

## • Lab Test – Reliability

### • Stress Pull Test

Our Wire Hooks are subjected to stress pull test to ensure that the hooks are secured rigidly and exceeding the wire pull strength specification.

Our proprietary process enables the hooks to withstand up to over 500 gms stress without detaching from the body.

### • Static Tester

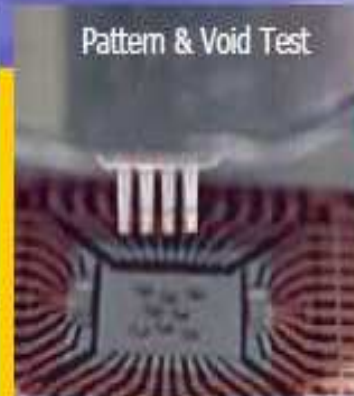
The rubber tips are electrically charged up to 5,000 volts and immediately allow to decay. The decay time must be less than 0.5 sec to 0 volts as an indication of its Good static discharged properties.



### • Rubber Hardness Tester

Using a Durometer our rubber tips blanks are subjected to force applied continuously. Our rubber hardness is between 60 ~ 70 shore.

## • Lab Test – Reliability



### • Durability Test

The customized design automates durability testing of the rubber tips ensuring that it can last > 10,000 pick-ups before showing sign of wear and tear.

### • EFO Spark Simulator

Sample of EFO's are subjected to this 'burn-in' testing to ensure consistent and round ball sizes

### • Conductive Test

Using proprietary material all the EFOs are subjected to the conductive (resistivity) test using the super mega ohmmeter as shown. These tests ensures that the material is free from impurities.

### • Pattern & Void Test

This test will ensure that dispensing nozzles meet both the design pattern and functionality requirements.

- **DIE BOND TOOLS**  
**Rubber Pick Up**  
**Rubber Tip Holder**

### Rubber Pick Up Tools

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- **Rectangular Molded Type**  
LRT1-XXXYYY (Ratio 1:1.5)  
LRT2-XXXYYY (Ratio 1:2)
- **Square Molded Type**  
LRSQ-XXX
- **Square Machined Type**  
LRCQ-XXX
- **Rectangular Machined Type**  
LRCT-XXXYYY
- **Round Molded Type**  
LRND-XXX
- **Round Machined Type**  
LRCD-XXX



### Rubber Tip Holder

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Esec 2006 K&S 6300

Esec 2007 K&S 6100

ASM AD-809

K. Matsushita

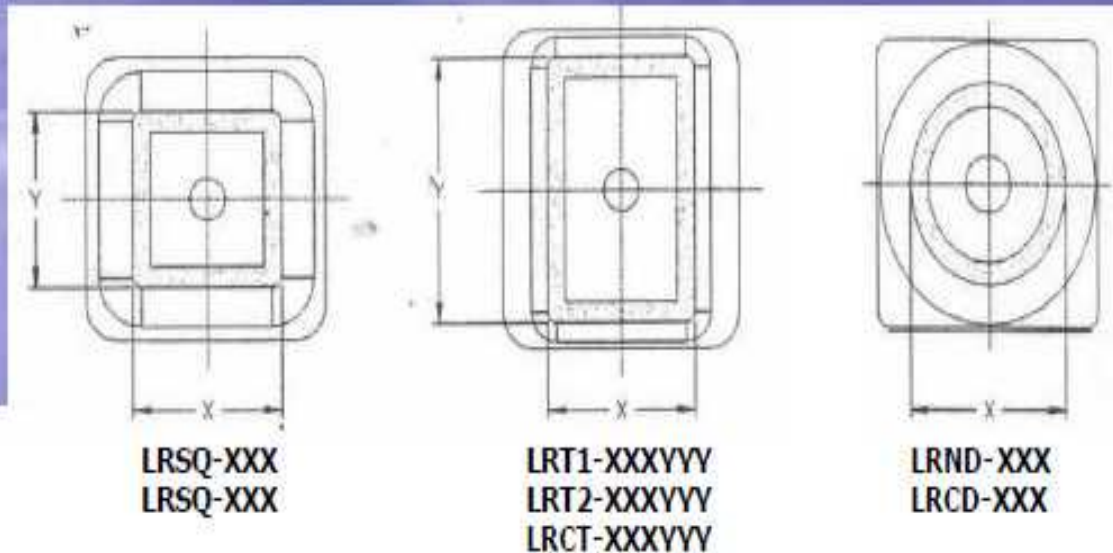
Shinkawa

Nichiden

Alphasem

Toshiba

# • DIE BOND TOOLS – Rubber Pick Up Tools



Standard Sizes	Tip Shape	Ordering Code	Tip Size		Part No
			X	Y	
	Round	LRND-XXX	40 mil	-	LRND-040
	Square	LRSQ-XXX	60 mil	60 mil	LRSQ-060
	Rect (1:1.5)	LRT1-XXXYYY	60 mil	60 mil	LRT1-060090
	Rect (1:2)	LRT2-XXXYYY	100 mil	200 mil	LRT2-100200

Custom Sizes	Tip Shape	Ordering Code	Tip Size		Part No
			X	Y	
	Round	LRCD-XXX	70 mil	-	LRND-070
	Square	LRCQ-XXX	90 mil	90 mil	LRSQ-090
	Rect	LRCT-XXXYYY	100 mil	120 mil	LRCT-100120

- DIE BOND TOOLS

- Hi Temp Tips

### Hi – Temp Tips

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- ESEC

LHTB-01 series

- ASM AD-829

LHTB-69 series

- FOTON

LHTB-13 series

- SODICK

LHTB-87 series

- MAGNUM

LHTB-88 series

- MRSI 505

LHTB-86 series

- MULHBAUER

LHTB-28 series

- ADAT

LHTB-13 series

- TOSOK

LHTB-84 series

- **DIE BOND TOOLS**  
**Hi Temp Tips**

## Hi – Temp Tips



- **SHINKAWA**  
LHTB-04 series  
LHTB-04B series

- **FK DELVOTEK**  
LHTB-21 series  
LHTB-21A series

- **ASM AD-809**  
LHTB-03 series  
LHTB-03A series  
LHTB-03B series  
LHTB-03D series  
LHTB-03E series  
LHTB-03F series

- **NEC**  
LHTB-14 series  
LHTB-14A series  
LHTB-14B series  
LHTB-14C series

- DIE BOND TOOLS  
Hi Temp Tips

## Hi - Temp Tips

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- KME DM60

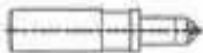
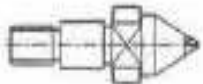
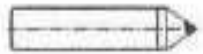
LHTB-09 series  
LHTB-09A series  
LHTB-09B series

