

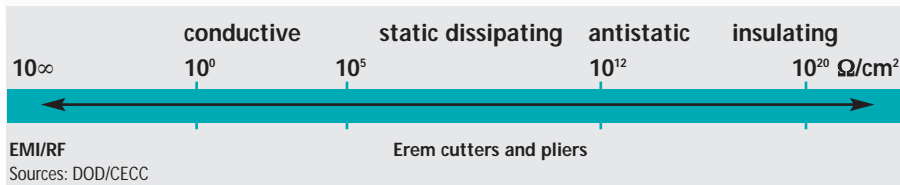
# Erem Side Cutters and Tip Cutters

## Erem impresses



### ESD-safe

The interchangeable foam-cushion handles are ESD-safe and are fitted as standard on all Erem cutters and pliers.



### Internal patented Erem Magic Spring

- Constant spring force
- Guarantees more than 1 million operations

### High precision screw joint

- Smooth jaw action with no play
- Smooth cutting operation with no jaw overlapping

### Erem Cut: Options for semi flush, full flush or super flush cuts



**Ergonomically shaped handles**

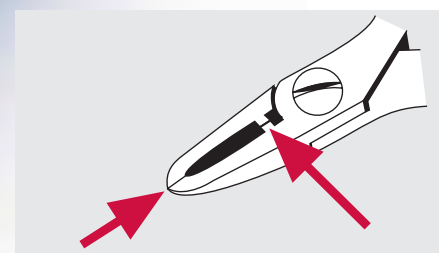
for high comfort, better grip and added safety

**EMOS maximum opening stop**

limits the cutting-edge tips from opening more than 5 mm/.197 Inch. The limited extent to which the handles can open prevent user hand fatigue.

**Induction-hardened cutting edges in Rockwell hardness 63 – 65 HR**

for exceptionally long life

**Erem cutting-edge protection for tip cutters**

All tip cutters are fitted with a special stop system which prevents the cutting edges from overlapping.

**Safety device for holding wire scraps**

This safety device for side cutters holds wire scraps securely after cutting. Available on most Series 500, 600 and 2400 cutters (oval head). Order suffix "W", e.g. 595EW.

# Erem impresses

## Erem Technology

### Special tool steel

Erem electronics tools are made from bright steel. They are not drop forged. The special tool steel is made using a unique Swiss processing technique.

#### The advantage:

The bright tool steel gives additional strength and toughness to the tools promoting a long service life.

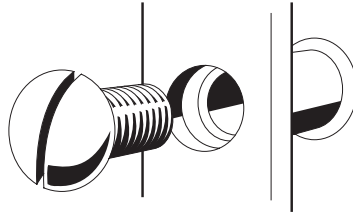


### The internal patented Erem Magic Spring

The Magic Spring system used in Erem precision tools is unique. It is integral to the cutting head and provides a constant closing and re-opening force. It is guaranteed for 1 million operations.

#### The advantage:

The Magic Spring system is highly reliable, makes the tools easy to use and reduces operator fatigue.



### High precision screw joint

This self locking screw joint system gives a smooth cutting and opening action and ensures that there is no blade overlap or play.

#### The advantage:

Precision cutting and reduced shock to components.

### EMOS maximum opening stop

The unique EMOS (Erem Maximum Opening Stop) system prevents the tips from opening more than 5 mm/.197 Inch. It reduces user fatigue by preventing excessive hand spread.

#### The advantage:

Comfortable and fatigue free working.

## Handle

### Erem cutters and pliers with ergonomic handles

Work Related Upper Limb Disorder (WRULD) can be caused by positional fatigue or nerve damage brought about by the repeated use of non-ergonomic hand tools, otherwise known as Repetitive Strain Injuries (RSI).

WRULDS is a direct consequence of insufficient ergonomics in manufacturing processes and working practices. To reduce the factors which cause WRULDS, Erem has developed a range of tools with ergonomic handles (Series 2400 MagicSense).

The handle shape and special materials ensure a soft feel, operating comfort and safety. The specially shaped handles ensure that the gripping pressure is evenly spread over the entire palm of the hand. The thumb and fingers automatically find their best position. The effort that has to be exerted by the user is reduced, thereby reducing hand fatigue.




The anti-slip surface provides excellent grip. The material is highly resistant to perspiration, water, oil and chemicals. The handles are ESD-safe and are easily interchangeable.



## Erem Cut

### Cut shape

There are three blade options, which determine the shape left on a lead after cutting. (see also P. 35)

-  1. Semi-flush
-  2. Flush
-  3. Super full flush

### Cutting edge

Erem cutters are noted for their ease of use, one of the reasons for this is the ability of the blade to cut equally well over its full length. This promotes operator comfort and reduces fatigue.

Semi-flush cutters offer the best performance and the longest service life. Super full flush cutters leave a flat wire end with minimal effort and prevent components from being subjected to load.

#### The advantage:

High level of user comfort thanks to special cutting edge.

### Rockwell hardness

The cutting blades of Erem cutters are hardened to Rockwell 63-65 HRC by an induction heating process. Continuous process control ensures that the blades achieve the correct level of hardening and are not embrittled.

#### The advantage:

This level of hardening plus the high-grade tool steel used in the manufacture of the tools and continuous process control promote an exceptionally long service life.

## Erem Service

### Re-sharpening

Erem is your service partner. All Erem side and tip cutters except those with carbide insert blades can be re-sharpened up-to three times. Carriage charges will apply.

#### The advantage:

The re-sharpened tool is as good as new, its life is extended and costs are reduced.

### Replacement parts

Erem cutters and pliers and their component parts are warranted against manufacturing defects. Magic springs, precision joint components are available as spare parts.

#### The advantage:

The warranty and availability of spares guarantee long service life.



### ESD-safe

The ergonomic, interchangeable molded handles are ESD-safe and are fitted as standard on all Erem cutters and pliers.



Erem cut Super full flush:  
perfect flush cut

Standard cut  
"Super full flush"

# Choosing the right tool

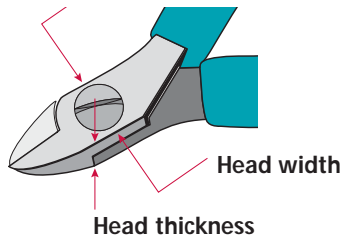
## Selection criteria

Erem offers a wide selection of precision side and tip cutters for virtually any application.

When choosing the right cutter, it is important to take









- Size
- Cut
- Head shape
- Cutting capacity into consideration.

## Size



Erem offers the right head size to suit every application. There are three main sizes: Micro, Medium and Maxi.

Each head size is available in different head shapes.

