

**telecom**  
unitronics

**MILLER®**

*Clauss®*

**WIRE & CABLE  
PREPARATION  
TOOLS FOR  
ELECTRICAL,  
FIBER OPTIC AND  
TELECOMMUNICATIONS**



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Our products are covered by the following patents: 4,813,144; 5,946,986; D485,149; D492,886; D490,673

## COMPARATIVE FIBER OPTIC TOOL SELECTION CHART

Diameter of Remaining Fiber or Buffer Coating	Claus No-Nik Tool	Miller FO 103 Tool
80 micron to 100 micron	NN-127 NN-152 NN-175	FO 103-S-100
125 micron (from 250 micron buffer)	NN-175 NN-203	FO 103-S FO 103-D-250 FO 103-D-J FO 103-T-250-J
250 micron	NN-305 NN-014 NN-016	FO-103-D-250 FO-103-T-250-J
400 micron	NN-018 NN-021	FO 103-T-250-400 FO 103-525
125 micron (from 900 micron buffer)	NN-254	FO 103-D-250 FO 103-T-250-J

# FO 103-S

## Fiber Optic Stripper Line

- For stripping 250 micron buffer coating from 125 micron optical fiber
- Precision diameter hole & V-opening in blade allow for accurate buffer coating removal
- Factory set, requires no adjustment
- Prevents scratching or nicking of optical fiber
- All cutting surfaces are precision formed, hardened, tempered and ground assuring precise buffer removal
- Made in U.S.A.
- Length: 5.375 in (136.53 mm)
- Weight: 2.5 oz (71 g)



### FO103-S – Custom Applications

- The same quality FO 103-S construction is available in a variety of stripping fiber diameters
- Currently available models shown below
- If your application is not listed here, please Contact Customer Service



Part Number	Model	Finished Cladding Diameter	
		(Microns)	(Inches)
80355	FO 103-S	125 $\mu\text{m}$	.005 in
80355-1	FO 103-S-100	80-100 $\mu\text{m}$	.003-.004 in
80355-15	FO103-S-140	140 $\mu\text{m}$	.0055 in
80355-2	FO 103-S-150	150 $\mu\text{m}$	.006 in
80355-3	FO 103-S-162	162 $\mu\text{m}$	.0065 in
80355-4	FO 103-S-175	175 $\mu\text{m}$	.007 in
80355-5	FO 103-S-187.5	187.5 $\mu\text{m}$	.0075 in
80355-10	FO 103-S-200	200 $\mu\text{m}$	.008 in
80355-12	FO 103-S-225	225 $\mu\text{m}$	.009 in
80355-6	FO 103-S-250	250 $\mu\text{m}$	.010 in
80355-7	FO 103-S-280	275-280 $\mu\text{m}$	.011 in
80355-8	FO 103-S-300	300 $\mu\text{m}$	.012 in
80355-9	FO 103-S-525	525 $\mu\text{m}$	.021 in

## NO-NIK® Fiber Optic Strippers

- 22 different patented NO-NIK tools in sizes ranging from 102 to 1,372 microns
- Accurate to -0 mm, +.0127 mm
- Exclusive centering device positions fiber for precise scoring and removal of buffer coating
- Razor-sharp blades completely score the buffer
- Color-coded, cushion-grip handles for quick identification
- Plastic heads, which make contact only with the buffer, center and support your work on both sides
- Cutting blades made from razor quality steel score the buffer completely
- Back-up blades support the cutting blades, nest positively, and "lock up" when the tool is closed to maintain perfect concentricity
- Buffer being removed acts as guide and protection for the fiber
- Stripping blade diameter clearly marked on plastic handle
- Arrow indicates direction pressure should be applied when stripping on head
- Length: 5.3 in (135 mm)
- Weight: 1.6 oz (45 g)



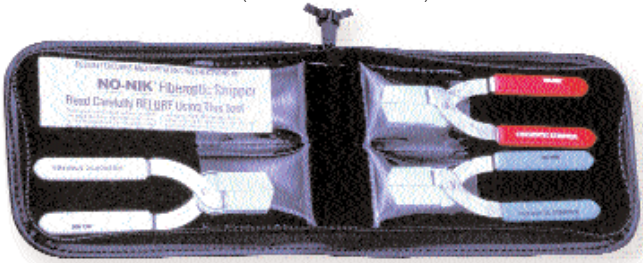
### NO-NIK® FIBER OPTIC STRIPPER SELECTION CHART

PART NUMBER	HANDLE COLOR	MINIMUM STRIPPING BLADE DIAMETER $\mu\text{m}$	MINIMUM STRIPPING BLADE DIAMETER INCHES
NN102	Navy	102	.004
NN127	Silver	127	.005
NN152	Gold	152	.006
NN175	Mustard	175	.007
NN203	Red	203	.008
NN254	Lt. Blue	254	.010
NN305	White	305	.012
NN1118 For Plastic Fiber	Brown	1,118	.044
NN1372 For Plastic Fiber	Clear	1,372	.054

# NO-NIK® FIBER OPTIC STRIPPER 3-PIECE KIT

This sturdy 3-piece No-Nik Fiber Optic Stripper Kit is available with the most popular sizes, 203 microns (Red Handles) 254 microns (Light Blue Handles) and 305 microns (White Handles). The vinyl case protects these precision tools and provides convenient safe storage.

- Part No: NN03
- Case size: 4" x 6-1/4" (102 mm x 159 mm)



## FIBER OPTIC 3-PIECE STRIPPING KITS



- **NO-NIK® FIBER OPTIC STRIPPER**  
Clauss Fiber Optic Stripping Kits are available with a No-Nik® Fiber Optic Stripper for each of the following minimum cutting diameters: 152 microns; 175 microns; 203 microns; 254 microns; and 305 microns. Operating instructions are included. Specify the size No-Nik needed when ordering your kit.
- **86 1/2SF HIGH LEVERAGE KEVLAR® SHEAR**  
With a nonslip serrated blade, the Clauss 86 1/2SF High Leverage Kevlar® Shear provides the perfect solution for trimming back the DuPont Kevlar® that serves as the central strength member.
- **821 MULTI-WIRE STRIPPER/CUTTER**  
The 821 removes the outside jacket from fiber optic cable.
- A vinyl case protects the tools and provides convenient safe storage.
- Part No: NN152 KIT, NN175 KIT, NN203 KIT, NN254 KIT, NN305 KIT
- Case size: 4" x 6-1/4" (102 mm x 159 mm)

## FO 103-D-J, FO 103-D-250

### “Dual-Hole” Fiber Optic Strippers

- New Dual hole models offer the same quality of our standard FO 103-S fiber tool coupled with a second hole
- **FO 103-D-J**: Second hole for stripping 2-3 mm fiber jackets and standard 125 micron fiber stripping (250 micron removal to 125 micron)
- **FO 103-D-250**: Second hole for stripping 900 micron tight buffer down to 250 micron buffer coating and standard 125 micron fiber stripping (250 micron removal to 125 micron) – allows longer stripping lengths without damaging the fiber
- Easy-to-read stripping diagrams imprinted on handles
- Length: 5.375 in (137 mm)
- Weight: 2.5 oz (71 g)

