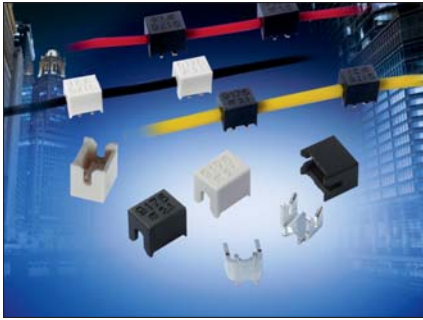


# Single IDC Contact 18-24 AWG: WTB

9176-500



The 917X series of surface mount Insulation Displacement Connectors (IDC) were developed to meet the harsh automotive and industrial market applications for connecting individual wires directly to a PCB ranging from 14 AWG to 28 AWG. This industry proven contact system has been tested to automotive levels of shock, vibration, and temperature cycling to prove their reliability and robustness. This new single contact was developed as a standalone component to enhance the application uses with the IDC technology. The simplicity of inserting a wire into an SMT contact with a small tool or optional retention / termination cap allows a wide range of devices to be connected to the PCB without soldering. In SSL applications specifically, these contacts are used to bring power and signal onto the PCB or are used to daisy chain multiple boards together in a long string. While the IDC contact provides a gas-tight connection to conductor of the wire, the optional cap provides a positive strain relief even in the harshest conditions. In case of repair, the wires can be removed and replace up to three times.

The single 9176 series contact and cap accepts 18 AWG to 24 AWG wires with an insulation diameter ranging from 1.1mm to 2.1mm. These dual beam contacts support a 10 amp current rating with a large SMT solder base to provide maximum stability on the PCB. The optional locking strain relief cap acts as the termination tool for severe vibration applications.

## APPLICATIONS

- Connecting discrete wire components directly to the PCB
- Bringing power and signals onto a PCB
- Daisy chaining PCB's together to create a continuous string of boards
- Application notes: refer to 201-01-124

## FEATURES AND BENEFITS

- IDC contact is supplied in T&R pockets for standard SMT placement
- IDC contact provides a gas-tight connection to the PCB for long term reliability
- Optional termination cap provides additional strain relief for severe environments
- Tested to automotive levels on shock, vibration and temperature cycling for reliability
- Reduced total applied cost versus solder or crimp processes
- Individual contacts can be located anywhere on the PCB based on specific application

## ELECTRICAL

- Current Rating: 10 Amps/Contact
- Voltage Rating: Dependant on component proximity

## ENVIRONMENTAL

- Operating Temperature: -40°C to +125°C

## MECHANICAL

- Insulator Material: Nylon 46: UL94V0
- Contact Material: Phosphor Bronze
- Plating: Tin over Nickel
- Durability: 3 Cycles

## HOW TO ORDER – CONTACT OPTIONS

70

Prefix

70 = Contact

9176

Series

001

Number of Ways

| Code | No of Ways | Details |
|------|------------|---------|
| 001  | 1          | Page 3  |

5XX

Wire Gauge Size

| Code | Accepted Wire Gauge        |
|------|----------------------------|
| 501  | 18 Gauge Stranded          |
| 511  | 20 Gauge Solid or Stranded |
| 522  | 22 Gauge Solid or Stranded |
| 532  | 24 Gauge Solid or Stranded |

