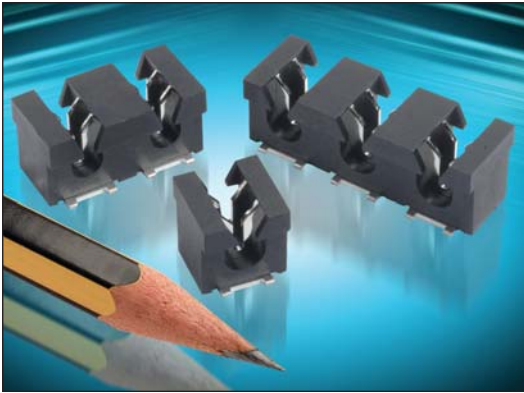


# Standard 14-20 AWG: WTB

00-9177



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 replaced up to three times.

The 9177 series accepts 14 AWG to 20 AWG wires with an insulation diameter ranging from 2.75mm to 4.25mm. These dual contact connectors support a 15 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.

## 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
- High temperature insulator capable to 260°C reflow soldering processes

## ELECTRICAL

- Current Rating: 15 Amp / Contact
- Voltage Rating: 600 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>9177</b>	<b>00X</b>	<b>0XX</b>	<b>X</b>	<b>06</b>	
Prefix	Series	Number of Ways	Wire Gauge Size	Color/Approval	Plating Option	

Code	No of Ways	Details
001	1	Page 2
002	2	Page 3
003	3	Page 4

Code	Accepted Wire Gauge	Wire Insulation
001	14 AWG Solid or Stranded	Ø 4.25
012	16 AWG Solid or Stranded	Ø 3.50
022	18 AWG Solid or Stranded	Ø 3.50
033	20 AWG Solid or Stranded	Ø 2.75

Code	Color	Approval
0	Black	Special Order
1	White	Standard
9	White	UL Approved
8	Black	UL Approved Special Order

06 = Pure Tin all over

## HOW TO ORDER – CAP OPTIONS – THROUGH WIRE

<b>60</b>	<b>9177</b>	<b>00X</b>	<b>0XX</b>	<b>X00</b>
Prefix	Series	Number of Ways	Wire Gauge Size	Insulator Color

60 = Cap

Code	No of Ways
001	1
002	2
003	3

Code	Wire Insulator Diameter (Note 3)	A	B
027	2.10mm - 2.75mm	Ø2.75	2.00
035	2.75mm - 3.50mm	Ø3.50	2.65
042	3.50mm - 4.25mm	Ø4.25	3.40

Code	Color
000	Black
100	White

## HOW TO ORDER – CAP OPTIONS – WIRE STOP

<b>60</b>	<b>9177</b>	<b>00X</b>	<b>0XX</b>	<b>X99</b>
Prefix	Series	Number of Ways	Wire Gauge Size	Insulator Color

60 = Cap

Code	No of Ways
001	1
002	2
003	3

Code	Wire Insulator Diameter (Note 3)	A	B
027	2.10mm - 2.75mm	Ø2.75	2.00
035	2.75mm - 3.50mm	Ø3.50	2.65
042	3.50mm - 4.25mm	Ø4.25	3.40

Code	Color
099	Black
199	White

Certification:  
UL File # E320991,  
check UL conditions of use for  
specific ratings and details