**FO 103-D-J**



**FO 103-D-250**

## FO 103-T-250-J

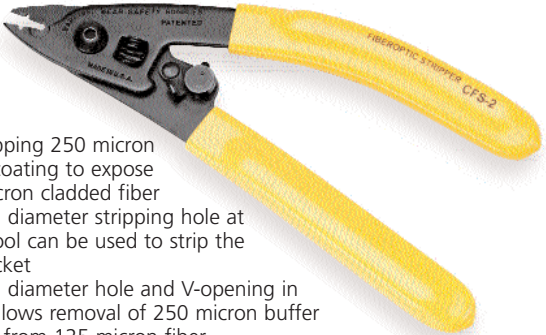
### “Tri-Hole” Fiber Optic Stripper

- New three-hole model performs all common fiber stripping functions in one compact tool....
  - Hole for removal of 2 to 3 mm fiber jackets
  - Remove 900 tight buffer to 250 micron buffer coating
  - Standard 250 to 125 micron stripping
- Same consistent quality and features found in our standard FO 103-S tool
- Also available: **FO 103-T-400-250** Fiber Optic Stripper for 400 micron coated PM Fiber
- Length: 5.375 in (137 mm)
- Weight: 2.5 oz (71 g)



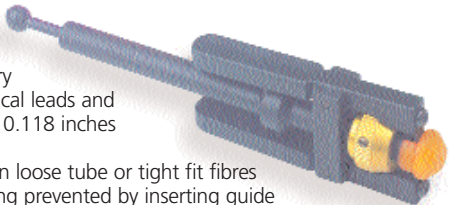
## CFS-2

### Fiber Optic Stripper



- For stripping 250 micron buffer coating to expose 125 micron clad fiber
- 1.0 mm diameter stripping hole at tip of tool can be used to strip the fiber jacket
- 140  $\mu$ m diameter hole and V-opening in blade allows removal of 250 micron buffer coating from 125 micron fiber
- Pre-set at the factory—no adjustments needed
- Will not scratch or nick glass fiber
- All stripping surfaces are manufactured to precise tolerances to assure clean, smooth strips
- Comfort-grip, ergonomic handles
- Lock to hold tool closed when it is not in use
- Made in the U.S.A.
- Length: 6.5 in (165 mm)
- Weight: 4.2 oz (119 g)

## OPTISTRIP<sup>®</sup>



- Removes secondary coatings from optical leads and small cables up to 0.118 inches (3.0 mm) O.D.
- Equally effective on loose tube or tight fit fibres
- Damage to cladding prevented by inserting guide bushes which ensure precise location of the fiber throughout the stripping operation
- Simple setup for operation: fit a pair of guide bushings for selected lead diameter and adjust blade depth
- Supplied with storage case and guide bushings
- Stripping Capacity
  - Optical fiber leads up to 0.118 inches (3.0 mm) O.D.
  - P.T.F.E. coated wires 0.02 to 0.12 inches (0.5 to 3.0 mm) O.D.
- Replacement Blades (pair): 39436
- Replacement set guide bushings: 39437
- Weight: 1 oz (20 g)
- Dimensions: 4.3 x 1.1 x 0.5 inches (108 x 29 x 13 mm)

## DFS-3

### Duplex/Simplex Fiber Stripper



- For stripping both the jacket and buffer coatings from duplex or simplex fiber optic cable
- Latch to hold tool closed
- Two sets of jacket removal notches will remove jackets used on most fiber optic cable:
  - Notches at the tip of the tool for 2 mm jacket
  - Notches in middle of the tool for 3 mm jacket
- Set of V-notches closest to the pivot of the tool will strip the various layers of buffer coatings used on most fiber optic cable:
  - For Corning TBII® type cable, the tool will strip the 900 micron buffer coating down to the 250 micron buffer coating, and then will strip the 250 micron buffer coating down to the 125 micron fiber. This two-step buffer stripping process allows the user to take longer strip lengths and creates much less stress on the fiber thus minimizing the chance of damage and time consuming costly rework
  - For cable that does not incorporate Corning TBII® type fiber, the tool will strip both the 900 micron and underlying 250 micron buffer coatings down to the 125 micron fiber, at the same time
  - For “mini-zip” duplex cable (2 mm jacket with 600 micron buffer coating) the tool will strip the 600 micron buffer coating down to the 125 micron fiber
- U.S. Patent Nos.: D485,149 and D490,673
- Additional Patents Pending

PART NO.	STRIPS	FULL LENGTH	WEIGHT LBS
DFS-3	2 mm jacket from “mini-zip” duplex or simplex cable  3 mm jacket from simplex or duplex cable  Various layers of buffer coatings (900, 600, and 250 micron) used on most duplex or simplex cable	6-3/4" (171 mm)	3/4 (340 g)

## FO-R12

### Fiber Ribbon Access Tool

- Removes outer jackets from 12 count fiber ribbons
- Factory set, requires no adjustment
- Prevents scratching or nicking of optical fibers
- All cutting surfaces are precision formed, hardened, tempered and ground
- Tools for other fiber counts available upon request
- Made in U.S.A., U.S. Patent pending
- Length: 5.375 in (136.53 mm)
- Weight: 2.5 oz (71 g)



## RFJS-12

### Ribbon Fiber Jacket Stripper

- Designed for easy removal of jacket from 12-count ribbon fiber without damaging the underlying fibers
- New, more comfortable grips and ergonomic handles
- Manufactured to precise tolerances to assure clean, smooth strips
- High grade carbon steel with black oxide finish
- Special heat treating assures durability
- Pre-set at the factory — no adjustments necessary
- Latch to hold the tool closed when it is not in use
- U.S. Patent No.: D485,149 and D511,951
- Length: 6.25 in (159 mm)
- Weight: 4 oz (114 g)



## RCS-114, RCS-158

### Round Cable Strippers

- Two tools designed for fast, safe, and precise jacket removal of PE, PVC, rubber, and other jackets
- Fiber Optic cables - excellent tool for precise jacket stripping of fiber optic multi-fiber cables
- RCS-114 for smaller diameter cables: 0.178 to 1.14 inches (4.5 - 29 mm)
- RCS-158 for larger diameter cables: 0.75 to 1.58 inches (19 - 40 mm)
- **"Tri-Action Strip"** capability
- Rotary cut to a longitudinal cut along the cable length for end stripping
- Spiral cut for end stripping
- Spiral cut for mid-span stripping
- Spiral cutting features provides easier removal of harder jackets
- Spring-loaded cable brace firmly secures cable to the blade for controlled cutting action
- Comfort and ergonomic design for ease of use and storage
- Long life blade design
- Blade depth can be regulated by simply turning the blade housing
- Blade housing is PTFE coated, for smooth, low effort stripping
- Replacement blade (RCS-114 and RCS-158): CB 231
- Length: RCS-114 - 5.43 inches (138 mm)  
RCS-158 - 6.02 inches (153 mm)
- Weight: RCS-114 - 3.5 oz (100 g)  
RCS-158 - 3.84 oz (110 g)