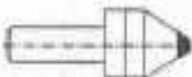
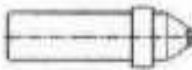

- TOSHIBA

LHTB-11 series  
LHTB-11A series  
LHTB-11B series

- UNIVERSAL

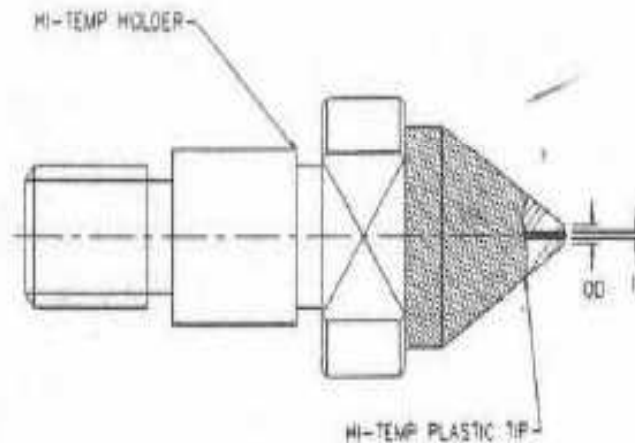
LHTB-U1 series  
LHTB-U1A series  
LHTB-U1B series

DRAWING	MC	MACHINE
	04	SHINKAWA
	U1	UNIVERSAL
	13	FOTON

DRAWING	MC	MACHINE
	01	ESEC
	03	ASM
	11	TOSHIBA

\* For other type of machine not stated please specify.

## • DIE BOND TOOLS Hi Temp Pick Up Tools



### MATERIAL CODE

B = VESPEL (BROWN)

D = VESPEL (BLACK)

MC = MACHINE CODE

### PRODUCT CODE

HT = HI-TEMP

OD = OUTSIDE DIA (MILS)

ID = INTERNAL DIA (MILS)

Ordering Examples	Product Code	Material Code	Machine Type	OD		ID		Part No
				mm	mils	mm	mils	
	LHT	B	01	2.54	100	0.75	30	LHTB-01-100030
	LHT	B	01	1.9	75	0.5	20	LHTB-01-075020

- **DIE BOND TOOLS**  
**Epoxy Dispensing Tools**

### Overview

In die attach applications using silver or silver glass epoxies, dispensing tools needs to provide good coverage, minimal setup time and maintenance. The tools are designed and manufactured incorporating all these features. Standard designs are available for most of the common die bonders while special requirements can be customized.

- **MULTI NEEDLE DISPENSING NOZZLE**

ESEC 2006 (LEDT-01)  
ASM AD-809 (LEDT-03)  
ASM AD-829 (LEDT-69)  
SHINKAWA (LEDT-04)  
ALPHASEM (LEDT-05)  
K&S (LEDT-06)  
NICHIDEN (LEDT-10)  
FOTON (LEDT-13)

SANYO (LEDT-22)  
VIKING (LEDT-74)  
UNIVERSAL (LEDT-U1)  
UNIVERSAL (LEDT-U2)

- **EPOXY STAMPING TOOL HOLDER**

ASM AD-809 (LEPX-03-HOLDER)



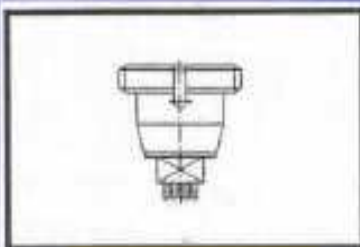
- **EPOXY DISPENSING PEN**

ESEC 2006 (LEDP-01-XX)  
ESEC 2007 (LEDP-02A-XX)  
ALPHASEM (LEDP-05-XX)  
ALPHASEM (LEDP-05A-XX)  
ASM AD-889 (LEDP-69-XX)  
TOSOK (LEDP-84A-XX)

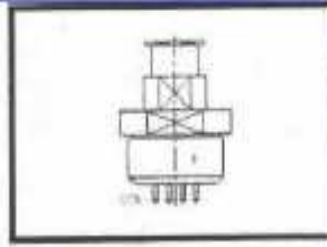
- **EPOXY STAMPING TOOL**

ASM AD-809 (LEPX-03DT)  
ASM AD-829 (LEPX-69DT)  
ASM AD-829 (LEPX-69ST)  
KME DM60 (LEPX-09ST)  
KME DM60 (LEPX-09ST)

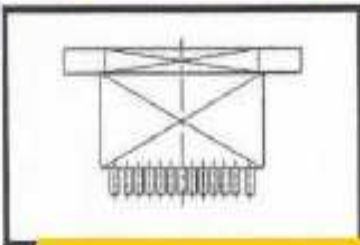
## • DIE BOND TOOLS Epoxy Dispensing Nozzle



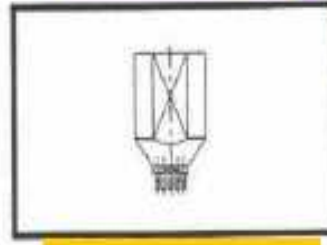
LEDT-01 (ESEC)



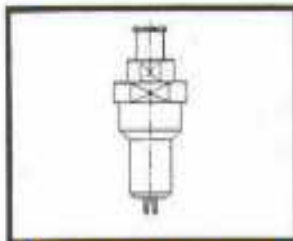
LEDT-03 (ASM)



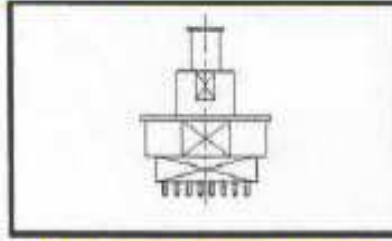
LEDT-05 (ALPHASEM)



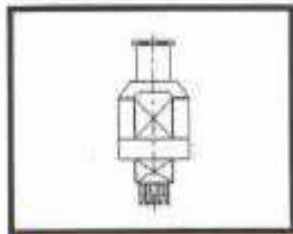
LEDT-13 (FOTON)



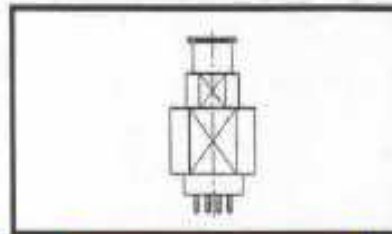
LEDT-69 (ASM)



