



## EN3660 QUALIFIED BACKSHELLS

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HIGH PERFORMANCE BACKSHELLS FOR EN2997 AND EN3645 CONNECTORS



## VERSATILE PRODUCT OFFERING

- Compatible with all defined shell sizes
- Available in a variety of materials and plating finishes

## HIGH RELIABILITY

- Provides strain-relief and cable support to help prevent bending or overflexing
- Individual or overall screening against EMI/RFI interference
- Helps protect the connector and cable when combined with a heat shrinkable boot by preventing water and dirt ingress into the harness system

## EASY INSTALLATION

- Simple and fast termination solutions

## TARGET MARKETS

- Commercial Aerospace
- Military Aerospace
- Ground Defense
- Marine
- Space



## For High-Performance Sealing and Strain Relief, the Ideal Mate for a Connector in a Wiring Application is a TE Backshell

TE Connectivity (TE) supplies a comprehensive range of circular backshells and accessories fully qualified to EN3660 that offer harness strain relief for harsh environments, environmental sealing with features for heat shrinkable boots and outlet connections for screen termination bands. These products help manage electromagnetic interference (EMI)/radio frequency interference (RFI) in order to meet the requirements of many military and commercial aerospace applications.

## Rugged Designs that Save Weight

When it comes to taming harsh environments, TE offers a broad array of shell styles, materials, and finishes to help meet the requirements of a program.

These highly durable circular backshells are time tested for reliability in some of the toughest environments

## Solve Tough Application Challenges with TE

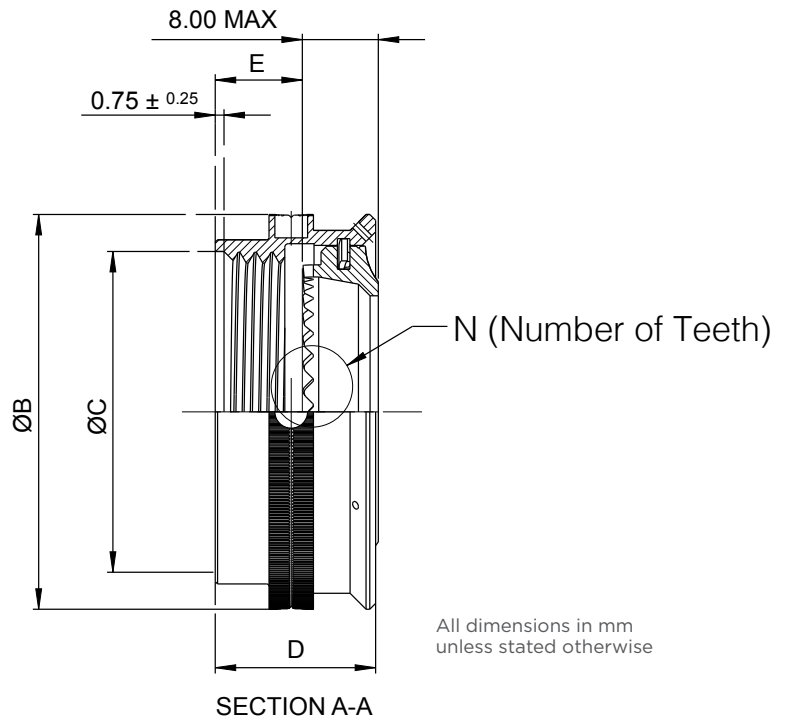
We work closely with customers to help meet their most demanding requirements for some of the world's toughest applications. Whether for commercial or military aerospace applications, TE designs and manufactures circular backshells and accessories to be ruggedly reliable, easy to install, lighter, and with more options. Various materials and configurations help maximize performance, reliability, and efficiency.

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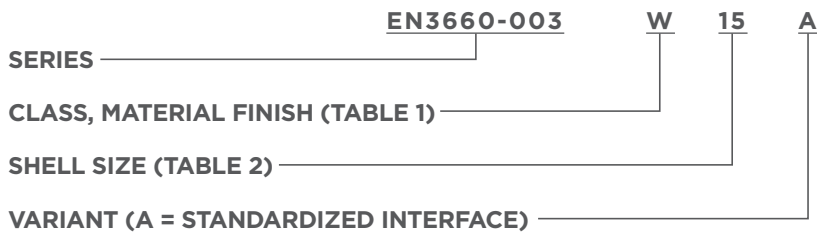
# EN3660-003 Grommet Nut

Interface Compatible with EN2997



**TABLE 1**

Class	Material/Finish
F/N	Aluminum/Nickel Plated
K	Stainless Steel/Passivated
W	Aluminum/Olive Drab Cadmium Plated



**TABLE 2**

Shell Size	Thread (Inches)	N	Ø B +0.00/-0.10	Ø C ± 0.20	D +0.00/-0.10	E ± 0.1
08	1/2-20 UNF	12	19.27	13.18	13.72	7.45
10	5/8-24 UNEF	15	22.27	16.32	13.72	7.45
12	3/4-20 UNEF	21	25.27	19.49	13.72	7.45
14	7/8-20 UNEF	24	28.47	22.67	13.72	7.45
16	1-20 UNEF	30	31.47	25.84	13.72	7.45
18	1 1/16-18 UNEF	33	33.77	27.44	13.72	7.45
20	1 3/16-18 UNEF	36	37.07	30.62	13.72	7.45
22	1 5/16-18 UNEF	39	40.47	33.79	13.72	7.45
24	1 7/16-18 UNEF	42	43.87	36.97	13.72	7.45
28	1 3/4-18 UNS	54	50.35	44.89	16.30	7.45