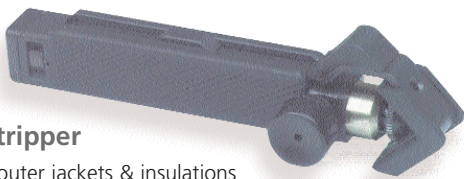
## MK02

### Round Cable Stripper

- Cable stripper for outer jackets & insulations from 0.18 to 1.12 inches (4.5 to 28.5 mm) O.D.
- Stripping action is both circumferential, then longitudinal for removal of insulation section at the end or mid span of wires
- Adjustable depth up to 0.12 inch (3 mm) cutting depth
- Chisel point blade for harder coverings is standard; spherical blade design for softer insulation optional
- Handy spring-loaded ripping blade at base of tool to facilitate insulation removal
- Solid construction for rugged applications

#### Specifications

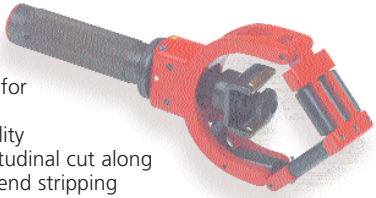
- Stripping Capacity – 0.18 to 1.12 inches (4.5 to 28.5 mm) O.D.
- Replacement Blades:
  - Spherical cutting blade (set of 5) – 39391
  - Chisel point blade (set of 5) - 39392
- Weight: 4.2 oz (120 g)
- Dimensions: 5.3 x 1.6 x 0.6 inches (135 x 40 x 15 mm)



# MK04

## Cable Jacket Stripper

- Cable stripper for outer jackets & insulation on large diameter cables
- Heavy duty construction for industrial environments
- "Tri-Action Strip" capability
  - Rotary cut to a longitudinal cut along the cable length for end stripping
  - Spiral cut for end stripping
  - Spiral cut for mid-span stripping
- Spiral cutting feature provides easier removal of harder jackets and on larger cables
- Adjustable blade up to 0.20 inches (5 mm) depth
- Blade depth setting can be locked to assure consistent repetitive operations
- Roller support of cable for smooth stripping action
- Wheel blade applications available – contact customer service for sizes and applications



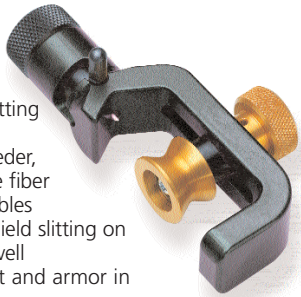
Model	Cable Size Range Inches O.D.	Cable Size Range mm O.D.
MK04	0.79" to 2.36"	20 to 60

- Replacement Fixed Blade Assembly: 39379
- Replacement Fixed Blade Cartridges (FC2) - 39377 & (FC3) - 39378
- Weight: 1.5 lbs (680 g)
- Size: 3.7 x 1.7 (head) x 9.8 inches (95 x 42 x 250 mm)

# ACS

## Armored Cable Slitter

- Professional grade tool ideal for slitting the corrugated copper, steel or aluminum armor layer on Fiber Feeder, Central Tube, Stranded Loose Tube fiber optic cables and other armored cables
- Versatile design allows jacket or shield slitting on non-fiber optic configurations as well
- Tool slits outer polyethylene jacket and armor in one operation
  - Performs longitudinal slitting and circumferential (ringing) for end stripping
  - Blade rotates 90 degrees by activating blade lever, allowing easy mid-span preparation (ringing and slitting)
- Adjustable from 0.315" (8 mm) to 1.125" (28.6 mm) cable O.D.
- Contact Customer Service for smaller diameter cable preparation options
- Adjustable blade depths to accommodate different cable coverings
- "Roller" style cable follower provides cable stability and allows for easier tool movement along the cable
- Rugged anodized aluminum and steel construction
- Replacement blade: CB 251-K
- Height: 5 in (127 mm) • Weight: 10 oz (284 g)



## FOKC

### Fiber Optic Kevlar® Cutter

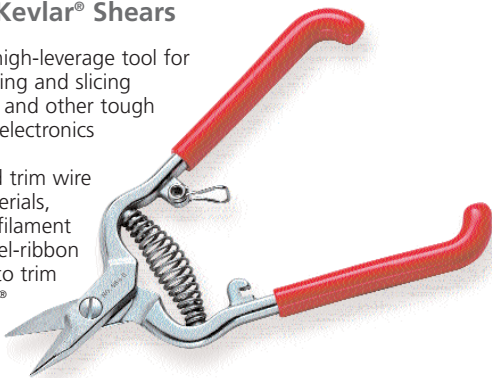
- Designed to cut Kevlar® strength members in fiber optic cables
- Powerful quick cutting action
- Full serrated edge for consistent, fast and clean cuts
- Lightweight and compact
- Return spring designed for precise repeated cuts
- Ergonomic handles with cushioned non-slip grips
- Made of high carbon steel specially treated for long life and trouble free cuts
- Length: 5.75 in (146 mm)
- Weight: 2.5 oz (72 g)



## 86 1/2SF

### Electronics/Kevlar® Shears

- 86 1/2SF is a high-leverage tool for cutting, trimming and slicing through fibers and other tough industrial and electronics materials
- Use to cut and trim wire insulation materials, copper leads, filament wire, and nickel-ribbon
- Use 86 1/2SF to trim DuPont Kevlar® Aramid fibers
- Hot-forged, high carbon steel for long life
- Quick action spring response and two sharp points
- 86 1/2SF has one blade serrated and red cushioned grips
- Length of cut: 0.63 in (16 mm)
- Length: 6.5 in (165 mm)
- Weight: 4.8 oz (136 g)



## KS-1

### Kevlar® Shears

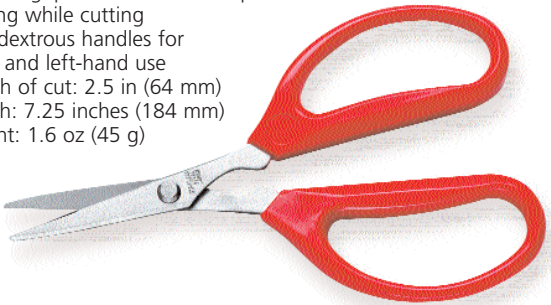
- Lightweight shears ideal for cutting Kevlar® strength members found in fiber optic cable construction
- Ergonomic molded handles provide comfort for both right and left handed users
- One micro-serrated blade reduces slippage for more positive cutting action
- Blades made from high carbon molybdenum, and vanadium steel for long life
- Length: 5.5 inches (140 mm)
- Weight: 2.8 oz (79 g)



## KC699

### Kevlar® Shears

- Soft, cushioned oversized bows for operator comfort
- Blades are hardened stainless steel with a fine serration on one blade to grip Kevlar® fibers and prevent slipping while cutting
- Ambidextrous handles for right- and left-hand use
- Length of cut: 2.5 in (64 mm)
- Length: 7.25 inches (184 mm)
- Weight: 1.6 oz (45 g)



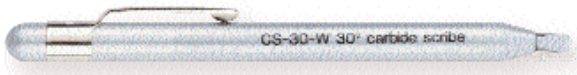
## DS-60-C, DS-90-W Diamond-Tip Fiber Optic Scribe



