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ELECTRONICS

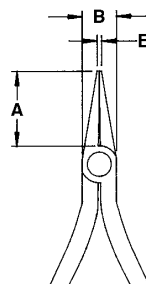
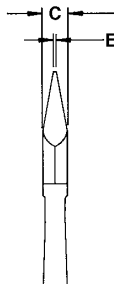
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Jameco Part Number 217891

# Subminiature Needle Nose Pliers

- Subminiature needle nose pliers
- Positive gripping of fine wire or subminiature components
- Fine point allows use in confined areas
- L4 features serrated jaws
- L4G features smooth jaws
- Features green cushion grips



Cat No.	UPC No.	Packed	Length		A		B		C		E		Pack Wt.		Shelf Pack
			Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	lb	g	
<b>L4</b>	043127161049	Bagged	4	100	13/16	21	3/8	10	9/32	7	3/64 x 1/32	1.2 x .8	.78	354	6
<b>L4V</b>	043127085482	Carded	4	100	13/16	21	3/8	10	9/32	7	3/64 x 1/32	1.2 x .8	.78	354	6
<b>L4G</b>	043127161056	Bagged	4	100	13/16	21	3/8	10	9/32	7	3/64 x 1/32	1.2 x .8	.78	354	6

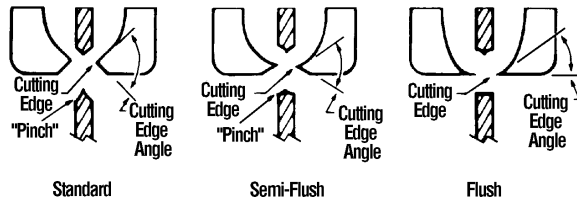
# Electronic Assembly Tools Plier Selection Information

## General

When selecting electronic cutting pliers, you should attempt to minimize your cost per cut by selecting the proper tool for each application. The type of cut, cutting area access, cutting edge quality and user preference will influence your choice.

## Type of Cut

Electronic pliers are available with cutting edge angles that produce standard, semi-flush and flush cuts. These terms refer to the amount of "pinch" left on the tip of a wire after it has been cut



**Standard** cutting edges should be used for applications that are not sensitive to either the amount of shock transmitted through the wire to the component (during cutting) or to the amount of "pinch" left on the wire tip (after cutting).

**Semi-flush** edges can be employed for most applications. They reduce shock transmittal and wire tip "pinch."

**Flush** edges should be selected only for delicate applications, which require minimal shock transmittal and wire tip "pinch." Flush cutters produce a clean cut, which facilitates soldering and increases connection reliability. With small cutting edge angles, the life of flush cutters is substantially less than that of semi-flush cutters. The larger the cutting edge angle, the more cuts you can expect from the tool. For electronic assembly work, the semi-flush cutter is often the most cost-effective choice.

## Cutting Area Access

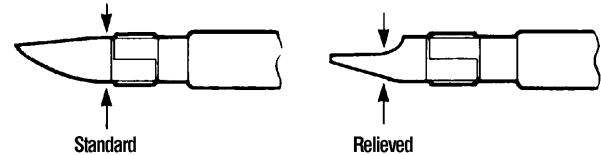
Access to cutting areas can determine the shape and thickness of the cutting head. Tight clearances around the cutting area, the need to reach over in-place components or to work from directly above, and visibility requirements are all factors which will affect your choice of a tool. However, it is important to recognize that head shape and thickness are directly related to cutting edge life



## Head Shape

Always select a cutter with the largest head that will meet your particular cutting requirements. It is a proven fact that more material behind the cutting edges gives more cuts and longer life.

Oval head cutters are the most versatile. They have the most material behind the cutting edges, and last longest. Tapered and angled head cutters should be selected only when access to the cutting area is limited. These cutters have less head mass, and provide proportionally fewer cuts.



## Head Thickness

Head thickness is related to cutting life in the same way as head shape. Cutting pliers with thicker heads also last longer. Whenever possible, use pliers with standard head thickness. Relieved head designs should be chosen only to accommodate difficult access problems.

## Cutting Edge Quality

The quality of a pair of cutting pliers can be determined by visual inspection. The blades should meet smoothly and evenly at the tips. From a point just behind the tips to the joint, an increasing amount of light should be visible



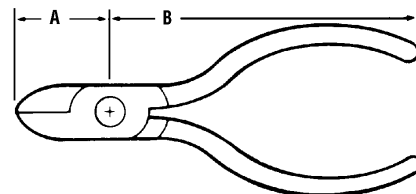
A precision tip interface assures clean cutting of fine wires, while the "no contact" area behind the tips extends cutter life by allowing the tips to continue to meet as they wear.

## User Preference

Other considerations can be a matter of personal preference. Handle shape, grip color, grip material, spring tension and leverage ratio are usually related to user comfort.

Proper spring tension will allow pliers to open and close with minimum effort. Finally, pliers with high leverage ratios provide the greatest ease of use and the longest life.

## Leverage Ratio



Leverage ratio is obtained by dividing dimension A into dimension B.

