

Micro-Tools and Small Precision Tools

miniature applications - micro electronics - specimen manipulation

Micro-Tools are the smallest available precision instruments for laboratory and production use.

Micro-Tools with interchangeable tips are available in hardened tool steel, stainless steel, and carbide for the cutting tools. Dedicated precision handles for each type of the Micro-Tools are available. The tool handles have a practical hexagonal shape to prevent rolling off a flat surface. Micro-Tools are available in 32 different tip configurations mounted in an interchangeable tool base. Many Micro-Tools with interchangeable tips are also available with shank sizes ranging from 0.025 to 1.0mm (0.001" to 0.040"). Applications for these precision Micro-Tools extend to microscopy, specimen preparation & manipulation, microbiology, microelectronics, forensics and spectroscopy. All tools are especially useful for precision tasks involving probing, manipulating, marking, cutting, assembling and separating on a microscopic level.

Based on the design and craftsmanship used to manufacture the Micro-Tools there are also Small Precision Tools available with integrated handles and a fixed shank diameter (most 0.8mm). The small precision tools mostly come in sets and deliver excellent value for less demanding applications.

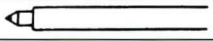

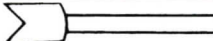

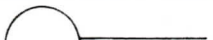
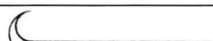

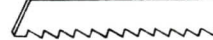
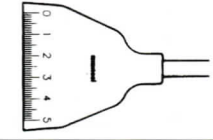


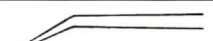



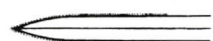
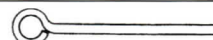

■ Micro-Tools with Interchangeable Hardened Tool Steel Tips



These are the original Micro-Tools made from first grade hardened tool steel (unless otherwise noted) manufactured to precise and durable tips. Tips are precision ground, lapped and polished with the close tolerances needed for microscopy scale applications. Available in 32 different configurations and shank sizes 0.025, 0.120, 0.250, 0.50 and 1mm for select tips. The Micro-Tool tips are mounted in anodized tool cones. All Micro-Tools fit the Micro-Tools handle (sold separately).

Hardened Tool Steel Tip Directory			Shank Diameter / Product Numbers				
# Tip Style	Micro-Tool	Description	0.025mm (0.001")	0.12mm (0.005")	0.25mm (0.010")	0.50mm (0.020")	1mm (0.040")
1		Micro-Needle, Long	13601A	13601	13601B	13601C	13601D
2		Micro-Engraver, Triangular	---	13602B	13602C	13602	13602D
3		Micro-Chisel	13603A	13603B	13603C	13603	13603D
4		Micro-Spade	13604A	13604B	13604C	13604	13604D
5		Micro-Fork	---	---	13605	13605A	---
6		Micro-Mirror, Forward, Stainless Steel	---	---	---	13606	---
7		Micro-Ruler, 10mm, 0.1mm div.	---	---	---	13607	---
8		Micro-Knife, 20°	13608A	13608B	13608C	13608	13608D
9		Micro-Knife, 45°	13609A	13609B	13609C	13609	13609D
10		Micro-Mirror, Reverse, Stainless Steel	---	---	---	13630	---
11		Micro-Prober, 90°	---	---	13633	13633A	---
12		Micro-Prober, 45°	---	---	13612A	13612	---
13		Micro-Engraver, Oval	13611A	13611B	13611C	13611	13611D
14		Micro-Brush, Single Natural Fiber		---	---	13614	---

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Hardened Tool Steel Tip Directory <i>continued</i>			Shank Diameter / Product Numbers				
# Tip Style	Micro-Tool	Description	0.025mm (0.001")	0.12mm (0.005")	0.25mm (0.010")	0.50mm (0.020")	1mm (0.040")
15		Micro-Diamond Scribe, 60°	---	---	13615A	13615	---
16		Micro-Spatula, Flexible, Stainless Steel	---	---	---	13616	---
17		Micro-Manipulator, A-type	---	---	---	13617	---
18		Micro-Hook, 90°	---	---	13618	13619	---
19		Micro-Burnisher, Glass Sphere	---	---	---	13637	---
20		Micro-Hook, 180°	---	---	13620A	13620	---
21		Micro-Scraper, Triangular	13613A	13613B	13613C	13613	13613D
22		Micro-Saw	---	---	---	13622	---
23M		Micro-Scale, 5mm, 0.1mm div. Stainless Steel	---	---	---	13629	---
23I		Micro-Scale, 0.2", 0.005" divisions, Stainless Steel	---	---	---	13638	---
24		Micro-Needle, Short	13624A	13624	13624B	13624C	13624D
25		Ultra Micro-Needle, Straight, 5µm radius tip, Tungsten	---	13625	13625A	13625B	---
26		Ultra Micro-Needle, 30°, 5µm radius tip, Tungsten	---	13626	13626A	13626B	---
27		Ultra Micro-Needle, 90°, 5µm radius tip, Tungsten	---	13627	13627A	13627B	---
28		Micro-Carbide Scribe, 5 µm radius tip	13628	13628A	13628B	13628C	---
29		Micro-Diamond File, round	---	---	13639A	13639	---
30		Micro-Diamond File, triangular, 1mm edge to edge	---	---	---	13632	---
31		Micro-Loop, 2mm dia	---	---	---	13631	---
32		Micro-Hook, 0.3mm ID, 1mm OD with clasp, anti-snag guard, St/St	---	---	---	13634	---

Ordering Information

Available Handles and Storage Case

- 13600** Micro-Tool Handle, 120mm (4.75") long, light weight, anodized aluminumeach
- 13675** Micro-Tool Handle, 120mm (4.75") long, Stainless Steeleach
- 13640** Micro-Tool hardwood storage case for 8 tips and handleeach

Note: The last dimension on Tip Ordering Information is the Shank Diameter.