# EN3660-004 Cable Outlet, Straight, Unsealed with Clamp Strain Relief

Interface Compatible with EN2997

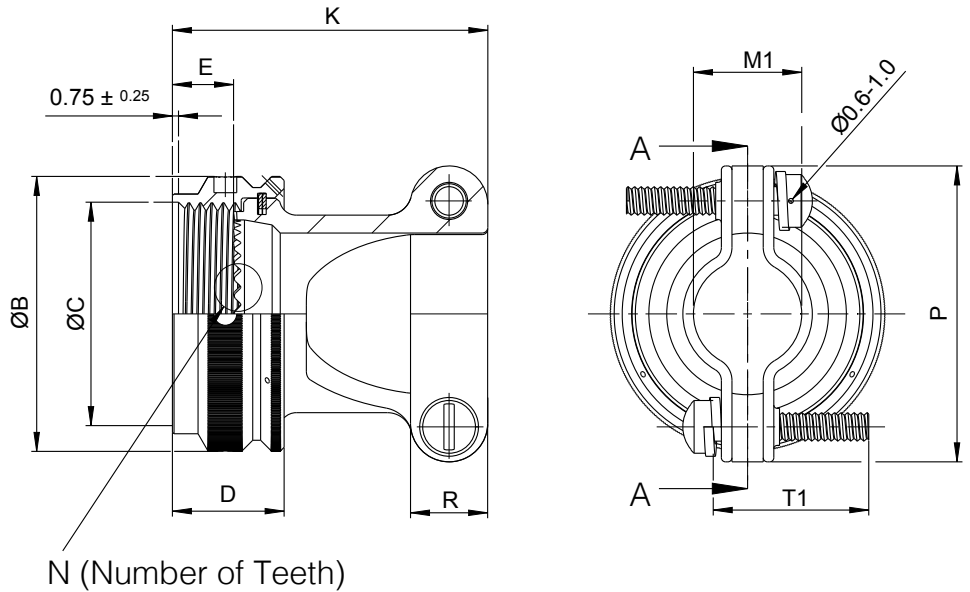


TABLE 1

Class	Material/Finish
F/N	Aluminum/Nickel Plated
K	Stainless Steel/Passivated
W	Aluminum/Olive Drab Cadmium Plated

