

# Outfit Your Printer with Precision Parmalex Metal Edge Squeegees

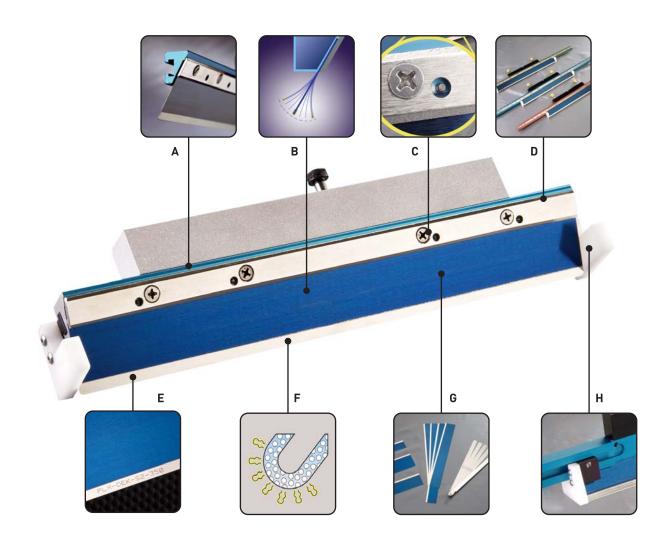
# **Squeegee Holders**



#### Maximize your micro-electronics printing results

Transition's patented universal holder design gives you outstanding functionality, ergonomics and choices that enable you to achieve greater performance and profitability on your SMT line.

- **A.** Lightweight, low profile holders reduce paste sticking and handling damage
- **B.** Spring steel base metal assures many thousands of flexures without failure
- C. Accurate blade referencing insures your setup quality
- D. Color choice add visual ergonomics and helps you segregate materials
- **E.** Permanent product ID helps you to track and repeat your high quality processes
- **F.** The permalex Infused teflon edge reduces friction and wear-keeping your squeegees and stencils in top condition
- **G.** Adjust blade thickness and/or angle easily with product codes for intrusive paste in hole or other special applications
- **H.** Sliding paste retainers enable you to reconfigure these advanced holders for smaller/larger squeegee sizes saving time, money and storage space



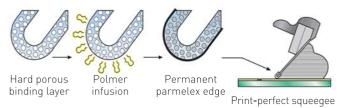


Your electronics production process, your end products and your people are valuable resources. Many leading companies worldwide choose Permalex brand squeegees to maximize these investments and avoid costly machine down-time, lost product quality, and "consumable" purchase cycles.

# Permalex Squeegees Maximize Results by Way of

#### Blade technology for long duty cycles

Permalex is a multi-step metallurgical bonding process that produces a smooth, durable metal squeegee with a hard, low-friction edge designed to prevent stencil wear. Permalex edge metal squeegees contain a unique base alloy and our special Permalex coating to provide superior performance.





Tempered spring steel alloy assures many thousands of flexures while maintaining original shape, unlike softer etched blades made from stencil material.



#### · Holder technology light weight and strong patented holders

The lightweight design eliminates most handling dents and dings; unique reference window insures accurate blade installation.

Add codes shown to end of any catalog part no. codes and descripton



#### **RED, GREEN, SILVER:**

Add these codes to any universal squeegee holder assebly or hand squeegee used to segregate materials / lines.



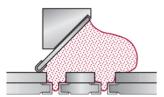
#### 0.006, 0.007, 0.008, 0.012:

Add this code to change the blade thickness from the standard 0.010; thinner for more delicate printing, thicker for faster and tougher printing.

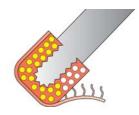


#### WH:

Use this code to have the proprietary Permalex coating applied to the entire squeegee blade. Prevents corrosion-but may shorten blade life.



Add this code to specify a different angle between the squeegee blade and the stencil. Normal angle is 60 degrees (no code). For example, if you add-A45, the squeegee will be set to form a 45 degree angle with the stencil.



#### SE "Sharp egde":

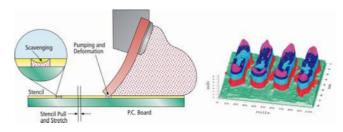
Add this code for more delicate printing and better wiping. Normal 4mil radius of standard Permalex is reduced to approximately 2 mils.

