Ruggedized Reverse Bayonet Connectors

Dynamic IP68 / IP69K
Up to 500 hr salt spray
VG95234 intermountable

UTV SERIES

Completely intermountable with VG 95234 : the MS 5015 reverse bayonet connectors *new*

Description

This connector series is an enhanced version of the VG 95234 connector standard but remains completely intermountable with VG 95234 : the MS 5015 reverse bayonet connectors.

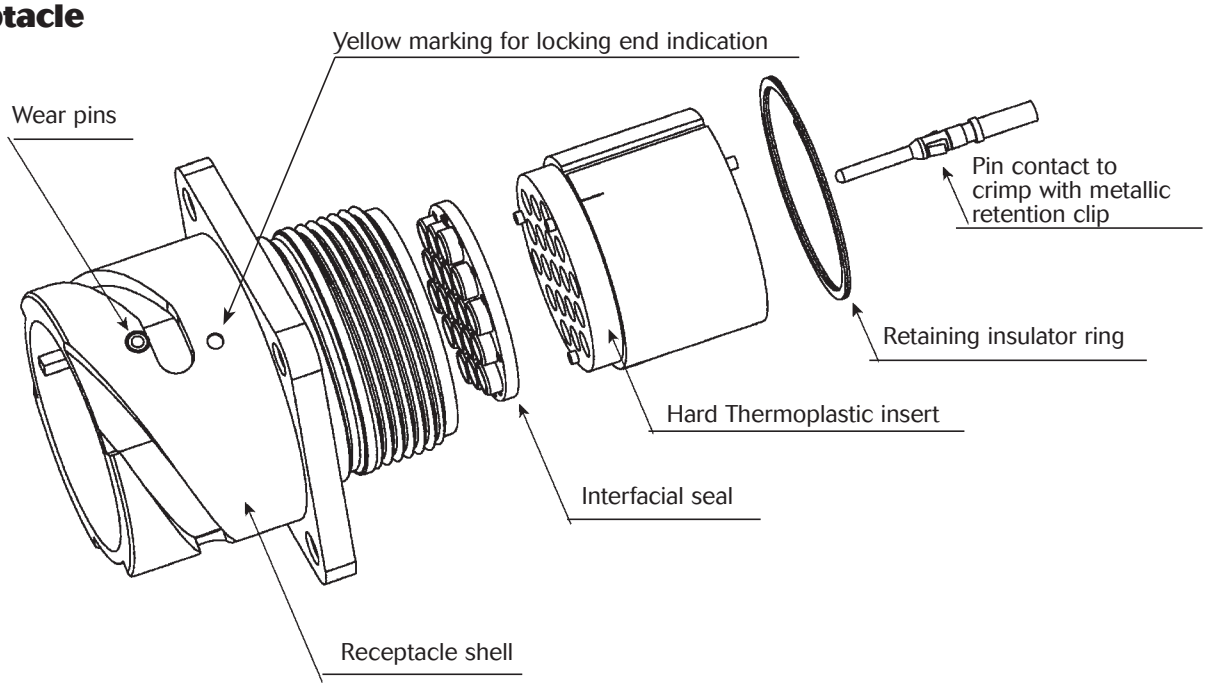
Features and benefits (see also page 3)

- An interfacial seal is present on the male inserts to extend the creepage distance and to have a better sealing when the connector is mated.
- The insulator is retained into the plug or receptacle shell by a metallic retaining ring which can be removed with a small screwdriver. Once removed, user can defined insulator orientation.
- Contacts gauge 8, 12 or 16 are machined crimp contacts, removable thanks to a clip on the contact.
- No tools are needed to insert contacts into the insulator. An extraction tool is available to extract the contacts. The tool is engaged by the front face of the connector and the contacts are rear released.
- Contacts are crimped thanks to very common toolings.
- The connector is rated 2 levels of water protection (see page 3):
  Dynamic IP67/IP68/IP69K when mated and used with suitable accessories, a grommet or a sealed back shell.
- This connector can be supplied fully assembled or in component form (please consult us).
- Corrosion spray resistance is rated up to 500 hours salt spray
- Cadmium and lead free materials are used

