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ITT

Electronic Components

Veam VBN Connectors



Engineered for life

Interconnect Technologies & Solutions for the Transportation Industry

For over 90 years, ITT has been developing innovative solutions for harsh environment applications. We have a proven track record of demonstrating our expertise and commitment to the transportation industry, offering the broadest portfolio of interconnect products.

Off-Road / Heavy Vehicle

Our interconnect range include sealed circulars, plastic and metal shell bayonet coupling circulars, miniature metal shell circulars, PC board header connectors and sensor and direct device connectors. ITT is also a systems supplier, providing value-added module and harness assemblies.

**In addition to our VBN series,
we also offer these connectivity solutions:**



Cannon APD

In-line and bulkhead sensors resistant to harsh environmental conditions (contaminants, vibration and shock).



Cannon CA-Bayonet

Signal and power connectors with exceptional sealing against the ingress of fluids and will withstand the effects of high vibrations.



Cannon Trident

Versatile range of electrical connectors based on a standard contact design. Options include; industrial grade, harsh environment and shielded circulars.

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Veam VBN Series is completely intermateable with VG95234/CIR reverse bayonet connectors.

Product Features

- 1/3 turn bayonet coupling
- UL94V-0 thermoplastic insert
- Removable insert retaining ring
- Pin insert interfacial seal
- Aluminum shells
- Protective platings
- Backshell / strain reliefs

Customer Benefits

- Fast reliable mating and unmating
- Vibration resistant
- No threads to gall or bind
- 2,000 coupling cycles max - 500 min.
- Flame retardant
- Ease of contact insertion & extraction
- Allows for field polarization changes
- Environmental sealing when mated
- Improved electrical creepage distance
- High strength / light weight
- Highly corrosion resistant
- Flexibility with different types of cables

VEAM VBN

General Specifications

Material Construction

Shells & Coupling Ring	Aluminum alloy
Finish	Cadmium free plating, conductive and non-conductive
Insulator	Thermoplastic, UL94-V0 meets NF F 16-101 / 16-102 standards
Insulator Retaining Ring	Copper alloy
Interfacial Seal & Grommet	Fire resistant silicone rubber
Contacts	Copper alloy with gold or silver plating

Electrical Performance

Insulation Resistance	≥5000 MΩ		
Withstanding Voltage	3250 VAC RMS in mated condition		
Contact Current Rating	Contact Size AWG	Max Rated Current at 20°C*	Rated at 85°C*
	16	22A	13A
	12	41A	23A
	8	73A	46A
	* single contact in isolation		

Environmental Performance

Operating Temperature	-40°C to +100°C per NF F 61-030 -40°C to +125°C (consult factory)
Flame Retardant Rating	UL94-V0 per NF F 16-101/16-102
Corrosion Resistance	96 hours per NF F 61-030 and VG95234 500 hours (consult factory)
Water Protection	IP67 in a mated condition when used with wire sealing grommet and sealing type backshell
Fluid Resistance	Gas, oil, mineral oil, acid bath per NF F 61-030

Mechanical Performance

Durability	2000 mating cycles maximum
Bayonet Coupling Torque	Per VG95234
Shock	Acceleration = 50g Duration = 11 ms per NF F 61-030 (NF C 20-727, NF C 93-400)
Vibration	Acceleration = 2g (NF F 60-002 / NF C 93-400) 20g (VG95234) Sinusoidal vibration = 10 / ±100 Hz
Contact Retention	16 contact size = 70 N minimum 12 contact size = 90 N minimum 8 contact size = 110 N minimum

ORDER CODE

VBN 3 () 20 15 P N TXX ()

Connector Series

VBN VEAM Bayonet
Coupling N Series
VBNG* Plug

Connector Type

2 Front Mounting Receptacle
3 Rear Mounting Receptacle
38 90° Rear Mount Receptacle
6 Straight Plug Connector
8 90° Plug Connector

Connector Class

A, R Straight or Right Angle, no Strain relief
AF, F, CF, CFZ Straight or Right Angle with Strain relief
APG, RPG Straight for use with PG fitting
SS Backshells for shielded cable

Shell Size

16S, 18, 20, 22, 24, 28, 32, 36, 40

Insert Arrangement

Refer to pages 13 and 14

Contact Gender

P Male Contacts (Pin)
S Female Contacts (Sockets)

Insert Orientation

N Normal
W, X, Y, Z Degrees for alternate positions - refer to page 13 and 14
No Letter Insulator Not Installed

Shell Plating

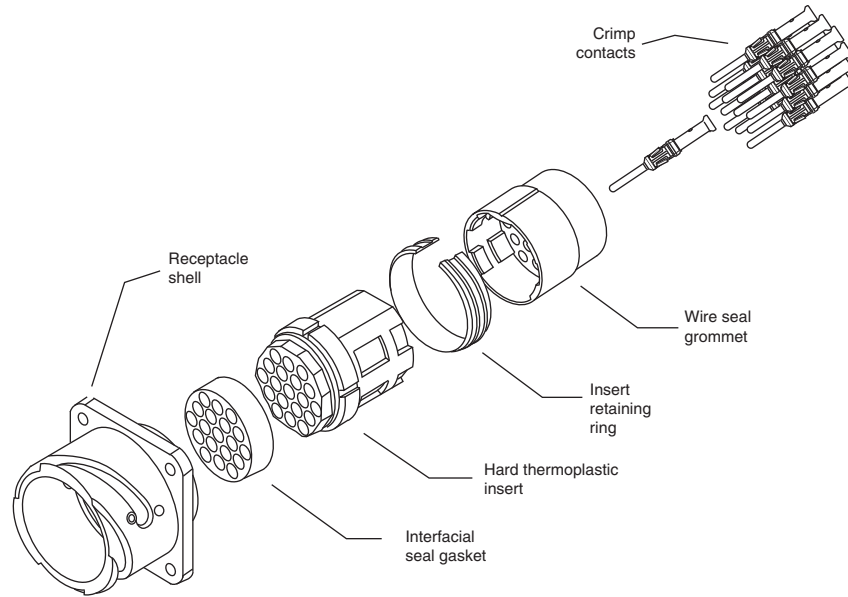
TXX T100 zinc/cobalt ecogreen (Conductive)
T108 zinc/iron ecoblack (Conductive)
T39 Black varnish (non conductive)

Modification Code

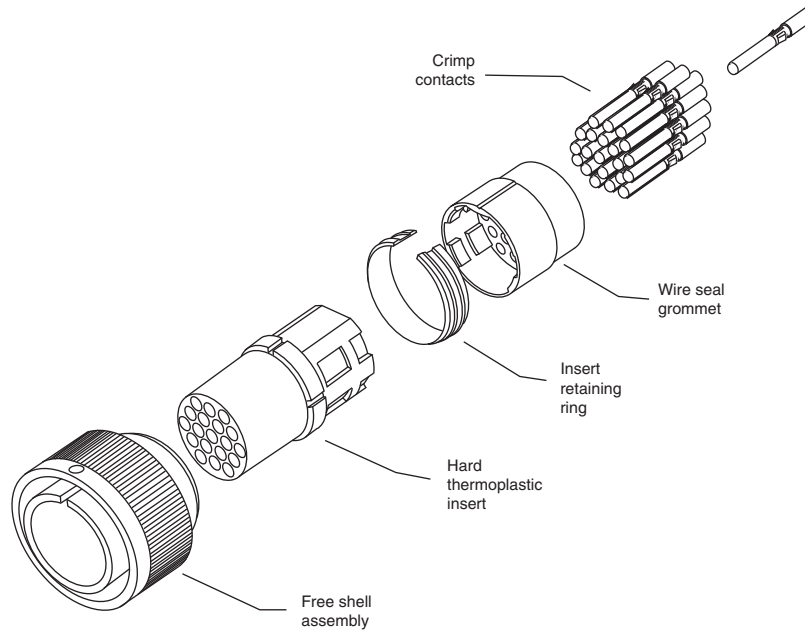
Consult Factory

* To be used only with Connector Type "6" and Connector Class "SS".

