



**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

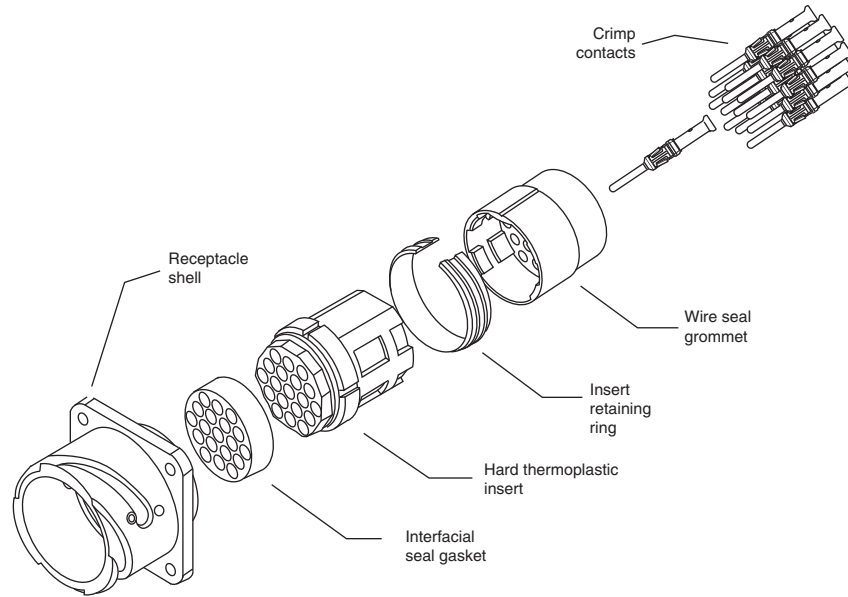
TXX T100 zinc/cobalt ecogreen (Conductive)  
T108 zinc/iron ecoblack (Conductive)  
T39 Black varnish (non conductive)

### Modification Code

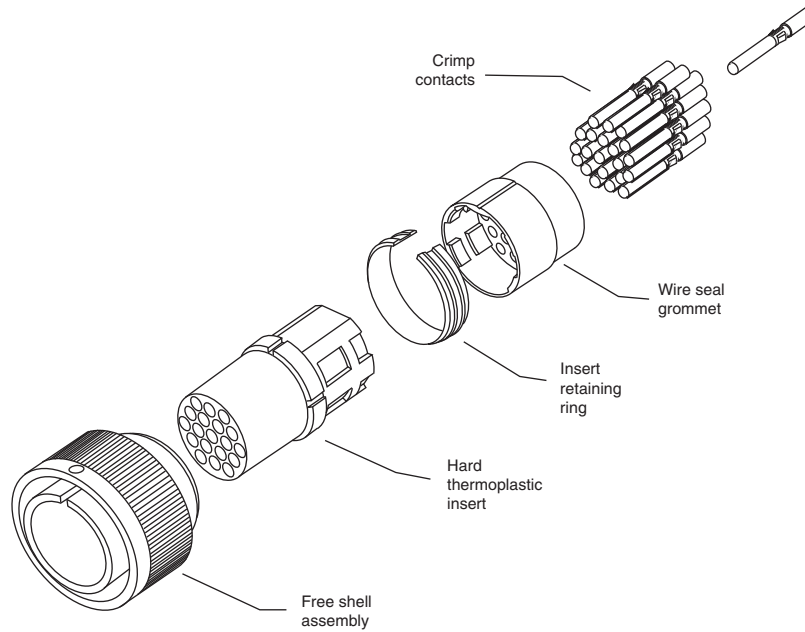
Consult Factory

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

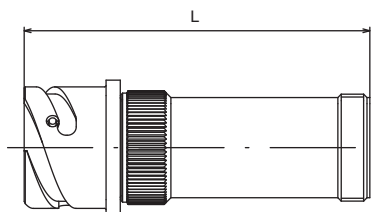
## PANEL MOUNTED CONNECTOR



## PLUG CONNECTOR

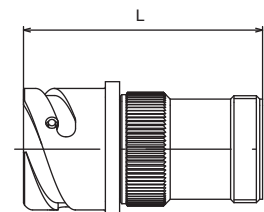


## Receptacle connector classes



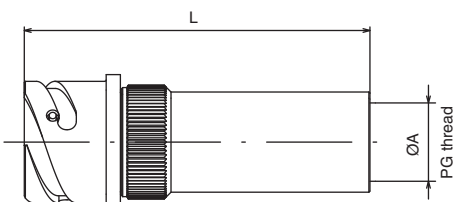
**VBN3A** Straight backshell without accessories  
**VBN3R** Same as "A" but includes a wire sealing grommet

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



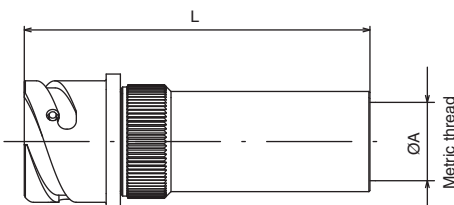
**VBN3RV** Short backshell, includes a wire sealing grommet

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



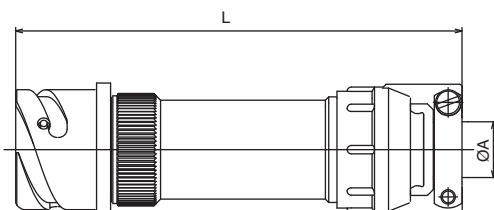
**VBN3APG** Straight backshell with "PG" thread and without accessories  
**VBN3RPG** Same as "APG" but includes a wire sealing grommet

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



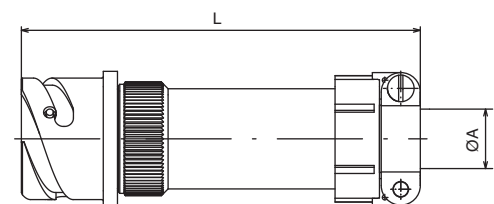
**VBN3AM** Straight backshell with with metric thread and without accessories  
**VBN3RM** Same as "AM" but includes a wire sealing grommet

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



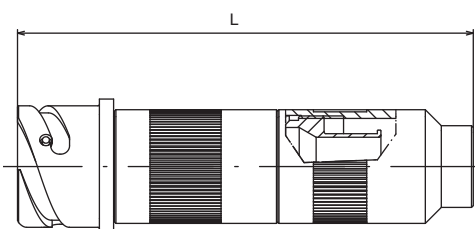
**VBN3CF** Straight backshell with "C" style clamp  
**VBN3CFZ** Same as "CF" but includes a wire sealing grommet

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



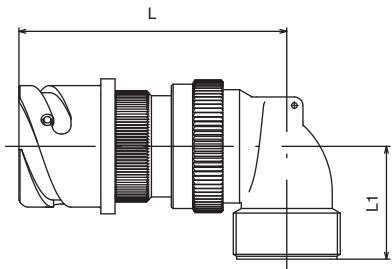
**VBN3SS** Straight backshell with shielding system  
**VBN3RSS** Same as "SS" but includes a wire sealing grommet

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.*

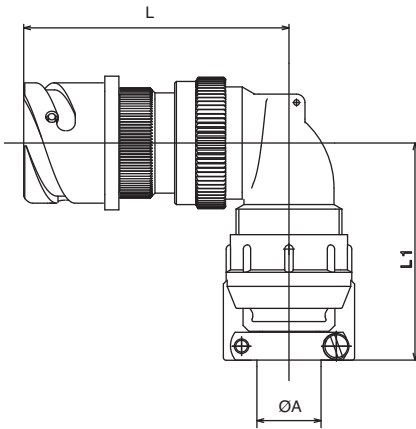
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## Receptacle connector classes



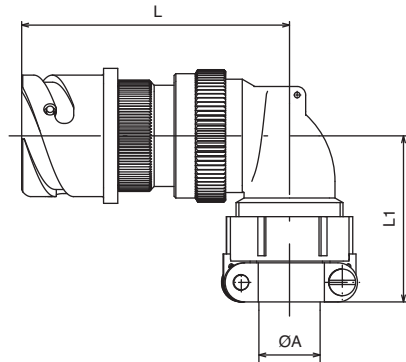
**VBN38A** 90° degree backshell without accessories  
**VBN38R** Same as "A" but includes a wire sealing grommet

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



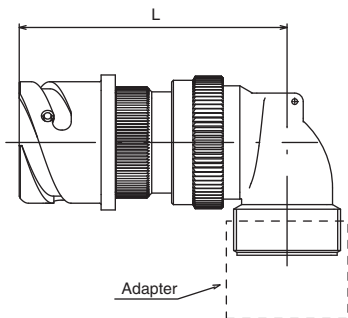
**VBN38CF** 90° degree backshell with "C" style clamp  
**VBN38CFZ** Same as "CF" but includes a wire sealing grommet

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



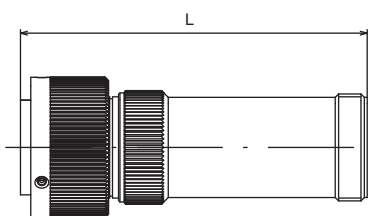
**VBN38APG-PGOXX** 90° degree backshell with adapter  
**VBN38RPG-PGOXX** with PG or Metric thread

**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

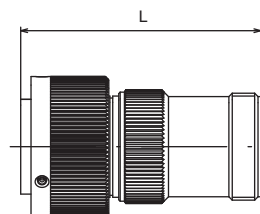


## Plug connector classes



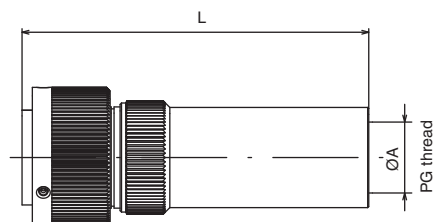
**VBN6A** Straight backshell without accessories  
**VBN6R** Same as "A" but includes a wire sealing grommet

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



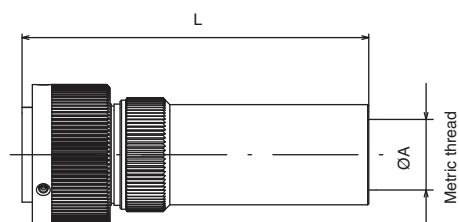
**VBN6RV** Short backshell, includes a wire sealing grommet

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



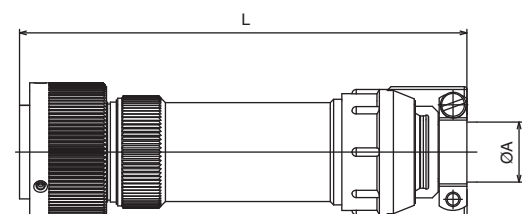
**VBN6APG** Straight backshell with PC thread and without accessories  
**VBN6RPG** Same as "APG" but includes a wire sealing grommet

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



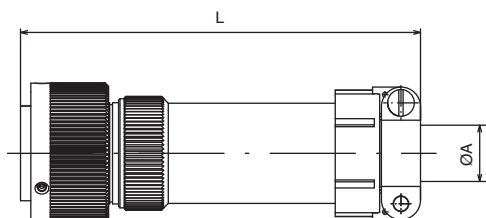
**VBN6AM** Straight backshell with metric thread and without accessories  
**VBN6RM** Same as "AM" but includes a wire sealing grommet

