MB-K Series Waterproof Connectors

1. Overview

1.1 Plug


MB-TGG


MB-TGG(Z)


MB-THG


MB-THG(Z)

1.2 Receptacle


MB-ZGG


MB-ZEG


MB-ZEG
(Elbow)


MB-DHG


MB-DHG(Z)


MB-ZHG

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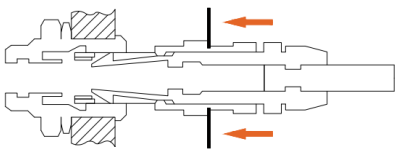
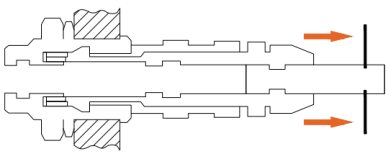
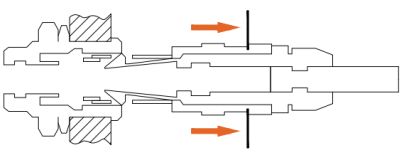
2. Push-Pull Self-Latching Connection System

Drawing	Specification
	**Engaging** The self-latching system allows the connector to be mated by simply pushing the plug into the receptacle.
	**Latched** Once firmly latched, the connection cannot be broken by pulling on the cable or any other component part other than the outer release sleeve.
	**Disengaging** When required, the connector is disengaged by a single axial pull on the outer release sleeve. This first disengage the latches and then withdraws the plug from the socket.

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3. Main Features

- Security of the push-pull latching system
- Watertight connection (IP 66 ~ IP 68)
- Multipole types 2 to 48 contacts
- Solder, crimp or print (straight or elbow) contacts
- Keying system («G» key standard) for connector alignment
- Multiple key options to avoid cross mating of similar connectors
- 360° screening for full EMC shielding
- High packing density for space savings
- Rugged housing for extreme working conditions
- Available customized cable assembly solution

4. Technical Characteristics

4.1 Mechanical and Climatical

Characteristics	Value	Standard
Endurance	>5000 cycles	IEC 60512-5 test 9a
Humidity	Up to 95% at 60°C	
Temperature Range	-40°C to +150°C	
Resistance to Vibration	10-2000Hz, 15g	IEC 60512-4 test 6d
Shock Resistance	100g, 6ms	IEC 60512-4 test 6c
Salt Spray Corrosion Test	>96h	IEC 60512-6 test 11f
Protection Index (mated)	IP 68	IEC 60529
Climatical category	55/175/21	IEC 60068-1

4.2 Electrical

Characteristics		Value	Standard
Shielding Efficiency	at 10 MHZ	>95 dB	IEC 60619-1-3
	at 1 GHZ	>80 dB	IEC 60619-1-3

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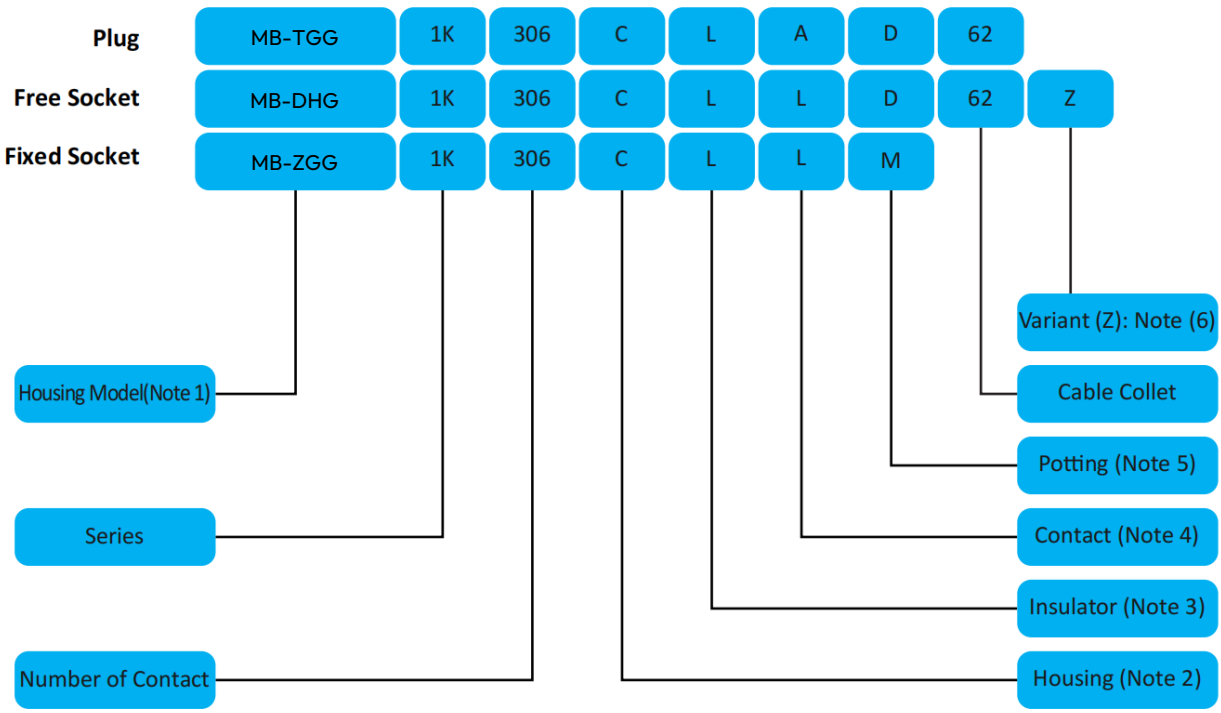
5. Part Numbering System