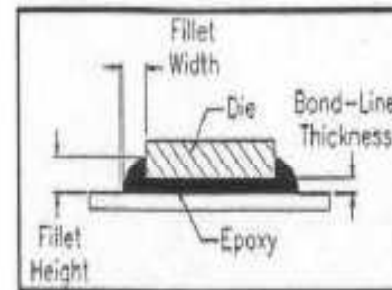
LEDT-04 (SHINKAWA)



LEDT-U1 (UNIVER)



LEDT-U2 (UNIVER)



### ORDERING INFORMATION

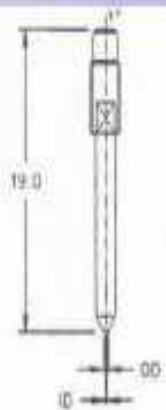
#### A. EPOXY INFO

1. EPOXY TYPE
2. EPOXY VISCOSITY
3. EPOXY COVERAGE %
4. BONDLINE THICKNESS
5. FILLER HEIGHT
6. FILLER WIDTH

#### B. PACKAGE INFO

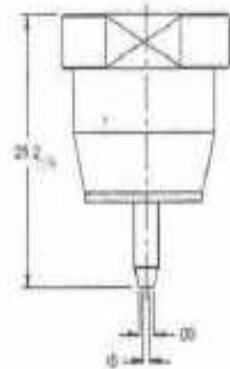
1. DIE DIMEN LENGTH
2. DIE DIMEN WIDTH
3. DIE DIMEN THICKNESS
4. PAD SIZE LENGTH
5. PAD SIZE WIDTH

• **DIE BOND TOOLS**  
**Epoxy Dispensing Pen**



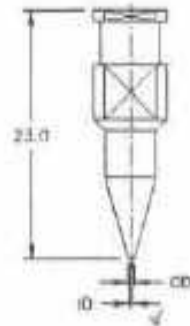
**ESEC 2007/8**

**LEDP-02A-XX**



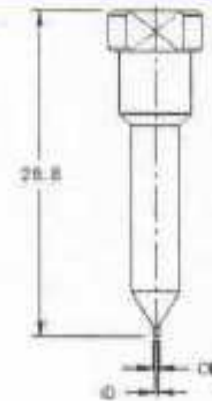
**ESEC 2006**

**LEDP-01-XX**



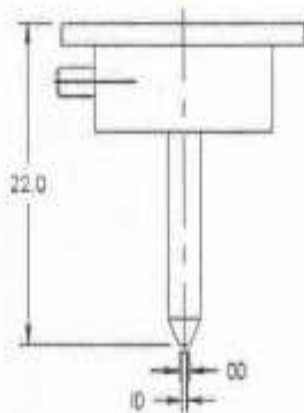
**TOSOK**

**LEDP-84A-XX**

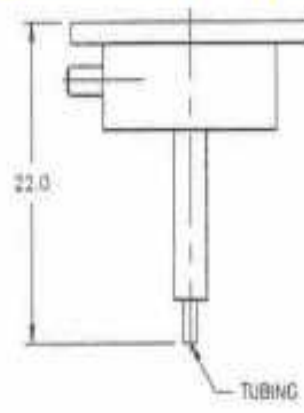


**ASM AD-889**

**LEDP-69-XX**



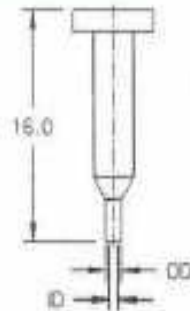
**1 PIECE DESIGN**



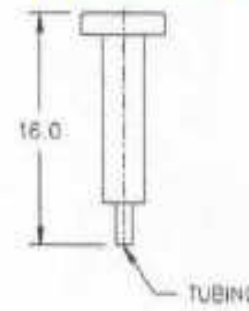
**2 PIECE DESIGN**

**ALPHASEM**

**LEDP-05-XX**



**1 PIECE DESIGN**



**2 PIECE DESIGN**

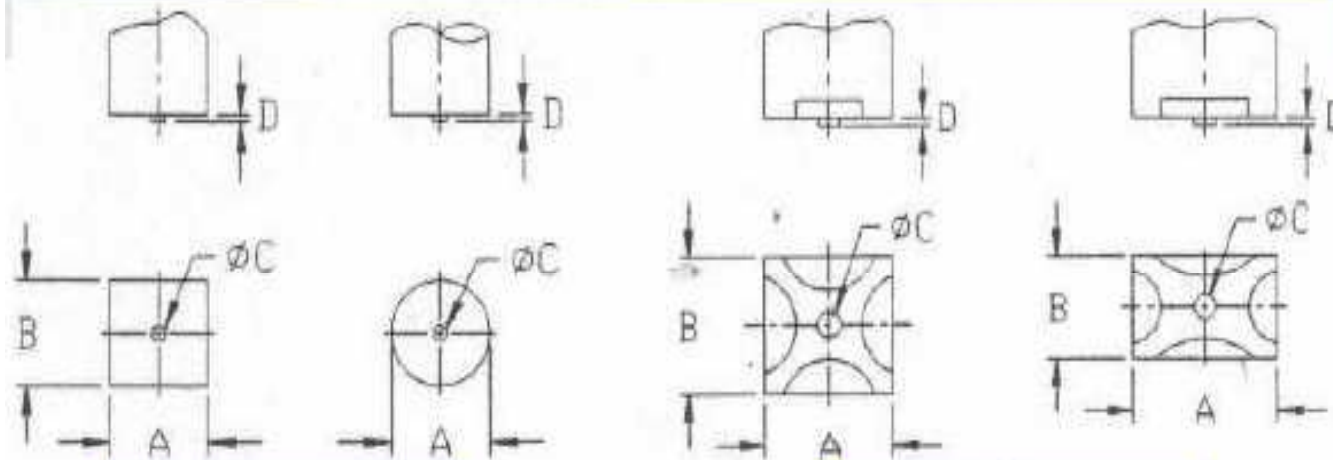
**ALPHASEM**

**LEDP-05A-XX**

**ORDERING INFORMATION**

1. MACHINE TYPE
2. MACHINE MODLE
3. 1 PC DESIGN OD
4. I PC DESIGN ID
5. 2 PC DESIGN TUBE SIZE OD
6. 2 PC DESIGN TUBE SIZE ID

