

Orange Sticks

Double Beveled Ends (7" x 5/32")

Beau Tech orange sticks are made of high quality non-resin wood which will not contaminate solder and component leads. Natural wood is among the best material that does not generate static charge, thus is safe to use in any ESD sensitive area. They are effective, yet inexpensive tools coming in packages of 100.



Package of 100

Applications

- Use to position and hold Through-Hole and Surface Mount components for soldering and desoldering.
- Use to bend component leads.
- Use to guide wire on the board.
- Use to break solder bridges.
- Use to probe for loose components.

Order Number: SH-83 (Package of 100)

Vacuum Handling Tools

Practical LP20™ Handling Tool

- Price competitive (least expensive handling tool).
- Perfect tool for handling small devices.
- Measuring less than 2-1/2" (without needle).
- Will lift up to 500 grams securely.
- Will accept all the same needle and suction cups from larger handling tools.
- Includes 1 angled needle with 1/4" suction cup and 1 straight needle with 1/8" suction cup.
- Static-safe and economical.

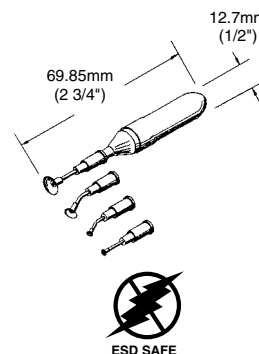
Order Number: LP20



Practical Handi-Vac® Vacuum Handling Tool

- An inexpensive tool that no assembler should be without.
- Good for handling surface mount components.
- Selection of four probes with vacuum cups. Includes one 1/4" cup, one 3/8" cup and two 1/8" cups.
- ESD safe with antistat treatment.
- Vacuum-cup rubber is ESD safe.
- Easily handles up to 3-ounce objects.
- No batteries to replace.
- Totally self-contained vacuum.
- Can be included in all of your tool kits.
- Cups can be mounted directly to tool.
- Replaces tweezers for many applications.
- Made in the U.S.A.

Order Number: HV-KIT-ESD



Practical LP200™ Handling Tool

- No batteries to replace.
- Fits in your pocket like a pen.
- Perfect for handling surface mount components.
- Vacuum cup rubber is ESD safe.
- No vacuum hoses or power cords to get in your way.
- Includes 3 angled needles with 1/4", 3/8" and 1/8" cup.
- Made in the USA.

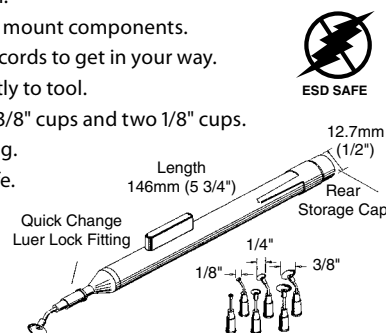
Order Number: LP200



Practical Pen-Vac® Vacuum Handling Tool

- Fits in your pocket like a pen.
- Perfect for handling surface mount components.
- No vacuum hoses or power cords to get in your way.
- Cups can be mounted directly to tool.
- Includes two 1/4" cups, two 3/8" cups and two 1/8" cups.
- Quick change luer lock fitting.
- Vacuum-cup rubber ESD safe.
- No batteries to replace.
- Blue aluminum body.
- Lifts up to 500 grams.
- Has rear storage cap.
- Made in the U.S.A.