All dimensions in mm unless stated otherwise

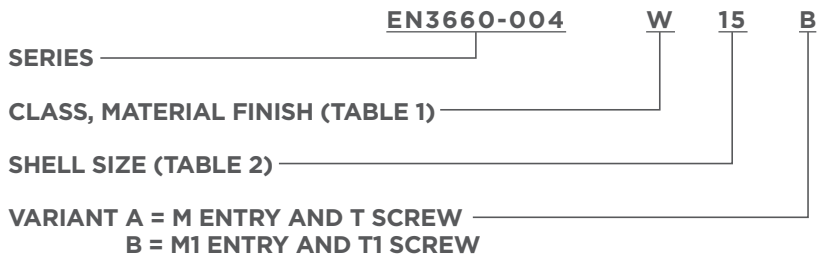


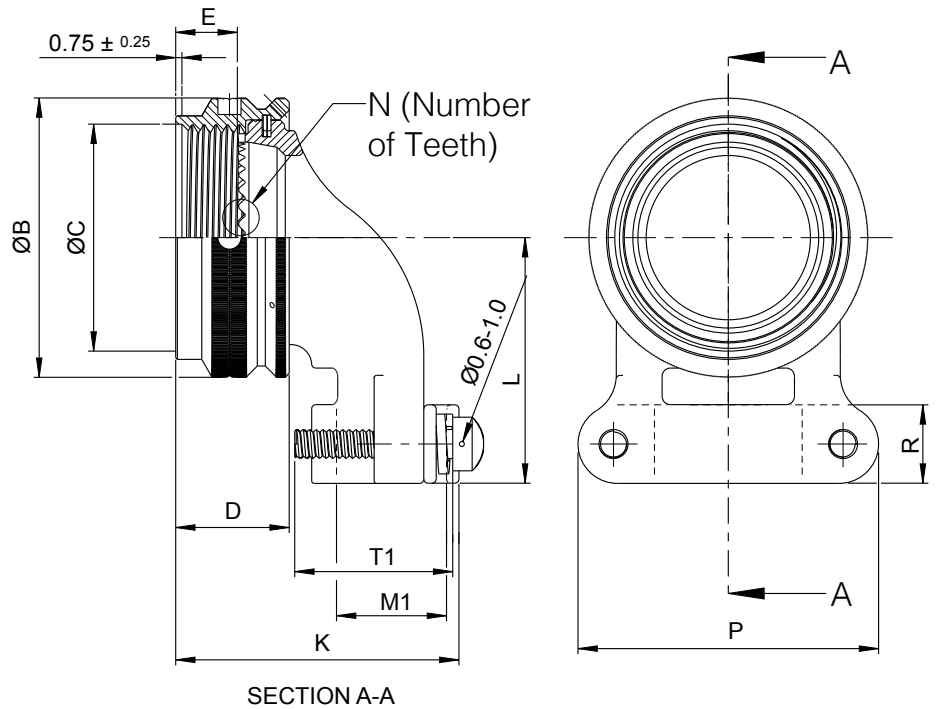
TABLE 2

Shell Size	Thread (Inches)	N	Ø B +0.00/-0.10	Ø C ± 0.20	D +0.00/-0.10	E ± 0.1	K ± 1.57	P ± 0.1	M1 Min	M1 Max	T1
08	1/2-20 UNF	12	19.27	13.18	13.72	7.45	22.61	18.54	3.2	5.2	12.7
10	5/8-24 UNEF	15	22.27	16.32	13.72	7.45	25.4	20.54	4.8	7.3	12.7
12	3/4-20 UNEF	21	25.27	19.49	13.72	7.45	28.58	24.54	7.4	10.6	15.9
14	7/8-20 UNEF	24	28.47	22.67	13.72	7.45	28.58	26.04	9.0	12.0	15.9
16	1-20 UNEF	30	31.47	25.84	13.72	7.45	31.75	32.94	12.8	16.0	15.9
18	1 1/16-18 UNEF	33	33.77	27.44	13.72	7.45	38.1	36.34	13.2	18.0	19.1
20	1 3/16-18 UNEF	36	37.07	30.62	13.72	7.45	41.28	38.94	15.0	21.0	22.3
22	1 5/16-18 UNEF	39	40.47	33.79	13.72	7.45	43.18	41.44	16.3	24.3	25.4
24	1 7/16-18 UNEF	42	43.87	36.97	13.72	7.45	47.62	44.54	18.0	27.5	28.6
28	1 3/4-18 UNS	54	50.35	44.89	16.30	7.45	55.55	50.74	19.0	30.0	31.8

Note  
Table 2, M1 and T1 dimensions shown are only for variant B  
Variant A, M and T dimensions are compliant to EN3660

# EN3660-005 Cable Outlet, 90°, Unsealed with Clamp Strain Relief

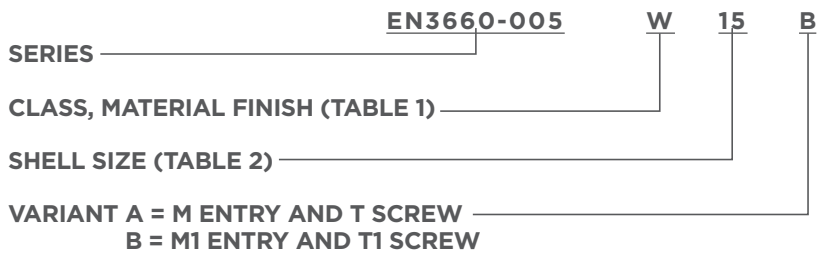
Interface Compatible with EN2997



**TABLE 1**

Class	Material/Finish
F/N	Aluminum/Nickel Plated
K	Stainless Steel/Passivated
W	Aluminum/Olive Drab Cadmium Plated

All dimensions in mm unless stated otherwise



**TABLE 2**

Shell Size	Thread (Inches)	N	Ø B +0.00/-0.10	Ø C ± 0.20	D +0.00/-0.10	E ± 0.1	K ± 1.57	P ± 0.1	M1 Min	M1 Max	T1
08	1/2-20 UNF	12	19.27	13.18	13.72	7.45	22.61	18.54	3.2	5.2	12.7
10	5/8-24 UNEF	15	22.27	16.32	13.72	7.45	25.4	20.54	4.8	7.3	12.7
12	3/4-20 UNEF	21	25.27	19.49	13.72	7.45	28.58	24.54	7.4	10.6	15.9
14	7/8-20 UNEF	24	28.47	22.67	13.72	7.45	28.58	26.04	9.0	12.0	15.9
16	1-20 UNEF	30	31.47	25.84	13.72	7.45	31.75	32.94	12.8	16.0	15.9
18	1 1/16-18 UNEF	33	33.77	27.44	13.72	7.45	38.1	36.34	13.2	18.0	19.1
20	1 3/16-18 UNEF	36	37.07	30.62	13.72	7.45	41.28	38.94	15.0	21.0	22.3
22	1 5/16-18 UNEF	39	40.47	33.79	13.72	7.45	43.18	41.44	16.3	24.3	25.4
24	1 7/16-18 UNEF	42	43.87	36.97	13.72	7.45	47.62	44.54	18.0	27.5	28.6
28	1 3/4-18 UNS	54	50.35	44.89	16.30	7.45	55.55	50.74	19.0	30.0	31.8

Note  
 Table 2, M1 and T1 dimensions shown are only for variant B  
 Variant A, M and T dimensions are compliant to EN3660