006

Plating Option

006 = Pure Tin all over

## HOW TO ORDER – CAP OPTIONS

| <b>60</b><br>└─<br><b>Prefix</b><br>60 = Cap | <b>9176</b><br>└─<br><b>Series</b> | <b>001</b><br>└─<br><b>Number of Ways</b><br><table><tr><th>Code</th><th>No of Ways</th><th>Details</th></tr><tr><td>001</td><td>1</td><td>Page 5</td></tr></table> | Code | No of Ways | Details | 001 | 1 | Page 5 | <b>5XX</b><br>└─<br><b>Wire Gauge Size</b><br><table><tr><th>Code</th><th>Wire Insulation (AWG)</th></tr><tr><td>516</td><td>1.1-1.6 (22-24)</td></tr><tr><td>521</td><td>1.6-2.1 (18-20)</td></tr></table> | Code | Wire Insulation (AWG) | 516 | 1.1-1.6 (22-24) | 521 | 1.6-2.1 (18-20) | <b>X00</b><br>└─<br><b>Insulator Color</b><br><table><tr><th>Code</th><th>Color</th><th>Application</th></tr><tr><td>000</td><td>Black</td><td>Industrial</td></tr><tr><td>100</td><td>White</td><td>Lighting</td></tr></table> | Code | Color | Application | 000 | Black | Industrial | 100 | White | Lighting |
|----------------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------------|---------|-----|---|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------------|-----|-----------------|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|-------------|-----|-------|------------|-----|-------|----------|
| Code                                         | No of Ways                         | Details                                                                                                                                                             |      |            |         |     |   |        |                                                                                                                                                                                                             |      |                       |     |                 |     |                 |                                                                                                                                                                                                                                 |      |       |             |     |       |            |     |       |          |
| 001                                          | 1                                  | Page 5                                                                                                                                                              |      |            |         |     |   |        |                                                                                                                                                                                                             |      |                       |     |                 |     |                 |                                                                                                                                                                                                                                 |      |       |             |     |       |            |     |       |          |
| Code                                         | Wire Insulation (AWG)              |                                                                                                                                                                     |      |            |         |     |   |        |                                                                                                                                                                                                             |      |                       |     |                 |     |                 |                                                                                                                                                                                                                                 |      |       |             |     |       |            |     |       |          |
| 516                                          | 1.1-1.6 (22-24)                    |                                                                                                                                                                     |      |            |         |     |   |        |                                                                                                                                                                                                             |      |                       |     |                 |     |                 |                                                                                                                                                                                                                                 |      |       |             |     |       |            |     |       |          |
| 521                                          | 1.6-2.1 (18-20)                    |                                                                                                                                                                     |      |            |         |     |   |        |                                                                                                                                                                                                             |      |                       |     |                 |     |                 |                                                                                                                                                                                                                                 |      |       |             |     |       |            |     |       |          |
| Code                                         | Color                              | Application                                                                                                                                                         |      |            |         |     |   |        |                                                                                                                                                                                                             |      |                       |     |                 |     |                 |                                                                                                                                                                                                                                 |      |       |             |     |       |            |     |       |          |
| 000                                          | Black                              | Industrial                                                                                                                                                          |      |            |         |     |   |        |                                                                                                                                                                                                             |      |                       |     |                 |     |                 |                                                                                                                                                                                                                                 |      |       |             |     |       |            |     |       |          |
| 100                                          | White                              | Lighting                                                                                                                                                            |      |            |         |     |   |        |                                                                                                                                                                                                             |      |                       |     |                 |     |                 |                                                                                                                                                                                                                                 |      |       |             |     |       |            |     |       |          |



## CONNECTOR/TOOLING PART NUMBER MATRIX

| SERIES 9176-500 IDC |                 |           |                 | HAND INSERTION TOOLING* |                     | ACCESSORY CAPS       |                 |                 |
|---------------------|-----------------|-----------|-----------------|-------------------------|---------------------|----------------------|-----------------|-----------------|
| AWG                 | Wire Insulation | Positions | Part Number     | Plastic (medium volume) | Metal (high volume) | Cap Application Tool | White           | Black           |
| 18                  | Ø 1.6 - 2.1     | 1p        | 709176001501006 | 069176702001000         | 069176701901000     | 069176701801000      | 609176001521100 | 609176001521000 |
| 20                  | Ø 1.6 - 2.1     | 1p        | 709176001511006 | 069176702001000         | 069176701901000     | 069176701801000      | 609176001521100 | 609176001521000 |
| 22                  | Ø 1.1 - 1.6     | 1p        | 709176001522006 | 069176702002000         | 069176701902000     | 069176701801000      | 609176001516100 | 609176001516000 |
| 24                  | Ø 1.1 - 1.6     | 1p        | 709176001532006 | 069176702002000         | 069176701902000     | 069176701801000      | 609176001516100 | 609176001516000 |