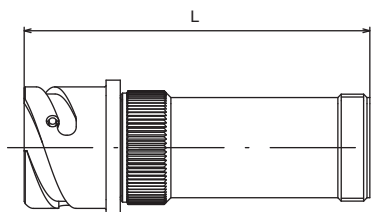
PANEL MOUNTED CONNECTOR



PLUG CONNECTOR

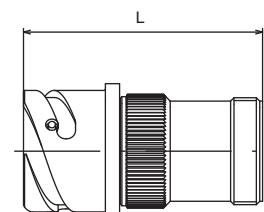


Receptacle connector classes



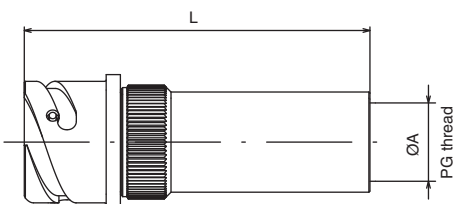
VBN3A Straight backshell without accessories
VBN3R Same as "A" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	80	100	100	100	105	105	115	125	125



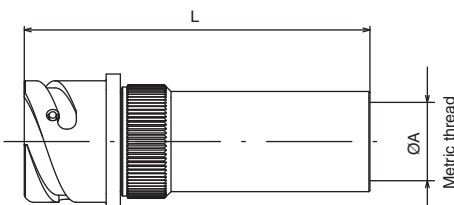
VBN3RV Short backshell, includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	55	65	70	70	70	75	75	80	80



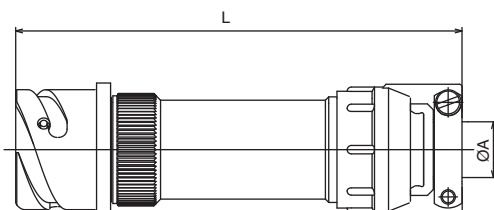
VBN3APG Straight backshell with "PG" thread and without accessories
VBN3RPG Same as "APG" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	80	100	100	100	105	105	115	125	125
ØA	PG9	PG16	PG16	PG16	PG21	PG21	PG36	PG36	PG42



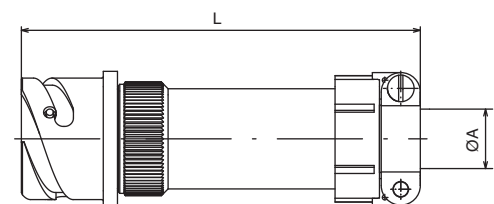
VBN3AM Straight backshell with with metric thread and without accessories
VBN3RM Same as "AM" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	80	100	100	100	105	105	115	125	125
ØA	M16	M25	M25	M25	M32	M32	M40	M40	M63



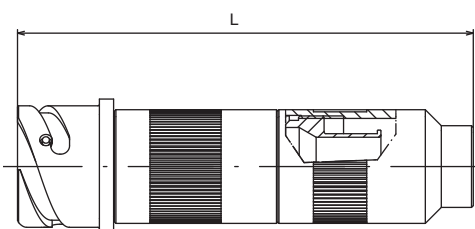
VBN3CF Straight backshell with "C" style clamp
VBN3CFZ Same as "CF" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L	110	135	135	135	140	140	160	175	175
ØA	8-13.5	9.6-15.8	11.3-19	11.3-19	15.5-23.8	15.5-23.8	23.4-31.7	23.4-35	29.9-41.2



VBN3AF Straight backshell with "A" style clamp
VBN3F Same as "AF" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L	105	125	125	125	130	130	145	155	167
ØA	11.0	14.2	15.8	15.8	19	19	23.8	31.7	34.9



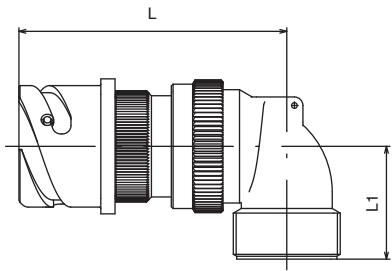
VBN3SS Straight backshell with shielding system
VBN3RSS Same as "SS" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L approx.	105	125	130	145	155	160	170	185	200

*Due to the various available options, the above dimensions could vary.
Please consult factory.*

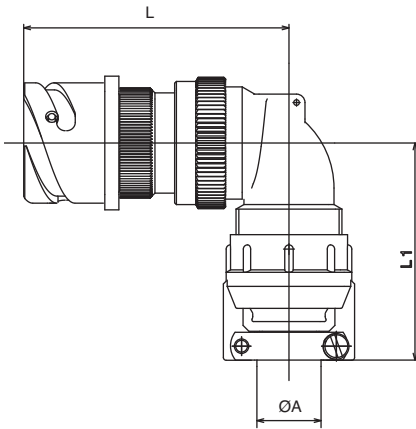
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Receptacle connector classes



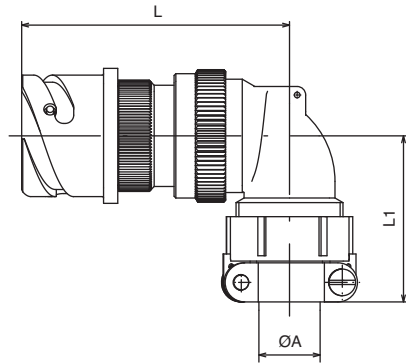
VBN38A 90° degree backshell without accessories
VBN38R Same as "A" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	63	75	80	80	80	80	85	90	95
L1 max.	30	35	35	35	40	40	45	50	55



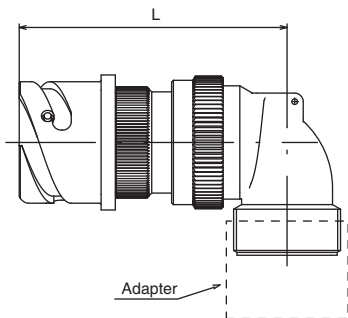
VBN38CF 90° degree backshell with "C" style clamp
VBN38CFZ Same as "CF" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	63	75	80	80	80	80	85	90	95
L1 max.	61	68	68	68	76	76	97	98	103
ØA	8-13.5	9.6-15.8	11.3-19	11.3-19	15.5-23.8	15.5-23.8	23.4-31.7	23.4-35	29.9-41.2



VBN38AF 90° degree backshell with "A" style clamp
VBN38F Same as "AF" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	63	75	80	80	80	80	85	90	95
L1 max.	45	53	53	53	58	58	66	69	95
ØA	11.0	14.2	15.8	15.8	19	19	23.8	31.7	34.9

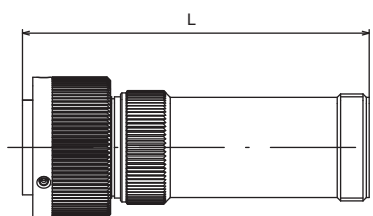


VBN38APG-PGOXX 90° degree backshell with adapter
VBN38RPG-PGOXX with PG or Metric thread

VBN38AM-MXXF
VBN38RM-MXXF

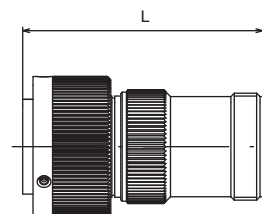
SIZE	16S	18	20	22	24	28	32	36	40
L max.	63	75	80	80	80	80	85	90	95

Plug connector classes



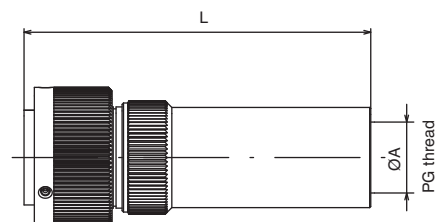
VBN6A Straight backshell without accessories
VBN6R Same as "A" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	80	100	100	100	105	105	115	125	125



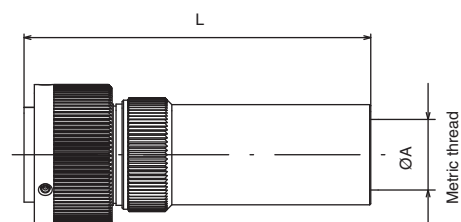
VBN6RV Short backshell, includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	55	65	70	70	70	75	75	80	80



