

# Waterproof Connectors with Crimp Contacts Compatible with JIS-B-6015

## CE01 Series

DDK Ltd.

### ◆ OUTLINE

CE01 series is compatible with JIS-B 6015, Japanese Industrial Standards, and is superior in waterproof and dustproof connector which has a ground contact to protect a circuit.

This connector is ideal for use under the external condition such as industrial equipment which needs to withstand moisture, oil, and dust.



### ◆ FEATURES

- Five-key position prevents cross-plugging problems and one touch lock design is capable to lock surely with click note. (Bayonet Coupling)
- Receptacle connector has an o-ring which conforms to meet IP67 to prevent moisture, oil and dust when the connectors are mated. Besides, when the plug connector uses a conduit with an o-ring, both plug and receptacle can be waterproof.
- Connectors are provided with a premating and ground contact having conductivity with the shell to protect a circuit. The premating contact is mated first before the other contacts and dismated last when dismating the connector.
- Contact is crimp type and easy to terminate. Also it is easy to extract the contact from the insert by the extraction tool.
- UL approved (File No. E72124)

### ◆ SPECIFICATIONS



| Rated Current                   | Contact Size               | #20   | #16   | #12   | #8  |
|---------------------------------|----------------------------|-------|-------|-------|-----|
|                                 | Maximum Rating per Contact | 5A    | 13A   | 23A   | 46A |
| Rated Voltage                   | Service Rating             | INST  | A     | D     |     |
|                                 | AC(r.m.s.)                 | 200   | 500   | 900   |     |
|                                 | DC                         | 250   | 700   | 1,250 |     |
| Dielectric Withstanding Voltage | AC(r.m.s.)/1 minute        | 1,000 | 2,000 | 2,800 |     |
| Insulation Resistance           | 5,000M Ω min. at 500VDC    |       |       |       |     |
| Contact Resistance              | Contact Size               | #20   | #16   | #12   | #8  |
|                                 | m Ω max.                   | 8     | 4     | 2     | 0.6 |
| Operating Temperature           | -55°C to +125°C            |       |       |       |     |
| Humidity                        | 95% max.                   |       |       |       |     |

### ◆ MATERIAL / FINISH

| Item          | Material / Finish                                                 |
|---------------|-------------------------------------------------------------------|
| Shell         | Aluminum Alloy / Zinc Plating, Black Trivalent Chromium Treatment |
| Coupling Ring | Aluminum Alloy / Zinc Plating, Black Trivalent Chromium Treatment |
| Insert        | Polyester Resin (UL94V-0) Gray                                    |
| Contact       | Copper Alloy / Silver Plating                                     |
| O Ring        | Nitrile Rubber                                                    |
| Ground Clip   | Copper Alloy / Silver Plating                                     |
| Gasket        | Polychloroprene or Ethylenepropylene Rubber                       |

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Conforming  
Standard

JIS B 6015

Waterproof

IP67

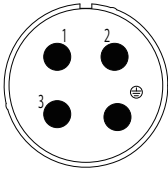
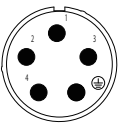
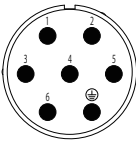
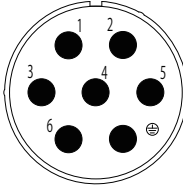
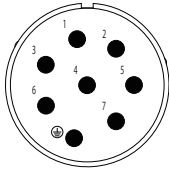
Lock Type

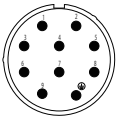
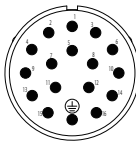
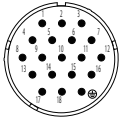
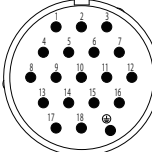
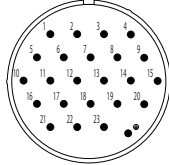
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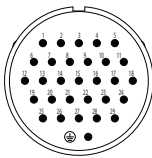
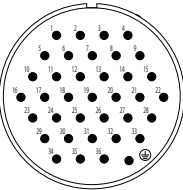
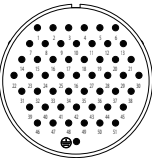
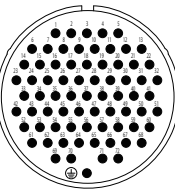


## ► Insert Arrangement List

Front View of Pin Insert or Rear View of Socket Insert

| Number of Contact  | 4                                                                                 | 5                                                                                 | 7                                                                                 |                                                                                    | 8                                                                                   |
|--------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Insert Arrangement |  |  |  |  |  |
| Insert Number      | 22-22                                                                             | 18-11                                                                             | 20-15                                                                             | 24-10                                                                              | 22-23                                                                               |
| Contact Size       | #8                                                                                | #12                                                                               | #12                                                                               | #8                                                                                 | #12                                                                                 |
| Service Rating     | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                  | D(4), A(Others)                                                                     |

| Number of Contact  | 10                                                                                | 17                                                                                | 19                                                                                |                                                                                     | 24                                                                                  |
|--------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Insert Arrangement |  |  |  |  |  |
| Insert Number      | 18-1                                                                              | 20-29                                                                             | 18-19A                                                                            | 22-14                                                                               | 24-28                                                                               |
| Contact Size       | #16                                                                               | #16                                                                               | #20                                                                               | #16                                                                                 | #16                                                                                 |
| Service Rating     | A(3,5,6,8,) / INST(Others)                                                        | A                                                                                 | INST                                                                              | A                                                                                   | INST                                                                                |

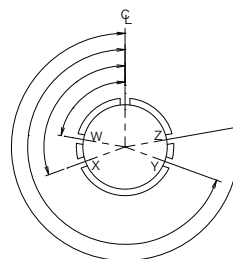
| Number of Contact  | 30                                                                                  | 37                                                                                  | 52                                                                                  | 73                                                                                   |
|--------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Insert Arrangement |  |  |  |  |
| Insert Number      | 20-30A                                                                              | 28-21                                                                               | 24-52A                                                                              | 28-73A                                                                               |
| Contact Size       | #20                                                                                 | #16                                                                                 | #20                                                                                 | #20                                                                                  |
| Service Rating     | INST                                                                                | A                                                                                   | INST                                                                                | INST                                                                                 |

Note: Normal key position illustrated.