# Standard 14-20 AWG: WTB

00-9177



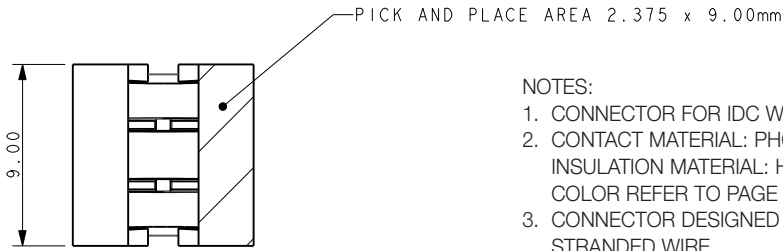
## CONNECTOR/TOOLING PART NUMBER MATRIX

AWG	Wire Insulation	SERIES 9177 IDC			HAND INSERTION TOOLING*		ACCESSORY CAPS	
		Positions	Color	Part Number	Plastic (low volume)	Metal (high volume)	Through Wire	Wire Stop
14	Ø 4.25	1p	White	009177001001106	069177701601001	069177701701001	609177001042100	609177001042199
14	Ø 4.25	1p	Black	009177001001006	069177701601001	069177701701001	609177001042000	609177001042099
14	Ø 4.25	2p	White	009177002001106	069177701601002	069177701701002	609177002042100	609177002042199
14	Ø 4.25	2p	Black	009177002001006	069177701601002	069177701701002	609177002042000	609177002042099
14	Ø 4.25	3p	White	009177003001106	069177701601003	069177701701003	609177003042100	609177003042199
14	Ø 4.25	3p	Black	009177003001006	069177701601003	069177701701003	609177003042000	609177003042099
16	Ø 3.50	1p	White	009177001012106	069177701602001	069177701702001	609177001035100	609177001035199
16	Ø 3.50	1p	Black	009177001012006	069177701602001	069177701702001	609177001035000	609177001035099
16	Ø 3.50	2p	White	009177002012106	069177701602002	069177701702002	609177002035100	609177002035199
16	Ø 3.50	2p	Black	009177002012006	069177701602002	069177701702002	609177002035000	609177002035099
16	Ø 3.50	3p	White	009177003012106	069177701602003	069177701702003	609177003035100	609177003035199
16	Ø 3.50	3p	Black	009177003012006	069177701602003	069177701702003	609177003035000	609177003035099
18	Ø 3.50	1p	White	009177001022106	069177701602001	069177701702001	609177001035100	609177001035199
18	Ø 3.50	1p	Black	009177001022006	069177701602001	069177701702001	609177001035000	609177001035099
18	Ø 3.50	2p	White	009177002022106	069177701602002	069177701702002	609177002035100	609177002035199
18	Ø 3.50	2p	Black	009177002022006	069177701602002	069177701702002	609177002035000	609177002035099
18	Ø 3.50	3p	White	009177003022106	069177701602003	069177701702003	609177003035100	609177003035199
18	Ø 3.50	3p	Black	009177003022006	069177701602003	069177701702003	609177003035000	609177003035099
20	Ø 2.75	1p	White	009177001033106	069177701603001	069177701703001	609177001027100	609177001027199
20	Ø 2.75	1p	Black	009177001033006	069177701603001	069177701703001	609177001027000	609177001027099
20	Ø 2.75	2p	White	009177002033106	069177701603002	069177701703002	609177002027100	609177002027199
20	Ø 2.75	2p	Black	009177002033006	069177701603002	069177701703002	609177002027000	609177002027099
20	Ø 2.75	3p	White	009177003033106	069177701603003	069177701703003	609177003027100	609177003027199
20	Ø 2.75	3p	Black	009177003033006	069177701603003	069177701703003	609177003027000	609177003027099

\* Insertion Tooling - Requires Hand Press with Flat Rock Plates; Consult Application Notes 201-01-124

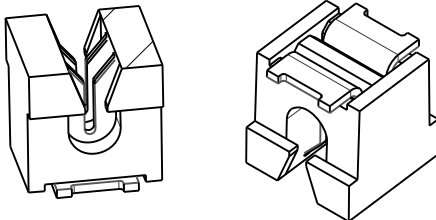
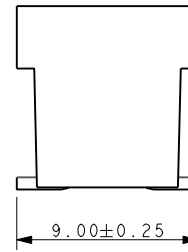
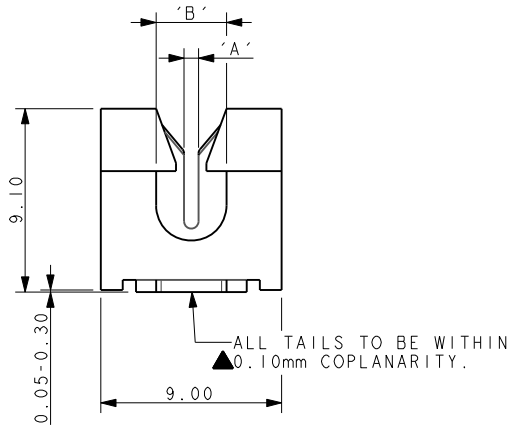


### 14-20 AWG 1 WAY IDC CONNECTOR



**NOTES:**

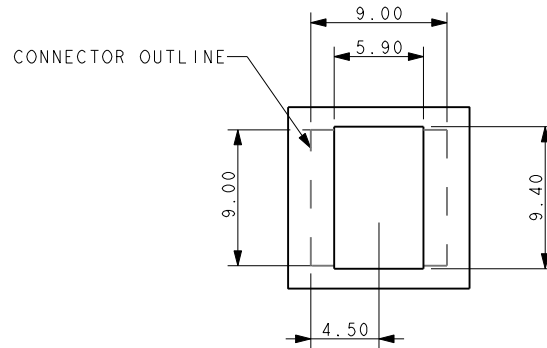
- CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
- CONTACT MATERIAL: PHOSPHOR BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 1.
- CONNECTOR DESIGNED TO ACCEPT BETWEEN 14 AND 20 GAUGE STRANDED WIRE.
- ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
- FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-109.
- FOR PCB SPACE RESTRICTED BY ASSEMBLY TOOLING REFER TO PAGE 8.