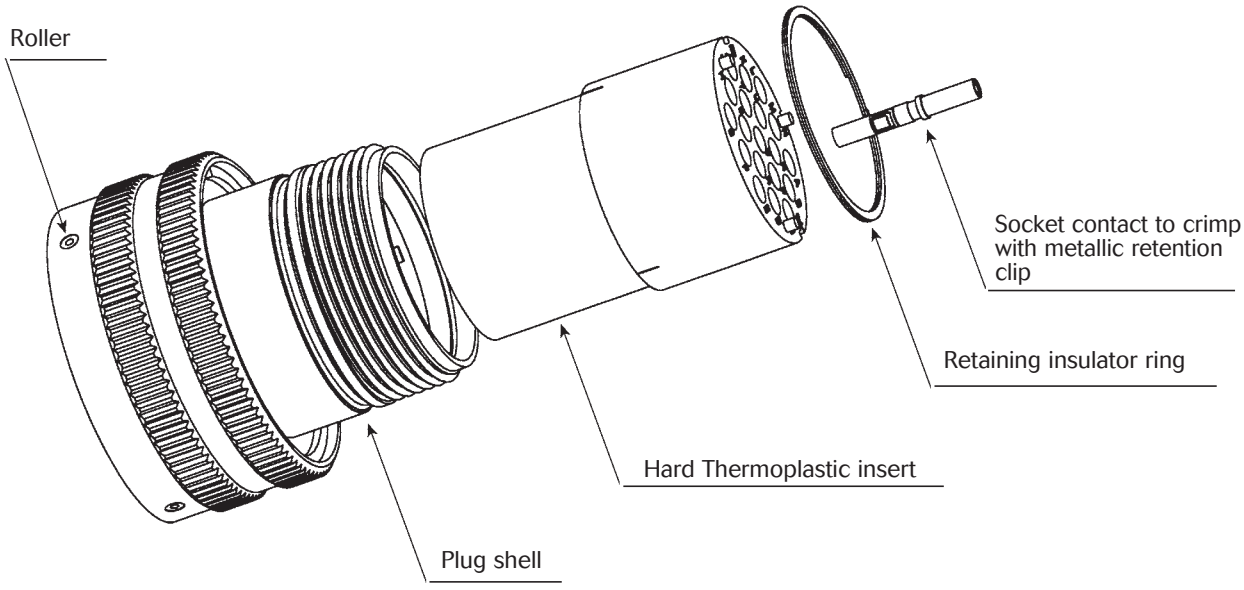
Ruggedized Reverse Bayonet Connector

Description

Receptacle



Plug



Ruggedized Reverse Bayonet Connector

Technical Features

Mechanical

- Mechanical endurance : 500 mating and unmating
- Minimum retention force of the contact in the insulator :
  - 70 N for contacts # 16 (1.6 mm)
  - 90 N for contacts # 12 (2.4 mm)
  - 110 N for contacts # 8 (3.6 mm)

  Minimum values with a maximum displacement of the contact of 0.3 mm (following NFF 61030)
- Retention of the insulator in the shell : (following MIL-C-26482G Series 2 class L standard)
- Bayonet coupling mechanism - Coupling torque : following VG 95234
- Vibrations : following NFF 61030
  Sinus vibrations : 10 - 100 Hz
  Acceleration : 2 g
- Shocks : Acceleration = 30 g
  Duration = 18 ms following NFF 61030
- Impact strength (free fall of the plug). The connector plug is subjected to a free fall test. The height of drop is 0.75 m. No mechanical damage.

Electrical

- Contact resistance :
  - 2.5 mΩ maxi for contact # 16
  - 1.3 mΩ maxi for contact # 12
  - 0.9 I maxi for contact # 8

  following NFF 61030
- Maximum current per contact :
  - 15 Amps for contact # 16
  - 20 Amps for contact # 12
  - 30 Amps for contact # 8
- Withstanding voltage :
  - 2550 Vrms for layouts # 16
  - 3250 Vrms for layouts # 12 and 8
- Insulation resistance :
  - ≥ 5000 MΩ under 500 Vcc
  - ≥ 4000 MΩ under 220 Vcc
- Electrical continuity of the shells : 20 mΩ maximum
- In mated conditions (interfacial seal is compression) minimum creepage distance = minimum insulation distance in the air :
  - 9 mm minimum for layouts with contacts # 16
  - 12 mm minimum for layouts with contacts # 12 or # 8

Environmental

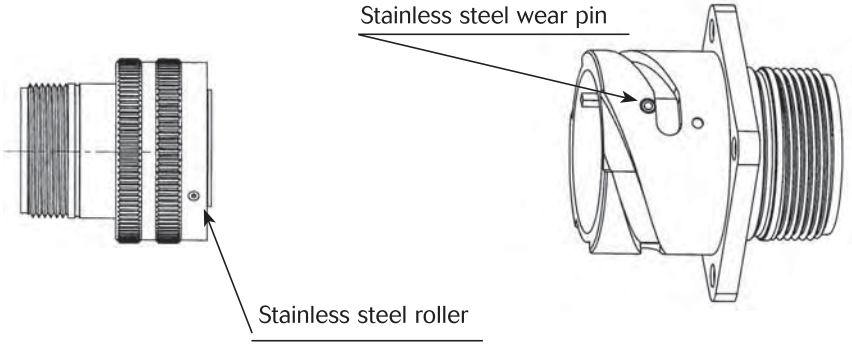
- Climatic category : -40°C +100°C
  Dry heat test : +100°C during 96 h
- Corrosion spray resistance : up to 500 hours salt spray
- Damp heat : 21 days, 40°C, 95% relative humidity
- The connector is rated 2 levels of water protection (see page 3): Dynamic IP67/IP68/IP69K when mated and used with suitable accessories, a grommet or a sealed back shell.
- Cadmium and lead free materials are used

Material

- Shell in aluminium alloy with black zinc cobalt plating
- Insulator : hard thermoplastic with glass fiber
- O'ring and interfacial seal in silicone
- Retaining insulator ring in carbon steel

This full product range is qualified by ALSTOM, RATP and SNCF.