- Quality fiber optic scribes featuring a protective retractable barrel with pocket clip and a stainless steel mounted diamond tip in your choice of conical or wedge shapes
- These scribes are specially made for the "scratch and pull" technique of scribing optical fiber. The wedge shape provides a more durable edge

PART NO.	DESCRIPTION	FULL LENGTH
DS-60-C	60° Cone Angle-Diamond Tip Retractable Scribe	5.375" / 137 mm
DS-90-W	90° Wedge-Diamond Tip Retractable Scribe	5.375" / 137 mm

## CS-30-W Carbide-Tip Fiber Optic Scribe



- The CS-30-W is a 30-degree wedge-tip carbide scribe 3.8 mm wide for long life and simple fiber termination
- Housed in a rugged, anodized aluminum casing 112mm long and 25 mm in diameter, the CS-30-W fits comfortably in either hand and in your pocket or tool kit
- The CS-30-W includes a convenient pocket clip and soft, brightly colored, protective "Squeeze and Pull" cap for easy and quick tool selection

PART NO.	DESCRIPTION	FULL LENGTH
CS-30-W	30° Wedge-Carbide Tip	4.375" / 112mm

## CS-30-DE Double End Carbide Fiber Optic Scribe



- Reversible carbide blade edged on both ends to double the life of the tool
- 5mm wide blade wider than conventional scribe blades for greater visibility
- "Soft feel" grip on rugged anodized aluminum casing
- Hex-shaped end to prevent scribe from rolling off work table
- Plastic cap protects blade when tool is not in use
- Convenient pocket clip

PART NO.	BLADE WIDTH	FULL LENGTH
CS-30-DE	3/16" (5 mm)	5-1/4" (133 mm)

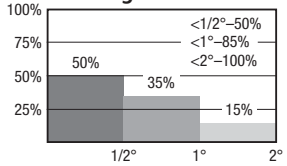
# CC125

## Fiber Optic Cleaver



- Produces extremely precise cleave lengths from 6.5 mm to 20 mm
- Produces endface angles of less than 2 degrees 100% of the time
- Ideal for achieving the precise cleaves required by the new generation of "no polish" fiber connectors — in either simplex or duplex cables
- Tremendous repeatability — once the cleave length is set and locked, every cleave will be the same precise length
- Steel handles with plastic grips
- Anodized aluminum cleaving blocks/fixturing
- Carbide cleaving blade
- Polyurethane rubber cleaving and gripping pads
- Compatible Fibers:
  - Glass fibers with 125-micron nominal cladding diameters
  - Accommodates fibers in coated as well as cable form
- Length: 5.125" (130 mm)
- Width: 1.75" (45 mm)
- Height/Thickness: 1.5" (38 mm)

**End Angle Distribution**



## Fiber Optic Crimp Tool

- Ratcheting action crimp tool for positive, full cycle crimping of fiber optic connectors
- Rugged steel frame
- Interchangeable jaws
- Several common fiber optic hex size jaws available
- Length: 8.6 in (218 mm)
- Weight: 1.1 lb (500 g)



#	Square	Hex Sizes		Oval
		Hex	Hex	
1	.043	.068, .100, .137, .213, .255		
2	.042	.068, .078, .128, .151, .178		
3	.042	.068		.133, .162, .195
4	.042	.068, .151, .178, .213		

# Fiber Optic Inspection Microscope

## 200x / 400x

**NEW**  
for 2006

- Available in magnification strengths of either 200x or 400x
- Achromatic glass objective for excellent image quality
- Focus wheel for proper focus at all times
- Universal adapter for nearly all ST, SC and FC connector ferrules included as standard
- Adapters available for other connector types.
- Integrated laser safety filters (not intended for viewing lit fibers)
- Illumination by LED light giving 100,000 lamp hour life and extended battery life.
- Side illumination port allows back lit inspection of jumpers and can be used as a fault finder.
- Body of durable aluminum comes in soft padded storage case
- Takes 3 AAA batteries (included)
- Length: 9 in (230 mm)
- Weight: 1.2 lbs (550 g) without case



## FIM 150-200

### Fiber Optic Inspection Microscope

- 3 built-in magnifications — zooms from 150x to 175x to 200x
- Universal adapter fits nearly all ST, SC and FC connector ferrules
- Adjustable light path for direct lighting or backlighting of connectors
- Achromatic, color-corrected, glass objective for excellent image quality
- Focus wheel mechanism consistently maintains proper focus
- Compact and lightweight — fits easily in a pocket or kit
- Adapters: 2.5 mm universal adapter included
- Batteries: (2) size AA included
- Backlight: Adjustable light path
- Image Quality: Excellent; Achromatic glass objective
- Soft, padded storage case w/flap: Included
- Length: 5.75 x 1.75 x 0.88 inches (147 x 45 x 22 mm)
- Weight: 5.1 oz (145 g) with batteries



## FOPD-25

### Fiber Optic Polishing Disc

- High quality hand polishing disc for fiber optic connectors
- "Universal" design fits most 2.5 mm ferrule connectors including: ST, SC and FC connectors
- Inside and outside rims designed for improved hand positioning while performing the polishing operation
- Channeled, raised base allows debris to escape easily and provide for easy polishing action
- High quality, precision machined stainless steel design for long life
- **FOPD-LC also available (aluminum disc for 1.25 mm ferrule LC connectors)**
- Diameter: 1.94 inches (49.2 mm)
- Weight: 1.5 oz (43 g)



## CCT-2001

### Fiber Continuity Tester

**NEW**  
**for 2006**

- Provides a high intensity, long-lasting LED light source that transmits light instantly and accurately down the fiber
- Designed for field use and provides a simple inexpensive check of fiber continuity
- Compatible with both single mode and multimode fiber
- Viewable at distances of up to 2km in multimode fiber (testing distance may vary depending upon fiber characteristics)
- Compatible with almost all types of connectors including ST, FC, SC, LC and MT-RJ connectors
- Includes 1.25mm Universal, 2.5mm Universal and MT-RJ style interchangeable adapters
- Uses (3) each LR44 or PX76A batteries (included)



# FIBER OPTIC POLISHING KIT



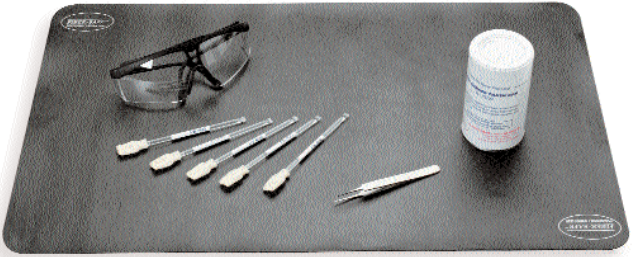
- Complete kit includes:
- Clear Lexan® polishing plate
  - Neoprene polishing pad
  - Universal plastic polishing puck
  - Universal stainless steel polishing puck
  - 12 micron polishing film – 5 included
  - 3 micron polishing film – 5 included
  - .5 micron polishing film – 5 included
  - Lint-free cleaning wipes – 25 included
  - Pre-saturated bifurcated swipes – 10 included