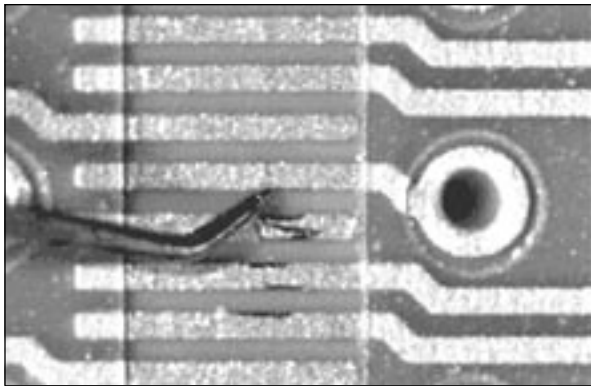
Order Number: V8901-LMS-ESD



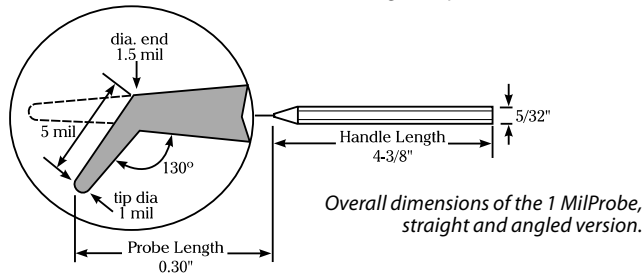
Tools for the Latest Developments in Component and Assembly Technologies

1 MilProbes for Ultra Fine Pitch Rework—BGA, Flip Chip, TAB, COB, etc.

The RocHard 1 MilProbe is a 0.3" long Micro-tip in a 4 3/8" long hex shape stainless steel handle. The Micro-tip is tapered to a one mil diameter tip for TAB, BGA, and other ultra fine pitch rework. The tip is either straight (SH-341) or 50° angled at 5 mil from the point (SH-316). The different tip geometry allows the tips to reach between all circuit leads and traces under a microscope.



1 MilProbe (SH-316) cleaning 3 mil pitch TAB substrate.



Overall dimensions of the 1 MilProbe, straight and angled version.

- Available Models:** SH-316 (50° Angled)
SH-341 (Straight)
SH-322 (Kit including both SH-316 and SH-341)

- The probe tip is strong and long lasting since it is made of special, proprietary alloy to achieve maximum strength.
- The hex shape stainless steel handle provides a easy grasp of the tool when operating under a microscope. It also prevents the tool from rolling on the work bench.
- To further increase the comfort of using the tool, a foam sleeve that goes onto the handle is available as an optional part.
- The 1 MilProbe comes with a protection cap and a vinyl pouch. The cap keeps the tip from damage and keeps the operator from injury. The pouch provides additional protection to the tip and provides a convenient way of storing and carrying the 1 MilProbe.

MilProbe Selection Guide

A = 1 MilProbes, B = 10 MilProbes, C = 25 MilProbes

Application	Pitch Size					
	2-10 mil	10-15 mil	15-25 mil	25-30 mil	30+ mil	Through-Hole
Testing Solder Joint & Wire Bonding Strength	A	A, B	B	B, C	C	C
Straightening Leads & Wires	A	A, B	B	B, C	C	C
Cleaning Leads & Traces	A	A	B	B	C	C
Applying Epoxy	A	A	B	B	C	C

The new inspection mirror meets clean room requirements yet is sufficiently economical for non-clean room.

Soldering Aid Kits

These Beau Tech kits contain the most popular tools. The vinyl cases keep the tools clean, handy, and safe from damage. The clear vinyl front allows easy selection of the tool to be used. The kits will also keep your bench more organized. Selection of a kit denotes a true crafts person and seeker of value.

Two-Piece Fine Pitch RocHard 10 MilProbe Kit

Kit Contents

- SH-241, 10 MilProbe
- SH-216, 10 MilProbe
- Teflon Tip Protectors
- Vinyl Case

Order Number: SH-222
(Minimum Order: 1)



Four-Piece TH/SMT RocHard 25 MilProbe Kit

Kit Contents

- SH-116, 25 MilProbe
- SH-117, 25 MilProbe
- SH-123, 25 MilProbe
- SH-141, 25 MilProbe
- Vinyl Case

Order Number: SH-125
(Minimum Order: 1)



Six-Piece Standard/Miniature Soldering Aid Kit

Kit Contents

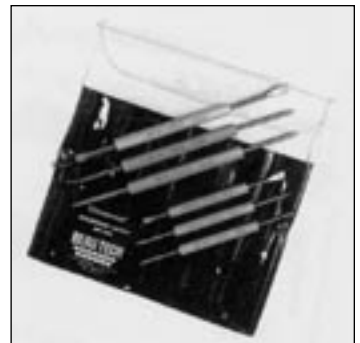
Standard Aids

- SH-20A Straight Flat Reamer/ Straight Fork Tip
- SH-20B Angled Flat Reamer Reamer/Straight Fork Tip
- SH-20K Stainless Steel Brush/ Beveled Scraper Blade

