

# Discrete Wire IDC



## Series 9176



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. The simplicity of inserting a wire into the connector with a small tool allows a wide range of devices to be connected to the PCB without soldering. In SSL applications specifically, these connectors 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 housing has been designed to grab the insulation of the wire to provide 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 9176 series accepts 18 AWG to 24 AWG wires with an insulation diameter ranging from 1.1mm to 2.1mm. These dual contact connectors support a 10 amp current rating with two large SMT solder tails per wire to provide maximum stability on the PCB. Available in 1p-3p configuration, these connectors can be end stackable for higher pin counts. The 9176 series also comes with optional locking strain relief caps that act 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 provides a gas-tight connection to the PCB for long term reliability
- Connector housing captures the wire insulation for positive strain relief
- Tested to automotive levels on shock, vibration and temperature cycling for reliability
- Low and high volume assembly tools to match production volumes
- Reduced total applied cost versus solder or crimp processes
- Optional thru and end caps lock in place to provide maximum strain relief
- High temperature insulator capable to 260°C reflow soldering processes

### ELECTRICAL

- Current Rating: 10 Amp / Contact
- Voltage Rating: 300 VAC

### 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

<b>00</b>	<b>9176</b>	<b>00X</b>												
Prefix	Series	Number of Ways												
		<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 3</td> </tr> <tr> <td>002</td> <td>2</td> <td>Page 4</td> </tr> <tr> <td>003</td> <td>3</td> <td>Page 5</td> </tr> </tbody> </table>	Code	No of Ways	Details	001	1	Page 3	002	2	Page 4	003	3	Page 5
Code	No of Ways	Details												
001	1	Page 3												
002	2	Page 4												
003	3	Page 5												

<b>00X</b>	<b>X</b>	<b>06</b>																				
Wire Gauge Size	Insulator Color	Plating Option																				
<table border="1"> <thead> <tr> <th>Code</th> <th>Accepted Wire Gauge</th> <th>Wire Insulation</th> <th>Cap Code Pages 6-7</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>18 Gauge Solid or Stranded</td> <td>Ø 1.6-2.1</td> <td>021</td> </tr> <tr> <td>011</td> <td>20 Gauge Stranded Solid or Stranded</td> <td>Ø 1.6-2.1</td> <td>021</td> </tr> <tr> <td>022</td> <td>22 Gauge Stranded Solid or Stranded</td> <td>Ø 1.1-1.6</td> <td>016</td> </tr> <tr> <td>032</td> <td>24 Gauge Stranded Solid or Stranded</td> <td>Ø 1.1-1.6</td> <td>016</td> </tr> </tbody> </table>	Code	Accepted Wire Gauge	Wire Insulation	Cap Code Pages 6-7	001	18 Gauge Solid or Stranded	Ø 1.6-2.1	021	011	20 Gauge Stranded Solid or Stranded	Ø 1.6-2.1	021	022	22 Gauge Stranded Solid or Stranded	Ø 1.1-1.6	016	032	24 Gauge Stranded Solid or Stranded	Ø 1.1-1.6	016	9 = UL White 8 = UL Black 1 = White 0 = Black	06 = Pure Tin all over
Code	Accepted Wire Gauge	Wire Insulation	Cap Code Pages 6-7																			
001	18 Gauge Solid or Stranded	Ø 1.6-2.1	021																			
011	20 Gauge Stranded Solid or Stranded	Ø 1.6-2.1	021																			
022	22 Gauge Stranded Solid or Stranded	Ø 1.1-1.6	016																			
032	24 Gauge Stranded Solid or Stranded	Ø 1.1-1.6	016																			