PART NO.	DESCRIPTION	DIMENSIONS
PK2000	Fiber Optic Polishing Kit – Complete	L: 14-3/8"; W: 9-1/2"; D: 2-3/8" 365 mm x 241 mm x 60 mm
FS600	Fiber Optic Polishing Plate – Lexan®	L: 13"; W: 9"; D: 1/4" 330 mm x 229 mm x 6 mm
FS700	Fiber Optic Polishing Pad – Neoprene	H: 5-1/2"; W: 5-1/2"; D: 1/8" 140 mm x 140 mm x 3 mm
FS800	Fiber Optic Polishing Puck – Plastic 2.5 mm	Diameter: 1-1/2" / 38 mm
FS900	Fiber Optic Polishing Puck – Stainless Steel 2.5 mm	Diameter: 1-1/2" / 38 mm
PFA0-.5	Fiber Optic Polishing Film Aluminum Oxide .5 micron Color: White	3" x 6" 76 mm x 152 mm
PFA0-3	Fiber Optic Polishing Film Aluminum Oxide 3 micron Color: Yellow	3" x 6" 76 mm x 152 mm
PFA0-12	Fiber Optic Polishing Film Aluminum Oxide 12 micron Color: Red	3" x 6" 76 mm x 152 mm
F1000	Fiber Optic Cleaning Wipes	5-3/4" x 5-3/4" / 146 mm x 146 mm
FS400	Bifurcated Swipes	4-1/4" / 108 mm

Also available: Diamond Polishing Film No. PFD-3, 5" (127 mm) Round; Color: Rose

# FIBER-SAFE™ SAFETY KIT

- Fiber-Safe™ safety kit is specifically for working safely with glass fiber.
- Complete kit includes a Fiber-Safe polishing/work mat, fiber scraps trash can, splinter removal tweezer, ten bifurcated cleaning swipes, each with a self-contained alcohol dispensing tube, and safety glasses.



PART NO.	DESCRIPTION	DIMENSIONS
FS9500	Fiber optic Safety Kit – Complete	L: 16.5"; W: 3.5" / 42 cm x 9 cm
FS100	Polishing/Work Mat (Black)	L: 22"; W: 14" / 56 cm x 35.5 cm
FS200	Fiber Scraps Trash Can	H: 4"; W: 2.25" / 10 cm x 5.7 cm
FS300	Safety Glasses	N/A
FS400	Bifurcated Swipes – 10 included	L: 5" / 12.7 cm
FS500	Fiber Splinter Removal Tweezers	L: 4.25" / 10.8 cm

## Fiber Optic Kits

- Ripley's fiber optic termination kits offer a high quality set of tools for the professional installer
- Standard kit items sold with a rugged, positive-closure, hard case.
- Components Available Separately

### •Standard kit includes:

- FO 103-S – Fiber Stripper
- Model 100 – Buffer Tube Scoring Tool
- FOKC – Kevlar Cutters
- FOPD-25 – Universal polishing disc for 2.5 mm ST, SC and FC connectors
- CS-30-DE Double End Carbide Fiber Optic Scribe
- CCT-2001 – Fiber Continuity Tool
- FS700 – Fiber Polishing Pad
- FIM 150-200 – 150 to 200x Inspection Scope
- MT-1 – “Magna-Tweez” tweezers
- RMC-6 – 6 inch (152 mm) precision scale
- Fiber Optic Crimp Tool
- Permanent marker pen
- Fiber Waste container

### Safety Glasses recommended

- *For alternate kit configurations, please contact Ripley Customer Service.*
- Width: 17 in (432 mm)
- Length: 12 in (305 mm)
- Weight: 4.5 lb (2 Kg)



# 100

## Adjustable Wire Stripper & Cutter

- Strips and cuts insulated wire sizes from #22 AWG (0.65 mm) to #10 AWG (2.6 mm)
- Effective for stripping fiber optic buffer jackets and tubing
- Stop screw adjusts easily to fit wire size
- Ground and unground versions available
- Soft plastic coated handles
- Length: 5.125 in (130.18 mm)
- Weight: 2.5 oz (71 g)
- **Also available with opening spring and closing lock feature (Model #101-S)**



# 103-S

## Adjustable Wire Stripper & Cutter with cam adjustment

- Strips and cuts insulated wire sizes from #22 AWG (0.65 mm) to #10 AWG (2.6 mm)
- Cam adjusts easily to fit wire size
- Pressure is against the cam not on the set screw
- Opening spring and closing lock feature
- Ideal for all applications
- Ground and unground versions available
- Soft plastic coated handles
- Length: 5.375 in (136.53 mm)
- Weight: 2.5 oz (71 g)



# 111-TAS

## Thumb Adjustable Wire Stripper & Cutter

- Effective for stripping & cutting insulated wire sizes from #22 AWG (0.65 mm) to #10 AWG (2.6 mm)
- Scalloped handles ergonomically designed for ease of use and optimum operator comfort
- Patented mechanism allows for full range adjustment
- Finger operated stop, adjusts easily for manual adjustment of jaws without additional tools
- Unique spring mechanism holds the jaws and stripping surfaces in a normally open position, permitting ease of operation in repetitive stripping applications
- Once set, the operating pressure is encapsulated between the cam and pivoting tool arm, allowing for maximum operator leverage
- All cutting surfaces are precision formed, hardened, tempered and ground assuring clean smooth strips
- U.S. Patent No.: 6,418,817
- Length: 5.4 in (137 mm)
- Weight: 2.2 oz (62 g)



## 721, 821 & 921

### Multi-Wire Strippers/Cutters

- 721 strips and cuts 20-10 AWG (.8-2.6 mm) wire sizes
- 821 strips and cuts 26-16 AWG (.40-1.3 mm) wire sizes
- 921 strips and cuts 30-20 AWG (.25-.80 mm) wire sizes
- AWG/mm wire sizes embossed/pad printed on tool
- Cushion grips for comfort
- Serrated plier-type nose for wire pulls and loops
- **Handle lock mechanism for compact and protective storage for ease of use with pouch**
- Wire looping/bending holes conveniently located
- Automatic return spring for ease of use and speed
- Compact and lightweight with narrow nose design
- Black oxide finish for extra corrosion protection
- All cutting surfaces are precision formed, hardened, tempered and ground, assuring clean, accurate strips
- Length: 6.25 in (159 mm)
- Weight: 3.8 oz (107.7 g)



721



821



921

## CS8

### Plier/Wire Cutter/ Wire Stripper/ Crimper/Bolt Cutter

- Groove-grip plier nose at tip for wire pulling and bending capability
- By-pass scissor action for cleaner cut than conventional "chisel" cut. Hardened blade so cutting surfaces stay sharper, longer.
- Strips AWG 10 to AWG 20-22 wire.
- Complete selection of crimp stations for non-insulated (7-8 mm Auto, AWG 10 to 20-22 Electrical) and insulated (AWG 10 to AWG 22 Electrical) common solderless connectors.
- Threaded bolt cutter prevents damage to 6 popular-sized bolts — 4-40, 5-40, 6-32, 8-32, 10-32, 10-24.
- Length: 8.25 in (210 mm)
- Weight: 6.4 oz (181 g)