***Note 1:**

To place an order for a chocolate design, please use the identifier MB12

MB-TGG.1K.306.CLAD62Z = 1K 6 pins straight plug, G key (alpha=0), pearl chrome plated brass housing, PPS insulator, male soldering contact type, 6.0 mm cable collet

MB12-TGG.1K.306.CLAD62Z = 1K 6 pins straight plug, G key (alpha=0), pearl chrome plated brass housing, PPS insulator, male soldering contact type, 6.0 mm cable collet, nut for fitting bend relief, chocolate out shell design

***Note 2:**

C=Brass plated chrome
K=Brass plated black chrome (At the end of the model number, adding 'R' indicates a red dot, while adding 'W' indicates a white dot.")
N=Brass plated nickel
T=Stainless Steel
L=Aluminum alloy anodized

***Note 3:**

L=PPS
T=PTFE
P=PEEK

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***Note 4:**

A=Male soldering contacts
L=Female soldering contacts
D=Male straight PCB contacts
N=Female straight PCB contacts
W=Male 90° PCB contacts
V=Female 90° PCB contacts

***Note 5:**

W=White silicone sealing
T=Transparent epoxy resin seal

***Note 6:**

To request a model that includes a nut for fitting the bend relief, designate the variant position with the letter "Z" and include the bend relief part numbers MB-GMA.

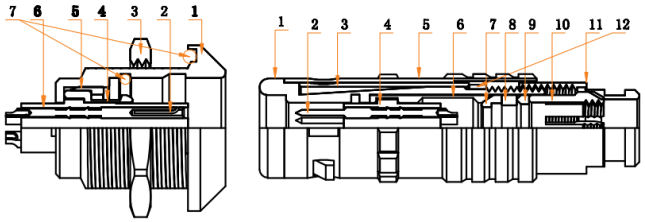
Bend relief color:

N=Black G=Gray A=Blue R=Red J=Yellow V=Green

6. Part Section Showing Internal Components

Fixed Receptacle

① Outer Shell
② Insulator
③ Hexagonal Nut
④ Retaining Ring
⑤ Earthing Crown
⑥ Female Contact
⑦ O-ring



Straight Plug

① Outer Shell
② Male Contact
③ Latch Sleeve
④ Insulator
⑤ Inner Shell
⑥ Split Insert Carrier
⑦ Earthing Cone
⑧ Gasket
⑨ Washer
⑩ Collet
⑪ Collet Nut
⑫ Retaining Ring

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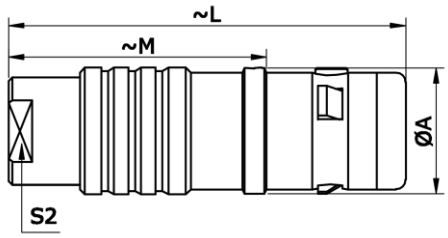
7. Product Size