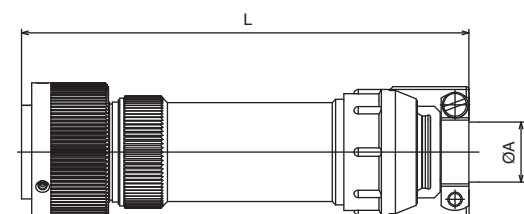
VBN6APG Straight backshell with PC thread and without accessories
VBN6RPG Same as "APG" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	80	100	100	100	105	105	115	125	125
ØA	PG9	PG16	PG16	PG16	PG21	PG21	PG36	PG36	PG42



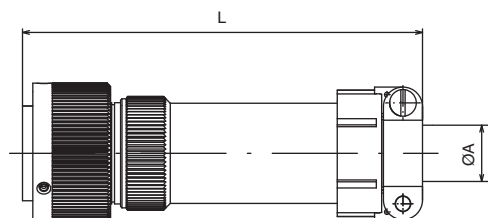
VBN6AM Straight backshell with metric thread and without accessories
VBN6RM Same as "AM" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	80	100	100	100	105	105	115	125	125
ØA	M16	M25	M25	M25	M32	M32	M40	M40	M63



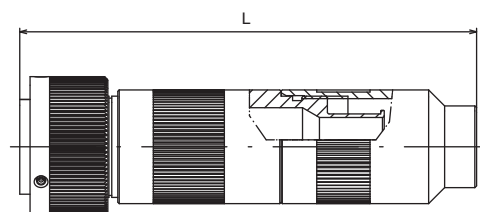
VBN6CF Straight backshell with "C" style cable clamp
VBN6CFZ Same as "CF" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	110	135	135	135	140	140	160	175	175
ØA	8-13.5	9.6-15.8	11.3-19	11.3-19	15.5-23.8	15.5-23.8	23.4-31.7	23.4-35	29.9-41.2



VBN6AF Straight backshell with "A" style clamp
VBN6F Same as "AF" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	105	125	125	125	130	130	145	155	167
ØA	11.0	14.2	15.8	15.8	19	19	23.8	31.7	34.9



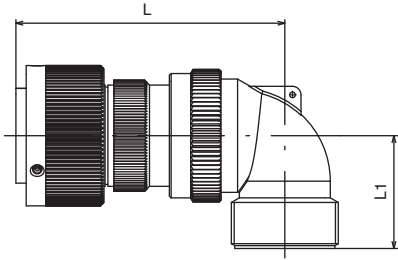
VBN6SS Straight backshell with shielding system
VBN6RSS Same as "SS" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	105	125	130	145	155	160	170	185	200

Due to the various available options, the above dimensions could vary. Please consult factory.

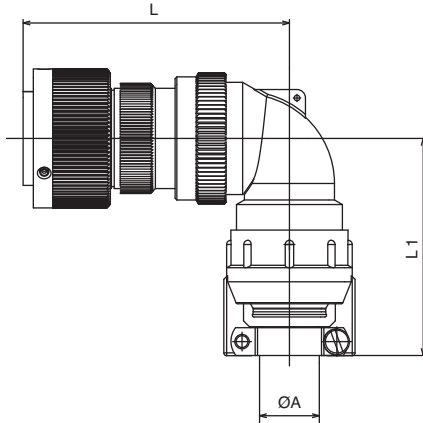
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Plug connector classes



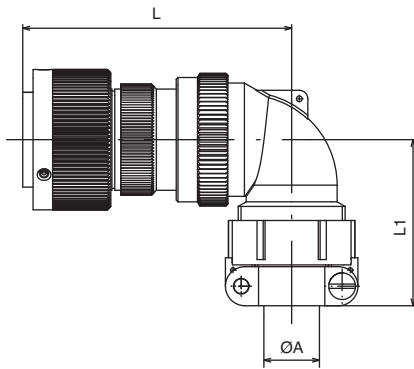
VBN8A 90° degree backshell without accessories
VBN8R Same as "A" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	63	75	80	80	80	80	85	90	95
L1 max.	30	35	35	35	40	40	45	50	55



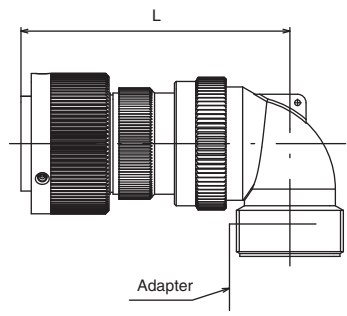
VBN8CF 90° degree backshell with "C" style clamp
VBN8CFZ Same as "CF" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	63	75	80	80	80	80	85	90	95
L1 max.	61	68	68	68	76	76	97	98	103
ØA	8-13.5	9.6-15.8	11.3-19	11.3-19	15.5-23.8	15.5-23.8	23.4-31.7	23.4-35	29.9-41.2



VBN8AF 90° degree backshell with "A" style clamp
VBN8F Same as "AF" but includes a wire sealing grommet

SIZE	16S	18	20	22	24	28	32	36	40
L max.	63	75	80	80	80	80	85	90	95
L1 max.	45	53	53	53	58	58	66	69	95
ØA	11.0	14.2	15.8	15.8	19	19	23.8	31.7	34.9



VBN8APG-PGOXX 90° degree backshell with adapter
VBN8RPG-PGOXX with PG or Metric thread

VBN8AM-MXXF
VBN8RM-MXXF

SIZE	16S	18	20	22	24	28	32	36	40
L max.	63	75	80	80	80	80	85	90	95

Electrical Contact Current Ratings

Contact Size AWG	* MAXIMUM rated current 20° C	Rated current 85° C *	De-rated current **
16	22A	15A	11,5A
12	41A	23A	20A
8	73A	46A	42A

* single contact isolation

** grouped contacts

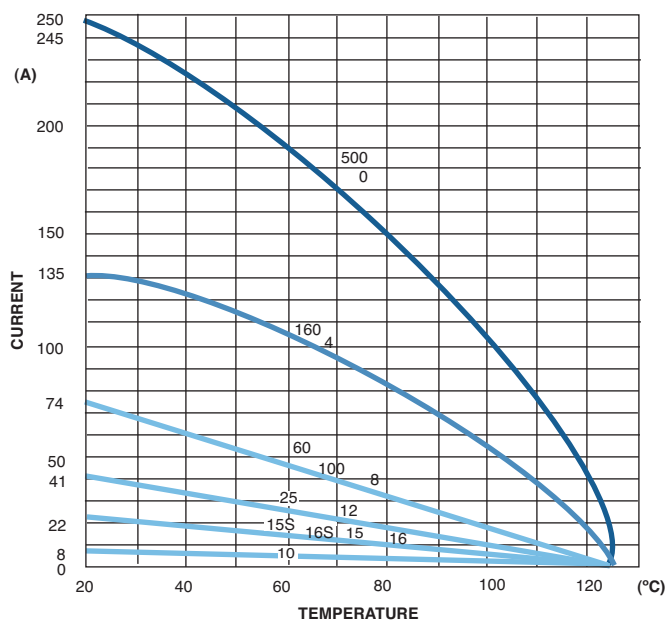
Contact size	Contact resistance
16	2.5 mΩ max.
12	1.3 mΩ max.
8	0.9 mΩ max.

- Insulation resistance $\geq 5000 \text{ m}\Omega$
- In mated conditions
- Interfacial seal is in compression
- Minimum creepage distance = Minimum insulation distance in air: 12mm.

Electrical performance per NFF-61030

Rated voltage	Withstand voltage
500 V.d.c. max	3250 V.a.c. (rms)
380 V.a.c. max.	3250 V.a.c. (rms)

Recommended current according to the temperature



Electrical performance per MIL-DTL-5015

Contact arrangement service rating

Service rating	Operating Voltage DC (at sea level)	Operating voltage AC (at sea level)
A	700 V	500 V
D	1,250 V	900 V

Dielectric strength (standard sea level conditions)

Service rating	Minimum flashover ac rms	* Test voltage ac rms
A	2,800 V	2,000 V
D	3,600 V	2,800V

* according to MIL-DTL-5015

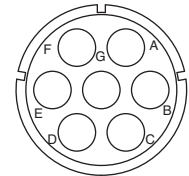
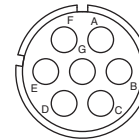
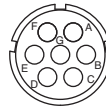
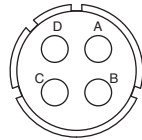
Insert Arrangements

Insert Arrangements	Total Contacts					Service Rating
	0	4	8	12	16	
16S-1	7				7	A
18-19	10				10	A
20-4	4			4		D
20-7	8				8	*
20-15	7			7		A
22-14	19				19	A
22-23	8			8		*
24-10	7		7			A
28-21	37				37	A
32A-13	13			13		D
36-10	48				48	A
36A-22	22			22		D
40A-35	35			35		D
40A-60	60				60	A
40A-70	70				70	A

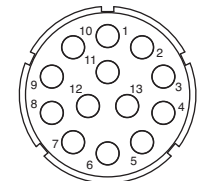
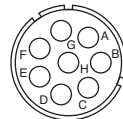
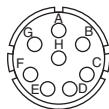
* For service ratings, please see the related contact arrangement view.