Code	Accepted Wire Gauge	A	Wire Insulation	B
001	14 AWG Solid or Stranded	1.10	Ø 4.25 max	4.25
012	16 AWG Solid or Stranded	0.82	Ø 3.50 max	3.50
022	18 AWG Solid or Stranded	0.72	Ø 3.50 max	3.50
033	20 AWG Solid or Stranded	0.60	Ø 2.75 max	2.75

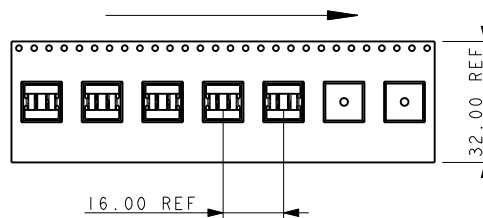
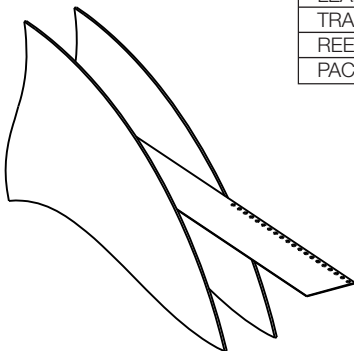
### SMT PCB LAYOUT

PURE TIN PADS

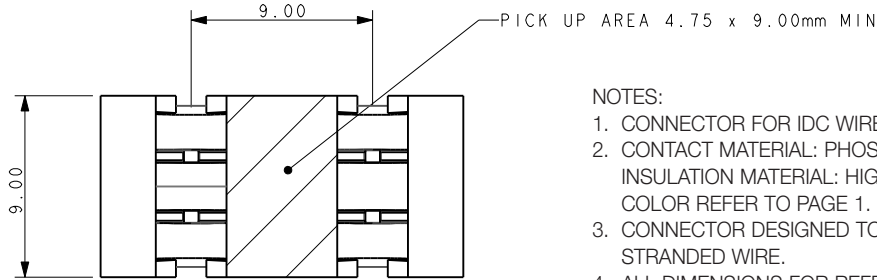


### PACKING DETAILS

REEL QTY	400
LEADER	500MM
TRAILER	400MM
REEL/BOX	4
PACK QTY	1600

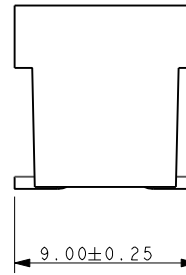
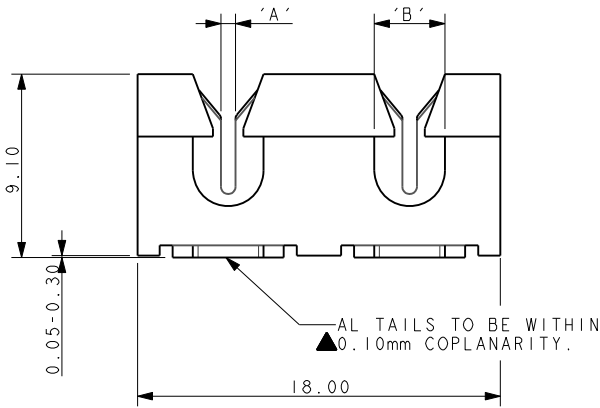


### 14-20 AWG 2 WAY IDC CONNECTOR

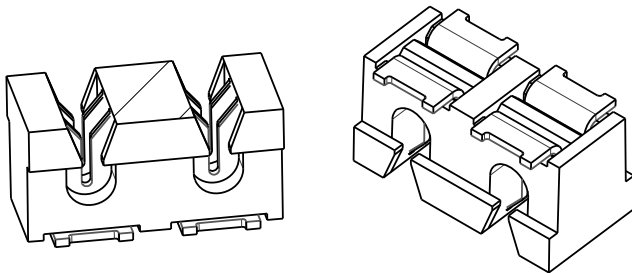


**NOTES:**

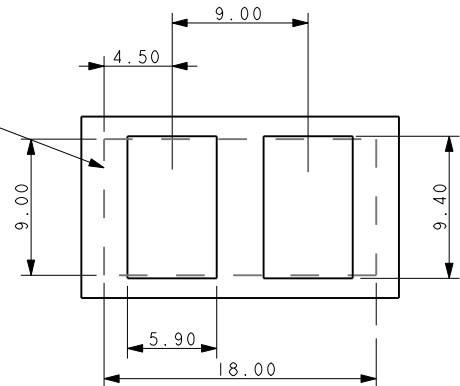
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 1.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 14 AND 20 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-109.
6. FOR PCB SPACE RESTRICTED BY ASSEMBLY TOOLING REFER TO PAGE 8.