MB-TGG

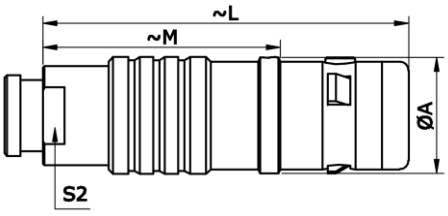
Waterproof cable mount straight plug, key (G) or keys (A... L), cable collet



Reference		Dimensions(mm)			
Model	Series	A	L	M	S2
MB-TGG	0K	11.0	34.0	23.0	7.0
MB-TGG	1K	13 .0	42.0	28.0	9.0
MB-TGG	2K	16.0	52.0	36.0	12.0
MB-TGG	3K	19.0	60.0	40.0	15.0

MB-TGG

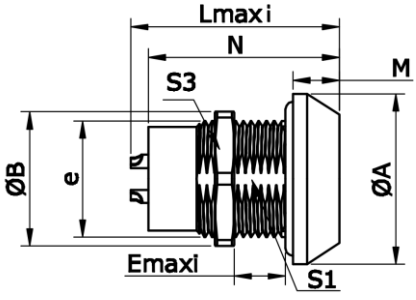
Waterproof cable mount straight plug, key (G) or keys (A... L), cable collet and nut for fitting a bend relief



Reference		Dimensions(mm)			
Model	Series	A	L	M	S2
MB-TGG	0K	11.0	34.0	23.0	7.0
MB-TGG	1K	13 .0	42.0	28.0	9.0
MB-TGG	2K	16.0	52.0	36.0	12.0
MB-TGG	3K	19.0	60.0	40.0	15.0

MB-ZGG

Panel mount fixed receptacle, nut fixing, key(G) or keys (A... L), solder or PCB printed type



Reference		Dimensions(mm)								
Model	Series	A	B	e	E	L	M	N	S1	S3
MB-ZGG	0K	18.0	19.2	M14 *1.0	6	21.7	4.0	20.0	12.5	17
MB-ZGG	1K	20.0	21.5	M16*1.0	9	27.0	4.5	25.1	14.5	19
MB-ZGG	2K	25.0	27.0	M20*1.0	9	30.7	5.0	28.6	18.5	24
MB-ZGG	3K	31.0	34.0	M24*1.0	11	36.2	6.0	33.6	22.5	30

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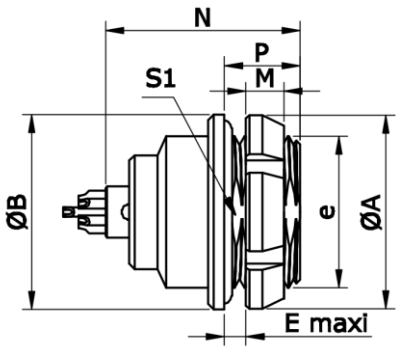
MB-ZEG

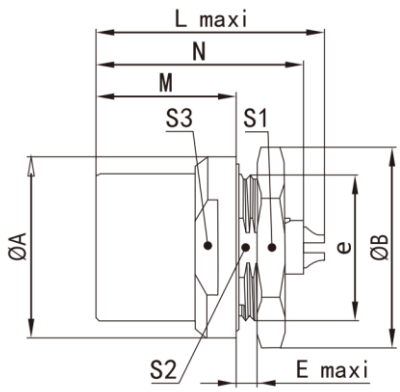
Panel mount fixed receptacle, nut fixing, key (G) or keys (A... L), solder or PCB printed type (back panel mounting)



Reference		Dimensions(mm)							
Model	Series	A	B	e	E	M	N	P	S1
MB-ZEG	0K	18.0	18.0	M14*1.0	3.4	3.5	20.1	7.0	12.5
MB-ZEG	1K	20.0	20.0	M16*1.0	6.2	3.5	25.1	10.0	14.5
MB-ZEG	2K	25.0	25.0	M20*1.0	5.0	3.5	28.6	10.0	18.5
MB-ZEG	3K	30.0	31.0	M24*1.0	7.5	4.5	33.6	12.0	22.5