Hardened Tool Steel Tip Ordering Information

- 13601A** Micro-Needle, Long, 0.025mm (0.001")each
- 13601** Micro-Needle, Long 0.12mm (0.005")each
- 13601B** Micro-Needle, Long, 0.25mm (0.010")each
- 13601C** Micro-Needle, Long, 0.50mm (0.020")each
- 13601D** Micro-Needle, Long, 1.0mm (0.040")each
- 13602B** Micro-Engraver, triangular 0.12mm (0.005") each
- 13602C** Micro-Engraver, triangular 0.25mm (0.010") each
- 13602** Micro-Engraver, triangular 0.50mm (0.020") each
- 13602D** Micro-Engraver, triangular 1.0mm (0.040") each

continued

Hardened Tool Steel Tip Ordering Information

continued

13603A	Micro-Chisel, 0.025mm (0.001")	.....each	13618	Micro-Hook, 90° 0.25mm (0.010")	.....each
13603B	Micro-Chisel, 0.12mm (0.005")	.....each	13619	Micro-Hook, 90° 0.50mm (0.020")	.....each
13603C	Micro-Chisel, 0.25mm (0.010")	.....each	13620A	Micro-Hook, 180° 0.25mm (0.010")	.....each
13603	Micro-Chisel, 0.50mm (0.020")	.....each	13620	Micro-Hook, 180° 0.50mm (0.020")	.....each
13603D	Micro-Chisel, 1.0mm (0.040")	.....each	13613A	Micro-Scraper, Triangular, 0.025mm (0.001")	.....each
13604A	Micro-Spade, 0.025mm (0.001")	.....each	13613B	Micro-Scraper, Triangular, 0.12mm (0.005")	each
13604B	Micro-Spade, 0.12mm (0.005")	.....each	13613C	Micro-Scraper, Triangular, 0.25mm (0.010")	each
13604C	Micro-Spade, 0.25mm (0.010")	.....each	13613	Micro-Scraper, Triangular, 0.50mm (0.020")	each
13604	Micro-Spade, 0.50mm (0.020")	.....each	13613D	Micro-Scraper, Triangular, 1.0mm (0.040")	each
13604D	Micro-Spade, 1.0mm (0.040")	.....each	13622	Micro-Saw, 0.50mm (0.020")	.....each
13605	Micro-Fork, 0.25mm (0.010")	.....each	13629	Micro-Scale, 5mm with 0.1mm divisions, St/St, 0.50mm (0.020")	.....each
13605A	Micro-Fork, 0.50mm (0.020")	.....each	13638	Micro-Scale, 0.2" with 0.005" divisions, St/St, 0.50mm (0.020")	.....each
13606	Micro-Mirror, forward, Stainless Steel, 0.50mm (0.020")	.....each	13624A	Micro-Needle, Short, 0.025mm (0.001")	each
13607	Micro-Ruler, 10mm with 0.1mm div, 0.50mm (0.020")	.....each	13624	Micro-Needle, Short, 0.12mm (0.005")	each
13608A	Micro-Knife, 20° 0.025mm (0.001")	.....each	13624B	Micro-Needle, Short, 0.25mm (0.010")	each
13608B	Micro-Knife, 20° 0.12mm (0.005")	.....each	13624C	Micro-Needle, Short, 0.50mm (0.020")	each
13608C	Micro-Knife, 20° 0.25mm (0.010")	.....each	13624D	Micro-Needle, Short, 1.0mm (0.040")	each
13608	Micro-Knife, 20° 0.50mm (0.020")	.....each	13625	Ultra Micro-Needle, Tungsten, Straight, tip radius 5 µm, 0.12mm (0.005")	.....each
13608D	Micro-Knife, 20° 1.0mm (0.040")	.....each	13625A	Ultra Micro-Needle, Tungsten, Straight, tip radius 5 µm, 0.25mm (0.010")	.....each
13609A	Micro-Knife, 45° 0.025mm (0.001")	.....each	13625B	Ultra Micro-Needle, Tungsten, Straight, tip radius 5 µm, 0.50mm (0.020")	.....each
13609B	Micro-Knife, 45° 0.12mm (0.005")	.....each	13626	Ultra Micro-Needle, Tungsten, 30°, tip radius 5 µm, 0.12mm (0.005")	.....each
13609C	Micro-Knife, 45° 0.25mm (0.010")	.....each	13626A	Ultra Micro-Needle, Tungsten, 30°, tip radius 5 µm, 0.25mm (0.010")	.....each
13609	Micro-Knife, 45° 0.50mm (0.020")	.....each	13626B	Ultra Micro-Needle, Tungsten, 30°, tip radius 5 µm, 0.50mm (0.020")	.....each
13609D	Micro-Knife, 45° 1.0mm (0.040")	.....each	13627	Ultra Micro-Needle, Tungsten, 90°, tip radius 5 µm, 0.12mm (0.005")	.....each
13630	Micro-Mirror, reverse, Stainless Steel, 0.50mm (0.020")	.....each	13627A	Ultra Micro-Needle, tungsten, 90°, tip radius 5 µm, 0.25mm (0.010")	.....each
13633	Micro-Prober, 90° 0.25mm (0.010")	.....each	13627B	Ultra Micro-Needle, Tungsten, 90°, tip radius 5 µm, 0.50mm (0.020")	.....each
13633A	Micro-Prober, 90° 0.50mm (0.020")	.....each	13628	Micro-Scribe, Carbide, tip radius 5 µm, 0.025mm (0.001")	.....each
13612A	Micro-Prober, 90° 0.25mm (0.010")	.....each	13628A	Micro-Scribe, Carbide, tip radius 5 µm, 0.12mm (0.005")	.....each
13612	Micro-Prober, 90° 0.50mm (0.020")	.....each	13628B	Micro-Scribe, Carbide, tip radius 5 µm, 0.25mm (0.010")	.....each
13611A	Micro-Engraver, oval, 0.025mm (0.001")	each	13628C	Micro-Scribe, Carbide, tip radius 5 µm, 0.50mm (0.020")	.....each
13611B	Micro-Engraver, oval, 0.12mm (0.005")	each	13639A	Micro-Diamond File, Round, 0.25mm (0.010")	.....each
13611C	Micro-Engraver, oval, 0.25mm (0.010")	each			
13611	Micro-Engraver, oval, 0.50mm (0.020")	each			
13611D	Micro-Engraver, oval, 1.0mm (0.040")	each			
13614	Micro-Brush, single natural fiber, 0.50mm (0.020")	.....each			
13615A	Micro-Diamond Scribe, 60° 0.25mm (0.010")	.....each			
13615	Micro-Diamond Scribe, 60° 0.50mm (0.020")	.....each			
13616	Micro-Spatula, Flexible, St/St 0.50mm (0.020")	.....each			
13617	Micro-Manipulator, A-type, 0.50mm (0.020")	.....each			

continued

Hardened Tool Steel Tip Ordering Information

continued

- 13639** Micro-Diamond File, Round, 0.50mm (0.020")each
- 13632** Micro-Diamond File, Triangular, 1mm edge to edge, 0.50mm, (0.020"), triangleeach

- 13631** Micro-Loop, 2mm dia, 0.50mm (0.020") . . .each
- 13634** Micro-Hook, 0.3mm ID, 1mm OD including clasp, Anti-Snag Guard, 0.50mm (0.020") . .each
- 13637** Micro-Burnisher, Glass Sphere, 0.50mm (0.020")each

Micro-Tool Standard Sets with Hardened Tool Steel Tips

The precision Micro-Tools with hardened tool steel are also available in standard sets for different applications, safely stored in a convenient hardwood case. The Micro-Tools in the standard sets all have the 0.50mm (0.020") shank size. Each of the four available sets in the hardwood case includes the anodized aluminum handle and eight tips

■ Microscopist Tool Set



Set includes:
handle with eight
replaceable
screw-on tips
and a hardwood
storage case.