Code	Accepted Wire Gauge	A	Wire Insulation	B
001	14 AWG Solid or Stranded	1.10	Ø 4.25 max	4.25
012	16 AWG Solid or Stranded	0.82	Ø 3.50 max	3.50
022	18 AWG Solid or Stranded	0.72	Ø 3.50 max	3.50
033	20 AWG Solid or Stranded	0.60	Ø 2.75 max	2.75

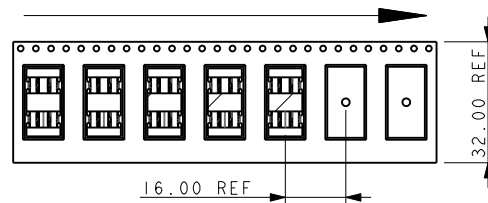
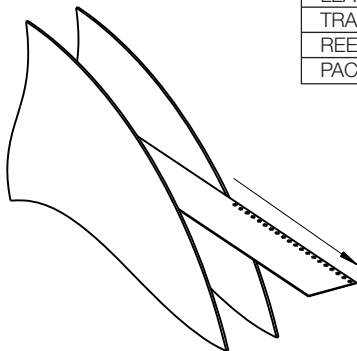


### SMT PCB LAYOUT PURE TIN PADS



### PACKING DETAILS

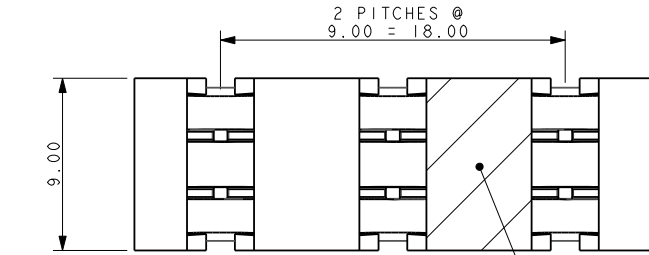
REEL QTY	400
LEADER	500MM
TRAILER	400MM
REEL/BOX	4
PACK QTY	1600



# Standard 14-20 AWG: WTB

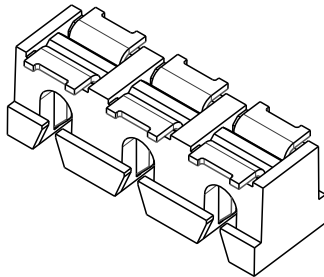
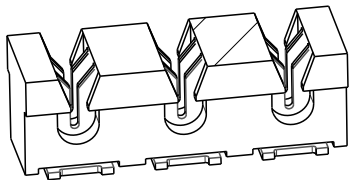
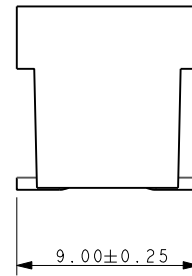
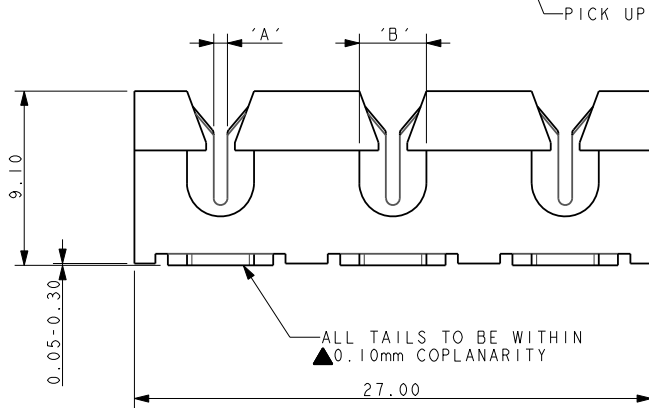
00-9177