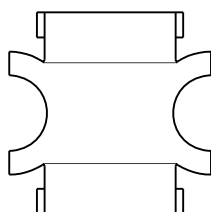
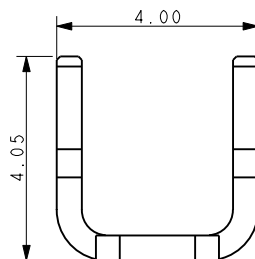
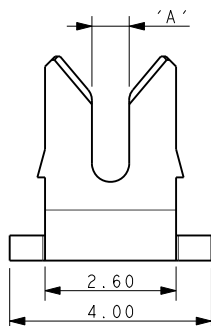
\* Hand Insertion Tooling and Cap Application - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124

Certification: UL File #E90723

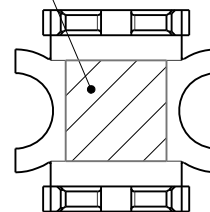
# Single IDC Contact 18-24 AWG: WTB

## 9176-500

### CONTACT DETAILS



AREA AVAILABLE FOR  
PICK & PLACE 2.00mm SQUARE

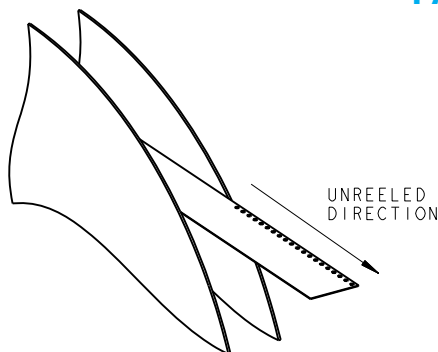


| Code | Accepted Wire Gauge       | A    |
|------|---------------------------|------|
| 501  | 18 AWG Stranded           | 0.72 |
| 511  | 20 AWG Solid and Stranded | 0.60 |
| 522  | 22 AWG Solid and Stranded | 0.47 |
| 532  | 24 AWG Solid and Stranded | 0.37 |

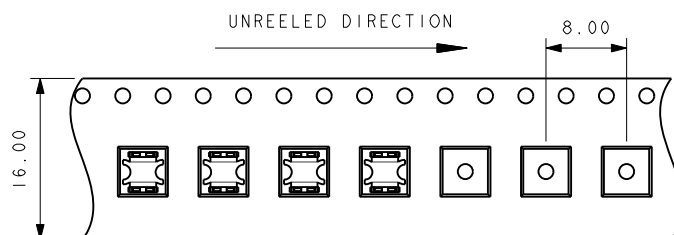
#### NOTES:

1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.
3. CONTACT PLATING: PURE TIN.
4. CONNECTOR DESIGNED TO ACCEPT BETWEEN 18 AND 24 GAUGE STRANDED WIRE. SEE TABLE.
5. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
6. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION NOTES 201-01-124.
7. SMT PCB LAYOUT, REFER TO PAGE 3.
8. PACKING IN TAPE AND REEL, QUANTITY 1000 PER REEL.
9. WHEN REQUIRED, MATCHING CAP DETAILS ON DRAWING 60-9176-001-5XX-X00S.
10. ASSEMBLY TOOLING ON PAGE 5 (WITH CAP AND WITHOUT CAP).