Note: Individual
tips may be or-
dered on previ-
ous pages.

Tips Included:

Tip #	Micro-Tool	Description	0.50mm (0.020")
1		Micro-Needle, Long	13601
3		Micro-Chisel	13603
8		Micro-Knife, 20°	13608
15		Micro-Diamond Scribe, 60°	13615
16		Micro-Spatula, Flexi-ble, Stainless Steel	13616
18		Micro-Hook, 90°	13618
23M		Micro-Scale, 5mm, 0.1mm divisions, Stainless Steel	13623
25		Ultra Micro-Needle, Straight, 5µm radius tip, Tungsten	13625

13610 Microscopist Tool Set, completeeach

■ Micro-Needle Probe Tool Set



Set includes:
handle with eight
replaceable
screw-on tips
and a hardwood
storage case.

Note: Individual
tips may be or-
dered on previ-
ous pages.

Tips Included:

Tip #	Micro-Tool	Description	0.50mm (0.020")
1		Micro-Needle, Long	13601
11		Micro-Prober 90°	13633
12		Micro-Prober 45°	13612
18		Micro-Hook 90°	13619
20		Micro-Hook 180°	13620
24		Micro-Needle, Short	13624
25		Ultra Micro-Needle, Straight, 5µm radius tip, Tungsten	13625
15		Micro-Diamond Scribe, 60°	13615

54458 Micro-Needle Probe Tool Set, completeeach

MICRO-TOOLS

Hardened Tool Steel Tips

■ Micro-Cutting Tool Set



Set includes:
Handle with
eight replaceable
threaded tips and
a hardwood storage
case.

Note: Individual
tips may be
ordered on
previous pages.

Tips Included:

Tip #	Micro-Tool	Description	0.50mm (0.020")
2		Micro-Engraver, triangular	13602
3		Micro-Chisel	13603
4		Micro-Spade	13604
8		Micro-Knife, 20°	13608
9		Micro-Knife, 45°	13609
13		Micro-Engraver, Oval	13611
28		Micro-Carbide Scribe, 5µm radius tip	13628
21		Micro-Scraper, triangular	13613

54457 Micro-Cutting Tool Set, completeeach

■ Micro-Placement and Manipulating Tool Set



Set includes:
Handle with
eight replaceable
threaded tips and
a hardwood storage
case.

Note: Individual
tips may be
ordered on
previous pages.

Tips Included:

Tip #	Micro-Tool	Description	0.50mm (0.020")
5		Micro-Fork	13605
7		Micro-Ruler, 10mm, 0.1mm divisions	13607
12		Micro-Prober 45°	13612
14		Micro-Brush, Single Natural Fiber	13614
16		Micro-Spatula, Flexible, Stainless Steel	13616
17		Manipulator, A-type	13617
18		Micro-Hook, 90°	13619
25		Ultra Micro-Needle, Straight, 30°, 5µm radius tip, Tungsten	13625

54459 Micro-Placement and Manipulating Tool Set, completeeach

■ Tweezer Repair Kit - Also great for Sharpening & Repairing Steel Micro-Tool Tips



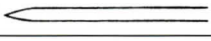

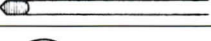

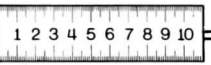
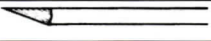
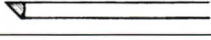

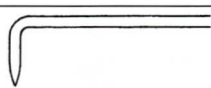

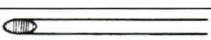
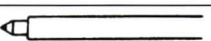
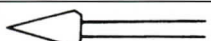
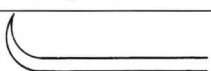
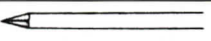
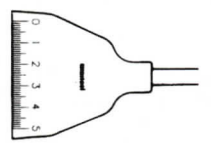


Salvage damaged tweezers (and Micro-Tool tips) with this kit. Use for straightening, sharpening and deburring dull or damaged tweezers (and Micro-Tool tips). Instructions included.

54528 Tweezer Repair Kiteach

■ Micro-Tools with Interchangeable Stainless Steel Tips



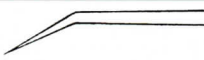
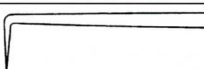
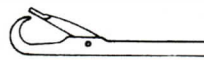
All the Micro-Tools with stainless steel tips are forged from 304 grade stainless steel, followed by precision grinding, lapping and polishing steps to create the ultimate in precision manipulation tools. The stainless steel Micro-Tools withstand corrosion better than tool steels and are more suitable for moist or wet environments encountered in pharmaceutical, medical, biological and biochemistry applications. The Micro-Tools with stainless steel tips are mounted in stainless steel tool cones. Stainless steel tools are not as hard as the Micro-Tools made from hardened tool steels. All Micro-Tools fit both the standard aluminum and the stainless steel Micro-Tool handle (sold separately).

Stainless Steel Tip Directory			Shank Diameter / Product Numbers			
# Tip Style	Micro-Tool	Description	0.12mm (0.005")	0.25mm (0.010")	0.40mm (0.016")	0.50mm (0.020")
1		Micro-Needle, Long, Stainless Steel	13671	13671A	13671B	---
3		Micro-Chisel, Stainless Steel	13673	13673A	13673B	13673C
4		Micro-Spade, Stainless Steel	13674	13674A	13674B	---
6		Micro-Mirror, Forward, Stainless Steel	---	---	---	13676
7		Micro-Ruler, 10mm, 0.1mm divisions, Stainless Steel	---	---	---	13677
8		Micro-Knife, 20°, Stainless Steel	13608B	13608C	13608D	13608
9		Micro-Knife, 45°, Stainless Steel	13609B	13609C	13609D	13609
10		Micro-Mirror, Reverse, Stainless Steel	---	---	---	13680
11		Micro-Prober, 90°, Stainless Steel	---	13681A	13681B	---
12		Micro-Prober, 45°, Stainless Steel	---	13682A	13682B	---
13		Micro-Engraver, Oval, Stainless Steel	13683	13683A	13683B	---
15		Micro-Diamond Scribe, 60°, St/St	---	---	13685	---
16		Micro-Spatula, Flexible, St/St	---	---	13686	---
18		Micro-Hook, 90°, Stainless Steel	---	13688A	13688B	---
21		Micro-Scraper, Triangular, St/St	13684	13684A	13684B	---
23M		Micro-Scale, 5mm, 0.1mm divisions, Stainless Steel	---	---	---	13687
23I		Micro-Scale, 0.2", 0.005" divisions Stainless Steel	---	---	---	13690
24		Micro-Needle, Short, Stainless Steel	13689	13689A	13689B	---
25		Ultra Micro-Needle, Straight, 20µm radius tip, Stainless Steel	---	---	---	13691