## 14-20 AWG 3 WAY IDC CONNECTOR



**NOTES:**

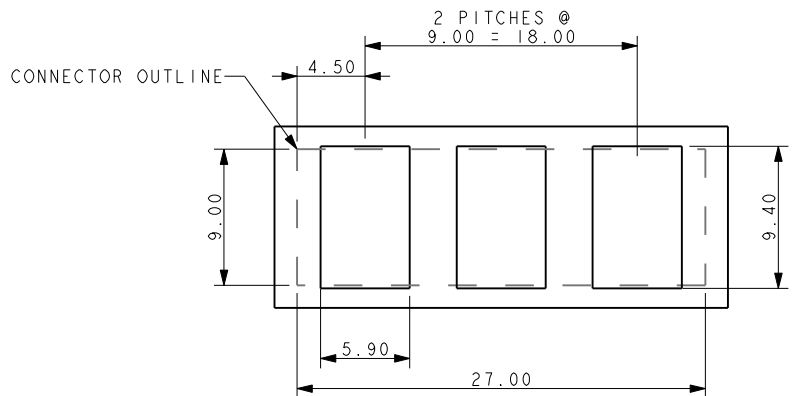
1. CONNECTOR FOR IDC WIRE TO BOARD CONNECTION.
2. CONTACT MATERIAL: PHOSPHOR BRONZE.  
INSULATION MATERIAL: HIGH TEMPERATURE NYLON 46.  
COLOR REFER TO PAGE 1.
3. CONNECTOR DESIGNED TO ACCEPT BETWEEN 14 AND 20 GAUGE STRANDED WIRE.
4. ALL DIMENSIONS FOR REFERENCE UNLESS OTHERWISE STATED.
5. FOR FULL PRODUCT SPECIFICATION REFER TO ELCO SPEC 201-01-109.
6. FOR PCB SPACE RESTRICTED BY ASSEMBLY TOOLING REFER TO PAGE 8.



Code	Accepted Wire Gauge	A	Wire Insulation	B
001	14 AWG Solid or Stranded	1.10	Ø 4.25 max	4.25
012	16 AWG Solid or Stranded	0.82	Ø 3.50 max	3.50
022	18 AWG Solid or Stranded	0.72	Ø 3.50 max	3.50
033	20 AWG Solid or Stranded	0.60	Ø 2.75 max	2.75

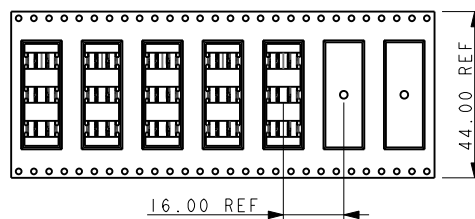
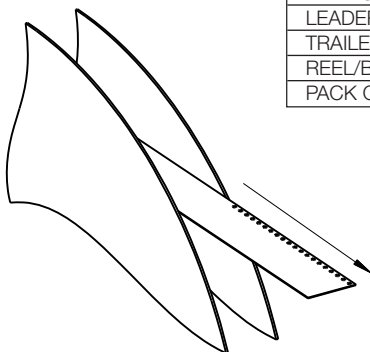
## SMT PCB LAYOUT

