SURE-SEAL

Reliability. Low Cost.
Performance. Delivery.

SURE-SEAL connectors – a series of low cost and environmentally sealed connectors.

The one-piece molded body and rugged multiple moisture seals make the SURE-SEAL connector a natural for applications whose outside contaminants must be excluded.

One of the many features of the SURE-SEAL connector is its simplicity. In addition to the contacts, only two other parts – the connector bodies – are required to complete the interconnect.

Features

Low Installed Cost
SURE-SEAL connectors are designed to be terminated by the O.E.M.

Field Service
When necessary, SURE-SEAL connectors can be changed, modified or wired in the field.

One-Piece Molded Bodies
The SURE-SEAL connector incorporates a very simple one-piece molded body. No other parts – other than contacts – are needed to assemble a complete connector.

Low Cost Stamped Contacts
Without sacrificing quality, the cost of SURE-SEAL connectors is kept low with stamped contacts available on reels in a continuous strip for use on the industry accepted semi automatic crimp press with mini applicator. All contacts utilize a “B” type crimp.

Wide Wire Gage and Cable Accommodations
Ideally suited to be terminated on wires of size 0.4-1.5 mm² (AWG 14-20), wire sizes with insulation in the range of 1.4-1.8 for Mini Sure Seal, resp. 1.8 - 2.8 for Sure Seal, termination to multiconductor jacketed cables in the range of 5.3 to 12.4 mm diameter and can be terminated to five different wire ranges depending on contact arrangements with total environment sealing still assured.

Polarized Against Mis-Mates
SURE-SEAL connector mating faces are constructed with two stepped planes; the plug and receptacle must be properly oriented in order for the contacts to engage. For “blind” mating a raised indexing rib and matching raised indexing spline has been added to the plug and receptacle.

Water Submersible
Not just splash proof, but truly submersible for short periods of time. SURE-SEAL fulfills the requirements according to IP68, IEC 60529. Note: Although SURE-SEAL can withstand submersion, it is not designed to be an underwater connector.

Resistant to Automotive/Commercial Environment
SURE-SEAL connectors are designed to meet temperatures from – 40° C to 105° C under conditions of high humidity severe vibration, ice and mud. Sealing integrity is still maintained with exposure to brake fluid, gasoline, diesel fuel, anti-freeze, ultra violet, ozone, steam cleaning under normal operating conditions.

Environment & Health
RoHS compliant

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
Interconnect Technologies & Solutions for the Transportation Industry

For over 90 years, ITT has been developing innovative solutions for harsh environment applications. We have a proven track record of demonstrating our expertise and commitment to the transportation industry, offering the broadest portfolio of interconnect products.

Our interconnect range include sealed circulars, plastic and metal shell bayonet coupling circulars, miniature metal shell circulars, PC board header connectors and sensor and direct device connectors. ITT is also a systems supplier, providing value-added module and harness assemblies.

In addition to the SURE-SEAL series, we also offer these connectivity solutions:

**Cannon APD**
In-line and bulkhead connectors are resistant to the harsh environmental conditions (contaminants, vibration and shock) and sealed up to IP69K.

**Cannon CA-Bayonet**
Signal and power connectors with exceptional sealing against the ingress of fluids and will withstand the effects of high vibrations.

**Cannon Trident**
Versatile range of electrical connectors based on a standard contact design. Options include: industrial grade, harsh environment and shielded circulars.

**Cannon SLC/SLE**
Environmentally sealed connector created for printed circuit board, black box, cable-to-cable or bulkhead applications.
## Connector Series Selection Table

<table>
<thead>
<tr>
<th></th>
<th>Sure Seal</th>
<th>CLC</th>
<th>SLC</th>
<th>SLE</th>
<th>APD</th>
<th>Trident Rectangular</th>
<th>Trident Circular</th>
<th>MS E/F/R</th>
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<td>5, 8, 10 &amp; 15</td>
<td>19 &amp; 28</td>
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<td>Max. Operating Voltage</td>
<td>48 V DC</td>
<td>300 V AC</td>
<td>300 V AC</td>
<td>300 V AC</td>
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<td>250 V AC</td>
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<td>Operating Temperature</td>
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<td>-40°F to 221°F</td>
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O: Available - Not available

Dimensions shown in mm
Specifications and dimensions subject to change

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<thead>
<tr>
<th>CA Bayonet</th>
<th>CA-INDUSTRIAL</th>
<th>CA Triple Thread</th>
<th>CGL</th>
<th>KPT / KPSE</th>
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**VG 95234**
- ISO 16750 VG 95234
- DIN/ VDE 0627 5.4.3 IEC 512-25-1 DIN/ VDE 0100 Part 410
- MIL-DTL-26482 Series 1, VG 95328
- MIL-DTL-26482 Series 2
- MIL-DTL-26482 Series 3
- MIL-DTL-38999 Series I
- MIL-DTL-38999 Series II
- MIL-DTL-38999 Series III

1 to 55
- 2 to 55
- 3 to 11
- 2 to 61
- 2 to 61
- 3 to 61
- 3 to 128
- 3 to 128
- 3 to 128

50 V DC
- 50 V DC
- 50 V DC
- 700 V DC
- 50 V DC
- 50 V DC
- 500 V AC
- 1250 V AC
- 1250 V AC
- 1250 V AC

3000 V AC
- 2000 V AC
- 3000 V AC
- 7200 V AC
- 2300 V AC
- 2300 V AC
- 2300 V AC
- 2300 V AC

245 A
- 30 A
- 245 A
- 100 A
- 22 A
- 22 A
- 23 A
- 23 A
- 23 A

26 to 0
- 26 to 12
- 26 to 0
- 15 to 3
- 24 to 16
- 24 to 16
- 24 to 12
- 28 to 12
- 28 to 12
- 28 to 12

14 - 50 mm²
- 0.14 - 2.0 mm²
- 0.14 - 2.0 mm²
- 1.5 - 25 mm²
- 0.21 - 1.9 mm²
- 0.4 - 7.0 mm²
- 0.4 - 7.0 mm²
- 0.45 - 7.0 mm²

500
- 200
- 500
- 500
- 500
- 500
- 500
- 500

Reverse Bayonet
- Reverse Bayonet
- Triple Thread
- Bayonet
- Bayonet
- Bayonet
- Bayonet
- Bayonet

IP68 (1 bar / 16h)
- IP69k
- IP68 (1 bar / 16h) IP69k
- IP68 (1 bar / 16h) IP69k
- IP 67
- IP 68 (0.2 bar / 48h)
- IP 68 (0.2 bar / 48h)
- Environmental resistant acc. to EIA-364-02
- Environmental resistant acc. to EIA-364-02
- Environmental resistant acc. to EIA-364-02
- Environmental resistant acc. to EIA-364-02