### PACKING DETAILS



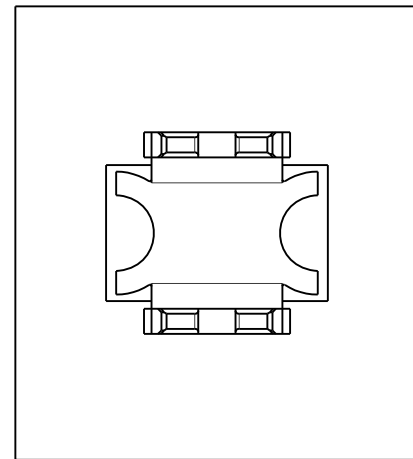
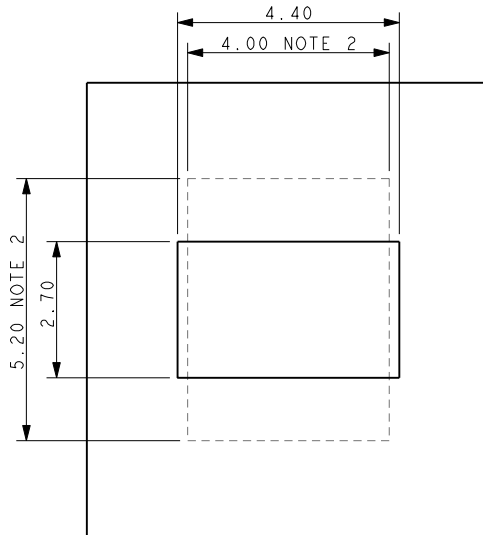
|          |       |
|----------|-------|
| REEL QTY | 1000  |
| LEADER   | 480MM |
| TRAILER  | 120MM |



## 18-24 AWG IDC WIRE TO BOARD CONNECTOR SINGLE CONTACT

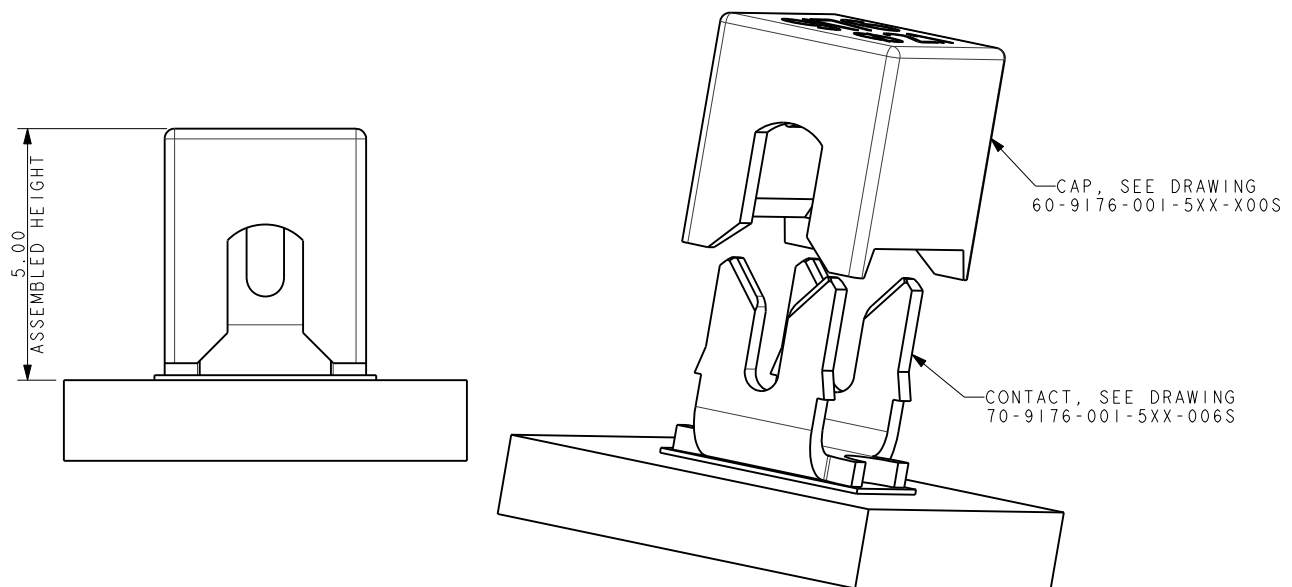
### SMT PCB LAYOUT

PURE TIN PADS



ORIENTATION OF CONTACT ON PAD

### ASSEMBLED/INSTALLED PRODUCTS



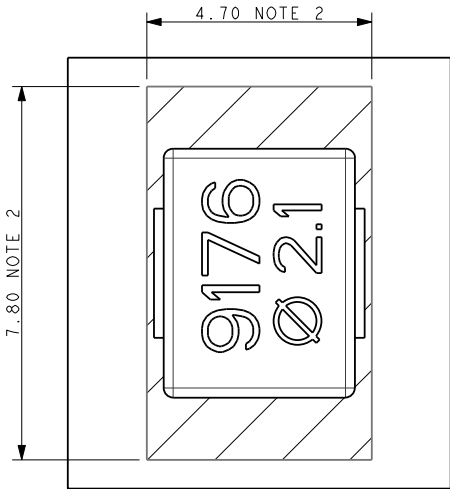
#### NOTES:

1. CONNECTOR CAN BE USED WITH CONTACT ONLY OR WITH OPTIONAL CAP.
2. OUTLINE OF CAP WHEN USED.
3. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND 201-01-124.
4. DIMENSIONS SHOWN ARE REFERENCED DIMENSIONS.
5. ASSEMBLY TOOLING ON PAGE 43 (WITH CAP AND WITHOUT CAP).

# Single IDC Contact 18-24 AWG: WTB

## 9176-500

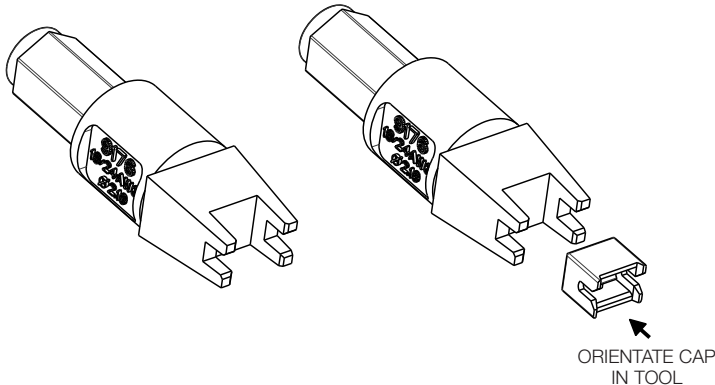
### ASSEMBLY TOOLING – CAP USED



- NOTES:
1. ASSEMBLY TOOLING FOR CAP.
  2. AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TACKS PERMISSIBLE.
  3. WIRE AND CAP INSERTED IN ONE OPERATION.
  4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.
  5. REFER BELOW WHEN CONTACT USED WITHOUT CAP.

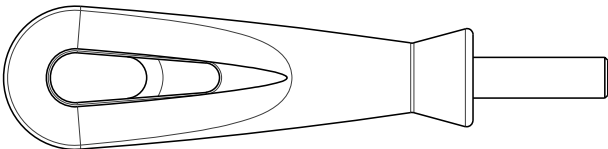
#### CAP APPLICATION TOOL

06-9176-7018-01-000

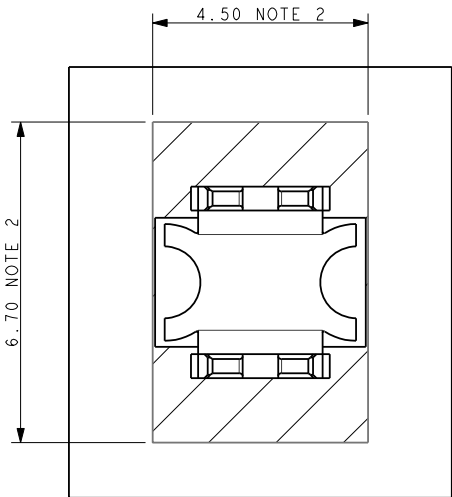


#### UNIVERSAL HANDLE

06 7000 7730 01 000



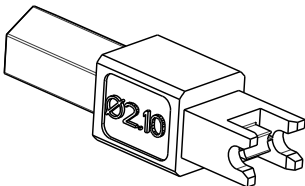
### ASSEMBLY TOOLING – CAP NOT USED WIRE ONTO CONTACT



- NOTES:
1. ASSEMBLY TOOLING FOR CONTACT ONLY, NO CAP USED.
  2. MINIMUM AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TRACK PERMISSIBLE.
  3. REFER TO TABLE FOR CORRECT TOOL/WIRE COMBINATION.
  4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.

