-BT3



example part description:
PC424HP-BT3-23-120FS-SN-1-ZN(-L13)

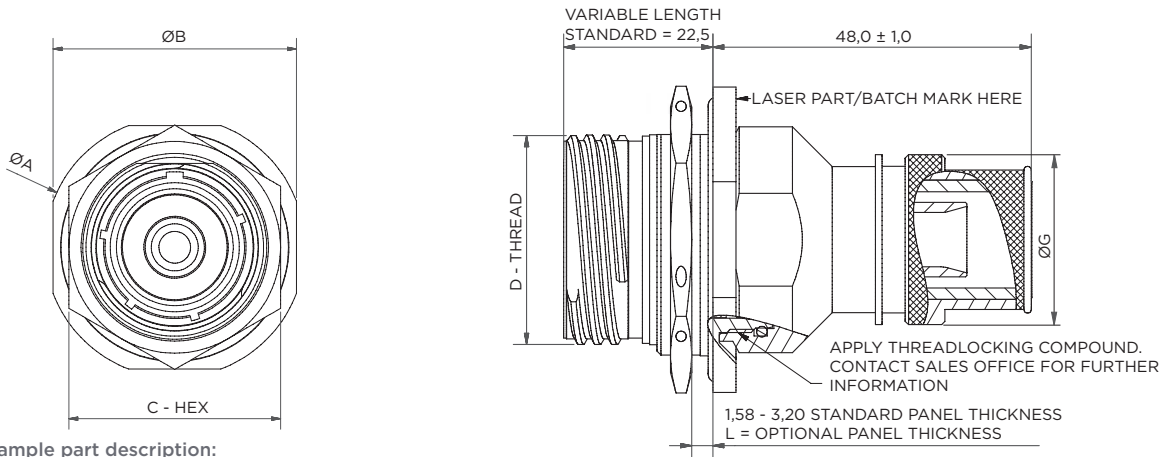
SHELL SIZE	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE	Ø A ±0.3	Ø B ±0.2	C HEX +0,25/-0	D THREAD 0.1P-0.3L-TS	Ø G MAX
19	70	70	49,2	46,0	40,0	1,2500	31,60
21	120	95	52,4	49,2	43,0	1,3750	34,50
23	185	150	55,6	52,4	46,0	1,5000	38,50
25	240	185	58,7	55,6	50,0	1,6250	40,64

All dimensions in MM unless otherwise stated.



2.1 - Shielded Receptacles

Straight Receptacle - IP69K Jam Nut PC424HP-BT69

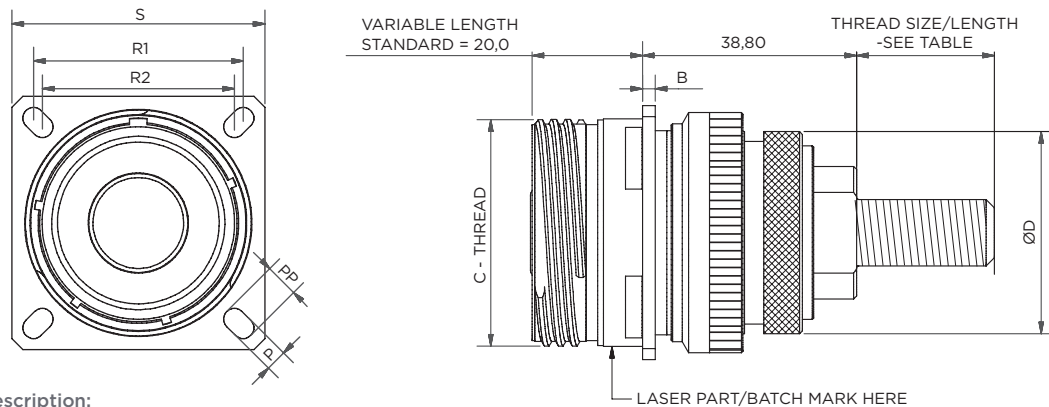


example part description:
PC424HP-BT69-19-35FS-SN-1-ZN(-L13)

SHELL SIZE	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE	Ø A ±0.3	Ø B ±0.2	C HEX +0,25/-0	D THREAD 0.1P-0.3L-TS	Ø G MAX
19	70	70	49,2	46,0	40,0	1,2500	27,60
21	120	95	52,4	49,2	43,0	1,3750	31,60
23	185	150	55,6	52,4	46,0	1,5000	36,00
25	240	185	58,7	55,6	50,0	1,6250	39,84