# EN3660-062 Cable Outlet, 90°, for Heat Shrink Boot, Shielded, Sealed and Self-Locking

Interface Compatible with EN3645

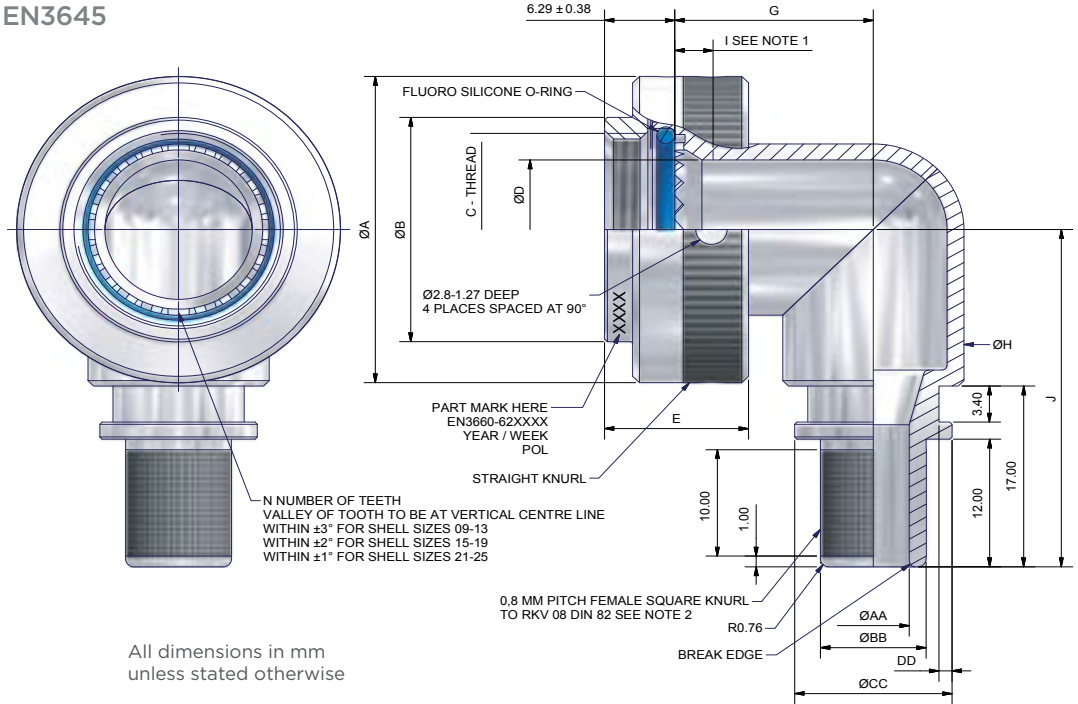


TABLE 1

Class	Material/Finish
F/N	Aluminum/Nickel Plated
K	Stainless Steel/Passivated
W	Aluminum/Olive Drab Cadmium Plated

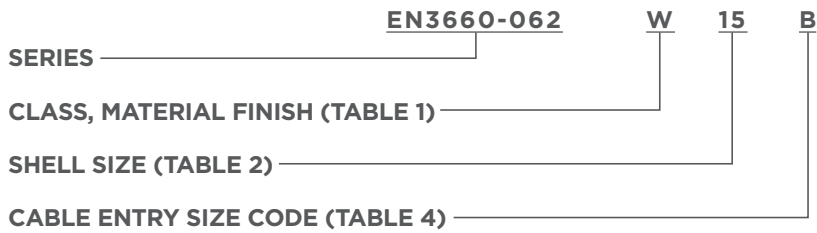


TABLE 4

Cable Entry Size Code	AA ± 0.1	BB ± 0.1	CC ± 0.3	DD + 0.2/-0
A	4.7	7.7	12.2	1.12
B	6.4	9.4	14.0	1.12
C	7.9	11.0	15.5	1.12
D	9.5	12.6	17.1	1.12
E	11.1	14.1	18.7	1.12
F	12.7	15.7	20.3	1.12
G	15.9	18.9	23.5	1.12
H	19.1	22.0	26.7	1.12
J	22.2	25.2	29.8	1.75
K	25.5	28.4	33.0	1.75
L	28.6	31.5	36.2	1.75
M	31.8	34.7	39.4	1.75

TABLE 2

A Max	B Max	C Thread	D Min	E Max	G Max	H Max	J Max	I Min	N	Shell Size	Maximum Entry Size
21.79	15.24	M12x1.0-6H	6.70	16.76	14.85	10.20	31.05	2.90	12	09	D
24.99	18.21	M15x1.0-6H	9.90	16.76	16.60	13.70	34.21	2.90	16	11	F
29.39	21.18	M18x1.0-6H	12.80	16.76	18.15	16.80	37.95	2.90	20	13	H
32.49	25.14	M22x1.0-6H	16.00	16.76	19.50	17.90	39.65	2.90	24	15	J
35.71	28.12	M25x1.0-6H	19.20	16.76	21.10	21.20	41.25	2.90	28	17	K
38.50	31.09	M28x1.0-6H	21.40	16.76	22.10	23.20	43.75	2.90	32	19	K
41.70	34.04	M31x1.0-6H	24.60	16.76	23.60	26.20	46.91	2.90	36	21	L
44.91	36.90	M34x1.0-6H	27.70	16.76	25.20	29.40	50.10	2.90	40	23	M
47.98	39.88	M37x1.0-6H	30.90	16.76	26.90	32.60	53.26	1.70	44	25	M

Notes: 1 - Minimum penetration of ØD from front of serrations. 2 - Please note there may be crossover dependent on diameter and pitch. Measurements shown in mm.