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



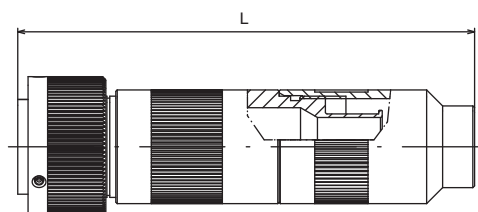
**VBN6CF** Straight backshell with "C" style cable clamp  
**VBN6CFZ** Same as "CF" but includes a wire sealing grommet

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

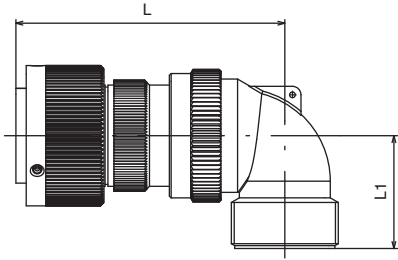
SIZE	16S	18	20	22	24	28	32	36	40
L max.	105	125	130	145	155	160	170	185	200

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

Dimensions shown in mm  
 Specifications and dimensions subject to change

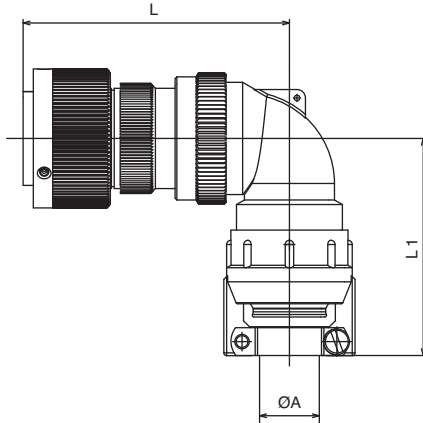
# VEAM VBN

## Plug connector classes



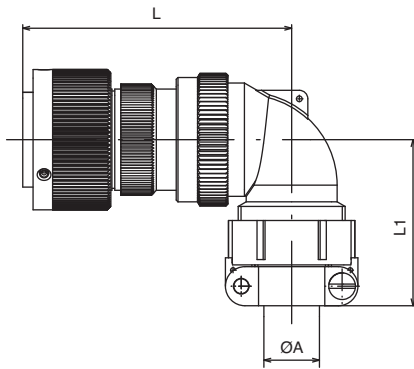
**VBN8A** 90° degree backshell without accessories  
**VBN8R** Same as "A" but includes a wire sealing grommet

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



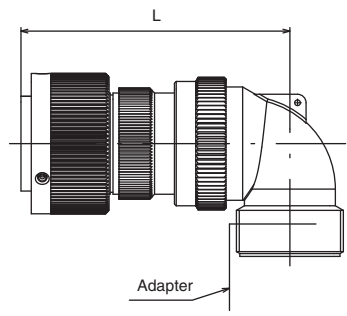
**VBN8CF** 90° degree backshell with "C" style clamp  
**VBN8CFZ** Same as "CF" but includes a wire sealing grommet

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

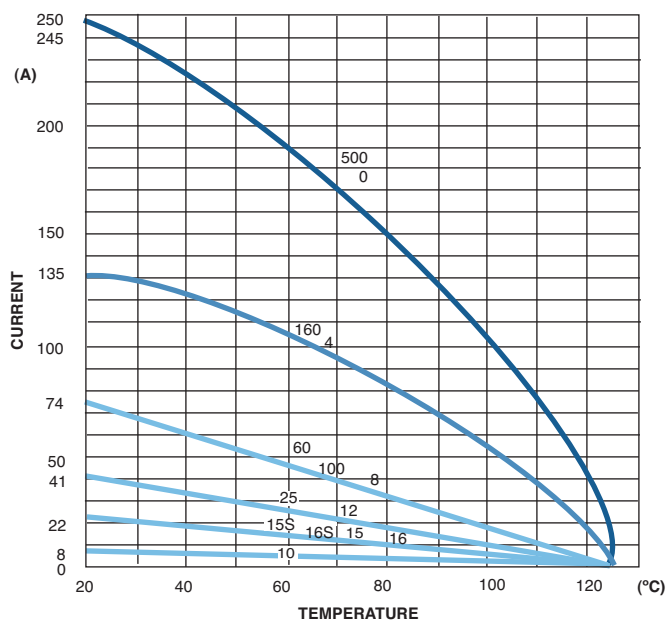
Contact size	Contact resistance
16	2.5 mΩ max.
12	1.3 mΩ max.
8	0.9 mΩ max.

- 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

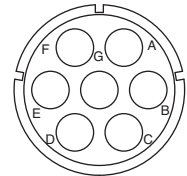
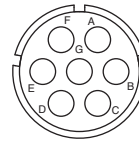
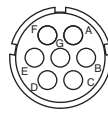
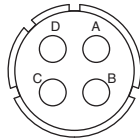
## Insert Arrangements

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

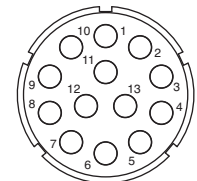
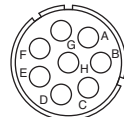
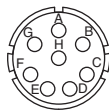
\* For service ratings, please see the related contact arrangement view.

## 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



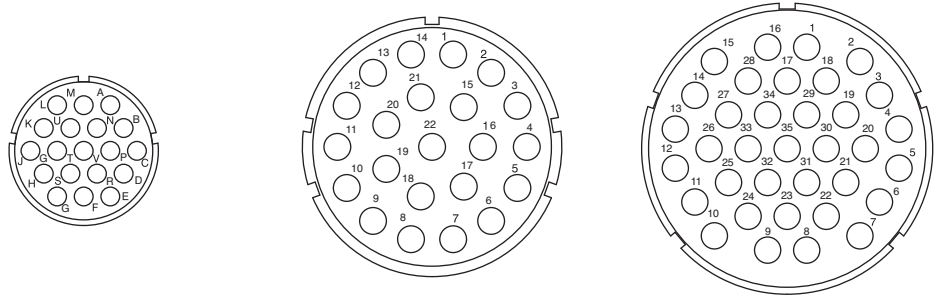
Insert Arrangement	20-7	22-23	18-19	32A-13
Number of Contacts	8	8	10	13
Contact Size	16	12	16	12
Service Rating	A, B, H, G=D C, D, E, F=A	H=D, BAL=A	A	D

## Alternate positions of insert

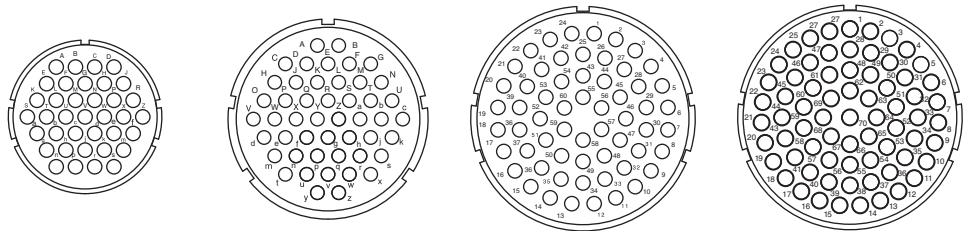
### Front of male insert

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

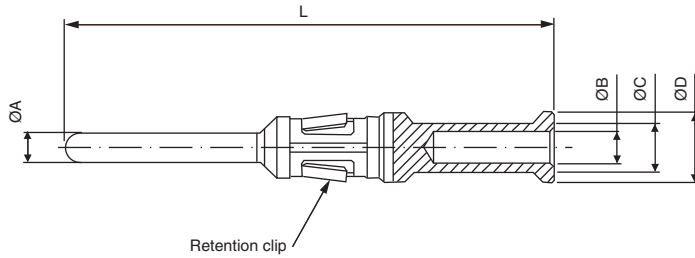


Figure 1

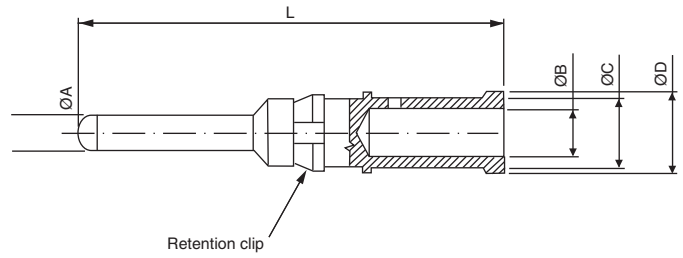


Figure 2

Part Number	Wire Size			L	ØA	ØB	ØC	ØD	Cable O.D. maximum	Figure
	Size	mm <sup>2</sup>	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 (mm<sup>2</sup>), 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.

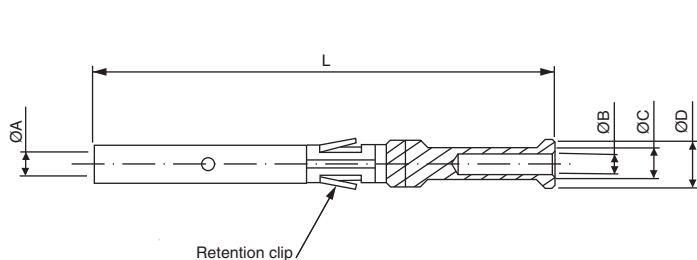


Figure 1

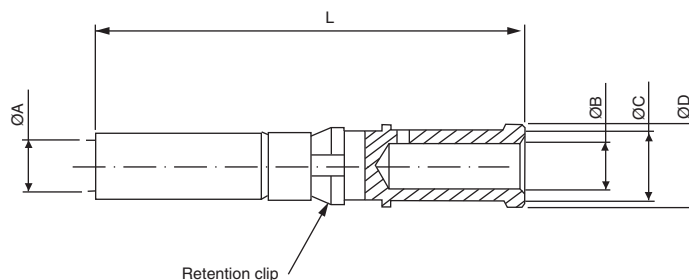


Figure 2

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 (mm<sup>2</sup>), 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
	18	CT8N (M)	VH435	7	Red		ET12VBN		
51513-12-30	12	4		CT8N (M)	VH435	8	Red		ET12VBN
51513-12-38	12	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
	12	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
	18	CT8N (M)	VH435	7	Red		ET12VBN		
51511-12-30	12	4		CT8N (M)	VH435	8	Red		ET12VBN
51511-12-38	12	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
	12	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

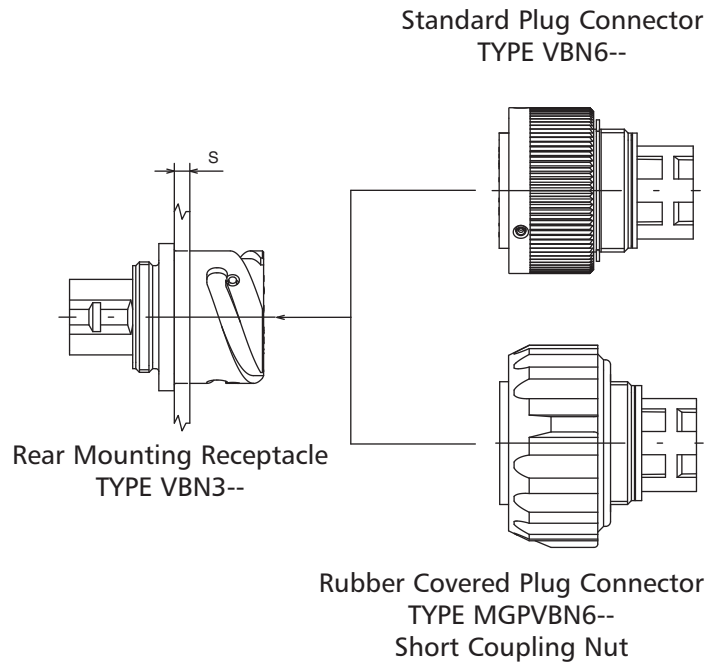
**Note:** Manual= (M)    Hydraulic= (H)    Electrical= (E)    \* = Consult Factory