2.2 - Unshielded Receptacles

Straight Receptacle - Square Flange, Male Thread PC420HP-M



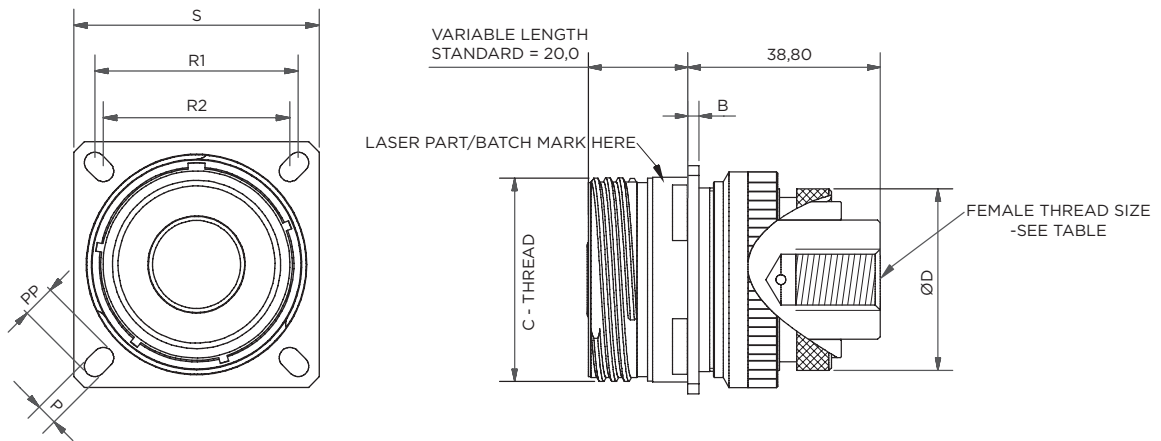
example part description:
PC420HP-M-25-PN-1-ZN(-L13)

SHELL SIZE	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE	Ø B ±0.2	C THREAD 0.1P-0.3L-TS	Ø D MAX	P ±0.2	PP ±0.2	R1	R2	S ±0.3	THREAD SIZE/LENGTH
19	70	70	2,3	1,2500	26,5	3,25	4,93	29,36	26,97	36,5	M8 X 20
21	120	95	3,0	1,3750	31,0	3,25	4,93	31,75	29,36	39,7	M10 X 25
23	185	150	3,0	1,5000	34,4	3,91	6,15	34,93	31,75	42,9	M10 X 25
25	240	185	3,0	1,6250	36,6	3,91	6,15	38,10	34,93	46,0	M12 X 25

All dimensions in MM unless otherwise stated.



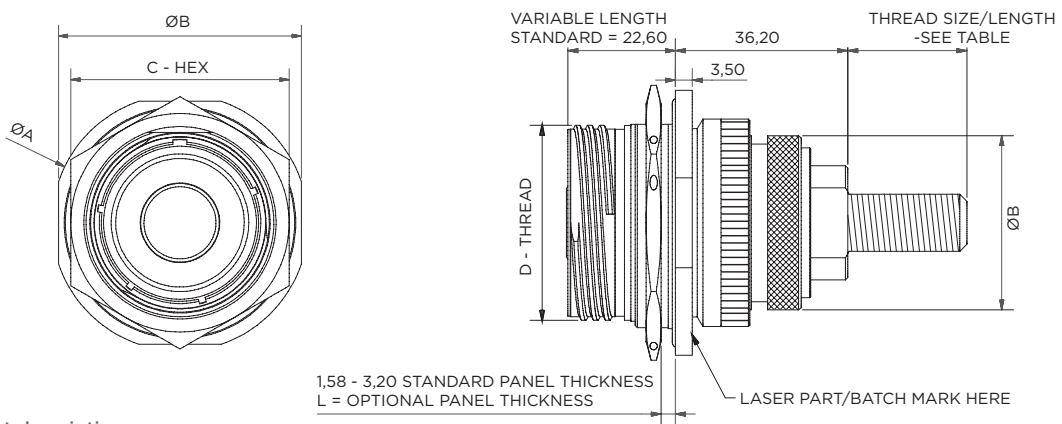
Straight Receptacle- Square Flange, Female Thread PC420HP-F



example part description:
PC420HP-F-25-PN-1-ZN(-L13)

SHELL SIZE	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE	Ø B ±0.2	C THREAD 0.1P-0.3L-TS	Ø D MAX	P ±0.2	PP ±0.2	R1	R2	S ±0.3	THREAD SIZE/ LENGTH
19	70	70	2,3	1,2500	26,5	3,25	4,93	29,36	26,97	36,5	M8
21	120	95	3,0	1,3750	31,0	3,25	4,93	31,75	29,36	39,7	M10
23	185	150	3,0	1,5000	34,4	3,91	6,15	34,93	31,75	42,9	M10
25	240	185	3,0	1,6250	36,6	3,91	6,15	38,10	34,93	46,0	M12

Straight Receptacle- Jam Nut, Male Thread PC424HP-M



example part description:
PC424HP-M-25-PN-1-ZN(-L13)