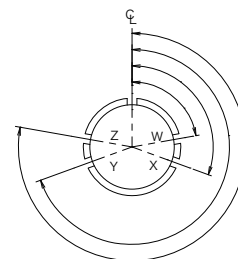
## ► Alternate Insert Positions

| Number of Contact | Insert No | W  | X   | Y   | Z   |
|-------------------|-----------|----|-----|-----|-----|
| 4                 | 22-22     | —  | 160 | —   | 300 |
| 5                 | 18-11     | —  | 170 | 265 | —   |
| 7                 | 20-15     | 80 | —   | —   | 280 |
|                   | 24-10     | 80 | —   | —   | 280 |
| 8                 | 22-23     | 85 | —   | —   | —   |
| 10                | 18-1      | 70 | 145 | 260 | 290 |
| 17                | 20-29     | 80 | —   | —   | 280 |
| 19                | 18-19A    | 80 | 110 | 250 | 280 |
|                   | 22-14     | 75 | 150 | —   | 285 |
| 24                | 24-28     | 80 | 110 | 250 | 280 |
| 30                | 20-30     | 80 | 110 | 250 | 280 |
| 37                | 28-21     | 80 | 110 | 250 | 280 |
| 52                | 24-52A    | 80 | 110 | 250 | 280 |
| 73                | 28-73A    | 80 | 110 | 250 | 280 |

To avoid cross-plugging problems in applications requiring the use of more than one connector of the same size and arrangement, alternate insert positions are available as indicated in the chart.



Front View of Pin Insert

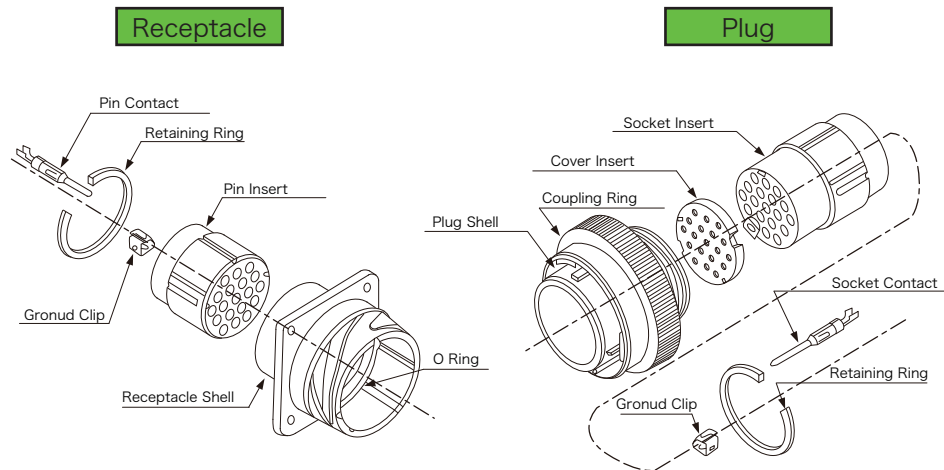


Front View of Socket Insert

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# Diagram

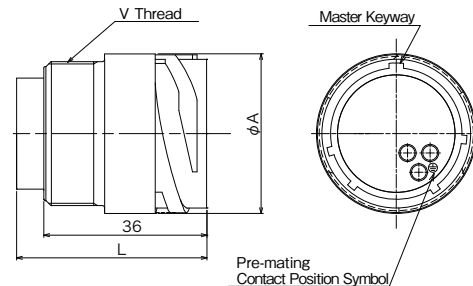


Note: Cover insert is available for socket insert with #16 or #20 contacts only.

## Cable Receptacle

**CE01-1A22-14PCW-D0**  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

|                             |                                                           |
|-----------------------------|-----------------------------------------------------------|
| ① Connector Style           | 1A : Cable Receptacle                                     |
| ② Shell Size                | 18, 20, 22, 24 and 28                                     |
| ③ Insert Arrangement        | Refer to page 2.                                          |
| ④ Contact Style             | P : Pin Contact<br>S : Socket Contact                     |
| ⑤ Contact Type              | C : Crimp Contact                                         |
| ⑥ Alternate Insert Position | Omit : Standard Position<br>W, X, Y, Z : Refer to page 3. |
| ⑦ Plating /Finish           | D : Zinc Plating / Black Trivalent Chromium Treatment     |
| ⑧ Contact                   | 0 : Less Contact (Available separately)                   |



| Shell Size | Number of Contact | Part Number          | A     | V               | Contact Size | L. Min.    |               |
|------------|-------------------|----------------------|-------|-----------------|--------------|------------|---------------|
|            |                   |                      |       |                 |              | Pin Insert | Socket Insert |
| 18         | 5                 | CE01-1A18-11 □ C-D0  | 28.87 | 1-20UNEF-2A     | # 12         | 46         | 43.0          |
|            | 10                | CE01-1A18-1 □ C-D0   |       |                 | # 16         | 43         | 38.0          |
|            | 19                | CE01-1A18-19A □ C-D0 |       |                 | # 20         | 40         | 36.5          |
| 20         | 7                 | CE01-1A20-15 □ C-D0  | 33.95 | 1 1/8-18UNEF-2A | # 12         | 46         | 43.0          |
|            | 17                | CE01-1A20-29 □ C-D0  |       |                 | # 16         | 43         | 38.0          |
|            | 30                | CE01-1A20-30A □ C-D0 |       |                 | # 20         | 40         | 36.5          |
| 22         | 4                 | CE01-1A22-22 □ C-D0  | 35.22 | 1 1/4-18UNEF-2A | # 8          | 48         | 48.0          |
|            | 8                 | CE01-1A22-23 □ C-D0  |       |                 | # 12         | 46         | 43.0          |
|            | 19                | CE01-1A22-14 □ C-D0  |       |                 | # 16         | 43         | 38.0          |
| 24         | 7                 | CE01-1A24-10 □ C-D0  | 38.39 | 1 3/8-18UNEF-2A | # 8          | 48         | 48.0          |
|            | 24                | CE01-1A24-28 □ C-D0  |       |                 | # 16         | 43         | 38.0          |
|            | 52                | CE01-1A24-52A □ C-D0 |       |                 | # 20         | 40         | 36.5          |
| 28         | 37                | CE01-1A28-21 □ C-D0  | 44.74 | 1 5/8-18UNEF-2A | # 16         | 43         | 38.0          |
|            | 73                | CE01-1A28-73A □ C-D0 |       |                 | # 20         | 40         | 36.5          |