Robustness and high reliability of the locking mechanism



Ruggedized Reverse Bayonet Connector

Connectors Ordering Information
(without contacts and accessories)

Shells, backshells, contacts and accessories have to be ordered separately

UTV	B	22	– 14	P	N	- -

Series

Shell type

Rear mounting receptacle	**B**
Plug	**D**
Rear mounting receptacle for PC tails contact # 16 contacts mounted	**C**

Shell size : 18 - 20 -22 - 24 - 28 - 32 - 36 - 40

Layouts

Contact type : P - Pin
S - Socket

Insert Orientation : N ; W ; X ; y ; Z or 0
0 = for insulator not installed in the shell

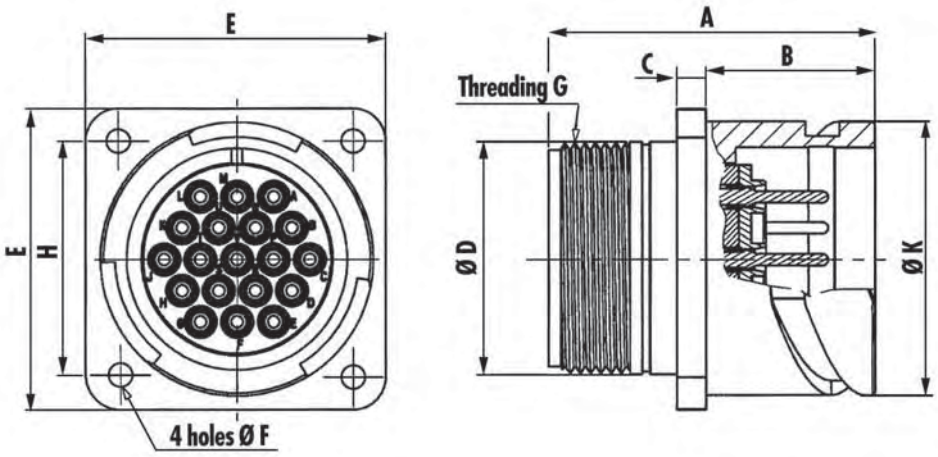
Modification Code :
Please consult us

Nota : Please consult us if you want to order the connector in component form (shell and insert).

Ruggedized Reverse Bayonet Connector

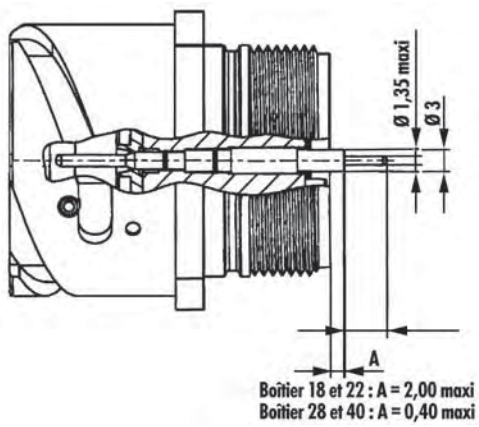
Connector Dimensions

Receptacle



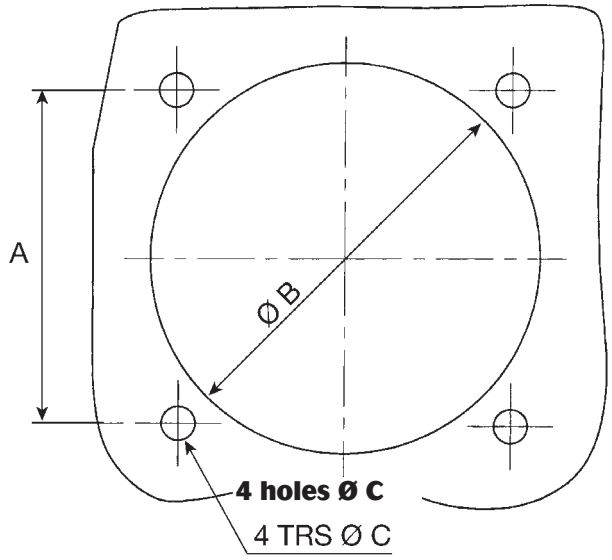
Shell size	A Max	B 0/+0.4	C ±0.2	ØD Max	E ±0.3	ØF 0/+0.15	Threading G Class 2A	H ±0.1	ØK -0.15/0
18	45.50	23.05	4.00	25.50	35.00	3.25	1"x20 UNEF	27.00	30.80
20	45.50	23.05	4.00	28.70	38.00	3.25	1 1/8"x18 UNEF	29.40	34.20
22	45.50	23.05	4.00	31.90	41.00	3.25	1 1/4"x18 UNEF	31.80	37.40
24	48.00	23.05	4.00	35.20	44.50	3.75	1 3/8"x18 UNEF	34.90	40.90
28	48.00	24.05	4.00	41.50	50.80	3.75	1 5/8"x18 UNE	39.70	46.70
32	48.00	24.05	4.00	47.90	57.00	4.35	1 7/8"x16 UN	44.50	53.40
36	48.00	24.05	4.00	52.50	63.50	4.35	2 1/16"x16 UNS	49.20	59.60
40	48.00	24.05	4.00	59.00	70.00	4.35	2 5/16"x16 UN	55.50	65.50