-55°C to 125°C
-67°F to 257°F
-50°C to 140°C
-58°F to 284°F
-55°C to 125°C
-67°F to 257°F
-55°C to 200°C
-65°F to 392°F
-65°C to 100°C
-85°F to 392°F
-65°C to 200°C
-85°F to 392°F
-65°C to 200°C
-85°F to 392°F

-50°C
-50°C
-50°C
-50°C
-50°C
-50°C
-50°C
-300
-300
-300

200 m/s²
- 300 m/s²
- 300 m/s²
- 300 m/s²
- 200 m/s²
- 200 m/s²
- 200 m/s²
- 200 m/s²
- 600 m/s²

-55°C to 125°C
-67°F to 257°F
-55°C to 125°C
-67°F to 257°F
-55°C to 125°C
-67°F to 257°F
-55°C to 200°C
-65°F to 392°F
-65°C to 100°C
-85°F to 392°F
-65°C to 200°C
-85°F to 392°F
-65°C to 200°C
-85°F to 392°F

-55°C to 125°C
-67°F to 257°F
-55°C to 125°C
-67°F to 257°F
-55°C to 200°C
-65°F to 392°F
-65°C to 100°C
-85°F to 392°F
-65°C to 200°C
-85°F to 392°F
-65°C to 200°C
-85°F to 392°F

-50°C
-50°C
-50°C
-50°C
-50°C
-50°C
-50°C
-300
-300
-300

200 m/s²
- 300 m/s²
- 300 m/s²
- 300 m/s²
- 200 m/s²
- 200 m/s²
- 200 m/s²
- 600 m/s²

-55°C to 125°C
-67°F to 257°F
-55°C to 125°C
-67°F to 257°F
-55°C to 125°C
-67°F to 257°F
-55°C to 200°C
-65°F to 392°F
-65°C to 100°C
-85°F to 392°F
-65°C to 200°C
-85°F to 392°F
-65°C to 200°C
-85°F to 392°F

Aluminum Alloy
- Aluminum Alloy
- Aluminum Alloy
- Aluminum Alloy
- Aluminum Alloy
- Aluminum Alloy
- Aluminum Alloy
- Aluminum Alloy

Silver or Gold
- Silver or Gold
- Silver or Gold
- Silver or Gold
- Silver or Gold
- Silver or Gold
- Silver or Gold
- Silver or Gold

Specifications and dimensions subject to change.

Dimensions shown in mm

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**Mini SURE-SEAL**

**Electrical Data**
- Operating Voltage: 48 VDC*
- Operating Current: see derating curve
- Contact Resistance: 10 Milliohms max.
- Dielectric Withstanding Voltage: 1200 VAC at sea level
- Insulation Resistance: 100 Megohms min.

**Wire Dimensions**
- Wire Range: 0,4–0,75 mm² (AWG 20–18)
- Wire Insulation: Sealing Range 1,4–1,8 mmØ

**Mechanical Data**
- No. of contacts per connector: 2 to 4
- Polarization: Stepped plane positive polarization and visual polarization
- Contact Retention: 30 N minimum
- Durability: 50 mating cycles with stamped contacts, tin-plated; 100 mating cycles with machined contacts, silver-plated

**Environmental Data**
- Temperature Range: -40°C to 105°C
- Humidity Range: up to 95% r.h.
- Sealing: IP 68 (100 kPa = 1 bar/12 h) (IEC 60529)
- Salt Spray: 100 h (DIN 50021, test SS)
- Vibration: Sine wave 10-55 Hz, 1,5mm (IEC 60512-4, test 6d)
- Physical Shock: Half sine 500 m/s² 11ms
- Fluid Compatibility: Fuel, engine oil, break fluid, detergent fluid and others
- Ozone Resistance: 50 ppmm, 48 h (DIN 53509-1)

**Materials and Finishes**
- Plug and Receptacle: Nitril-Butadien rubber
- Contacts, stamped: Copper alloy, tin plating
- Contacts, machined: Copper alloy, hard silver plating

**Applications**
- Industrial Machinery
- Rail
- Construction & Cleaning Vehicles
- Trucks & Busses
- Cranes

---

*Further information available upon request*
**Mini SURE-SEAL**

**Contact Arrangements**

![Contact Arrangements Diagram]

<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Shell size</th>
<th>Plug Receptacle</th>
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<tbody>
<tr>
<td>2</td>
<td>MSS 2 P</td>
<td>120-8552-100</td>
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<tr>
<td>3</td>
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<td>4</td>
<td>MSS 4 P</td>
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**Part Numbers**

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<th>Plug Receptacle</th>
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**Measurements**

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<th>ØB ± 0,2</th>
<th>ØC ± 0,3</th>
<th>ØD ± 0,3</th>
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<td>9,6</td>
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<td>16,3</td>
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<td>14,4</td>
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Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
## Contacts, stamped
With insulation support

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<th>Sockets</th>
<th>Wire hole fillers</th>
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<tbody>
<tr>
<td>Mini SURE-SEAL 0,4–0,75 mm² individual</td>
<td>330-8672-100</td>
<td>031-8703-100</td>
<td>225-1012-000</td>
</tr>
<tr>
<td>on reels, 5000 pcs.</td>
<td>121348-0100</td>
<td>121347-0100</td>
<td>225-1012-000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pin</th>
<th>Socket</th>
<th>Wire hole filler *</th>
</tr>
</thead>
</table>

* Wire hole fillers are inserted into unused cavities instead of a contact in order to create a watertight sealing.

## Contacts, machined

<table>
<thead>
<tr>
<th></th>
<th>Pins</th>
<th>Sockets</th>
<th>Wire hole fillers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini SURE-SEAL 0,4–0,75 mm² individual</td>
<td>330-8672-005</td>
<td>031-8703-052</td>
<td>225-1012-000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pin</th>
<th>Socket</th>
<th>Wire hole filler *</th>
</tr>
</thead>
</table>

* Wire hole fillers are inserted into unused cavities instead of a contact in order to create a watertight sealing.
**Electrical Data**

- **Operating Voltage**: 48 VDC*
- **Operating Current**: see derating curve
- **Contact Resistance**: 10 Milliohms max.
- **Dielectric Withstanding Voltage**: 1200 VAC at sea level
- **Insulation Resistance**: 100 Megohms min.

