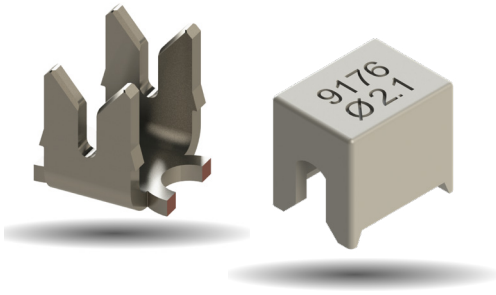


# SINGLE IDC CONTACT 18-24 AWG: 9176-500

## General Information



The 917X series of surface mount Insulation Displacement Connectors (IDC) were developed to meet the harsh requirements of automotive and industrial applications. This industry proven series of connectors provides a robust, reliable, and efficient method to connect individual wires ranging from 12 AWG to 30 AWG directly to a PCB. The single contact design can function as a standalone component. It provides our designers access to IDC technology in an easy-to-use form factor allowing them to bring power and signal to a PCB in a wide range of applications. These connectors have been tested to various levels of shock, vibration, and temperature cycling to prove their reliability and robustness.

The single 9176-500 series contact and cap accepts 18 AWG to 24 AWG wires. These dual beam contacts support up to a 10 Amp current rating (dependent on wire gauge) 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
- Product Specification: Refer to 201-01-126

### FEATURES AND BENEFITS

- 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 various 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: Up to 10 Amps/Contact
- Voltage Rating: Dependent on Contact Spacing

### ENVIRONMENTAL

- Operating Temperature: -40°C to +130°C
- Storage Temperature: -40°C to +60°C

### MECHANICAL

- Insulator Material: Nylon 46, UL94V-0
- 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 36 |

**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



Safety Standards: UL 1977-File #E90723

### HOW TO ORDER – CAP OPTIONS

**60**  
Prefix  
60 = Cap

**9176**  
Series

**001**  
Number of Ways

| Code | No of Ways | Details |
|------|------------|---------|
| 001  | 1          | Page 40 |

**5XX**  
Wire Insulation Size

| Code | Wire Insulation Ø |
|------|-------------------|
| 516  | 1.1-1.6 (22-24)   |
| 521  | 1.6-2.1 (18-20)   |

**X00**  
Insulator Color

| Code | Color |
|------|-------|
| 000  | Black |
| 100  | White |

### 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 (Plastic)<br>069176702501000 (Metal) | 609176001521100 | 609176001521000 |
| 20                  | Ø 1.6 - 2.1     | 1p        | 709176001511006 |                         |                     |                                                      |                 |                 |
| 22                  | Ø 1.1 - 1.6     | 1p        | 709176001522006 |                         |                     |                                                      |                 |                 |
| 24                  | Ø 1.1 - 1.6     | 1p        | 709176001532006 |                         |                     |                                                      |                 |                 |

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

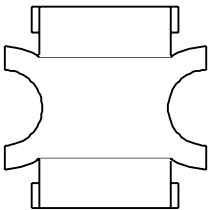
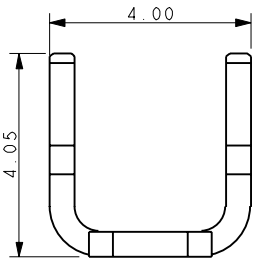
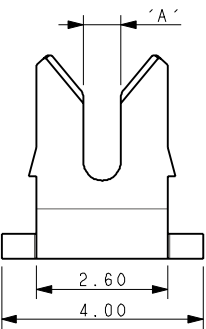
\*\*Other tools are available for special wires (thick insulator, copper enameled wire...), please contact KYOCERA AVX for more details

# SINGLE IDC CONTACT 18-24 AWG: 9176-500



## Contact Details

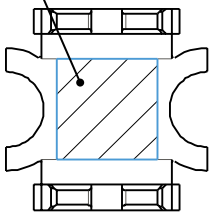
### CONTACT DETAILS



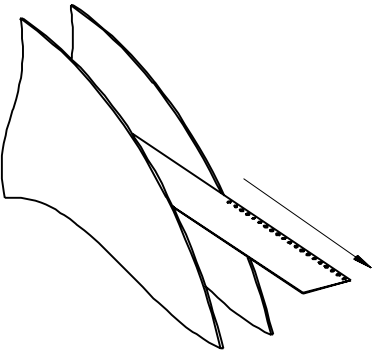
| Code | Accepted Wire Gauge       | A    |
|------|---------------------------|------|
| 501  | 18 AWG Stranded           | 0.74 |
| 511  | 20 AWG Solid and Stranded | 0.60 |
| 522  | 22 AWG Solid and Stranded | 0.47 |
| 532  | 24 AWG Solid and Stranded | 0.37 |