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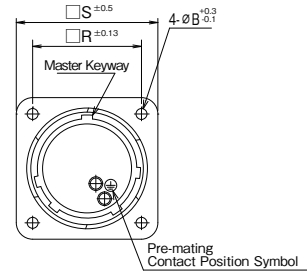
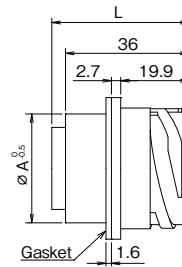
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# ▶ Box Mount Receptacle

## CE01-2A22-14PCW-D 0S

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

|                             |                                                           |
|-----------------------------|-----------------------------------------------------------|
| ① Connector Style           | 2A : Box Mount Receptacle                                 |
| ② Shell Size                | 18, 20, 22, 24 and 28                                     |
| ③ Insert Arrangement        | Refer to page 2.                                          |
| ④ Contact Style             | P : Pin Contact<br>S : Socket Contact                     |
| ⑤ Contact Type              | C : Crimp Contact                                         |
| ⑥ Alternate Insert Position | Omit : Standard Position<br>W, X, Y, Z : Refer to page 3. |
| ⑦ Plating /Finish           | D : Zinc Plating / Black Trivalent Chromium Treatment     |
| ⑧ Contact                   | 0 : Less Contact (Available separately)                   |
| ⑨ Gasket                    | Omit : Less Gasket<br>S : With Gasket                     |



Note: Gasket is applicable to box receptacle only.

Place a gasket on the rear of the flange. (thickness 1.6mm)

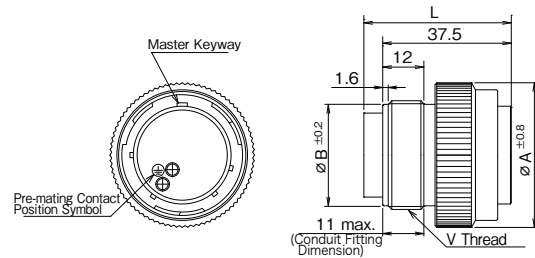
| Shell Size | Number of Contact | Part Number          | A    | B   | S    | R     | Contact Size | L. Min.    |               |
|------------|-------------------|----------------------|------|-----|------|-------|--------------|------------|---------------|
|            |                   |                      |      |     |      |       |              | Pin Insert | Socket Insert |
| 18         | 5                 | CE01-2A18-11 □ C-D0  | 24.9 | 3.2 | 35.0 | 26.97 | # 12         | 46         | 43.0          |
|            | 10                | CE01-2A18-1 □ C-D0   |      |     |      |       | # 16         | 43         | 38.0          |
|            | 19                | CE01-2A18-19A □ C-D0 |      |     |      |       | # 20         | 40         | 36.5          |
| 20         | 7                 | CE01-2A20-15 □ C-D0  | 29.6 | 3.2 | 38.1 | 29.36 | # 12         | 46         | 43.0          |
|            | 17                | CE01-2A20-29 □ C-D0  |      |     |      |       | # 16         | 43         | 38.0          |
|            | 30                | CE01-2A20-30A □ C-D0 |      |     |      |       | # 20         | 40         | 36.5          |
| 22         | 4                 | CE01-2A22-22 □ C-D0  | 31.8 | 3.2 | 41.3 | 31.75 | # 8          | 48         | 48.0          |
|            | 8                 | CE01-2A22-23 □ C-D0  |      |     |      |       | # 12         | 46         | 43.0          |
|            | 19                | CE01-2A22-14 □ C-D0  |      |     |      |       | # 16         | 43         | 38.0          |
| 24         | 7                 | CE01-2A24-10 □ C-D0  | 35.0 | 4.2 | 44.3 | 34.92 | # 8          | 48         | 48.0          |
|            | 24                | CE01-2A24-28 □ C-D0  |      |     |      |       | # 16         | 43         | 38.0          |
|            | 52                | CE01-2A24-52A □ C-D0 |      |     |      |       | # 20         | 40         | 36.5          |
| 28         | 37                | CE01-2A28-21 □ C-D0  | 41.3 | 4.2 | 50.8 | 39.67 | # 16         | 43         | 38.0          |
|            | 73                | CE01-2A28-73A □ C-D0 |      |     |      |       | # 20         | 40         | 36.5          |