**Wire Dimensions**

- **Wire Range**: 0,75–1,5 mm² (AWG 18–14)
- **Wire insulation**: 0,5-1,0 mm² (AWG 20–16)
- **Sealing Range**: 1,8–2,8 mmØ

**Mechanical Data**

- **No. of contacts per connector**: 2 to 10
- **Polarization**: Stepped plane positive polarization and visual polarization
- **Contact Retention**: 35 N minimum
- **Durability**: 50 mating cycles with stamped contacts, tin-plated
  - 100 mating cycles with machined contacts, silver-plated

**Environmental Data**

- **Temperature Range**: -40°C to 105°C
- **Humidity Range**: up to 95% r.h.
- **Sealing**: IP 68 (100 kPa = 1 bar/12 h) (IEC 60529)
- **Salt spray**: 100 h (DIN 50021, test SS)
- **Vibration**: Sine wave 10-55 Hz, 1,5mm (IEC 60512-4, test 6d)
- **Physical Shock**: Half sine 500 m/s², 11ms
- **Fluid Compatibility**: Fuel, engine oil, break fluid, detergent fluid and others
- **Ozone Resistance**: 50 pphm, 48 h (DIN 53509-1)

**Materials and Finishes**

- **Plug and Receptacle**: Nitril-Butadien rubber
- **Contacts, stamped**: Copper alloy, tin plating
- **Contacts, machined**: Copper alloy, hard silver plating

**Applications**

- Industrial Machinery
- Rail
- Construction & Cleaning Vehicles
- Trucks & Busses
- Cranes

---

*Further information available upon request*
Plug

Contact Arrangements

Part Numbers

2, 3 and 4 Contacts

<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Shell size</th>
<th>Part No.</th>
<th>A ± 0,3</th>
<th>B ± 0,3</th>
<th>Insulation Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>SS2P</td>
<td>120-8552-000</td>
<td>13,9</td>
<td>10,9</td>
<td>1,8 – 2,8</td>
</tr>
<tr>
<td>3</td>
<td>SS3P</td>
<td>120-8552-001</td>
<td>15,2</td>
<td>12,3</td>
<td>1,8 – 2,8</td>
</tr>
<tr>
<td>4</td>
<td>SS4P</td>
<td>120-8552-002</td>
<td>15,2</td>
<td>12,3</td>
<td>1,8 – 2,8</td>
</tr>
</tbody>
</table>

5, 6 and 7 Contacts

<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Shell size</th>
<th>Part No.</th>
<th>A ± 0,3</th>
<th>B ± 0,3</th>
<th>Insulation Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>SS5P</td>
<td>120-8552-005</td>
<td>25,3</td>
<td>20,2</td>
<td>1,8 – 2,8</td>
</tr>
<tr>
<td>6</td>
<td>SS6P</td>
<td>120-8552-006</td>
<td>25,3</td>
<td>20,2</td>
<td>1,8 – 2,8</td>
</tr>
<tr>
<td>7</td>
<td>SS7P</td>
<td>120-8552-007</td>
<td>25,3</td>
<td>20,2</td>
<td>1,8 – 2,8</td>
</tr>
</tbody>
</table>

8 to 10 Contacts

<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Shell size</th>
<th>Part No.</th>
<th>A ± 0,3</th>
<th>B ± 0,3</th>
<th>Insulation Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>SS8P</td>
<td>120-8552-308</td>
<td>28,55</td>
<td>23,5</td>
<td>1,8 – 2,8</td>
</tr>
<tr>
<td>9</td>
<td>SS9P</td>
<td>120-8552-309</td>
<td>28,55</td>
<td>23,5</td>
<td>1,8 – 2,8</td>
</tr>
<tr>
<td>10</td>
<td>SS10P</td>
<td>120-8552-310</td>
<td>28,55</td>
<td>23,5</td>
<td>1,8 – 2,8</td>
</tr>
</tbody>
</table>

Dimensions shown in mm
Specifications and dimensions subject to change

www.ittcannon.com

11
Plug with flange

Contact Arrangements

Part Numbers

2, 3 and 4 Contacts

<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Shell size</th>
<th>Part No.</th>
<th>A ± 0,3</th>
<th>B ± 0,3</th>
<th>Insulation Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>SSF2P</td>
<td>120-8552-200</td>
<td>13,9</td>
<td>10,8</td>
<td>1,8 – 2,8</td>
</tr>
<tr>
<td>3</td>
<td>SSF3P</td>
<td>120-8552-201</td>
<td>15,2</td>
<td>12,3</td>
<td>1,8 – 2,8</td>
</tr>
<tr>
<td>4</td>
<td>SSF4P</td>
<td>120-8552-202</td>
<td>15,2</td>
<td>12,3</td>
<td>1,8 – 2,8</td>
</tr>
</tbody>
</table>

8, 9 and 10 Contacts

<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Shell size</th>
<th>Part No.</th>
<th>A ± 0,3</th>
<th>B ± 0,2</th>
<th>Insulation Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>SSF8P</td>
<td>120-8552-305</td>
<td>28,55</td>
<td>23,5</td>
<td>1,8 – 2,8</td>
</tr>
<tr>
<td>9</td>
<td>SSF9P</td>
<td>120-8552-306</td>
<td>28,55</td>
<td>23,5</td>
<td>1,8 – 2,8</td>
</tr>
<tr>
<td>10</td>
<td>SSF10P</td>
<td>120-8552-307</td>
<td>28,55</td>
<td>23,5</td>
<td>1,8 – 2,8</td>
</tr>
</tbody>
</table>
Receptacle

Contact Arrangements

```
<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Shell size</th>
<th>Part No.</th>
<th>A - 0,5</th>
<th>B - 0,3</th>
<th>Insulation Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>SS2R</td>
<td>120-8551-000</td>
<td>18,0</td>
<td>10,9</td>
<td>1,8 - 2,8</td>
</tr>
<tr>
<td>3</td>
<td>SS3R</td>
<td>120-8551-001</td>
<td>18,9</td>
<td>12,3</td>
<td>1,8 - 2,8</td>
</tr>
<tr>
<td>4</td>
<td>SS4R</td>
<td>120-8551-002</td>
<td>18,9</td>
<td>12,3</td>
<td>1,8 - 2,8</td>
</tr>
</tbody>
</table>
```

Part Numbers

```
<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Shell size</th>
<th>Part No.</th>
<th>A - 0,5</th>
<th>B - 0,3</th>
<th>Insulation Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>SS5R</td>
<td>120-8551-005</td>
<td>29,1</td>
<td>20,2</td>
<td>1,8 - 2,8</td>
</tr>
<tr>
<td>6</td>
<td>SS6R</td>
<td>120-8551-006</td>
<td>29,1</td>
<td>20,2</td>
<td>1,8 - 2,8</td>
</tr>
<tr>
<td>7</td>
<td>SS7R</td>
<td>120-8551-007</td>
<td>29,1</td>
<td>20,2</td>
<td>1,8 - 2,8</td>
</tr>
</tbody>
</table>
```

```
<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Shell size</th>
<th>Part No.</th>
<th>A - 0,5</th>
<th>B ± 0,3</th>
<th>Insulation Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>SS8R</td>
<td>120-8551-308</td>
<td>33,5</td>
<td>23,5</td>
<td>1,8 - 2,8</td>
</tr>
<tr>
<td>9</td>
<td>SS9R</td>
<td>120-8551-309</td>
<td>33,5</td>
<td>23,5</td>
<td>1,8 - 2,8</td>
</tr>
<tr>
<td>10</td>
<td>SS10R</td>
<td>120-8551-310</td>
<td>33,5</td>
<td>23,5</td>
<td>1,8 - 2,8</td>
</tr>
</tbody>
</table>
```
### Contacts, stamped