- DIE BOND TOOLS**  
**Epoxy Stamping Tool**



**DOT SHAPE LEPX-XXDT**

**STAR SHAPE LEPX-XXST**



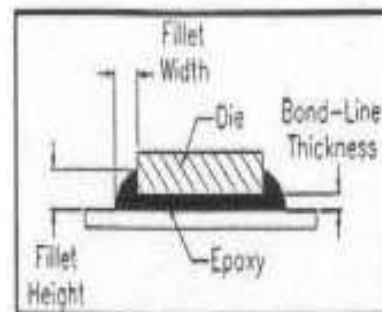
**ASM AD-829**



**ASM AD-809**



**"KME DM60"**



**ORDERING INFORMATION**

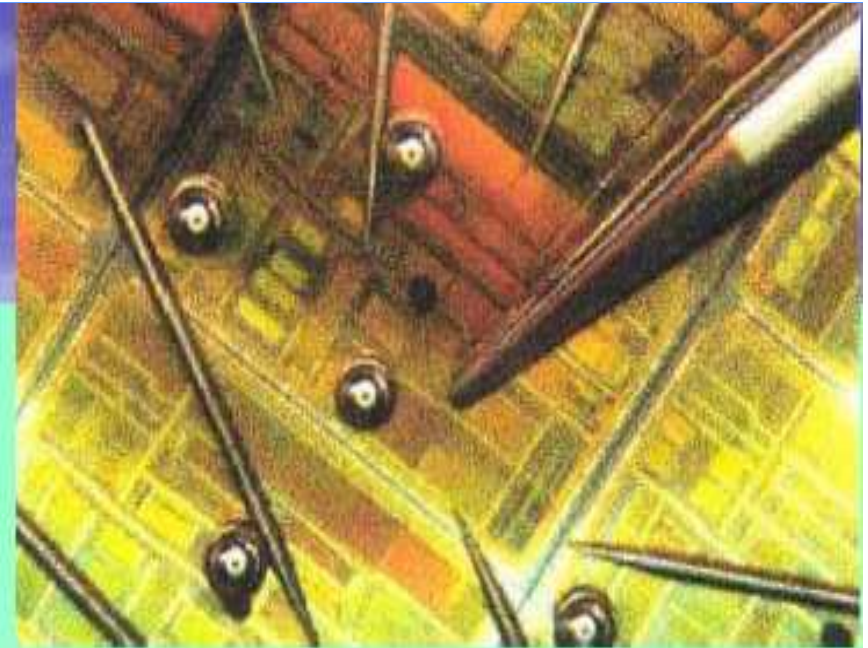
**A. PACKAGE / DIE / EPOXY**

1. PACKAGE TYPE
2. DIE DIMEN LENGTH
3. DIE DIMEN WIDTH
4. DIE DIMEN THICKNESS
5. EPOXY COVERAGE %
6. BONDLINE THICKNESS

**B. MC TYPE PART DIMEN**

1. MC TYPE
2. DIE DIMEN SPEC A, B, DIA C, D

- **DIE BOND TOOLS**  
Die Ejector Pins



- **Die Ejector Pins Material**

LEPC series	Carbide Rod
LEPH series	High Speed Steel Rod
LEPS series	Tungsten Carbide Rod



### Needle Holder / Pepper Pot

ESEC

LNH01-XX-XXXX-XXXX  
LNH01A-XX-XXXX-XXXX  
LPP01-XX-XXXX-XXXX

NEC

LNH14-XX-XXXX-XXXX  
LPP14-XX-XXXX-XXXX

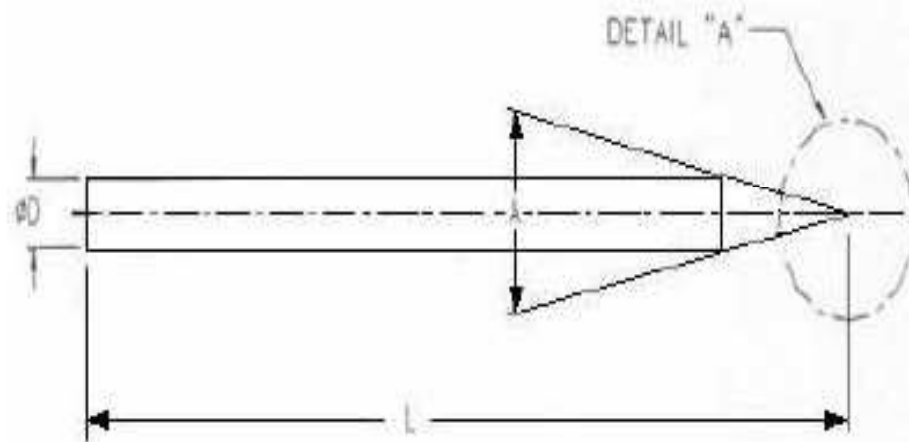
ALPHASEM

LNH05-XX-XXXX-XXXX  
LPP05-XX-XXXX-XXXX

ASM AD-829

LNH69-XX-XXXX-XXXX  
LPP69-XX-XXXX-XXXX

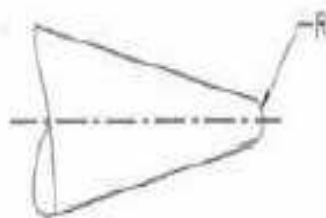
- DIE BOND TOOLS**  
**Ejector Pin**



**ORDERING INFORMATION**

A = ANGLE  
R = RADIUS  
L = LENGTH  
D = SHANK DIA

MATERIAL CODE  
C = CARBIDE ROD  
H = HIGH SPEED STEEL  
S = TUNGSTEN CARBIDE



Prod Code	Mat Code	Shank Dia	Dimensional Specifications			Ordering Information
			Angle A	Radius R	Length L	
LEP	C	0.40 mm	10 deg	0.015 mm	14.30 mm	LEPC04-10-015-143
LEP	H	0.70 mm	15 deg	0.250 mm	17.00 mm	LEPH-15-250-170
LEP	S	1.00 mm	25 deg	0.500 mm	19.05 mm	LEPS10-25-500-1905

# • DIE BOND TOOLS

## Needle Holder

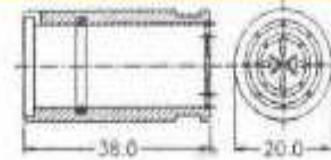
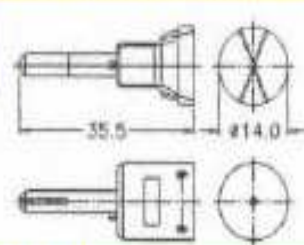
### Pepper Pot



ESEC

LNH-01-XX-XXXX-XXXX

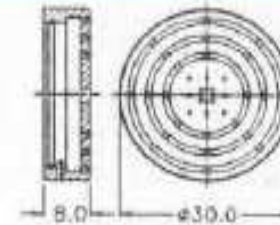
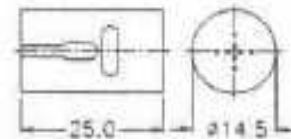
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ALPHASEM