MB-ZHG

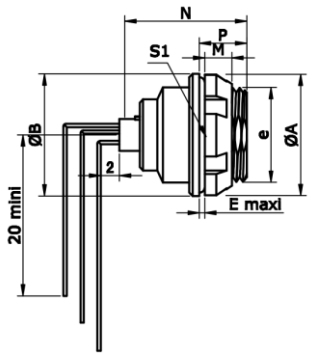
Fixed socket, nut fixing, key (G) or keys (A...), protruding shell



Reference		Dimensions(mm)									
Model	Series	A	B	e	E	L	M	N	S1	S2	S3
MB-ZHG	0K	18	19.2	M14*10	1.5	21.7	10.5	20.1	15	12.5	17
MB-ZHG	1K	20	21.5	M16*1.0	1.5	27.0	15.5	25.1	17	14.5	19
MB-ZHG	2K	25	27.0	M20*1.0	1.5	30.7	17.0	27.1	20	18.5	24

MB-ZEG (Elbow)

Panel mount fixed receptacle, nut fixing, key (G) or keys (A... L), elbow 90°contact for printed circuit (back panel mounting)



Reference		Dimensions(mm)							
Model	Series	A	B	e	E	M	N	P	S1
MB-ZEG	0K	18.0	18.0	M14*1.0	3.4	3.5	20.1	7.0	12.5
MB-ZEG	1K	20.0	20.0	M16*1.0	6.2	3.5	25.1	10.0	14.5
MB-ZEG	2K	25.0	25.0	M20*1.0	5.0	3.5	28.6	10.0	18.5
MB-ZEG	3K	30.0	31.0	M24*1.0	7.5	4.5	33.6	12.0	22.5

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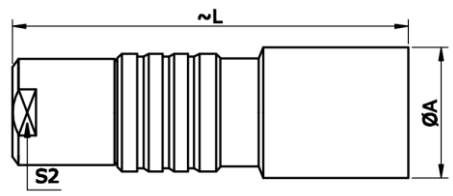
MB-DHG

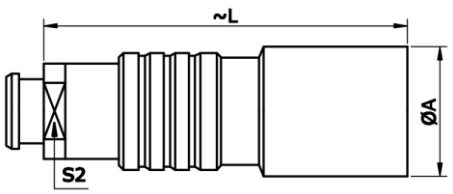
Free cable mounted receptacles, key (G) or keys (A... L), cable collet



Reference		Dimensions(mm)		
Model	Series	A	L	S2
MB-DHG	0K	13.0	34.0	7.0
MB-DHG	1K	15.0	45.0	9.0
MB-DHG	2K	19.0	54.0	12.0
MB-DHG	3K	23.0	64.0	15.0

MB-DHG(Z)

Free cable mounted receptacles, key (G) or keys (A... L), cable collet and nut for fitting a bend relief



Reference		Dimensions(mm)		
Model	Series	A	L	S2
MB-DHG	0K	13.0	34.0	7.0
MB-DHG	1K	15.0	45.0	9.0
MB-DHG	2K	19.0	54.0	12.0
MB-DHG	3K	23.0	64.0	15.0

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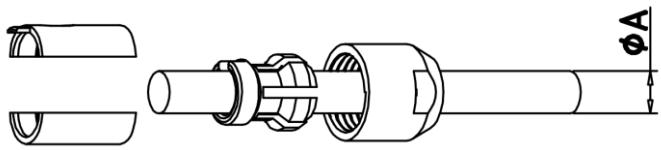
8. Cable Collect Size



Cable Clamp Set		Cable Collet (mm)	Cable dia Range	
Type	Code	A	Max	Min
0K-022	22	2.2	2.2	>1.4
0K-032	32	3.2	3.2	>2.2
0K-042	42	4.2	4.2	>3.2
0K-052	52	5.2	5.2	>4.2

Cable Clamp Set		Cable Collet (mm)	Cable dia Range	
Type	Code	A	Max	Min
1K-042	42	4.2	4.2	>3.2
1K-052	52	5.2	5.2	>4.2
1K-062	62	6.2	6.2	>5.2
1K-072	72	7.2	7.2	>6.2
1K-080	80	8.0	8.0	>7.0