## 60

### Utility Cutter

- Cuts stranded wire from #22 AWG (.65 mm) to #12 AWG (2.3 mm)
- Utility cutter for plastic, wire and other materials
- Perfect for plastic cuffs
- Spring mechanism opens tool permitting ease of operation in repetitive functions
- All cutting surfaces are precision formed, hardened, tempered and ground
- Closing lock feature
- Soft plastic coated handles
- Length: 5.375 in (136.53 mm)
- Weight: 2.5 oz (71 g)



# NO-NIK®

## Wire Strippers

- The premier precision wire stripper for removing insulation from solid or stranded wire without nicking or scratching the conductor
- Stripping blade diameters range from 0.008 in to 0.054 in (.203 mm to .323 mm)
- Stripping apertures are accurate to -0 in, + 0.0005 in (.0127 mm)
- Simple operation
- Insulation being removed protects conductor from the stripping blades
- No adjustments needed; each tool is made to strip specific wire sizes
- Handles are color-coded to tool size for easy identification
- Stripping Blade Diameter Marking and Indicating Arrow:
  - Stripping blade diameter clearly marked on plastic head.
  - Arrow indicates direction pressure should be applied when stripping
- Length: 5.3 in (135 mm)
- Weight: 1.6 oz (45 g)



## Wire Stripper Selection Chart

Part Number (Cutting Diameter)*	Handle Color	AWG	Wire Construction	Nominal Conductor Diameter	
				Inches	mm
NN044 (.044)	Dark Brown	18	Single	.0403	1.0236
NN054 (.054)	Clear		Stranded	.044	1.1176
NN034 (.034)	Pink	20	Single	.0320	.8128
NN037 (.037)	Grey				
NN044 (.044)	Dark Brown		Stranded	.035	.889
NN028 (.028)	Black	22	Single	.0253	.64262
NN031 (.031)	Tan				
NN034 (.034)	Pink		Stranded	.028	.7112
NN023 (.023)	Maroon	24	Single	.0201	.511
NN025 (.025)	Light Green				
NN028 (.028)	Black		Stranded	.022	.5588
NN018 (.018)	Yellow	26	Single	.0159	.404
NN021 (.021)	Royal Blue				
NN023 (.023)	Maroon		Stranded	.017	.4318
NN014 (.014)	Dark Green	28	Single	.0126	.320
NN016 (.016)	Orange				
NN018 (.018)	Yellow		Stranded	.014	.3556
NN012 (.012)	White	30	Single	.0100	.254
NN014 (.014)	Dark Green				
NN016 (.016)	Orange		Stranded	.011	.2794
NN010 (.010)	Light Blue	32	Single	.0080	.2032
NN012 (.012)	White				
NN010 (.010)	Light Blue		Stranded	.009	.2286
NN008 (.008)	Red	34	Single	.0063	.160
NN010 (.010)	Light Blue				
NN008 (.008)	Red		Stranded	.007	.1778
NN008 (.008)	Red	36	Single	.0050	.127
NN008 (.008)	Red		Stranded	.006	.1524

\* Proper selection depends upon type of insulation and insulation construction.

# MICROSTRIP

- Designed to handle PVC insulated small cross-sectional wires up to 0.062 in (1.5 mm<sup>2</sup>)
- Lightweight and compact size ideal for small applications
- Allows for precision work and lower fatigue
- Automatic, self-adjusting stripping action over entire range
- Built-in strip stop for consistent strip lengths
- Built-in cutter for wire end trimming
- Interchangeable gripping pads supplied to customize tool for insulation type



Application	Wire Size Range Inches O.D.	Wire Size Range mm <sup>2</sup>	Approximate AWG wire size
Wire Stripping	Up to 0.062"	Up to 1.5	Stranded up to 16 Solid up to 14
Wire Cutting	Up to 0.062"	Up to 1.5	Stranded up to 16 Solid up to 14

- Replacement Cutting Blade: 39396
- Replacement Stripping Jaws: 39397
- Replacement Gripping Pads (set of 3): 39398
- Weight: 2.7 oz (76 g)
- Dimensions: 6.1 x 3.1 x 0.6 inches (155 x 80 x 14 mm)

## ACC

### Adjustable Armored Cable Cutter

- Turning the crank handle produces a clean cut through the armor casing which is then twisted for easy removal
- Cable is easily loaded from the side of the tool
- One tool for 3/8" to 3/4" flexible armored conduit. Fits 14/2 to 4/3 AWG AC, MC, HCF, BX and 3/4" Greenfield cables
- Tool easily adjusted from small to large sizes of armored cables
- Adjustable cutting depth prevents damage to conductor insulation
- Long lasting high speed steel blade improves productivity
- Innovative quick clamping mechanism eliminates the need for clamping set screw found on other similar tools
- Made in U.S.A.
- Replacement blades: ACCB, Part #34812 (package of 5)
- U.S. Patent.: 4,813,144
- Length: 8 inch (203 mm)
- Weight: 14 oz. (397 g)



## 80

### Heat Sink Tool

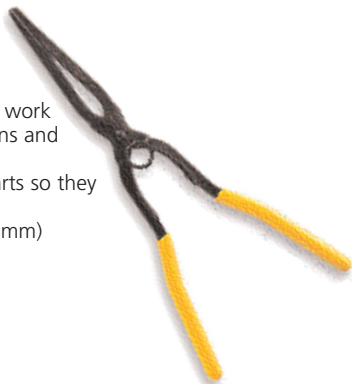
- Copper jaws absorb and dissipate heat to protect electronic components from heat exposure during soldering
- Solder will not stick to nickel-plated finish
- A necessity for electronic, industrial assembly and for laboratory work
- Soft plastic coated handles and no-slip spring tension
- Length: 3.25 in (82.55 mm)
- Weight: 0.5 oz (14 g)



## 85

### Long Nose Plier

- Perfect for precision assembly work
- Ideal for mechanics, technicians and hobbyists
- Spring closing action holds parts so they don't slip during assembly
- Narrow width, .25 inch (6.35 mm)
- Soft plastic coated handles
- Length: 9.25 in (234.95 mm)
- Weight: 2.7 oz (77 g)



# 95

## Romex Cable Ripper

- The easy way to rip Romex jackets to expose the conductors
- Economical value with professional results
- Blade hardened for long wear and easily replaced
- Replacement Blade #95 BL
- Length: 4.5 in (114.3 mm)
- Weight: 1.5 oz (42.5 g)



# 205

## Rural "C" Line Wire Slitter & Stripper

- Heads matched to wire diameter
- Used by major telephone installers
- Slitting and stripping blades are replaceable
- Replacement Blades:
  - # 205 SL BL (slitting blade)
  - # 205 ST BL (stripping blade)
- Tools self-closing for safety
- Soft plastic coated handles
- Length: 7 in (177.80 mm)
- Weight: 9.5 oz (269 g)