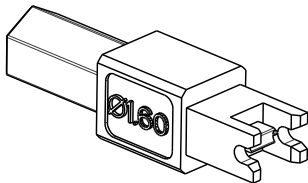
#### 2.1 WIRE (18-20 AWG)

06-9176-7019-01-000  
06-9176-7020-01-000



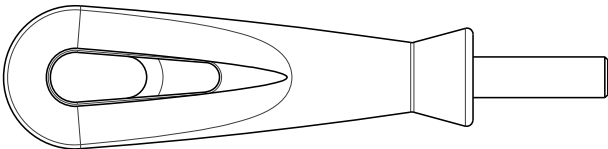
#### 1.6 WIRE (22-24 AWG)

06-9176-7019-02-000  
06-9176-7020-02-000



#### UNIVERSAL HANDLE

06 7000 7730 01 000

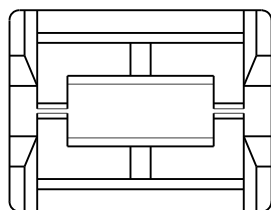
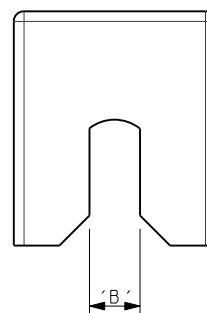
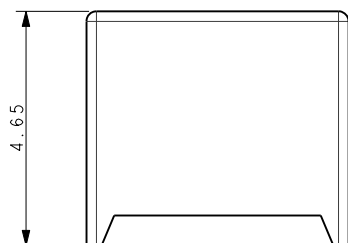
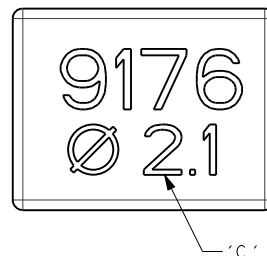
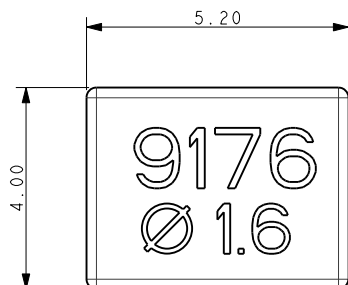


| Wire Gauge | Wire Insulation ø | Metal Tool High Volume | Plastic Tool Small to Medium Volume | Handle              |
|------------|-------------------|------------------------|-------------------------------------|---------------------|
| 22-24 AWG  | 1.10 to 1.60      | 06-9176-7019-02-000    | 06-9176-7020-02-000                 | 06-7000-7730-01-000 |
| 18-20 AWG  | 1.60 to 2.10      | 06-9176-7019-01-000    | 06-9176-7020-01-000                 | 06-7000-7730-01-000 |

# Single IDC Contact 18-24 AWG: WTB

## 9176-500

### CAP DETAILS



| Code | Insulator Diameter (AWG) | B    | Text C |
|------|--------------------------|------|--------|
| 516  | 1.1 to 1.6 (22-24)       | 1.00 | Ø 1.6  |
| 521  | 1.6 to 2.1 (18-20)       | 1.50 | Ø 2.1  |

#### NOTES:

1. CAP FOR IDC WIRE TO BOARD CONNECTION.
2. CAP MATERIAL: GLASS FILLED NYLON 46, COLOR SEE PAGE 1.
3. CAPS DESIGNED TO ACCOMMODATE WIRE INSULATION DIAMETERS 1.1MM TO 2.1MM.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106, APPLICATION NOTES 201-01-124.
6. PACKING IN BAGS, QUANTITY 1000 PER BAG.
7. FOR INSTALATION DETAILS REFER TO DRAWING 70-9176-001-XX-006S.

# Mouser Electronics

Authorized Distributor

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[Kyocera AVX:](#)

[609176001516000](#) [609176001516100](#) [609176001521000](#) [609176001521100](#) [709176001501006](#)  
[709176001511006](#) [709176001522006](#) [709176001532006](#) [069176701801000](#) [069176701901000](#) [069176701902000](#)  
[069176702002000](#) [069176702001000](#)