Certification: UL File #E90723



# Discrete Wire IDC



## Series 9176

### CONNECTOR/TOOLING PART NUMBER MATRIX

SERIES 9176 IDC					HAND INSERTION TOOLING*			ACCESSORY CAPS	
AWG	Wire Insulation	Positions	Color	Part Number	Plastic (medium volume)	Metal (high volume)	Mass Termination	Through Wire	Wire Stop
18	Ø 1.6 - 2.1	1p	White	009176001001106	069176701601000	069176701701000	N/A	609176001021100	609176001021199
18	Ø 1.6 - 2.1	1p	Black	009176001001006	069176701601000	069176701701000	N/A	609176001021000	609176001021099
18	Ø 1.6 - 2.1	1p	UL White	009176001001906	069176701601000	069176701701000	N/A	609176001021100	609176001021199
18	Ø 1.6 - 2.1	2p	White	009176002001106	069176701601000	069176701701000	069176701701002	609176002021100	609176002021199
18	Ø 1.6 - 2.1	2p	Black	009176002001006	069176701601000	069176701701000	069176701701002	609176002021000	609176002021099
18	Ø 1.6 - 2.1	2p	UL White	009176002001906	069176701601000	069176701701000	069176701701002	609176002021100	609176002021199
18	Ø 1.6 - 2.1	3p	White	009176003001106	069176701601000	069176701701000	069176701701003	609176003021100	609176003021199
18	Ø 1.6 - 2.1	3p	Black	009176003001006	069176701601000	069176701701000	069176701701003	609176003021000	609176003021099
18	Ø 1.6 - 2.1	3p	UL White	009176003001906	069176701601000	069176701701000	069176701701003	609176003021100	609176003021199
20	Ø 1.6 - 2.1	1p	White	009176001011106	069176701601000	069176701701000	N/A	609176001021100	609176001021199
20	Ø 1.6 - 2.1	1p	Black	009176001011006	069176701601000	069176701701000	N/A	609176001021000	609176001021099
20	Ø 1.6 - 2.1	1p	UL White	009176001011906	069176701601000	069176701701000	N/A	609176001021100	609176001021199
20	Ø 1.6 - 2.1	2p	White	009176002011106	069176701601000	069176701701000	069176701701002	609176002021100	609176002021199
20	Ø 1.6 - 2.1	2p	Black	009176002011006	069176701601000	069176701701000	069176701701002	609176002021000	609176002021099
20	Ø 1.6 - 2.1	2p	UL White	009176002011906	069176701601000	069176701701000	069176701701002	609176002021100	609176002021199
20	Ø 1.6 - 2.1	3p	White	009176003011106	069176701601000	069176701701000	069176701701003	609176003021100	609176003021199
20	Ø 1.6 - 2.1	3p	Black	009176003011006	069176701601000	069176701701000	069176701701003	609176003021000	609176003021099
20	Ø 1.6 - 2.1	3p	UL White	009176003011906	069176701601000	069176701701000	069176701701003	609176003021100	609176003021199
22	Ø 1.1 - 1.6	1p	White	009176001022106	069176701602000	069176701702000	N/A	609176001016100	609176001016199
22	Ø 1.1 - 1.6	1p	Black	009176001022006	069176701602000	069176701702000	N/A	609176001016000	609176001016099
22	Ø 1.1 - 1.6	1p	UL White	009176001022906	069176701602000	069176701702000	N/A	609176001016100	609176001016199
22	Ø 1.1 - 1.6	2p	White	009176002022106	069176701602000	069176701702000	069176701702002	609176002016100	609176002016199
22	Ø 1.1 - 1.6	2p	Black	009176002022006	069176701602000	069176701702000	069176701702002	609176002016000	609176002016099
22	Ø 1.1 - 1.6	2p	UL White	009176002022906	069176701602000	069176701702000	069176701702002	609176002016100	609176002016199
22	Ø 1.1 - 1.6	3p	White	009176003022106	069176701602000	069176701702000	069176701702003	609176003016100	609176003016199
22	Ø 1.1 - 1.6	3p	Black	009176003022006	069176701602000	069176701702000	069176701702003	609176003016000	609176003016099
22	Ø 1.1 - 1.6	3p	UL White	009176003022906	069176701602000	069176701702000	069176701702003	609176003016100	609176003016199
24	Ø 1.1 - 1.6	1p	White	009176001032106	069176701602000	069176701702000	N/A	609176001016100	609176001016199
24	Ø 1.1 - 1.6	1p	Black	009176001032006	069176701602000	069176701702000	N/A	609176001016000	609176001016099
24	Ø 1.1 - 1.6	1p	UL White	009176001032906	069176701602000	069176701702000	N/A	609176001016100	609176001016199
24	Ø 1.1 - 1.6	2p	White	009176002032106	069176701602000	069176701702000	069176701702002	609176002016100	609176002016199
24	Ø 1.1 - 1.6	2p	Black	009176002032006	069176701602000	069176701702000	069176701702002	609176002016000	609176002016099
24	Ø 1.1 - 1.6	2p	UL White	009176002032906	069176701602000	069176701702000	069176701702002	609176002016100	609176002016199
24	Ø 1.1 - 1.6	3p	White	009176003032106	069176701602000	069176701702000	069176701702003	609176003016100	609176003016199
24	Ø 1.1 - 1.6	3p	Black	009176003032006	069176701602000	069176701702000	069176701702003	609176003016000	609176003016099
24	Ø 1.1 - 1.6	3p	UL White	009176003032906	069176701602000	069176701702000	069176701702003	609176003016100	609176003016199

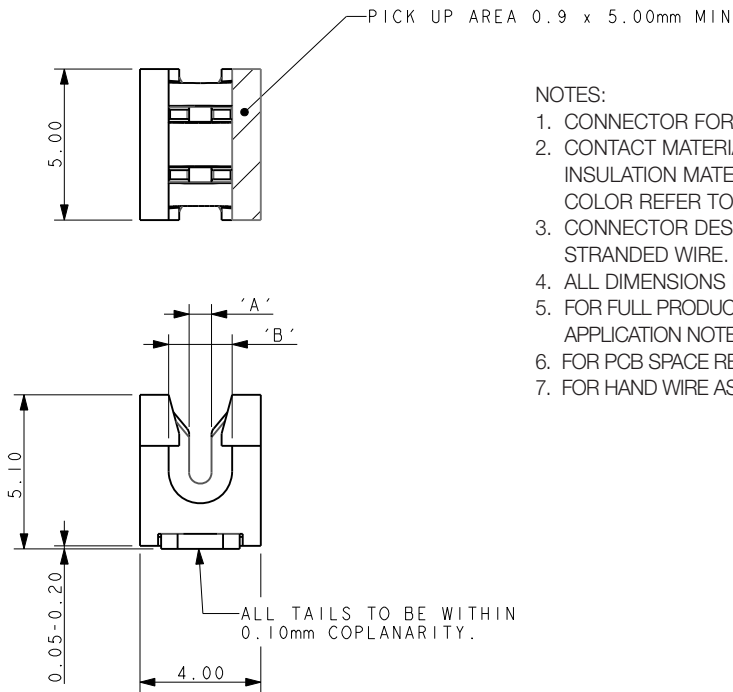
\* Hand Insertion Tooling - Universal Hand Tool 067000773001000; Consult Application Notes 201-01-124