Micro	Medium		Maxi
			
<b>Series 600</b>	<b>Series 2400 MagicSense</b>	<b>Series 500</b>	<b>Series 800</b>
			
<b>Size</b>			
Head width 9.0 mm/.354 Inch Head thickness 6.0 mm/.236 Inch	Head width 11.0 mm/.433 Inch Head thickness 6.0 mm/.236 Inch	Head width 11.0 mm/.433 Inch Head thickness 6.5 mm/.256 Inch	Head width 13.5 mm/.331 Inch Head thickness 7.5 mm/.295 Inch
Miniature cutter for applications in microelectronics and for fine wires. Offers a large variety of head shapes for very good access even to hard-to-reach areas.	Medium-size cutter. Combines robustness, visibility and accessibility. Large variety of head shapes for precision working in hard-to-reach areas. The Series 2400 MagicSense offers an optimised ergonomic shape and an improved grade of hardness.		The strongest and most robust head size for general cutting applications in electronics, cuts large wire diameters.

## Cut

### Cut

There are three blade options, which determine the shape left on a lead after cutting.



#### Semi-flush

This cut leaves a pyramidal tip at the end of the wire. It is particularly suitable for standard jobs where the final shape does not play a significant role. Cutters with this cut are suitable for both soft copper wires and very hard wires such as stainless steel.



#### Flush

This cut leaves a much smaller tip at the end of the wire than the semi-flush cut – without reducing the cutting capacity. The cutting edges are finer than on semi-flush cutters. The effort exerted when cutting is less and the load on the component is reduced. Flush wire ends reduce the effort needed to fit components on printed-circuit boards. Erem guarantees precise cutting even after frequent use.



#### Super full flush

Only Erem offers you a super full flush cut. This cut provides absolutely flush wire ends. No rework is needed. Cutters with this cut are absolutely precision-ground and sharpened. The effort exerted when cutting is low, as is the load on the component caused by the cut. Soldering tags in soldering-bath procedures are prevented. Cutters of this type are used in microelectronics, space travel or medical technology. These cutters are suitable for soft wires.



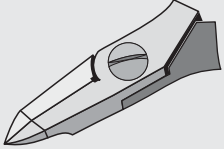
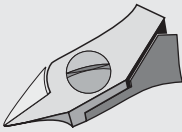
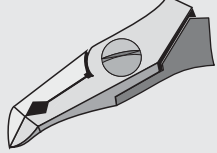
Erem cut Super full flush:  
perfect flush cut

Standard cut  
"Super full flush"

# Choosing the right tool

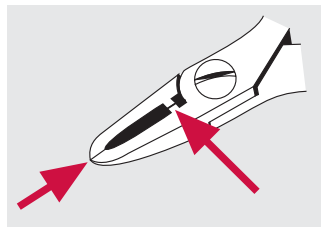
## Head shape

Erem offers the right head shape to suit your application. The head shapes differ in terms of shape and design. There are six basic shapes:

Shape	Tip cutter Straight relieved head	Tip cutter Pointed relieved head	Tip cutter Angled narrow head
<b>Visibility and accessibility</b> Cutting at the outermost tip of the cutter			
	This head is suitable for horizontal and vertical cuts. The long tips facilitate cutting in hard-to-reach areas.	This is the narrowest head shape. The underside is relieved and facilitates optimum access even to extremely hard-to-reach areas.	The angled head provides for precise cuts at different working angles.
Series 600 Micro	670E*, 670EP*, 670EPF* (P. 45)	622NB, 632NCF, 676E, 776E (P. 44)	
Series 2400 MagicSense	2470E (P. 49)		2475E, 2482E (P. 49)
Series 500 Medium	570E, 573E** (P. 55)	592E, 792E (P. 54)	555E, 572E, 582E (P. 53), 575E, 593AE (P. 54)
Series 800 Maxi		884E (P. 58)	

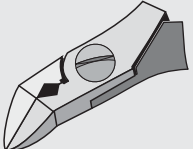
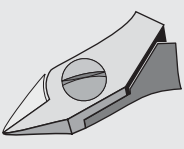
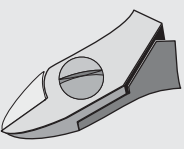
\* Very short head

\*\* Straight head for vertical working



### Erem cutting-edge protection for tip cutters

Erem tip cutters are equipped with cutting-edge protection. A special stop system prevents the cutting edges from overlapping.

	Tip cutter Angled wide head	Side cutter Tapered head	Side cutter Oval head
			
	<p>The angled head provides for precise cuts at different working angles.</p>	<p>The jaws of the cutter have straight edges and taper to a point. This head shape allows access to difficult to reach areas but reduces the cutting capacity in comparison to the same size oval head cutter.</p>	<p>This is the most widely used head shape, it is robust and size for size offers the highest cutting capacity.</p>
		622NA (P. 44)	612N, 622N, 632N (P. 43)
	2403E, 2404E (P. 48)	2477E (P. 48)	2412E, 2422E, 2432E (P. 47)
	503E, 504AE (P. 52)	577E, 595E (P. 52)	512E, 512N, 522N, 532N, 599E (P. 51)
		886E (P. 58)	812N, 822N, 896E (P. 57)

**High cutting capacity**  
Cutting over the full length of the cutter

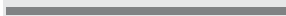


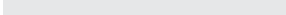
Erem offers carbide cutters (see P. 38) for cutting high-hardness wire (piano wire)












































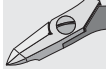










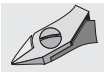









































# Choosing the right tool

## Cutting capacity

### Wire quality

-  Piano wire, stainless spring steel wire, material 1.4310, tensile strength 2000–2400 MPa
-  Hard wire, stainless steel wire, material 1.4301, tensile strength 1800 MPa
-  Medium-hard wire, stainless steel wire, material 1.4301, tensile strength 800 MPa
-  Soft wire, copper, aluminium, tensile strength 250 MPa

Model		Cut	Cutting capacity
<b>Series 600 Micro</b>			mm 0.03 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 Inch .001 .003 .007 .011 .015 .019 .023 .027 .031 .035 .039 .043 .047 .051 .055 .059 .062 .066 .070 .074 .078
	<b>612N</b>	 Semi-flush	
	<b>622N</b>	 Flush	
	<b>632N</b>	 Super full flush	
	<b>622NA</b>	 Flush	
	<b>622NB</b>	 Flush	
	<b>676E</b>	 Flush	
	<b>776E</b>	 Super full flush	
	<b>632NCF</b>	 Super full flush	Only for soft materials: silicone, rubber, etc.
	<b>670E</b>	 Flush	
	<b>670EP</b>	 Flush	For micro-package contacts
	<b>670EPF</b>	 Flush	Only for micro pitches under 0.5 mm / .019 Inch
<b>Series 2400 MagicSense</b>			mm 0.03 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0 Inch .001 .003 .007 .011 .015 .019 .023 .027 .031 .035 .039 .043 .047 .051 .055 .059 .062 .066 .070 .074 .078
	<b>2412E</b>	 Semi-flush	
	<b>2422E</b>	 Flush	
	<b>2432E</b>	 Super full flush	
	<b>2477E</b>	 Flush	
	<b>2403E</b> 30°	 Flush	
	<b>2404E</b> 30°	 Flush	
	<b>2482E</b> 45°	 Flush	
	<b>2475E</b> 45°	 Flush	
	<b>2470E</b>	 Flush	