Contact Arrangements

Full scale views - looking into front face of male insert



Insert Arrangement	20-4	16S-1	20-15	24-10
Number of Contacts	4	7	7	7
Contact Size	12	16	12	8
Service Rating	D	A	A	A



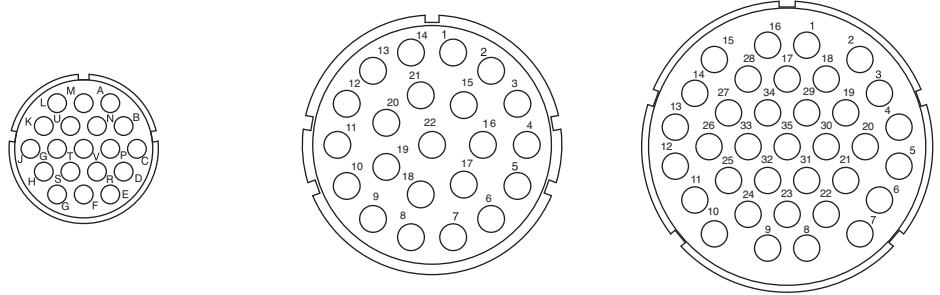
Insert Arrangement	20-7	22-23	18-19	32A-13
Number of Contacts	8	8	10	13
Contact Size	16	12	16	12
Service Rating	A, B, H, G=D C, D, E, F=A	H=D, BAL=A	A	D

Alternate positions of insert

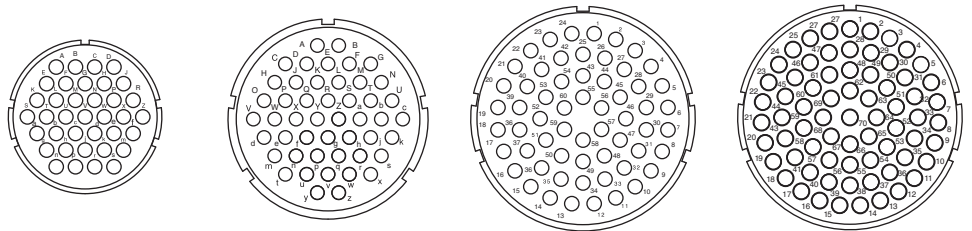
Front of male insert

Insert Arrangements	Degrees for alternate positions			
	W	X	Y	Z
16S-1	80			280
18-19		120	240	
20-4	45	110	250	
20-7	80	110	250	280
20-15	80			280
22-14	80			280
22-23	35		250	
24-10	80			280
28-21	80	110	250	280
32A-13	65	130	230	295
36-10	80	125	235	280
36A-22	80	110	250	280
40A-35	70	130	230	290
40A-60	80	110	250	280
40A-70	80	110	250	280

Full scale views - looking into front face of male insert



Insert Arrangement	22-14	36A-22	40A-35
Number of Contacts	19	22	35
Contact Size	16	12	12
Service Rating	A	D	D



Insert Arrangement	28-21	36-10	40A-60	40A-70
Number of Contacts	37	48	60	70
Contact Size	16	16	16	16
Service Rating	A	A	A	A

VEAM VBN

Pin Crimp Contacts

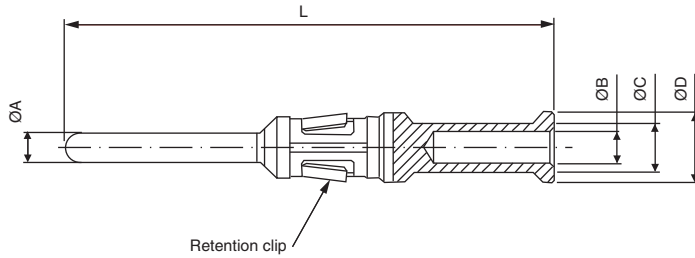


Figure 1

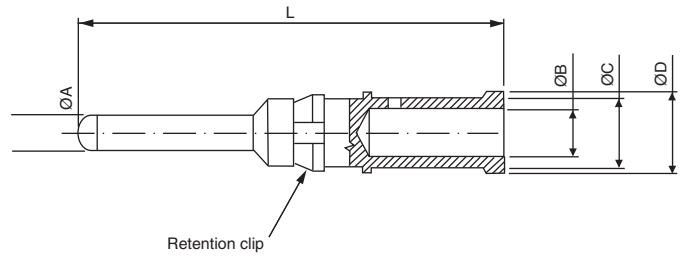


Figure 2

Part Number	Wire Size			L	ØA	ØB	ØC	ØD	Cable O.D. maximum	Figure
	Size	mm ²	AWG							
51513-16S-12	16S	0.5-0.75	20	28.1	1.58	1.2	2.6	3.9	3.8	1
51513-16S-20	16S	1.0-2.0	16	28.1	1.58	2.0	2.9	3.9	3.8	1
51513-16S-26	16S	2.5-3.0	12	28.1	1.58	2.5	3.8	3.8	3.8	1
51513-16-12	16	0.5-0.75	20	33.2	1.58	1.2	2.6	3.9	3.8	1
51513-16-20	16	1.0-2.0	16	33.2	1.58	2.0	2.9	3.9	3.8	1
51513-16-26	16	2.5-3.0	14	33.2	1.58	2.5	3.8	3.8	3.8	1
51513-12	12	2.5-3.0	14	38.5	2.38	2.5	3.8	5.5	5.4	1
51513-12-12	12	0.5-0.75	20	38.5	2.38	1.2	2.6	5.5	5.4	1
51513-12-20	12	1.0-2.0	16	38.5	2.38	2.0	3.8	5.5	5.4	1
51513-12-30*	12	4.0	12	38.5	2.38	3.0	4.8	5.5	5.4	1
51513-12-38*	12	6.0	10	38.5	2.38	3.6	4.8	5.5	5.4	1
51513-8*	8	AWG 8	8	41.7	3.60	4.6	6.8	8.0	7.8	2
51513-8-26*	8	3.0	14	41.7	3.60	2.5	3.8	8.0	7.8	2
51513-8-30	8	4.0	12	41.7	3.60	3.0	4.8	8.0	7.8	2
51513-8-38	8	6.0	10	41.7	3.60	3.6	4.8	8.0	7.8	2
51513-8-50*	8	10		41.7	3.60	5.0	7	8.0	7.8	2

NOTES:

1. Materials: Body in copper alloy
Retention clip in beryllium copper
2. Finish: Silver plating (add the suffix T9 to the part number)
Gold plated (add the suffix T12 to the part number)
3. For different wire sizes (mm²), please consult factory.
4. The dimensions indicated are the maximum OD cable permitted due to the rear insert holes.
5. When grommets are used refer to page 25 for cable dimensions.

* Contacts with wires not in according to NF F.