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MICRO-TOOLS

Stainless Steel Tips

Stainless Steel Tip Directory <i>continued</i>			Shank Diameter / Product Numbers			
# Tip Style	Micro-Tool	Description	0.012mm (0.005")	0.25mm (0.010")	0.40mm (0.016")	0.50mm (0.020")
26		Ultra Micro-Needle, 30°, 20µm radius tip, Stainless Steel	---	---	---	13692
27		Ultra Micro-Needle, 90°, 20µm radius tip, Stainless Steel	---	---	---	13693
32		Micro-Hook, 0.3mm ID, 1mm OD with clasp, anti-snag guard, Stainless Steel	---	---	---	13696

Ordering Information

Available Handles and Storage Case

- 13600** Micro-Tool Handle, 120mm (4.75") long, light weight, anodized aluminumeach
- 13675** Micro-Tool Handle, 120mm (4.75") long, Stainless Steeleach
- 13640** Micro-Tool Hardwood Storage Case for 8 tips and handleeach

Stainless Steel Tip Ordering Information

- 13671** Micro-Needle, Long 0.12mm (0.005"), St.St. each
- 13671A** Micro-Needle, Long, 0.25mm (0.010"), Stainless Steeleach
- 13671B** Micro-Needle, Long, 0.40mm (0.016"), Stainless Steeleach
- 13673** Micro-Chisel, 0.12mm (0.005"), St/Steach
- 13673A** Micro-Chisel, 0.25mm (0.010"), St/Steach
- 13673B** Micro-Chisel, 0.40mm (0.016"), St/Steach
- 13673C** Micro-Chisel, 0.50mm (0.020"), St/Steach
- 13674** Micro-Spade, 0.12mm (0.005"), St/Steach
- 13674A** Micro-Spade, 0.25mm (0.010"), St/Steach
- 13674B** Micro-Spade, 0.40mm (0.016"), St/Steach
- 13676** Micro-Mirror, Forward, 0.50mm (0.020"), Stainless Steeleach
- 13677** Micro-Ruler, 10mm with 0.1mm divisions, 0.50mm (0.020"), Stainless Steeleach
- 13678** Micro-Knife, 20°, 0.12mm (0.005"), St/St ..each
- 13678A** Micro-Knife, 20°, 0.25mm (0.010"), St/St ..each
- 13678B** Micro-Knife, 20°, 0.40mm (0.016"), St/St ..each
- 13678C** Micro-Knife, 20°, 0.50mm (0.020"), St/St ..each
- 13679** Micro-Knife, 45°, 0.12mm (0.005"), St/St ..each
- 13679A** Micro-Knife, 45°, 0.25mm (0.010"), St/St ..each
- 13679B** Micro-Knife, 45°, 0.40mm (0.016"), St/St ..each
- 13680** Micro-Mirror, Reverse 0.50mm (0.020"), Stainless Steeleach
- 13681A** Micro-Prober, 90°, 0.25mm (0.010"), St/St ..each
- 13681B** Micro-Prober, 90°, 0.40mm (0.016"), St/St ..each
- 13682A** Micro-Prober, 45°, 0.25mm (0.010"), St/St ..each
- 13682B** Micro-Prober, 45°, 0.40mm (0.016"), St/St ..each

- 13683** Micro-Engraver, Oval, 0.12mm (0.005"), Stainless Steeleach
- 13683A** Micro-Engraver, Oval, 0.25mm (0.010"), Stainless Steeleach
- 13683B** Micro-Engraver, Oval, 0.40mm (0.016"), Stainless Steeleach
- 13685** Micro-Diamond Scribe, 60°, 0.40mm (0.016"), Stainless Steeleach
- 13686** Micro-Spatula, Flexible, 0.40mm (0.016"), Stainless Steeleach
- 13688A** Micro-Hook, 90°, 0.25mm (0.010"), Stainless Steeleach
- 13688B** Micro-Hook, 90°, 0.40mm (0.016"), Stainless Steeleach
- 13684** Micro-Scraper, Triangular, 0.12mm (0.005"), Stainless Steeleach
- 13684A** Micro-Scraper, Triangular, 0.25mm (0.010"), Stainless Steeleach
- 13684B** Micro-Scraper, Triangular, 0.40mm (0.016"), Stainless Steeleach
- 13687** Micro-Scale, 5mm with 0.1mm divisions, 0.50mm (0.020"), Stainless Steeleach
- 13690** Micro-Scale, 0.2" with 0.005" divisions, 0.50mm (0.020"), Stainless Steeleach
- 13689** Micro-Needle, Short, 0.12mm (0.005"), Stainless Steeleach
- 13689A** Micro-Needle, Short, 0.25mm (0.010"), Stainless Steeleach
- 13689B** Micro-Needle, Short, 0.40mm (0.016"), Stainless Steeleach
- 13691** Ultra Micro-Needle, Straight, tungsten tip radius 5 µm, 0.50mm (0.020"), Stainless Steel ...each
- 13692** Ultra Micro-Needle, 30°, tungsten tip radius 5 µm, 0.50mm (0.020"), Stainless Steel ...each
- 13693** Ultra Micro-Needle, 90°, tungsten tip radius 5 µm, 0.50mm (0.020"), Stainless Steel ...each
- 13696** Micro-Hook, 0.3 ID, 1mm OD including clasp, anti-snag guard, 0.50mm (0.020"), St/St ..each

Note: The last dimension on Tip Ordering Information is the Shank Diameter.