Model		Cut	Cutting capability	
			mm	Inch
<b>Series 500 Medium</b>				
			0.030	.001
			0.1	.003
			0.2	.007
			0.3	.011
			0.4	.015
			0.5	.019
			0.6	.023
			0.7	.027
			0.8	.031
			0.9	.035
			1.0	.039
			1.1	.043
			1.2	.047
			1.3	.051
			1.4	.055
			1.5	.059
			1.6	.062
			1.7	.066
			1.8	.070
			1.9	.074
			2.0	.078
	<b>512N</b>	 Semi-flush	[Bar chart showing cutting capability for 512N]	
	<b>512E</b>	 Semi-flush	[Bar chart showing cutting capability for 512E]	
	<b>522N</b>	 Flush	[Bar chart showing cutting capability for 522N]	
	<b>599E</b>	 Flush	[Bar chart showing cutting capability for 599E]	
	<b>532N</b>	 Super full flush	[Bar chart showing cutting capability for 532N]	
	<b>595E</b>	 Flush	[Bar chart showing cutting capability for 595E]	
	<b>577E</b>	 Flush	[Bar chart showing cutting capability for 577E]	
	<b>503E</b>	 Flush	[Bar chart showing cutting capability for 503E]	
	<b>504AE</b>	 Flush	[Bar chart showing cutting capability for 504AE]	
	<b>555E</b>	35°  Flush	[Bar chart showing cutting capability for 555E]	
	<b>572E</b>	40°  Flush	[Bar chart showing cutting capability for 572E]	
	<b>582E</b>	45°  Flush	[Bar chart showing cutting capability for 582E]	
	<b>582EW</b>	 Flush	[Bar chart showing cutting capability for 582EW]	
	<b>593AE</b>	30°  Flush	[Bar chart showing cutting capability for 593AE]	
	<b>575E</b>	45°  Flush	[Bar chart showing cutting capability for 575E]	
	<b>592E</b>	 Flush	[Bar chart showing cutting capability for 592E]	
	<b>792E</b>	 Super full flush	[Bar chart showing cutting capability for 792E]	
	<b>570E</b>	 Flush	[Bar chart showing cutting capability for 570E]	
	<b>573E</b>	 Flush	For vertical cutting	
<b>Series 800 Maxi</b>				
			mm	Inch
			0.030	.001
			0.1	.003
			0.2	.007
			0.3	.011
			0.4	.015
			0.5	.019
			0.6	.023
			0.7	.027
			0.8	.031
			0.9	.035
			1.0	.039
			1.1	.043
			1.2	.047
			1.3	.051
			1.4	.055
			1.5	.059
			1.6	.062
			1.7	.066
			1.8	.070
			1.9	.074
			2.0	.078
	<b>812N</b>	 Semi-flush	[Bar chart showing cutting capability for 812N]	
	<b>896E</b>	 Semi-flush	[Bar chart showing cutting capability for 896E]	
	<b>822N</b>	 Flush	[Bar chart showing cutting capability for 822N]	
	<b>886E</b>	 Flush	[Bar chart showing cutting capability for 886E]	
	<b>884E</b>	 Flush	[Bar chart showing cutting capability for 884E]	
<b>Tungsten-carbide cutters</b>				
			mm	Inch
			0.030	.001
			0.1	.003
			0.2	.007
			0.3	.011
			0.4	.015
			0.5	.019
			0.6	.023
			0.7	.027
			0.8	.031
			0.9	.035
			1.0	.039
			1.1	.043
			1.2	.047
			1.3	.051
			1.4	.055
			1.5	.059
			1.6	.062
			1.7	.066
			1.8	.070
			1.9	.074
			2.0	.078
	<b>622TX</b>	 Flush	[Bar chart showing cutting capability for 622TX]	
	<b>599T</b>	 Semi-flush	[Bar chart showing cutting capability for 599T]	
	<b>599TF</b>	 Flush	[Bar chart showing cutting capability for 599TF]	
	<b>595T</b>	 Semi-flush	[Bar chart showing cutting capability for 595T]	
	<b>595TF</b>	 Flush	[Bar chart showing cutting capability for 595TF]	
	<b>2476TX1</b>	 Flush	[Bar chart showing cutting capability for 2476TX1]	
	<b>576TX1</b>	 Flush	[Bar chart showing cutting capability for 576TX1]	
	<b>2476TX</b>	 Flush	[Bar chart showing cutting capability for 2476TX]	
	<b>576TX</b>	 Flush	[Bar chart showing cutting capability for 576TX]	
	<b>503ET</b>	30°  Semi-flush	[Bar chart showing cutting capability for 503ET]	
	<b>503ETF</b>	30°  Semi-flush	[Bar chart showing cutting capability for 503ETF]	

# Special applications

## Side cutters for use in medical device manufacturing



The 632NCF miniature side cutter is ideally suitable for soft material such as silicone tubes in medical device applications, precision connector seals or miniature rubber seals.

The miniature cutter is also the ideal tool for cutting soft synthetic parts, e.g. in the manufacture of hearing aids.

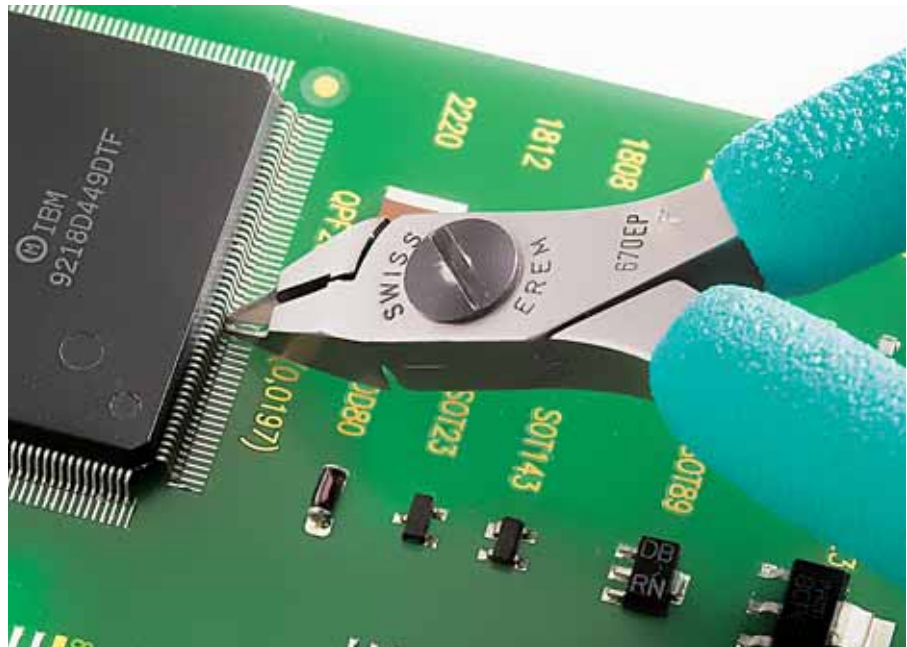
The cutting edges of the 632NCF side cutter are precision-ground to an extremely high level. This enables the cutter to deliver a razor-like full-flush cut.