# 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

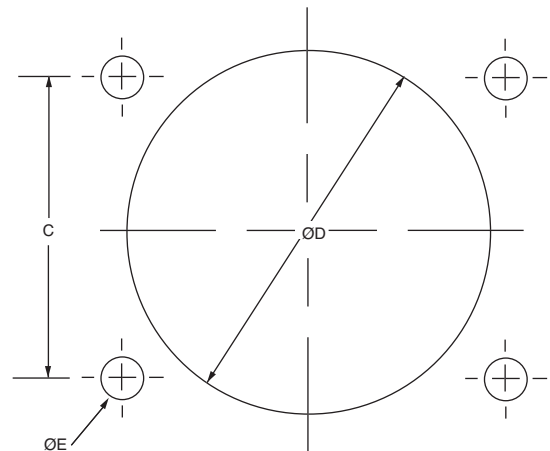


### Rear panel cut-out dimensions

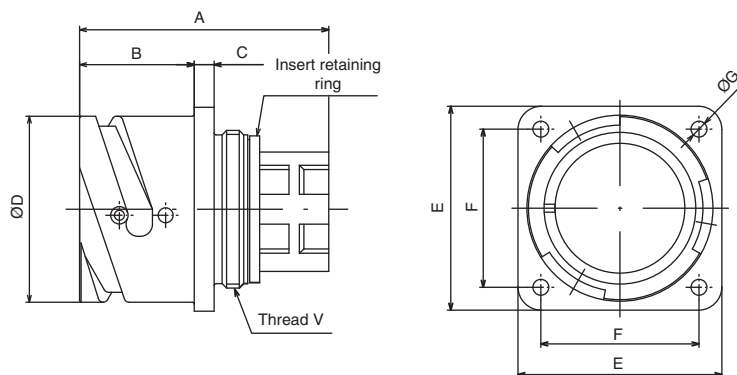
Shell Size	C±0.1	ØD	ØE ±0.1 for VBN3 series
16S	24.6	28.3	4.5
18	27	31.7	4.5
20	29.4	35	4.5
22	31.8	38.3	4.5
24	34.9	41.8	4.5
28	39.7	47.6	5.5
32	44.5	54.3	5.5
36	49.2	60.5	5.5
40	55.5	66.4	5.5

### 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

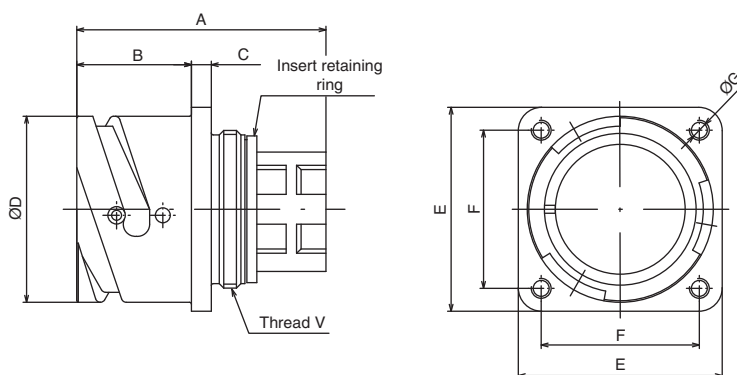


### Receptacle VBN 2 front panel mounting



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

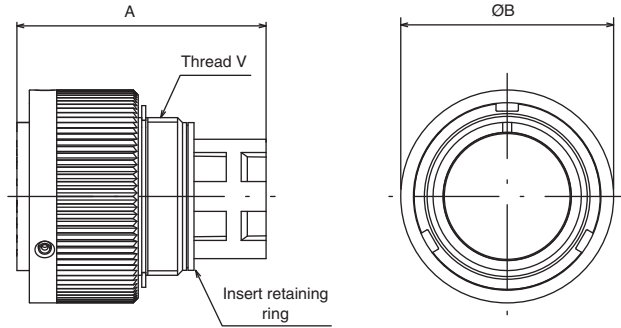
Specifications and dimensions subject to change

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# VEAM VBN

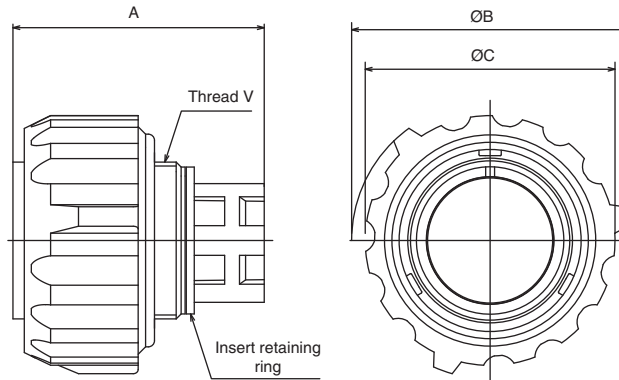
## Connector Dimensions

### VBN 6 Plug



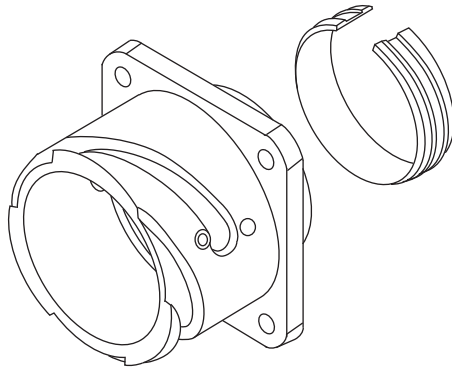
SIZE	A	ØB	Thread V
16S	40	32	7/8"-20 UNEF
18	50	36.5	1"-20 UNEF
20	50	39.9	1 1/8"-18 UNEF
22	50	43.1	1 1/4"-18 UNEF
24	50	46.6	1 3/8"-18 UNEF
28	50	53.4	1 5/8"-18 UNEF
32	50	60.1	1 7/8"-16 UN
36	50	66.3	2 1/16"-16 UN
40	50	72.5	2 5/16"-16 UN

### VBN 6GG Plug



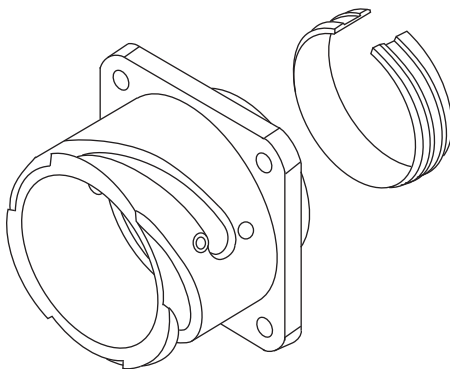
SIZE	A	Thread V	ØB	ØC
16S	40	7/8"-20 UNEF	44	38.9
18	50	1"-20 UNEF	49	43.5
20	50	1 1/8"-18 UNEF	51.5	46
22	50	1 1/4"-18 UNEF	56	50.5
24	50	1 3/8"-18 UNEF	60	54
28	50	1 5/8"-18 UNEF	67	61
32	50	1 7/8"-16 UN	76	67.6
36	50	2 1/16"-16 UN	82.3	74.3
40	50	2 5/16"-16 UN	88	80

### 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

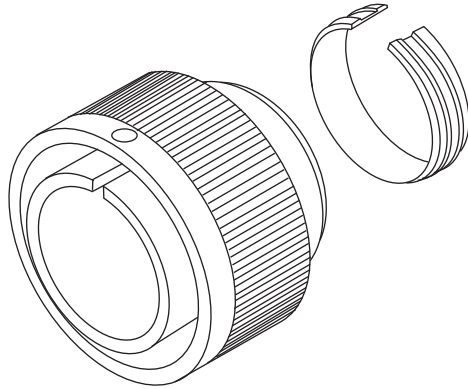
#### Note:

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

# VEAM VBN

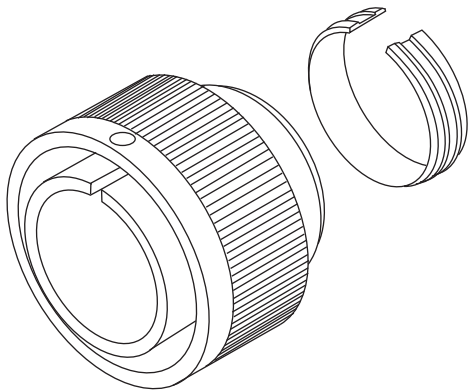
## Connector Components & Sub-Assemblies

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



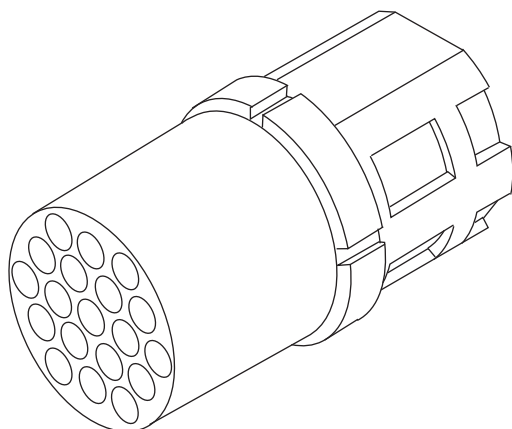
SHELL SIZE	Ordering Part Number
16S	VBNG616STXX
18	VBNG618TXX
20	VBNG620TXX
22	VBNG622TXX
24	VBNG624TXX
28	VBNG628TXX
32	VBNG632TXX
36	VBNG636TXX
40	VBNG640TXX

**Note:**

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

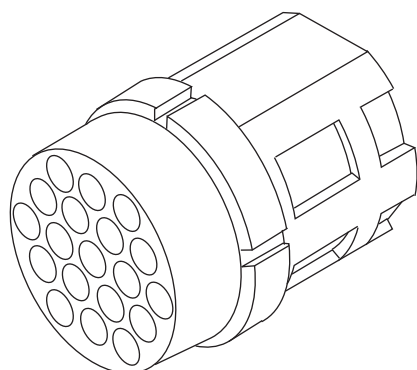
## Connector Components & Sub-Assemblies

### 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

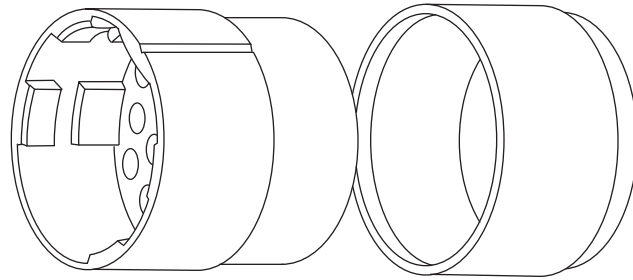
### Male inserts with front sealing gasket