# Discrete Wire IDC



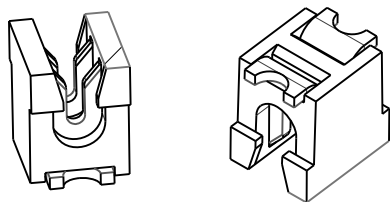
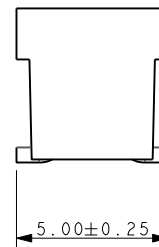
## Series 9176

### 18-24 AWG 1 WAY IDC CONNECTOR



#### NOTES:

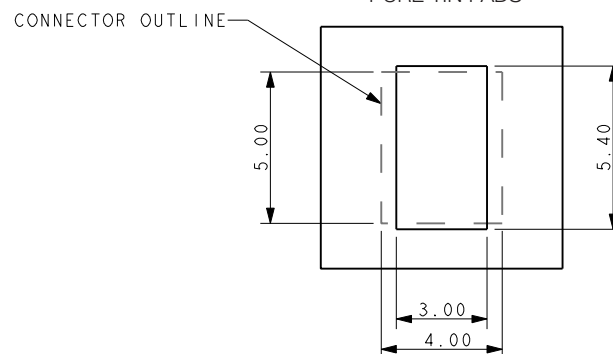
- CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
- CONTACT MATERIAL: PHOSPHOR BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 1.
- CONNECTOR DESIGNED TO ACCEPT BETWEEN 24 AND 18 GAUGE STRANDED WIRE.
- ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
- FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION NOTES 201-01-124.
- FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 8.
- FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 8.



Code	Accepted Wire Gauge	A	Wire Insulation	B
001	18 Gauge Stranded	0.72	Ø 1.6-2.1	2.1
011	20 Gauge Stranded	0.60	Ø 1.6-2.1	2.1
022	22 Gauge Stranded	0.47	Ø 1.1-1.6	1.6
032	24 Gauge Stranded	0.37	Ø 1.1-1.6	1.6

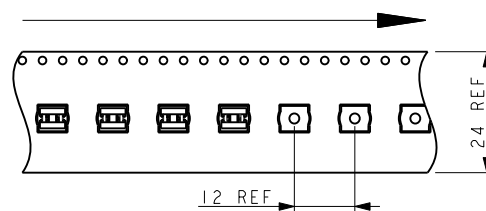
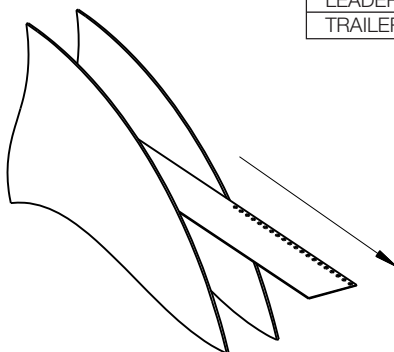
### SMT PCB LAYOUT

PURE TIN PADS



### PACKING DETAILS

REEL QTY	1000
LEADER	480MM
TRAILER	120MM

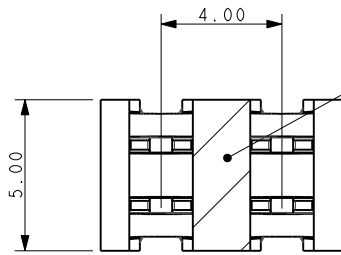


# Discrete Wire IDC



## Series 9176

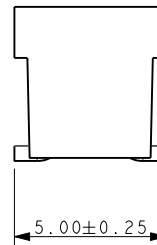
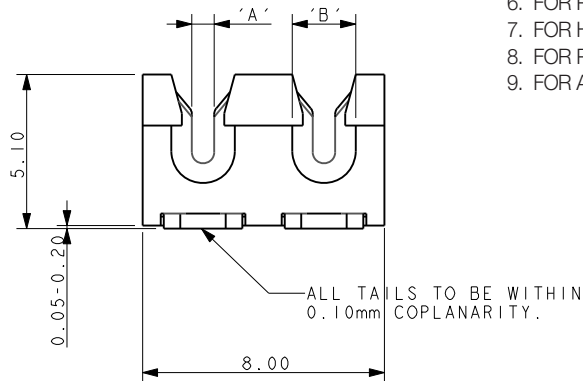
### 18-24 AWG 2 WAY IDC CONNECTOR



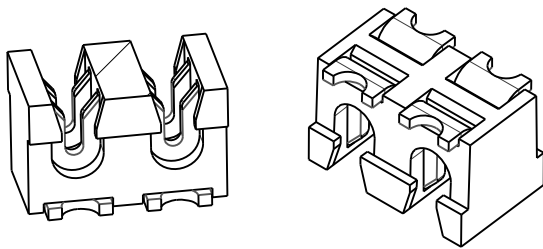
PICK UP AREA 1.9 x 5.00mm MIN

**NOTES:**

1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 1.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 24 AND 18 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION NOTES 201-01-124.
6. FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 8.
7. FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 8
8. FOR PRESS WIRE ASSEMBLY TOOLING REFER TO PAGE 9.
9. FOR ACCESSORY CAPS REFER TO PAGES 6 AND 7.