PURE TIN PADS

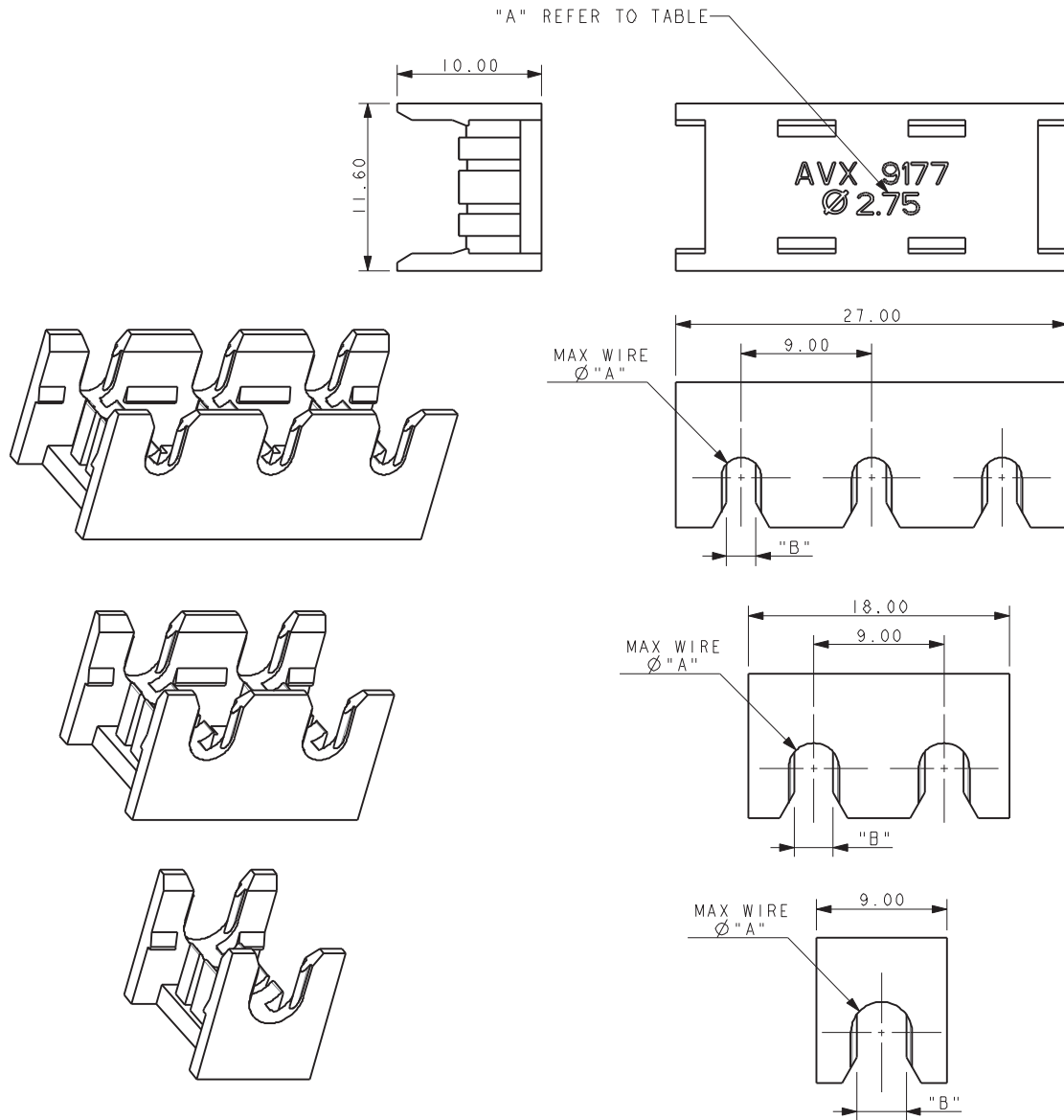


## PACKING DETAILS

REEL QTY	400
LEADER	500MM
TRAILER	400MM
REEL/BOX	4
PACK QTY	1600



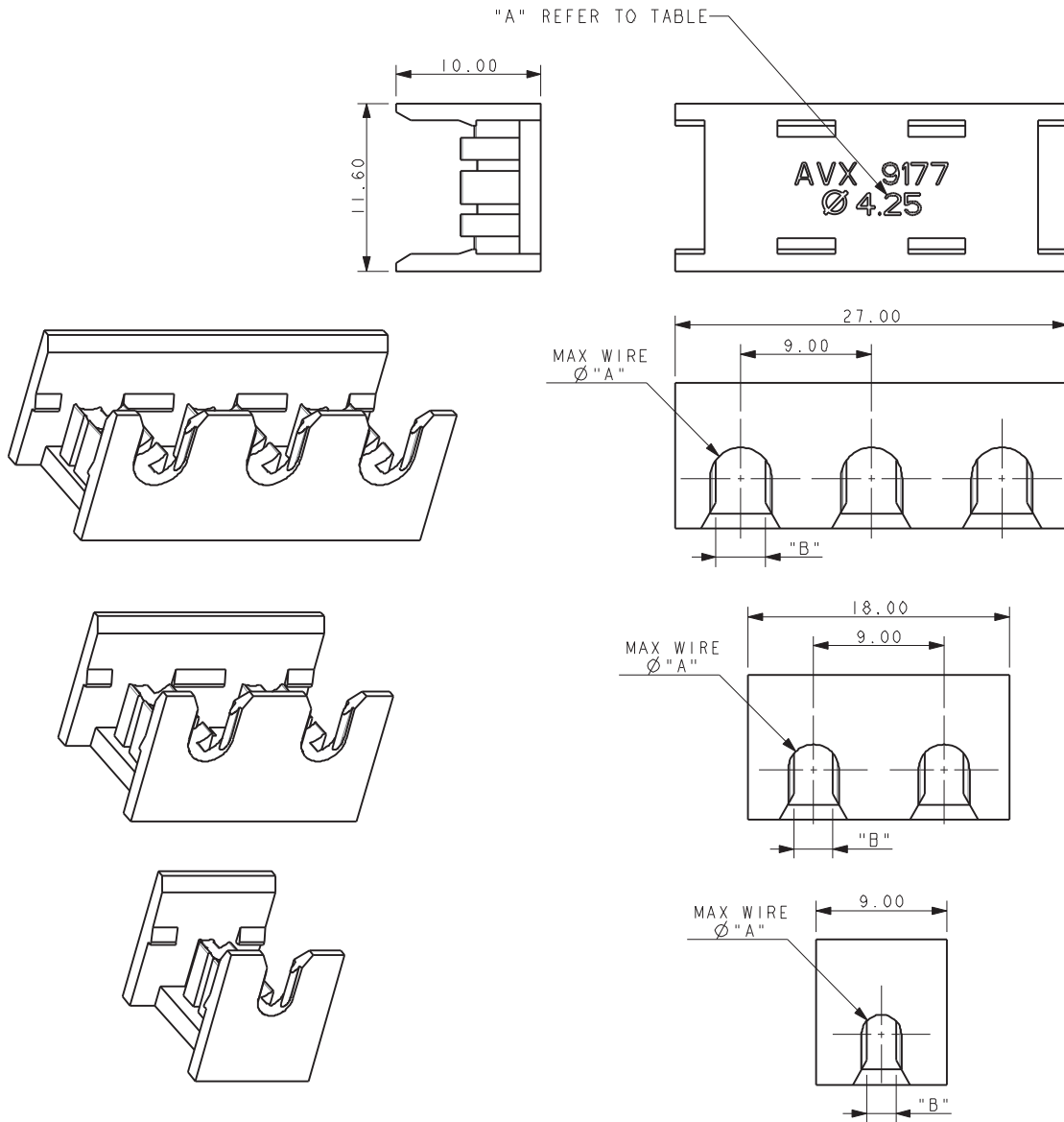
### ACCESSORY CAP – THROUGH WIRE



NOTES:

1. CAP FOR 9177 IDC WIRE TO BOARD CONNECTOR.
2. THROUGH WIRE CAP CAN BE USED AT ANY POSITION ALONG WIRE.
3. REFERS TO CAP, FOR WIRE MATCH TO CONNECTOR REFER TO TABLE ON PAGE 2.
4. MATERIAL: GLASS FILLED NYLON 46. FOR COLOR REFER TO PAGE 1.
5. CAPS DESIGNED TO ACCOMMODATE INSULATION DIAMETERS REFER TO PAGE 2.
6. GENERAL TOLERANCE  $\pm 0.20\text{MM}$ .
7. PACKED IN BAGS, 400 PIECES PER BAG.
8. APPLICATION NOTES REFER TO ELCO SPECIFICATION 201-01-124.

### ACCESSORY CAP – WIRE STOP

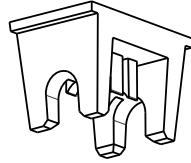


**NOTES:**

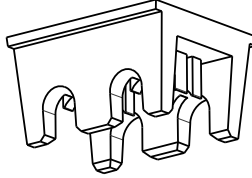
1. CAP FOR 9177 IDC WIRE TO BOARD CONNECTOR.