Receptacle with PC tails contact # 16



Ruggedized Reverse Bayonet Connector

Panel Cutout

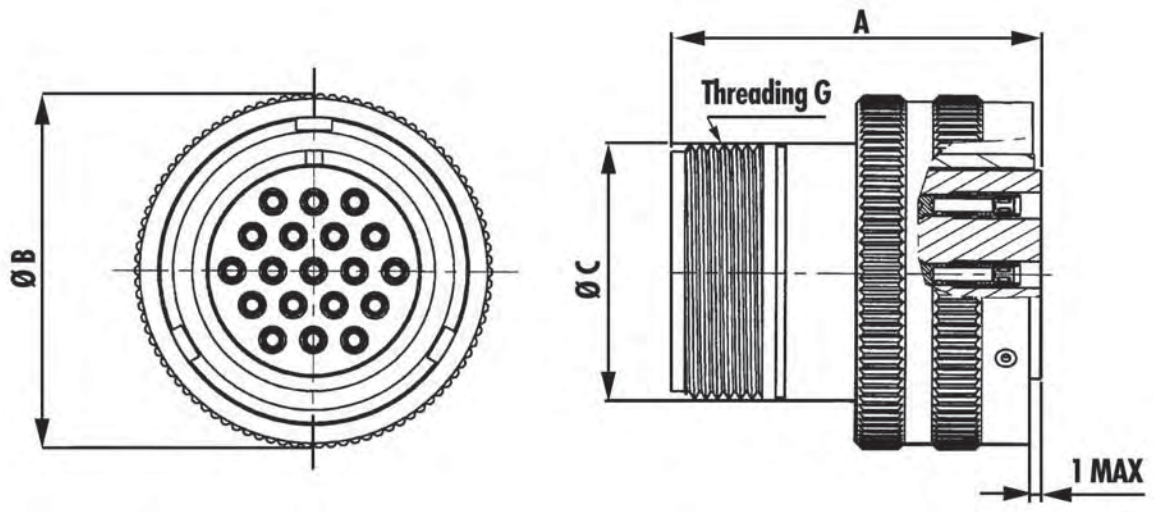


Shell size	A ± 0.15	B 0/+0.3	C ± 0.10	Maximum thickness of the panel for rear mounting
18	27	31,2	3,4	3
20	29,4	34,6	3,4	3
22	31,8	37,8	3,4	3
24	34,9	41,3	3,9	3
28	39,7	47,1	3,9	3
32	44,5	53,8	4,5	3
36	49,2	60	4,5	3
40	55,5	66,4	4,5	3

Note : The above panel cut-out enables front mounting of all receptacles.

Ruggedized Reverse Bayonet Connector

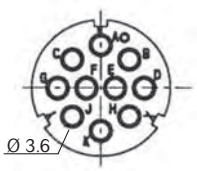
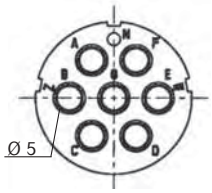
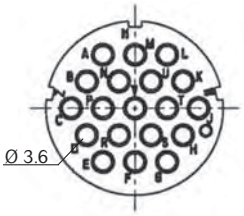
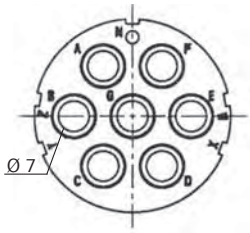
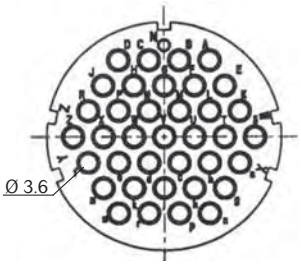
Plug

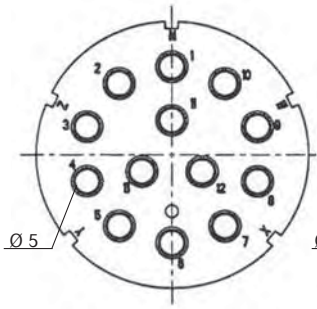
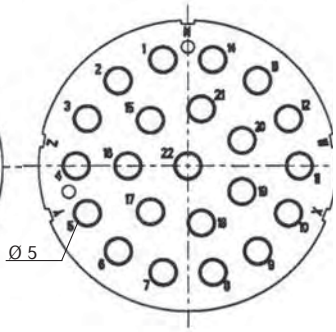
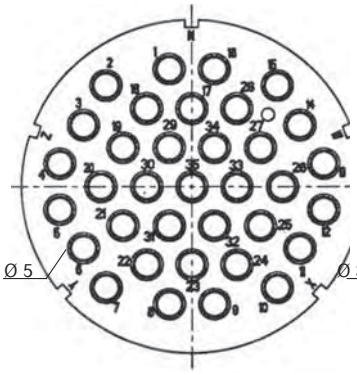
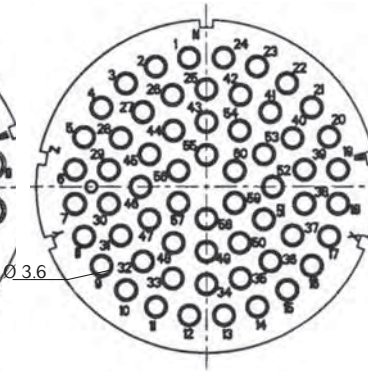