LNH-05-XX-XXXX-XXXX

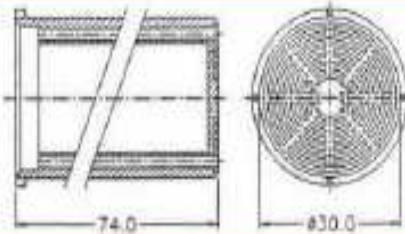
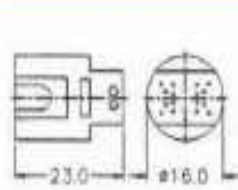
LPP-05-XX-XXXX-XXXX



HITACHI

LNH-42-XX-XXXX-XXXX

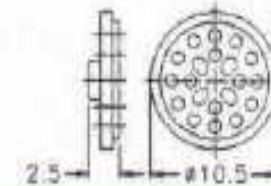
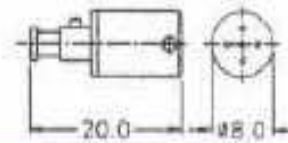
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HITACHI

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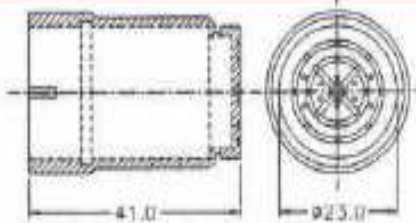
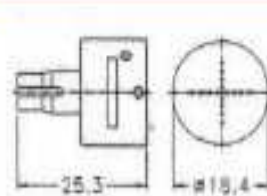
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ASM

LNH-69-XX-XXXX-XXXX

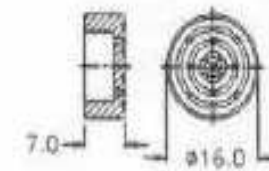
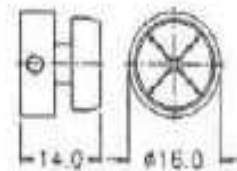
LPP-69-XX-XXXX-XXXX



NEC

LNH-14-XX-XXXX-XXXX

LPP-14-XX-XXXX-XXXX



Die Size = A x B

#### ORDERING INFORMATION

NH = NEEDLE HOLDER  
PP = PEPPER POT  
DIE SIZE

- **WIRE BOND TOOLS**  
**EFO**

### Overview

Our EFOs are suitable for various types of wire bonders in the industry. These include ESEC, ASM, Kaijo, Shinkawa and K&S. Manufactured with the latest CNC machines together with proprietary material these tools will provide consistent air balls. Every EFO is thoroughly tested in our QA Lab before shipment.

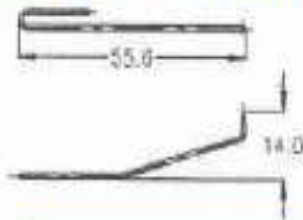


<ul style="list-style-type: none"> <li>• ASM AB-309 EFO-29-309</li> </ul>	<ul style="list-style-type: none"> <li>• ESEC 3006 EFO-35A-3006</li> </ul>	<ul style="list-style-type: none"> <li>• SHINKAWA UTC-300 EFO-45-300</li> </ul>	<ul style="list-style-type: none"> <li>• KAIJO FB-131 EFO-67-131</li> </ul>
<ul style="list-style-type: none"> <li>• K&amp;S 1484 EFO-31-1484</li> </ul>	<ul style="list-style-type: none"> <li>• KAIJO FB-118 EFO-37-118</li> </ul>	<ul style="list-style-type: none"> <li>• KAIJO FB-128 EFO-47-128</li> </ul>	<ul style="list-style-type: none"> <li>• K&amp;S 8028 HOLDER EFO-53-HOLDER</li> </ul>
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<ul style="list-style-type: none"> <li>• K&amp;S 8020 EFO-33A-8020</li> </ul>	<ul style="list-style-type: none"> <li>• SHINKAWA UTC-250 EFO-41-250</li> </ul>	<ul style="list-style-type: none"> <li>• ASM AB-339 EFO-59-339</li> </ul>	

# • WIRE BOND TOOLS EFO



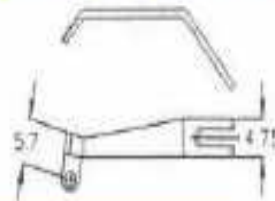
**K & S 1484**  
LEFO-31-1484



**K & S 1488**  
LEFO-32-1488



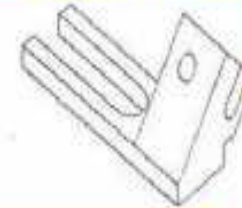
**K & S 8020**  
LEFO-33A-8021



**K & S 8028**  
LEFO-53-8028



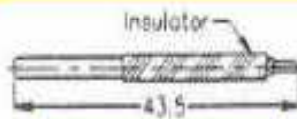
**K & S 8028 HOLDER**  
LEFO-53-HOLDER



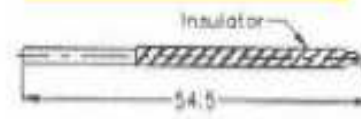
**SHINKAWA UTC-200**  
LEFO-40-200



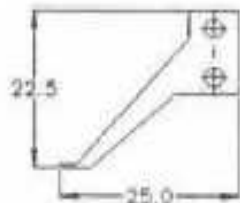
**SHINKAWA UTC-200**  
LEFO-40-200



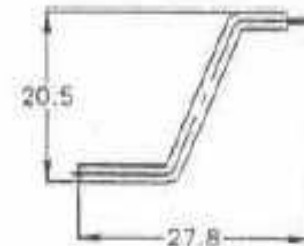
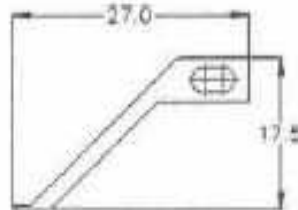
**SHINKAWA UTC-300**  
LEFO-45-300