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

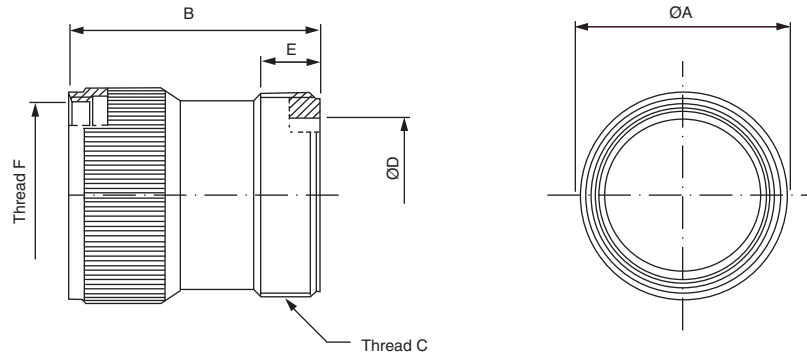
### Note:

- (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:

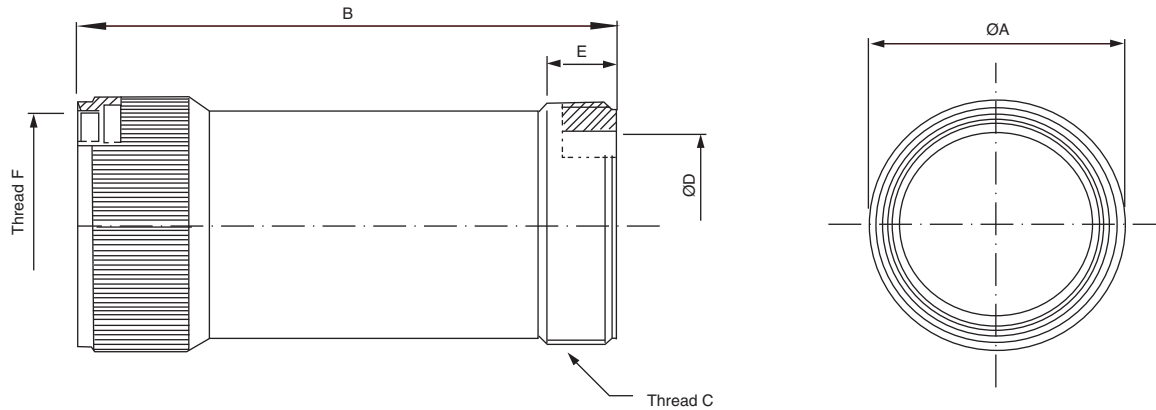
- 1 - The backshells are supplied with gasket
- 2 - TXX = plating suffix: consult factory

# VEAM VBN

## Common multi-purpose backshells

### Straight Backshells With Common Thread

Used with or without grommet and compression ring to make A, R, AF, F, CF and CFZ termination classes for 6 (straight plug) and 3 (receptacle) shell styles.



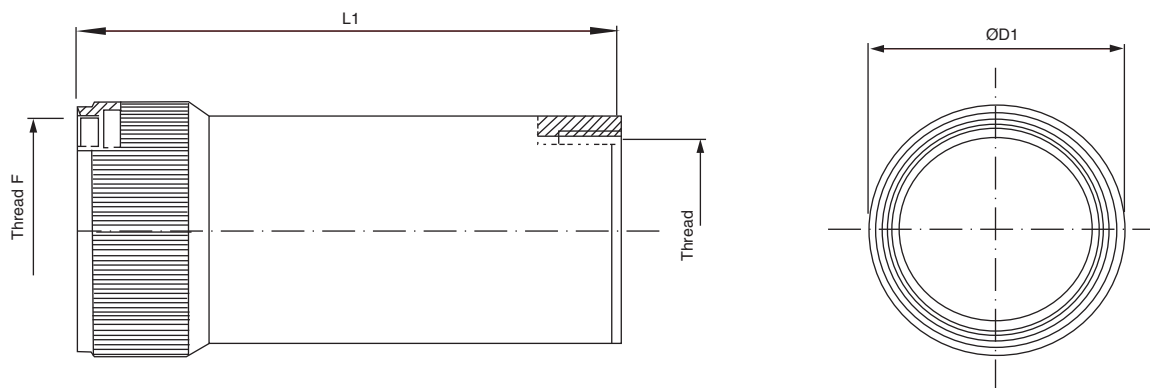
Ordering Part number	Shell size	ØA max	B ± 0.2	Thread C	Ø D + 0.2-0	E Min.	Thread F
VBN-R16STXX	16S	26	55	7/8" - 20 UNEF	14	9.5	7/8" - 20 UNEF
VBN-R18TXX	18	29.5	70	1" - 20 UNEF	17	9.5	1" - 20 UNEF
VBN-R20TXX	20	33	70	1 3/16" - 18 UNEF	21	9.5	1 1/8" - 18 UNEF
VBN-R22TXX	22	36	70	1 3/16" - 18 UNEF	21	9.5	1 1/4" - 18 UNEF
VBN-R24TXX	24	40	75	1 7/16" - 18 UNEF	26	9.5	1 3/8" - 18 UNEF
VBN-R28TXX	28	46	75	1 7/16" - 18 UNEF	26	9.5	1 5/8" - 18 UNEF
VBN-R32TXX	32	51.5	85	1 3/4" - 18 UNS	32	11	1 7/8" - 16 UN
VBN-R36TXX	36	58	95	2" - 18 UNS	37	11.8	2 1/16" - 16 UN
VBN-R40TXX	40	64.5	95	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

### Straight Backshells With PG Thread

Used with or without grommet and compression ring to make APG and RPG termination classes for 6 (straight plug) and 3 (receptacle) shell styles.



Ordering Part Number	Shell Size	d1 max	L1 ± 0,2	Thread B	Thread F
VBN-PG9BL16STXX	16S	26	55	PG9	7/8"- 20 UNEF
VBN-PG16BL18TXX	18	29.5	70	PG16	1"- 20 UNEF
VBN-PG21BL18TXX	18	34	70	PG21	1"- 20 UNEF
VBN-PG16BL20TXX	20	33	70	PG16	1 1/8"-18 UNEF
VBN-PG29BL20TXX	20	43	75	PG29	1 1/8"-18 UNEF
VBN-PG16BL22TXX	22	36	70	PG16	1 1/4"-18 UNEF
VBN-PG21BL24TXX	24	40	75	PG21	1 3/8"-18 UNEF
VBN-PG29BL24TXX	24	43	75	PG29	1 3/8"-18 UNEF
VBN-PG36BL24TXX	24	54	85	PG36	1 3/8"-18 UNEF
VBN-PG21BL28TXX	28	46	75	PG21	1 5/8"-18 UNEF
VBN-PG29BL32TXX	32	51.5	85	PG29	1 7/8"-16 UN
VBN-PG36BL32TXX	32	54	85	PG36	1 7/8"-16 UN
VBN-PG36BL36TXX	36	58	95	PG36	2 1/16"-16 UN
VBN-PG36BL40TXX	40	64.5	95	PG36	2 5/16"-16 UN
VBN-PG42BL40TXX	40	64.5	95	PG42	2 5/16"-16 UN

### Note:

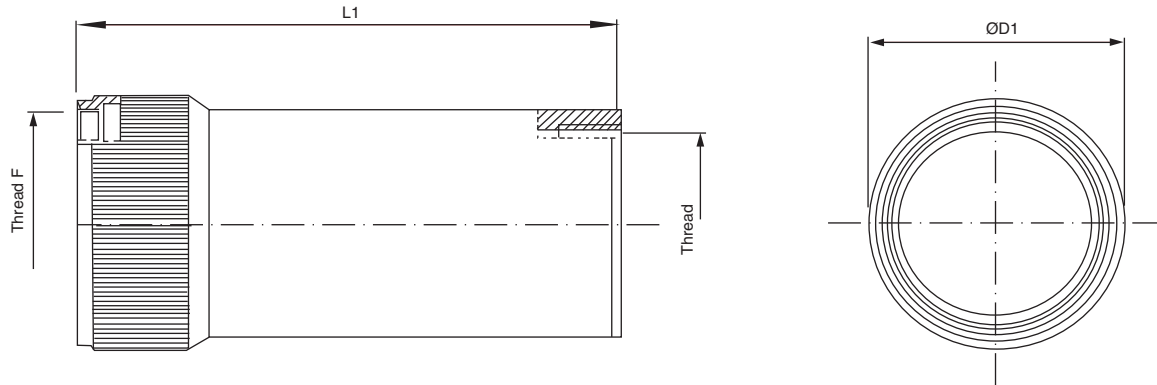
- 1 - The backshells are supplied with gasket
- 2 - For different backshell sizes and PG thread termination, consult factory
- 3 - TXX = plating suffix: consult factory

# VEAM VBN

## Common multi-purpose backshells

### Straight Backshells With Metric Thread

Used with or without grommet and compression ring to make AM and RM termination classes for 6 (straight plug) and 3 (receptacle) shell styles.