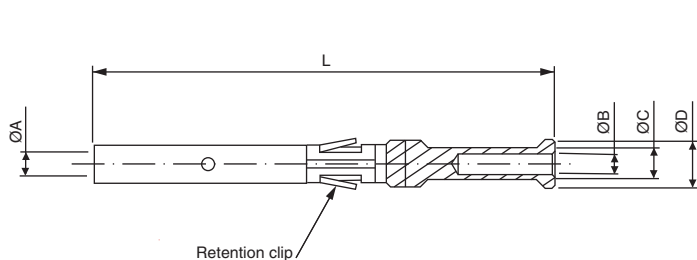


Figure 1

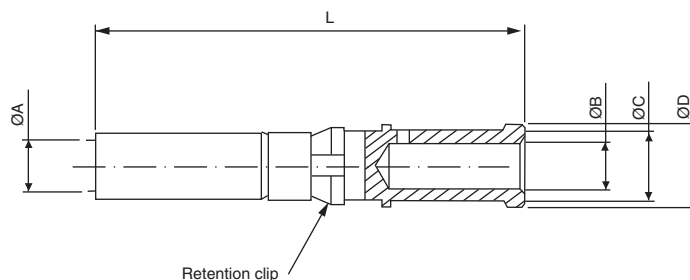


Figure 2

Part Number	Wire Size			L	ØA	ØB	ØC	ØD	Cable O.D. maximum	Figure
	Size	mm2	AWG							
51511-16S-12	16S	0.5-0.75	20	28.1	1.65	1.2	2.6	3.9	3.8	1
51511-16S-20	16S	1.0-2.0	16	28.1	1.65	2.0	2.9	3.9	3.8	1
51511-16S-26	16S	2.5-3.0	12	28.1	1.65	2.5	3.8	3.8	3.8	1
51511-16-12	16	0.5-0.75	20	38.0	1.65	1.2	2.6	3.9	3.8	1
51511-16-20	16	1.0-2.0	16	38.0	1.65	2.0	2.9	3.9	3.8	1
51511-16-26	16	2.5-3.0	14	38.0	1.65	2.5	3.8	3.8	3.8	1
51511-12	12	2.5-3.0	14	38.5	2.48	2.5	3.8	5.5	5.4	1
51511-12-12	12	0.5-0.75	20	38.5	2.48	1.2	2.5	5.5	5.4	1
51511-12-20	12	1.0-2.0	16	38.5	2.48	2.0	3.8	5.5	5.4	1
51511-12-30*	12	4.0	12	38.5	2.48	3.0	4.8	5.5	5.4	1
51511-12-38*	12	6.0	10	38.5	2.48	3.6	4.8	5.5	5.4	1
51511-8*	8	AWG 8	8	41.7	3.70	4.6	6.8	8.0	7.8	2
51511-8-26*	8	3.0	14	41.7	3.70	2.5	3.8	8.0	7.8	2
51511-8-30	8	4.0	12	41.7	3.70	3.0	4.8	8.0	7.8	2
51511-8-38	8	6.0	10	41.7	3.70	3.6	4.8	8.0	7.8	2
51511-8-50*	8	10		41.7	3.70	5.0	7	8.0	7.8	2

NOTES:

1. Materials: Body in copper alloy
Contacts spring in beryllium copper, gold plated.
Retention clip in beryllium copper
2. Finish: Silver plating (add the suffix T9 to the part number)
Gold plated (add the suffix T12 to the part number)
3. For different wire sizes (mm2), please consult factory.
4. The dimensions indicated are the maximum OD cable permitted due to the rear insert holes.
5. When grommets are used refer to page 25 for cable dimensions.

* Contacts with wires not in according to NF F.

Crimp, Insertion & Extraction Tools

Male Contact Part Number	Contact Size	Cable DIN mm2 AWG	Crimping Tool (note)	Crimping Die	Selector Number	Tool Position	Insertion Tool	Removal Tool
51513-16S-12	16S	0.5	VM8 or CT8N(M)	VH435	3	Green		ET16VBN
		0.75	VM8 or CT8N(M)	VH435	4	Green		ET16VBN
		20	VM8 or CT8N(M)	VH435	3	Green		ET16VBN
51513-16S-20	16S	1	VM8 or CT8N(M)	VH435	5	Green		ET16VBN
		1.5	VM8 or CT8N(M)	VH435	6	Green		ET16VBN
		14	VM8 or CT8N(M)	VH435	6	Green		ET16VBN
51513-16S-26	16S	2.5/3	VM8 or CT8N(M)	VH435	7	Green		ET16VBN
		12	VM8 or CT8N(M)	VH435	8	Green		ET16VBN
51513-16-12	16	0.5	VM8 or CT8N(M)	VH435	3	Blue		ET16VBN
		0.75	VM8 or CT8N(M)	VH435	4	Blue		ET16VBN
		20	VM8 or CT8N(M)	VH435	3	Blue		ET16VBN
51513-16-20	16	1	VM8 or CT8N(M)	VH435	5	Blue		ET16VBN
		1.5	VM8 or CT8N(M)	VH435	6	Blue		ET16VBN
		14	VM8 or CT8N(M)	VH435	6	Blue		ET16VBN
51513-16-26	16	2.5/3	VM8 or CT8N(M)	VH435	7	Blue		ET16VBN
		12	VM8 or CT8N(M)	VH435	8	Blue		ET16VBN
51513-12	12	2.5/3	CT8N (M)	VH435	7	Red		ET12VBN
		12	CT8N (M)	VH435	7	Red		ET12VBN
51513-12-12	12	0.5	CT8N (M)	VH435	3	Red		ET12VBN
		0.75	CT8N (M)	VH435	4	Red		ET12VBN
		20	CT8N (M)	VH435	3	Red		ET12VBN
51513-12-20	12	1	CT8N (M)	VH435	7	Red		ET12VBN
		1.5	CT8N (M)	VH435	8	Red		ET12VBN
		2	CT8N (M)	VH435	8	Red		ET12VBN
		14	CT8N (M)	VH435	8	Red		ET12VBN
		16	CT8N (M)	VH435	7	Red		ET12VBN
51513-12-30	12	4	CT8N (M)	VH435	8	Red		ET12VBN
		6	CT8N (M)	VH435	8	Red		ET12VBN
51513-8	8		MP-F80-VGE (H)	44519-8T70				ET8VBN
		8	HT45 (M)	51589-52T70				ET8VBN
			B50 (E)	51589-52T70				ET8VBN
51513-8-26	8	3	MP-F80-VGE (H)	44519-425T70				ET8VBN
		12	MP-F80-VGE (H)	44519-425T70				ET8VBN
		3	HT45 (M)	51589-32T70				ET8VBN
		12	HT45 (M)	51589-32T70				ET8VBN
		3	B50 (E)	51589-32T70				ET8VBN
51513-8-30	8		MP-F80-VGE (H)	44519-44T70				ET8VBN
		4	HT45 (M)	51589-37T70				ET8VBN
			B50 (E)	51589-37T70				ET8VBN
51513-8-38	8		MP-F80-VGE (H)	44519-126T70				ET8VBN
		6	HT45 (M)	51589-37T70				ET8VBN
			B50 (E)	51589-37T70				ET8VBN
51513-8-50	8		MP-F80-VGE (H)	44519-8T70				ET8VBN
		10	HT45 (M)	51589-52T70				ET8VBN
			B50 (E)	51589-52T70				ET8VBN