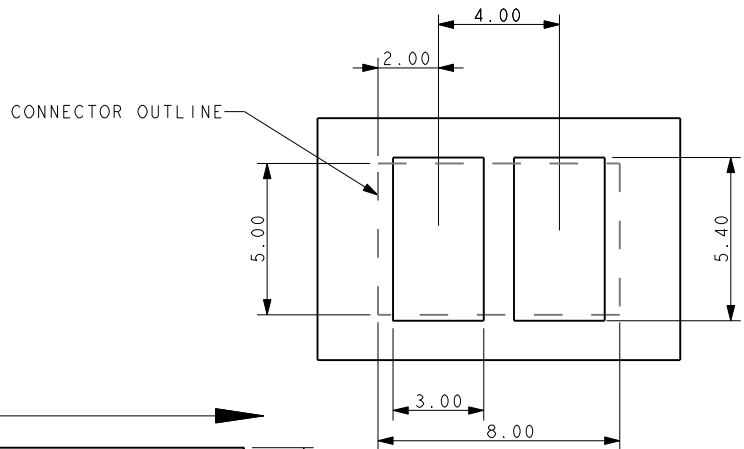


Code	Accepted Wire Gauge	A	Wire Insulation	B
001	18 Gauge Stranded	0.72	Ø 1.6-2.1	2.1
011	20 Gauge Stranded	0.60	Ø 1.6-2.1	2.1
022	22 Gauge Stranded	0.47	Ø 1.1-1.6	1.6
032	24 Gauge Stranded	0.37	Ø 1.1-1.6	1.6



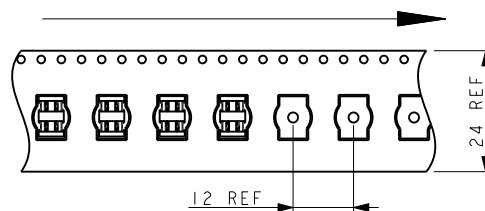
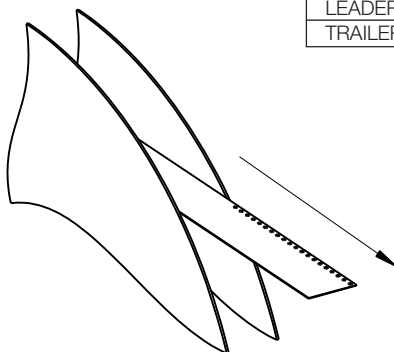
### SMT PCB LAYOUT

PURE TIN PADS



### PACKING DETAILS

REEL QTY	1000
LEADER	480MM
TRAILER	120MM

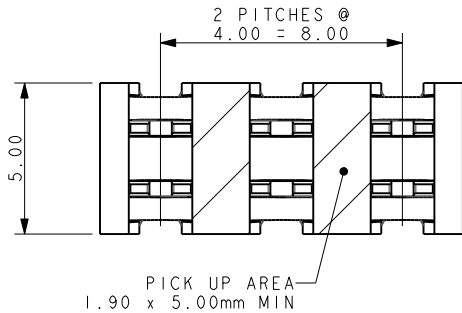


# Discrete Wire IDC



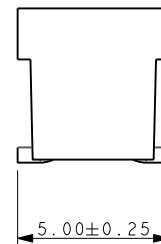
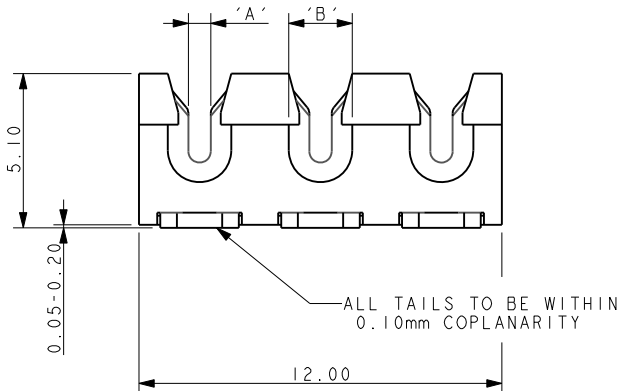
## Series 9176

### 18-24 AWG 3 WAY IDC CONNECTOR

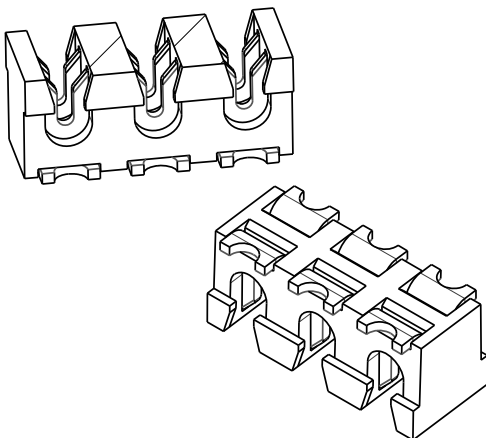


**NOTES:**

1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 1.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 24 AND 18 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-106 AND APPLICATION NOTES 201-01-124.
6. FOR PCB SPACE RESTRICTED BY WIRE ASSEMBLY TOOLING REFER TO PAGE 8.
7. FOR HAND WIRE ASSEMBLY TOOLING REFER TO PAGE 8
8. FOR PRESS WIRE ASSEMBLY TOOLING REFER TO PAGE 9.
9. FOR ACCESSORY CAPS REFER TO PAGES 6 AND 7.