2. THROUGH WIRE CAP CAN BE USED AT ANY POSITION ALONG WIRE.
3. REFERS TO CAP, FOR WIRE MATCH TO CONNECTOR REFER TO TABLE ON PAGE 2.
4. MATERIAL: GLASS FILLED NYLON 46. FOR COLOR REFER TO PAGE 1.
5. CAPS DESIGNED TO ACCOMMODATE INSULATION DIAMETERS REFER TO PAGE 2.
6. GENERAL TOLERANCE  $\pm 0.20\text{MM}$ .
7. PACKED IN BAGS, 400 PIECES PER BAG.
8. APPLICATION NOTES REFER TO ELCO SPECIFICATION 201-01-124.

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

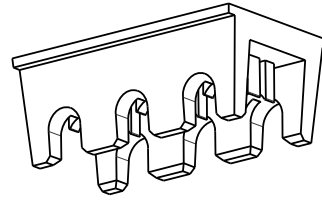
1 WAY



2 WAY



3 WAY



#### HIGH PRODUCTION Metal

No. of Ways	Max Insulation Dia (AWG)	Tool Part Number
1	4.25 (14)	06 9177 7017 01 001
	3.50 (16-18)	06 9177 7017 02 001
	2.75 (20)	06 9177 7017 03 001
2	4.25 (14)	06 9177 7017 01 002
	3.50 (16-18)	06 9177 7017 02 002
	2.75 (20)	06 9177 7017 03 002
3	4.25 (14)	06 9177 7017 01 003
	3.50 (16-18)	06 9177 7017 02 003
	2.75 (20)	06 9177 7017 03 003