- 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 20AWG AND 24AWG SOLID AND STRANDED WIRES, 18AWG WILL ONLY ACCEPT STRANDED WIRES, SEE TABLE.
  5. ALL DIMENSIONS  $\pm 0.20$  UNLESS TOLERANCED
  6. FOR FULL PRODUCT SPECIFICATION REFER TO SPEC 201-01-126 AND APPLICATION NOTES 201-01-124.
  7. SMT PCB LAYOUT, REFER TO PAGE 37.
  8. PACKING IN TAPE AND REEL, QUANTITY 1000 PER REEL.
  9. WHEN REQUIRED, REFER TO MATCHING CAP DETAILS ON PAGE 40.
  10. ASSEMBLY TOOLING ON PAGE 38 (WITH CAP) AND PAGE 39 (WITHOUT CAP).

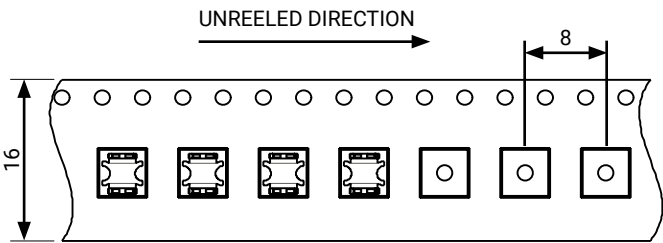
AREA AVAILABLE FOR PICK & PLACE 2.00mm SQUARE



### PACKING DETAILS



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



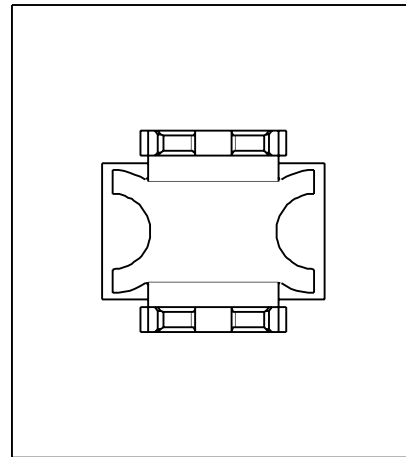
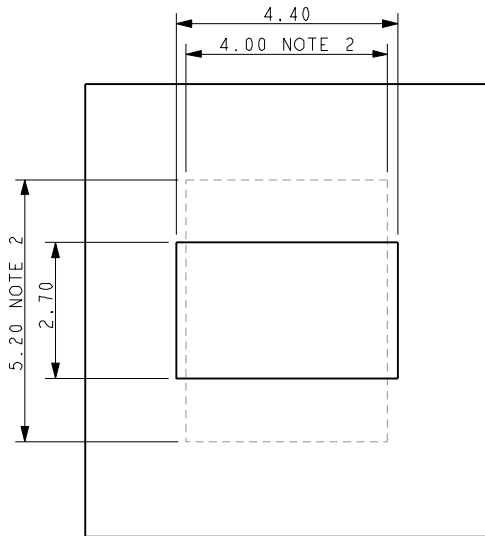
# SINGLE IDC CONTACT 18-24 AWG: 9176-500

## PCB Layout

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

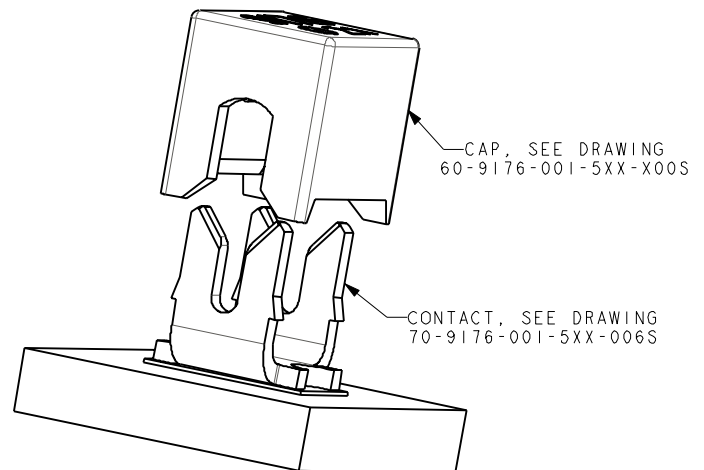
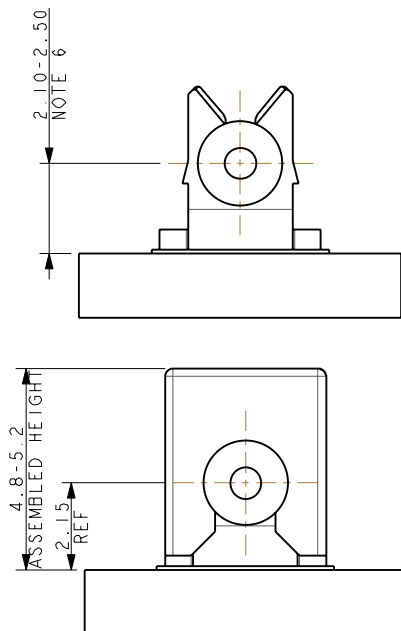
#### SMT PCB LAYOUT