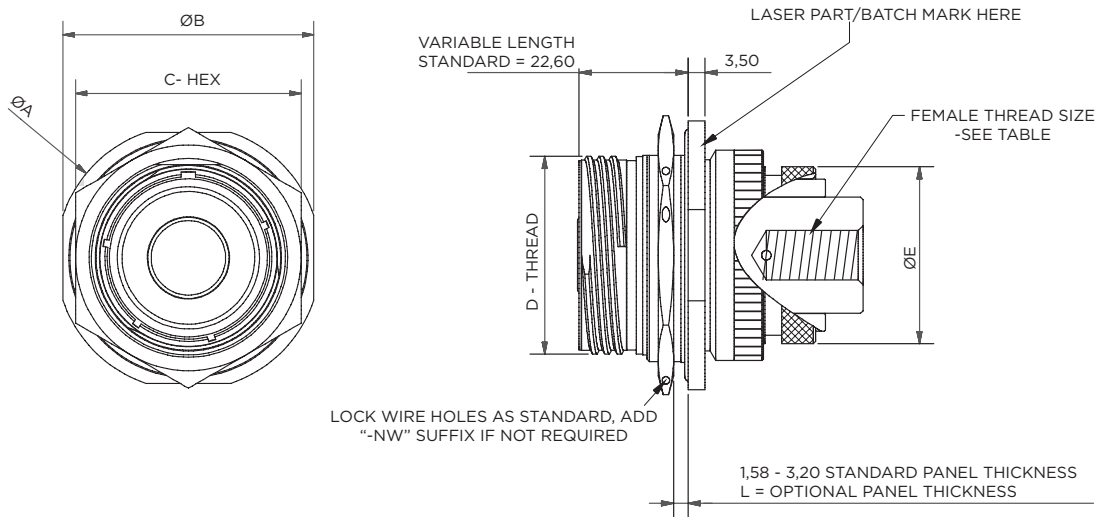
SHELL SIZE	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE	Ø A ±0.3	Ø B ±0.2	C HEX +0,25/-0	D THREAD 0.1P-0.3L-TS	Ø E MAX	THREAD SIZE/ LENGTH
19	70	70	49,2	46,0	40,0	1,2500	26,5	M8 X 20
21	120	95	52,4	49,2	43,0	1,3750	31,0	M10 X 25
23	185	150	55,6	52,4	46,0	1,5000	34,4	M10 X 25
25	240	185	58,7	55,6	50,0	1,6250	36,6	M12 X 25

All dimensions in MM unless otherwise stated.



2.2 - Unshielded Receptacles

Straight Receptacle - Jam Nut, Female Thread PC424HP-F



example part description:
PC424HP-F-25-PN-1-ZN(-L13)

SHELL SIZE	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE	$\varnothing A$ ± 0.3	$\varnothing B$ ± 0.2	C HEX $+0,25/-0$	D THREAD 0.1P-0.3L-TS	$\varnothing E$ MAX	THREAD SIZE
19	70	50	49,2	46,0	40,0	1,2500	26,5	M8
21	120	95	52,4	49,2	43,0	1,3750	31,0	M10
23	185	150	55,6	52,4	46,0	1,5000	34,4	M10
25	240	185	58,7	55,6	50,0	1,6250	36,6	M12



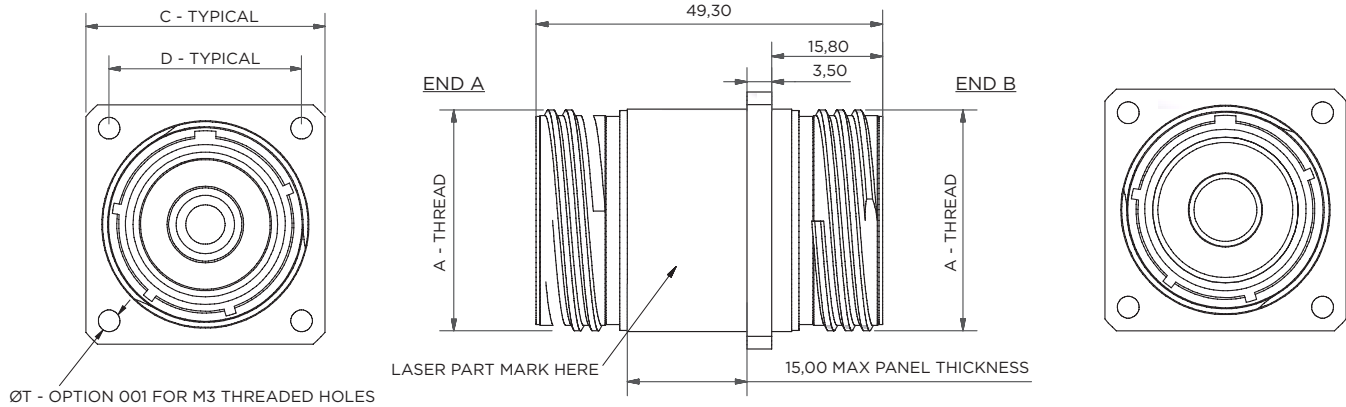
High power receptacles
Black zinc nickel

All dimensions in MM unless otherwise stated.