Note: For blade thickness <0.010 sharp edge is standard.

#### Advantages Over Rubber Squeegees

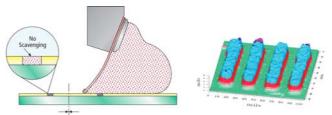
#### Rubber vs. metal

The diagram above shows the details of solder pad deposits made with a standard polymer squeegee. The diagram clearly shows uneven, dog-bone solder deposits resulting from scooping and scavenging. Courtesy of intergraph corporation.



#### Better results with permalex

Permalex edge metals squeegees eliminate pumping and scavenging, improving solder paste deposit quality. The smooth, lubricated edge reduces stencil pulling and stretching, improving pad registration and stencil life.



#### • Benefits Over Other Metal Squeegees



#### Fatigue bending

Blades made with soft etched stainless steel or nickel are prone to bending.



#### Cracking and chipping

Other plated blades exhibit cracks and flakes.



#### Fatigue warping

Soft metals allow bends and dings from handling.

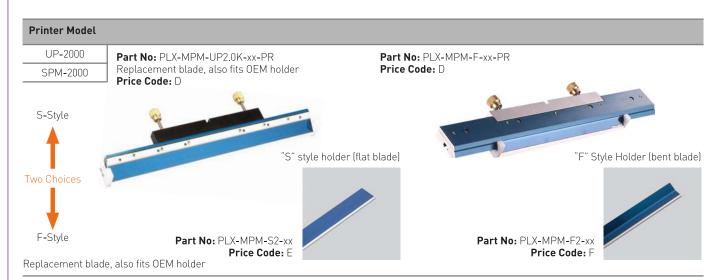


Photo shows crack in a nickel blade undetectable to the eye



# Speedline, MPM, Quad-SMTech

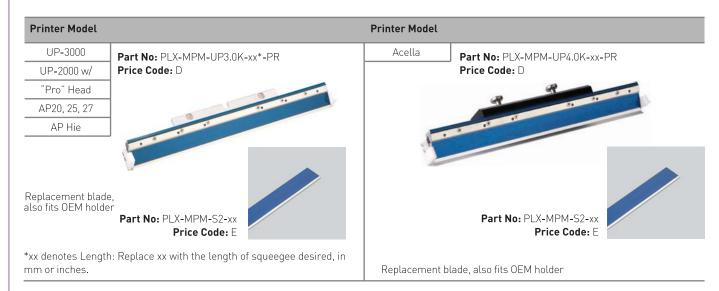
Printer Model		Replace Original OEM Blades
UP-100	Part No: PLX-MPM-UP1.5K-xx*-PR	Part No. – Code. F
UP-200	Price Code: D	PLX-0EM-MPM15K-34-150
UP-500	4	PLX-0EM-MPM15K-34-220
UP-1500	4	PLX-0EM-MPM15K-34-260
Accuflex		PLX-0EM-MPM15K-34-300
Accuprint	18 18	PLX-0EM-MPM15K-34-330
SMTech	· *	PLX-0EM-MPM15K-34-360
Sigmaprint		PLX-0EM-MPM15K-34-420
MicroFlex		PLX-0EM-MPM15K-34-430
Momentum	Part No: PLX-MPM-S2-xx	PLX-0EM-MPM15K-34-460
Reprint	Price Code: E	PLX-0EM-MPM15K-34-520
	•	PLX-0EM-MPM15K-34-6
xx denotes Lengtl	n: Replace xx with the length of squeegee desired, in mm or in	nches.



