

# Single IDC Contact 22-28 AWG: WTB

9176-400



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 9176-400 series contact and cap accepts 22 AWG to 28 AWG wires with an insulation diameter ranging from 1.0mm to 1.5mm. These dual beam contacts support a 6 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: 6 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

<b>70</b>	<b>9176</b>	<b>001</b>	<b>4XX</b>	<b>006</b>																
Prefix	Series	Number of Ways	Wire Gauge Size	Plating Option																
70 = Contact				006 = Pure Tin all over																
		<table border="1"> <thead> <tr> <th>Code</th> <th>No of Ways</th> <th>Details</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>1</td> <td>Page 36</td> </tr> </tbody> </table>	Code	No of Ways	Details	001	1	Page 36	<table border="1"> <thead> <tr> <th>Code</th> <th>Accepted Wire Gauge</th> </tr> </thead> <tbody> <tr> <td>422</td> <td>22 Gauge Solid or Stranded</td> </tr> <tr> <td>432</td> <td>24 Gauge Solid or Stranded</td> </tr> <tr> <td>442</td> <td>26 Gauge Solid or Stranded</td> </tr> <tr> <td>443</td> <td>28 Gauge Solid or Stranded</td> </tr> </tbody> </table>	Code	Accepted Wire Gauge	422	22 Gauge Solid or Stranded	432	24 Gauge Solid or Stranded	442	26 Gauge Solid or Stranded	443	28 Gauge Solid or Stranded	
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## HOW TO ORDER – CAP OPTIONS

<b>60</b>	<b>9176</b>	<b>001</b>	<b>415</b>	<b>X00</b>																				
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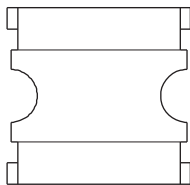
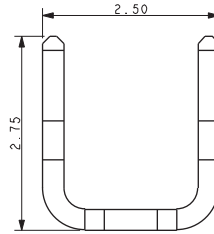
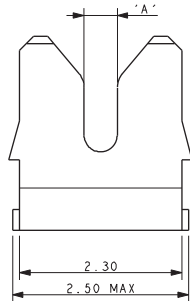
## CONNECTOR/TOOLING PART NUMBER MATRIX

SERIES 9176-400 IDC				HAND INSERTION TOOLING*		ACCESSORY CAPS		
AWG	Wire Insulation	Positions	Part Number	Plastic (medium volume)	Metal (high volume)	Cap Application Tool	White	Black
22	Ø 1.0 - 1.5	1p	709176001422006	069176702201000	069176702101000	069176702301000	609176001415100	609176001415000
24	Ø 1.0 - 1.5	1p	709176001432006	069176702201000	069176702101000	069176702301000	609176001415100	609176001415000
26	Ø 0.7 - 1.0	1p	709176001442006	069176702201000	069176702101000	069176702301000	609176001415100	609176001415000
28	Ø 0.7 - 1.0	1p	709176001443006	069176702201000	069176702101000	069176702301000	609176001415100	609176001415000

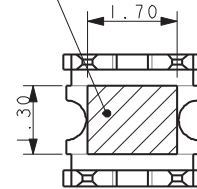
\* Hand Insertion Tooling and Cap Application - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124



### CONTACT DETAILS



AREA AVAILABLE FOR PICK & PLACE



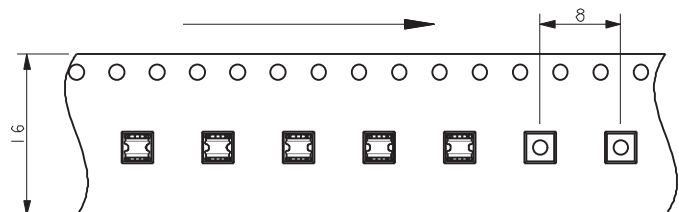
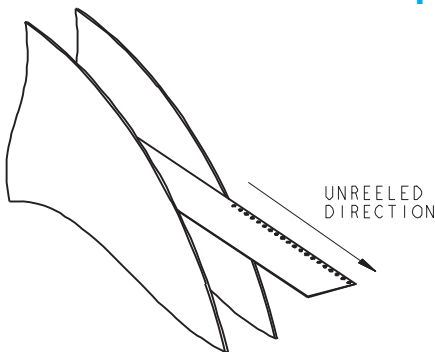
Code	Accepted Wire Gauge	A
422	22AWG Solid or Stranded	0.47
432	24AWG Solid or Stranded	0.37
442	26AWG Solid or Stranded	0.28
443	28AWG Solid or Stranded	0.20