2.3 - Bulkhead Feedthrough Receptacles

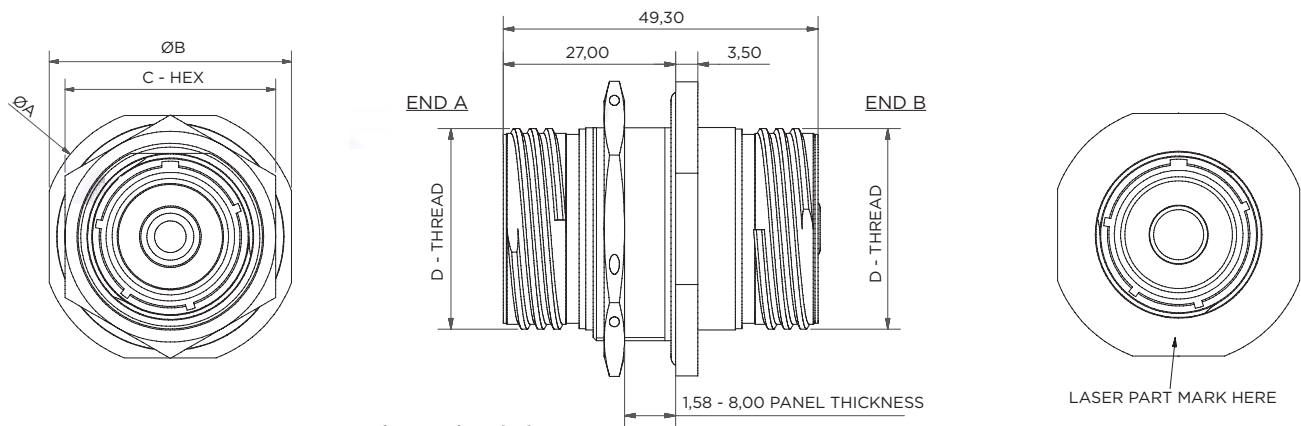
Square Flange Bulkhead Feedthrough PC420HPBF



example part description:
PC420HPBF-19SPN-1-ZN(-001)

SHELL SIZE	A THREAD 0.1P-0.3L-TS	C ±0,25	D	T ±0,13
19	1,2500	36,5	29,4	3,3
21	1,3750	39,7	31,8	3,3
23	1,5000	42,9	34,9	3,3
25	1,6250	46,0	38,1	3,3

Jam Nut Bulkhead Feedthrough PC424HPBF



example part description:
PC424HPBF-19SPN-1-ZN

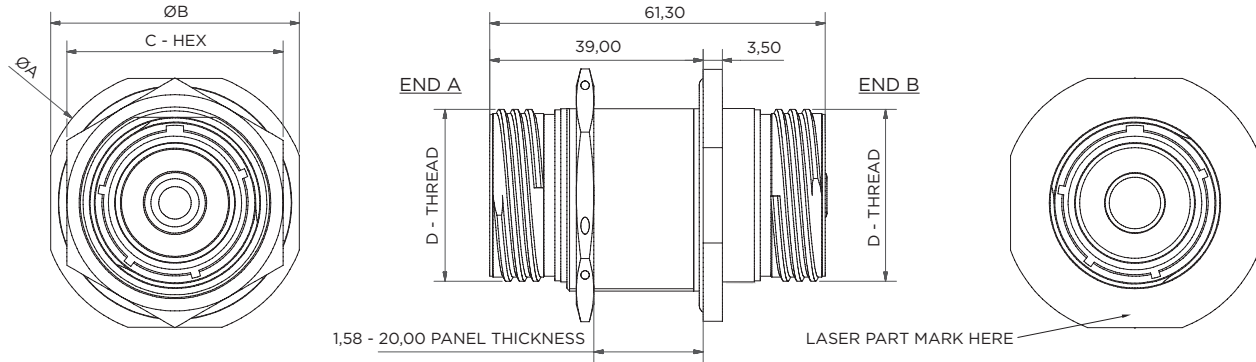
SHELL SIZE	Ø A ±0.3	Ø B ±0.2	C HEX +0,25/-0	D THREAD 0.1P-0.3L-TS
19	49,2	46,0	40,0	1,2500
21	52,4	49,2	43,0	1,3750
23	55,6	52,4	46,0	1,5000
25	58,7	55,6	50,0	1,6250

All dimensions in MM unless otherwise stated.