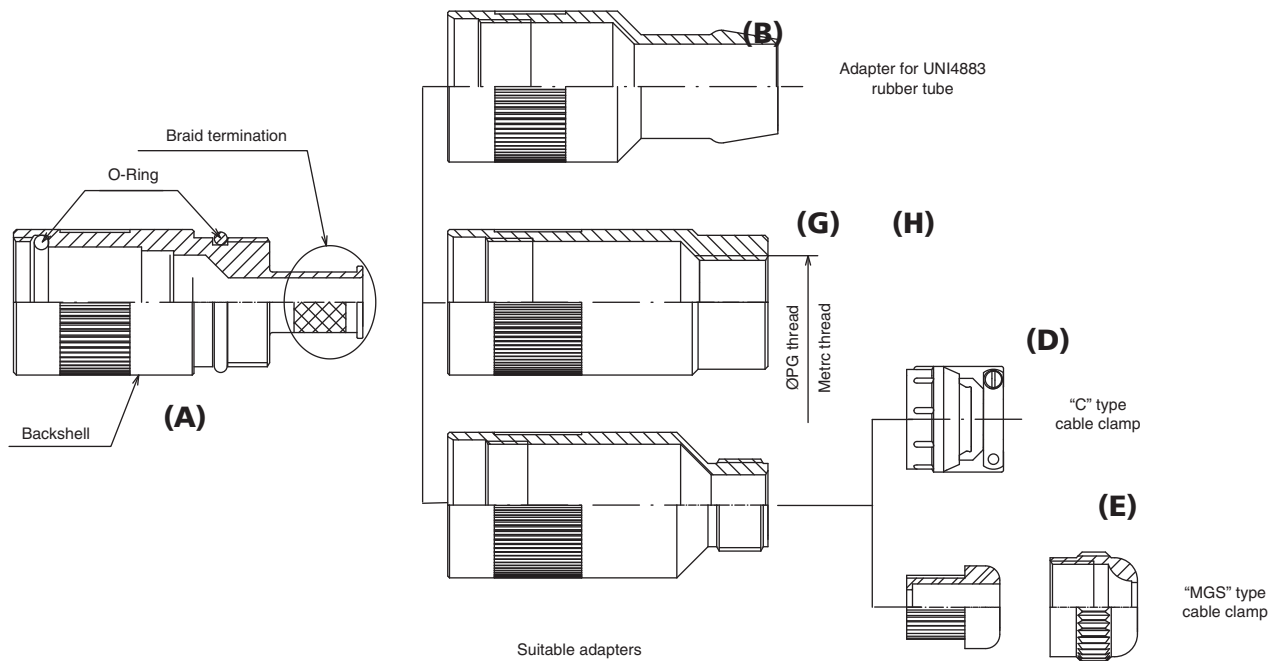


Ordering Part Number	Shell Size	d1 max	L1 ± 0,2	Thread B	Thread F
VBNM16BL16STXX	16S	26	55	M16x1.5	7/8"- 20 UNEF
VBN-M25BL18TXX	18	29.5	70	M25x1.5	1"- 20 UNEF
VBN-M32BL18TXX	18	34	70	M32x1.5	1"- 20 UNEF
VBN-M25BL20TXX	20	33	70	M25x1.5	1 1/8"-18 UNEF
VBN-M32BL20TXX	20	43	75	M32x1.5	1 1/8"-18 UNEF
VBN-M25BL22TXX	22	36	70	M25x1.5	1 1/4"-18 UNEF
VBN-M25BL24TXX	24	40	75	M25x1.5	1 3/8"-18 UNEF
VBN-M32BL24TXX	24	43	75	M32x1.5	1 3/8"-18 UNEF
VBN-M40BL24TXX	24	54	85	M40x1.5	1 3/8"-18 UNEF
VBN-M25BL28TXX	28	46	75	M25x1.5	1 5/8"-18 UNEF
VBN-M32BL32TXX	32	51.5	85	M32x1.5	1 7/8"-16 UN
VBN-M40BL32TXX	32	54	85	M40x1.5	1 7/8"-16 UN
VBN-M40BL36TXX	36	58	95	M40x1.5	2 1/16"-16 UN
VBN-M40BL40TXX	40	64.5	95	M40x1.5	2 5/16"-16 UN
VBN-M63BL40TXX	40	64.5	95	M63x1.5	2 5/16"-16 UN

### Note:

- 1 - The backshells are supplied with gasket
- 1 - For different backshell sizes and METRIC thread termination, consult factory.
- 3 - TXX = plating suffix: consult factory

## Backshells for shielded cable



(A) Termination Size	Cable O.D. Range	(D) "C" Type Cable Clamp	(E) "MGS" Type Cable Clamp	(G) Metric Thread	(H) PG Thread	(B) UNI4883 Rubber Tube
04	2.5-8	-4C	02	M12x1.5F	PG07 (PG9)	Different sizes available. Please consult factory.
04	6.5-10	-6C	03	M16x1.5F	PG011	
05	8-13.5	-8C	04	M20x1.5F	PG013.5	
06	9.5-15.8	-10C	05	M25x1.5F	PG016	
08	13-19	-12C	06	M25x1.5F	PG021	
10	16-23.8	-16C	07	M32x1.5F	PG029	
12	23.5-31.5	-20C		M40x1.5F	PG036	
13	30-41	-28C		M50(M60)x1.5F	PG042 (PG48)	

Due to the various available options, for other dimensions and characteristics, please consult factory

### How To Order

VBNG6SS (A) 16S-1SNT100VO

- (B) FSxxxx
- (D) 4C
- (E) MGS02
- (G) M12F
- (H) PG07

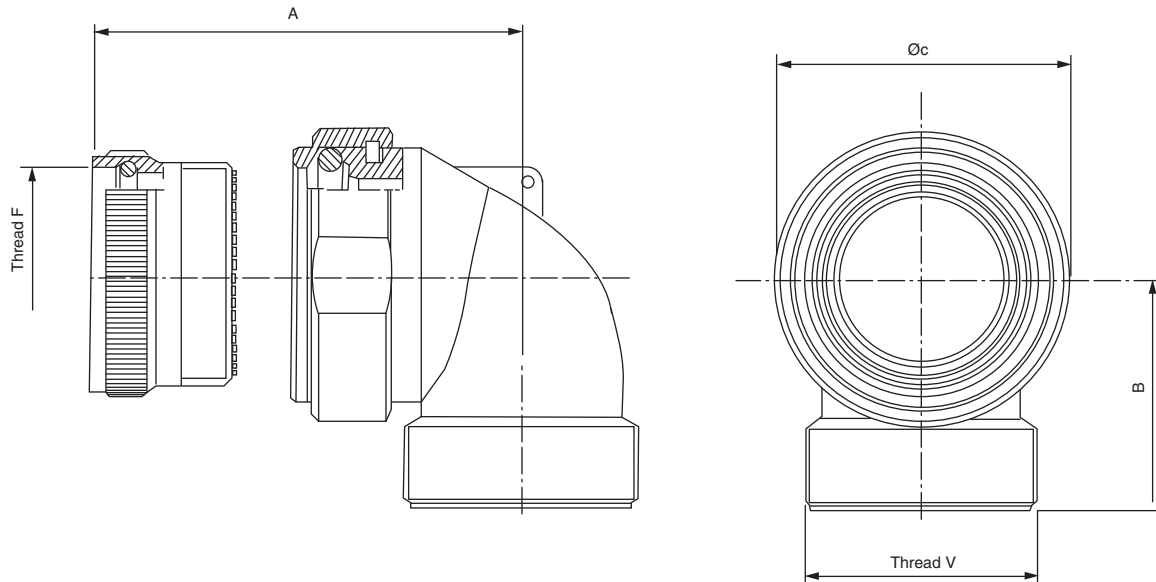
Dimensions shown in mm  
Specifications and dimensions subject to change

# VEAM VBN

## Common multi-purpose backshells

### 90° backshells & adapters

Used with or without grommet and compression ring to make A,R, AF, F, CF and CFZ termination classes for 8 (90° plug) and 38 (90° receptacle) shell styles.

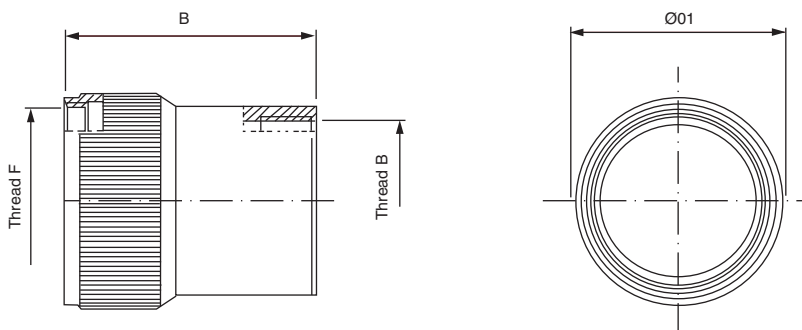


Ordering Part Number	Shell Size	A Maximum	B Maximum	ØC±0.25	Thread F	Thread V
VBN-90R16STXX	16S	40	30	30	7/8"-20 UNEF	7/8"-20 UNEF
VBN-90R18TXX	18	47	35	35	1"-20 UNEF	1"-20 UNEF
VBN-90R20TXX	20	53	35	37.3	1 1/8"-18 UNEF	1 3/16"-18 UNEF
VBN-90R22TXX	22	53	35	42	1 1/4"-18 UNEF	1 3/16"-18 UNEF
VBN-90R24TXX	24	52	40	46	1 3/8"-18 UNEF	1 7/16"-18 UNEF
VBN-90R28TXX	28	52	40	51	1 5/8"-18 UNEF	1 7/16"-18 UNEF
VBN-90R32TXX	32	56	45	58	1 7/8"-16 UN	1 3/4"-18 UNS
VBN-90R36TXX	36	59	50	62	2 1/16"-16 UN	2"-18 UNS
VBN-90R40TXX	40	65	55	69	2 5/16"-16 UN	2 1/4"-16 UNS

**Note:**

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

Adapters with metric thread "VBN-M—A---" series  
Usually used with 90° elbow connectors



Ordering Part Number	Shell Size	d 1 Max.	L1 ± 0.3	Thread B	Thread F
VBN-M16A16STXX	16S	26	27	M16 x 1.5	7/8" -20 UNEF
VBN-M25A18TXX	18	34	30	M25 x 1.5	1" -20 UNEF
VBN-M32A18TXX	18	43	35	M32 x 1.5	1" -20 UNEF
VBN-M25A20TXX	20/22	36.5	27	M25 x 1.5	1 3/16"-18 UNEF
VBN-M32A20TXX	20/22	43	30	M32 x 1.5	1 3/16"-18 UNEF
VBN-M25A24TXX	24/28	43	27	M25 x 1.5	1 7/16"-18 UNEF
VBN-M32A24TXX	24/28	43	27	M32 x 1.5	1 7/16"-18 UNEF
VBN-M40A24TXX	24/28	54	38	M40 x 1.5	1 7/16"-18 UNEF
VBN-M32A32TXX	32	50	27	M32 x 1.5	1 3/4"-18 UNS
VBN-M40A32TXX	32	54	37	M40 x 1.5	1 3/4"-18 UNS
VBN-M40A36TXX	36	57.2	27	M40 x 1.5	2" -18 UNS
VBN-M40A40TXX	40	65	27	M40 x 1.5	2 1/4"-16 UN
VBN-M63A40TXX	40	69	31	M63 x 1.5	2 1/4"-16 UN

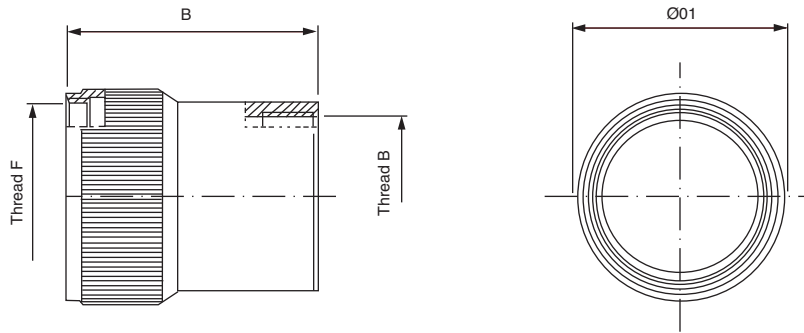
**Note:**

- 1 - The adapters are supplied with internal gasket
- 2 - Txx = plating suffix: consult factory
- 3 - For different adapter sizes and metric thread termination: consult factory

# VEAM VBN

## Accessories

Adapters with PG thread "VBN-PG—A---" series  
Usually used with 90° elbow connectors



Ordering Part Number	Shell Size	d 1 Max.	L1 ± 0.3	Thread B	Thread F
VBN-PG9A16STXX	16S	26	27	PG9	7/8" -20 UNEF
VBN-PG16A18TXX	18	31	28.3	PG16	1" -20 UNEF
VBN-PG21A18TXX	18	34	34	PG21	1" -20 UNEF
VBN-PG16A20TXX	20/22	36.5	27	PG16	1 3/16"-18 UNEF
VBN-PG29A20TXX	20/22	43	27	PG29	1 3/16"-18 UNEF
VBN-PG21A24TXX	24/28	43	27	PG21	1 7/16"-18 UNEF
VBN-PG29A24TXX	24/28	43	27	PG29	1 7/16"-18 UNEF
VBN-PG36A24TXX	24/28	54	38	PG36	1 7/16"-18 UNEF
VBN-PG29A32TXX	32	50	25.3	PG29	1 3/4"-18 UNS
VBN-PG36A32TXX	32	54	36.3	PG36	1 3/4"-18 UNS
VBN-PG36A36TXX	36	57.2	27	PG36	2" -18 UNS
VBN-PG36A40TXX	40	65	27	PG36	2 1/4"-16 UN
VBN-PG42A40TXX	40	65	31	PG42	2 1/4"-16 UN