**with insulation support**

<table>
<thead>
<tr>
<th>SURE-SEAL 0,5–1,0 mm²</th>
<th>Pins</th>
<th>Sockets</th>
<th>Wire hole fillers</th>
</tr>
</thead>
<tbody>
<tr>
<td>individual</td>
<td>330-8672-001</td>
<td>031-8703-001</td>
<td></td>
</tr>
<tr>
<td>on reels, 5000 pcs.</td>
<td>121348-0020</td>
<td>121347-0020</td>
<td>225-0093-000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SURE-SEAL 0,75–1,5 mm²</th>
<th>Pins</th>
<th>Sockets</th>
<th>Wire hole fillers</th>
</tr>
</thead>
<tbody>
<tr>
<td>individual</td>
<td>330-8672-000</td>
<td>031-8703-000</td>
<td></td>
</tr>
<tr>
<td>on reels, 5000 pcs.</td>
<td>121348-0010</td>
<td>121347-0010</td>
<td></td>
</tr>
</tbody>
</table>

**Pin** | **Socket** | **Wire hole filler** *

* Wire hole fillers are inserted into unused cavities instead of a contact in order to create a watertight sealing.

### Contacts, machined

**without insulation support**

<table>
<thead>
<tr>
<th>SURE-SEAL 0,5–1,0 mm²</th>
<th>Pins</th>
<th>Sockets</th>
<th>Wire hole fillers</th>
</tr>
</thead>
<tbody>
<tr>
<td>330-8672-002</td>
<td>031-8703-050</td>
<td></td>
<td>225-0093-000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SURE-SEAL 0,75–1,5 mm²</th>
<th>Pins</th>
<th>Sockets</th>
<th>Wire hole fillers</th>
</tr>
</thead>
<tbody>
<tr>
<td>330-8672-003</td>
<td>031-8703-051</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pin** | **Socket** | **Wire hole filler** *

* Wire hole fillers are inserted into unused cavities instead of a contact in order to create a watertight sealing.

### Mounting plate

*For SURE-SEAL with flange Steel, zinc finish*

**Mounting Dimensions**

*Front and rear panel mounting*

**Order ref. 066-8516-002**

**Order ref. 066-8516-000**

Screw head on this side

Tighten screw with min. 30 Ncm

Dimensions shown in mm

Specifications and dimensions subject to change

www.ittcannon.com
Accessories

Boot

Seals wired cable jackets to connector housing. It also provides abrasion resistance.

<table>
<thead>
<tr>
<th>For connector size</th>
<th>Order ref.</th>
<th>B Ømax.</th>
<th>D Ømax.</th>
<th>outer cable Ø</th>
<th>K max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 contacts</td>
<td>317-1398-000</td>
<td>17,00</td>
<td>9,70</td>
<td>5,28 – 5,79</td>
<td>52,07</td>
</tr>
<tr>
<td>3/4 contacts</td>
<td>317-1397-000</td>
<td>15,80</td>
<td>9,70</td>
<td>5,59 – 6,10</td>
<td>52,50</td>
</tr>
<tr>
<td>3/4 contacts</td>
<td>317-1399-000</td>
<td>19,40</td>
<td>12,90</td>
<td>8,76 – 9,65</td>
<td>52,07</td>
</tr>
<tr>
<td>5/7 contacts</td>
<td>317-8657-000</td>
<td>27,60</td>
<td>12,50</td>
<td>7,20 – 8,40</td>
<td>62,00</td>
</tr>
<tr>
<td>8/9/10 cont.</td>
<td>317-8657-002</td>
<td>31,50</td>
<td>17,50</td>
<td>10,00 – 12,40</td>
<td>64,00</td>
</tr>
</tbody>
</table>

Grommet

Grommets enable panel mounting of either plugs or receptacle. It snaps into a hole of a panel so non-flanged plugs or receptacles can be mounted.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 contacts</td>
<td>351-1640-000</td>
<td>10,41</td>
<td>32,39</td>
<td>19,18</td>
<td>5,84</td>
<td>1,40</td>
<td>17,53</td>
</tr>
<tr>
<td>3/4 contacts</td>
<td>351-1641-000</td>
<td>11,94</td>
<td>32,39</td>
<td>19,18</td>
<td>5,84</td>
<td>1,40</td>
<td>17,53</td>
</tr>
<tr>
<td>5/6/7 contacts</td>
<td>351-1633-000</td>
<td>19,43</td>
<td>55,88</td>
<td>36,70</td>
<td>8,00</td>
<td>1,65</td>
<td>20,57</td>
</tr>
<tr>
<td>8/9/10 cont.</td>
<td>351-1634-000</td>
<td>22,61</td>
<td>55,88</td>
<td>36,70</td>
<td>8,00</td>
<td>1,65</td>
<td>20,57</td>
</tr>
</tbody>
</table>

Wire Fillers

Wire hole fillers are inserted into unused cavities instead of a contact in order to create a watertight sealing.

Wire hole filler
Mini SURE-SEAL
Part Number 225-1012-000

Wire hole filler
SURE-SEAL
Part Number 225-0093-000
**Accessories Clip/Clamp**

Clips/Clamps can be used as an extra lock to secure two connector halves. Due to its design it also offers the possibility for fixed mounting a mated pair by using a screw or a cable tie.

**Clamp**

Clamps, plug and receptacle in mated condition

---

### Mounting Clip

Clamps, plug and receptacle in mated condition

---

### Connector Size

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 contacts</td>
<td>Red</td>
<td>029-0263-000</td>
<td>-</td>
<td>22,61</td>
<td>25,40</td>
<td>10,67</td>
<td>10,7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3/4 contacts</td>
<td>Yellow</td>
<td>029-0262-000</td>
<td>-</td>
<td>23,62</td>
<td>26,67</td>
<td>11,43</td>
<td>12,19</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5/6/7 contacts</td>
<td>Natural</td>
<td>026-0450-000</td>
<td>77,34</td>
<td>35,43</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>15,49</td>
<td>23,11</td>
</tr>
<tr>
<td>8/9/10 contacts</td>
<td>Black</td>
<td>026-0451-000</td>
<td>77,34</td>
<td>38,61</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>16,76</td>
<td>24,38</td>
</tr>
</tbody>
</table>