Note: Manual= (M) Hydraulic= (H) Electrical= (E) * = Consult Factory

Female Contact Part Number	Contact Size	Cable DIN mm2 AWG	Crimping Tool (note)	Crimping Die	Selector Number	Tool Position	Insertion Tool	Removal Tool
51511-16S-12	16S	0.5	VM8 or CT8N(M)	VH435	3	Green		ET16VBN
		0.75	VM8 or CT8N(M)	VH435	4	Green		ET16VBN
		20	VM8 or CT8N(M)	VH435	3	Green		ET16VBN
51511-16S-20	16S	1	VM8 or CT8N(M)	VH435	5	Green		ET16VBN
		1.5/2	VM8 or CT8N(M)	VH435	6	Green		ET16VBN
		14	VM8 or CT8N(M)	VH435	6	Green		ET16VBN
51511-16S-26	16S	2.5/3	VM8 or CT8N(M)	VH435	7	Green		ET16VBN
		12	VM8 or CT8N(M)	VH435	8	Green		ET16VBN
51511-16-12	16	0.5	VM8 or CT8N(M)	VH435	3	Red		ET16VBN
		0.75	VM8 or CT8N(M)	VH435	4	Red		ET16VBN
		20	VM8 or CT8N(M)	VH435	3	Red		ET16VBN
51511-16-20	16	1	VM8 or CT8N(M)	VH435	5	Red		ET16VBN
		1.5/2	VM8 or CT8N(M)	VH435	6	Red		ET16VBN
		14	VM8 or CT8N(M)	VH435	6	Red		ET16VBN
51511-16-26	16	2.5/3	VM8 or CT8N(M)	VH435	7	Red		ET16VBN
		12	VM8 or CT8N(M)	VH435	8	Red		ET16VBN
51511-12	12	2.5/3	CT8N (M)	VH435	7	Red		ET12VBN
		12	CT8N (M)	VH435	7	Red		ET12VBN
51511-12-12	12	0.5	CT8N (M)	VH435	3	Red		ET12VBN
		0.75	CT8N (M)	VH435	4	Red		ET12VBN
		20	CT8N (M)	VH435	3	Red		ET12VBN
51511-12-20	12	1	CT8N (M)	VH435	7	Red		ET12VBN
		1.5	CT8N (M)	VH435	8	Red		ET12VBN
		2	CT8N (M)	VH435	8	Red		ET12VBN
		14	CT8N (M)	VH435	8	Red		ET12VBN
		16	CT8N (M)	VH435	7	Red		ET12VBN
51511-12-30	12	4	CT8N (M)	VH435	8	Red		ET12VBN
		6	CT8N (M)	VH435	8	Red		ET12VBN
51511-8	8		MP-F80-VGE (H)	44519-8T70				ET8VBN
		8	HT45 (M)	51589-52T70				ET8VBN
			B50 (E)	51589-52T70				ET8VBN
51511-8-26	8	3	MP-F80-VGE (H)	44519-425T70				ET8VBN
		12	MP-F80-VGE (H)	44519-425T70				ET8VBN
		3	HT45 (M)	51589-32T70				ET8VBN
		12	HT45 (M)	51589-32T70				ET8VBN
		3	B50 (E)	51589-32T70				ET8VBN
51511-8-30	8		MP-F80-VGE (H)	44519-44T70				ET8VBN
		4	HT45 (M)	51589-37T70				ET8VBN
			B50 (E)	51589-37T70				ET8VBN
51511-8-38	8		MP-F80-VGE (H)	44519-126T70				ET8VBN
		6	HT45 (M)	51589-37T70				ET8VBN
			B50 (E)	51589-37T70				ET8VBN
51511-8-50	8		MP-F80-VGE (H)	44519-8T70				ET8VBN
		10	HT45 (M)	51589-52T70				ET8VBN
			B50 (E)	51589-52T70				ET8VBN

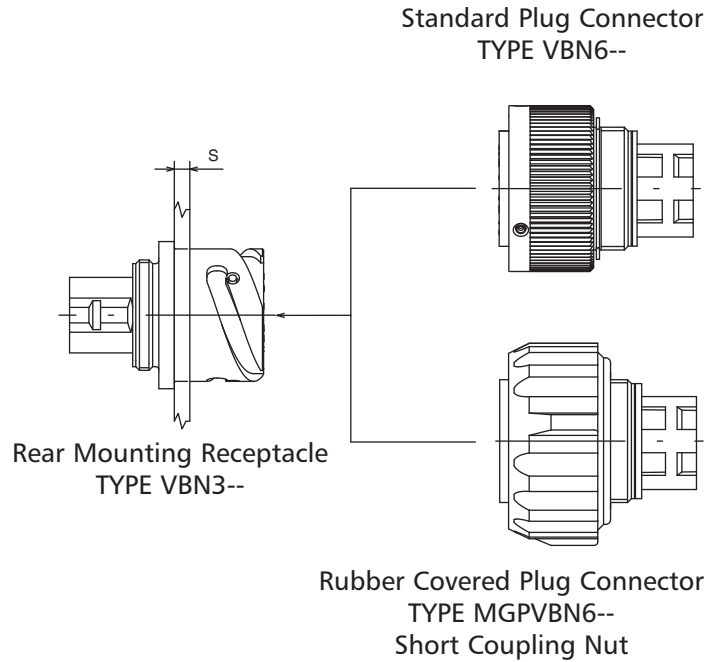
Note: Manual= (M) Hydraulic= (H) Electrical= (E) * = Consult Factory

VEAM VBN

Maximum panel thickness

Connector	S Max. panel thickness with connectors type	
	VBN6	MGPVBN6
16S	7.2	
18	7.5	6.3
20	7.5	6.3
22	7.5	6.3
24	7.5	6.3
28	8.2	7
32	7.5	6.3
36	7.5	6.3
40	7.5	6.3

NOTE: The panel dimensions doesn't include the bolt head

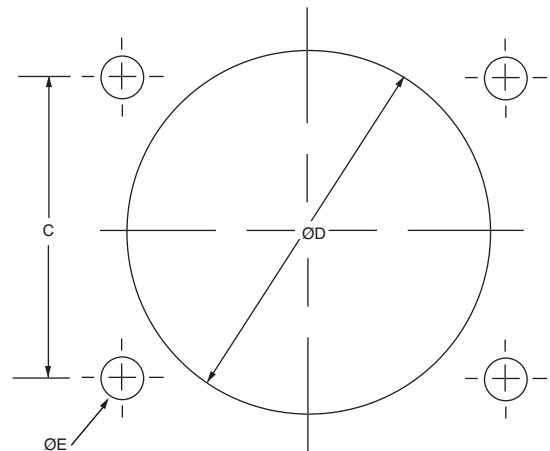


Rear panel cut-out dimensions

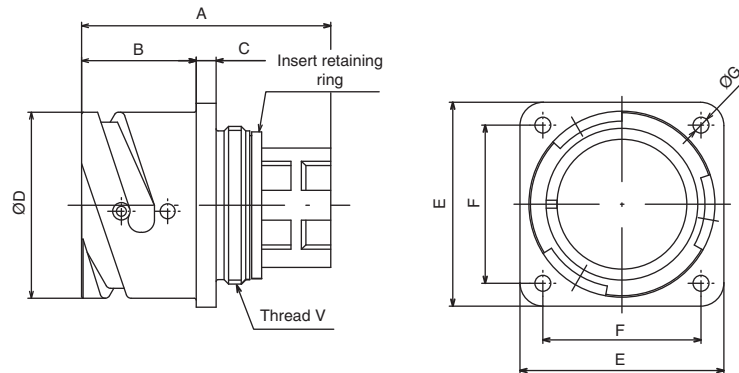
Shell Size	C±0.1	ØD	ØE ±0.1 for VBN3 series
16S	24.6	28.3	4.5
18	27	31.7	4.5
20	29.4	35	4.5
22	31.8	38.3	4.5
24	34.9	41.8	4.5
28	39.7	47.6	5.5
32	44.5	54.3	5.5
36	49.2	60.5	5.5
40	55.5	66.4	5.5

Front panel cut-out dimensions

Shell Size	C±0.1	ØD	ØE ±0.1 for VBN2 series
16S	24.6	23	3.4
18	27	26.5	3.4
20	29.4	30	3.4
22	31.8	33	3.4
24	34.9	36	3.9
28	39.7	42	3.9
32	44.5	48.5	4.5
36	49.2	55	4.5
40	55.5	61	4.5

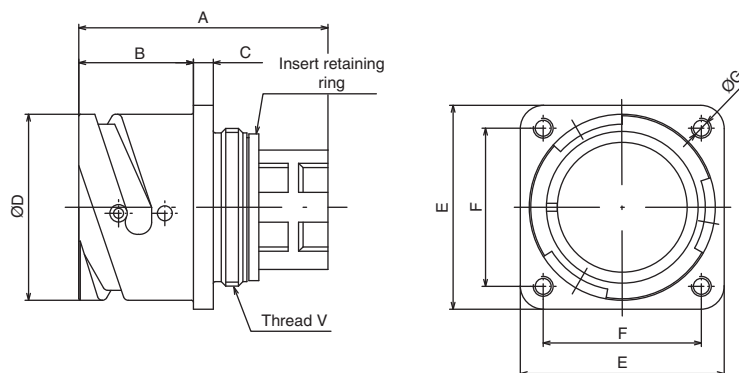


Receptacle VBN 2 front panel mounting



SIZE	A	B+0.4 -0	C ±0.2	ØD+0 -0.15	E ±0.3	F ±0.1	ØG	Thread V
16S	40	18.2	3.2	27.4	32.5	24.6	3.2	7/8"-20 UNEF
18	50	23.05	4	30.8	35.0	27.0	3.2	1"-20 UNEF
20	50	23.05	4	34.2	38.0	29.4	3.2	1 1/8"-18 UNEF
22	50	23.05	4	37.4	41.0	31.8	3.2	1 1/4"-18 UNEF
24	50	23.05	4	40.9	44.5	34.9	3.7	1 3/8"-18 UNEF
28	50	24.05	4	46.7	50.8	39.7	3.7	1 5/8"-18 UNEF
32	50	24.05	4	53.4	57.0	44.5	4.3	1 7/8"-16 UN
36	50	24.05	4	59.6	63.5	49.2	4.3	2 1/16"-16 UN
40	50	24.05	4	65.5	69.9	55.5	4.3	2 5/16"-16 UN