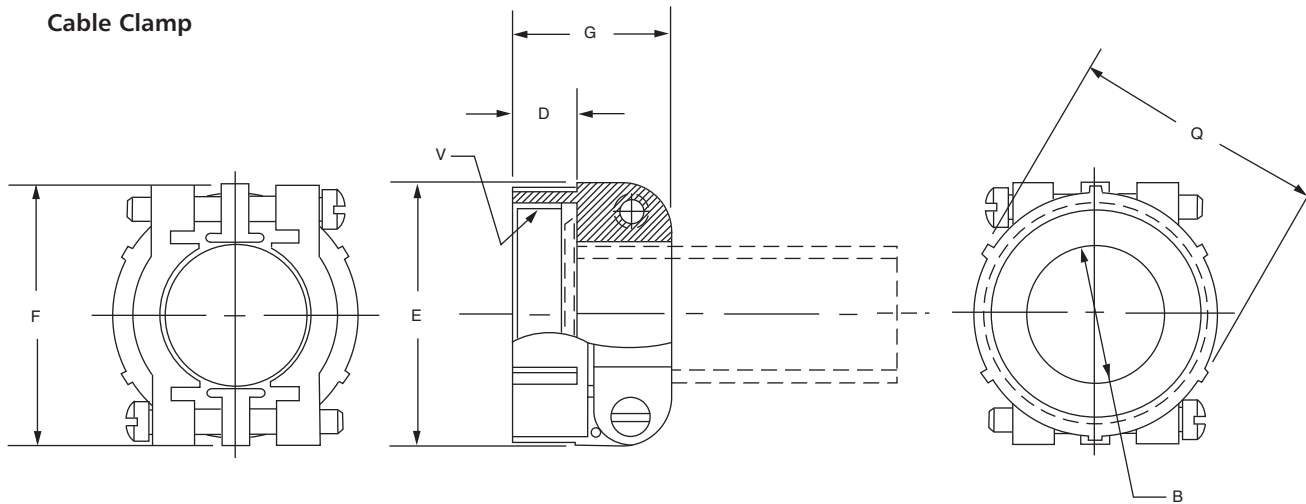
### Note:

- 1 - The adapters are supplied with internal gasket
- 2 - Txx = plating suffix: consult factory
- 3 - For different adapter sizes and PG thread termination: consult factory



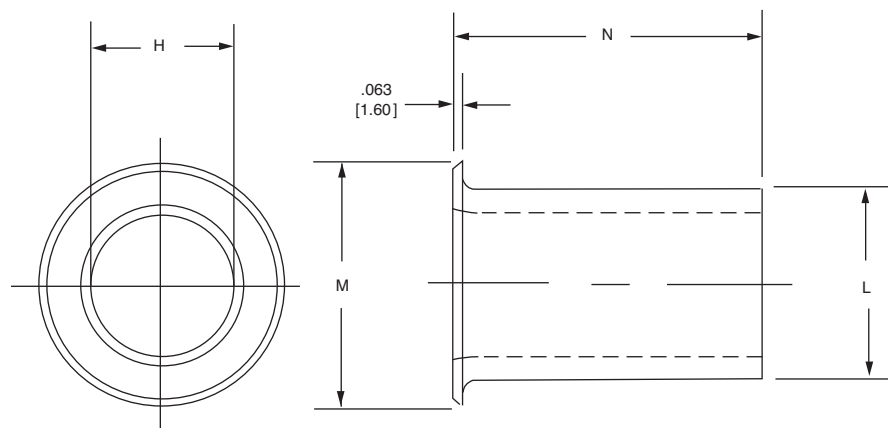
### Cable Clamp "VE3057-AB" Series

The concentric cable clamps ensure strain relief and centralized location of the cable. Used with bushing "49675--Series" in FR compound which is included with clamp. These clamps are supplied with AF and F termination classes.



Ordering Part Number	Used with size	Used with Bushing	B	D	G	E-F-Q	Thread V	H	L	M	N
VE3057-8ABTXX	16-16S	49675-8	14.2	10.5	24	28	7/8"-20 UNEF	11.1	14.02	18.8	63.5
VE3057-10ABTXX	18	49675-10	15.8	10.5	28.5	33	1"-20 UNEF	14.3	15.62	22.5	60.5
VE3057-12ABTXX	20-22	49675-12	19	10.5	24	35	1 3/16"-18 UNEF	15.9	18.79	27.5	57.1
VE3057-16ABTXX	24-28	49675-16	23.8	10.5	26	43	1 7/16"-18 UNEF	19.1	23.54	33.3	53.9
VE3057-20ABTXX	32	49675-20	31.7	12.5	28	51	1 3/4"-18 UNS	23.8	31.49	40.5	50.8
VE3057-24ABTXX	36	49675-24	35	14	29.4	58	2"-18 UNS	31.8	34.67	46.9	47.6
VE3057-28ABTXX	40	49675-28	41.2	14	42.8	65	2 1/4"-16 UN	35	40.99	52.9	44.4

### Rubber Bushing



### Note:

- 1 - Txx = plating suffix: consult factory
- 2 - Ordering Part Number: VE3057--AB-- = Cable clamp with bushing included

Dimensions shown in mm

Specifications and dimensions subject to change

www.ittcannon.com

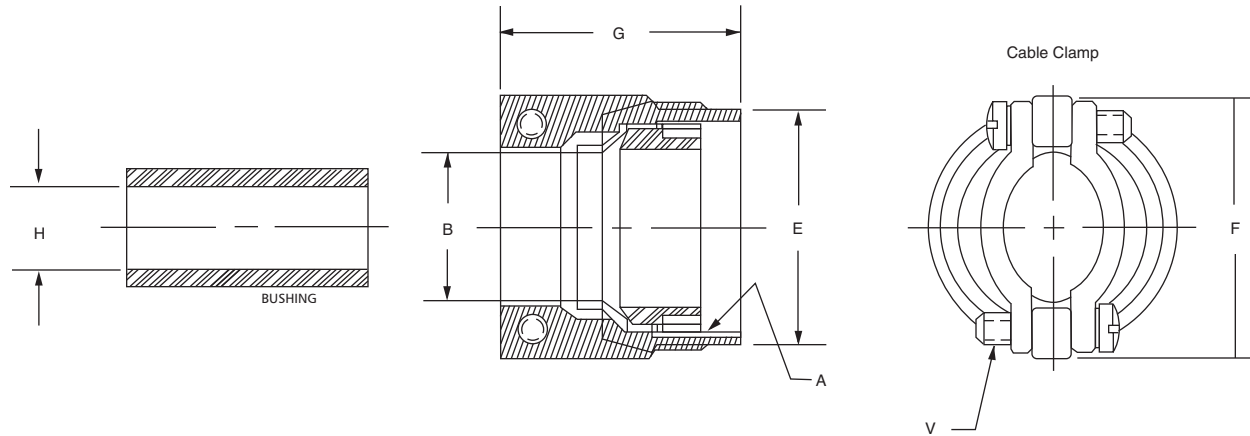
# VEAM VBN

## Accessories

### Cable Clamp "VE3057-C" Series

Waterproof cable clamps with mechanical strain relief, providing concentric clamping over a wide range of cable sizes. These clamps are supplied with CF and CFZ termination classes.

Can be used with bushing "49674--Series" in FR compound to reduce the cable range. Bushing must be ordered separately.

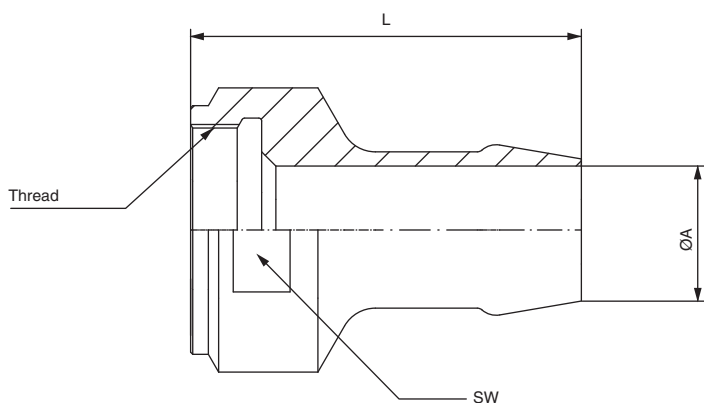


Ordering Part Number	Used with size	Thread A	B		E ± 0.4	F ± 0.2	G + 0.5 - 0	Thread V	Brushing Part Number	H
			Open	Closed						
VE3057-8CTXX	16-16S	7/8"-20 UNEF	13.48	8	25.4	28.1	32.3	6-32 UNC	49674-16	11.1
VE3057-10CTXX	18	1"-20 UNEF	15.87	9.6	28.5	31	35.3	6-32 UNC	49674-18	11.1
VE3057-12CTXX	20-22	1 3/16"-18 UNEF	19	11.3	33.3	37.3	35.7	8-32 UNC	49674-20	13.7
VE3057-18CTXX	24-28	1 7/16"-18 UNEF	23.8	15.5	39.6	42	38.5	8-32 UNC	49674-24	19
VE3057-20CTXX	32	1 3/4"-18 UNS	31.75	23.4	47.6	54	44.8	.250-20 UNC	49674-32	23.8
VE3057-24CTXX	36	2"-18 UNS	35	23.4	53.9	57.1	51.6	.250-20 UNC	49674-36	28.5
VE3057-28CTXX	40	2 1/4"-16 UN	41.25	29.9	60.3	63.5	51.6	.250-20 UNC	49674-40	31.7

### Note:

- 1 - Txx = plating suffix: consult factory
  - 2 - More telescopic bushings are available, consult factory
- Ordering Part Number VE3057-..C = Cable clamp without bushing.  
 Ordering Part Number VE3057-..CB = Cable clamp + bushing.