Micro-Tool Standard Sets with Stainless Steel Tips

■ Micro-Tool Stainless Steel Standard Set



The precision Micro-Tools with stainless steel tips are also available in a standard set, safely stored in a convenient hardwood case. The Micro-Tools in the standard set includes 8 tips in stainless steel tool holders with 0.50mm (0.020")

shank size, stainless steel handle and hardwood case. There are also 3 special sets available with a 0.40mm (0.016") shank diameter for microscopy, cutting or probing applications.

Note: Individual tips may be ordered on previous pages.

Tips Included:

Tip #	Micro-Tool	Description	0.50mm (0.020")
3		Micro-Chisel, St/St	13673C
6		Micro-Mirror, Forward, Stainless Steel	13676
8		Micro-Knife, 20°, Stainless Steel	13678C
23M		Micro-Scale, 5mm, 0.1mm div. Stainless Steel	13687
25		Ultra Micro-Needle, Straight, 20µm radius tip, Stainless Steel	13691
26		Ultra Micro-Needle, 30°, 20µm radius tip, Stainless Steel	13692
27		Ultra Micro-Needle, 90°, 20µm radius tip,	13693
32		Micro-Hook, 0.3mm ID, 1mm OD, anti-snap guard, St/St	13696

13670 Micro-Tool Stainless Steel Standard Set, complete seteach

■ Micro-Tool Stainless Steel Microscopist Set



Set includes: Handle with eight replaceable threaded tips and a hardwood storage case.

Note: Individual tips may be ordered on previous pages.

Tips Included:

Tip #	Micro-Tool	Description	0.40mm (0.016")
1		Micro-Needle, Long, Stainless Steel	13671B
3		Micro-Chisel, St/St	13673B
8		Micro-Knife, 20°, Stainless Steel	13678B
12		Micro-Prober, 45°, Stainless Steel	13682B
16		Micro-Spatula, Flexible, St/St	13686
18		Micro-Hook, 90°, Stainless Steel	13688B
23M		Micro-Scale, 5mm, 0.1mm div.	13687
24		Micro-Needle, Short, Stainless Steel	13689B

13670-10 Microscopist Stainless Steel Tool Set, completeeach

MICRO-TOOLS

Stainless Steel Tips

■ Micro-Needle Prober Set



Set includes:
Handle with eight
replaceable
threaded tips and a
hardwood storage
case.

Note: Individual
tips may be
ordered on
previous pages.

Tips Included:

Tip #	Micro-Tool	Description	0.40mm (0.016")
1		Micro-Needle, Long, Stainless Steel	13671B
6		Micro-Mirror, Forward, Stainless Steel	13676
7		Micro-Scale, 10mm, 0.1mm div. St/St	13677
11		Micro-Prober, 90°, Stainless Steel	13681B
12		Micro-Prober, 45°, Stainless Steel	13682B
16		Micro-Spatula, Flexible, St/St	13686
18		Micro-Hook, 90°, Stainless Steel	13688B
24		Micro-Needle, Short, Stainless Steel	13689B

13670-20 Micro-Needle Stainless Steel Probe Tool Set,
completeeach

■ Micro-Cutting Tool Set



Set includes:
Handle with eight
replaceable
threaded tips and a
hardwood storage
case.

Note: Individual
tips may be
ordered on
previous pages.

Tips Included:

Tip #	Micro-Tool	Description	0.40mm (0.016")
1		Micro-Needle, Long, Stainless Steel	13671B
3		Micro-Chisel, St/St	13673B
4		Micro-Spade, St/St	13674B
6		Micro-Mirror, Forward, Stainless Steel	13676
8		Micro-Knife, 20°, St/St	13678B
9		Micro-Knife, 45°, St/St	13679B
13		Micro-Engraver, Oval, Stainless Steel	13683B
21		Micro-Scraper, Triangular, St/St	13684B

13670-30 Micro-Cutting Stainless Steel Tool Set,
completeeach

■ Micro-Tools with Interchangeable Carbide Tips



The carbide tipped Micro-Tools have been developed for applications where cutting needs to be done on the micro scale. The micro-grain tungsten carbide tips are the hardest and most durable cutting tips available in the Micro-Tool line. The carbide Micro-Tools need to be held in place precisely for cutting and are more brittle than comparable tools made from tool steel or high speed steel tools. They are available in 8 different configurations and tip sizes of 0.25, 0.50mm and 1mm. The Micro-Tool tips are mounted in anodized tool cones. All carbide Micro-Tools fit the Micro-Tool handle (sold separately).

Carbide Tip Directory			Shank Diameter / Product Numbers		
# Tip Style	Micro-Tool	Description	0.25mm (0.010")	0.50mm (0.020")	1.0mm (0.040")
1		Micro-Needle, Long, Carbide	13701	13701A	13701B
2		Micro-Engraver, Triangular, Carbide	13702	13702A	13702B
3		Micro-Chisel, Carbide	13703	13703A	13704B
4		Micro-Spade, Carbide	13704	13704A	13704B
8		Micro-Knife, 20°, Carbide	13708	13708A	13708B
9		Micro-Knife, 45°, Carbide	13709	13709A	13709B
13		Micro-Engraver, Oval, Carbide	13705	13705A	13705B
21		Micro-Scraper, Triangular, Carbide	13706	13706A	13706B

Ordering Information

Available Handles and Storage Case

- 13600** Micro-Tool Handle, 120mm (4.75") long, light weight, anodized aluminumeach
- 13675** Micro-Tool Handle, 120mm (4.75") long, Stainless Steeleach
- 13640** Micro-Tool hardwood storage case for 8 tips and handleeach

Carbide Tip Ordering Information

- 13701** Micro-Needle, Long 0.25mm (0.005"), Carbideeach
- 13701A** Micro-Needle, Long, 0.50mm (0.010"), Carbideeach
- 13701B** Micro-Needle, Long, 0.40mm (0.016"), Carbideeach
- 13702** Micro-Engraver, Triangular, Carbide, 0.25mm (0.010")each
- 13702A** Micro-Engraver, Triangular, Carbide, 0.50mm (0.020")each
- 13702B** Micro-Engraver, Triangular, Carbide, 1.0mm (0.040")each
- 13703** Micro-Chisel, Carbide, 0.25mm (0.010") . . .each
- 13703A** Micro-Chisel, Carbide, 0.50mm (0.020") . . .each
- 13703B** Micro-Chisel, Carbide, 1.0mm (0.040") . . .each
- 13704** Micro-Spade, Carbide, 0.25mm (0.010") . . .each