Miniature Aids

- SH-20C Straight Flat Reamer/ Straight Fork Tip
- SH-20D Angled Flat Reamer Reamer/Straight Fork Tip
- SH-20G Stainless Steel Brush/Beveled Scraper Blade
- Vinyl Case

Order Number: SH-120 (Minimum Order: 1)



Flextac™ BGA Rework Stencil Kit



Flextac™ BGA Rework Stencil Kit includes 20 different sizes of BGA rework stencils, a spatula handle and three sizes of spatula blades. There are a total of 40 stencils in kit (2 stencils per type). Replacement blades are available (see tool kit list for order number).

If you've been using metal stencils for BGA rework, we have some great news for you. Flextac™ BGA Rework Stencils...a creative new product that is a major improvement over what you may be using now. These flexible solder paste stencils are laser cut from high quality, anti-static polymer film with a residue-free adhesive backing. Because they are self-sticking, no tape or fixturing is needed. The adhesive seals around each BGA pad to prevent solder paste from bleeding under the stencil when the paste is applied. Flextac™ Stencils are easy to use and leave no residue on the board surface.

Current BGA rework stencils are fabricated from metal and require fixturing or taping to position them and hold them in place. Metal stencils warp easily, and if the circuit board has undulations in the board surface, the metal stencil will not sit flat. Since there is no gasket-like seal, solder paste can easily bleed under metal stencils when paste is applied with a squeegee. Also solder paste can spill out over the sides of flat metal stencils contaminating the circuit board surface. Metal stencils require tedious stencil cleaning. To use metal stencils effectively, a high level of operator skill is required.

To use, the operator folds the pre-scored side tabs and then peels off the cover film from the bottom side of the stencil. The operator holds the side tabs while placing the Flextac™ Stencil in position. If it is not correctly positioned, it can simply be removed and repositioned. The side tabs also serve as solder dams preventing overspill. No external taping or fixturing is used. Next the operator applies a small dab of solder paste and uses a standard squeegee to spread the paste. Since the residue-free adhesive seals around each BGA pad, the operator can make as many passes as necessary with the squeegee to assure proper aperture filling. The Flextac™ Stencil is then peeled up leaving a perfect deposit of solder on each pad. Although Flextac™ Stencils are disposable, they can be used several times.

Application

- Applying solder paste for BGA rework.

Features and Benefits

- Residue-free adhesive backing seals around BGA pads to prevent solder paste bleed.
- Laser cut ensures precise aperture size.
- Disposable—eliminates tedious stencil cleaning.
- Flexible—conforms to board surface.
- Fold-up sides for easy placement and solder paste containment.
- Low cost.
- Packaged in a handy ESD safe carrying case

Kit Part Number	Description
201-3120	Flextac™ BGA Rework Stencil Kit

Note

- Custom pattern stencils are available as special order with up to 2,600 holes per stencil. Please call Practical for quotation.