PURE TIN PADS



ORIENTATION OF CONTACT ON PAD

#### ASSEMBLED/INSTALLED PRODUCTS



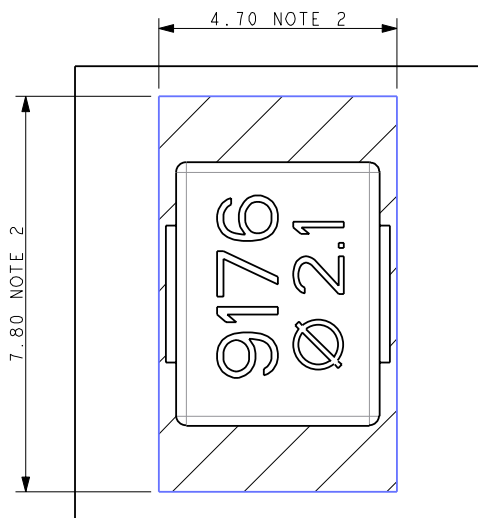
#### NOTES:

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 SPEC 201-01-126 AND 201-01-124.
4. ALL DIMENSIONS  $\pm 0.20$  UNLESS TOLERANCED.
5. ASSEMBLY TOOLING ON PAGE 38 (WITH CAP) AND PAGE 39 (WITHOUT CAP).
6. WIRE CENTER LINE HEIGHT ABOVE THE PCB, THIS INCLUDES AN ALLOWANCE OF 0.10MM FOR SOLDER AND 0.035MM FOR PAD THICKNESS, NO ALLOWANCE HAS BEEN MADE FOR SOLDER RESIST OR OTHER FEATURES.

# SINGLE IDC CONTACT 18-24 AWG: 9176-500

## Assembly Tooling

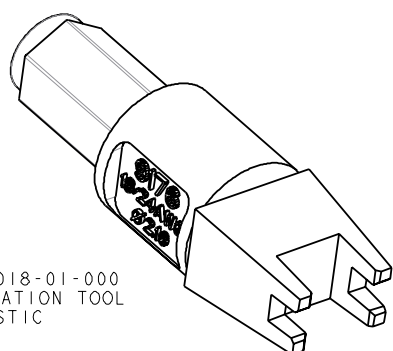
### ASSEMBLY TOOLING – CAP USED



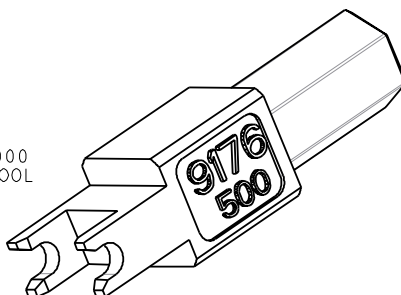
#### NOTES:

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.

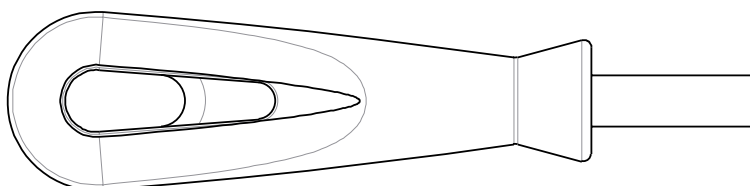
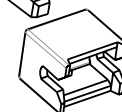
06-9176-7018-01-000  
CAP APPLICATION TOOL  
PLASTIC