#### NOTES:

- CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
- CONTACT MATERIAL: PHOSPHOR BRONZE.
- CONTACT PLATING: PURE TIN.
- CONNECTOR DESIGNED TO ACCEPT BETWEEN 22AWG AND 28AWG SOLID AND STRANDED WIRE, SEE TABLE.
- ALL DIMENSIONS  $\pm 0.20$  UNLESS TOLERANCED.
- FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-126 AND APPLICATION NOTES 201-01-124.
- SMT PCB LAYOUT, REFER TO PAGE 37.
- PACKING IN TAPE AND REEL, QUANTITY 2000 PER REEL.
- WHEN REQUIRED, MATCHING CAP DETAILS ON DRAWING 60-9176-001-4XX-X06S.
- ASSEMBLY TOOLING ON PAGE 39 FOR WIRE INTO CONTACT AND PAGE 38 FOR CAP.
- UL REFERENCE E90723, THIS UL REFERENCE ALSO APPLIES WHEN COMBINED WITH AVX SPECIFIED OPTIONAL CAP.

### PACKING DETAILS

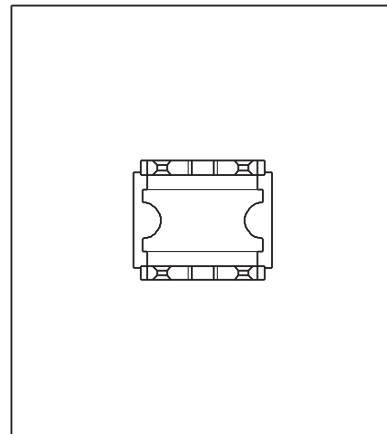
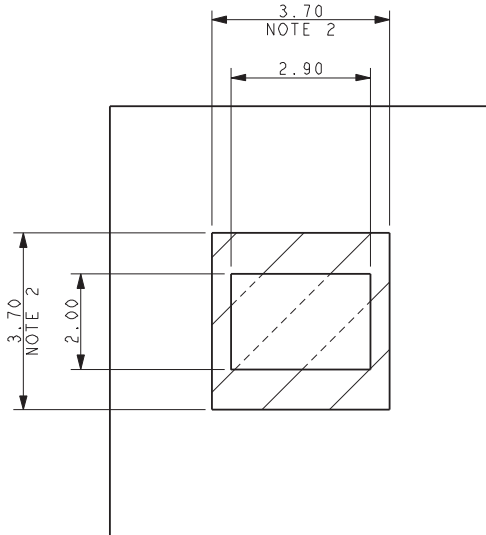
REEL QTY	2 000
LEADER	480MM
TRAILER	120MM