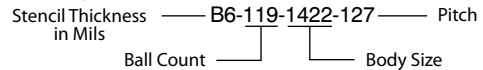


Flextac™ BGA Rework Stencil Kit

Flextac™ BGA Rework Stencil Kits—each kit includes 2 stencils per ball count

Part Number	PBGA Ball Count	Body Size	Pitch	Aperture Size	Ball Pattern (matrix)
B6-119-1422-127	119	14 x 22mm	1.27mm	.020" (0.508mm)	7 x 17 Full Array
B4-196-1515-100	196	15mm	1.0mm	.020" (0.508mm)	14 x 14 Full Array
B6-225-2727-150	225	27mm	1.5mm	.025" (0.635mm)	15 x 15 Full Array
B4-256-1717-100	256	17mm	1.0mm	.020" (0.508mm)	16 x 16 Full Array
B8-256-2121-127	256	21mm	1.27mm	.032" (0.813mm)	16 x 16 Full Array
B6-256-2727-127	256	27mm	1.27mm	.025" (0.635mm)	20 x 20 P4-Row
B6-272-2727-127	272	27mm	1.27mm	.025" (0.635mm)	20 x 20 P4-Row + 4x4 center
B6-292-2727-127	292	27mm	1.27mm	.025" (0.635mm)	20 x 20 P4-Row + 6x6 center
B8-304-2125-127	304	21 x 25mm	1.27mm	.032" (0.813mm)	16 x 19 Full Array
B4-324-2323-100	324	23mm	1.0mm	.020" (0.508mm)	22 x 22 P4-Row + 6x6 center
B6-352-3535-127	352	35mm	1.27mm	.025" (0.635mm)	26 x 26 P4-Row
B6-357-2525-127	357	25mm	1.27mm	.025" (0.635mm)	19 x 19 Full Array
B8-361-2525-127	361	25mm	1.27mm	.032" (0.813mm)	19 x 19 Full Array
B6-388-3535-127	388	35mm	1.27mm	.025" (0.635mm)	26 x 26 P4-Row + 6x6 center
B6-432-4040-127	432	40mm	1.27mm	.025" (0.635mm)	31 x 31 P4-Row
B4-484-2323-100	484	23mm	1.0mm	.020" (0.508mm)	22 x 22 Full Array
B6-560-4242-127	560	42.5mm	1.27mm	.025" (0.635mm)	33 x 33 P5-Row
B8-625-3232-127	625	32.5mm	1.27mm	.032" (0.813mm)	25 x 25 Full Array
B4-672-2727-100	672	27mm	1.0mm	.020" (0.508mm)	26 x 26 Full Array
B4-676-2727-100	676	27mm	1.0mm	.020" (0.508mm)	26 x 26 Full Array

Part Number System



Hand tools included in kit

Part Number	Description
115-3514	Spatula (1 piece)
115-3502	Squeegee Blade Handle (1 piece)
115-3504	Squeegee Blade—12mm (1 piece)
115-3506	Squeegee Blade—27mm (1 piece)
115-3508	Squeegee Blade—35mm (1 piece)

Other PBGA stencils available (not included in kit)

Each item includes set of 10 stencils which depends on part number

Part Number	PBGA Ball Count	Body Size	Pitch	Aperture Size	Ball Pattern (matrix)
B6-208-2323-127	208	23mm	1.27mm	.025" (0.635mm)	17 x 17 P4-Row
B6-241-2323-127	241	23mm	1.27mm	.025" (0.635mm)	17 x 17 P5-Row + 3x3 center
B4-324-1919-100	324	19mm	1.0mm	.020" (0.508mm)	18 x 18 Full Array
B6-420-3535-127	420	35mm	1.27mm	.025" (0.635mm)	26 x 26 P5-Row
B8-475-2532-127	475	25 x 32mm	1.27mm	.030" (0.762mm)	19 x 25 Full Array
B6-540-4242-127	540	42.5mm	1.27mm	.025" (0.635mm)	32 x 32 P5-Row
B6-552-2525-100	552	25mm	1.0mm	.025" (0.635mm)	24 x 24 Full Array
B8-624-3232-127	624	32.5mm	1.27mm	.032" (0.813mm)	25 x 25 Full Array
B4-1156-3535-100	1,156	35mm	1.0mm	.020" (0.508mm)	34 x 34 Full Array

Practical BGA Reballing Kit **PRACTICAL** COMPONENTS

The Practical BGA Reballing Kit features patented stencils and holder to manually rework BGA components to original condition. Restore costly BGAs to original condition using hot air rework stations or tools. Simply squeeze on flux, pour on solder balls and rework with hot air!

Stencils and holders are available separately, so you can purchase only the stencils and stencil holders you need. All the standard stencils and holders are available as a kit for one of the easiest and least expensive BGA repair solutions.