# EN3660-063 Cable Outlet, Straight, for Heat Shrink Boot, Shielded, Sealed and Self-Locking

Interface Compatible with EN3645

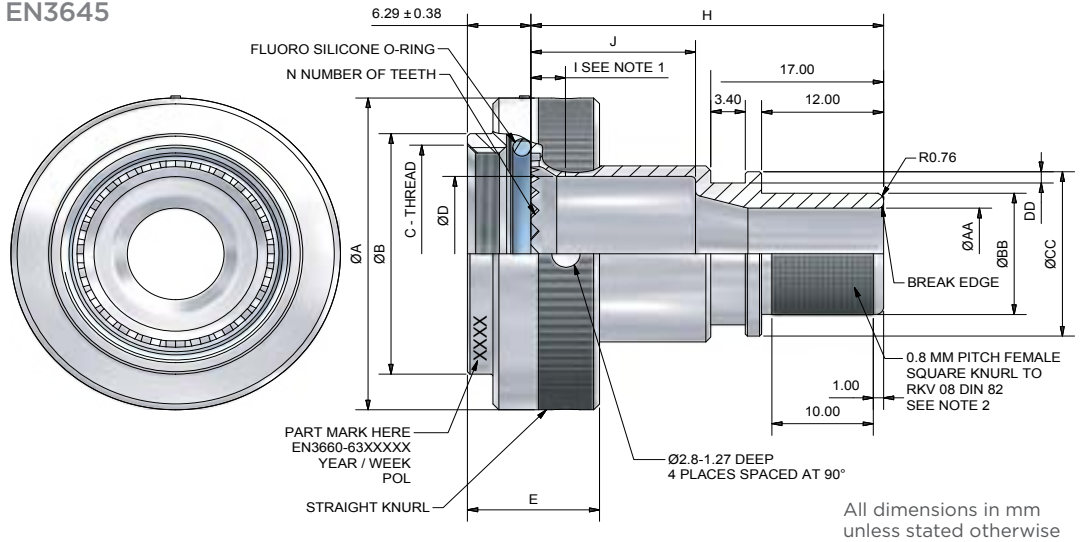


TABLE 1

Class	Material/Finish
F/N	Aluminum/Nickel Plated
K	Stainless Steel/Passivated
W	Aluminum/Olive Drab Cadmium Plated

TABLE 3

Length Code	Wiring Chamber	H Max	J
A		27.1	8.2
B		35.1	16.2
C		40.1	21.2
D		50.1	31.2

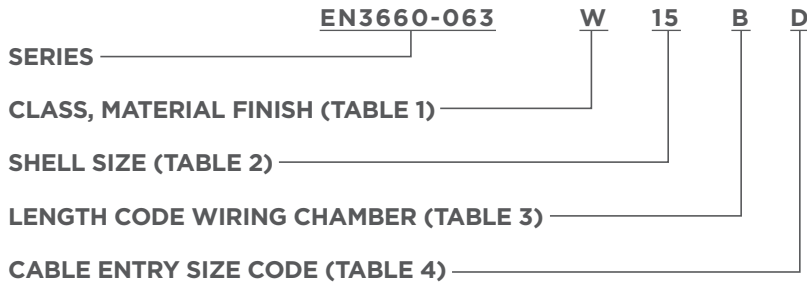


TABLE 4

Cable Entry Size Code	AA ± 0.1	BB ± 0.1	CC ± 0.3	DD + 0.2/-0
A	4.7	7.7	12.2	1.12
B	6.4	9.4	14.0	1.12
C	7.9	11.0	15.5	1.12
D	9.5	12.6	17.1	1.12
E	11.1	14.1	18.7	1.12
F	12.7	15.7	20.3	1.12
G	15.9	18.9	23.5	1.12
H	19.1	22.0	26.7	1.12
J	22.2	25.2	29.8	1.75
K	25.5	28.4	33.0	1.75
L	28.6	31.5	36.2	1.75
M	31.8	34.7	39.4	1.75