Shell size	A Max	B Max	C Max	Threading G Class 2A
18	45.60	37.30	25.50	1"x 20 UNEF
20	45.60	41.50	28.70	1 1/8"x 18 UNEF
22	45.60	44.00	31.90	1 1/4"x 18 UNEF
24	45.60	48.50	35.20	1 3/8"x 18 UNEF
28	48.10	55.30	41.50	1 5/8"x 18 UNEF
32	48.10	62.00	47.90	1 7/8"x 16 UN
36	48.10	66.80	52.50	2 1/6" x 16 UNS
40	48.10	74.50	59.00	2 5/16"x 16 UN

Ruggedized Reverse Bayonet Connector

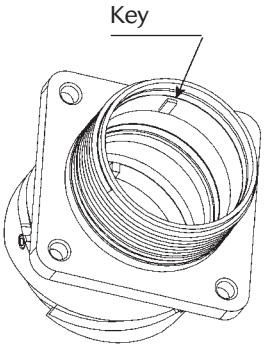
Layouts (marking on front face of female insulator)

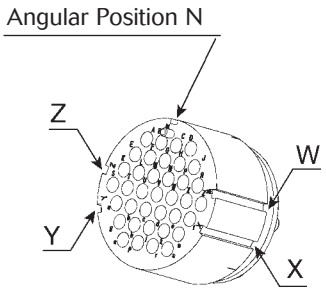
18-19	20-15	22-14	24-10	28-21
				
10 contacts # 16	7 contacts # 12	19 contacts # 16	7 contacts # 8	37 contacts # 16

32 A13	36 A22	40 A35	40 A60
			
13 contacts # 12	22 contacts # 12	35 contacts # 12	60 contacts # 16

Note : *For other layouts: consult factory.*

Alternative insert orientation positions





	Angular displacement of insert					Insulator weight (g)	
Layouts	N	W	X	y	Z	Male	Female
18-19	0	-	120	240	-	10	16
20-15	0	80	-	-	280	13	21
22-14	0	80	-	-	280	16	25
24-10	0	80	110	250	280	19	31
28-21	0	80	110	250	280	27	40
32-A13	0	65	130	230	295	45	75
36-A22	0	80	110	250	280	53	88
40-A35	0	70	130	230	290	61	99
40-A60	0	80	110	250	280	63	100

Ruggedized Reverse Bayonet Connector

Accessories

Backshells ordering information

Series	UTV UTV	J C	S S	18 22	– 00 – 14	00 00	M
Backnut		R					
Cable clamp		C					
Backshell for PMA tube		S					
Cable clamp with sealing gland		J					
Cable clamp with sealing gland (trumpet)		K					
Cable clamp with sealing gland for shielding		T					
S - Straight backshell **E -** Elbow backshell							
Shell size : 18 - 20 - 22 - 24 - 28 - 32 - 36 - 40							
Layout (grommet included) or 00 (without grommet)							
Adaptor type : 10 - long **00** - short							
Grommet type : M for male or L for female (if grommet needed)							

Plug cap: F
ex: VGE1Fxx (xx = shell size)

receptacle cap: E
ex: VGE1Exx (xx = shell size)

Adaptor ordering information

Series	UTV	P	S	18	– 00	00
P - Adaptor with PG outlet*						
S - Adaptor for straight backshell						
Shell size : 18 - 20 - 22 - 24 - 28 - 32 - 36 - 40						
Adaptor type : 10 - long **00** - short						

* For metric threading: consult factory

Ruggedized Reverse Bayonet Connector

Accessories

Grommet (only when needed on spare parts)

Grommet are delivered with a conical ring

Layout	Grommet type	Part number	Wire insulator diameter (mm)	
			Mini	Maxi *
18-19	male	UTVM18-1900	1,2	2,95
18-19	female	UTVL18-1900	1,2	2,95
20-15	male	UTVM20-1500	1,2	3,6
20-15	female	UTVL20-1500	1,2	3,6
22-14	male	UTVM22-1400	1,2	2,95
22-14	female	UTVL22-1400	1,2	2,95
24-10	male	UTVM24-1000	4,2	6,2
24-10	female	UTVL24-1000	4,2	6,2
28-21	male	UTVM28-2100	1,2	2,95
28-21	female	UTVL28-2100	1,2	2,95
32A13	male	UTVM32A1300	1,2	3,6
32A13	female	UTVL32A1300	1,2	3,6
36A22	male	UTVM36A2200	1,2	3,6
36A22	female	UTVL36A2200	1,2	3,6
40A35	male	UTVM40A3500	1,2	3,6
40A35	female	UTVL40A3500	1,2	3,6
40A60	male	UTVM40A6000	1,2	2,95
40A60	female	UTVL40A6000	1,2	2,95

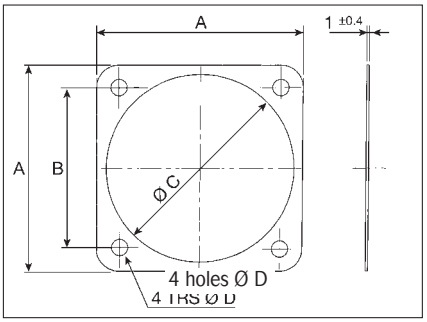
* Please consult us if your wire has an insulation diameter over these values, we will propose you another grommet.