Receptacle VBN 3 rear panel mounting



SIZE	A	B+0.4 -0	C ±0.2	ØD+0 -0.15	E ±0.3	F ±0.1	ØG	Thread V
16S	40	18.2	3.2	27.4	32.5	24.6	M4	7/8"-20 UNEF
18	50	23.05	4	30.8	35.0	27.0	M4	1"-20 UNEF
20	50	23.05	4	34.2	38.0	29.4	M4	1 1/8"-18 UNEF
22	50	23.05	4	37.4	41.0	31.8	M4	1 1/4"-18 UNEF
24	50	23.05	4	40.9	44.5	34.9	M5	1 3/8"-18 UNEF
28	50	24.05	4	46.7	50.8	39.7	M5	1 5/8"-18 UNEF
32	50	24.05	4	53.4	57.0	44.5	M5	1 7/8"-16 UN
36	50	24.05	4	59.6	63.5	49.2	M5	2 1/16"-16 UN
40	50	24.05	4	65.5	69.9	55.5	M5	2 5/16"-16 UN

Dimensions shown in mm

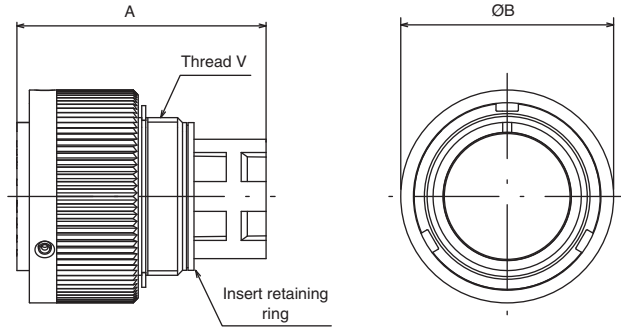
Specifications and dimensions subject to change

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VEAM VBN

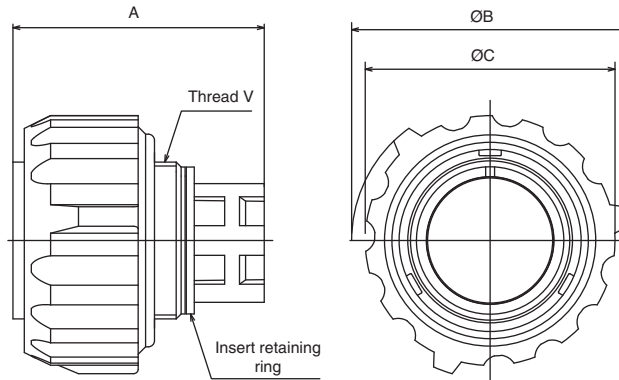
Connector Dimensions

VBN 6 Plug



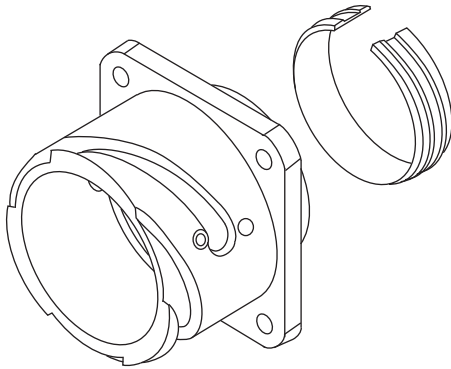
SIZE	A	ØB	Thread V
16S	40	32	7/8"-20 UNEF
18	50	36.5	1"-20 UNEF
20	50	39.9	1 1/8"-18 UNEF
22	50	43.1	1 1/4"-18 UNEF
24	50	46.6	1 3/8"-18 UNEF
28	50	53.4	1 5/8"-18 UNEF
32	50	60.1	1 7/8"-16 UN
36	50	66.3	2 1/16"-16 UN
40	50	72.5	2 5/16"-16 UN

VBN 6GG Plug



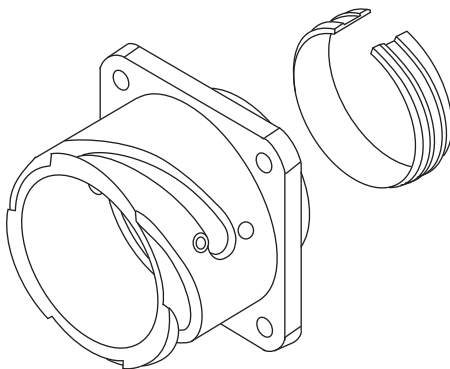
SIZE	A	Thread V	ØB	ØC
16S	40	7/8"-20 UNEF	44	38.9
18	50	1"-20 UNEF	49	43.5
20	50	1 1/8"-18 UNEF	51.5	46
22	50	1 1/4"-18 UNEF	56	50.5
24	50	1 3/8"-18 UNEF	60	54
28	50	1 5/8"-18 UNEF	67	61
32	50	1 7/8"-16 UN	76	67.6
36	50	2 1/16"-16 UN	82.3	74.3
40	50	2 5/16"-16 UN	88	80

Front Mounting Receptacle



SHELL SIZE	Ordering Part Number
16S	VBN216STXX
18	VBN218TXX
20	VBN220TXX
22	VBN222TXX
24	VBN224TXX
28	VBN228TXX
32	VBN232TXX
36	VBN236TXX
40	VBN240TXX

Rear Mounting Receptacle



SHELL SIZE	Ordering Part Number
16S	VBN316STXX
18	VBN318TXX
20	VBN320TXX
22	VBN322TXX
24	VBN324TXX
28	VBN328TXX
32	VBN332TXX
36	VBN336TXX
40	VBN340TXX

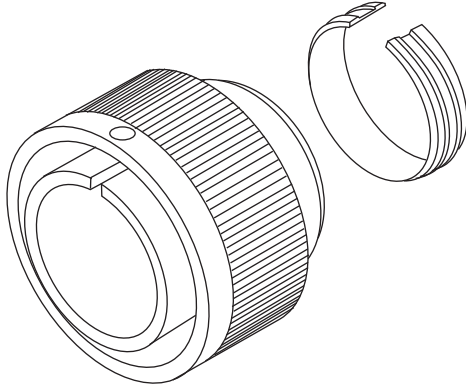
Note:

1. Receptacle shell assemblies are supplied with an insulator retaining ring
2. TXX= Plating suffix (consult factory)

VEAM VBN

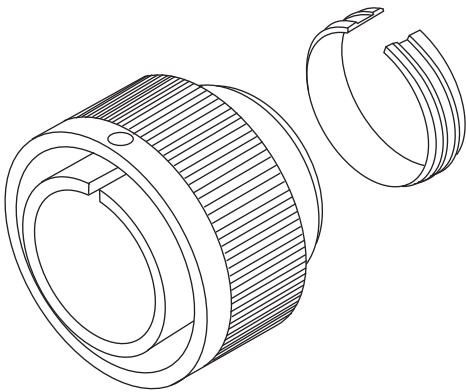
Connector Components & Sub-Assemblies

Plug assembly
without grounding finger



SHELL SIZE	Ordering Part Number
16S	VBNG16STXX
18	VBNG18TXX
20	VBNG20TXX
22	VBNG22TXX
24	VBNG24TXX
28	VBNG28TXX
32	VBNG32TXX
36	VBNG36TXX
40	VBNG40TXX