Model	Wire Diameter	
	(inch)	(mm)
205 14GA	.062	1.57
205 12GA	.080	2.03

## 305

Figure-8 Aerial Self Support  
Duct Slitting Tools

- Messenger removal and jacket slitting tools for round figure-8 aerial duct
- Heads matched to messenger sizes
- Self closing for safety
- Locking latch on MJ and MW tools provides easier slitting action
- Replaceable blades
- Plastic Handles
- Length: 6.5 in (165 mm)
- Weight: 9.0 oz (255 g)

Models for Messenger Web Slitting  
(slits web between messenger and duct)

Tool Model	Tool Part Number	Duct Mfr	Nominal Duct Messenger Size, mm	Maximum Messenger Covering O.D. Inches	Replacement Blade	Blade Part Number
305 AN	80255		—	.380 - .420	305 BL	80235
305 WEB-B	80260		—	.435 - .450	305 BL	80235
305-6MW-P6	80631	Pyramid	6.6	.400	305 Hook	80244
305-6MW-D6	80241	Duraline	6.6	.450	305 Hook	80244
305-6MW-D	80633	Duraline	6	.515	305 Hook	80244
305-10MW-D	80243	Duraline	3/8" or 10	.575	305 Hook	80244
305-MWS	35480		.109" or 2.75	.250	305 Hook	80244

Models for Messenger Jacket Slitting  
(Slits Messenger Jacket for Removal)

Tool Model	Tool Part Number	Maximum Messenger Covering O.D. Inches	Duct Mfr	Nominal Duct Messenger Size, mm	Replacement Blade	Blade Part Number
305-6MJ-P6	80640	.400	Pyramid	6.6	305 MJ	80639
305-6MJ-AD6	80240	.450	Duraline, Arnco	6.6	305 MJ	80639
305-6/10MJ-ADP	80641	.515	Duraline	6	305 MJ	80639
"	80641	"	Arnco, Pyramid	3/8" or 10	305 MJ	80639
305-10MJ-D	80242	.575	Duraline	3/8" or 10	305 MJ	80639

# PDT-66

## Punch Down Tool

- This spring-loaded adjustable, automatic impact tool is used for terminating wires on 110/88 or 66 – type connecting blocks
- Precision hardened and interchangeable blades spread the termination prongs to allow fast and easy insertion of the wire into the contact, providing a tight termination that resists corrosion. The blade finishes the job in the same motion by neatly cutting off excess wire
- Accepts a variety of interchangeable blades
- No screwdriver is needed to change the blades
- The impact of the blade can be adjusted simply by turning a thumb wheel
- A sure-lock blade holder provides fast, easy blade changes and prevents pull-out during operation
- Convenient storage compartment with a unique locking mechanism provides storage for spare blades
- Length: 5.75 in (146 mm)
- Weight: 5.1 oz (145 g)



## 925CS

### Splicer's Scissors

- Multi-purpose service tool
- All exterior surfaces and interior blade surfaces double-plated with chrome over nickel to prevent rust and corrosion — the ONLY electrician's scissors that offer this full double protection
- Every pair totally thru-hardened for years of service.
- Use for splicing wire; cutting harness ties, insulation materials, medium gauge wires, and electrical tape; and stripping insulation.
- Stripping Notches for 19 and 23 Gauge Wire
- Scraper and File on Back of Blade
- Length: 5.25 in (133 mm)
- Weight: 3.2 oz (91 g)



## CK6

### Splicer's Knife

- Tough, Coping-Style Blade
- Forged Steel
- Full-Size, High-Dielectric, Red-Cushioned Handle
- Length: 6.25 in (159 mm)
- Blade length: 1.625 in (41 mm)
- Weight: 2.4 oz (68 g)



## 925CS KIT

### Splicer's Kit

Complete Kit Contains:

- 1 – CSH 96 Holster
- 1 – 925CS Splicer's Scissors
- 1 – CK6 Knife



PART NO.	DESCRIPTION	FULL LENGTH	LENGTH OF CUT
925CS	Stripping notches and one blade serrated	5" / 127 mm	1.75" / 44 mm
CK6	Splicer's knife	6.25" / 159 mm	N/A
925CS Kit	Contains No. 925CS scissors	8.5" / 216 mm	N/A

# SPECIALTY SCISSORS



- Precision crafted tools
- Perfect for military spec work
- Used for cutting harnesses, assembling circuit boards, cutting and tying laces, and trimming wire for terminals
- Needle-sharp points for accuracy and delicate trimming in tight places
- Hot-forged fine cutlery steel, double-plated with chrome over nickel, tempered and precision ground for the finest performance
- IS4 1/4 is a precise instrument with long blades and needle-sharp points for stripping shielding, and cutting light wire for shim stock. High leverage for extra cutting power
- 33 1/4 is a high leverage scissors with delicate, extra sharp, curved blades
- 383 1/2 has two sharp points and is sturdily built for cutting light wire
- 384 and 385 have the same features, but vary in overall length and length of cut
- 554 has snub-nosed, curved blades, and long, strong handles for cutting wire and filament in limited clearance areas
- 564C has one blade serrated to prevent slip-out

PART NO.	FULL LENGTH	LENGTH OF CUT
IS4 1/4	4 1/4" - 108mm	3/4" - 19mm
33 1/4 (Curved blades)	3 1/4" - 83mm	1/2" - 13mm
383 1/2	3 1/2" - 89mm	3/4" - 19mm
384	4" - 102mm	1 1/4" - 32mm
385	5" - 127mm	1 1/2" - 38mm
554 (Curved blades)	4" - 102mm	3/8" - 10mm
564C (One blade serrated)	4" - 102mm	3/8" - 10mm

# ESD-SAFE PLIERS AND CUTTERS

## 9000

### Advanced Precision Diagonal Cutters

- Superior high quality Swedish steel for extra cutting capability and prolonged tool life
- Hardness 61-63 HRC on cutter blades
- Produced with an advanced grinding technique
- Adjustable precision screw joint
- Wobble-free operation
- Specially designed return springs to facilitate precision work
- Ergonomically designed handles for operator comfort
- ESD-safe grips
- Tested and approved to International ESD standards



9150

9150 - Rounded jaws  
Semi-flush cut  
Copper wire 0.2 - 1.25 mm

9151 - Rounded jaws  
Flush cut  
Copper wire 0.1 - 1.25 mm

9350 - Rounded jaws  
Semi-flush cut  
Copper wire 0.3 - 1.6 mm  
Spring wire max. 0.4 mm

9351 - Rounded jaws  
Flush cut  
Copper wire 0.2 - 1.6 mm

9158 - Pointed and relieved jaws  
Full flush cut  
Copper wire 0.1 - 0.8 mm

PART NO.	FULL LENGTH	LENGTH OF CUT
9150	4-1/3" / 110 mm	3/8" / 9.5 mm
9151	4-1/3" / 110 mm	3/8" / 9.5 mm
9350	4-2/5" / 112 mm	1/2" / 12.5 mm
9351	4-2/5" / 112 mm	1/2" / 12.5 mm
9158	4-1/3" / 110 mm	3/8" / 9.5 mm