#### MEDIUM PRODUCTION Plastic

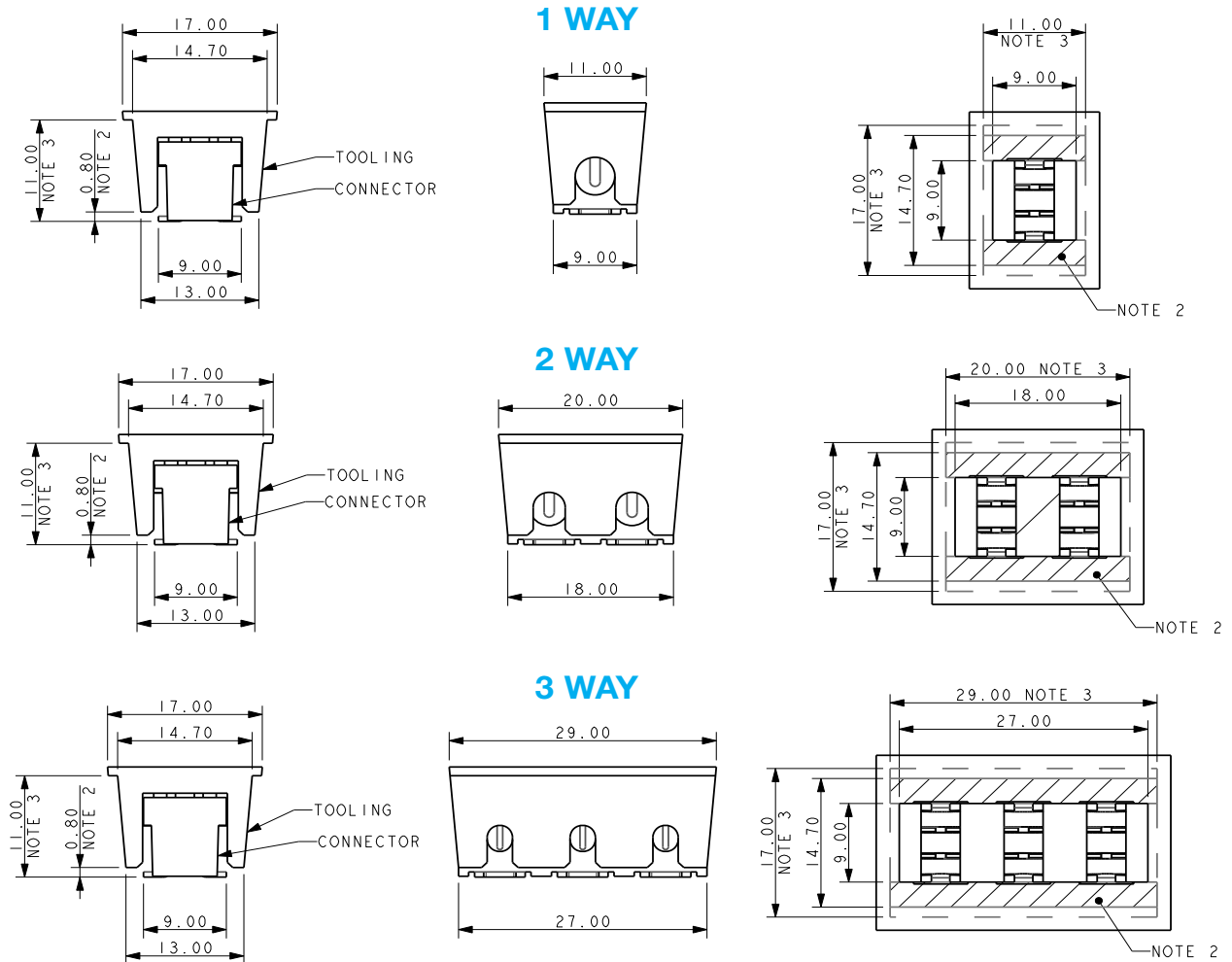
No. of Ways	Max Insulation Dia (AWG)	Tool Part Number
1	4.25 (14)	06 9177 7016 01 001
	3.50 (16-18)	06 9177 7016 02 001
	2.75 (20)	06 9177 7016 03 001
2	4.25 (14)	06 9177 7016 01 002
	3.50 (16-18)	06 9177 7016 02 002
	2.75 (20)	06 9177 7016 03 002
3	4.25 (14)	06 9177 7016 01 003
	3.50 (16-18)	06 9177 7016 02 003
	2.75 (20)	06 9177 7016 03 003

The assembly tooling restricts the available space/component heights on the PCB.  
For details see below.

NOTES:

1. ALL DIMENSIONS FOR REFERENCE DIMENSIONS.
2. MAXIMUM COMPONENT HEIGHT 0.80MM IN THIS AREA.
3. MAXIMUM COMPONENT HEIGHT 11.00 MM IN THIS AREA.
4. THE SAME RESTRICTIONS APPLY TO ALL WIRE INSULATION DIAMETERS.

### INSERTION TOOLING – PCB RESTRICTED AREAS FOR ASSEMBLY TOOLING





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