Plug assembly
with grounding finger



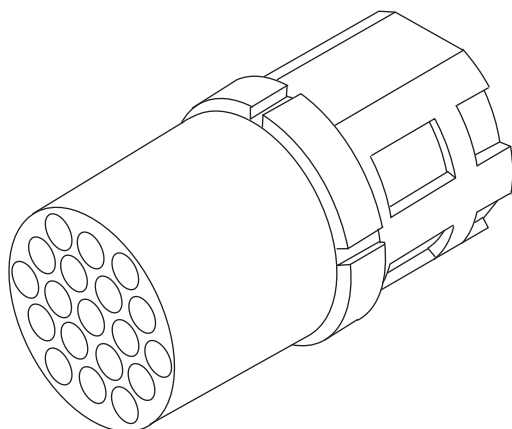
SHELL SIZE	Ordering Part Number
16S	VBNG616STXX
18	VBNG618TXX
20	VBNG620TXX
22	VBNG622TXX
24	VBNG624TXX
28	VBNG628TXX
32	VBNG632TXX
36	VBNG636TXX
40	VBNG640TXX

Note:

1. Plug shell assemblies are supplied with an insulator retaining ring
2. TXX= Plating suffix (consult factory)

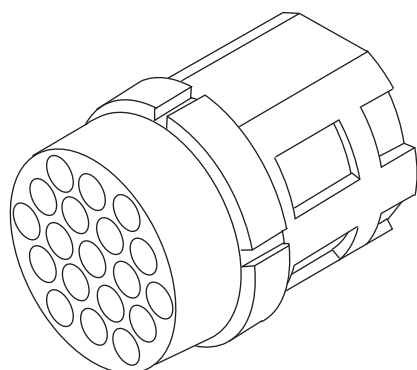
Connector Components & Sub-Assemblies

Female inserts



Shell Size	Contact Arrangement	Part Number
16S	16S-1	VBNI16S-1S
18	18-19	VBNI18-19S
20	20-4	VBNI20-4S
20	20-7	VBNI20-7S
20	20-15	VBNI20-15S
22	22-14	VBNI22-14S
22	22-23	VBNI22-23S
24	24-10	VBNI24-10S
28	28-21	VBNI28-21S
32	32A-13	VBNI32A-13S
36	36-10	VBNI36-10S
36	36A-22	VBNI36A-22S
40	40A-35	VBNI40A-35S
40	40A-60	VBNI40A-60S
40	40A-70	VBNI40A-70S

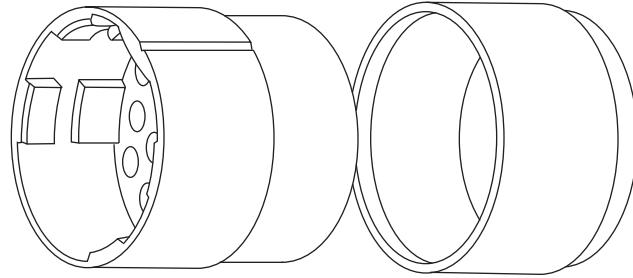
Male inserts with front sealing gasket



Shell Size	Contact Arrangement	Part Number
16S	16S-1	VBNI16S-1P
18	18-19	VBNI18-19P
20	20-4	VBNI20-4P
20	20-7	VBNI20-7P
20	20-15	VBNI20-15P
22	22-14	VBNI22-14P
22	22-23	VBNI22-23P
24	24-10	VBNI24-10P
28	28-21	VBNI28-21P
32	32A-13	VBNI32A-13P
36	36-10	VBNI36-10P
36	36A-22	VBNI36A-22P
40	40A-35	VBNI40A-35P
40	40A-60	VBNI40A-60P
40	40A-70	VBNI40A-70P

Connector Components & Sub-Assemblies

Grommets



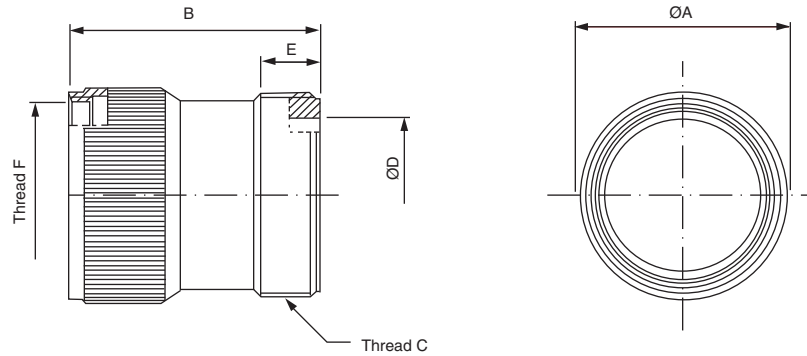
Shell Size	Contact Arrangement	O. D. Cable Range		Part Number
		Vers. 1 ⁽³⁾	Vers. 2 ⁽⁴⁾	
16S	16S-1	1.0/3.0		VBNZ16S-1 ⁽¹⁾⁽²⁾
18	18-19	1.0/3.0		VBNZ18-19 ⁽¹⁾⁽²⁾
20	20-4	2.5/4.5		VBNZ20-4 ⁽¹⁾⁽²⁾
20	20-7	1.0/3.2		VBNZ20-7 ⁽¹⁾⁽²⁾
20	20-15	2.5/4.5		VBNZ20-15 ⁽¹⁾⁽²⁾
22	22-14	1.0/3.0		VBNZ22-14 ⁽¹⁾⁽²⁾
22	22-23	2.5/4.5		VBNZ22-23 ⁽¹⁾⁽²⁾
24	24-10	4.0/6.0		VBNZ24-10 ⁽¹⁾⁽²⁾
28	28-21	0.8/1.8		VBNZ28-21 ⁽¹⁾⁽²⁾
28	28-21		1.8/3	VBNZ28-21 ⁽¹⁾⁽²⁾ H
32	32A-13	2.5/4,5		VBNZ32A-13 ⁽¹⁾⁽²⁾
36	36-10	0.8/1,8		VBNZ36-10 ⁽¹⁾⁽²⁾
36	36-10		1.8/3	VBNZ36-10 ⁽¹⁾⁽²⁾ H
36	36A-22	2.5/4.5		VBNZ36A-22 ⁽¹⁾⁽²⁾
40	40A-35	2.5/4.5		VBNZ40A-35 ⁽¹⁾⁽²⁾
40	40A-60	0.8/1.8		VBNZ40A-60 ⁽¹⁾⁽²⁾
40	40A-60		1.8/3	VBNZ40A-60 ⁽¹⁾⁽²⁾ H
40	40A-70	1.0/2.0		VBNZ40A-70 ⁽¹⁾⁽²⁾
40	40A-70		2.0/3.0	VBNZ40A-70 ⁽¹⁾⁽²⁾ H

Note:

- (1) = For connector with male inserts suffix P must be added at the part number
- (2) = For connector with female inserts suffix S must be added at the part number
- (3) = Grommet to be used with classes R-F-CFZ-RV-RPG-RM-RSS
- (4) = Grommet to be used with classes R-F-CFZ-RV-RPG-RM-RSS

The connector P/N will be ie: VBN6FH...

Short Straight Backshells With Common Thread Used with grommet and compression ring



Ordering Part number	Shell size	ØA max	B ± 0.2	Thread C	Ø D ± 0.2	E Min.	Thread F
VBN-RV16STXX	16S	26	30.5	7/8"- 20 UNEF	14	9.5	7/8"- 20 UNEF
VBN-RV18TXX	18	29.5	38	1"- 20 UNEF	17	9.5	1"- 20 UNEF
VBN-RV20TXX	20	33	40	1 3/16"-18 UNEF	21	9.5	1 1/8"-18 UNEF
VBN-RV22TXX	22	36	40	1 3/16"-18 UNEF	21	9.5	1 1/4"-18 UNEF
VBN-RV24TXX	24	40	40	1 7/16"-18 UNEF	26	9.5	1 3/8"-18 UNEF
VBN-RV28TXX	28	46	45	1 7/16"-18 UNEF	26	9.5	1 5/8"-18 UNEF
VBN-RV32TXX	32	51.5	45	1 3/4"-18 UNS	32	11	1 7/8"-16 UN
VBN-RV36TXX	36	58	50	2"-18 UNS	37	11.8	2 1/16"-16 UN
VBN-RV40TXX	40	64.5	50	2 1/4"-16 UN	45	11.8	2 5/16"-16 UN

Note:

- 1 - The backshells are supplied with gasket
- 2 - TXX = plating suffix: consult factory