### Adapters for rubber conduit "FS xxxx"



Connector Size	Rubber Tube Size	Connector Size	Thread	L	ØA	SW
16S	20x15	16S	7/8"-20 UNEF	55	13	28
18	17x12	18	1"-20 UNEF	55	10	32
18	20x15	18	1"-20 UNEF	55	13	32
18	25x20	18	1"-20 UNEF	55	18	32
20-22	20x15	20-22	1"3/16"-18 UNEF	55	13	36
20-22	25x20	20-22	1"3/16"-18 UNEF	55	18	36
20-22	26x18	20-22	1"3/16"-18 UNEF	54	16	36
24-28	23x18	24-26	1"7/16"-18 UNEF	55	16	43
24-28	25x20	24-26	1"7/16"-18 UNEF	55	18	43
24-28	27x22	24-26	1"7/16"-18 UNEF	55	20	43
24-28	29x24	24-26	1"7/16"-18 UNEF	55	22	43
24-28	33x25	24-26	1"7/16"-18 UNEF	55	23	43
24-28	33x28	24-26	1"7/16"-18 UNEF	55	26	43
24-28	37x32	24-26	1"7/16"-18 UNEF	55	30	43
24-28	38x33	24-26	1"7/16"-18 UNEF	55	31	43
32	33x28	32	1"3/4"-18 UNS	55	26	52
32	38x33	32	1"3/4"-18 UNS	55	31	52
32	40x30	32	1"3/4"-18 UNS	55	28	52
32	40x35	32	1"3/4"-18 UNS	55	33	52
32	42x36	32	1"3/4"-18 UNS	55	34	52
32	50x40	32	1"3/4"-18 UNS	55	38	52
36	38x33	32	2"-18 UNS	57	31	57
36	40x35	32	2"-18 UNS	55	33	57
36	50x40	36	2"-18 UNS	55	38	57
40	37x32	40	2"1/4"-18 UNS	58	30	63
40	42x36	40	2"1/4"-18 UNS	60	34	63
40	50x40	40	2"1/4"-18 UNS	55	38	63

Dimensions shown in mm

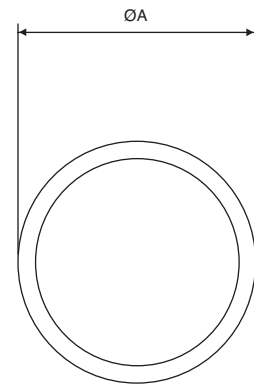
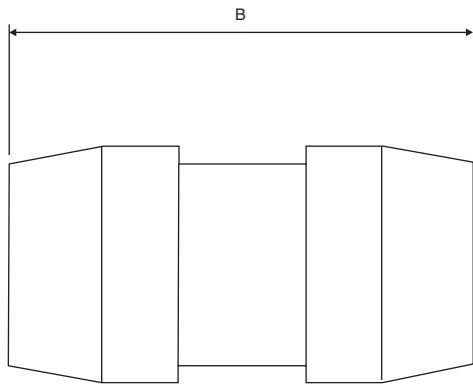
Specifications and dimensions subject to change

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# VEAM VBN

## Insert wire hold plugs

51605 Series



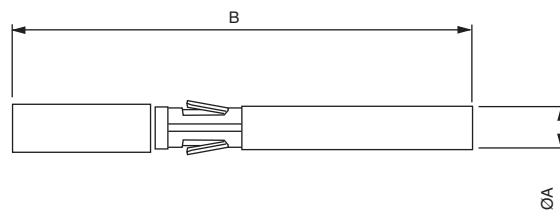
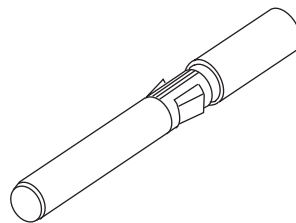
P/N	ØA	B
51605-16	3.7	13.5
51605-12	5.4	15.5
51605-8	7.5	19.7

### VBN-PDMC Series

To prevent mis-mating of like connectors, as shown previously in this catalog, the connector contact arrangement is rotated through pre-determined angular positions. Each of these positions is identified by a single letter (N-W-X-Y-Z).

For additional polarization, size 16 and 12 "plastic dummy contacts" are available.

The "plastic dummy contacts" are longer than standard male contacts and can be installed in one or more contact cavities instead of standard male contacts, when empty contact cavities are available.



Ordering Part Number	Size	ØA	B
VBN-PDMC-16	16	3.2	32
VBN-PDMC-12	12	4.8	36

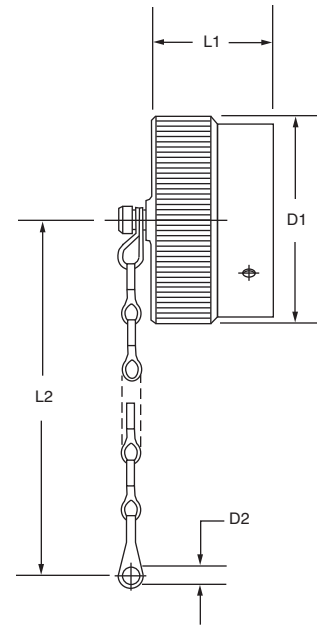
## Accessories

### Metal Dust Cap "CIR-TF-Series"

Metal dust cap with chain, for receptacle.

Also available with stainless steel rope (nylon covered) or nylon rope (consult factory).

Ordering Part Number	Used with size	d1 Maximum	d2 +0.5 -0	l1 ±0.2	l2 Approximate
CIR16STFTxx	16S	33	4.4	16	127
CIR18TFTxx	18	37.5	4.4	20.7	127
CIR20TFTxx	20	41	4.4	20.7	127
CIR22TFTxx	22	44	4.4	20.7	127
CIR24TFTxx	24	47.5	4.4	20.7	127
CIR28TFTxx	28	54.5	5.6	20.7	190
CIR32TFTxx	32	61	5.6	20.7	190
CIR36TFTxx	36	67.5	5.6	20.7	175
CIR40TFTxx	40	73	5.6	20.7	190



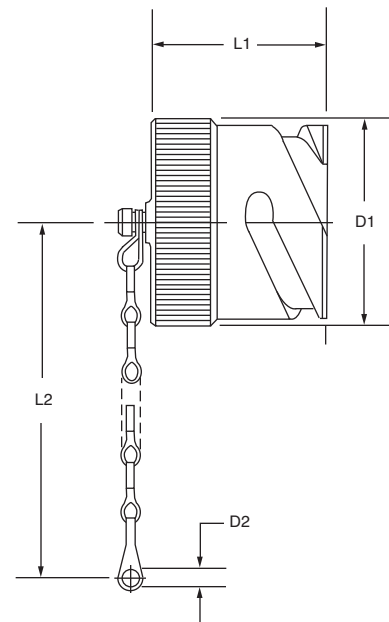
### Metal Dust Cap "CIR-TV-Series"

Metal dust cap with chain, for receptacle.

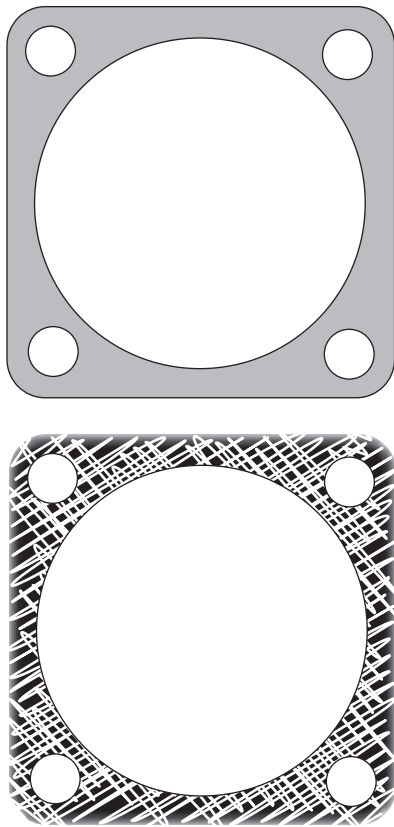
Also available with stainless steel rope (nylon covered) or nylon rope (consult factory).

Ordering Part Number	Used with size	d1 Maximum	d2 +0.5 -0	l1 ±0.2	l2 Approximate
CIR16STVTxx	16S	30	4.4	23.5	127
CIR18TVTxx	18	33.5	4.4	31.5	127
CIR20TVTxx	20	37	4.8	31.5	140
CIR22TVTxx	22	40	4.8	31.5	140
CIR24TVTxx	24	43.5	4.8	31.5	140
CIR28TVTxx	28	49.5	4.8	31.5	190
CIR32TVTxx	32	56	5.6	31.5	190
CIR36TVTxx	36	62.5	5.6	31.5	190
CIR40TVTxx	40	67.7	5.6	31.5	190

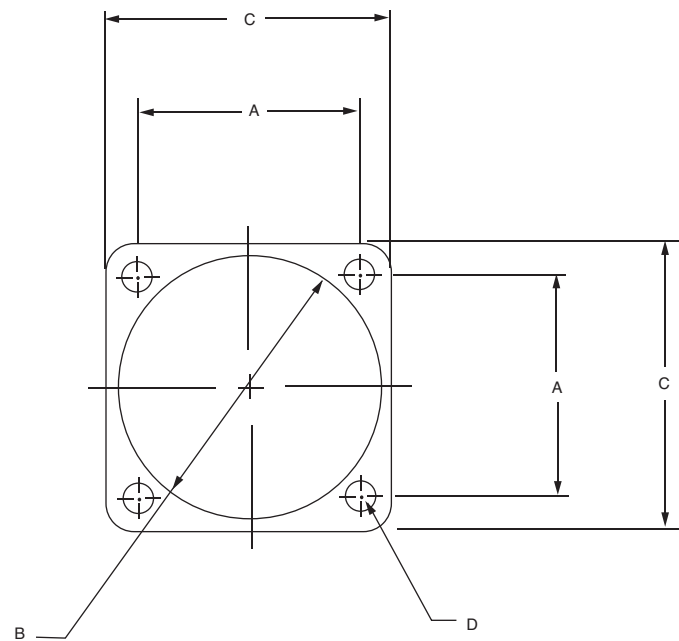
TXX= Plating suffix, consult factory.



### Panel sealing gasket



“N” Type gaskets assure waterproofing of front panel mounted connectors.  
Shell type 2 protection level: IP 67

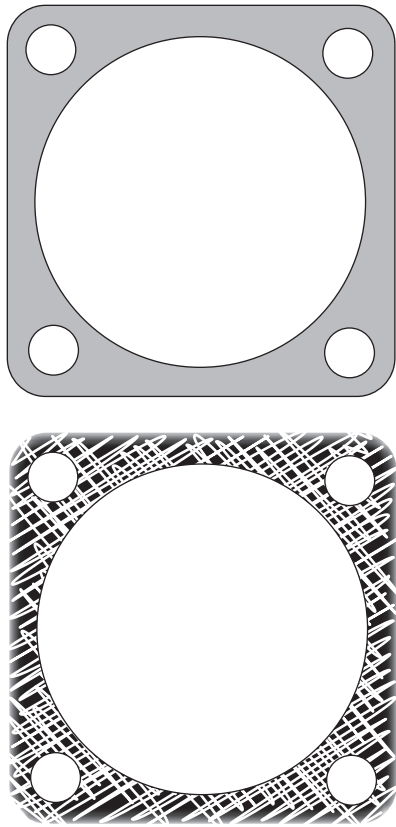


“NS” type gasket with an imbedded metal screen for panel sealing and RFI shielding.  
Protection level: IP 65 (water stream)

Size	A ±0.2	B +1 -0	C ±0.5	D +0.5 -0	“N” type (non-conductive) according to VG spec.	“NS” type (conductive) according to VG spec.
16-16S	24	25.3	32.5	4.2	VG95234 DA-16-1	VG95234 DA-16-2
18	27	28.4	35	4.2	VG95234 DA-18-1	VG95234 DA-18-2
20	29.4	31.6	38	4.2	VG95234 DA-20-1	VG95234 DA-20-2
22	31.8	34.8	41	4.2	VG95234 DA-22-1	VG95234 DA-22-2
24	34.9	38	44.5	4.2	VG95234 DA-24-1	VG95234 DA-24-2
28	39.7	44.3	50.8	5.1	VG95234 DA-28-1	VG95234 DA-28-2
32	44.5	50.7	57	5.1	VG95234 DA-32-1	VG95234 DA-32-2
36	49.2	57	63.5	5.1	VG95234 DA-36-1	VG95234 DA-36-2
40	55.5	61.9 <sup>+04</sup> <sub>-0</sub>	70 <sup>+04</sup> <sub>-0</sub>	5.6±02	16968	16968/1