### 22-28 AWG IDC WIRE TO BOARD CONNECTOR SINGLE CONTACT

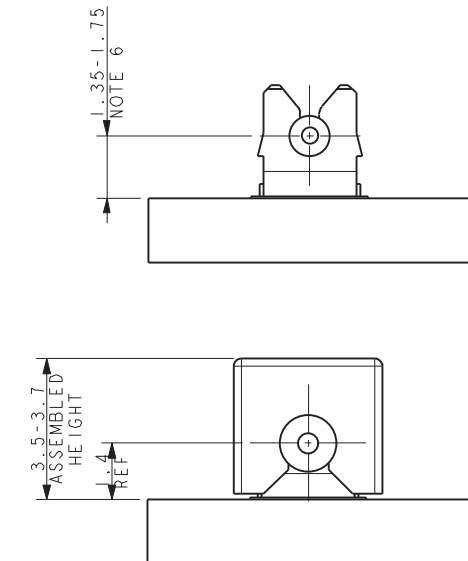
#### SMT PCB LAYOUT

PURE TIN PADS

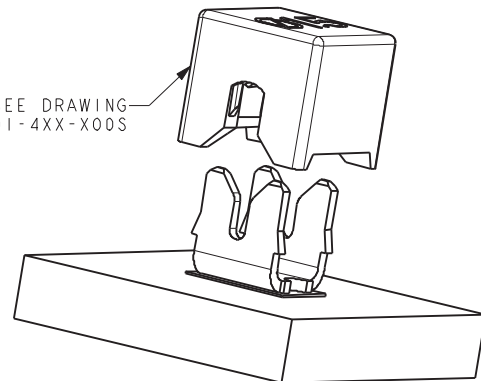


ORIENTATION OF CONTACT ON PAD

#### ASSEMBLED/INSTALLED PRODUCTS



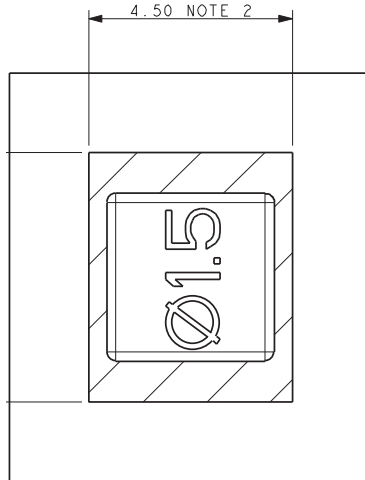
CAP. SEE DRAWING  
60-9176-001-4XX-X00S



#### NOTES:

- CONNECTOR CAN BE USED WITH CONTACT ONLY OR WITH OPTIONAL CAP.
- OUTLINE OF CAP WHERE USED.
- FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-126 AND APPLICATION NOTES 201-01-124.
- ALL DIMENSIONS  $\pm 0.20$  UNLESS TOLERANCED.
- ASSEMBLY TOOLING ON PAGE 39 FOR WIRE INTO CONTACT AND PAGE 38 FOR CAP.
- 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.

### ASSEMBLY TOOLING – CAP USED



**NOTES:**

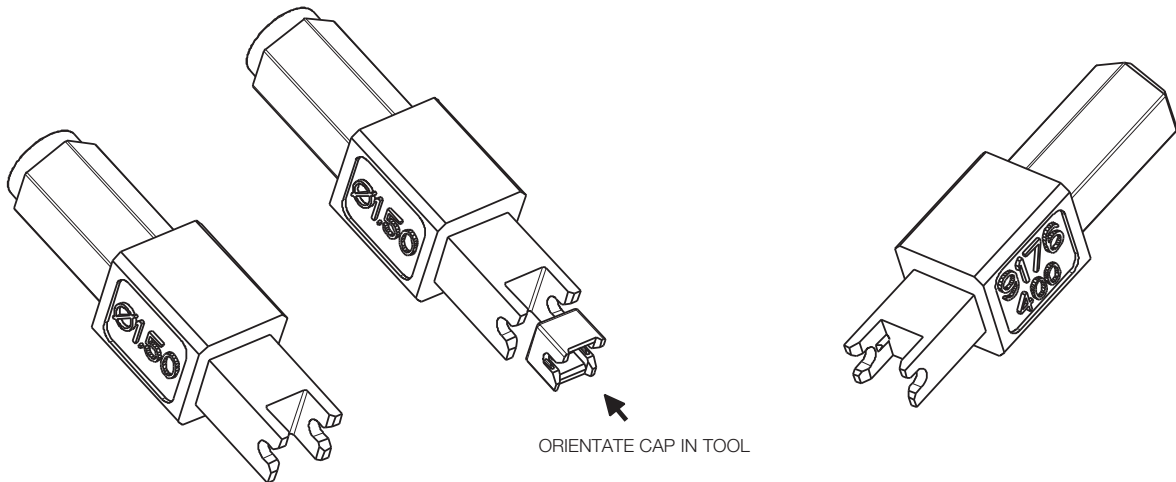
1. ASSEMBLY TOOLING FOR CAP.
2. MINIMUM AREA OF PCB TO BE KEPT CLEAR OF COMPONENTS, TRACKS PERMISSIBLE.
3. WIRE AND CAP INSERTED IN ONE OPERATION.
4. REFER TO APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.
5. REFER TO PAGE 39 FOR ASSEMBLY WITHOUT CAP.