#### Available options

(Add codes to part numbers in combination)

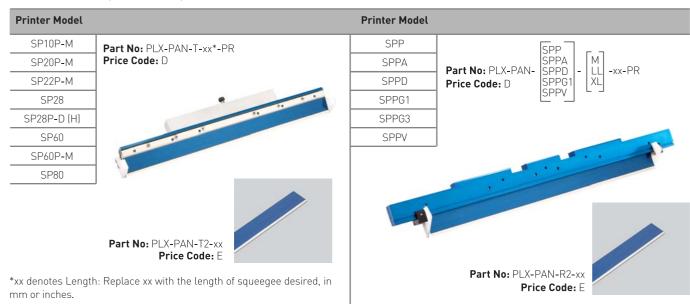
- A45: Change angle to 45° (achieved by 15 degree bend in blade)
- RED, GREEN, SILVER: Change holder color (standard is blue)
- 0.008, 0.012: Change blade thickness
- WH: Whole blade permalex (prevents corrosion on spring steel)
- CH (YYY): Cut holder to YYY dimension (longer than blade (xx) dimension so holder can hold longer blade. SE: Sharp edge





Printer Model		Printer Model		
AP-20	Part No: PLX-MPM-B-xx-PR	SP200	Part No: PLX-MPM-A-xx	Part No. Code E
AP-25	Price Code: B	SP1500	Price Code: E	PLX-PRO-MPM-01A-8
AP-27		SP2000		PLX-PR0-MPM-01A-10
SP-20	For models that use rubber	SP2400	For models that use rubber	PLX-PRO-MPM-01A-12
Juki/Zevatech 220	squeegee holders		squeegee holders	PLX-PRO-MPM-01A-14
			This item is a flat, 0.5 (12.2mm) wide strip of Permalex included with a soft rubber squeegee to act as a shim.	PLX-PRO-MPM-01A-16 Actual length is 1" longer than part number length.

# Panasonic, Create, KME



#### Available options

(Add codes to part numbers in combination)

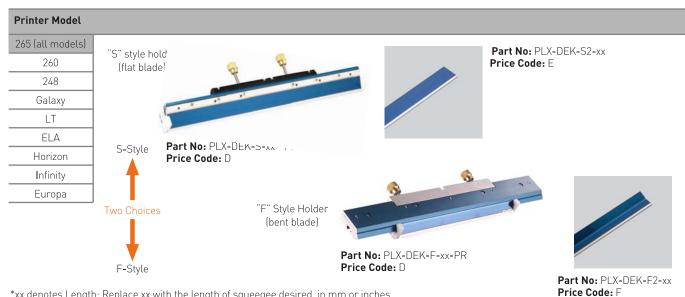
- A45: Change angle to 45° (achieved by 15 degree bend in blade)
- RED, GREEN, SILVER: Change holder color (standard is blue)
- 0.008, 0.012: Change blade thickness
- WH: Whole blade permalex (prevents corrosion on spring steel)
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\*xx denotes Length: Replace xx with the length of squeegee desired, in mm or inches.



### **DEK**



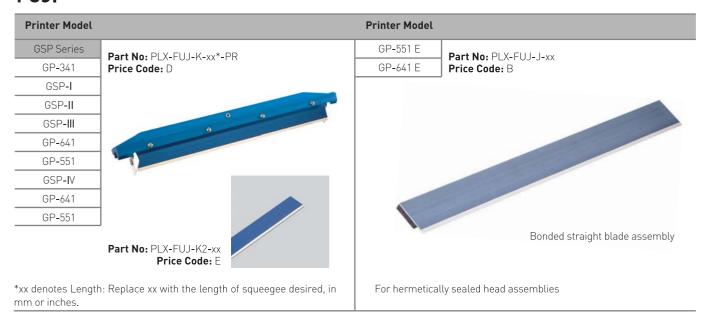
\*xx denotes Length: Replace xx with the length of squeegee desired, in mm or inches.