2.3 - Bulkhead Feedthrough Receptacles

Jam Nut Bulkhead Feedthrough - Large Panel PC424HPXLBF

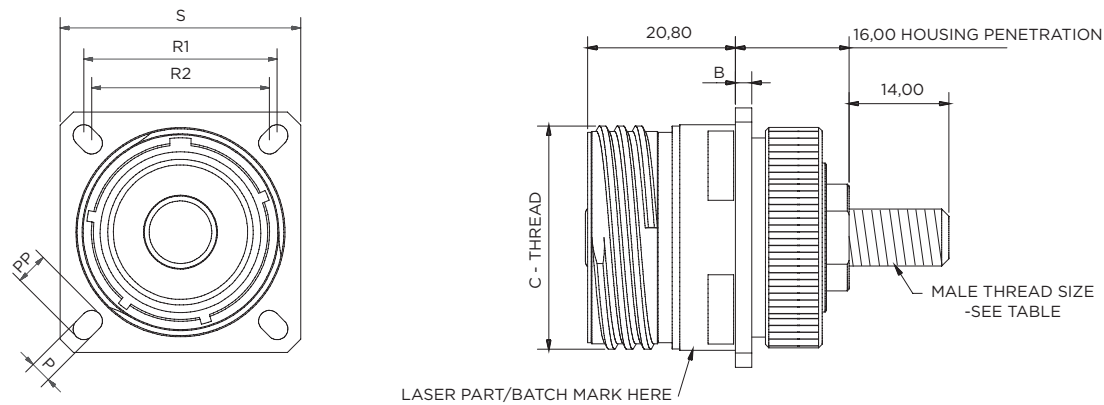


example part description:
PC424HPXLBF-19SPN-1-ZN

SHELL SIZE	Ø A ±0.3	Ø B ±0.2	C HEX +0,25/-0	D THREAD 0.1P-0.3L-TS
19	49,2	46,0	40,0	1,2500
21	52,4	49,2	43,0	1,3750
23	55,6	52,4	46,0	1,5000
25	58,7	55,6	50,0	1,6250

2.4 - Low Profile Rear Mount Receptacle

Low Profile Rear Mount Receptacle - Square Flange PC420HP-M*H



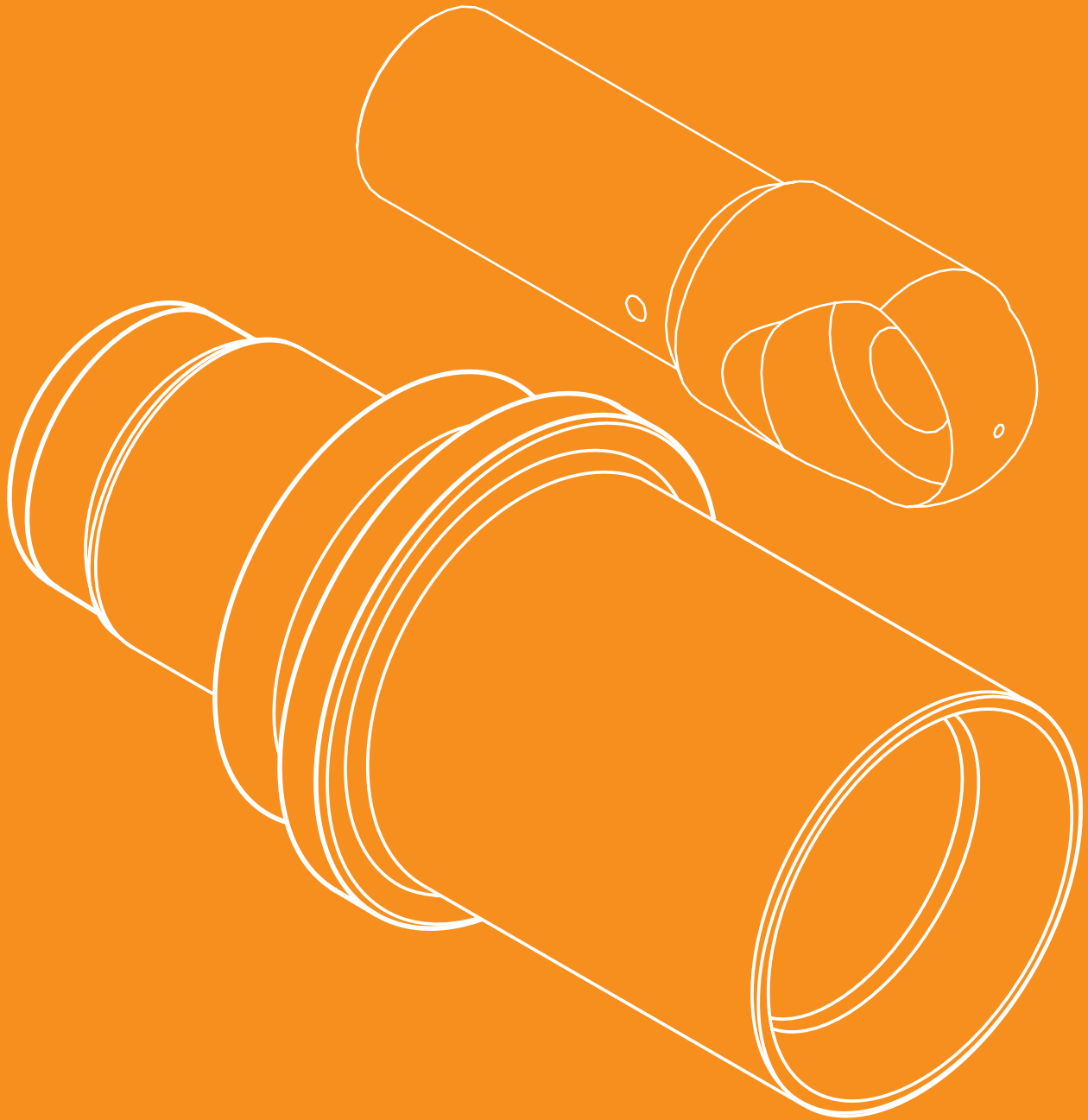
example part description:
PC420HP-M-19-PN-1-ZN-H16