Grommet filler plug

Contact size	Part number	Color	Photo
# 16 # 12	8500-479	blue	

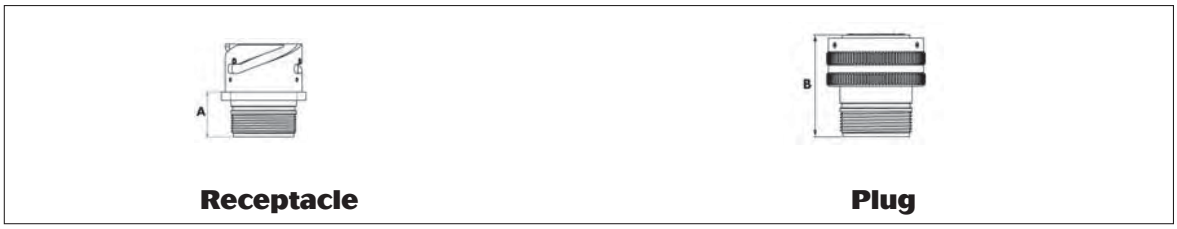
Panel gasket

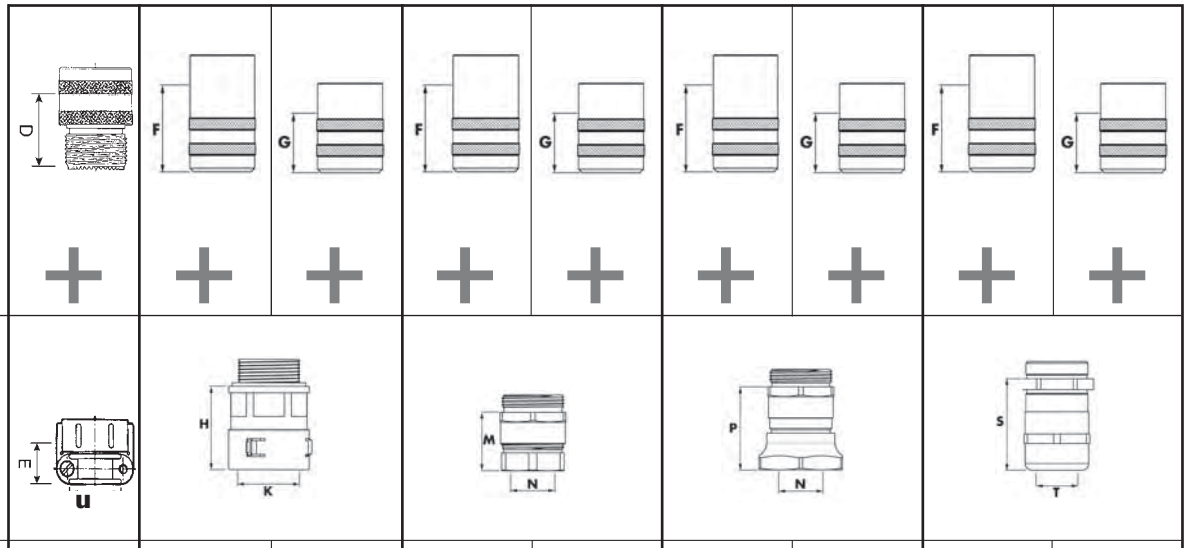
Shell size	Part number	Dimensions			
		A ± 0.5	B ± 0.2	C 0/+0.3	Ø D 0/+0.3
20	UTVG20	38	29.4	34.2	4.2
22	UTVG22	41	31.8	37.4	4.2
24	UTVG24	44.5	34.9	40.9	4.2
28	UTVG28	50.8	39.7	46.7	5.1
32	UTVG32	57	44.5	53.4	5.1
36	UTVG36	63.5	49.2	59.6	5.1
40	UTVG40	69.9	55.5	65.5	5.1



Ruggedized Reverse Bayonet Connector

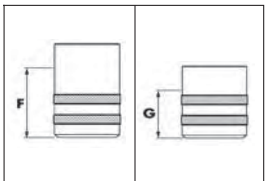
Synoptic of straight backshells (for IP67 applications)





Description	Backnut	Cable clamp	Backshell for PMA tube	Backshell for PMA tube	Cable clamp with sealing gland	Cable clamp with sealing gland	Cable clamp with sealing gland (trumpet shape to avoid cable wound)	Cable clamp with sealing gland (trumpet shape to avoid cable wound)	Cable clamp with sealing gland for shielding	Cable clamp with sealing gland for shielding
Ref	UTV RS****00	UTV CS****00	UTV SS****10	UTV SS****00	UTV JS****10	UTV JS****00	UTV KS****10	UTV KS****00	UTV TS****10	UTV TS****00