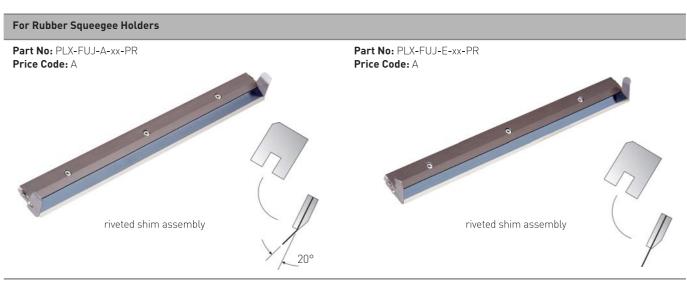
**Pro-Flow Systems** Replace Original OEM Blades Part No. Code F Part No. Code, F PLX-PRO-DEK-01A-300 PLX-0EM-DEK-30-170 PLX-0EM-DEK-30-440 PLX-PRO-DEK-01A-350 PLX-0EM-DEK-30-193 PLX-0EM-DEK-30-483 PLX-PRO-DEK-01A-400 PLX-0EM-DEK-30-200 PLX-0EM-DEK-30-510 PLX-PRO-DEK-01A-450 PLX-0EM-DEK-30-250 PLX-0EM-DEK-30-535 PLX-PRO-DEK-01A-500 PLX-0EM-DEK-30-300 PLX-0EM-DEK-30-580 PLX-0EM-DEK-30-350 PLX-0EM-DEK-30-610 Actual blade length is 50 mm longer PLX-0EM-DEK-30-400 than the part number length.

EKRA Printer Model	Replace Original OEM Blades
Part No: PLX-EKR-S-xx*-PR Price Code: D  Part No: PLX-EKR-S-xx*-PR Price Code: D  Part No: PLX-EKR-S2-xx Price Code: E  *xx denotes Length: Replace xx with the length of squeegee desired, in mm or inches.	Part No. Code. F PLX-0EM-EKR-33-180 PLX-0EM-EKR-33-350 PLX-0EM-EKR-33-200 PLX-0EM-EKR-33-370 PLX-0EM-EKR-33-210 PLX-0EM-EKR-33-400 PLX-0EM-EKR-33-220 PLX-0EM-EKR-33-430 PLX-0EM-EKR-33-250 PLX-0EM-EKR-33-450 PLX-0EM-EKR-33-260 PLX-0EM-EKR-33-600 PLX-0EM-EKR-33-270 PLX-0EM-EKR-33-300
Printer Model  EKRA  E2  Part No: PLX-EKR-T-xx-PR Price Code: D  Price Code: E	Available options [Add codes to part numbers in combination]  • A45: Change angle to 45° [achieved by 15 degree bend in blade]  • RED, GREEN, SILVER: Change holder color (standard is blue)  • 0.008, - 0.012: Change blade thickness  • WH: Whole blade permalex [prevents corrosion on spring steel]  • CH (YYY): Cut holder to YYY dimension (longer than blade (xx) dimension so holder can hold longer blade.  • SE: Sharp edge

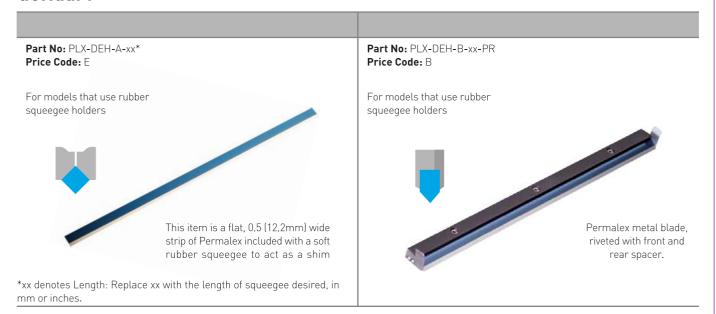


### **FUJI**



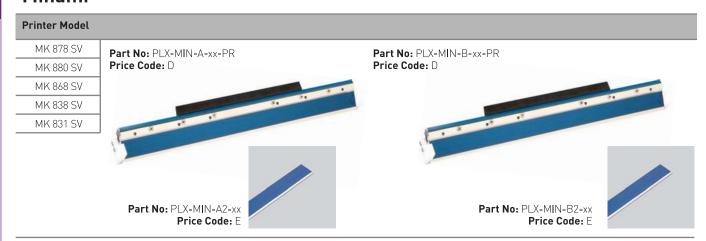


# deHaart





### Minami



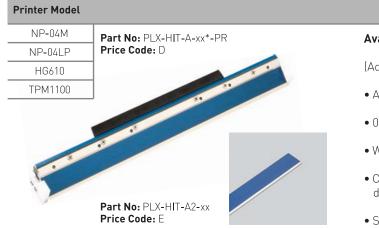
#### Available options

(Add codes to part numbers in combination)

- A45: Change angle to 45° (achieved by 15 degree bend in blade)
- 0.008, 0.012: Change blade thickness

- WH: Whole blade permalex (prevents corrosion on spring steel)
- CH (YYY): Cut holder to YYY dimension (longer than blade (xx) dimension so holder can hold longer blade. • SE: Sharp edge

#### Hitachi



\*xx denotes Length: Replace xx with the length of squeegee desired, in mm or inches.