SHELL SIZE	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE	Ø B ±0.2	C THREAD 0.1P-0.3L-TS	P ±0.2	PP ±0.2	R1	R2	S ±0.3	THREAD SIZE
19	70	50	2,3	1,2500	3,25	4,93	29,36	26,97	36,5	M8
21	120	95	3,0	1,3750	3,25	4,93	31,75	29,36	39,7	M10
23	185	150	3,0	1,5000	3,91	6,15	34,93	31,75	42,9	M10
25	240	185	3,0	1,6250	3,91	6,15	38,10	34,93	46,0	M12

All dimensions in MM unless otherwise stated.

SECTION THREE

High Power Connector Accessories

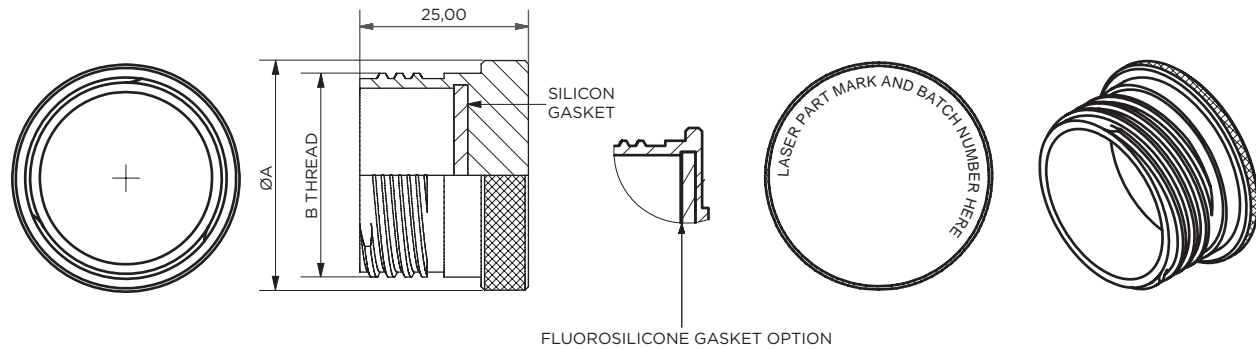




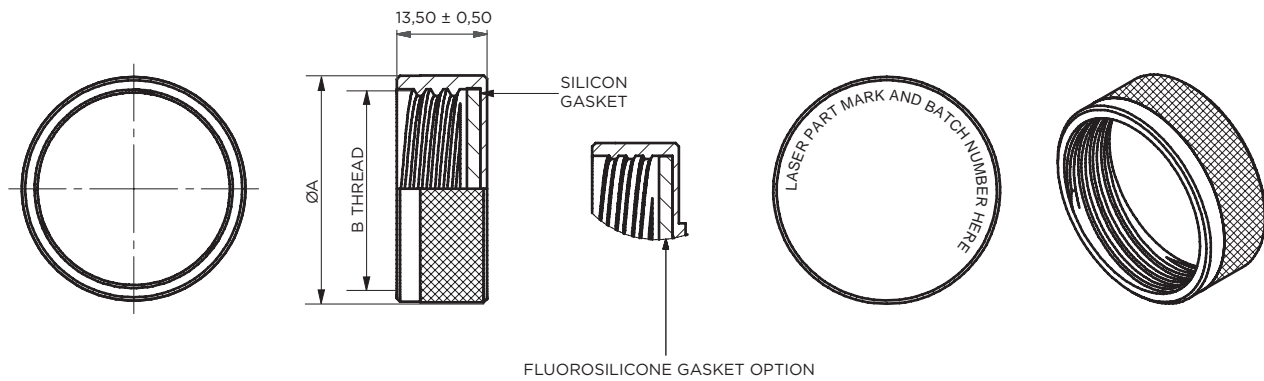
SECTION 3: Accessories

3.1 - Protection Covers

Plug Protection Cap - 100P237



Receptacle Protection Cap - 100P160



Shell Size	Ø A MAX	B THREAD
17	34,0	1.1875-0.1P-0.3L-TS
19	37,0	1.250-0.1P-0.3L-TS
21	40,0	1.375-0.1P-0.3L-TS
23	43,0	1.500-0.1P-0.3L-TS
25	47,0	1.625-0.1P-0.3L-TS