## ► Straight Plug

### CE01-6A22-14PCW-D 0

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

|                             |                                                           |
|-----------------------------|-----------------------------------------------------------|
| ① Connector Style           | 6A : Straight Plug                                        |
| ② Shell Size                | 18, 20, 22, 24 and 28                                     |
| ③ Insert Arrangement        | Refer to page 2.                                          |
| ④ Contact Style             | P : Pin Contact<br>S : Socket Contact                     |
| ⑤ Contact Type              | C : Crimp Contact                                         |
| ⑥ Alternate Insert Position | Omit : Standard Position<br>W, X, Y, Z : Refer to page 3. |
| ⑦ Plating / Finish          | D : Zinc Plating / Black Trivalent Chromium Treatment     |
| ⑧ Contact                   | 0 : Less Contact (Available separately)                   |



| Shell Size | Number of Contact | Part Number          | A    | B    | V               | Contact Size | L Max.     |               |
|------------|-------------------|----------------------|------|------|-----------------|--------------|------------|---------------|
|            |                   |                      |      |      |                 |              | Pin Insert | Socket Insert |
| 18         | 5                 | CE01-6A18-11 □ C-D0  | 35.9 | 23.5 | 1-20UNEF-2A     | # 12         | 46         | 43.0          |
|            | 10                | CE01-6A18-1 □ C-D0   |      |      |                 | # 16         | 43         | 38.0          |
|            | 19                | CE01-6A18-19A □ C-D0 |      |      |                 | # 20         | 40         | 37.5          |
| 20         | 7                 | CE01-6A20-15 □ C-D0  | 40.6 | 26.9 | 1 1/8-18UNEF-2A | # 12         | 46         | 43.0          |
|            | 17                | CE01-6A20-29 □ C-D0  |      |      |                 | # 16         | 43         | 38.0          |
|            | 30                | CE01-6A20-30A □ C-D0 |      |      |                 | # 20         | 40         | 37.5          |
| 22         | 4                 | CE01-6A22-22 □ C-D0  | 42.2 | 29.6 | 1 1/4-18UNEF-2A | # 8          | 48         | 48.0          |
|            | 8                 | CE01-6A22-23 □ C-D0  |      |      |                 | # 12         | 46         | 43.0          |
|            | 19                | CE01-6A22-14 □ C-D0  |      |      |                 | # 16         | 43         | 38.0          |
| 24         | 7                 | CE01-6A24-10 □ C-D0  | 45.4 | 32.8 | 1 3/8-18UNEF-2A | # 8          | 48         | 48.0          |
|            | 24                | CE01-6A24-28 □ C-D0  |      |      |                 | # 16         | 43         | 38.0          |
|            | 52                | CE01-6A24-52A □ C-D0 |      |      |                 | # 20         | 40         | 37.5          |
| 28         | 37                | CE01-6A28-21 □ C-D0  | 51.7 | 39.0 | 1 5/8-18UNEF-2A | # 16         | 43         | 38.0          |
|            | 73                | CE01-6A28-73A □ C-D0 |      |      |                 | # 20         | 40         | 37.5          |

## ► Waterproof Straight Backshell

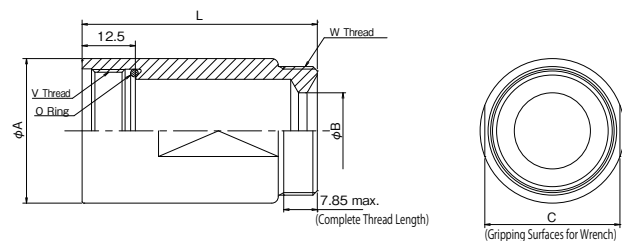
### CE01-22BSL-D S

① ② ③ ④ ⑤ ⑥

|              |                                                 |
|--------------|-------------------------------------------------|
| ① Shell Size | 18, 20, 22, 24 and 28                           |
| ② Part       | B : Backshell                                   |
| ③ Style      | S : Straight                                    |
| ④ Shell Type | Omit : Standard Backshell<br>L : Long Backshell |
| ⑤ Finish     | D : Black Trivalent Chromium Treatment          |
| ⑥ Waterproof | S : Waterproof                                  |

#### MATERIAL / FINISH

Aluminum Alloy/Black Trivalent Chromium Treatment



The straight backshell retains the cable when the conduit is not used. Two kinds of backshells in different length are available for the shell size of 22, 24 and 28. Use the waterproof backshell with the waterproof cable clamp.

| Shell Size | Part Number   | A    | B    | C     | V               | W                | L  |
|------------|---------------|------|------|-------|-----------------|------------------|----|
| 18         | CE01-18BS-DS  | 29.3 | 16.3 | 26.73 | 1-20UNEF-2B     | 1-20UNEF-2A      | 55 |
| 20         | CE01-20BS-DS  | 33.8 | 17.8 | 31.6  | 1 1/8-18UNEF-2B | 1 3/16-18UNEF-2A | 55 |
| 22         | CE01-22BS-DS  | 35.3 | 17.8 | 32.4  | 1 1/4-18UNEF-2B | 1 3/16-18UNEF-2A | 55 |
|            | CE01-22BSL-DS |      |      |       |                 |                  | 75 |
| 24         | CE01-24BS-DS  | 38.8 | 21.0 | 36.6  | 1 3/8-18UNEF-2B | 1 7/16-18UNEF-2A | 55 |
|            | CE01-24BSL-DS |      |      |       |                 |                  | 75 |
| 28         | CE01-28BS-DS  | 44.8 | 21.0 | 40.0  | 1 5/8-18UNEF-2B | 1 7/16-18UNEF-2A | 55 |
|            | CE01-28BSL-DS |      |      |       |                 |                  | 75 |

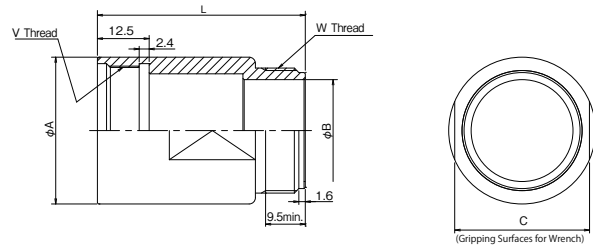
Note : Use the long backshell in the case of insert arrangements with the contact size #12 and #8.

## ► Straight Backshell

### CE01-22BSL-D

① ② ③ ④ ⑤

|              |                                                 |
|--------------|-------------------------------------------------|
| ① Shell Size | 18, 20, 22, 24 and 28                           |
| ② Part       | B : Backshell                                   |
| ③ Style      | S : Straight                                    |
| ④ Shell Type | Omit : Standard Backshell<br>L : Long Backshell |
| ⑤ Finish     | D : Black Trivalent Chromium Treatment          |



#### MATERIAL / FINISH

Aluminum Alloy/Black Trivalent Chromium Treatment

The straight backshell retains the cable when the conduit is not used. Two kinds of backshells in different length are available for the shell size of 22, 24 and 28.