## Tip cutters to remove fine pitch SMD ICs

A simple method to remove SMD ICs is to cut each of the individual leads to remove the device and then reflow the joint with a soldering iron and remove the component lead from the board.

The solder left on the board can then be removed with a desoldering tool or desolder braid and a new component fitted.

The 670EP and 670EPF have fine pointed tapered and relieved heads that are able to fit between individual leads and cut them without causing damage to the printed circuit.



## Tungsten-carbide cutter for the preparation of cardio-vascular stents

A stent is a vascular-wall prop. It is a lattice-shaped tube made of stainless steel or nickel-titanium. It serves to hold open constricted coronary blood vessels and improves the flow of blood through the vessels.

It is important in stent manufacture that the cut end of any wire in the lattice is as flat as possible, otherwise it will be necessary rework the stents.

These side cutters have fine polished carbide cutting blades to accurately cut the lattice and reduce the need for rework.



## High precision side cutter for cutting stainless wires



The 599TFO has wear resistant tungsten carbide cutting edges and all round capability. It is able to cut Vectran™ braided wires, fibre optics, Kevlar® and small stainless steel braids and wires.

A further application lies in telecommunications, i.e. working on fibre-optic cables, Kevlar® silks and piano wires.

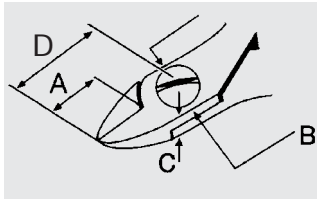
# Side Cutters and Tip Cutters

## Series 600 Micro

- Miniature cutters
- Offers a wide variety of head shapes for access in difficult to reach areas
- Suitable for SMD and leads (670EP, 670EPF)
- Made from high grade tool steel with cutting edges hardened to 63-65HRc
- Non reflecting surface, ESD safe, resharpenable



## Series 600 Micro



A = length of cutting edges  
 B = head width  
 C = head thickness  
 D = head length



Tip cutter Straight short relieved head	Tip cutter Pointed relie- ved head	Side cutter Tapered head	Side cutter Oval head
← Visibility and accessibility		Robustness, high cutting capacity →	

### Side cutter – oval head



110 mm / 4.331 Inch  
 48 g / 1.69 oz.

- This is the most widely used head shape.
- It is robust and size for size offers the highest cutting capacity.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter		
		A	B	C	D	Hard wire	Medium hardness	Copper wire
612N	Semi-flush	9 .354	9 .354	6 .236	15 .590	0.5 .019	0.8 .031	1.3 .051
622N	Flush	9 .354	9 .354	6 .236	15 .590	–	0.8 .031	1.3 .051
632N	Super full flush	9 .354	9 .354	6 .236	15 .590	–	0.7 .027	1.3 .051



Wire quality, see P. 38

# Side Cutters and Tip Cutters


## Series 600 Micro

### Side cutter – tapered head





 110 mm / 4.331 Inch  
 48 g / 1.69 oz.

- The jaws of the cutter have straight edges and taper to a point.
- This head shape allows access to difficult to reach areas but reduces the cutting capacity in comparison to the same size oval head cutter.





Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter	
		A	B	C	D	Medium hardness	Copper wire
622NA	 Flush	9	9	6	15	0.7	1.0
		.354	.354	.236	.590	.027	.039

### Tip cutter – pointed relieved head



 110 mm / 4.331 Inch  
 48 g / 1.69 oz.



- This is the narrowest head shape.
- The underside is relieved and facilitates optimum access even to extremely hard-to-reach areas.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter	
		A	B	C	D	Medium hardness	Copper wire
622NB	 Flush	9	9	6	15	0.6	0.8
		.354	.354	.236	.590	.023	.031
676E	 Flush	9	9	6	15	Model same as 622NB, but with short, robust head	
		.354	.354	.236	.590		
776E	 Super full flush	9	9	6	15	0.6	0.8
		.354	.354	.236	.590	.023	.031
632NCF	 Super full flush	9	9	6	15	For soft material such as small silicone tubes, miniature rubber seals or for cutting soft synthetic parts	
		.354	.354	.236	.590		






### Tip cutter – straight short relieved head



 110 mm / 4.331 Inch  
 48 g / 1.69 oz.

■ Suitable for cutting SMD and micro-package contacts.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter		
		A	B	C	D	Medium hardness	Copper wire	
670E	 Flush	9 .354	9 .354	6 .236	18 .709	0.5 .019	0.8 .031	
670EP	 Flush	9 .354	9 .354	6 .236	18 .709	0.4 .015	0.6 .023	High-precision working on SMD and micro-package contacts up to 0.25 mm/.010 Inch
670EPF*	 Flush	3 .354	9 .354	6 .236	18 .709	Model same as 670EP, but smaller version <b>only</b> for micro pitches under 0.5 mm/.019 Inch (see also P. 40)		

\*Not available in North America



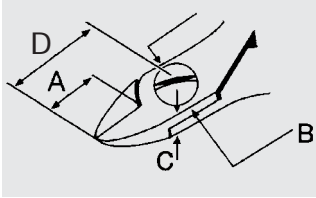
# Side Cutters and Tip Cutters

## Series 2400 MagicSense

- Medium-size cutter
- Combines robustness, visibility and accessibility.
- Large variety of head shapes for precision working in hard-to-reach areas.
- The optimised ergonomic shape of the Series 2400 MagicSense prevents hand fatigue
- Improved induction-hardened cutting edges up to 64 – 65 HRc for an extremely long service life
- Cutting edges made from special tool steel
- Non-reflecting surface, ESD-safe and resharpenable



## Series 2400 MagicSense



A = length of cutting edges  
 B = head width  
 C = head thickness  
 D = head length



Tip cutter Straight long relieved head	Tip cutter Angled narrow head	Tip cutter Angled wide head	Side cutter Tapered head	Side cutter Oval head
← Visibility and accessibility			Robustness, high cutting capacity →	

### Side cutter – oval head



130 mm / 5.118 Inch  
 70 g / 2.47 oz.