100P237-25-1-C

Series —————

Insert **F** for fluorosilicone gasket —————

Omit for standard —————

Shell Size (table 1) —————

Material (table 5) —————

Finish —————

NOTE:

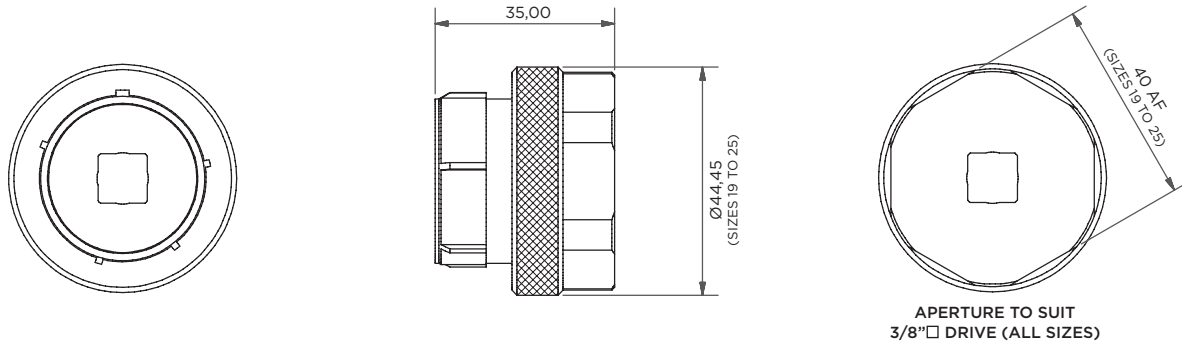
Caps only intended for use whilst connectors are in transit and prior to harness installation.

All dimensions in MM unless otherwise stated.

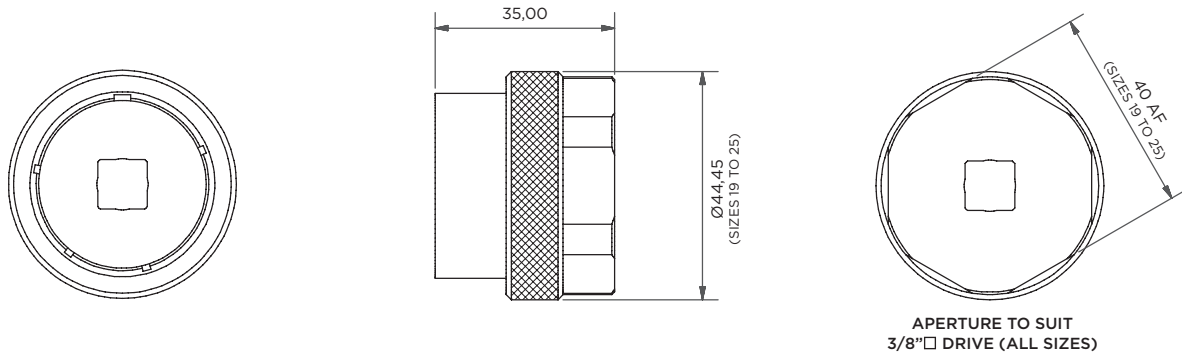


3.2 - Socket Adaptors

Receptacle Range PC4T3-R



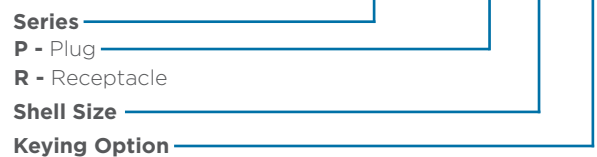
Plug Range PC4T3-P



Keying Options

- Socket adaptors are available in all sizes to suit keyings: N, A, B, C, D & E
- A universal option (U) is also available which drives on the main key (shell sizes 13-25). Intended for occasional use for increased convenience, it should not be seen as a permanent alternative to a fully keyed option.

PC4T3-P23N

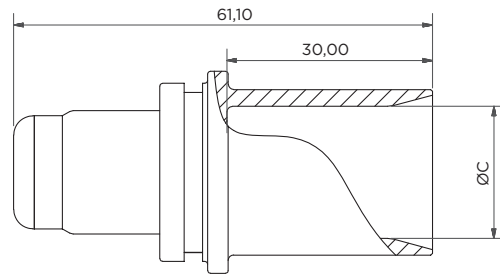
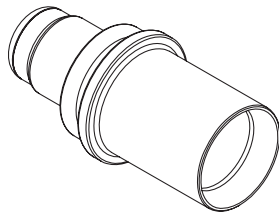


All dimensions in MM unless otherwise stated.