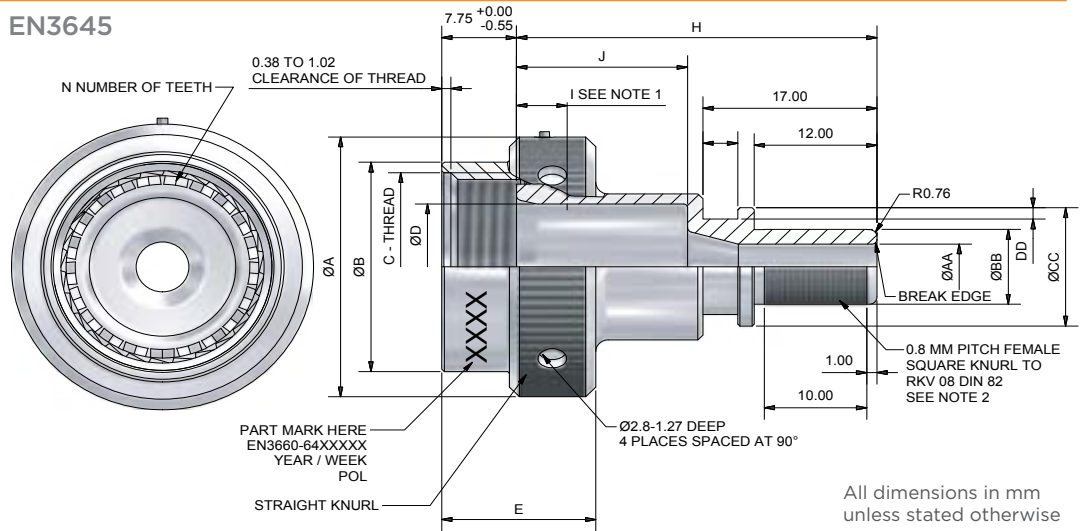
TABLE 2

A Max	B Max	C Thread	D Min	E Max	I Min	N	Shell Size	Maximum Entry Size
21.79	15.24	M12x1.0-6H	6.70	16.76	2.90	12	09	D
24.99	18.21	M15x1.0-6H	9.90	16.76	2.90	16	11	F
29.39	21.18	M18x1.0-6H	12.80	16.76	2.90	20	13	H
32.49	25.14	M22x1.0-6H	16.00	16.76	2.90	24	15	J
35.71	28.12	M25x1.0-6H	19.20	16.76	2.90	28	17	K
38.50	31.09	M28x1.0-6H	21.40	16.76	2.90	32	19	K
41.70	34.04	M31x1.0-6H	24.60	16.76	2.90	36	21	L
44.91	36.90	M34x1.0-6H	27.70	16.76	2.90	40	23	M
47.98	39.88	M37x1.0-6H	30.90	16.76	1.70	44	25	M

Notes: 1 - Minimum penetration of ØD from front of serrations. 2 - Please note there may be crossover dependent on diameter and pitch. Measurements shown in mm.

# EN3660-064 Cable Outlet, Straight, for Heat Shrink Boot, Shielded, Sealed and Self-Locking

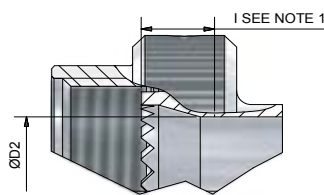
Interface Compatible with EN3645



**TABLE 1**

Class	Material/Finish
F	Aluminum/Nickel Plated
K	Stainless Steel/Passivated
KE	Stainless Steel/Passivated
W	Aluminum/Olive Drab Cadmium Plated

**TABLE 2**

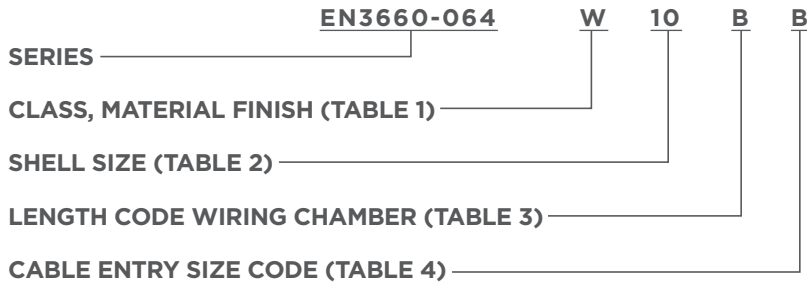


**TABLE 3**

Length Code Wiring Chamber	H Max	J
A	27.5	8.57
B	35.5	16.57
C	40.5	21.6
D	50.5	31.6

**TABLE 4**

Cable Entry Size Code	AA ± 0.1	BB ± 0.1	CC ± 0.3	DD + 0.2/-0
A	4.7	7.7	12.2	1.12
B	6.4	9.4	14.0	1.12
C	7.9	11.0	15.5	1.12
D	9.5	12.6	17.1	1.12
E	11.1	14.1	18.7	1.12
F	12.7	15.7	20.3	1.12
G	15.9	18.9	23.5	1.12
H	19.1	22.0	26.7	1.12
J	22.2	25.2	29.8	1.75
K	25.5	28.4	33.0	1.75
L	28.6	31.5	36.2	1.75
M	31.8	34.7	39.4	1.75



**TABLE 2**

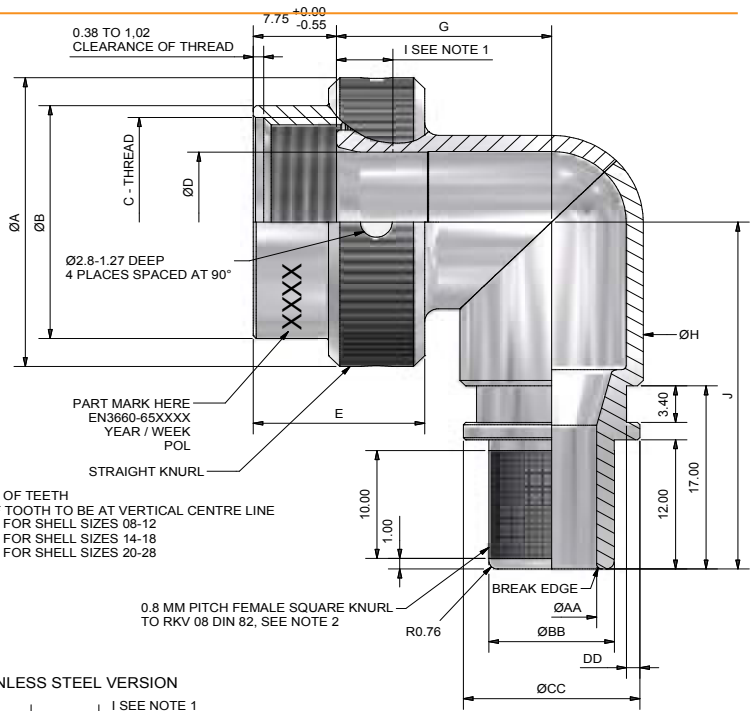
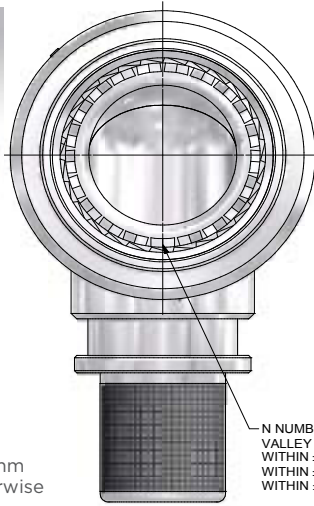
Shell Size	A Max	B Max	C Thread	D + 0/-0.25	D2 + 0/-0.25	E Max	I Min	N	Maximum Entry Size
08	22.48	15.67	1/2-20 UNF	6.86	6.68 see note 3	15.30	4.95	12	B
10	25.65	18.64	5/8-24 UNEF	9.53	9.35 see note 3	15.30	4.95	15	D
12	28.83	21.79	3/4-20 UNEF	12.98	12.62 see note 3	15.30	4.95	21	F
14	32.00	24.99	7/8-20 UNEF	14.86	14.86	15.30	4.95	24	G
16	35.18	28.24	1-20 UNEF	18.03	17.73 see note 3	15.30	4.95	30	H
18	38.55	30.94	1 1/16-18 UNEF	20.04	20.04	15.30	4.95	33	H
20	41.53	34.16	1 3/16-18 UNEF	23.22	23.22	15.30	4.95	36	J
22	44.70	37.29	1 5/16-18 UNEF	26.39	26.39	15.30	4.95	39	K
24	47.89	40.46	1 7/16-18 UNEF	29.31	29.31	15.30	4.95	42	L
28	54.23	49.45	1 3/4-18 UNS	35.28	35.28	15.30	4.95	54	M