Synoptic of adaptors



Description	Long adaptor with PG outlet	Short adaptor with PG outlet
Ref	UTV PS**0010	UTV PS**0000

NB: IP68 backshells are available under request

Ruggedized Reverse Bayonet Connector

Dimensions

	Shell 18		Shell 20		Shell 22		Shell 24		Shell 28		Shell 32		Shell 36		Shell 40	
	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet
	**** = 18-19	**** = 18-00	**** = 20-15	**** = 20-00	**** = 22-14	**** = 22-00	**** = 24-10	**** = 24-00	**** = 28-21	**** = 28-00	**** = 32A13	**** = 32A00	**** = 36A22	**** = 36A00	**** = 40A35 40A60	**** = 40A00
A	22.5		22.5		22.5		22.5		24		24		24		24	
B	45.6		45.6		45.6		45.6		48.1		48.1		48.1		48.1	
C	18		18		18		18		17		17		17		17	
D	44		44		44		44		47							
E	28,5		28,5		26		26		23							
F	48,6		48,6		48,6		48,6		58		48		48		48	
G	34		34		34		34		33		33		33		33	
H	35,5		35,5		38,5		38,5		38.5		38.5		52		46	
K	PMA17		PMA17		PMA23		PMA23		PMA29		PMA29		PMA36		PMA48	
M	23		23		31		31		31.5		31.5		37.5		45	
N	7/12		9/14		10/18		10/18		14/24		14/24		22/30		25/35	
P	30		31,5		38,5		38,5		45		45		51.5		57	
S	33,5		33,5		43		43		52		52					
T	8/12,5		10/14,5		13,5/18		13,5/18		17/24		17/24					
U	4/15,5		7/15,5		9/15,5		8,5/19,5		9,5/19,5							
	PG13,5		PG16		PG 21		PG21		PG29		PG29		PG36		PG42	

Note : *Dimensions are not contractual and may be subject to modifications.*

⇒ All backshells are compatible with a grommet and a conical ring.

⇒ For cable or PMA tube diameter not included in the above chart please consult us.

Example of rear dimensions calculation
of a shell size 18 connector with a sealing gland
cable clamp backshell without grommet and with a long adaptor

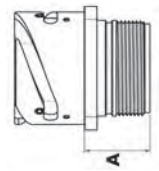
Backshell P/N : UTV JS 18 00 10

Rear dimensions receptacle + backshell :

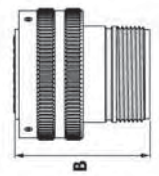
A + F + M = 94,1 mm

Ruggedized Reverse Bayonet Connector

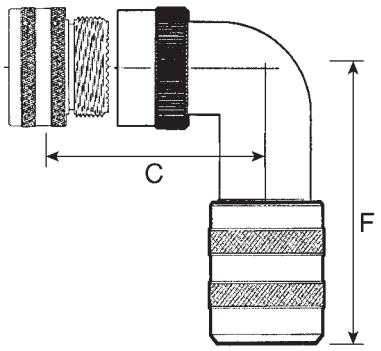
Synoptic of elbow backshells (IP67 applications)

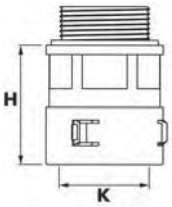


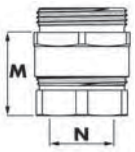
Receptacle

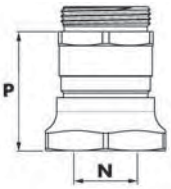


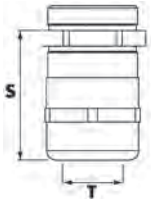
Plug



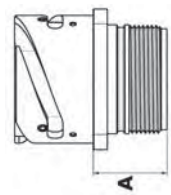




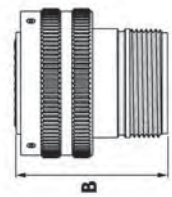




Description	Backshell for PMA tube	Cable clamp with sealing gland	Cable clamp with sealing gland (trumpet shape to avoid cable wound)	Cable clamp with sealing gland for shielding
Part number	UTV SE****00	UTV JE****00	UTV KE****00	UTV TE****00