Dimensions shown in mm

Specifications and dimensions subject to change

**ITT Cannon**

www.ittcannon.com
Hand Crimp Tool CCT
for stamped contacts

<table>
<thead>
<tr>
<th>Crimp tool</th>
<th>Order no.</th>
<th>Contact size</th>
<th>Pin contact</th>
<th>Socket contact</th>
<th>Stripping length mm</th>
<th>Outer wire insulation Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCT-MSS/SS-20</td>
<td>121586-0085</td>
<td>SS-20</td>
<td>330-8672-001</td>
<td>031-8703-001</td>
<td>3,6-3,8</td>
<td>1,8-2,4</td>
</tr>
<tr>
<td>CCT-MSS/SS-20</td>
<td>121586-0085</td>
<td>MSS-100</td>
<td>330-8672-100</td>
<td>031-8703-100</td>
<td>3,3-3,6</td>
<td>1,4-1,8</td>
</tr>
<tr>
<td>CCT-SS-10</td>
<td>121086-3225</td>
<td>SS-10</td>
<td>330-8672-000</td>
<td>031-8703-000</td>
<td>5,0-5,5</td>
<td>1,8-2,8</td>
</tr>
</tbody>
</table>

Instructions

- Strip wire (neither twist nor touch stripped section)
- Insert single contact in correct crimp profile and locate onto wire stop (refer to table for outer insulation diameter).
- Close hand crimp tool until it holds contact in place.
- Insert pre-stripped wire until light contact is made on wire stop, and lay wire into contact barrels.
- Fully close hand crimp tool until ratchet releases.
- Remove contact.
- Inspect crimped area visually.

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
**ITT Cannon Mini Applicator**
for semi-automatic and automatic crimp machines

Cannon Mini Applicator can be exchanged easy, quick and effortless. The compact construction as well as the clamping device allow using the Mini Applicator with other crimp machines.

**Technical Data**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lift</td>
<td>40 mm</td>
</tr>
<tr>
<td>Wire size to be processed</td>
<td>max 4mm²</td>
</tr>
<tr>
<td>Installation dimension</td>
<td>135.78 +/- 0.02 mm (lower dead center)</td>
</tr>
</tbody>
</table>

**Contacts**

Contacts for the different connector series are available on reels. They can be terminated with the tool on the Basic Crimp Press TT (part number 121586-5225).

<table>
<thead>
<tr>
<th>Quick Change Tool</th>
<th>Part Number</th>
<th>Contacts</th>
<th>Contacts per reel</th>
<th>Termination range mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>WWZ-EVS-SS-10</td>
<td>121586-5215</td>
<td>Sure Seal</td>
<td>5,000</td>
<td>0.75 - 1.5</td>
</tr>
<tr>
<td>WWZ-EVS-SS-20</td>
<td>121586-5216</td>
<td>Sure Seal</td>
<td>5,000</td>
<td>0.5 - 1.0</td>
</tr>
<tr>
<td>WWZ-EVS-MSS</td>
<td>121586-5214</td>
<td>Mini Sure Seal</td>
<td>5,000</td>
<td>0.4 - 0.75</td>
</tr>
</tbody>
</table>

Adjustments for the tools - please refer to the datasheet supplied with the tool.
### Hand Crimp Tool M22520-1-01

**for machined contacts**

<table>
<thead>
<tr>
<th>Crimp tool</th>
<th>Contacts</th>
<th>Contact Size</th>
<th>Positioner</th>
<th>Wire size Pin and Socket mm</th>
<th>AWG</th>
<th>Stripping Length mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>330-8672-003</td>
<td>SS10</td>
<td>120090-0114</td>
<td>0,75-1,5</td>
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<td>6,5 ±0,3</td>
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<tr>
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<tr>
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<td>0,5-1,0</td>
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<td>6,5 ±0,3</td>
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<td>330-8672-008</td>
<td>SS</td>
<td>120090-0114</td>
<td>12-14</td>
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<tr>
<td></td>
<td>330-8672-005</td>
<td>MSS-100</td>
<td>120090-0114</td>
<td>0,4-0,75</td>
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<td>5,2 ±0,2</td>
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<td></td>
<td>031-8703-052</td>
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<td></td>
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</tbody>
</table>

### Pneumatic Crimp Tool WA27F-CE

**for machined contacts**

This tool is designed for 8-indent crimps. For insertion and removal of contact insert please refer to tool description.

**Specifications**
- **Air pressure**: 5.7-6.3 bar
- **Weight**: 4 kg

**Sequence**
- Mount correct contact positioner.
- Adjust tool for correct wire size using reference gauge (refer to table).
- Place contact in correct positioner.
- Insert stripped wire into crimp bore hole of contact.

### Order numbers

<table>
<thead>
<tr>
<th>Crimp tool</th>
<th>Contacts</th>
<th>Contact Size</th>
<th>Positioner</th>
<th>Wire size Pin and Socket mm²</th>
<th>AWG</th>
<th>Stripping Length mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>330-8672-003</td>
<td>SS10</td>
<td>120090-0114</td>
<td>0,75-1,5</td>
<td></td>
<td>6,5 ±0,3</td>
</tr>
<tr>
<td></td>
<td>031-8703-051</td>
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<tr>
<td>WA27F-CE</td>
<td>330-8672-009</td>
<td>SS20</td>
<td>120090-0114</td>
<td>0,5-1,0</td>
<td></td>
<td>6,5 ±0,3</td>
</tr>
<tr>
<td>Part Number:</td>
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<tr>
<td></td>
<td>330-8672-008</td>
<td>SS</td>
<td>120090-0114</td>
<td>12-14</td>
<td>6,5</td>
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<td>031-8703-054</td>
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</tr>
<tr>
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<td>330-8672-005</td>
<td>MSS-100</td>
<td>120090-0114</td>
<td>0,4-0,75</td>
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<td>5,2 ±0,2</td>
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<td>031-8703-052</td>
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</tr>
</tbody>
</table>

**Bench Mount: BM-2**
- 121586-5068

**Foot Pedal: WA10**
- 121586-5069

Dimensions shown in mm
Specifications and dimensions subject to change

[www.ittcannon.com](http://www.ittcannon.com)
## Semi-Automatic Crimp Machine HACS-5

for machined contacts

Machined contacts can be terminated quickly and efficiently with the Cannon semi-automatic crimp machine HACS-5.

### Specifications

<table>
<thead>
<tr>
<th>Power supply</th>
<th>220 V/Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pressure</td>
<td>min. 6 bar</td>
</tr>
<tr>
<td>Dimensions</td>
<td>600 x 600 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 82 kg</td>
</tr>
</tbody>
</table>

For operating the machine and adjusting the crimp depth please refer to separate operating instructions.