### CAP APPLICATION TOOL – PLASTIC

06-9176-7023-01-000

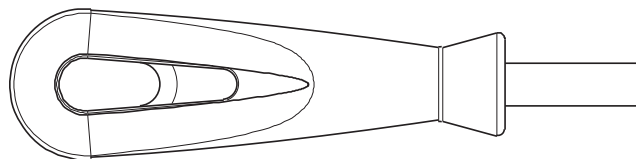
### METAL TOOL – HIGH VOLUME

06-9176-7024-01-000



### UNIVERSAL HANDLE

06-7000-7730-01-000

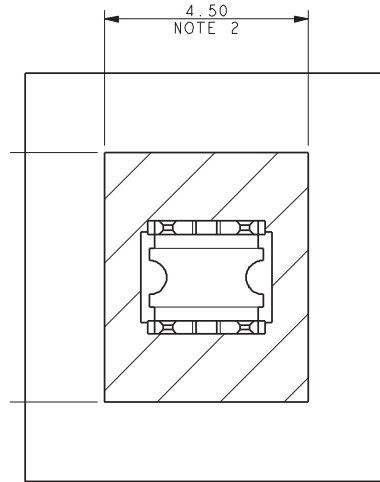


### CONNECTOR/TOOLING PART NUMBER MATRIX

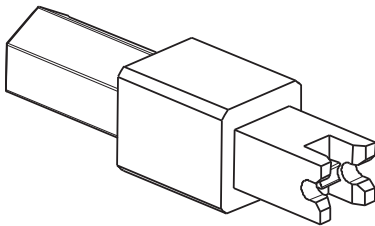
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\* Hand Insertion Tooling and Cap Application - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124

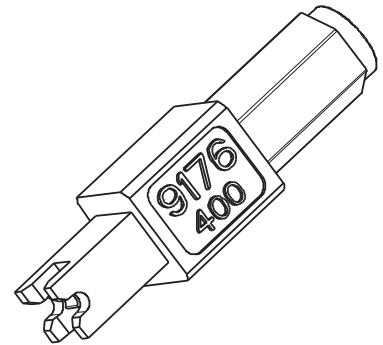
### ASSEMBLY TOOLING – CAP NOT USED WIRE ONTO CONTACT



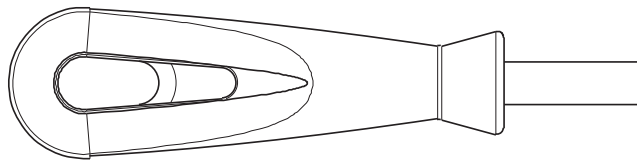
**METAL TOOL  
HIGH VOLUME**  
06-9176-7021-01-000