- 13704A** Micro-Spade, Carbide, 0.50mm (0.020") . . .each
- 13704B** Micro-Spade, Carbide, 1.0mm (0.040") . . .each
- 13708** Micro-Knife, 20°, Carbide, 0.25mm (0.010") each
- 13708A** Micro-Knife, 20°, Carbide, 0.50mm (0.020") each
- 13708B** Micro-Knife, 20°, Carbide, 1.0mm (0.040") each
- 13709** Micro-Knife, 45°, Carbide, 0.25mm (0.010") each
- 13709A** Micro-Knife, 45°, Carbide, 0.50mm (0.020") each
- 13709B** Micro-Knife, 45°, Carbide, 1.0mm (0.040") each
- 13705** Micro-Engraver, Oval, Carbide, 0.25mm (0.010")each
- 13705A** Micro-Engraver, Oval, Carbide, 0.50mm (0.020")each
- 13705B** Micro-Engraver, Oval, Carbide, 1.0mm (0.040")each
- 13706** Micro-Scraper, Triangular, Carbide, 0.25mm (0.010")each
- 13706A** Micro-Scraper, Triangular, Carbide, 0.50mm (0.020")each
- 13706B** Micro-Scraper, Triangular, Carbide, 1.0mm (0.040")each

Note: The last dimension on Tip Ordering Information is the Shank Diameter.

MICRO-TOOLS

Carbide Tips; Hardened Steel Tips

■ Micro-Tool Set with Carbide Cutting Tools



The precision Micro-Cutting Tools with carbide tips are also available in a standard set, safely stored in a convenient hardwood case. The Micro-Cutting Tools in the standard set include 8 tips in anodized aluminum holders with

0.50mm (0.020") shank size, anodized aluminum Micro-Tool handle and hardwood case.

Note: Individual tips may be ordered on previous page.

Tips Included:

Tip #	Micro-Tool	Description	0.50mm (0.020")
1		Micro-Needle, Long, Carbide	13701A
2		Micro-Engraver, Triangular, Carbide	13702A
3		Micro-Chisel, Carbide	13703A
4		Micro-Spade, Carbide	13704A
8		Micro-Knife, 20°, Carbide	13708A
9		Micro-Knife, 45°, Carbide	13709A
13		Micro-Engraver, Oval, Carbide	13705A
21		Micro-Scraper, Triangular, Carbide	13706A

13700 Micro-Tool Carbide Cutting Tools Set, completeeach

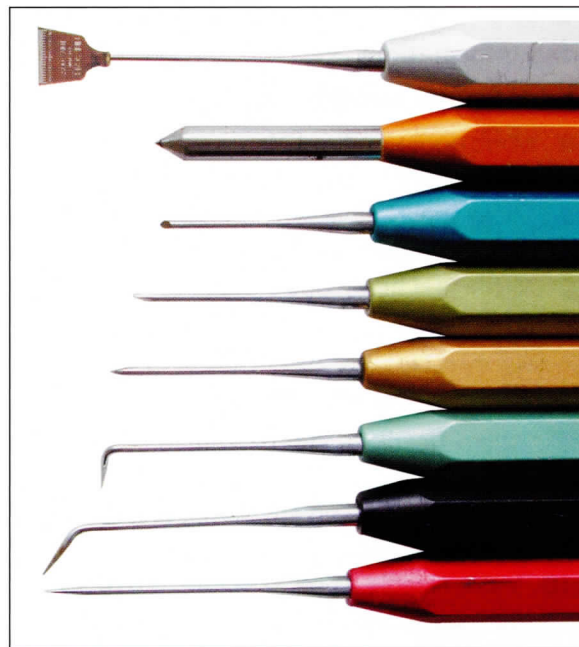
Technician Sets with Hardened Tool Steel Tips

■ Technician Microtool Set



with non-inter-changeable Tips

This set contains eight tool tips with integrated, color-coded handles that are light-weight, non-rolling and well balanced. The overall tool length is approximately 127mm (5"). Tip size is 0.89mm (0.030") and the material is oil-hardened tool steel, nickel-plated.



The entire set, from top to bottom:

Micro Measuring Scale; Micro Diamond Scribe; Micro-Graver; Micro-Knife; Micro-Chisel; 90° Micro-Probe; 30° Micro-Probe; Straight Micro-Probe.

54440 Technician Set, complete with 8 tools and Storage Caseeach

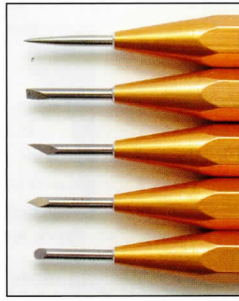
■ Precision Cutting Set

5-piece set with the following specifications. Tip material is hardened steel.

The tip size is 1.6mm by 12.7mm long (0.063" x 0.5"). The overall length of the tool is about 124mm (4.88").

Set contains from top to bottom: Scriber; Chisel; Knife; Triangular Scraper; Oval Graver

Note: An excellent tool for sharpening microtools is the Tweezer Repair Kit, Prod. No. 54528.



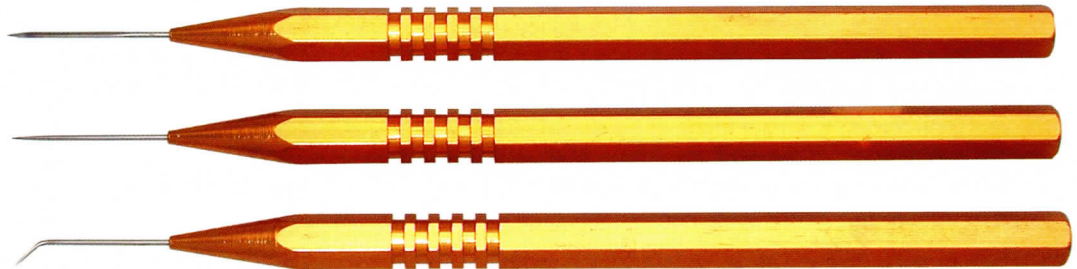
54444 Precision Cutting Set, complete with 5 Tools, in Plastic Caseeach

■ Tinitool Set

nickel-plated hardened steel tips

The tip size is 0.8mm by 25mm long (0.03" x 1"). The overall length of the tool is about 140mm (5.5").