#### Available options

(Add codes to part numbers in combination)

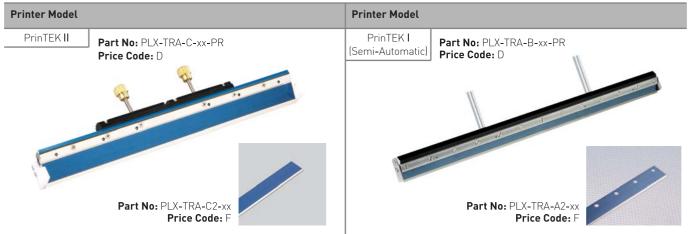
- A45: Change angle to 45° (achieved by 15 degree bend in blade)
- 0.008, 0.012: Change blade thickness
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- SE: Sharp edge

# **APS, Elite, Surface Mount Techniques**

#### **Printer Model** APS Part No: PLX-SMT-A-xx\* For models that use rubber squeegee holders Price Code: E SPR-40 SPR-45 Elite 5000 6000 Suface Mount Techniques Opti-print series This item is a flat, 0.5 (12.2mm) wide Solderprint series strip of Permalex included with a soft BAM sseries rubber squeegee to act as a shim.



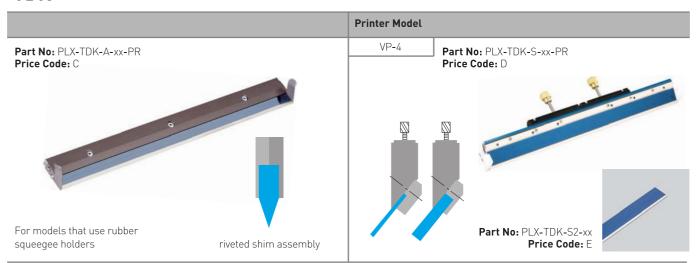
# **PrinTEK**



 $\mbox{*xx}$  denotes Length: Replace xx with the length of squeegee desired, in mm or inches.

\*xx denotes Length: Replace xx with the length of squeegee desired, in mm or inches.

# **TDK**



HTI Juki Motoprint/Uniprint

Printer Model		Printer Model	
HT-1	Part No: PLX-HTI-B-xx*	KS1710	Part No Code. F
HT-2	Price Code: B	Part No:	PLX-0EM-M0T-26-130
HT <b>-</b> 3		PLX-0EM-JUK-35-430	PLX-0EM-M0T-26-180
HT-7		PLX-0EM-JUK-35-xx Price Code: F	PLX-0EM-M0T-26-220
3AV		Trice odde.	PLX-0EM-M0T-26-260
			PLX-0EM-MOT-26-300
			PLX-OEM-MOT-26-400
	Front flush blade with be bonded to shim to mato 5-sided polymer squeeg	ch	
xx denotes Leng nm or inches.	th: Replace xx with the length of squeegee desired	d, in	



# **Speedprint Europlacer**

# Yamaha/Tenyru

Printer Model		Printer Model	
AVI Series	Replace Original OEM Blades	YMK880II	Part No. Price Code: A
SP-100	Part No Code. F	YMK 280	PLX-YAM-A-170
SP-200	PLX-0EM-SPT-40-130	YVP-XG	PLX-YAM-A-200
	PLX-0EM-SPT-40-140	TSP-200	PLX-YAM-A-230
	PLX-0EM-SPT-40-170		PLX-YAM-A-xx
	PLX-0EM-SPT-40-220		
	PLX-0EM-SPT-40-270		
	PLX-0EM-SPT-40-320		o
	PLX-0EM-SPT-40-370		0
	PLX-0EM-SPT-40-390	1	
	PLX-0EM-SPT-40-450	8	
	PLX-0EM-SPT-40-490		Paste retainers not availab