**KADJO FB-118**  
LEFO-37-118



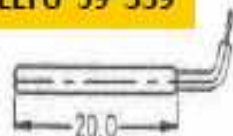
**KADJO FB-128**  
LEFO-47-128



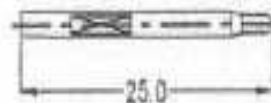
**ORDERING INFORMATION**

**A. MACHINE TYPE**

**ASM AB-339**  
LEFO-59-339

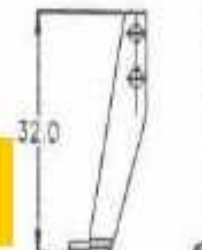


**ASM AB-309**  
LEFO-29-309

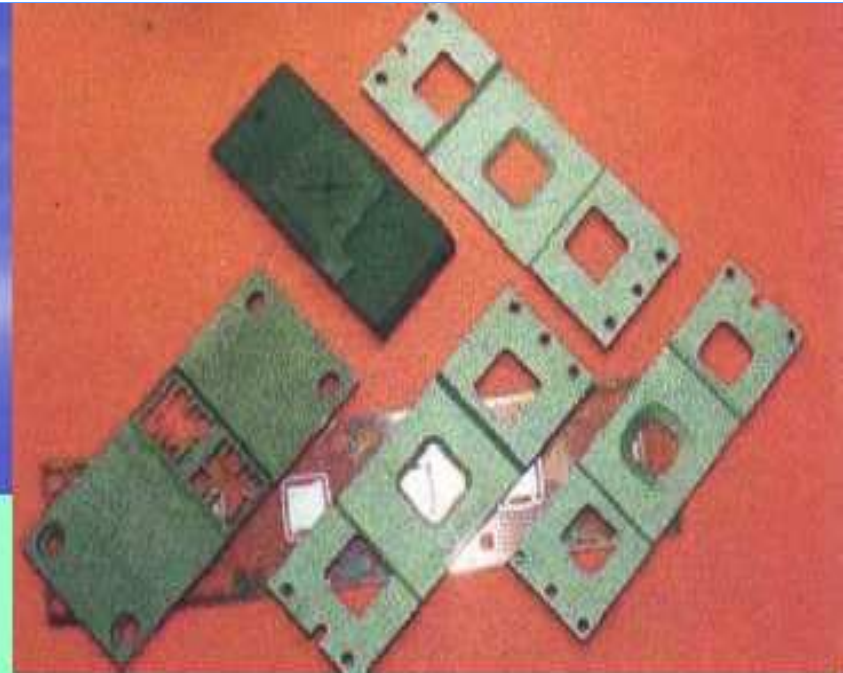


**KADJO FB-131**  
LEFO-67-131

**ESEC 3006**  
LEFO-35A-3006



- **WIRE BOND TOOLS**  
Wire Bond Clamp



## Overview

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We provide a variety of Wire Bond Clamp for different machine types for different wire bonders in the industry. These include ESEC, ASM, Kaijo, Shinkawa and K&S.

Manufactured with the latest CNC machines together with proprietary material these tools will provide consistent quality made to exact specifications.