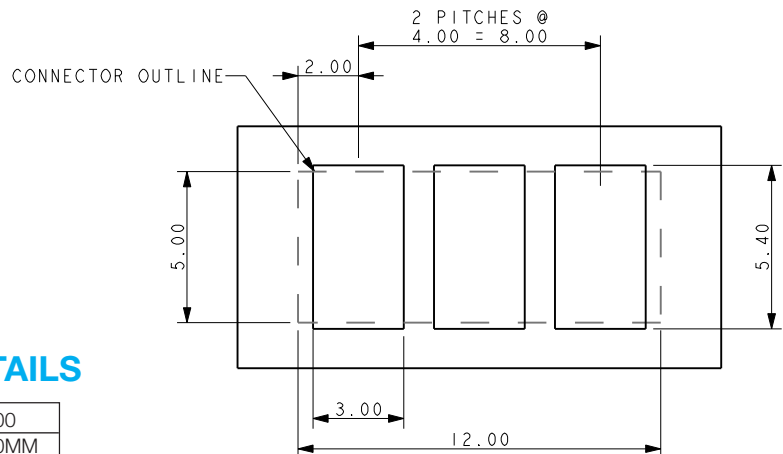


Code	Accepted Wire Gauge	A	Wire Insulation	B
001	18 Gauge Stranded	0.72	Ø 1.6-2.1	2.1
011	20 Gauge Stranded	0.60	Ø 1.6-2.1	2.1
022	22 Gauge Stranded	0.47	Ø 1.1-1.6	1.6
032	24 Gauge Stranded	0.37	Ø 1.1-1.6	1.6



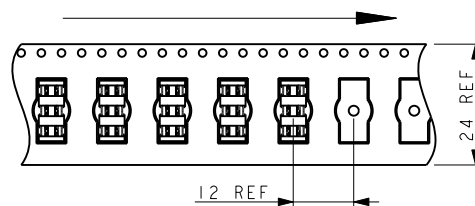
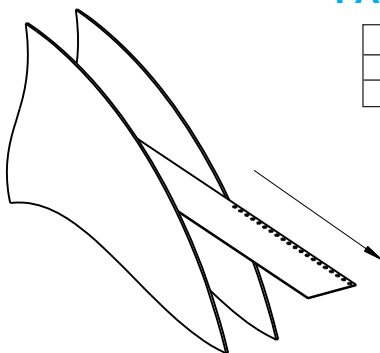
### SMT PCB LAYOUT

PURE TIN PADS



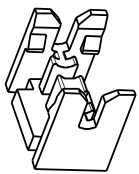
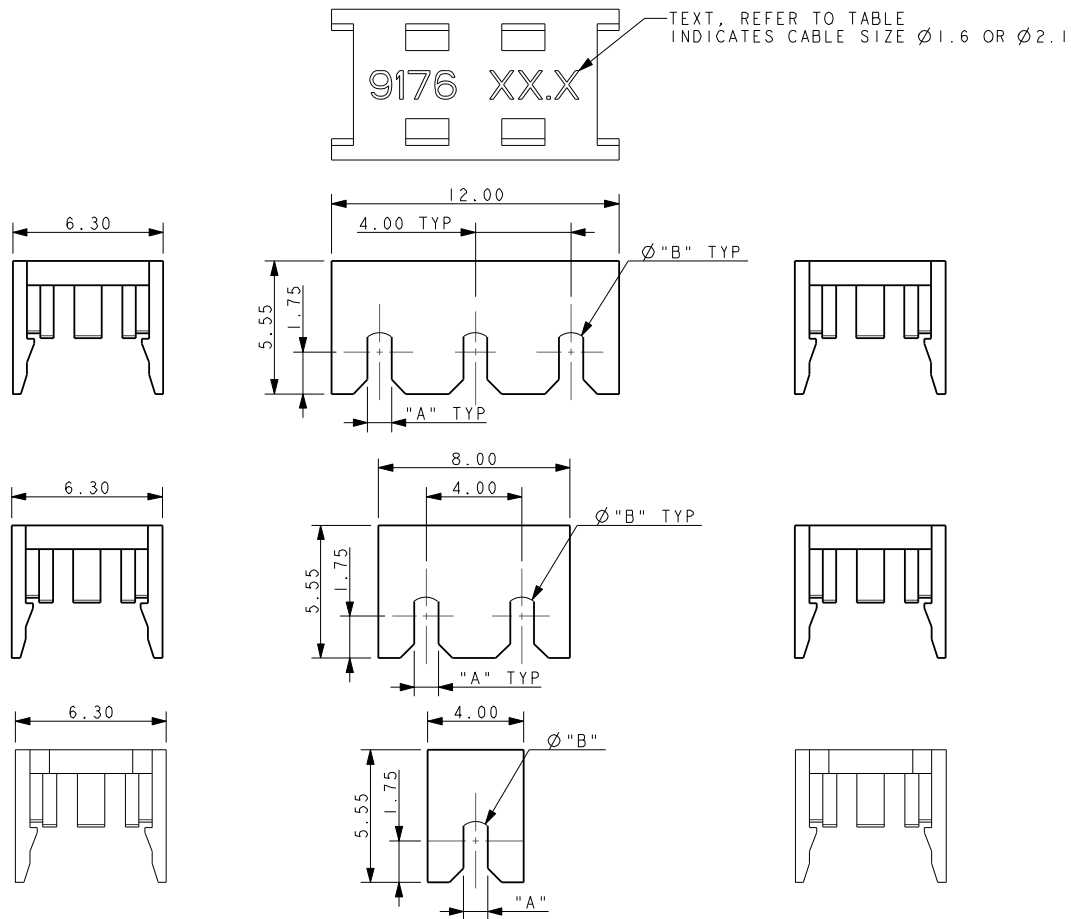
### PACKING DETAILS