## 3000

### Pliers & Cutters

- Precision riveted box joint
- Specially designed return spring
- Ergonomically designed handles for operator comfort
- ESD-safe grips



3011

3011 - Flat nose pliers  
Smooth jaws

3021 - Chain nose pliers  
Smooth jaws

3023 - Long chain nose pliers  
Smooth jaws

3075 - Oblique end cutter  
Extra slim for close, flush cuts  
45° oblique head angle  
Copper wire 0.35 - 1.0 mm

PART NO.	FULL LENGTH
3011	4-1/2" / 114 mm
3021	4-1/2" / 114 mm
3023	5" / 127 mm
3075	4-1/2" / 114 mm

# AW, AWG

## Anti-Wicking Tools

### AW SERIES



### AWG SERIES



- **AW Series:** Bullet-shaped head grips conductor, supports insulation
- **AWG Series:** L-shaped head affords greater visibility. Works well in tightly confined solder areas
- Precision-made from non-fatiguing copper alloy
- Fully chrome-plated for extended life and solder-free operation
- Heads drilled to precise tolerances for positive conductor contact and maximum thermal conductivity
- Insures compliance with military and NASA specifications on inspection requirements of solder connections when used properly
- Reverse action automatically grips conductor
- Part numbers give correct AWG size wire that tools are made to fit
- Meet all specifications for soldering both single and multi-strand wire

PART NO.*	FULL LENGTH	CONDUCTOR CONTACT LENGTH	HOLE DIAMETER
AW 18	5" / 127 mm	1/16" / 1.59 mm	.046 - .047" / 1.17 - 1.19 mm
AW 20	5" / 127 mm	1/16" / 1.59 mm	.035 - .036" / .89 - .91 mm
AW 22	5" / 127 mm	1/16" / 1.59 mm	.028 - .029" / .71 - .74 mm
AW 24	5" / 127 mm	1/32" / .79mm	.022 - .023" / .56 - .58 mm
AW 26	5" / 127 mm	1/32" / .79 mm	.017 - .018" / .43 - .46 mm
AW 28	5" / 127 mm	1/32" / .79 mm	.012 - .014" / .30 - .36 mm
AW 30	5" / 127 mm	1/32" / .79 mm	.010 - .011" / .25 - .28 mm
AWG 18	4-1/2" / 114 mm	1/16" / 1.59 mm	.046 - .047" / 1.17 - 1.19 mm
AWG 20	4-1/2" / 114 mm	1/16" / 1.59 mm	.035 - .036" / .89 - .91 mm
AWG 22	4-1/2" / 114 mm	1/16" / 1.59 mm	.028 - .029" / .71 - .74 mm
AWG 24	4-1/2" / 114 mm	1/32" / .79 mm	.022 - .023" / .56 - .58 mm
AWG 26	4-1/2" / 114 mm	1/32" / .79 mm	.017 - .018" / .43 - .46 mm
AWG 28	4-1/2" / 114 mm	1/32" / .79 mm	.012 - .014" / .30 - .36 mm
AWG 30	4-1/2" / 114 mm	1/32" / .79 mm	.010 - .011" / .25 - .28 mm

\* Part Numbers give correct wire size tools are made to fit

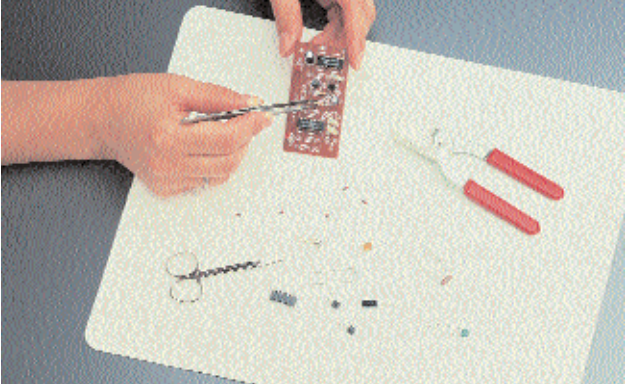
# TWEEZERS



- **AA-SA** — Strong, fine tips. General purpose tweezer popular for assembly line work. Anti-acid/Anti-magnetic stainless steel. Brushed satin finish.
- **4SA** — Extra fine tips. Excellent for dense access areas in micro-assembly work. Anti-acid/Anti-magnetic stainless steel. Brushed satin finish.
- **4C** — Same design as the 4SA for access to dense areas, but made of carbon steel. Chrome-plated for added protection.
- **5SA** — Needle sharp tips. Excellent for die attaching, wire bonding, and handling miniature parts. Anti-acid/Anti-magnetic stainless steel. Brushed satin finish.
- **7SA** — Extra fine curved tips for working on miniature assemblies. Curved tips allow hand to rest on work surface for support, which means greater accuracy with less fatigue. Anti-acid/Anti-magnetic stainless steel. Brushed satin finish.
- **7C** — Same design as the 7SA but made of carbon steel. Chrome plated for extra protection.
- **231** — General purpose assembly tweezer with serrated inside points. Anti-acid/Anti-magnetic stainless steel. Brushed satin finish.
- **226** — Same design and serrated points as the 231 but made of carbon steel. Chrome-plated for added protection

PART NO.	FULL LENGTH
AA-SA	4-7/8" / 124 mm
4-SA	4-1/4" / 108 mm
4C	4-1/4" / 108 mm
5-SA	4-1/4" / 108 mm
7-SA	4-1/2" / 114 mm
7C	4-1/2" / 114 mm
231	4-3/4" / 121 mm
226	4-3/4" / 121 mm

# SOFTY® ANTI-STATIC DISPOSABLE WORK MATS



- Protects delicate assemblies and expensive work surfaces
- Cushioned surface protects delicate assemblies
- Make small parts handling easier and quicker
- Inexpensive and Disposable
- Perfect for covering and preventing damage to expensive, permanent work surfaces
- Anti-static and free from contamination
- Depress easily to give tools a sure grip on parts
- Backing is non-slip, even on smooth glass
- Will not put carbon into the atmosphere
- Can be cleaned with soap and water without affecting their anti-static quality
- Available in two sizes of mats or rolls
- Surface resistivity  $10^{10} - 10^{11}$  ohms/sq
- Meets DOD-STD-1686 for anti-static material
- Meets DOCF1-70 test for flammability

PART NO.	SIZE	PACKAGING
M11 White Bulk	11" x 14" (279 mm x 356 mm)	1 box of 10 mats
M11 White Individually wrapped	11" x 14" (279 mm x 356 mm)	1 box of 10 mats
M14 Bulk	14" x 22" (356 mm x 559 mm)	1 box of 10 mats
M14 Individually wrapped	14" x 22" (356 mm x 559 mm)	1 box of 10 mats
R22 White	22" Width (559 mm)	*180' (55 m) per roll
R44 White	44" Width (1118 mm)	*180' (55 m) per roll

\* Feet per roll is approximate

NOTE: M11 and M14 mats are boxed 10 per box. Choice of a box of 10 mats bulk, or a box of 10 mats individually wrapped. Roll goods are approximately 180 feet (55 meters), but can vary somewhat in length. Invoiced only for the amount of feet (meters) shipped.