- ASM AB-309  
C29-XXXX

- ASM AB-339  
C59-XXXX

- K&S 1488
- K&S 1484  
C70-XXXX

- K&S 8020
- K&S 8028  
C71-XXXX

- SHINKAWA UTC-300  
C45-XXXX

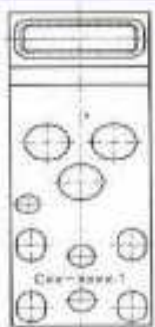
- KAIJO FB-131  
C67-XXXX

# • WIRE BOND TOOLS

## Wire Bond Clamps

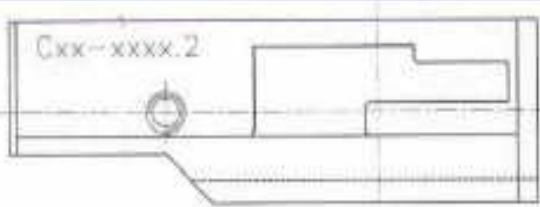


### DOWNHOLDER CLAMPS ASM AB-309



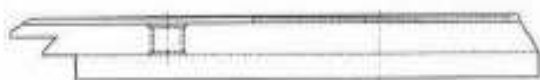
WINDOW CLAMP

LC29-XXXX.A

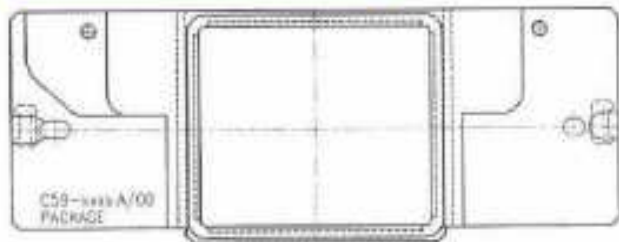


HEATER PLATE

LC29-XXXX.B

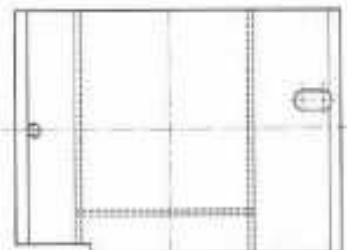


### DOWNHOLDER CLAMPS ASM AB-339



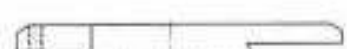
WINDOW CLAMP

LC59-XXXX.A

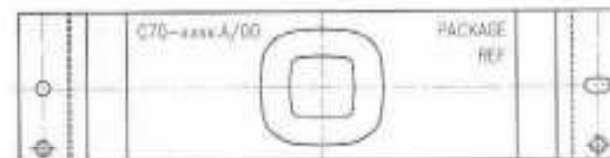


HEATER PLATE

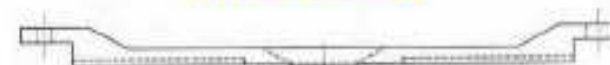
LC59-XXXX.B



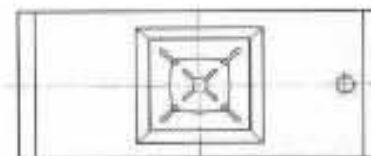
### DOWNHOLDER CLAMPS K & S 1484 / 1488



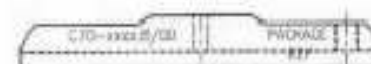
LC70-XXXX.A



WINDOW CLAMP



HEATER PLATE



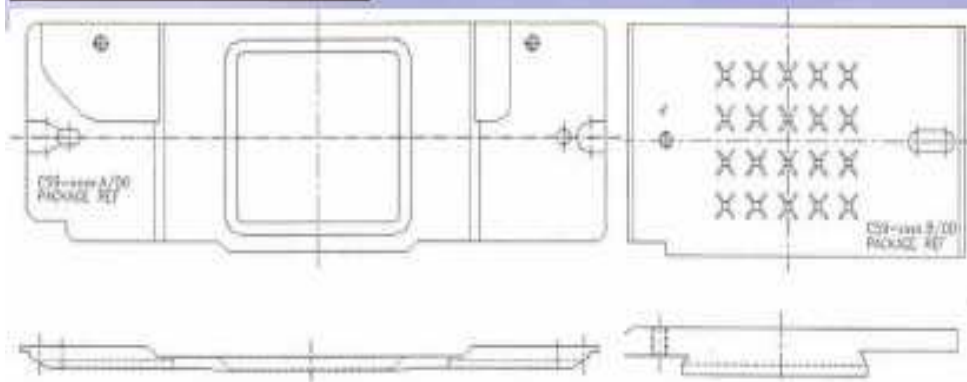
LC70-XXXX.B

# • WIRE BOND TOOLS

## Wire Bond Clamps



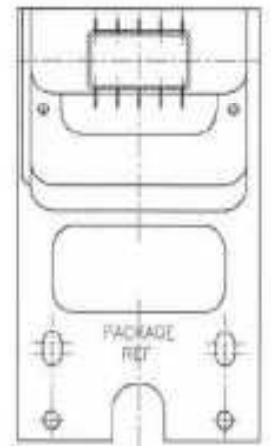
**DOWNHOLDER CLAMP  
ASM AB-339**



**TOP PLATE  
LC59-XXXX.A**

**HEATER PLATE  
LC59-XXXX.B**

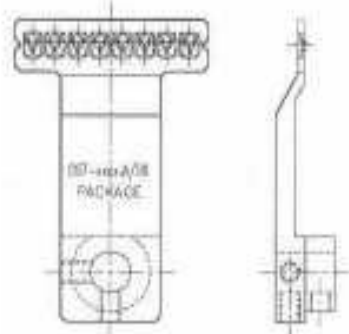
**DOWNHOLDER CLAMP  
SHINKAWA UTC-300**



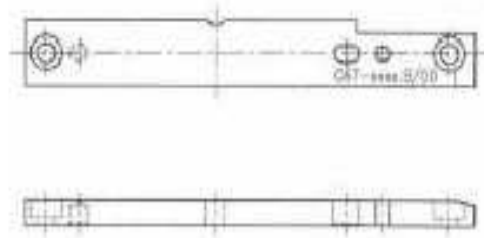
**WINDOW CLAMP  
LC45-XXXX.A**



**DOWNHOLDER CLAMP  
KAJIO FB-131**

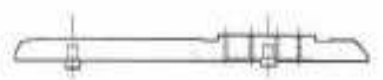


**WINDOW CLAMP  
LC67-XXXX.A**



**HEATER PLATE  
LC-X67XXX.B**

**HEATER PLATE  
LC70-XXXX.B**



- **QA TOOLS & ACCESSORIES**  
Wire Hook  
Shear Pin

### Wire Hook

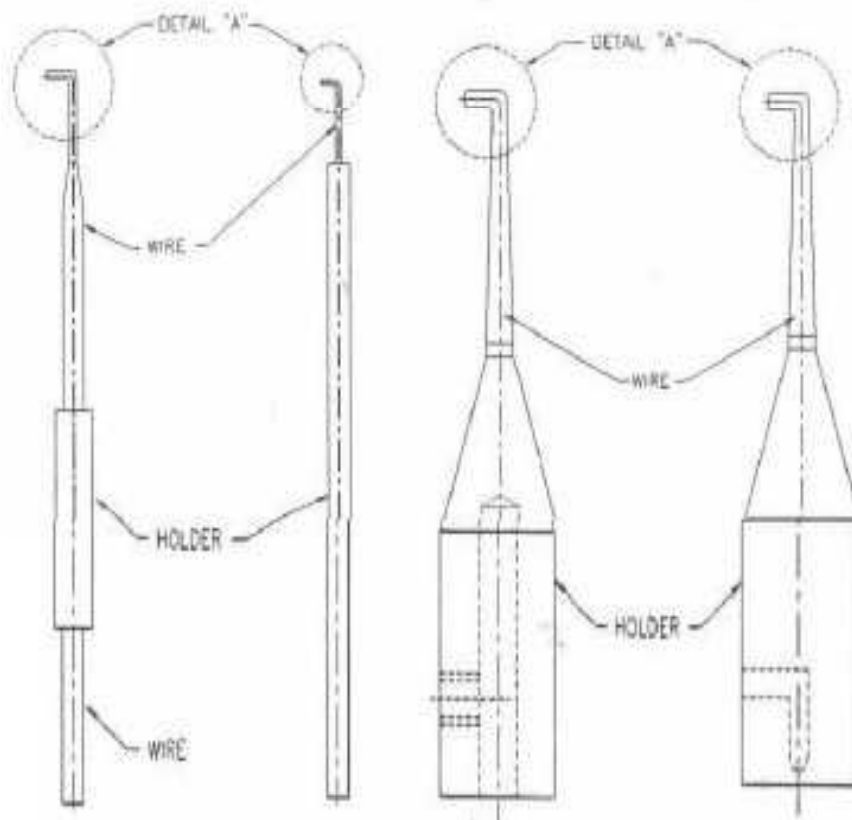
- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• <b>DAGE</b><br/>WH-90S-XX-XXX-X<br/>WH-91L-XX-XXX-X<br/>WH-91S-XX-XXX-X</li> </ul> | <ul style="list-style-type: none"> <li>• <b>UNITEK</b><br/>WH-92-XX-XXX</li> </ul> |
|   | <ul style="list-style-type: none"> <li>• <b>ROYCE</b><br/>WH-95-XX-XXX</li> </ul>  |



### Shear Pin

- |   |
|---|
| <ul style="list-style-type: none"> <li>• <b><u>Ball Shear Pin</u></b><br/>Dage<br/>LBSP-91-XXXYYY-01<br/>Royce<br/>LBSP-95-XXXYYY-01</li> </ul>                       |
| <ul style="list-style-type: none"> <li>• <b><u>Die Shear Pin</u></b><br/>Dage<br/>LDSP-91-XXXYYY-01<br/>LDSP-91A-XXXYYY-01<br/>Royce<br/>LDSP-95-XXXYYY-01</li> </ul> |

- QA TOOLS AND ACCESORIES  
Wire Hook



### ORDERING INFORMATION

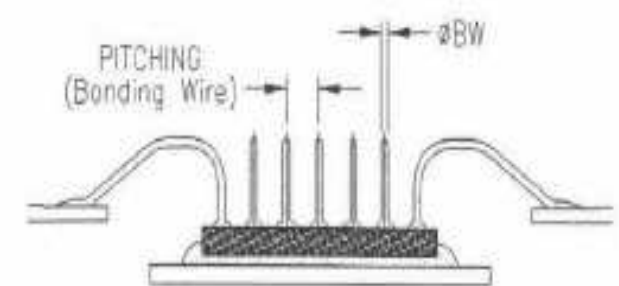
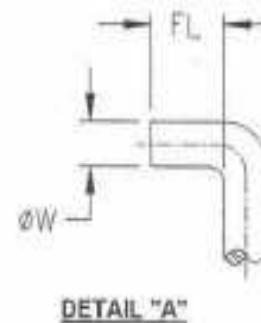
FL = FOOT LENGTH (MILS)