Notes: 1 - Minimum penetration of ØD from front of serrations. 2 - Please note there may be crossover dependent on diameter and pitch. Measurements shown in mm. 3 - Apply tolerance +0.18/-0



# EN3660-065 Cable Outlet, 90°, for Heat Shrink Boot, Shielded, Sealed and Self-Locking

Interface Compatible with EN2997



All dimensions in mm unless stated otherwise

TABLE 1

Class	Material/Finish
F	Aluminum/Nickel Plated
K	Stainless Steel/Passivated
KE	Stainless Steel/Passivated
W	Aluminum/Olive Drab Cadmium Plated

STAINLESS STEEL VERSION

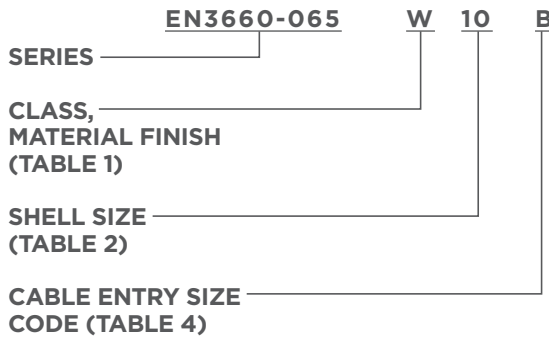
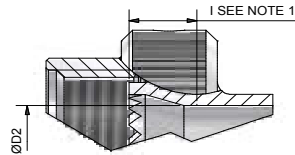


TABLE 4

Cable Entry Size Code	AA ± 0.1	BB ± 0.1	CC ± 0.3	DD + 0.2/-0
A	4.7	7.7	12.2	1.12
B	6.4	9.4	14.0	1.12
C	7.9	11.0	15.5	1.12
D	9.5	12.6	17.1	1.12
E	11.1	14.1	18.7	1.12
F	12.7	15.7	20.3	1.12
G	15.9	18.9	23.5	1.12
H	19.1	22.0	26.7	1.12
J	22.2	25.2	29.8	1.75
K	25.5	28.4	33.0	1.75
L	28.6	31.5	36.2	1.75
M	31.8	34.7	39.4	1.75

TABLE 2

Shell Size	A Max	B Max	C Thread	D + 0/-0.25	D2 + 0/-0.25	E Max	G Max	H Max	J Max	I Min	N	Maximum Entry Size
08	22.48	15.67	1/2-20 UNF	6.86	6.68 see note 3	15.30	16.10	10.20	31.05	4.95	12	B
10	25.65	18.64	5/8-24 UNEF	9.53	9.35 see note 3	15.30	17.90	13.70	34.21	4.95	15	D
12	28.83	21.79	3/4-20 UNEF	12.98	12.62 see note 3	15.30	19.40	16.80	37.95	4.95	21	F
14	32.00	24.99	7/8-20 UNEF	14.86	14.86	15.30	20.00	17.90	39.65	4.95	24	G
16	35.18	28.24	1-20 UNEF	18.03	17.73 see note 3	15.30	21.60	21.20	41.25	4.95	30	H
18	38.55	30.94	1 1/16-18 UNEF	20.04	20.04	15.30	22.60	23.20	43.75	4.95	33	H
20	41.53	34.16	1 3/16-18 UNEF	23.22	23.22	15.30	24.10	26.20	46.91	4.95	36	J
22	44.70	37.29	1 5/16-18 UNEF	26.39	26.39	15.30	25.70	29.40	50.10	4.95	39	K
24	47.89	40.46	1 7/16-18 UNEF	29.31	29.31	15.30	27.40	32.60	53.29	4.95	42	L
28	54.23	49.45	1 3/4-18 UNS	35.28	35.28	15.30	30.90	39.60	56.46	4.95	54	M