### Crimp Contacts

<table>
<thead>
<tr>
<th>Crimp machine</th>
<th>Contacts</th>
<th>Contact Size</th>
<th>Wire size Pin and Socket mm²</th>
<th>Stripping Length mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>HACS-5-SS</td>
<td>330-8672-003</td>
<td>SS10</td>
<td>0,75-1,5</td>
<td>6,5</td>
</tr>
<tr>
<td></td>
<td>031-8703-051</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>330-8672-009</td>
<td>SS20</td>
<td>0,5-1,0</td>
<td>6,5</td>
</tr>
<tr>
<td></td>
<td>031-8703-050</td>
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</tr>
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<td></td>
<td>031-8703-055</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HACS-5-SS-12/14</td>
<td>330-8672-008</td>
<td>SS</td>
<td>12-14</td>
<td>6,5</td>
</tr>
<tr>
<td></td>
<td>031-8703-054</td>
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</tr>
<tr>
<td>HACS-5-MSS</td>
<td>330-8672-005</td>
<td>MSS-100</td>
<td>0,4-0,75</td>
<td>5,2</td>
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<tr>
<td></td>
<td>031-8703-052</td>
<td></td>
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</tr>
</tbody>
</table>

Spare indenter: 7011707 (121586-0038)

* available upon request
Visual Check
for machined contacts

Correct crimp

1 insulation  2 strands  3 contact  4 drill bore

Incorrect crimp

1 insulation  2 strands  3 contact

Tensile strength according to DIN 41611, section 3

Micro sections
Enlargement of micro section allows for final judgement of crimp quality. This test is recommended whenever new tools or new types of wire are used.

Correct crimp

1 insulation  2 strands  3 contact

Incorrect crimp

1 insulation  2 strands  3 contact

strands not visible

strands extend too far into contact

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
Contact Insertion Tools
for machined contacts

Support block for series production
Support block to install contacts in small and medium series. This support block consists of a basic body which can be equipped, according to individual requirements, with exchangeable insert for plugs and receptacles.

Please note: When required exchangeable inserts to be ordered separately.

<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Basic tool to use for SURE-SEAL Standard Plug/Receptacle</th>
<th>Order No.</th>
<th>Plug with Flange</th>
<th>Order No.</th>
<th>Mini SURE SEAL</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>CIFG-SS-2</td>
<td>121086-3022</td>
<td>CIF-SSF-2</td>
<td>121086-3057</td>
<td>CIF-MSS-2</td>
<td>121086-3021</td>
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<tr>
<td>3</td>
<td>CIFG-SS-3</td>
<td>121086-3019</td>
<td>CIF-SSF-3</td>
<td>121086-3058</td>
<td>CIF-MSS-3</td>
<td>121086-3077</td>
</tr>
<tr>
<td>4</td>
<td>CIFG-SS-4</td>
<td>121086-3020</td>
<td>CIF-SSF-4</td>
<td>121086-3059</td>
<td>CIF-MSS-4</td>
<td>121086-3079</td>
</tr>
<tr>
<td>5/6/7</td>
<td>CIFG-SS-5-6-7</td>
<td>121586-0080</td>
<td>CIF-SSF-5-6-7</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/9/10</td>
<td>CIFG-SS-8-9-10</td>
<td>121086-3056</td>
<td>CIF-SSF-8-9-10</td>
<td>*</td>
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<td></td>
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</tbody>
</table>

*available upon request

<table>
<thead>
<tr>
<th>No. of contact</th>
<th>Exchangeable inserts to use for SURE-SEAL Standard Plug</th>
<th>Plug with flange</th>
<th>Receptacle</th>
<th>Mini SURE-SEAL Plug</th>
<th>Receptacle</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/6/7</td>
<td>195-8508-006</td>
<td>195-8508-006</td>
<td>195-8508-007</td>
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<tr>
<td>8/9/10</td>
<td>195-8508-008</td>
<td>195-8508-008</td>
<td>195-8508-009</td>
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</tbody>
</table>
### Insertion Tool CIT

#### Hand Insertion tool

<table>
<thead>
<tr>
<th>Type of insulator</th>
<th>Description</th>
<th>Order No.</th>
<th>Outer insulation Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS 2P + R to SS 10P + R SSF 8, 9, 10P</td>
<td>CITG-SS-1</td>
<td>121086-3025</td>
<td>1,8-2,8</td>
</tr>
<tr>
<td>SSF 2, 3, 4P</td>
<td>CIT-SSF-1</td>
<td>121086-3203</td>
<td>1,8-2,8</td>
</tr>
<tr>
<td>MSS 2, 3, 4P+R</td>
<td>CIT-MSS-1</td>
<td>121086-3023</td>
<td>1,4-1,8</td>
</tr>
</tbody>
</table>

#### Insertion tip

<table>
<thead>
<tr>
<th>Type of insulator</th>
<th>Description</th>
<th>Order No.</th>
<th>Outer insulation Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS 2P + R to SS 10P + R SSF 8, 9, 10P</td>
<td>CITG-SS-1-TIP</td>
<td>121586-0076</td>
<td>1,8-2,8</td>
</tr>
<tr>
<td>SSF 2, 3, 4P</td>
<td>CIT-SSF-1-TIP</td>
<td>121086-3202</td>
<td>1,8-2,8</td>
</tr>
<tr>
<td>MSS 2, 3, 4P+R</td>
<td>CIT-MSS-1-TIP</td>
<td>121586-0074</td>
<td>1,4-1,8</td>
</tr>
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</table>

#### Contact holder tip

<table>
<thead>
<tr>
<th>Type of insulator</th>
<th>Order No.</th>
<th>Outer insulation Ø</th>
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</thead>
<tbody>
<tr>
<td>SS 2P + R to SS 10P + R SSF 8, 9, 10P</td>
<td>317-8666-005</td>
<td>1,8-2,8</td>
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<td>SSF 2, 3, 4P</td>
<td>317-8666-007</td>
<td>1,8-2,8</td>
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<tr>
<td>MSS 2, 3, 4P+R</td>
<td>317-8666-002</td>
<td>1,4-1,8</td>
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</tbody>
</table>

Guiding pins have to be used for socket contacts. They are not necessary for Mini SURE-SEAL.

Order number: 317-8588-000

Approved lubricating fluid
Isopropyl alcohol
Cleaning solvent (e.g. HAKU 424, Chem. Fabrik Kluthe, Heidelberg, Germany)
Insertion Press CHPZ-240

A hand actuated insertion press can be used instead of a hand insertion tool. A manual assembly station consists of a press, a support block and a suitable insertion tip (refer to page 20-22). The CHPZ press, the required CIF... support block and the insertion tip must be ordered separately.