Cable Clamp Set		Cable Collet (mm)	Cable dia Range	
Type	Code	A	Max	Min
2K-042	42	4.2	4.2	>3.2
2K-052	52	5.2	5.2	>4.2
2K-062	62	6.2	6.2	>5.2
2K-072	72	7.2	7.2	>6.2
2K-082	82	8.2	8.2	>7.2
2K-092	92	9.2	9.2	>8.2
2K-100	10	10.0	10.0	>9.0

Cable Clamp Set		Cable Collet (mm)	Cable dia Range	
Type	Code	A	Max	Min
3K-062	62	6.2	6.2	>4.9
3K-072	72	7.2	7.2	>6.2
3K-082	82	8.2	8.2	>7.1
3K-092	92	9.2	9.2	>7.7
3K-100	10	10.2	10.2	>9.2
3K-110	11	11.2	11.0	>10.2
3K-120	12	12.0	12.0	>11.1

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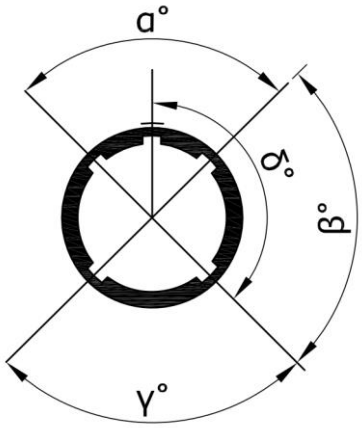
9. Alignment Key and Polarized Key

INT-B series connector model types are composed of six letters.

The last letter indicated the key position and contact type (male or female).

Front View of Receptacle:



Code	Keys No.	Angles	Series				Contact Type	
			0K	1K	2K	3K	Plug	Receptacle
G	1		0°	0°	0°	0°	Male	Female
A	2	α	30°	30°	30°	30°	Male	Female
B	2		45°	45°	45°	45°	Male	Female
C	2		60°	60°	60°	60°	Male	Female
D	2	γ	95°	95°	95°	95°	Male	Female
E	2	β	120°	120°	120°	120°	Male	Female
F	2		145°	145°	145°	145°	Male	Female
L	2	γ	75°	75°	75°	75°	Female	Male

10. MB-B and MB-K Series Multipole Layout

See page 30-31.

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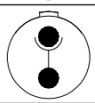
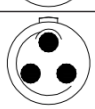
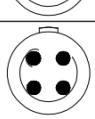
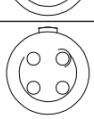
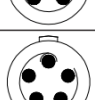
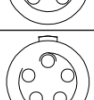
	Male Contact	Female Contact	Insulator	Contact No.	ØA(MM)	Contact type			Test voltage (contact - contact) K/V rms	Test voltage (contact - shell) K/V rms	Rated current (A)
						Solder contact	PCB straight contact	PCB elbow contact			
00			302	2	0.5	●	●	●	1.00	0.95	5.0
			303	3	0.5	●	●	●	0.80	0.95	3.0
			304	4	0.5	●	●	●	0.80	0.65	2.0
			305	5	0.35	●	●	●	0.70	1.0	1.70
0B 0K			302	2	0.9	●	●	●	1.30	1.05	10.0
			303	3	0.9	●	●	●	1.20	0.90	8.0
			304	4	0.7	●	●	●	0.85	0.70	7.0
			305	5	0.35	●	●	●	0.7	1.0	1.7
			306	6	0.5	●	●	●	0.85	0.65	2.5
			307	7	0.5	●	●	●	0.80	0.70	2.5
			309	9	0.5	●	●	○	0.60	0.50	2.0
1B 1K			302	2	1.3	●	●	●	1.50	1.35	15.0
			303	3	1.3	●	●	●	1.30	1.55	12.0
			304	4	0.9	●	●	●	1.35	1.45	10.0
			305	5	0.9	●	●	●	1.25	1.15	9.0