Use the waterproof backshell with the waterproof cable clamp.

| Shell Size | Part Number  | A    | B    | C     | V               | W                | L  |
|------------|--------------|------|------|-------|-----------------|------------------|----|
| 18         | CE01-18BS-D  | 29.3 | 19.5 | 26.73 | 1-20UNEF-2B     | 1-20UNEF-2A      | 50 |
| 20         | CE01-20BS-D  | 33.8 | 24.5 | 31.6  | 1 1/8-18UNEF-2B | 1 3/16-18UNEF-2A | 50 |
| 22         | CE01-22BS-D  | 35.3 | 24.5 | 32.4  | 1 1/4-18UNEF-2B | 1 3/16-18UNEF-2A | 50 |
|            | CE01-22BSL-D |      |      |       |                 |                  | 70 |
| 24         | CE01-24BS-D  | 38.8 | 30.5 | 36.6  | 1 3/8-18UNEF-2B | 1 7/16-18UNEF-2A | 50 |
|            | CE01-24BSL-D |      |      |       |                 |                  | 70 |
| 28         | CE01-28BS-D  | 44.8 | 30.5 | 40.0  | 1 5/8-18UNEF-2B | 1 7/16-18UNEF-2A | 50 |
|            | CE01-28BSL-D |      |      |       |                 |                  | 70 |

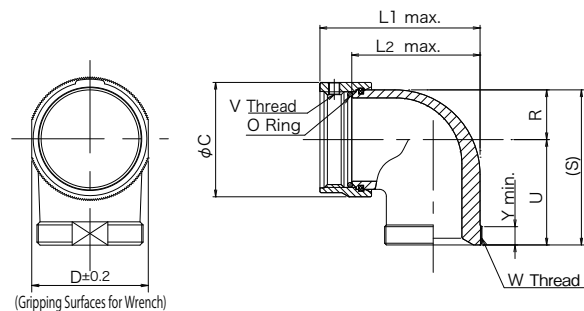
Note : Use the long backshell in the case of insert arrangements with the contact size #12 and #8.

## ► Waterproof Angle Backshell

### CE-18BA-S-D

① ② ③ ④ ⑤

|              |                                        |
|--------------|----------------------------------------|
| ① Shell Size | 18, 20, 22, 24 and 28                  |
| ② Part       | B : Backshell                          |
| ③ Style      | A : Angle                              |
| ④ Waterproof | S : Waterproof                         |
| ⑤ Finish     | D : Black Trivalent Chromium Treatment |



#### MATERIAL / FINISH

Aluminum Alloy/Black Trivalent Chromium Treatment

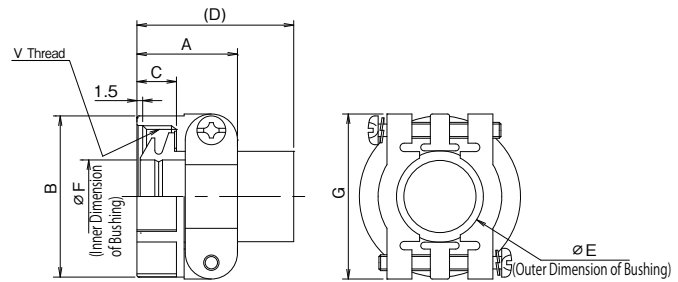
| Shell Size | Part Number | L1   | L2   | C    | D    | R    | U    | (S)    | V               | W                | Y   |
|------------|-------------|------|------|------|------|------|------|--------|-----------------|------------------|-----|
| 18         | CE-18BA-S-D | 44.6 | 34.0 | 32.4 | 30.0 | 13.2 | 30.2 | (43.4) | 1-20UNEF-2B     | 1-20UNEF-2A      | 7.5 |
| 20         | CE-20BA-S-D | 50.5 | 39.6 | 36.0 | 33.6 | 15.0 | 33.3 | (48.3) | 1 1/8-18UNEF-2B | 1 3/16-18UNEF-2A | 7.5 |
| 22         | CE-22BA-S-D | 50.5 | 39.6 | 38.6 | 36.2 | 16.3 | 33.3 | (49.6) | 1 1/4-18UNEF-2B | 1 3/16-18UNEF-2A | 7.5 |
| 24         | CE-24BA-S-D | 60.1 | 47.9 | 42.4 | 40.0 | 18.2 | 36.5 | (54.7) | 1 3/8-18UNEF-2B | 1 7/16-18UNEF-2A | 7.5 |
| 28         | CE-28BA-S-D | 60.9 | 47.9 | 49.5 | 46.4 | 21.3 | 36.5 | (57.8) | 1 5/8-16UN-2B   | 1 7/16-18UNEF-2A | 7.5 |

• The waterproof angle backshell retains the cable when the conduit is not used.

## Waterproof Cable Clamp

CE3057- □□ A- □ - D  
① ② ③

|                |                                                      |
|----------------|------------------------------------------------------|
| ① Clamp Size   | 10, 12 and 16                                        |
| ② Bushing Size | Rubber Bushing (Refer to the applicable cable size.) |
| ③ Finish       | D : Black Trivalent Chromium Treatment               |



### MATERIAL / FINISH

|                                     | Material         | Finish                             |
|-------------------------------------|------------------|------------------------------------|
| Cable Clamp Body and Metal Fastener | Aluminum Alloy   | Black Trivalent Chromium Treatment |
| Bushing                             | Synthetic Rubber | Black                              |