REEL QTY	1000
LEADER	480MM
TRAILER	120MM

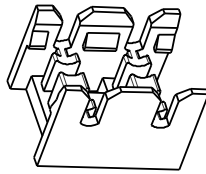


### 60-9176-00X-0XX-X00

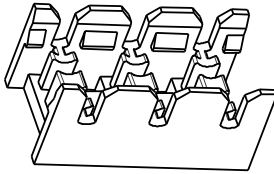
### ACCESSORY CAP – THROUGH WIRE



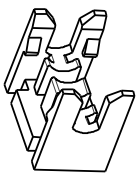
60-9176-001-016-X00



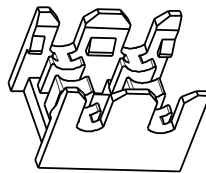
60-9176-002-016-X00



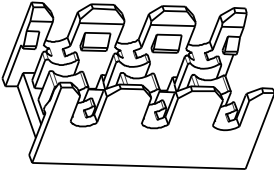
60-9176-003-016-X00



60-9176-001-021-X00



60-9176-002-021-X00



60-9176-003-021-X00

#### NOTES:

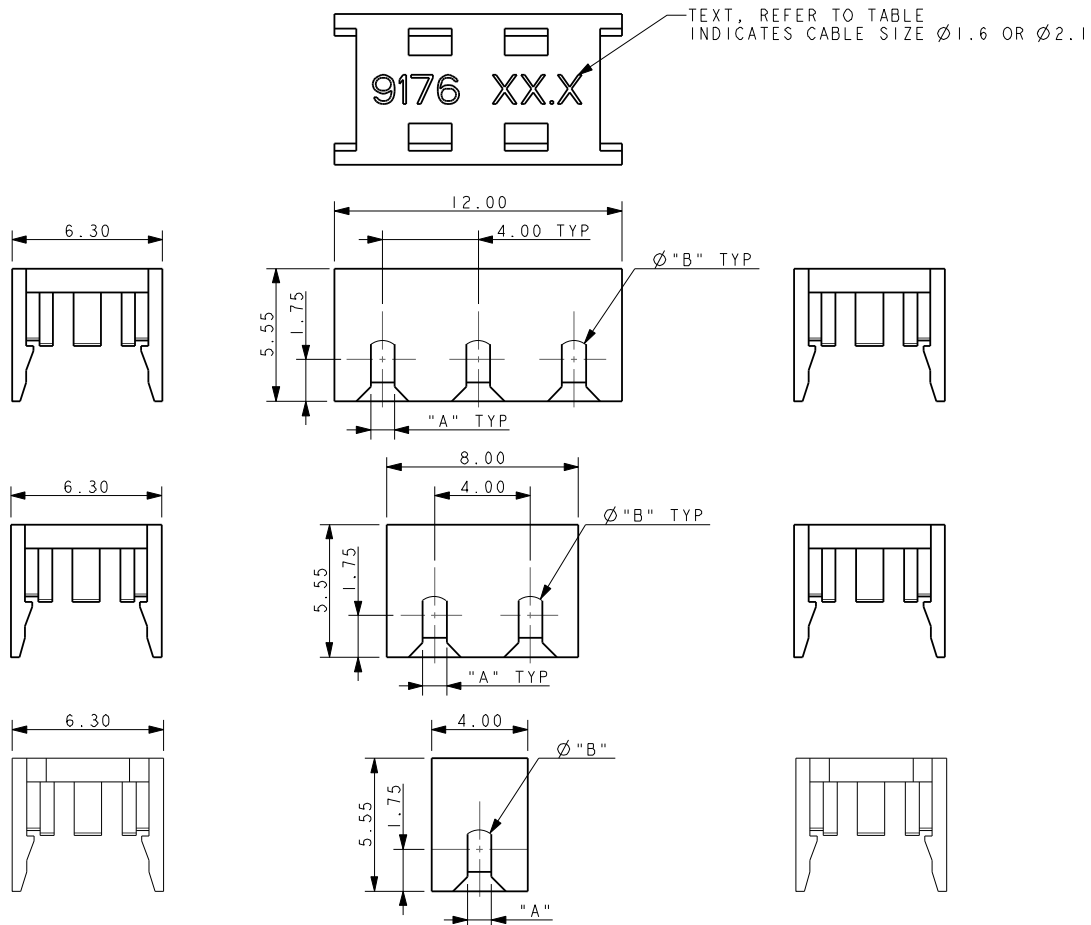
1. CAP FOR IDC WIRE TO BOARD CONNECTION, 1, 2 AND 3 WAY, THROUGH WIRE.
2. FOR USE WITH STANDARD 9176 IDC CONNECTORS, SEE PAGE 2 FOR THE CORRECT PART CODE TO MATCH WIRE.
3. CAP MATERIAL: GLASS FILLED NYLON 46, FOR COLORS SEE TABLE BELOW.
4. DIMENSIONS A, B AND TEXT, SEE TABLE BELOW.
5. CAPS DESIGNED TO ACCOMMODATE WIRE INSULATION DIAMETERS 1.1MM TO 1.6MM AND 1.6MM TO 2.1MM.
6. ALL DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
7. PACKED IN BAGS, 1000 PIECES PER BAG.