BGA-Holder	Stencil	Ball Matrix	Body Size (mm)	Pitch (mm)	
BGA5	BGA64	8 x 8	5 x 5	0.50	
	BGA81	9 x 9	5 x 5	0.50	
BGA10	BGA144	12 x 12	10 x 10	0.80	
BGA11	BGA297	21 x 21	11 x 11	0.50	
BGA12	BGA144	13 x 13	12 x 12	0.80	
	BGA192	16 x 16	12 x 12	0.80	
	BGA144	12 x 12	12 x 12	0.80	
	BGA196	14 x 14	12 x 12	0.80	
BGA121	BGA121	11 x 11	12 x 12	1.00	
	BGA180	16 x 16	14 x 14	0.80	
BGA14	BGA134	16 x 16	14 x 14	0.80	
	BGA289	17 x 17	14 x 14	0.80	
	BGA169	13 x 13	14 x 14	1.00	
	BGA100	10 x 10	14 x 14	1.27	
	BGA180	18 x 18	15 x 15	0.80	
BGA208	BGA208	17 x 17	15 x 15	0.80	
	BGA256	18 x 18	15 x 15	0.80	
BGA156	BGA156	14 x 14	15 x 15	1.00	
	BGA196	14 x 14	15 x 15	1.00	
	BGA160	14 x 14	15 x 15	1.00	
	BGA324	18 x 18	15 x 15	0.80	
	BGA121	11 x 11	15 x 15	1.27	
	BGA16	BGA216	18 x 18	16 x 16	0.80
		BGA324	18 x 18	16 x 16	0.80
BGA257		19 x 19	16 x 16	0.80	
BGA257		19 x 19	16 x 16	0.80	
BGA257		19 x 19	16 x 16	0.80	
BGA361		19 x 19	16 x 16	0.80	
BGA225		15 x 15	16 x 16	1.00	
BGA144		12 x 12	16 x 16	1.27	
BGA17	BGA256	16 x 16	17 x 17	1.00	
	BGA208	16 x 16	17 x 17	1.00	
	BGA225	15 x 15	17 x 17	1.00	
	BGA441	21 x 21	17 x 17	0.80	
	BGA169	13 x 13	17 x 17	1.27	
BGA208	BGA208	16 x 16	17 x 17	1.00	
	BGA384	22 x 22	18 x 18	0.80	
BGA18	BGA484	22 x 22	18 x 18	0.80	
	BGA289	17 x 17	18 x 18	1.00	
	BGA196	14 x 14	18 x 18	1.27	
	BGA169	13 x 13	19 x 19	1.27	
BGA196	BGA196	14 x 14	19 x 19	1.27	
	BGA225	15 x 15	19 x 19	1.27	
	BGA121	11 x 11	19 x 19	1.50	
	BGA144	12 x 12	19 x 19	1.50	
	BGA324	18 x 18	19 x 19	1.00	
	BGA260	18 x 18	19 x 19	1.00	
	BGA529	23 x 23	19 x 19	0.80	
BGA21	BGA225	15 x 15	21 x 21	1.27	
	BGA256	16 x 16	21 x 21	1.27	
	BGA169	13 x 13	21 x 21	1.50	
	BGA196	14 x 14	21 x 21	1.50	



BGA-Holder	Stencil	Ball Matrix	Body Size (mm)	Pitch (mm)
BGA220	BGA220	20 x 20	21 x 21	1.00
	BGA255	16 x 16	21 x 21	1.27
	BGA400	20 x 20	21 x 21	1.00
	BGA676	26 x 26	21 x 21	0.80
	BGA208	17 x 17	23 x 23	1.27
BGA217	BGA217	17 x 17	23 x 23	1.27
	BGA225	15 x 15	23 x 23	1.27
	BGA289	17 x 17	23 x 23	1.27
	BGA324	18 x 18	23 x 23	1.27
	BGA196	14 x 14	23 x 23	1.50
	BGA225	15 x 15	23 x 23	1.50
	BGA256	16 x 16	23 x 23	1.27
	BGA324	22 x 22	23 x 23	1.00
	BGA240	17 x 17	23 x 23	1.27
	BGA376	22 x 22	23 x 23	1.00
	BGA456	22 x 22	23 x 23	1.00
	BGA484	22 x 22	23 x 23	1.00
BGA168	BGA168	17 x 17	23 x 23	1.27
	BGA784	28 x 28	23 x 23	0.80
	BGA548	26 x 26	23 x 23	0.80