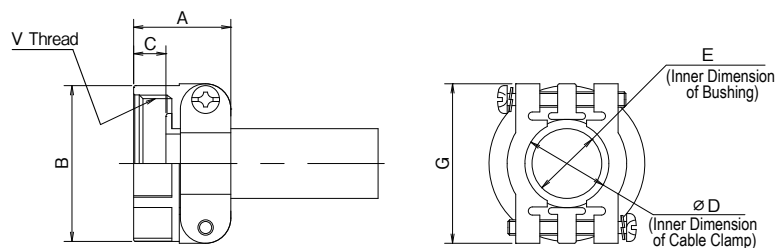
| Part Number    | Applicable Shell Size | A     | B    | C     | (D)    | E    | F    | G    | V                | Bushing P/N | Applicable Cable |
|----------------|-----------------------|-------|------|-------|--------|------|------|------|------------------|-------------|------------------|
| CE3057-10A-1-D | 18                    | 23.83 | 30.1 | 10.31 | (41.3) | 15.8 | 14.1 | 31.7 | 1-20UNEF-2B      | CE3420-10-1 | φ 10.5 ~ φ 14.1  |
| CE3057-10A-2-D |                       |       |      |       |        |      | 11.0 |      |                  | CE3420-10-2 | φ 8.5 ~ φ 11     |
| CE3057-10A-3-D |                       |       |      |       |        |      | 8.7  |      |                  | CE3420-10-3 | φ 6.5 ~ φ 8.7    |
| CE3057-12A-1-D | 20                    | 23.83 | 35.0 | 10.31 | (41.3) | 19.0 | 16.0 | 37.3 | 1 3/16-18UNEF-2B | CE3420-12-1 | φ 12.5 ~ φ 16    |
| CE3057-12A-2-D |                       |       |      |       |        |      | 13.0 |      |                  | CE3420-12-2 | φ 9.5 ~ φ 13     |
| CE3057-12A-3-D |                       |       |      |       |        |      | 10.0 |      |                  | CE3420-12-3 | φ 6.8 ~ φ 10     |
| CE3057-12A-7-D | 22                    |       |      |       |        |      | 17.0 |      |                  | CE3420-12-7 | φ 14.5 ~ φ 17    |
| CE3057-16A-1-D | 24                    | 26.19 | 42.1 | 10.31 | (41.3) | 23.8 | 19.1 | 42.9 | 1 7/16-18UNEF-2B | CE3420-16-1 | φ 15 ~ φ 19.1    |
| CE3057-16A-2-D |                       |       |      |       |        |      | 15.5 |      |                  | CE3420-16-2 | φ 13 ~ φ 15.5    |
| CE3057-16A-4-D |                       |       |      |       |        |      | 21.5 |      |                  | CZY005-GB-3 | φ 19.1 ~ φ 21.5  |
| CE3057-16A-6-D |                       |       |      |       |        |      | 20.0 |      |                  | CE3420-16-6 | φ 18.5 ~ φ 20    |
| CE3057-16A-7-D |                       |       |      |       |        |      | 13.5 |      |                  | CE3420-16-7 | φ 11.5 ~ φ 13.5  |
| CE3057-16A-8-D | 28                    |       |      |       |        |      | 12.5 |      |                  | CZY005-GB-6 | φ 10.5 ~ φ 12.5  |

\* CE3057- □□ A- □ - D is a waterproof cable clamp for use with D/MS(D190), CE01 and CE02 plugs.  
The main body is the same as D/MS3057A- □□ . The cable clamp has a waterproof rubber bushing.  
Make sure to use a cable meeting one of the applicable cable size ranges as shown in the chart.  
The cable clamp should be used together with the waterproof backshell.

## Cable Clamp

D/MS3057- □□ A  
①

|              |               |
|--------------|---------------|
| ① Clamp Size | 10, 12 and 16 |
|--------------|---------------|



### MATERIAL / FINISH

|                                     | Material         | Finish                             |
|-------------------------------------|------------------|------------------------------------|
| Cable Clamp Body and Metal Fastener | Aluminum Alloy   | Black Trivalent Chromium Treatment |
| Bushing                             | Synthetic Rubber | Black                              |

| Part Number  | Applicable Shell Size | A     | B    | C    | D    | E    | G    | V             | Bushing P/N |
|--------------|-----------------------|-------|------|------|------|------|------|---------------|-------------|
| D/MS3057-10A | 18                    | 23.83 | 30.1 | 10.3 | 15.9 | 14.3 | 31.7 | 1-20UNEF      | AN3420-10   |
| D/MS3057-12A | 20, 22                | 23.83 | 35.0 | 10.3 | 19.0 | 15.9 | 37.3 | 1 3/16-18UNEF | AN3420-12   |
| D/MS3057-16A | 24, 28                | 26.19 | 42.1 | 10.3 | 23.8 | 19.1 | 42.9 | 1 7/16-18UNEF | AN3420-16   |

\* D/MS3057- □□ A is an accessory which is used together with a backshell to fasten the cable.  
The cable is fixed in the center of the cable clamp for sure since the cable is fixed from both directions with two pieces of the metal clamps and the screws. The jacketed cable can be used with this cable clamp as well because a rubber bushing shown on the table above is inserted.

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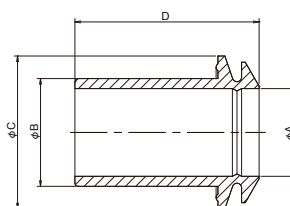
## ▶ Waterproof Rubber Bushing

CE3420-       -     
                   ①                   ②

|                    |                   |
|--------------------|-------------------|
| ① Cable Clamp Size | 10, 12 and 16     |
| ② Bushing Size     | Refer to Table 1. |

### MATERIAL

Synthetic Rubber(Black)



CE3420-       -    is a rubber bushing which is inserted into the cable clamp, CE3057-       -A-    ,to constrict the cable to meet the waterproof requirement.