This set consists of three different tools, top to bottom: Straight, Sharp Scriber; Sharp Triangular Scraper; Bent Probe with Sharp Tip



54442 Tinitool Set, complete with 3 Toolseach

54442-11 Straight Scriber with sharp tipeach

54442-12 Sharp Triangular Scrapereach

54442-13 Bent Probe with sharp tipeach

■ Sets with Interchangeable Tips:

set includes precision vise handle, 6 interchangeable tips (see table) and plastic storage case



Tip #	Micro-Tool	Description	0.10mm (0.040")
1		Micro-Needle, Long,	13601
3		Micro-Chisel	13603
8		Micro-Knife, 20°	13608
9		Micro-Knife, 45°	13609
13		Micro-Engraver, Oval	13611
15		Micro-Diamond Scribe	13615

The heavy duty Micro-Tools are made from fine grain high speed steel and are designed for application where extra strength is required but without sacrificing the precision of a true Micro-Tool. They are durable and strong Micro-Tools. The interchangeable tool tips are available in 1mm (.040") tip diameter only and fit the PV-081 precision vise handle.

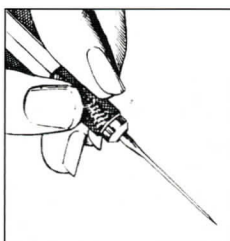
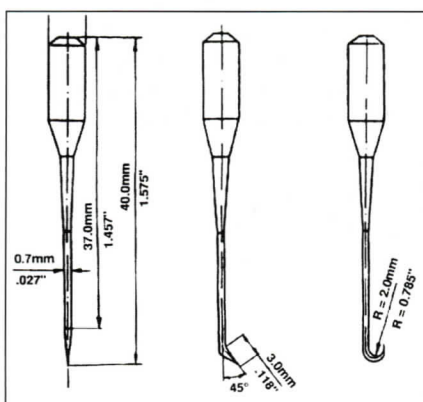
The tips can also be ordered separately.

13710 Heavy Duty Micro-Tool set, complete with 6 Tools, in Plastic Caseeach

MICRO-TOOLS

Needle Probe Set; Measuring Scales; Optical Fiber Cleaving Tools

■ Needle Probe Set with Interchangeable Tips



The set includes one lightweight, precision handle and four interchangeable hardened steel tools for manipulating, scribing, spring assembly and probing. The precision handle is finely balanced, non-

rolling, gold color anodized with a split collet mounting and knurled lock nut. Length is 120mm (4.7").

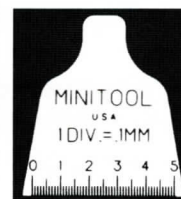
The precision forged tools are made of hardened nickel-plated tool steel, 40mm (1.575") long with a 2mm (0.0785") diameter shank reduced to a 0.7mm (0.027") diameter. All tools are tapered to a sharp tip. Plastic container.

- 13650** Needle Probe Set, 4 tools and 1 handle
in a plastic boxeach
- 13651** Needle Probe Handleeach
- 13652** Straight Probereach
- 13653** Bent Probereach
- 13655** Hook, 180°each

■ Miniature Measuring Scales and Ruler



Prod. No. 13636



Prod. No. 13623

These unique measuring scales and ruler may be used directly under a microscope or magnifier for rapid measuring of small parts, grooves, slots, line widths, holes, and chamfers. Precision fabricated from etched

stainless steel, the scales and ruler are spot welded to bendable stainless steel shafts and mounted in anodized aluminum, non-rolling handles. Each scale or ruler is individually packaged in a plastic enclosure. Overall length is 83mm (3-1/4").



Prod. No. 13635



- 13636** 0.200" Scale, with Handle
(calibrated to 0.005")each
- 13623** 5mm Scale, with Handle
(calibrated to 0.1mm, 5mm range)each
- 13635** Micro-Ruler, 10mm, with Handle
(calibrated to 0.1mm, 10mm range)each

■ Optical Fiber Cleaving Tools

the precision hand-held instruments can be used for scoring and cleaving all types of optical fiber

The Retractable Diamond cleaver is retained in a quality metal casing with pocket clasp. Ground and polished natural diamond has a 90° included angle with a relief angle of 30°.

The carbide cleaver is made from a solid carbide rod. It has two angled sides that intersect into a very sharp cutting edge of about 4mm in length. A third angle is lapped on the very tip to prevent breakage. Carbide is mounted into a non-rolling hexagon shaped anodized aluminum holder.

Specifications:

54452-2 (diamond) 1.5 x 3mm (0.06 x 0.12") Overall Length, 133mm (5-1/4")

54452-4 (carbide) 2.0 x 10mm (0.08 x 0.4") Overall Length, 120mm (4-3/4")



Prod. No. 54452-2 Tip Detail



- 54452-2** Optical Fiber Cleaver, Diamondeach



- 54452-4** Optical Fiber Cleaver, carbideeach

■ High Precision Diamond Scribing Tools



handle with eight replaceable, threaded tips and a hardwood storage case

These professional scribing tools are used in the electronics industry for scribing of delicate components or any other scribing tasks calling for precision work. All scribing tools have hardness-oriented, quality, industrial diamonds for outstanding performance. A 60° included angle is standard. Diamond configuration: all diamond bases are 0.25mm (.01") diameter with a final tip radius of 5µm. Depth of diamond (tip to base) is 0.15mm (.006").

Note: Tools are available in straight or bent tip configuration with a variety of shaft diameters and tip lengths but the actual diamonds are consistent in size.

Wood box contains one each of all the tips offered (see below for details).

54410 Diamond Scribe Seteach



Prod. No. 13636 Handle with 54413 Tip (1:1)

Diamond Tips



54411 Tool Handle, 4.75" (120mm) long, light weight, anodized aluminumeach



54412 Shaft: 0.81mm (.032") dia.; Tip: 0.50mm (.020") dia. x 1.5mm (.060") lengtheach



54413 Shaft: 0.81mm (.032") dia., 30° angle; Tip: 0.50mm (.020") dia. x 1.5mm (.060") lengtheach



54414 Shaft: 0.81mm (.032") dia.; Fine Tip: 0.25mm (.010") dia. x 1.5mm (.060") lengtheach



54415 Shaft: 0.81mm (.032") dia., 30° angle; Fine Tip: 0.25mm (.010") dia. x 1.5mm (.060") lengtheach



54416 Shaft: 0.81mm (.032") dia.; Tip: 0.50mm (.020") dia. x 5mm (.200") lengtheach
Useful for reaching into and in between high density components.



54417 Shaft: 0.81mm (.032") dia.; 30° angle, Tip: 0.50mm (.020") dia. x 5mm (.200") lengtheach
Useful for reaching into tight places.