- This is the most widely used head shape.
- It is robust and size for size offers the highest cutting capacity.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter		
		A	B	C	D	Hard wire	Medium hardness	Copper wire
2412E	Semi-flush	12 .472	11 .433	6 .236	19 .748	0.5 .019	1.0 .039	1.6 .062
2422E	Flush	12 .472	11 .433	6 .236	19 .748	–	1.0 .039	1.6 .062
2432E	Super full flush	12 .472	11 .433	6 .236	19 .748	–	0.8 .039	1.6 .062

Wire quality, see P. 38



Optional: Safety device for wire scraps. Order suffix "W", e.g. 2412W.

# Side Cutters and Tip Cutters


## Series 2400 MagicSense

### Side cutter – tapered head






 127 mm / 5.999 Inch  
 70 g / 2.47 oz.

- The jaws of the cutter have straight edges and taper to a point.
- This head shape allows access to difficult to reach areas but reduces the cutting capacity in comparison to the same size oval head cutter.



Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter	
		A	B	C	D	Medium hardness	Copper wire
2477E	 Flush	12	12	11	6	1.0	1.3
		.472	.472	.433	.236	.039	.051

### Tip cutter – angled wide head



 130 mm / 5.118 Inch  
 70 g / 2.47 oz.  
 30°

- The angled head provides for precise cuts at different working angles.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter		
		A	B	C	D	Medium hardness	Copper wire	
2403E	 Flush	9	11	6	19	1.0	1.6	Wide, robust head, fine cut
		.354	.433	.236	.748	.039	.062	
2404E	 Flush	9	11	6	20	0.8	1.3	Model same as 2403E, but with pointed rounded head
		.354	.433	.236	.787	.031	.051	

## Series 2400 MagicSense

### Tip cutter – angled narrow head



135 mm / 5.315 Inch  
 72 g / 2.54 oz.  
 45°

- The angled head provides for precise cuts at different working angles.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter		
		A	B	C	D	Medium hardness	Copper wire	
2482E	 Flush	6 .236	11 .433	6 .236	26 1.024	0.6 .023	1.2 .047	Suitable for working on printed-circuit boards, component connections, can be used in both 90° and 180° applications
2475E	 Flush	4 .157	11 .433	6 .236	22 .866	0.4 .015	0.6 .023	Suitable for fine cutting work on hybrid circuits of miniature components.

### Tip cutter – straight long relieved head



140 mm / 5.512 Inch  
 72 g / 2.54 oz.

- This head is suitable for horizontal and vertical cuts.
- The long tips facilitate cutting in hard-to-reach areas.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter		
		A	B	C	D	Medium hardness	Copper wire	
2470E	 Flush	4 .157	11 .433	6 .236	29 1.142	0.4 .015	0.6 .023	



Safety device for wire scraps **only** possible on 2412EW, 2422EW, 2432EW, 2477EW, 2482EW models.

# Side Cutters and Tip Cutters

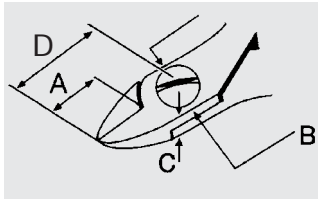
## Series 500 Medium

- Medium size, robust, precision cutters
- Wide range of head shapes
- Manufactured from high grade tool steel
- Cutting edges hardened to Rockwell 63-65 HRc
- Non reflecting surface, ESD safe and resharpenable



# Side Cutters and Tip Cutters

## Series 500 Medium



A = length of cutting edges  
 B = head width  
 C = head thickness  
 D = head length



Tip cutter Straight long relieved head	Tip cutter Pointed relieved head	Tip cutter Angled narrow head	Tip cutter Angled wide head	Side cutter Tapered head	Side cutter Oval head

Visibility and accessibility

Robustness, high cutting capacity

### Side cutter – oval head



115 mm / 4.527 Inch  
 67 g / 2.36 oz.

- This is the most widely used head shape.
- It is robust and size for size offers the highest cutting capacity.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter			
		A	B	C	D	Hard wire	Medium hardness	Copper wire	
512N	 Semi-flush	12 .472	11 .433	6.5 .256	19 .748	0.5 .019	1.0 .039	1.6 .062	
512E	 Semi-flush	12 .472	11 .433	6.5 .256	19 .748	Model same as 512N, but with burnished head			
522N	 Flush	12 .472	11 .433	6.5 .256	19 .748	–	1.0 .039	1.6 .062	
599E	 Flush	10 .472	11 .433	6.5 .256	17 .669	–	1.0 .039	1.6 .062	Short, robust head
532N	 Super full flush	12 .472	11 .433	6.5 .256	19 .748	–	0.8 .039	1.6 .062	

Wire quality, see P. 38



Optional: Safety device for wire scraps. Order suffix "W", e.g. 512NW.

# Side Cutters and Tip Cutters



## Series 500 Medium

### Side cutter – tapered head






 115 mm / 4.527 Inch  
 67 g / 2.36 oz.

- The jaws of the cutter have straight edges and taper to a point.
- This head shape allows access to difficult to reach areas but reduces the cutting capacity in comparison to the same size oval head cutter.



Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter		
		A	B	C	D	Medium hardness	Copper wire	
595E	 Flush	12	11	6.5	19	1.0	1.3	Tapered head
		.472	.433	.256	.748	.039	.051	
577E	 Flush	10	11	6.5	17	1.0	1.3	Tapered, short head
		.472	.433	.256	.669	.039	.051	

### Tip cutter – angled wide head



 110 mm / 4.331 Inch  
 67 g / 2.36 oz.  
 30°

- The angled head provides for precise cuts at different working angles.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter		
		A	B	C	D	Medium hardness	Copper wire	
503E	 Flush	9	11	6.5	19	1.0	1.6	Wide, robust head
		.354	.433	.256	.748	.039	.062	
504AE	 Flush	9	11	6.5	19	0.8	1.3	Model same as 503E, but with pointed rounded head
		.354	.433	.256	.748	.031	.051	



## Series 500 Medium

### Tip cutter – angled narrow head



120 mm / 4.724 Inch  
 68 g / 2.40 oz.  
 35°

- The angled head provides for precise cuts at different working angles.
- Narrow, robust head, suitable for working with high cutting force in confined areas.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter	
		A	B	C	D	Medium hardness	Copper wire
555E	Flush	6	11	6.5	24	0.6	1.3
		.236	.433	.256	.945	.023	.051



115 mm / 4.527 Inch  
 68 g / 2.40 oz.  
 40°

- Relieved cutting edge for easy access.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter	
		A	B	C	D	Medium hardness	Copper wire
572E	Flush	6	11	6.5	21	0.6	1.3
		.236	.433	.256	.827	.023	.051