Basic press: CHPZ-240
Support block: Refer to page 20
Insertion tip: Refer to table
Wire holder (accessory): 121086-3210

Version A: Single insertion tip, also used for the hand insertion tool
B: Double insertion tip
C: Single insertion tip; can be turned twice by 120°
D: Single insertion tip; can be turned once by 180°

Parts subject to wear

Insertion tip

<table>
<thead>
<tr>
<th>Type of contact</th>
<th>Order no.</th>
<th>Outer Insulation Ø</th>
</tr>
</thead>
<tbody>
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<td>317-8666-007</td>
<td>1,8-2,8</td>
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<tr>
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<td>317-8666-007</td>
<td>1,8-2,8</td>
</tr>
<tr>
<td>MSS-100</td>
<td>317-8666-002</td>
<td>1,4-1,8</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Version A</th>
<th>Version B</th>
<th>Version C</th>
<th>Version D</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>• CIT-SSF-1-TIP</td>
<td>• CIT-SSF-2-TIP</td>
<td>• CIT-SSF-3-TIP</td>
<td>• CIT-SSF-4-TIP</td>
</tr>
<tr>
<td></td>
<td>■ CIT-MSS-1-TIP</td>
<td>■ CIT-MSS-2-TIP</td>
<td>■ CIT-MSS-3-TIP</td>
<td>■ CIT-MSS-4-TIP</td>
</tr>
<tr>
<td>3</td>
<td>• CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-2-TIP</td>
<td>• CIT-SSF-3-TIP</td>
<td>• CIT-SSF-4-TIP</td>
</tr>
<tr>
<td></td>
<td>■ CIT-MSS-1-TIP</td>
<td>■ CIT-MSS-2-TIP</td>
<td>■ CIT-MSS-3-TIP</td>
<td>■ CIT-MSS-4-TIP</td>
</tr>
<tr>
<td>4</td>
<td>• CIT-SSF-1-TIP</td>
<td>• CIT-SSF-2-TIP</td>
<td>• CIT-SSF-3-TIP</td>
<td>• CIT-SSF-4-TIP</td>
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<td>■ CIT-MSS-2-TIP</td>
<td>■ CIT-MSS-3-TIP</td>
<td>■ CIT-MSS-4-TIP</td>
</tr>
<tr>
<td>5</td>
<td>• CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
</tr>
<tr>
<td>6</td>
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<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
</tr>
<tr>
<td>7</td>
<td>• CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
</tr>
<tr>
<td>8</td>
<td>• CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
</tr>
<tr>
<td>9</td>
<td>• CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
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<td>10</td>
<td>• CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
<td>■ CIT-SSF-1-TIP</td>
</tr>
</tbody>
</table>

• = Standard SURE-SEAL with flange  ■ = Mini SURE-SEAL (MSS)

Dimensions shown in mm
Specifications and dimensions subject to change
www.ittcannon.com
**Extraction Tools CET**

**Hand extraction tool**

<table>
<thead>
<tr>
<th>Type of insulator</th>
<th>Pin Contact</th>
<th>Socket Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SS 2 - 10P + R</strong></td>
<td>CET-SS-P</td>
<td>CET-SS-S</td>
</tr>
<tr>
<td><strong>SSF 2, 3, 4P</strong></td>
<td>121586-0121</td>
<td>121586-0122</td>
</tr>
<tr>
<td><strong>SSF 8, 9, 10P</strong></td>
<td>CET-MSS-P</td>
<td>CET-MSS-S</td>
</tr>
<tr>
<td><strong>MSS 2, 3, 4P+R</strong></td>
<td>121586-0123</td>
<td>121586-0124</td>
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</tbody>
</table>

**Spare tip**

<table>
<thead>
<tr>
<th>Type of insulator</th>
<th>Pin Contact</th>
<th>Socket Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SS 2 - 10P + R</strong></td>
<td>CET-SS-P-TIP 121086-3207</td>
<td>CET-SS-S-TIP 121086-3189</td>
</tr>
<tr>
<td><strong>SSF 2, 3, 4P</strong></td>
<td></td>
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<tr>
<td><strong>SSF 8, 9, 10P</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MSS 2, 3, 4P+R</strong></td>
<td>CET-MSS-P-TIP 121086-3191</td>
<td>CET-MSS-S-TIP 121086-3192</td>
</tr>
</tbody>
</table>

**Handle**

Order number: 204-8501-002

---

**Auxiliary Tools CIEF and CIET**

*Auxiliary tools for repairs*

Device for holding connectors during insertion and extraction of crimped contacts.

<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>Type of insulator</th>
<th>Description</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 3, 4</td>
<td>SS...P + R</td>
<td>CIEF-SS-2-3-4</td>
<td>121086-3097</td>
</tr>
<tr>
<td></td>
<td>SSF...P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5, 6, 7</td>
<td>SS...P + R</td>
<td>CIEF-SS-5-6-7</td>
<td>121086-3098</td>
</tr>
<tr>
<td>8, 9, 10</td>
<td>SS...P + R</td>
<td>CIEF-SS-8-9-10</td>
<td>121086-3179</td>
</tr>
<tr>
<td></td>
<td>SSF...P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2, 3, 4</td>
<td>MSS...P + R</td>
<td>CIEF-MSS-2-3-4</td>
<td>121086-3099</td>
</tr>
</tbody>
</table>

Guiding pins can be extracted by using a socket contact which is slightly tilted.

**Kit for field repair work and prototype**

<table>
<thead>
<tr>
<th>Kit</th>
<th>No. of contacts</th>
<th>Type of insulator</th>
<th>Description</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2, 3, 4</td>
<td>SS...P + R</td>
<td>CIEF-SS-2-3-4-KIT-10</td>
<td>121086-3226</td>
</tr>
<tr>
<td></td>
<td>2, 3, 4</td>
<td>SSF...P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>5, 6, 7</td>
<td>SS...P + R</td>
<td>CIEF-SS-5-6-7-KIT-10</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>8, 9, 10</td>
<td>SS...P + R</td>
<td>CIEF-SS-8-9-10-KIT-10</td>
<td>121086-3228</td>
</tr>
<tr>
<td>3*</td>
<td>8, 9, 10</td>
<td>SS...P + R</td>
<td>CIEF-SS-8-9-10-KIT-10</td>
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<td>8, 9, 10</td>
<td>SSF...P</td>
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<td>2, 3, 4</td>
<td>SS...P + R</td>
<td>CIEF-SS-2-3-4-KIT-20</td>
<td>121086-3229</td>
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<td>2, 3, 4</td>
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<td>SS...P + R</td>
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</table>

* upon request

Dimensions shown in mm

Specifications and dimensions subject to change

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*Operating instruction
CIEF Insertion and extraction holder
CIT Insertion tool
CET Extraction tool (socket contacts)
CET Extraction tool (pin contacts)
CCT Crimp tool

Lubricating fluid: Isopropyl alcohol

10 Guiding pins (not included for MSS)
## Semi-Automatic Assembly Machine CBITA

for 2 to 10 way SURE-SEAL connectors.

### Technical Data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>Air pressure</td>
<td>min. 6 bar</td>
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<tr>
<td>Weight</td>
<td>approx. 60 kg</td>
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<tr>
<td>Power supply</td>
<td>220 V/50Hz</td>
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### Parts subject to wear

<table>
<thead>
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<th>Component</th>
<th>Part Number</th>
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<tbody>
<tr>
<td>Guiding pin-Sensor release</td>
<td>121586-5229</td>
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<tr>
<td>Guiding pin-Foot pedal release</td>
<td>970-8606-022</td>
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<tr>
<td>Widening tip</td>
<td>252-7015-003</td>
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### No. of contacts vs. Assembly machine

<table>
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<th>Assembly machine</th>
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<td>CBITA-SS-8</td>
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<td>CBITA-SS-9</td>
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<tr>
<td>10</td>
<td>CBITA-SS-10</td>
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</table>
Wiring Instructions

Note: Insert accessories (e.g. Boot) prior to assembly.