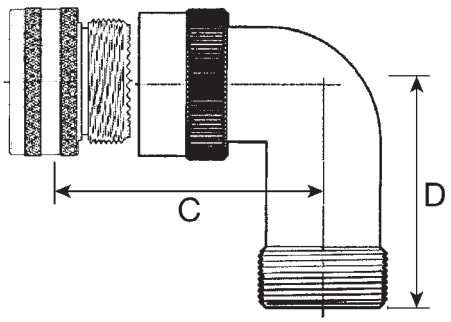


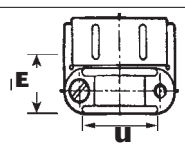
Receptacle



Plug

NB: IP68 backshells are available upon request





Description	Cable clamp
Part number	UTV CE****00

Ruggedized Reverse Bayonet Connector

Dimensions

	Shell 18		Shell 20		Shell 22		Shell 24		Shell 28		Shell 32		Shell 36		Shell 40	
	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet	with grommet	without grommet
	**** = 18-19	**** = 18-00	**** = 20-15	**** = 20-00	**** = 22-14	**** = 22-00	**** = 24-10	**** = 24-00	**** = 28-21	**** = 28-00	**** = 32A13	**** = 32A00	**** = 36A22	**** = 36A00	**** = 40A35 40A60	**** = 40A40
A	22,5		22,5		22,5		22,5		24		24		24		24	
B	45,6		45,6		45,6		45,6		48,1		48,1		48,1		48,1	
C	44		43,5		43,5		46		41							
D	26		25,5		17,5		20		18							
E	28,5		28,5		26		26		23							
F	43		44		44		49		46		59		60			
H	35,5		35,5		38,5		38,5		38,5		38,5		46			
K	PMA 17		PMA 17		PMA23		PMA23		PMA29		PMA36		PMA36			
M	23		23		31		31		31,5		31,5		37.5			
N	7/12		9/14		10/18		10/18		14/24		14/24		22/30			
P	30		31,5		38,5		38,5		45		45		51,5			
S	33,5		33,5		43		43		52		52					
T	8/12,5		10/14,5		13,5/18		13,5/18		17/24		17/24					
U	4/15,5		7/15,5		9/15,5		8,5/19,5		9,5/19,5							
	PG 13,5		PG16		PG 21		PG21		PG29		PG29		PG36		PG42	

Note : *Dimensions are not contractual and may be subject to modifications.*

⟹ All backshells are compatible with a grommet and a conical ring.

⟹ For cable or PMA tube diameter not included in the above chart please consult us.

Ruggedized Reverse Bayonet Connector

Tooling Data

Contact size	Contact type	Contact Ø mm	Contact Part number	Contact Size		Crimp tool	Locator	Extraction tool
				mm²	AWG			
#16	Male	1.6	RM16M23K	0.52 - 1.50	20-16	MH860 (M22520/7-01)	MH86164G	RX2025GE1
#16	Female	1.6	RC16M23K	0.52 - 1.50	20-16	MH860 (M22520/7-01)	MH86164G	RX2025GE1
#16	Male	1.6	RM14M30K	2.50	14	AF8 (M22520/3-1)	TP1142 (selector on 8)	RX2025GE1
#16	Female	1.6	RC14M30K	2.50	14	AF8 (M22520/3-1)	TP1142 (selector on 8)	RX2025GE1
#12	Male	2.4	8291 1437 NA	0.50	20	M317	VGE10077A	5106.021.09.24
#12	Female	2.4	8291 1436 A	0.50	20	M317	VGE10077A	5106.021.09.24
#12	Male	2.4	8291 1435 NA	0.75 - 1.00	18	M317	VGE10077A	5106.021.09.24
#12	Female	2.4	8291 1434 A	0.75 - 1.00	18	M317	VGE10077A	5106.021.09.24
#12	Male	2.4	8291 1463 NA	1.50	16	M317	VGE10077A	5106.021.09.24
#12	Female	2.4	8291 1462 A	1.50	16	M317	VGE10077A	5106.021.09.24
#12	Male	2.4	8291 1465 NA	2.50	14	M317	VGE10077A	5106.021.09.24
#12	Female	2.4	8291 1464 A	2.50	14	M317	VGE10077A	5106.021.09.24
#12	Male	2.4	8291 1437 NK	0.50	20	M317	VGE10077A	5106.021.09.24
#12	Female	2.4	8291 1436 K	0.50	20	M317	VGE10077A	5106.021.09.24
#12	Male	2.4	8291 1435 NK	0.75 - 100	18	M317	VGE10077A	5106.021.09.24
#12	Female	2.4	8291 1434 K	0.75 - 100	18	M317	VGE10077A	5106.021.09.24
#12	Male	2.4	8291 1463 NK	1.50	16	M317	VGE10077A	5106.021.09.24
#12	Female	2.4	8291 1462 K	1.50	16	M317	VGE10077A	5106.021.09.24
#12	Male	2.4	8291 1465 NK	2.50	14	M317	VGE10077A	5106.021.09.24
#12	Female	2.4	8291 1464 K	2.50	14	M317	VGE10077A	5106.021.09.24
#8	Male	3.6	8291 3601 A	1.50	16	M317	VGE10078A	5106.021.09.36
#8	Female	3.6	8291 3600 A	1.50	16	M317	VGE10078A	5106.021.09.36
#8	Male	3.6	8291 3603 A	2.50	14	M317	VGE10078A	5106.021.09.36
#8	Female	3.6	8291 3602 A	2.50	14	M317	VGE10078A	5106.021.09.36
#8	Male	3.6	8291 3605 A	4.00	12	M317	VGE10078A	5106.021.09.36
#8	Female	3.6	8291 3604 A	4.00	12	M317	VGE10078A	5106.021.09.36
#8	Male	3.6	8291 3607 A	6.00	10	M317	VGE10078A	5106.021.09.36
#8	Female	3.6	8291 3606 A	6.00	10	M317	VGE10078A	5106.021.09.36

For detailed information on crimp tooling: see crimp tooling section.

Ruggedized Reverse Bayonet Connector

Notes