Table 1

| Part Number | φ A  | φ B  | φ C  | D    | Friction Washer |
|-------------|------|------|------|------|-----------------|
| CE3420-10-1 | 14.1 | 15.5 | 22.2 | 38.5 | MS3057-10W      |
| CE3420-10-2 | 11.0 | 15.5 | 22.2 | 38.5 |                 |
| CE3420-10-3 | 8.7  | 15.5 | 22.2 | 38.5 |                 |
| CE3420-12-1 | 16.0 | 18.6 | 26.9 | 39.3 | MS3057-12W      |
| CE3420-12-2 | 13.0 | 18.6 | 26.9 | 39.3 |                 |
| CE3420-12-3 | 10.0 | 18.6 | 26.9 | 39.3 |                 |
| CE3420-16-1 | 19.1 | 23.4 | 33.2 | 40.0 | MS3057-16W      |
| CE3420-16-2 | 15.5 | 23.4 | 33.2 | 40.0 |                 |

Purchase a friction washer separately.

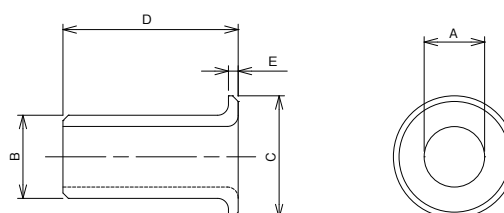
## ▶ Rubber Bushing

AN3420-        
                   ①

|                    |               |
|--------------------|---------------|
| ① Cable Clamp Size | 10, 12 and 16 |
|--------------------|---------------|

### MATERIAL

Synthetic Rubber(Black)



| Part Number | φ A  | φ B  | φ C  | D±0.7 | E   |
|-------------|------|------|------|-------|-----|
| AN3420-10   | 14.3 | 15.6 | 23.7 | 60.3  | 2.3 |
| AN3420-12   | 15.9 | 18.8 | 28.2 | 57.2  | 2.3 |
| AN3420-16   | 19.1 | 23.6 | 35.0 | 54.0  | 2.9 |

## ▶ Rubber Protection Cap for Receptacle

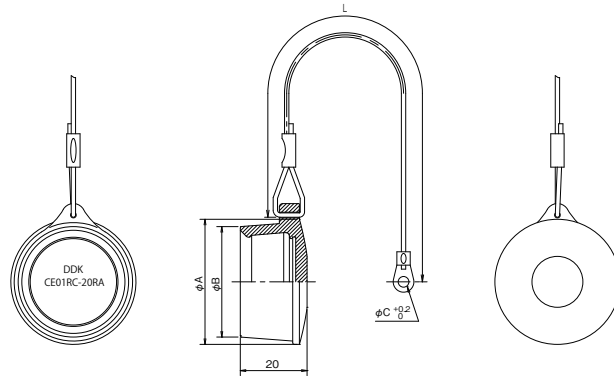
### CE01RC-       RA

①

|              |                       |
|--------------|-----------------------|
| ① Shell Size | 18, 20, 22, 24 and 28 |
|--------------|-----------------------|

#### MATERIAL

Synthetic Rubber(Black)



| Shell Size | Part Number | A    | B    | C   | L   |
|------------|-------------|------|------|-----|-----|
| 18         | CE01RC-18RA | 37.5 | 33.1 | 3.2 | 80  |
| 20         | CE01RC-20RA | 42.6 | 38.2 | 3.2 | 100 |
| 22         | CE01RC-22RA | 43.8 | 39.4 | 3.2 | 110 |
| 24         | CE01RC-24RA | 47.0 | 42.6 | 4.3 | 130 |
| 28         | CE01RC-28RA | 53.3 | 49.0 | 4.3 | 150 |

## ▶ Metal Protection Cap for Receptacle

### CE01RC-       -D

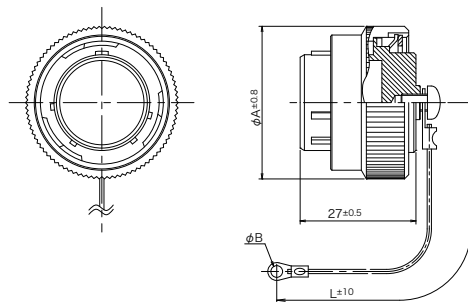
①

②

|              |                                        |
|--------------|----------------------------------------|
| ① Shell Size | 18, 20 and 28                          |
| ② Finish     | D : Black Trivalent Chromium Treatment |

#### MATERIAL / FINISH

Aluminum Alloy/Black Trivalent Chromium Treatment



| Shell Size | Part Number | A    | B   | L   |
|------------|-------------|------|-----|-----|
| 18         | CE01RC-18-D | 35.9 | 3.2 | 80  |
| 20         | CE01RC-20-D | 40.6 | 3.2 | 100 |
| 28         | CE01RC-28-D | 51.7 | 4.3 | 150 |