115 mm / 4.527 Inch  
 68 g / 2.40 oz.  
 45°

- Suitable for working on printed-circuit boards, component connections, can be used in both 90° and 180° applications.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter	
		A	B	C	D	Medium hardness	Copper wire
582E	Flush	6	11	6.5	26	0.6	1.3
		.236	.433	.256	1.024	.023	.051



115 mm / 4.527 Inch  
 67 g / 2.36 oz.  
 45°

- Model same as 582E, but with safety device for wire scraps.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter	
		A	B	C	D	Medium hardness	Copper wire
582EW	Flush	6	11	6.5	26	0.6	1.3
		.236	.433	.256	1.024	.023	.051






# Side Cutters and Tip Cutters


## Series 500 Medium

### Tip cutter – angled narrow head






 115 mm / 4.527 Inch  
 68 g / 2.40 oz.  
 30°


- Ideal rework tool, suitable for cutting DIL contacts at front and rear and densely printed circuit boards.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter	
		A	B	C	D	Medium hardness	Copper wire
593AE	 Flush	4 .157	11 .433	6.5 .256	26 1.024	0.4 .015	1.0 .039





 110 mm / 4.331 Inch  
 67 g / 2.36 oz.  
 45°

- Suitable for fine cutting work on hybrid circuits or miniature components.



Model	Cut	Dimensions in mm/Inch			Max. cutting capability in mm/Inch Diameter		
		A	B	C	Medium hardness	Copper wire	
575E	 Flush	4 .157	11 .433	6.5 .256	22 .866	0.2 .007	0.6 .023

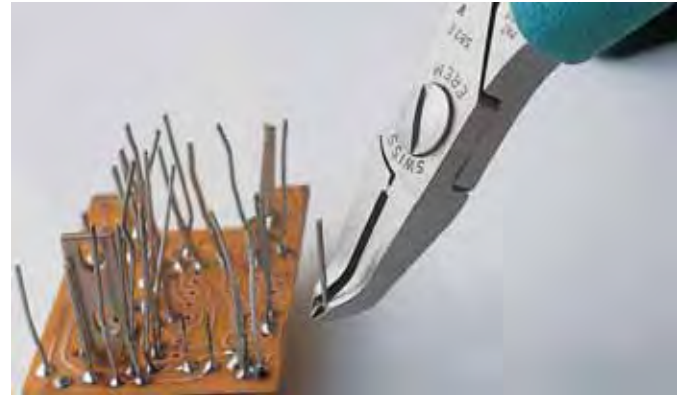
### Tip cutter – pointed relieved head



 115 mm / 4.527 Inch  
 67 g / 2.36 oz.



- This is the narrowest head shape.
- The underside is relieved and facilitates optimum access even to extremely hard-to-reach areas.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter	
		A	B	C	D	Medium hardness	Copper wire
592E	 Flush	12 .472	11 .433	6.5 .256	19 .748	0.4 .015	0.8 .031
792E	 Super full flush	12 .472	11 .433	6.5 .256	19 .748	0.4 .015	0.6 .023




### Tip cutter – straight long relieved head





 120 mm / 4.724 Inch  
 67 g / 2.36 oz.


- This head is suitable for horizontal and vertical cuts.
- The long tips facilitate cutting in hard-to-reach areas.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter		
		A	B	C	D	Medium hardness	Copper wire	
570E	 Flush	4 .157	11 .433	6.5 .256	29 1.142	0.6 .023	1.2 .047	For cutting at extreme tips

### Tip cutter – straight head for vertical use



 120 mm / 4.724 Inch  
 67 g / 2.36 oz.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter		
		A	B	C	D	Medium hardness	Copper wire	
573E	 Flush	4 .157	11 .433	6.5 .256	29 1.142	0.4 .015	0.6 .023	

# Side Cutters and Tip Cutters

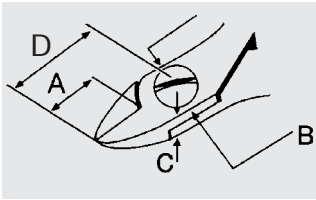
## Series 800 Maxi

- Maxi-sized cutter for general cutting applications in electronics
- Made from high grade tool steel, cutting edges hardened to Rockwell 63-65 HRc
- Cuts large wire diameters
- Non-reflecting surface, ESD-safe and resharpenable



# Side Cutters and Tip Cutters

## Series 800 Maxi



A = length of cutting edges  
 B = head width  
 C = head thickness  
 D = head length



Tip cutter Pointed relieve- d head	Side cutter Tapered head	Side cutter Oval head
Visibility and accessibility		Robustness, high cutting capacity

### Side cutter – oval head



120 mm / 4.724 Inch  
 67 g / 2.36 oz.

- This is the most widely used head shape.
- It is robust and size for size offers the highest cutting capacity.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter			
		A	B	C	D	Hard wire	Medium hardness	Copper wire	
812N	 Semi-flush	15 .590	13.5 .531	7.5 .295	21 .827	0.6 .023	1.2 .047	1.8 .070	
896E	 Semi-flush	15 .590	13.5 .531	7.5 .295	21 .827	0.6 .023	1.2 .047	1.8 .070	Suitable for cutting hard wires, Kovar, connector pins
822N	 Flush	15 .590	13.5 .531	7.5 .295	21 .827	–	1.2 .047	1.8 .070	



Wire quality, see P. 38

# Side Cutters and Tip Cutters


## Series 800 Maxi

### Side cutter – tapered head





 120 mm / 4.724 Inch  
 83 g / 2.93 oz.

- The jaws of the cutter have straight edges and taper to a point.
- This head shape allows access to difficult to reach areas but reduces the cutting capacity in comparison to the same size oval head cutter.


Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter	
		A	B	C	D	Medium hardness	Copper wire
886E	 Flush	15	13.5	7.5	21	1.0	1.8
		.590	.531	.295	.827	.039	.070

### Tip cutter – pointed relieved head



 120 mm / 4.724 Inch  
 81 g / 2.86 oz.

- This is the narrowest head shape.
- The underside is relieved and facilitates optimum access even to extremely hard-to-reach areas.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter	
		A	B	C	D	Medium hardness	Copper wire
884E	 Flush	15	13.5	7.5	21	0.8	1.6
		.590	.531	.295	.827	.031	.062

# Side Cutters and Tip Cutters

Series 800 Maxi



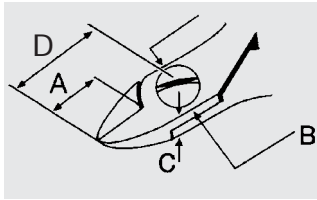
# Side Cutters and Tip Cutters

## Tungsten-carbide cutters

- Medium sized precision cutters
- Wear resistant tungsten carbide edged cutting blades
- Manufactured from high grade tool steel
- Suitable for cutting hard and tough wires e.g. piano wire, nickel and diode leads
- Non reflecting surface, ESD safe and resharpenable



## Tungsten-carbide cutters



A = length of cutting edges  
 B = head width  
 C = head thickness  
 D = head length



Tip cutter Pointed relieved head	Tip cutter Angled wide head	Side cutter Tapered head	Side cutter Oval head
← Visibility and accessibility		Robustness, high cutting capacity →	

### Side cutter – oval head



115 mm / 4.527 Inch  
 67 g / 2.36 oz.