**PLASTIC TOOL  
LOW/MEDIUM VOLUME**  
06-9176-7022-01-000



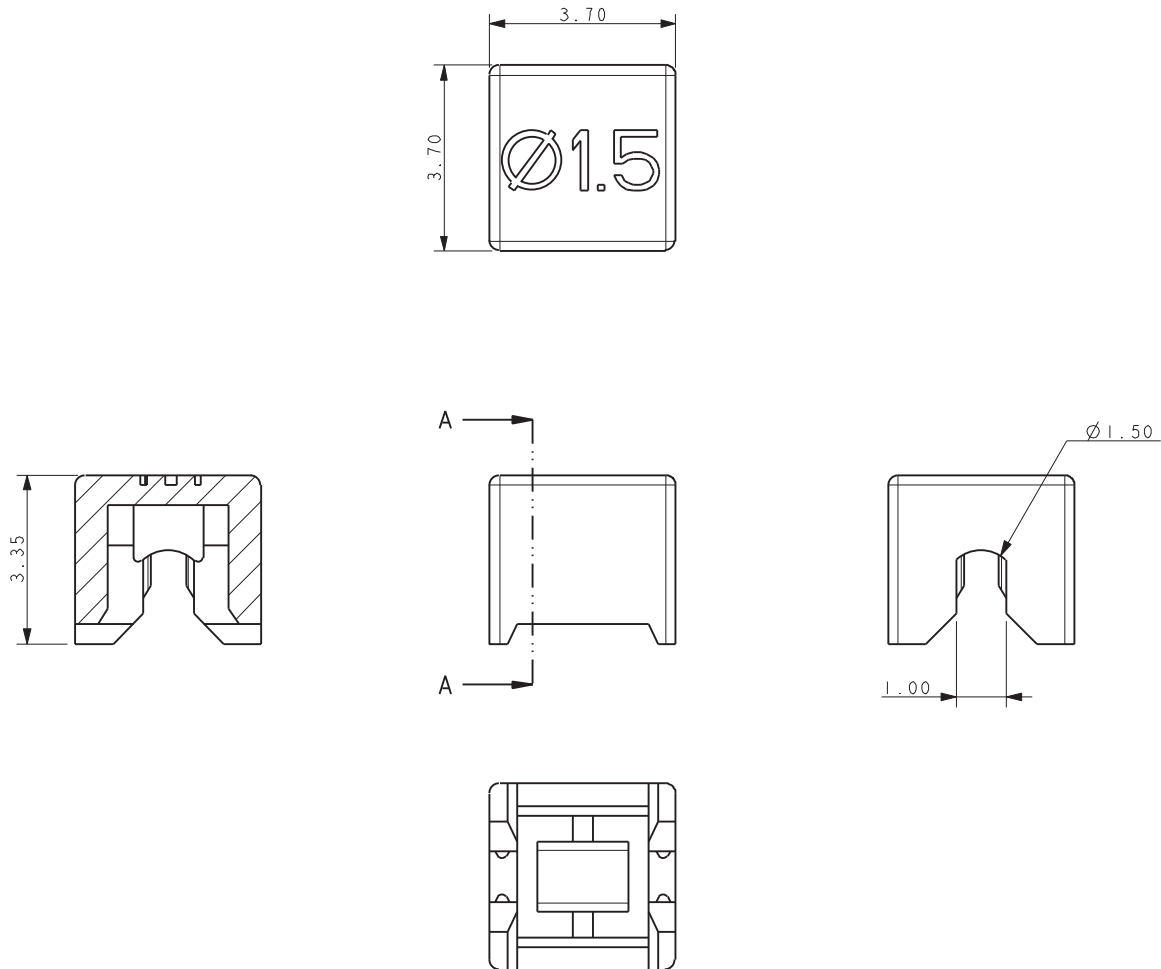
**UNIVERSAL HANDLE**  
06-7000-7730-01-000



**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 APPLICATION NOTE 201-01-124 FOR FURTHER INFORMATION.
4. INSERT CORRECT TOOL INTO HANDLE, MAGNETIC RETENTION.
5. REFER TO PAGE 38 FOR ASSEMBLY WITH CAP.

### CAP DETAILS



#### 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 0.75MM TO 1.5MM.
4. ALL DIMENSIONS  $\pm 0.20$  UNLESS TOLERANCED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-126, APPLICATION NOTES 201-01-124.
6. PACKING IN BAGS, QUANTITY 2000 PER BAG.
7. FOR INSTALATION DETAILS REFER TO DRAWING 70-9176-001-4XX-006S.

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