Code	Slot A (AWG)	Diameter B	Text
016	1.60 (22-24)	1.00	9176 $\phi 1.6$
021	2.10 (18-20)	1.50	9176 $\phi 2.1$

Color	X00
Black	000
White	100

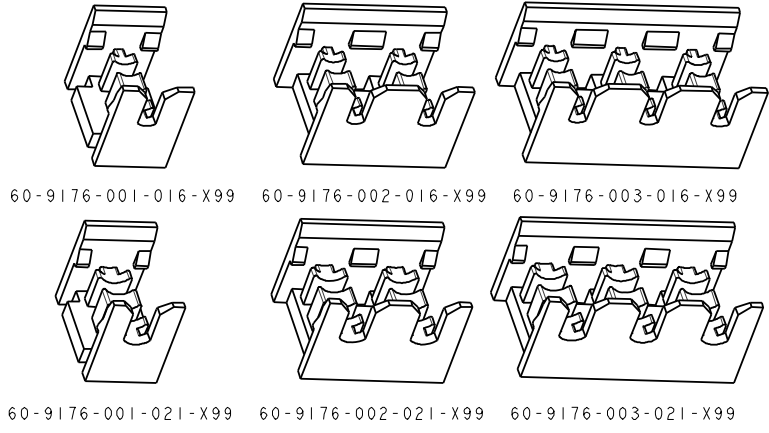
### 60-9176-00X-0XX-X99

### ACCESSORY CAP - WIRE STOP



**NOTES:**

1. CAP FOR IDC WIRE TO BOARD CONNECTION, 1, 2 AND 3 WAY, WITH WIRE STOP.
2. FOR USE WITH STANDARD 9176 IDC CONNECTORS, SEE PAGE 2 FOR THE CORRECT PART CODE TO MATCH WIRE.
3. CAP MATERIAL: GLASS FILLED NYLON 46, FOR COLORS SEE TABLE BELOW.
4. DIMENSIONS A, B AND TEXT, SEE TABLE BELOW.
5. CAPS DESIGNED TO ACCOMMODATE WIRE INSULATION DIAMETERS 1.1MM TO 1.6MM AND 1.6MM TO 2.1MM.
6. ALL DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
7. PACKED IN BAGS, 1000 PIECES PER BAG.



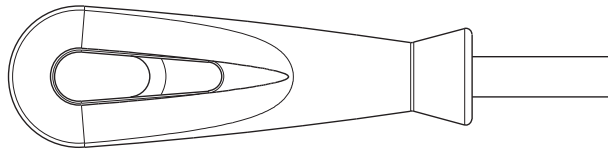
Code	Slot A (AWG)	Diameter B	Text	Color	X99
016	1.60 (22-24)	1.00	9176 Ø1.6	Black	099
021	2.10 (18-20)	1.50	9176 Ø2.1	White	199

# Discrete Wire IDC

Series 9176

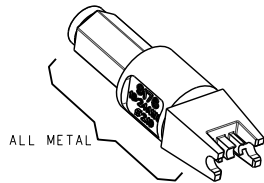


## HAND INSERTION TOOLING FOR SINGLE 18/24 GAUGE WIRE



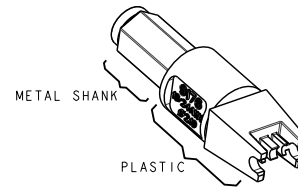
### UNIVERSAL HANDLE

Details	Tool Part Number
6.35 A/F HEX BIT HOLDER	06 7000 7730 01 000



### HIGH PRODUCTION Metal

Max Insulation Dia (AWG)	Tool Part Number
2.10 (18-20)	06 9176 7017 01 000
1.60 (22-24)	06 9176 7017 02 000

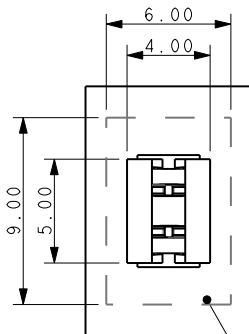


### MEDIUM PRODUCTION Metal/Plastic

Max Insulation Dia (AWG)	Tool Part Number
2.10 (18-20)	06 9176 7016 01 000
1.60 (22-24)	06 9176 7016 02 000