## Cutting capability guide

\* Maximum Tensile Strength

Catalog Number	Flush Edge	Semi-Flush Edge	Standard Edge	36 Ga. (.005) Teflon Coated Copper Wire	25 Ga. (.017) Soft Copper Wire	22 Ga. (.025) Soft Copper Wire	20 Ga. (.034) *90,000 PSI Steel Wire	20 Ga. (.034) *120,000 PSI Steel Wire	18 Ga. (.047) *200,000 PSI Steel Wire
EC54J	•				•	•	•		
EGA54J	•				•	•	•		
EMS543J	•				•	•	•		
EMS549J	•				•	•	•		
EMS54		•				•		•	
GA54J	•				•	•	•		
LC665J	•				•	•	•		
MS54			•				•		•
MS543J	•				•	•	•		
MS545		•				•		•	
MS545J	•				•	•	•		
MS549J	•				•	•	•		
S1415JS	•				•	•	•		
S424JS	•				•	•	•		
S54				•			•		•
S54KS		•				•		•	
S54S			•			•			•
S55				•			•		•
S55KS		•				•		•	
S55S			•			•			•
SN54			•				•		•
SN55			•				•		•
TC55			•				•		•

## Xcelite® Electronic Pliers

### Provide the ultimate in precision plier

- Manufactured to the highest professional quality
- Easily handles a wide range of electronic assembly requirements
- Smooth, easy-working, corrosion-proof joint
- Maintains perfect cutting edge and tip alignment
- All Xcelite® cutters and pliers are standard with ESD safe cushion grip handles. Exception: red grip products

# Xcelite® Diagonal Cutting Pliers

FLUSH OR SEMI-FLUSH CUTTING  
EDGES HANDLE MOST CUTTING  
REQUIREMENTS

CUTTING EDGES MACHINE GROUND  
AND ELECTRONICALLY HARDENED  
FOR EXTENDED LIFE

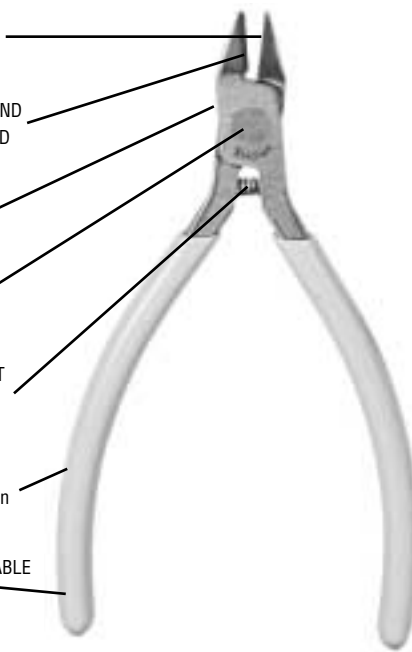
FORGED ALLOY STEEL WITH  
POLISHED HEAD FOR HIGH  
DURABILITY

STEEL RIVET FOR SMOOTH  
OPERATION AND LONG LIFE

HANDLE COIL SPRINGS FOR FAST  
CUTTING ACTION (Standard on all  
Models)

ESD SAFE CUSHION GRIPS FOR  
MAXIMUM COMFORT (Standard on  
all Models)

"ACCU-LITE" GRIPS ALSO AVAILABLE  
ON MANY MODELS



## Pliers Features and Benefits

- Lightweight, miniature plier line. Includes versatile selection of diagonal, angular, tip and end cutters plus wiring and assembly tools.
- Choice of oval, tapered, relieved and angled head designs for general or confined area cutting.
- Full flush or semi-flush cutting edges machine ground and electronically hardened for extended life in cutting either hard or soft wires.
- Needle nose styles include long, short, curved, flat and round to handle most forming, looping, twisting, insertion and pickup jobs.
- Copaloy joint maintains perfect cutting edge and tip alignment to maximize operational consistency and tool life.
- Handle coil springs, standard on all Copaloy pliers, allow faster cutting action with reduced user fatigue.
- Forged from high quality alloy steel for maximum strength and durability.
- Precision ground to close tolerances, individually finished and tested to ensure exact fit of jaws.
- Polished heads with gun metal handles.
- Made in U.S.A.



### CAUTION

1. Always wear approved eye protection.
2. Cushioned handles are not intended to provide protection against electric shock.  
Do not use on or near energized circuits.
3. When cutting wire or metal, hold short end to prevent flying pieces.



## Accu-Lite Handles Meet The Optimum Criteria For Hand Tools:

THUMB FLAIR INCREASES TOOL  
CONTROL

EXCLUSIVE, SOFT, NON-SLIP FOAM  
GRIPS PROVIDE POSITIVE GRIPPING  
AND MAXIMUM COMFORT

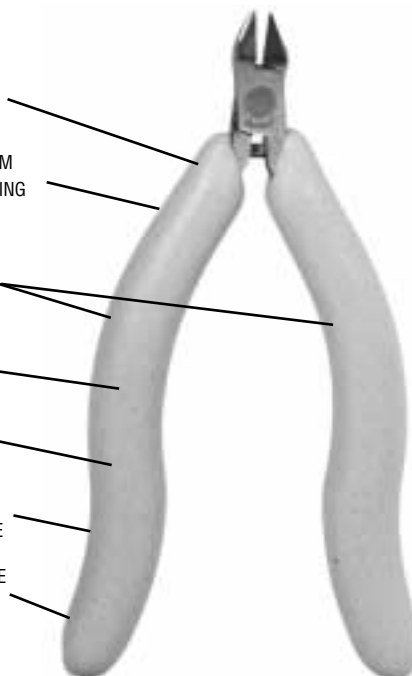
IDENTICALLY FORMED HANDLES  
ALLOW EITHER RIGHT OR  
LEFT-HAND USE

ANTI-STATIC GRIP MATERIAL  
DISSIPATES STATIC CHARGES

SOIL RESISTANT SURFACE  
EXTENDS GRIP LIFE

CONCAVE CONFIGURATION  
DISPERSES GRIPPING PRESSURE

EXTENDED HANDLE PERMITS USE  
OF ALL FINGERS



- **Lightweight construction**
- **Extended handle length** allows even application of force from all four fingers.
- **Exclusive, smooth, soft foam cushion grips** are free of abrupt edges and finger indentations.
- **Grip material is non-slip and compressible** to allow positive gripping and to absorb mechanical shock.
- **Handle contours adaptable for either right or left-hand use.**