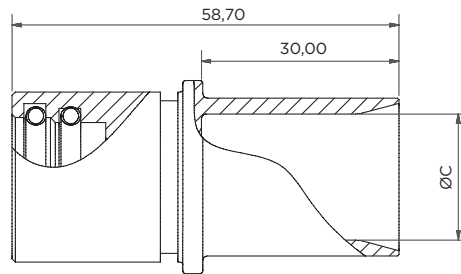
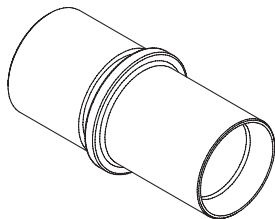


3.4 - Shielded Crimp Plugs

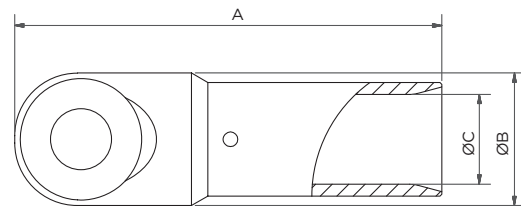
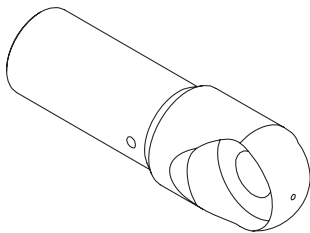
Pin Crimp Contact



Socket Crimp Contact



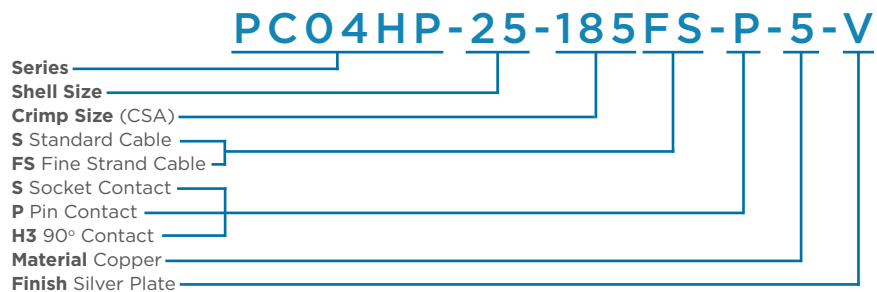
90° Crimp Contact



SHELL SIZE	MAX CRIMP (CSA) STD CABLE	MAX CRIMP (CSA) FINE STRAND CABLE	90° CRIMP CONTACT	
			LENGTH A	Ø B
19	70	70	58,0	18,0
21	120	95	58,0	20,8
23	185	150	59,0	25,2
25	240	185	60,0	27,5

CRIMP SIZE (CSA)	Ø C MAX STD CABLE	Ø C MAX FINE STRAND CABLE
50	10,0	10,3
70	11,3	12,1
95	13,5	14,2
120	15,2	16,5
150	16,7	17,6
185	19,2	19,2
240	21,1	NA

Crimp Plug Part Description Breakdown

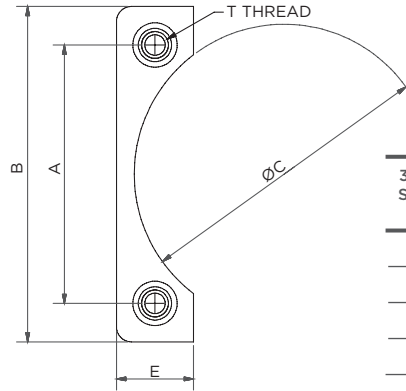
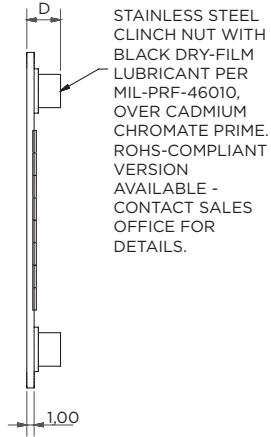


All dimensions in MM unless otherwise stated.



3.3 - Retaining Plates

Retaining Plate, 1/4 Perimeter - 100P3503



38999 SHELL SIZE	PLATE SIZE	T THREAD UNJC-3B	A	B $\pm 0,4$	ϕC $+0,4/-0$	D MAX	ϕE $+0,4/-0$
19	20	4-40	29,4	39,0	34,2	4,3	9,6
21	22	4-40	31,8	42,3	37,5	4,3	10,5
23	24	6-32	34,9	45,3	40,5	4,7	10,4
25	25	6-32	38,1	48,0	42,1	4,7	9,9

100P3503-24-A

Series _____
 Plate Size (see table) _____
 Primer Coat _____
 Contact TE for available options , omit for standard finish



IP69K plug and receptacle
Stainless, passivated

All dimensions in MM unless otherwise stated.

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