06-9176-7025-01-000  
CAP APPLICATION TOOL  
METAL



PLACE CAP IN TOOL



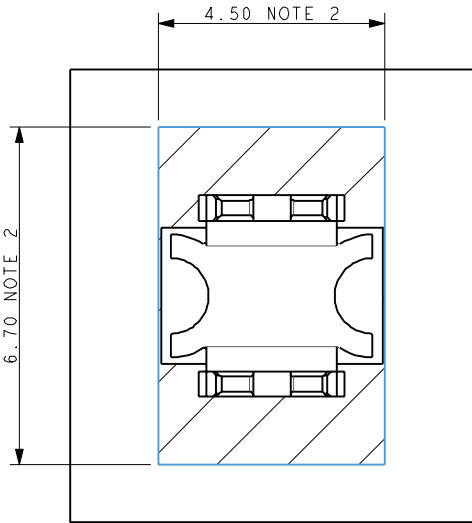
06-7000-7730-01-000  
UNIVERSAL HANDLE

SINGLE IDC CONTACT 18-24 AWG: 9176-500

Assembly Tooling

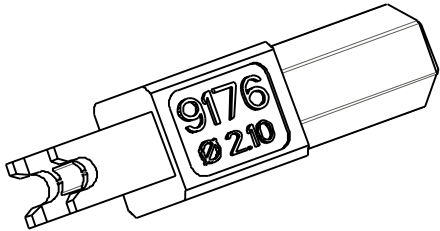


ASSEMBLY TOOLING – CAP NOT USED WIRE ONTO CONTACT

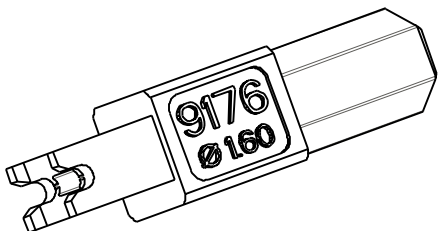


- NOTES:
- 1. ASSEMBLY TOOLING FOR CONTACT ONLY, NO CAP USED.
  - 2. MINIMUM AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TRACKS PERMISSIBLE.
  - 3. REFER TO TABLE FOR CORRECT TOOL/WIRE COMBINATION.
  - 4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION
  - 5. OTHER TOOLS ARE AVAILABLE FOR SPECIAL WIRES (THICK INSULATOR, COPPER ENAMELED WIRE...), PLEASE CONTACT KYOCERA AVX FOR MORE DETAILS

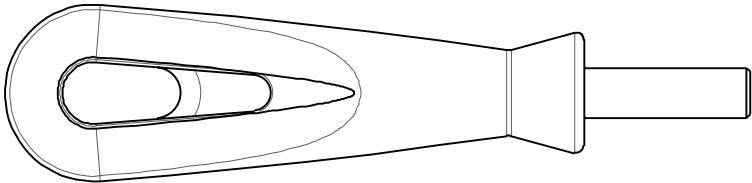
| WIRE<br>INSULATION Ø | METAL TOOL<br>HIGH VOLUME | PLASTIC TOOL<br>SMALL TO MEDIUM VOLUME | HANDLE              |
|----------------------|---------------------------|----------------------------------------|---------------------|
| 1.10 to 1.60         | 06-9176-7019-02-000       | 06-9176-7020-02-000                    | 06-7000-7730-01-000 |
| 1.60 to 2.10         | 06-9176-7019-01-000       | 06-9176-7020-01-000                    | 06-7000-7730-01-000 |



06-9176-7019-01-000  
06-9176-7020-01-000  
2.1Ø WIRE



06-9176-7019-02-000  
06-9176-7020-02-000  
1.6Ø WIRE



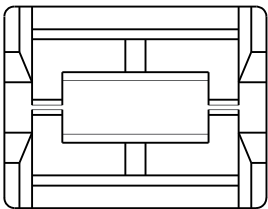
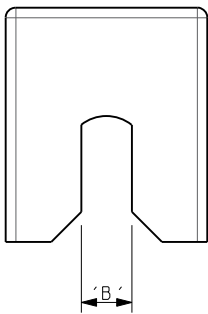
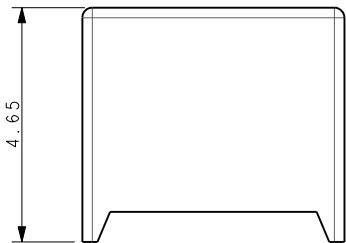
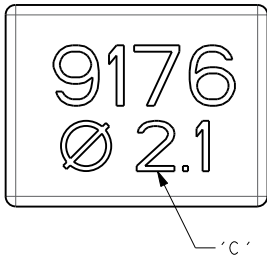
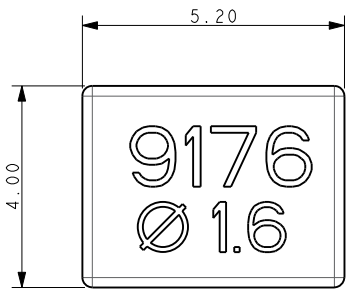
06-7000-7730-01-000  
UNIVERSAL HANDLE

SINGLE IDC CONTACT 18-24 AWG: 9176-500

Cap Details



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 35.
  - 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 201-01-126, APPLICATION NOTES 201-01-124.
  - 6. PACKING IN BAGS, QUANTITY 1000 PER BAG.
  - 7. FOR INSTALLATION DETAILS REFER TO PAGES 37, 38 & 39.