Stripping lengths
For jacketed cables the following stripping lengths have to be adhered to.

<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>min. stripping lengths mm</th>
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<tbody>
<tr>
<td>2, 3, 4</td>
<td>40</td>
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<tr>
<td>5, 6, 7</td>
<td>45</td>
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<tr>
<td>8, 9, 10</td>
<td>50</td>
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</table>

Insertion contacts
SURE-SEAL connectors have a one-piece connector body made of rubber. Contacts are inserted from the rear side. They may only be inserted with the approved tools (refer to page 19-23).

Plug or receptacle must be sprayed with lubricating fluid before contact insertion.

Approved lubricating fluid
Manual insertion
Isopropyl alcohol
Cleaning solvent HAKU 1025-975 or HAKU 1025-800, Chem. Werke Kluthe Gottlieb-Daimler Straße 12, 69115 Heidelberg

Semi-automatic insertion
CBITG...and CBITS...Hellerine (HellermanTyton, Grosser Moorweg 45, 25436 Tomesch) for sprayer.

With hand insertion tools
Fasten supports (table, vice etc.)
An inclined position is recommended for easier assembly.
- Dip insulator in lubricating fluid and shake off excess fluid.
- Open fixing clip and place connector body into support block (refer to page 20).
- Insert cable resp. single wires into accessories (e.g. boot).
- Pay attention to correct sequence and position
- Install guiding pin 317-8588-000 (does not apply to Mini SURE-SEAL) in socket contact.

Usage of jacketed cable with boot

<table>
<thead>
<tr>
<th>No. of contacts</th>
<th>X max.</th>
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<td>5, 6, 7</td>
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</table>
Wiring Instructions

With CHPZ-240 hand lever insertion press
Mount correct support block and insertion tip to CHPZ-240 insertion press (refer to page 22).

- Dip connector body into lubricating fluid and shake off excess fluid. Open fixing clip and place connector body in support block (refer to page 20).
- Insert wire into accessories. Pay attention to correct sequence and position (refer to illustration page 25).
- Insert guiding pins 317-8588-000 (only for Standard SURE-SEAL) into socket contacts (refer to illustration page 25).
- Place contact into insertion tip. Contact shoulder has to be flush with lower edge of the contact tip.

- Adjust height of hand lever press: For first insertion loosen stop at the upper end of the press. Move down lever slowly and steadily and adjust stop until contact is in the correct position (refer to page 21). Tighten stop. This adjustment may be used for both socket and pin contacts. After this adjustment the lever is simply pressed until stop is reached. Remove terminated connector from support after all contacts are inserted.
- Check fit and position of contacts in insulator.
- Remove guiding pins from socket contacts.
- Assemble accessories.

For Assembly Machines CBITG and CBITS refer to separate operating instructions

Standard SURE-SEAL

![Diagram of Standard SURE-SEAL](image)

Plug 2 to 4 contacts
Receptacle 2 to 4 contacts
Plug 5 to 10 contacts
Receptacle 5 to 10 contacts

Different dimensions for machined contacts are given in paranthesis.

Mini SURE-SEAL

![Diagram of Mini SURE-SEAL](image)

MSS plug 2 to 4 contacts
MSS receptacle 2 to 4 contacts
## Part Number Index

<table>
<thead>
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<th>Part Number</th>
<th>Page</th>
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<tbody>
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</table>

*Specifications shown in mm*

*Specifications and dimensions subject to change*

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Product Safety Information

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

1. MATERIAL CONTENT AND PHYSICAL FORM
   Electrical connectors do not usually contain hazardous materials. They contain conducting and non-conducting materials and can be divided into two groups:
   a) Printed circuit types and low cost audio types which employ all plastic insulators and casings.
   b) Rugged, Fire Barrier and High Reliability types with metal casings and either natural rubber, synthetic rubber, plastic or glass insulating materials. Contact materials vary with type of connector and also application and are usually manufactured from either: Copper, copper alloys, nickel, alumen, chromel or steel. In special applications, other alloys may be specified.

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

   Overheating may not be visually apparent. Burns may result from touching overheated components.

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

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

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

IMPORTANT GENERAL INFORMATION

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

(ii) Temperature
   All information given are temperature limited. The operation temperature depends on the individual application.

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

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Itt Cannon invented D-sub connectors in 1952. Our family of D-Subs now includes combinations of signal, power and RF, as well as severe service sealed connectors. Cannon D-Subs are available with an extensive line of backshells and accessories and are one of the most economical shielded connector solutions available. ITT D-Sub connectors are qualified to the MIL-DTL-24308 specification.

www.ittcannon.com/dsubs

Developed first by Cannon in the 1960’s, Interconnect Solutions microminiature connectors offer high performance and reliability with exceptional versatility. Available in rectangular, circular, and strip configurations for countless applications, many of our connectors meet or exceed applicable requirements of the MIL-DTL-83513 specification.

www.ittcannon.com/micro

Initially pioneered by Cannon during the 1930s, Interconnect Solutions is the world leader in rack and panel connectors, offering unmatched variety of shell configurations and insert arrangements, materials, plating, and contact options. Many of our standard and custom designs meet the stringent requirements of ARINC 600, ARINC 404 (MIL-C-81659), and MIL-DTL-83733 standards.

www.ittcannon.com/rackandpanel

ITT Interconnect Solutions has been providing interconnect products to the Microwave and RF industry since 1963 (formerly The Sealectro Corporation). The RF 50 & 75 Ohm product lines cover UHF band through Ku band requirements. These connectors and cable assemblies are available with a thread type, snap type, bayonet type or slide on coupling method. The frequencies range from DC to 18+ GHz.

www.ittcannon.com/RF50 • www.ittcannon.com/RF75

The ITT ICS interconnect range includes sealed circular and rectangular connectors in metal or plastic shells. These configurations include board to cable or cable to cable/ bulkhead applications. Both signal and power contacts can be combined in various layouts. All product lines within the Transportation segment offer very low contact resistance providing maximum signal integrity.

www.ittcannon.com/transportation

ITT Interconnect Solutions is an international manufacturer and supplier of connectors including circular, rectangular, fiber optic, RF, power and high voltage, audio, PMCIA, Compact Flash Card, enclosures, cable assemblies, and application specific custom solutions. The Interconnect Solutions portfolio includes the brands Cannon, VEAM, and BIW. As a worldwide leader in connector technology for nearly a century, ITT offers one of the broadest product offerings, six sigma manufacturing capability, Value Based Product Development with exceptional engineering capability, and an extensive sales, distribution, and customer support network.