54418 Heavy Duty Shaft: 1.27mm (.050") dia.; Tip: 0.84mm (.033") dia. x 3.18mm (.125") lengtheach



54419 Heavy Duty Shaft: 1.27mm (.050") dia.; 30° angle, Tip: 0.84mm (.033") dia. x 3.18mm (.125")each

■ Fine Point Diamond Scriber (Straight or Bent)

Applications include scribing under a microscope, precision scribing and repairing thin film circuits, micro circuits, small circuit boards or integrated circuits. This fine point scribe (0.005" radius) may also be used to clean or trim circuits or break or build up new lines. Overall length is 120mm (4.72") and the diamond has a 60° included angle. Tip shaft diameters are 0.8mm (1/16") x 8mm (5/16") long.



54466 Fine Point Diamond Scriber, Straighteach



54467 Fine Point Diamond Scriber, Bent 30°each

MICRO-TOOLS

Diamond Scribing Tools

■ Hexagonal Aluminum Handles with Polished Diamond Tips

These general purpose scribing tools are suited to a wide range of industrial and laboratory use. Each of these high-quality hand-held tools is equipped with a polished quality industrial diamond that is vacuum bonded to a 1.57mm (.062") dia. steel tip shaft. Scribes create fine lines in a wide range of materials, from metals to silicon to plastics to glass.

The unique high-precision tips of these scribes allow greater accessibility to smaller work areas and make it possible to continuously view what is being scribed. They are ideal for applications that require very low tolerances.



54482 Diamond Scribe Head Angle: 30°; Diamond Tip Included Angle: 60°; Overall Length: 13.2cm (5.19")each



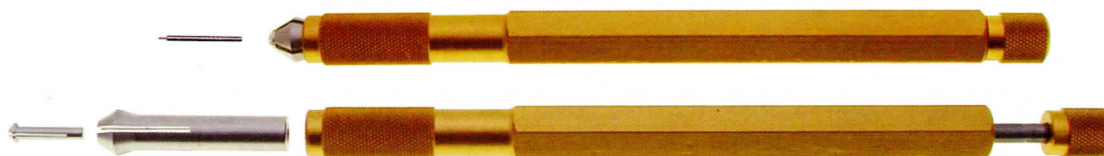
54483 Diamond Scribe Head Angle: 30°; Diamond Tip Included Angle: 90°; Overall Length: 17cm (6.69")each



54484 Diamond Scribe Head: Straight; Diamond Tip Included Angle: 90°; Overall Length: 17.1cm (6.75")each

■ High Precision Pin Vise Handle for Precision Ground Diamond Scribes

This high precision pin vise handle is machined from the finest material. It is light weight and versatile, with



a precision drawbar for positive collet chuck clamping. The 8mm (.31") wide hexagonal barrel dimension by 100mm (4") long, overall length is 115mm (4.53") fully assembled; has a knurled finger grip for positive precision control in handling and tool manipulation. Supplied with a standard collet chuck bore diameter 2mm (.078") and collet adapter bore diameter .8mm (.030") for diamond stylus chucking (diamond stylus is shown in photo above but must be ordered separately, see 13663 and 13664 below).

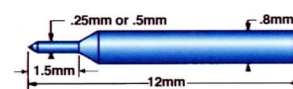
13662 Precision Pin Vise Handleeach

■ Precision Ground Diamond Scribes

(fits handle above) 60° included angle, 0.25mm and 0.5mm tip diameters each with a 0.8mm dia. mounting shaft. Tip radius 0.0005" (0.013mm).

13663 Diamond Scribe, 0.25mm tip dia.each

13664 Diamond Scribe, 0.5mm tip dia.each



■ Deluxe Diamond Scribing Pen

High-quality precision diamond scribing tool in a durable chromium pen housing. Screw-type precision mechanism works smoothly and diamond



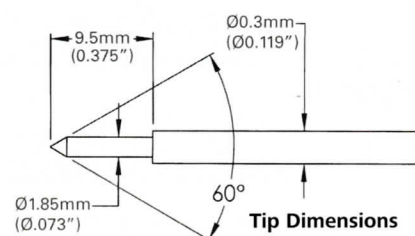
mounting (quality industrial diamond tip) is firmly affixed when exposed; no wobble. Twist-type barrel exposes or retracts diamond tip. Refills available. Diamond is ground and lapped to a 60° included angle. Overall length is 133mm, weight is 26 grams.

54468 Deluxe Diamond Scribing Peneach

54469 Diamond Refilleach



Prod. No. 54469, Refill



■ 3M™ Diamond Scriber



Plastic pen-like handle with steel shaft; diamond tip. Marks

glass slides, scribes metal, scores for breaking glass, and glass knives. Tip included angle: 90°; Shaft diameter: 3.15mm (.124"); Shaft length from handle, with diamond: 5.9mm (.232"); Diamond diameter, exposed: 1.14mm (.045"); Diamond length, exposed: .86mm (.034"); Overall length, without cap: 155.6mm (6.125").



54463 3M™ Diamond Scribereach

■ Glascribe®

Clips to pocket like a ballpoint pen. Retractable tungsten carbide tip to scribe on glass, ceramics and plastics. Tip included angle: 40°; Shaft diameter: 1.55mm (.061"); Tip length (angled area): 2.13mm (.084"); Shaft length from pen body: 4.24mm (.167"); Overall length 133mm (5-1/4").



829 Glascribe® Tungsten Carbide Scribereach

■ Sapphire Burnishing Tool

outperforms any stone for finest burnishing



The new Sapphire Burnishing Tool is indispensable for delicate burnishing of fine instrument parts such as miniature pivot points, shafting and probes. Materials can be hard steel, carbide, glass and ceramics. It may also be used for deburring of soft and hard materials.

The precision ground sapphire (ground on all 5 exposed surfaces) is mounted in a non-rolling (the tool won't roll off the bench) hexagonal gold anodized aluminum holder. It is sold in a plastic storage and shipping container, one tool per container.

Specifications: Material: Ground Sapphire; Sapphire Dimensions: 1.5 x 2.3 x 14mm exposed sapphire (0.06 x 0.09 x 0.56")

Mounting: Structural Epoxy; Overall Length: 120mm (4.72")

54446 Sapphire Burnishing Tooleach

■ Micro Picks



Stainless Steel, for dissecting, manipulating, or holding small tissues or objects, wooden handle, needle diameter 0.63mm (.025").

13531 Micro Pick, angled, 19.0cm Leach



13532 Micro Pick, straight 18.4cm Leach

■ Micro Eyelash



enlarged view



A carefully selected No. 1 Superfine Eyelash is attached to a fine wooden handle for delicate manipulation of ultra-thin sections in the knife boat of an ultramicrotome or wherever delicate teasing or manipulation is required. These special eyelashes are chosen due to their taper and strength and make an excellent addition to your dissection tools.

113 No. 1 Superfine Eyelasheach