# Sanyo



# Milara Kistech

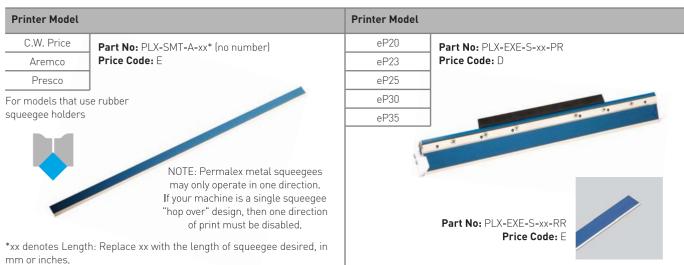
Printer Model		Printer Model	
TP 2929	Part No. Code. E	KT300	Part No. Price Code: F
ST 2929	PLX-MIL-S2-xx		PLX-0EM-KIS-38-270
MT 2020			PLX-0EM-KIS-38-370
STAV			PLX-0EM-KIS-38-400
STW-1			PLX-0EM-KIS-38-425
MTW-1			PLX-OEM-KIS-38-xx

# **Essemtec** Autotronik

Printer Model		Printer Model		
SP002	Part No. Code, E	BS 1300	Part No. Code, F	
SP003	PLX-0EM-ESS-20-xx	BS 1400	PLX-OEM-AUT-30-xx	
SP200AV	PLX-0EM-ESS-25-xx			
SP600				
SP900	1			



# AMI Exerra



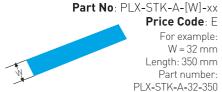
#### Custom Ordering

#### Make Your Own Custom Squeegee

(All dimensions in millimeters)

#### A.Flat blade





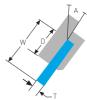
#### B.Blade w/ Bend





#### C. Shimmed blade

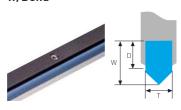




# Part No: PLX-A-[W] [Tx10]-xx Price Code: A

For example: W = 40 mm T: 6 mm Length: 400 mm Part Number: PLX-A4060-400

# D. Shimmed blade w/Bend



#### Part No: PLX-B-[W] [Tx10]-xx Price Code: B

For example: W = 20 mm
T: 10 mm, Length: 200 mm
Part Number:
PLX-B20100-200
Normal angle
on this style is: 38 °.
For other angles, add code:
-A\_\_ and specify angle.

#### **Misc Printers**

Printer	Model		
Micro-tec	MT-80SP, MT-320, MT-550,		
MICTO-tec	MT-750, MT-1100		
Mechatronic	S10, S40, D40		
Desen	DSP-1008, DSP-XP		
VM star	1000		
SJ Innotech	HP520, HP620		
Sony	SI-P750, SI-P950		
GKG	G1, G2, G3, K Series		
Schmid	S84-GF		
Folungwin	Win-5, FL-AVP737, FL-AVP816		
Koma / genitec	KP440Va, KP100		
Cinalian	SKVP-318, SKP-818,		
Singking	SKP-828, SKP-838		
Suneast	G2		
Multicomponents	MC-400		
Contact us for part numbers and pricing.			

#### Available options

(Add codes to part numbers in combination)

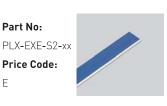
- A45: Change angle to 45° (achieved by 15 degree bend in blade)
- RED, GREEN, SILVER: Change holder color (standard is blue)
- 0.008, 0.012: Change blade thickness
- WH: Whole blade permalex (prevents corrosion on spring steel)
- CH (YYY): Cut holder to YYY dimension (longer than blade (xx) dimension so holder can hold longer blade.
- SE: Sharp edge



### **Handhelds**

Part No: PLX-HAN-A-xx includes handle and blade Price Code: F







Part No: PLX-Holder

Part No:

Price Code:



#### Available options

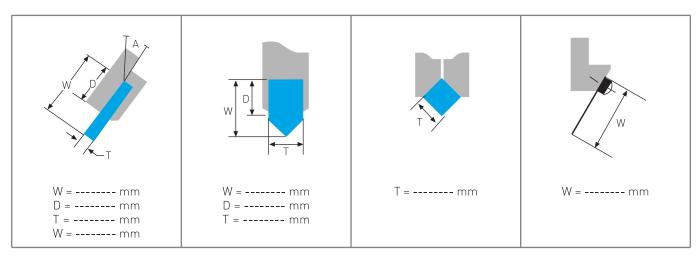
(Add codes to part numbers in combination)

- A45: Change angle to 45° (achieved by 15 degree bend in blade)
- RED, GREEN, SILVER: Change holder color (standard is blue)
- 0.008, 0.012: Change blade thickness
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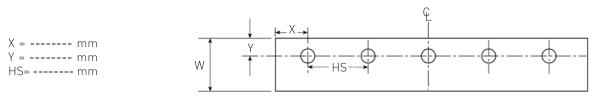
#### **Custom Squeegee Specification Form**

#### Printer Manufacturer and Model Number Overall Length of Squeegee (xx) mm

Please circle the type of squeegee you have and provide dimensions (in mm) listed:



If there are holes in your squeegee, please provide the following information (in mm):



Number of Holes \_\_\_\_\_ Diameter of Holes \_\_\_\_ Centerline on Hole? Y\_ \_ N\_\_ Price Code: Call for Price and Part Number



### **Guidelines for High Quality SMT Printing**

- A. Be sure stencil specs are suitable for your pitch.
- **B.** Check that your squeegee, stencil and pcboard "stack" are parrallel and rigid as possible



**C.** Set squeegee pressure for a "clean wipe": Start at a low squeegee pressure force and adjust UP until a clean wipe is achieved; Add 10% more for variations.



Stencil Aperature and Thickness Sugggestions:

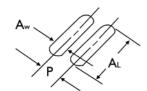
For course pitch, 0.050 inch and larger:	

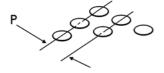
For finepitch, 0.025 inch to 0.016 inch:

For finepitch, 0.015 inch and smaller:

Aw: Aperature width AL: Aperature length P: Pitch

Aperature Size	Stencil Thickness
Aw=1/2P AL= Land Pad	8-6 mils
Aw=1/2 P AL=Land Pad	6-5 mils
Aw=1/2 P AL=Land Pad	5-4 mils





#### Notes:

- **1.** For rectangular shaped stencil aperatues.

  Adjust the lengtph of the pad to fine tune solder joint volume, but hold the width dimension to 1/2 the pitch to maintain good printing.
- 2. For round shaped aperatues. Maintain a web thickness between pads which is no smaller than 30% of pad diameter

#### Squeegee Inspection and Performance

**A.** Be sure that your metal squeegees are straight and parallel, and free of nicks, dents or jagged edges. Do not use rubber squeegees - they deform and wear out quickly. Use only metal squeegees

**B. Squeegee life:** Normal life-span of a metal squeegee depends on speed of printing, care when handling, quality of board support, and amount of pressure and force applied to squeegees during printing. Normally Permalex Edge squeegee will operate for well beyond 200,000 print cycles, and exceed 8 months of continuous use on an SMT line.

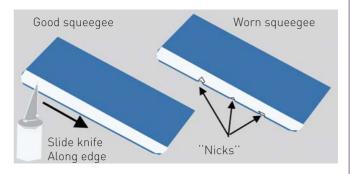
For high-quality Permalex squeegees, inspect edge by running a sharp edge (like a small screwdriver or razor knife) along the edge. There should be no nicks or dings or abnormalities which cause the sliding knife edge to jam or chatter while sliding.





Good squeegee

Reject squeegee



**C. Rust and corrosion prevention:** Permalex edge metal squeegees are manufactured with an exceptional tempered spring steel which assured many hundreds of thousands of flexures. It's a great material for the application however it also is susceptible to corrosion

#### To prevent corrosion:

- 1. Avoid handling the Permalex squeegees with bare hands. Oil and salts from hands can accelerate corrosion.
- 2. Keep squeegees clean and dry and inside their storage tubes when not in use.
- For maximum protection, or to reduce, clean and protect squeegees that show rust: apply a thin film of oil to the blades and wipe excess off before placing squeegees in storage.