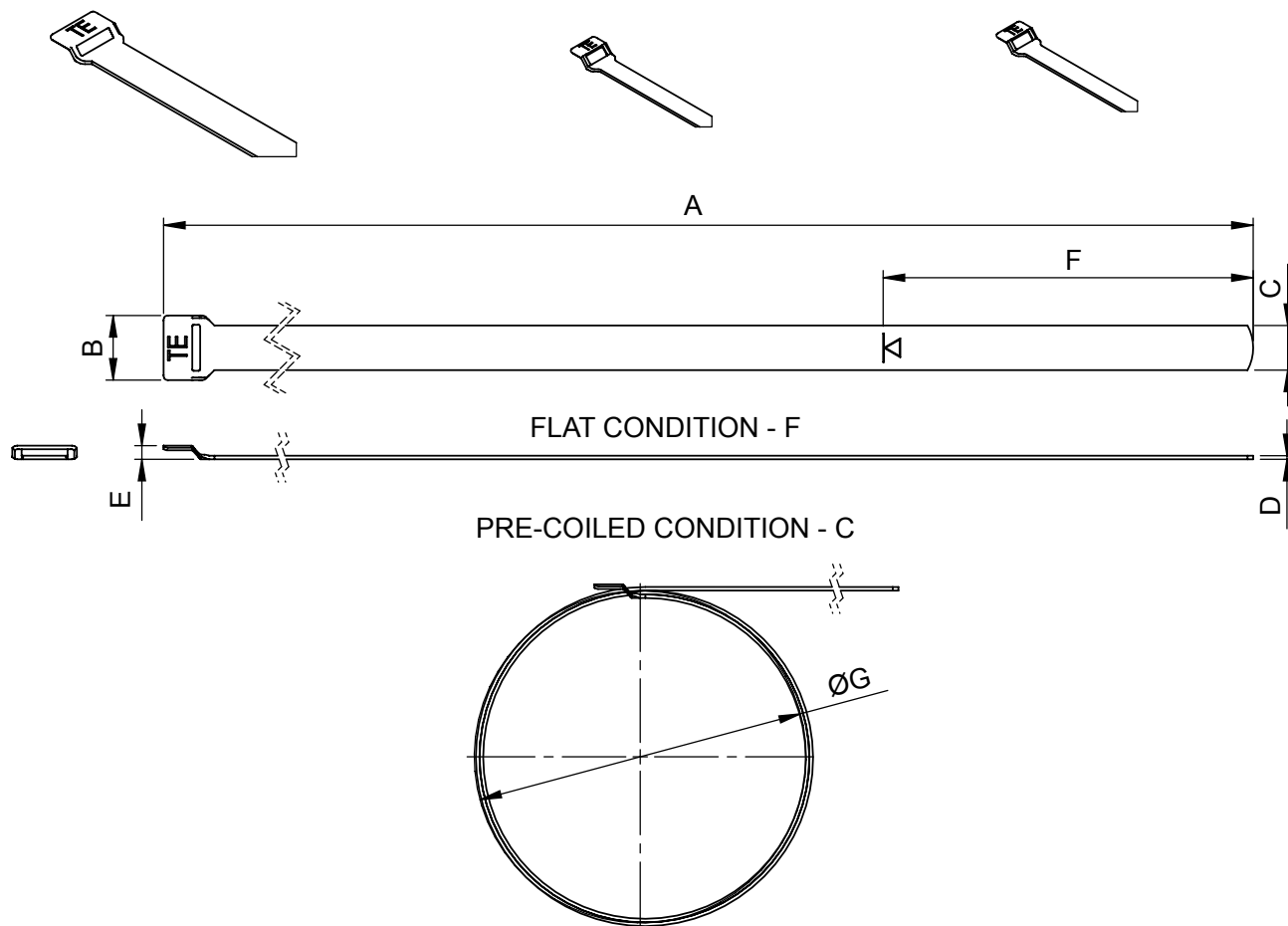
Notes: 1 - Minimum penetration of ØD or ØD2 from front of serrations. 2 - Please note there may be crossover dependent on diameter and pitch. 3 - Apply tolerance of +0, 18/-0. Measurements shown in mm.

# EN3660-033 Stainless Steel Screen Termination Band

EN3660-033AF - FLAT  
EN3660-033AC - PRE-COILED  
ONE-STEP  
STANDARD BAND

EN3660-033CF - FLAT  
EN3660-033CC - PRE-COILED  
ONE-STEP  
MICRO BAND

EN3660-033DF - FLAT  
EN3660-033DC - PRE-COILED  
EXTENDED ONE-STEP  
MICRO BAND



Variant	A	B ± 0.76	C ± 0.25	D ± 0.08	E ± 0.38	F Ref	ØG Max	Mass/100 [g] Max	Tool Req.
A	360.42 363.47	8.89	6.22	0.48	1.88	52.00	47.80	1060	M81306/1-01
B	204.72 207.77	4.95	2.92	0.38	1.35	52.00	22.40	250	M81306/1-02
C	360.42 363.47	4.95	2.92	0.38	1.35	52.00	47.80	425	M81306/1-02

Measurements shown in mm

## Notes

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Empower Engineers to Solve Problems, Moving the World Forward.

AMP | AGASTAT | CII | DEUTSCH | DRI | HARTMAN | KILOVAC  
MICRODOT | NANONICS | POLAMCO | Raychem | SEACON

## CONNECT WITH US

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### EN3660 QUALIFIED BACKSHELLS

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