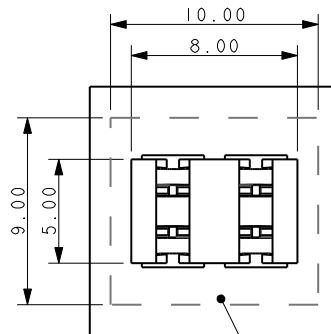
## CLEARANCE AREA ON PCB FOR HAND TOOLING

### 1 WAY



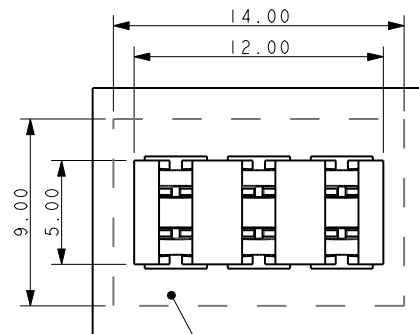
AREA TO BE KEPT CLEAR FOR TOOLING

### 2 WAY



AREA TO BE KEPT CLEAR FOR TOOLING

### 3 WAY



AREA TO BE KEPT CLEAR FOR TOOLING



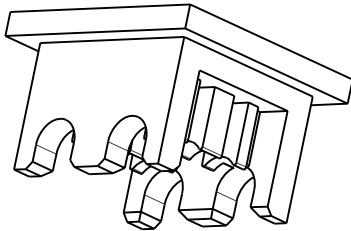
# Discrete Wire IDC



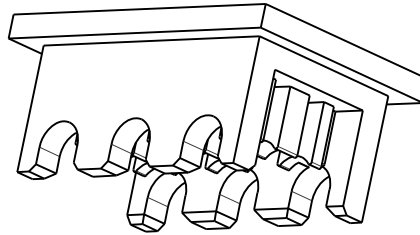
## Series 9176

### INSERTION TOOLING REQUIRES HAND PRESS WITH FLAT ROCK PLATES

#### 2 WAY



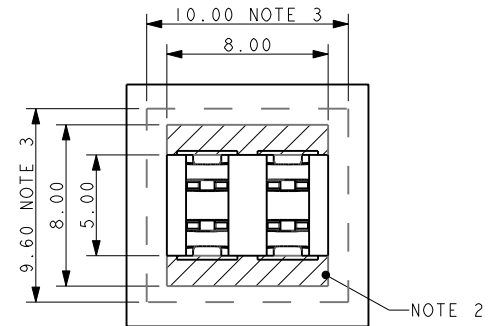
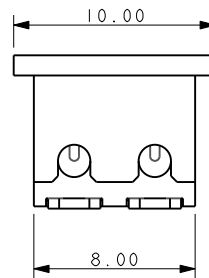
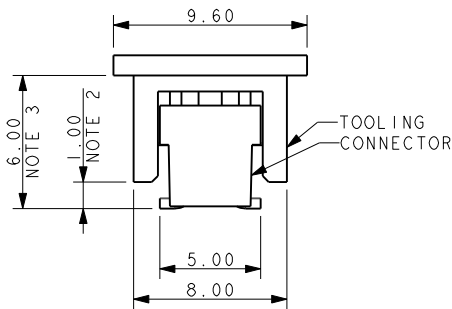
#### 3 WAY



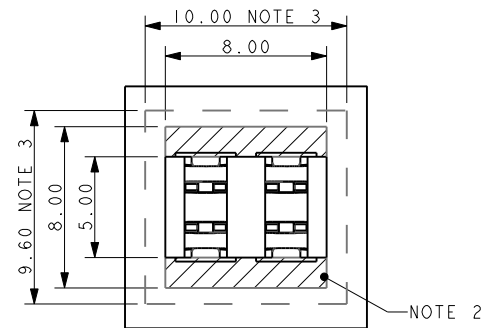
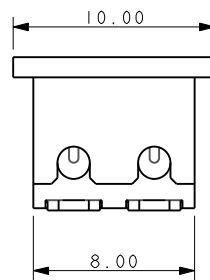
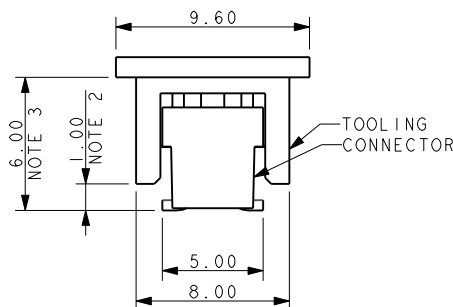
#### HIGH PRODUCTION Metal

No. of Ways	Max Insulation Dia (AWG)	Tool Part Number
2	2.10 (18-20)	06 9176 7017 01 002
	1.60 (22-24)	06 9176 7017 02 002
3	2.10 (18-20)	06 9176 7017 01 003
	1.60 (22-24)	06 9176 7017 02 003

#### 2 WAY



#### 3 WAY



#### NOTES:

1. DIMENSIONS SHOWN ARE REFERENCE DIMENSIONS.
2. MAXIMUM COMPONENT HEIGHT 1.00MM IN THIS AREA.
3. MAXIMUM COMPONENT HEIGHT 6.00MM IN THIS AREA.
4. THE SAME RESTRICTIONS APPLY TO ALL WIRE INSULATION DIAMETERS
5. 2 AND 3 WAY TOOLS ONLY, FOR USE UNDER HAND PRESS WITH FLAT PLATES.
6. FOR HAND TOOLING REFER TO PAGE 8.