## ▶ Contact(Crimp Type)

| Part Number              |                       |                       | Contact Type | Applicable Cable(Twisted Wire) |                                  |               |
|--------------------------|-----------------------|-----------------------|--------------|--------------------------------|----------------------------------|---------------|
| Package                  | Pin Contact           | Socket Contact        |              | AWG#                           | Sectional Area(mm <sup>2</sup> ) | Jacket Dia.   |
| Separate<br>(100pcs/bag) | CE01- # 20P-C2-100    | CE01- # 20S-C2-100    | Press        | # 26 ~ # 24                    | 0.13 ~ 0.2                       | φ 1.2 ~ φ 1.5 |
|                          | CE01- # 20P-C1-100    | CE01- # 20S-C1-100    |              | # 22                           | 0.3                              | φ 1.4 ~ φ 1.7 |
| Reel<br>(1,000pcs/reel)  | CE01- # 20P-C2-10000  | CE01- # 20S-C2-10000  |              | # 22 ~ # 18                    | 0.3 ~ 0.75                       | φ 2.3 max.    |
|                          | CE01- # 20P-C1-10000  | CE01- # 20S-C1-10000  |              | # 26 ~ # 24                    | 0.13 ~ 0.2                       | φ 1.2 ~ φ 1.5 |
| Separate<br>(100pcs/bag) | CE01- # 16P-2024-100  | CE01- # 16S-2024-100  |              | # 22                           | 0.3                              | φ 1.4 ~ φ 1.7 |
|                          | CE01- # 16P-1620-100  | CE01- # 16S-1620-100  |              | # 22 ~ # 18                    | 0.3 ~ 0.75                       | φ 2.3 max.    |
|                          | CE01- # 16P-1416-100  | CE01- # 16S-1416-100  |              | # 24 ~ # 20                    | 0.2 ~ 0.5                        | φ 3.8 max.    |
|                          | CE01- # 16P-1620-3500 | CE01- # 16S-1620-3500 |              | # 20 ~ # 16                    | 0.5 ~ 1.25                       |               |
| Reel<br>(3,500pcs/reel)  | CE01- # 16P-2024-3500 | CE01- # 16S-2024-3500 |              | # 14                           | 2.0                              |               |
|                          | CE01- # 16P-1620-3500 | CE01- # 16S-1620-3500 |              | # 24 ~ # 20                    | 0.2 ~ 0.5                        |               |
|                          | CE01- # 16P-1416-3500 | CE01- # 16S-1416-3500 |              | # 20 ~ # 16                    | 0.5 ~ 1.25                       |               |
| Separate<br>(10pcs/bag)  | CE01- # 12P-C1M-10    | CE01- # 12S-C1M-10    | Machine      | # 16 ~ # 12                    | 1.25 ~ 3.5                       | φ 4.65 max.   |
|                          | CE01- # 08P-C2M-10    | CE01- # 08S-C2M-10    |              | # 12 ~ # 10                    | 3.5 ~ 5.5                        | φ 7.25 max.   |
|                          | CE01- # 08P-C1M-10    | CE01- # 08S-C1M-10    |              | # 10 ~ # 8                     | 5.5 ~ 8                          |               |

## ▶ Hand Crimping Tools

| Contact Part Number                  | Applicable Cable |                           | Tool Kit<br>Part Number | Crimping Tool | Locator    | Stopper    | Inspection<br>Gauge   | Extraction<br>Tool |
|--------------------------------------|------------------|---------------------------|-------------------------|---------------|------------|------------|-----------------------|--------------------|
|                                      | AWG #            | Sectional area            |                         |               |            |            |                       |                    |
| CE01- # 08P-C1M<br>CE01- # 08S-C1M   | 8 ~ 10           | 5.5 ~ 8.0mm <sup>2</sup>  | 357J-12605<br>(Note1)   |               | 357J-12606 | 357J-12607 | 357J-12724            | 357J-12609         |
| CE01- # 08P-C2M<br>CE01- # 08S-C2M   | 10 ~ 12          | 3.5 ~ 5.5mm <sup>2</sup>  |                         |               |            | 357J-12608 |                       |                    |
| CE01- # 12P-C1M<br>CE01- # 12S-C1M   | 12 ~ 16          | 1.25 ~ 3.5mm <sup>2</sup> | 357J-12725<br>(Note2)   | 357J-12610    | 357J-12611 |            | 357J-12723<br>(Note3) | 357J-12612         |
| CE01- # 16P-1416<br>CE01- # 16S-1416 | 14               | 2.0mm <sup>2</sup>        |                         | 357J-13426    |            |            |                       | 357J-12615         |
| CE01- # 16P-1620<br>CE01- # 16S-1620 | 16 ~ 20          | 0.5 ~ 1.25mm <sup>2</sup> |                         | 357J-13411    |            |            |                       |                    |
| CE01- # 16P-2024<br>CE01- # 16S-2024 | 20 ~ 24          | 0.2 ~ 0.5mm <sup>2</sup>  |                         | 357J-13412    |            |            |                       |                    |
| CE01- # 20P-C1<br>CE01- # 20S-C1     | 18 ~ 22          | 0.3 ~ 0.75mm <sup>2</sup> |                         | 357J-13413    |            |            |                       | 357J-13979         |
| CE01- # 20P-C2<br>CE01- # 20S-C2     | 22 ~ 26          | 0.15 ~ 0.3mm <sup>2</sup> |                         | 357J-13414    |            |            |                       |                    |

Note 1 : 357J-12605 is a tool kit part number which includes the crimping tool, 357J-12606, 357J-12607, 357J-12608 and 357J-12724.

The crimping tool can not be sold alone separately.

Note 2 : 357J-12725 is a tool kit part number which includes the crimping tool, the locator and the inspection gauge.

Note 3 : 357J-12723 is a part number which contains 3 pieces of the inspection gauges.

Note 4 : The tool instruction manuals are available. Contact the nearest sales office or distributor.

## ▶ Semi-Automatic Crimping Machine

| Contact Part Number                  | Crimping Machine |         |             |
|--------------------------------------|------------------|---------|-------------|
|                                      | Kit              | Press   | Applicator  |
| CE01- # 16P-1416<br>CE01- # 16S-1416 | AP-A13607        | LPC220S | AP-A13607-1 |
| CE01- # 16P-1620<br>CE01- # 16S-1620 | AP-A11216        | LPC220S | AP-A11216-1 |
| CE01- # 16P-2024<br>CE01- # 16S-2024 | AP-A13609        | LPC220S | AP-A13609-1 |
| CE01- # 20P-C1<br>CE01- # 20S-C1     | AP-A13611        | LPC220S | AP-A13611-1 |
| CE01- # 20P-C2<br>CE01- # 20S-C2     | AP-A13614        | LPC220S | AP-A13614-1 |

### ■ Note

- #20 contacts are quite smaller in outer diameter than #16 contacts. Insert #20 contacts into the insert with care so as not to damage or deform the contacts.
- Make sure that all contacts remain fixed in the insert completely. Around the last 2 or 3 pieces of contacts should be taken care in particular for a larger number of the contact arrangements. It is relatively harder to insert the contacts after installing a large number of contacts into the insert since there are many wires on the wiring side.
- Use the mating half of CE01 series pin contacts when you test the electrical continuity of the socket contacts. In case of mating the other conductors such like a clip it causes the troubles of electrical continuity, contact retaining force or contact surface damage.

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