- This is the most widely used head shape.
- It is robust and size for size offers the highest cutting capacity.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter				
		A	B	C	D	Piano wire	Hard wire	Medium hardness	Copper wire	
622TX	 Flush	8	9	6	15	0.2	0.4	0.6	1.2	Miniature cutter
		.315	.354	.236	.590	.007	.015	.023	.047	
599T	 Semi-flush	12	11	6.5	19	0.6	0.8	1.0	1.5	
		.472	.433	.256	.748	.023	.031	.039	.059	
599TF	 Flush	12	11	6.5	19	0.6	0.8	1.0	1.5	
		.472	.433	.256	.748	.023	.031	.039	.059	

Wire quality, see P. 38



# Side Cutters and Tip Cutters

## Tungsten-carbide cutters



### Side cutter – tapered head







115 mm / 4.527 Inch



67 g / 2.36 oz.

- The jaws of the cutter have straight edges and taper to a point.
- This head shape allows access to difficult to reach areas but reduces the cutting capacity in comparison to the same size oval head cutter.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter			
		A	B	C	D	Piano wire	Hard wire	Medium hardness	Copper wire
595T	 Semi-flush	12	11	6.5	19	0.4	0.6	0.8	1.5
		.472	.433	.256	.748	.015	.023	.031	.059
595TF	 Flush	12	11	6.5	19	0.4	0.6	0.8	1.5
		.472	.433	.256	.748	.015	.023	.031	.059
2476TX1	 Flush	11	11	6	19	0.3	0.4	0.5	1.0
		.433	.433	.236	.748	.011	.015	.019	.039
576TX1	 Flush	11	11	6.5	19	0.3	0.4	0.5	1.0
		.433	.433	.256	.748	.011	.015	.019	.039

Series 2400 MagicSense model  
(Length: 130 mm / 5.118 Inch)

## Tungsten-carbide cutters

### Tip cutter – pointed relieved head



115 mm / 4.527 Inch  
 67 g / 2.36 oz.

- This is the narrowest head shape.
- The underside is relieved and facilitates optimum access even to extremely hard-to-reach areas.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter				
		A	B	C	D	Piano wire	Hard wire	Medium hardness	Copper wire	
2476TX	 Flush	11 .433	11 .433	6 .236	19 .748	0.1 .003	0.2 .007	0.3 .011	1.0 .039	Series 2400 MagicSense model
576TX	 Flush	11 .433	11 .433	6.5 .256	19 .748	0.1 .003	0.2 .007	0.3 .011	1.0 .039	

### Tip cutter – angled wide head



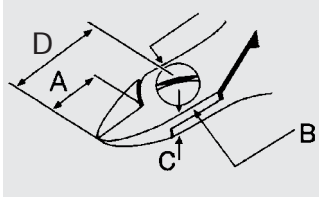
110 mm / 4.331 Inch  
 67 g / 2.36 oz.  
 30°

- The angled head provides for precise cuts at different working angles.

Model	Cut	Dimensions in mm/Inch				Max. cutting capability in mm/Inch Diameter				
		A	B	C	D	Piano wire	Hard wire	Medium hardness	Copper wire	
503ET	 Semi-flush	9 .354	11 .433	6.5 .256	19 .748	0.4 .015	0.6 .023	0.8 .031	1.2 .047	
503ETF	 Flush	9 .354	11 .433	6.5 .256	20 .787	0.4 .015	0.6 .023	0.8 .031	1.2 .047	

# Side Cutters and Tip Cutters

## Special applications





A = length of cutting edges  
 B = head width  
 C = head thickness  
 D = head length





### Special applications – Special tool steel, ESD-safe





 120 mm / 4.724 Inch  
 100 g / 3.53 oz.


■ Side cutter with compound action.

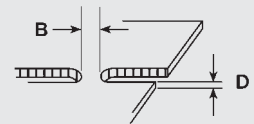
Model	Cut	Dimensions in mm/Inch			Max. cutting capability in mm/Inch Diameter	
		A	B	C	Copper wire	
147A	 Semi-flush	12 .472	10.5 .413	7.5 .295	1.8 .070	For cutting hard wires with minimal effort
147AT	 Semi-flush	12 .472	10.5 .413	7.5 .295	1.8 .070	Model same as 147A, but with cutting edges made from tungsten carbide, model on request



 115 mm / 4.527 Inch  
 79 g / 2.79 oz.

■ Side cutter, suitable for cutting printed-circuit boards.

Model	Cut	Max. cutting capability in mm/Inch	
		Max. D	Max. B
884EPCM*	 Flush	1.5 .059	2.0 .078



\*Not available in North America

## Special applications



110 mm / 4.331 Inch  
 48 g / 1.69 oz.

■ Side cutter, suitable for precision cuts on soft materials, e.g. small silicone tubes in medical applications, precision connector seals, miniature rubber seals, soft synthetic parts.

Model	Cut	Dimensions in mm/Inch		
		A	B	C
632NCF	 Super full flush	9 .354	9 .354	6 .236



115 mm / 4.527 Inch  
 67 g / 2.36 oz.

■ Side cutter, suitable for cutting Kevlar® silks.

Model	Dimensions in mm/Inch			
	A	B	C	D
599FO	12 .472	11 .433	6.5 .256	19 .748



115 mm / 4.527 Inch  
 67 g / 2.36 oz.

■ Side cutter with cutting edges made from tungsten carbide.

Model	Cut	Dimensions in mm/Inch			
		A	B	C	D
599TFO	 Semi-flush	12 .472	10.5 .413	6.5 .256	19 .748

Model same as 599FO, but with cutting edges made from tungsten carbide. Suitable for cutting Kevlar® silks, Vectran™-sheathed wires, optical fibres and small stainless wires

# Side Cutters and Tip Cutters



## Pneumatic side cutters and tip cutters

- Pneumatic cutter
- Handy, light and precise
- Extremely versatile thanks to a selection of different cutting heads
- Easily interchangeable cutting heads
- Suitable for cutting conventional components, soft metals or small plastic parts



### Pneumatic side cutters and tip cutters

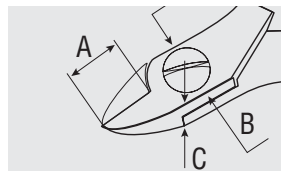


 130 mm / 5.118 Inch  
 130 g / 4.59 oz.