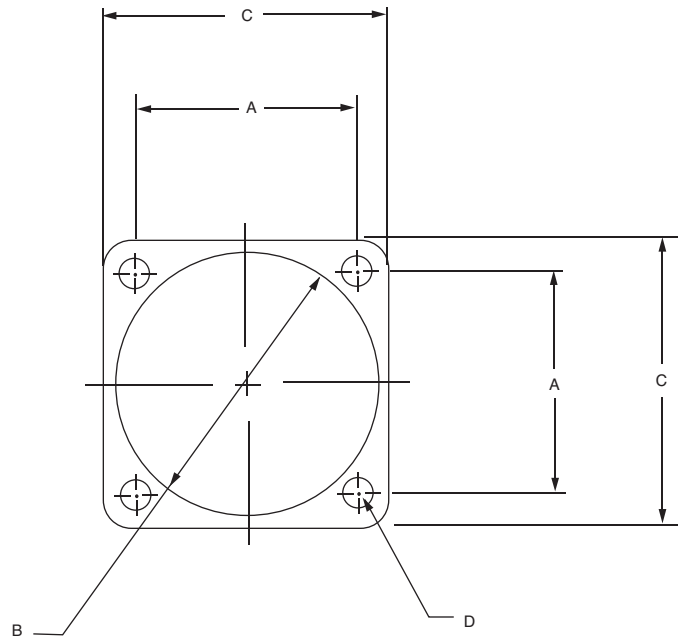
## Accessories

### Panel sealing gasket



“NS” type gasket with an imbedded metal screen for panel sealing and RFI shielding.  
Protection level: IP 65 (water stream)

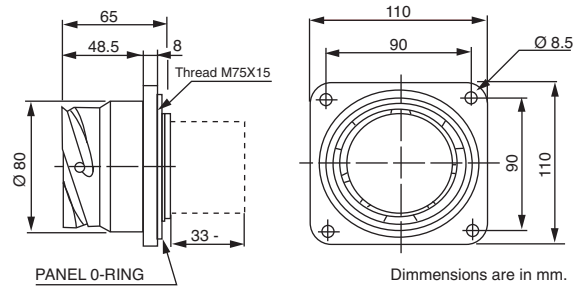
“N” Type gaskets assure waterproofing of rear panel mounted connectors.  
Shell type 3 protection level: IP 67



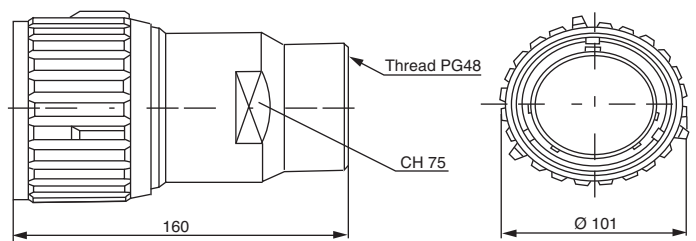
Size	A ±0.2	B +3 -0	C ±0.5	D +0.5 -0	“N” type (non-conductive) according to VG spec.	“NS” type (conductive) according to VG spec.
16-16S	24.6	27.4	32.5	4.2	VG95234 DH-16-1	VG95234 DH-16-2
18	27	30.8	35	4.2	VG95234 DH-18-1	VG95234 DH-18-2
20	29.4	34.2	38	4.2	VG95234 DH-20-1	VG95234 DH-20-2
22	31.8	37.4	41	4.2	VG95234 DH-22-1	VG95234 DH-22-2
24	34.9	40.9	44.5	4.2	VG95234 DH-24-1	VG95234 DH-24-2
28	39.7	46.7	50.8	5.1	VG95234 DH-28-1	VG95234 DH-28-2
32	44.5	53.4	57	5.1	VG95234 DH-32-1	VG95234 DH-32-2
36	49.2	59.6	63.5	5.1	VG95234 DH-36-1	VG95234 DH-36-2
40	55.5	65.5	69.9	5.1	46739-40	46739-40-1



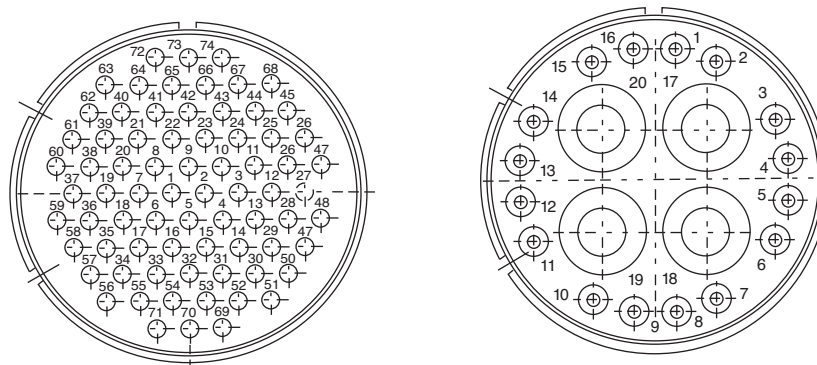
## VBN 290 special series box mounting receptacle with rear thread



STRAIGHT PLUG CONNECTOR WITH BACKSHELL



CONTACTS ARRANGEMENTS



	290-74	290-20
Number of contacts	74	20
Contact size	74/16	16/12 ; 4/0
Service rating	A	E

Ordering P/N: consult factory

## Crimp, insertion & extraction tools



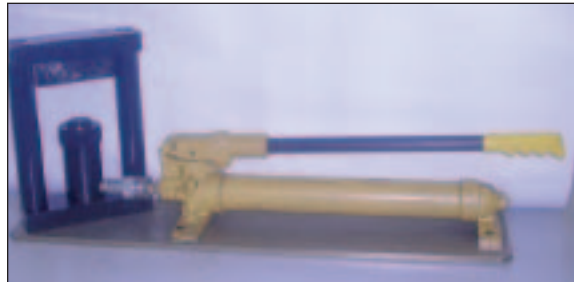
MANUAL CRIMP TOOL VM8 / CT8N



REMOVAL TOOL



INSERTION TOOL



HYDRAULIC MP-F80-VGE



CRIMPING DIE 44519 & 51589



HYDRAULIC HT45



ELECTRICAL B50

**Tool 2020 Cosmos**



**Ordering Part Number: PINZA 2020 COSMOS**

**This tool helps the operators for mate and unmate plug connectors with the receptacle.**

## Product Safety Information

**THIS NOTE MUST BE READ IN CONJUNCTION WITH THE PRODUCT DATA SHEET/CATALOG. FAILURE TO OBSERVE THE ADVICE IN THIS INFORMATION SHEET AND THE OPERATING CONDITIONS SPECIFIED IN THE PRODUCT DATA SHEET/CATALOG COULD RESULT IN HAZARDOUS SITUATIONS.**

### 1. MATERIAL CONTENT AND PHYSICAL FORM

Electrical connectors do not usually contain hazardous materials. They contain conducting and non-conducting materials and can be divided into two groups.

a) Printed circuit types and low cost audio types which employ all plastic insulators and casings.  
b) Rugged, Fire Barrier and High Reliability types with metal casings and either natural rubber, synthetic rubber, plastic or glass insulating materials. Contact materials vary with type of connector and also application and are usually manufactured from either: Copper, copper alloys, nickel, alumel, chromel or steel. In special applications, other alloys may be specified.

### 2. FIRE CHARACTERISTICS AND ELECTRIC SHOCK HAZARD

**There is no fire hazard when the connector is correctly wired and used within the specified parameters. Incorrect wiring or assembly of the connector or careless use of metal tools or conductive fluids, or transit damage to any of the component parts may cause electric shock or burns. Live circuits must not be broken by separating mated connectors as this may cause arcing, ionization and burning.** Heat dissipation is greater at maximum resistance in a circuit. Hot spots may occur when resistance is raised locally by damage, e.g. cracked or deformed contacts, broken strands of wire. Local overheating may also result from the use of the incorrect application tools or from poor quality soldering or slack screw terminals. Overheating may occur if the ratings in the product Data Sheet/Catalog are exceeded and can cause breakdown of insulation and hence electric shock. If heating is allowed to continue it intensifies by further increasing the local resistance through loss of temper of spring contacts, formation of oxide film on contacts and wires and leakage currents through carbonization of insulation and tracking paths. Fire can then result in the presence of combustible materials and this may release noxious fumes. Overheating may not be visually apparent. Burns may result from touching overheated components.

### 3. HANDLING

Care must be taken to avoid damage to any component parts of electrical connectors

during installation and use. Although there are normally no sharp edges, care must be taken when handling certain components to avoid injury to fingers. Electrical connectors may be damaged in transit to the customers, and damage may result in creation of hazards. Products should therefore be examined prior to installation/use and rejected if found to be damaged.

### 4. DISPOSAL

Incineration of certain materials may release noxious or even toxic fumes.

### 5. APPLICATION

Connectors with exposed contacts should not be selected for use on the current supply side of an electrical circuit, because an electric shock could result from touching exposed contacts on an unmated connector. Voltages in excess of 30 V ac or 42.5 V dc are potentially hazardous and care should be taken to ensure that such voltages cannot be transmitted in any way to exposed metal parts of the connector body. The connector and wiring should be checked, before making live, to have no damage to metal parts or insulators, no solder blobs, loose strands, conducting lubricants, swarf, or any other undesired conducting particles. Circuit resistance and continuity check should be made to make certain that there are no high resistance joints or spurious conducting paths. Always use the correct application tools as specified in the Data Sheet/Catalog. Do not permit untrained personnel to wire, assemble or tamper with connectors. For operation voltage please see appropriate national regulations.

### IMPORTANT GENERAL INFORMATION

**(i) Air and creepage paths/Operating voltage.** The admissible operating voltages depend on the individual applications and the valid national and other applicable safety regulations.

For this reason the air and creepage path data are only reference values. Observe reduction of air and creepage paths due to PC board and/or harnessing.

### **(ii) Temperature**

All information given are temperature limits. The operation temperature depends on the individual application.

### **(iii) Other important information**

Cannon continuously endeavors to improve their products. Therefore, Cannon products may deviate from the description, technical data and shape as shown in this catalog and data sheets.

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# ITT

## Connector Product Locations

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### GERMANY

Cannonstrasse 1  
Weinstadt, 71384  
phone: 49.7151.699.0  
fax: 49.7151.699.217

### HONG KONG

Unit 901 & 912, West Tower  
Shun Tak Center  
168-200 Connaught Road  
Central  
phone: 852.2732.2720  
fax: 852.2732.2919

### ITALY

Via Statuto, 2  
Arese, 20020  
Milan  
phone: 39.2.935321  
fax: 39.2.9385000

### UK

Jays Close, Viables Estate  
Basingstoke, RG22 4BA  
phone: 44.1256.311200  
fax: 44.1256.323356

### USA

100 New Wood Road  
Watertown, CT 06795  
phone: 1.860.274.9681  
fax: 1.860.274.4963

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VBN 05-Sept