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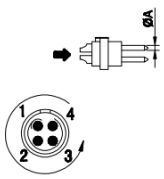
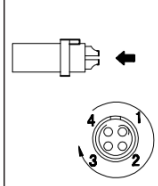
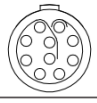
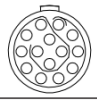
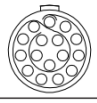
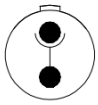
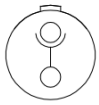
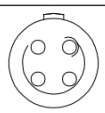
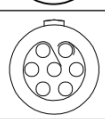
	Male contact	Female contact	Insulator	Contact No.	ØA(MM)	Contact type			Test voltage (contact - contact) K/V rms	Test voltage (contact - shell) K/V rms	Rated current (A)
						Solder contact	PCB straight contact	PCB elbow contact			
1B 1K			306	6	0.7	●	●	●	1.05	1.20	7.0
			307	7	0.7	●	●	●	0.95	1.05	7.0
			308	8	0.7	●	●	●	0.95	1.15	5.0
			310	10	0.5	●	●	●	0.90	1.50	2.5
			314	14	0.5	●	●	●	0.80	1.20	2.0
			316	16	0.5	●	●	○	0.80	1.25	1.5
2B 2K			302	2	2.0	●	●	●	2.10	1.75	25.0
			303	3	1.6	●	●	●	2.40	1.85	17.0
			304	4	1.3	●	●	●	1.85	1.85	15.0
			305	5	1.3	●	●	●	1.75	1.60	14.0
			306	6	1.3	●	●	●	1.35	1.45	12.0
			307	7	1.3	●	●	●	1.75	1.60	11.0

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	Male contact	Female contact	Insulator	Contact No.	ØA(MM)	Contact type			Test voltage (contact - contact) K/V rms	Test voltage (contact - shell) K/V rms	Rated current (A)
						Solder contact	PCB straight contact	PCB elbow contact			
2B 2K			308	8	0.9	●	●	●	1.50	1.25	10.0
			310	10	0.9	●	●	●	1.45	1.30	8.0
			312	12	0.7	●	●	●	1.25	1.35	7.0
			314	14	0.7	●	●	●	1.15	1.35	6.5
			316	16	0.7	●	●	●	0.95	1.25	6.0
			318	18	0.9	●	●	●	1.2	1.05	7.0
			319	19	0.7	●	●	●	0.95	1.25	5.0
			326	26	0.5	●	●	○	0.95	1.30	2.0
			332	32	0.5	●	●	○	0.80	1.20	1.5
3B 3K			302	2	3.0	●	○	-	2.10	1.55	35.0
			303	3	2.0	●	●	○	1.90	1.50	25.0

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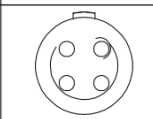
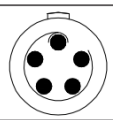
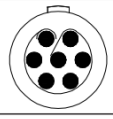
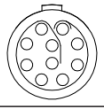
	Male contact	Female contact	Insulator	Contact No.	ØA(MM)	Contact type			Test voltage (contact - contact) K/V rms	Test voltage (contact - shell) K/V rms	Rated current (A)
						Solder contact	PCB straight contact	PCB elbow contact			
3B 3K			304	4	2.0	●	●	●	1.45	1.25	19.0
			305	5	1.6	●	●	○	1.90	1.25	19.0
			306	6	1.6	●	●	○	1.60	1.15	17.0
			307	7	1.6	●	●	○	1.70	1.25	15.0
			308	8	1.3	●	●	●	1.65	1.15	13.0
			309	8 1	1.3 2.0	●	●	-	1.35 1.35	1.05 1.05	6.0 15.0
			310	10	1.3	●	●	○	1.25	0.90	12.0
			312	12	0.9	●	●	●	1.45	1.00	9.0
			314	14	0.9	●	●	●	1.20	1.20	9.0

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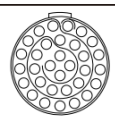
		316	16	0.9	●	●	●	1.20	0.85	8.0
		318	18	0.9	●	●	●	1.20	1.05	7.0
		320	20	0.7	●	●	●	1.0	0.9	6.0
		322	22	0.7	●	●	●	1.0	0.9	5.5
		324	24	0.7	●	●	●	1.2	1.45	7.0
		326	26	0.7	●	●	●	0.95	0.7	4.0
		330	30	0.7	●	●	●	0.8	0.7	3.5
		332	32	0.7	●	●	●	0.75	0.7	3.0

● First choice alternative
○ Special order alterative

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