- Pneumatic-cutter housing

Model	Dimensions in mm/Inch Diameter	
	D	
1500 BSF	28 1.102	Requires 4 – 6 bar oil-free clean compressed air

### Cutting heads for 1500BSF





A = length of cutting edges  
 B = head width  
 C = head thickness

### Side cutter – oval head



 35 g / 1.16 oz.

- This is the standard head shape.
- It is used for all cutting jobs in easy-to-reach areas.
- The oval head provides for a high cutting capacity and is characterised by its robustness.

Model	Cut	Dimensions in mm/Inch			Max. cutting capability in mm/Inch Diameter Copper wire
		A	B	C	
1512N	 Semi-flush	10 .394	10.5 .413	6.5 .256	1.6 .062
1522N	 Flush	10 .394	10.5 .413	6.5 .256	1.6 .062

Wire quality, see P. 38

## Pneumatic side cutters and tip cutters

### Side cutter – tapered head



35 g / 1.16 oz.

- The edges of the cutter head are straight and taper to a point, allowing access to hard to reach areas.

Model	Cut	Dimensions in mm/Inch			Max. cutting capability in mm/Inch Diameter Copper wire
		A	B	C	
1522NA	 Flush	9 .354	10.5 .413	6.5 .256	1.4 .055

### Side cutter – pointed relieved head



32 g / 1.12 oz.

- This is the narrowest head shape.
- The underside is relieved and facilitates optimum access even to extremely hard-to-reach areas.

Model	Cut	Dimensions in mm/Inch			Max. cutting capability in mm/Inch Diameter Copper wire
		A	B	C	
1522NB	 Flush	9 .354	10.5 .413	6.5 .256	1.2 .047

### Tip cutter – angled head



38 g / 1.34 oz.  
 30°

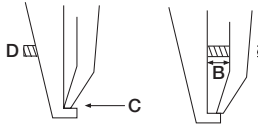
- The angled head provides for precise cuts at different working angles.

Model	Cut	Dimensions in mm/Inch			Max. cutting capability in mm/Inch Diameter Copper wire
		A	B	C	
1503E	 Flush	12 .472	10.5 .413	6.5 .256	1.2 .047

# Side Cutters and Tip Cutters

## Distance cutters

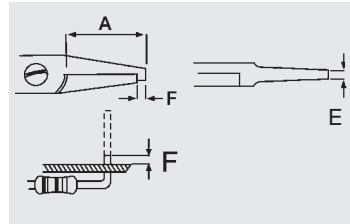
- Erem distance cutters are available with fixed and variable cutting lengths
- The tips are polished so as to prevent board damage
- For cutting wires to the right length and for fixing components



The protective stop screw D improves the performance of Erem distance cutters:

- Clearance B larger than the wire diameter = cut wire is ejected.
- Clearance B smaller than the wire diameter = cut wire is held.

Adjust protective stop screw D so that cutting edge C does not hit the opposite side. This increases the lifetime of the cutting edge.



A = jaw length  
E = width of tips  
F = cutting length

## Fixed cutting length (F)



120 mm / 4.724 Inch  
67 g / 2.36 oz.

- Special tool steel
- ESD-safe
- Fixed cutting length (= F)
- Reduces mechanical shock on components

Model	Cut	Dimensions in mm/Inch			Max. cutting capability in mm/Inch Diameter	
		A	E	F	Copper wire	
530E06**	Flush	20 .787	3 .118	0.6 .023	1.2 .047	Cuts copper wire to a length of 0.6 mm/.023 Inch
530E08	Flush	20 .787	3 .118	0.8 .031	1.2 .047	Cuts copper wire to a length of 0.8 mm/.031 Inch
530E10	Flush	20 .787	3 .118	1.0 .039	1.2 .047	Cuts copper wire to a length of 1.0 mm/.039 Inch
530E12*	Flush	20 .787	3 .118	1.2 .047	1.2 .047	Cuts copper wire to a length of 1.2 mm/.047 Inch
530E13*	Flush	20 .787	3 .118	1.3 .051	1.2 .047	Cuts copper wire to a length of 1.3 mm/.051 Inch
530E15	Flush	20 .787	3 .118	1.5 .059	1.2 .047	Cuts copper wire to a length of 1.5 mm/.059 Inch

Wire quality, see P. 38

\*Not available in North America

\*\*Order as 539E060 in North America

## Distance cutters

Model	Cut	Dimensions in mm/Inch			Max. cutting capability in mm/Inch Diameter	
		A	E	F	Copper wire	
530E18*	Flush	20 .787	3 .118	1.8 .070	1.2 .047	Cuts copper wire to a length of 1.8 mm / .070 Inch
530E20*	Flush	20 .787	3 .118	2.0 .078	1.2 .047	Cuts copper wire to a length of 2.0 mm / .078 Inch



120 mm / 4.724 Inch  
 67 g / 2.36 oz.  
 45°

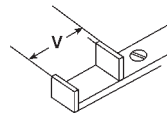
- Special tool steel
- ESD-safe
- Fixed length distance cutter
- Tapered 45°

Model	Cut	Dimensions in mm/Inch			Max. cutting capability in mm/Inch Diameter	
		A	E	F	Copper wire	
549E	Flush	20 .787	3 .118	1.5 .059	1.2 .047	Cuts wire to a length of 1.5 mm / .059 Inch
549E10*	Flush	20 .787	3 .118	1.0 .039	1.2 .047	Cuts wire to a length of 1.0 mm / .039 Inch
549E12*	Flush	20 .787	3 .118	1.2 .047	1.2 .047	Cuts wire to a length of 1.2 mm / .047 Inch

## Variable cutting length (V)



120 mm / 4.724 Inch  
 70 g / 2.47 oz.

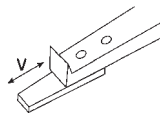


- Special tool steel
- ESD-safe
- Variable cutting length (= V)
- With protective stop screw

Model	Cut	Dimensions in mm/Inch			Max. cutting capability in mm/Inch Diameter	
		A	E	V	Copper wire	
530E15A*	Flush	20 .787	4.5 .177	1.2 – 6 .047 – .236	1.2 .047	Variable cutting length from 1.2 mm to 6 mm / .047 to .236 Inch



115 mm / 4.527 Inch  
 70 g / 2.47 oz.



- Special tool steel
- ESD-safe
- Variable cutting length (= V)
- With protective stop screw
- Interchangeable plastic stop protects the printed-circuit board against damage

Model	Cut	Dimensions in mm/Inch			Max. cutting capability in mm/Inch Diameter	
		A	E	V	Copper wire	
573EB	Flush	20 .787	4.5 .177	0 – 5 0 – .197	0.8 .031	Variable cutting length from 0 mm to 5 mm / 0 to .197 Inch

\*Not available in North America