LH = LOOP HEIGHT

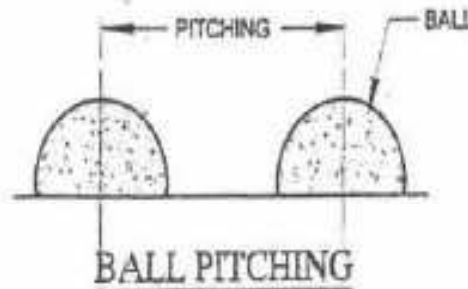
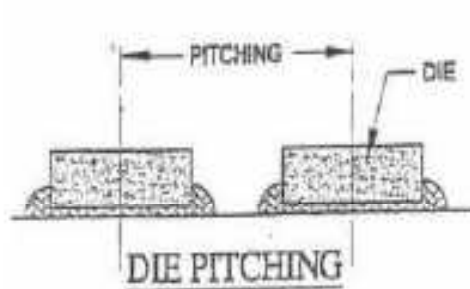
DIA W = WIRE HOOK DIA (MILS)

DIA BW = BONDING WIRE DIAMETER (MILS)

PITCH BONDING WIRE



• QA TOOLS AND ACCESSORIES  
Shear Pin



DIE & BALL PITCHING

ORDERING INFORMATION

MACHINE CODE

S1 = DAGE

S2 = ROYCE

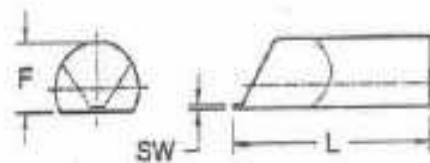
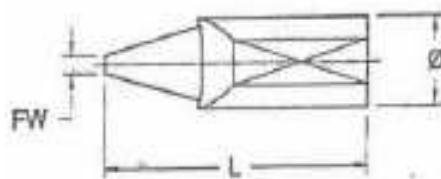
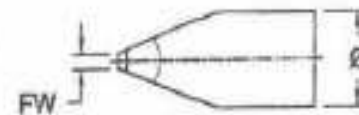
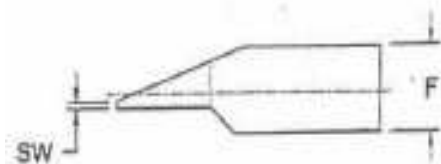
FW = FACE WIDTH (MILS)

SW = SIDW WIDTH (MILS)

L = LENGTH

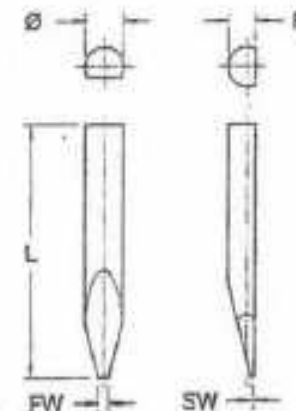
F = FLAT SURFACE

DIA = BODY DIA WIRE



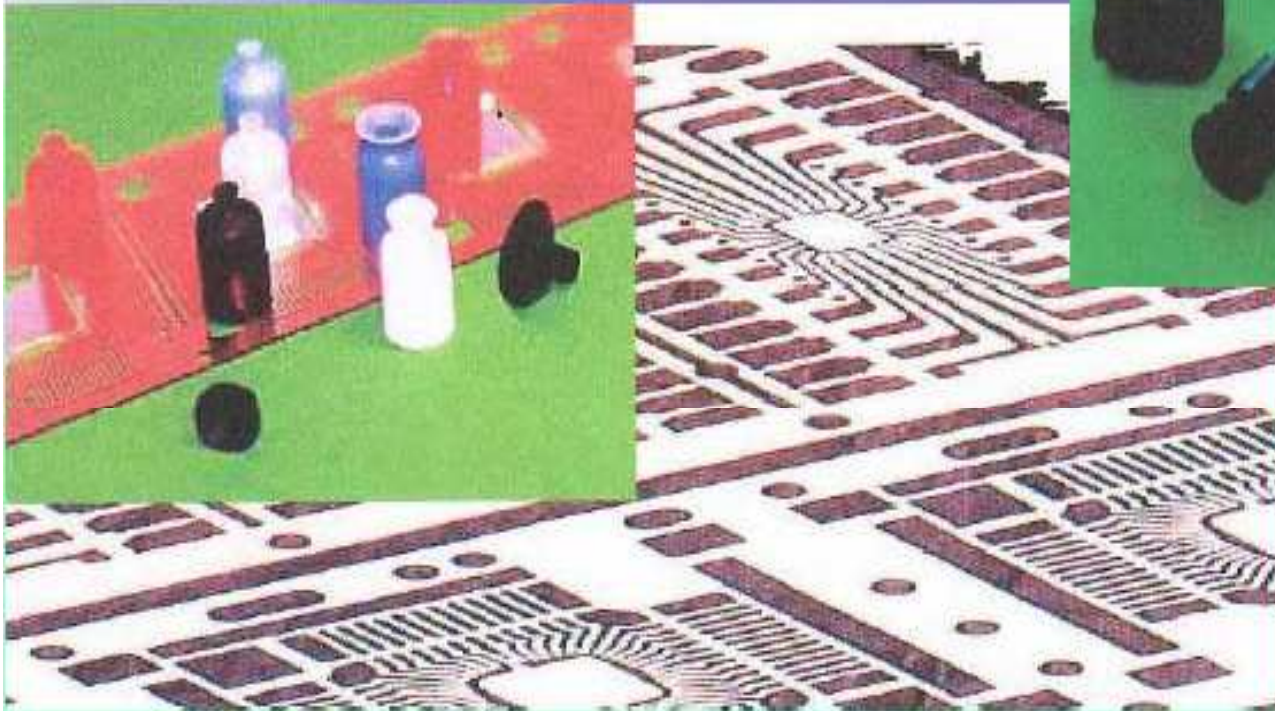
DIE SHEAR PIN

DIE SHEAR PIN



BALL SHEAR PIN

- **SUCTION CUPS**  
**Lead Frame Handling**



### **Advantages**

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- Low Cost
- Using High Purity Material
- Wide ranges catering for most lead frames
- Application to most lead frames