

# LPKF milling, drilling and routing tools

Reliable tools for LPKF ProtoMat circuit board plotters

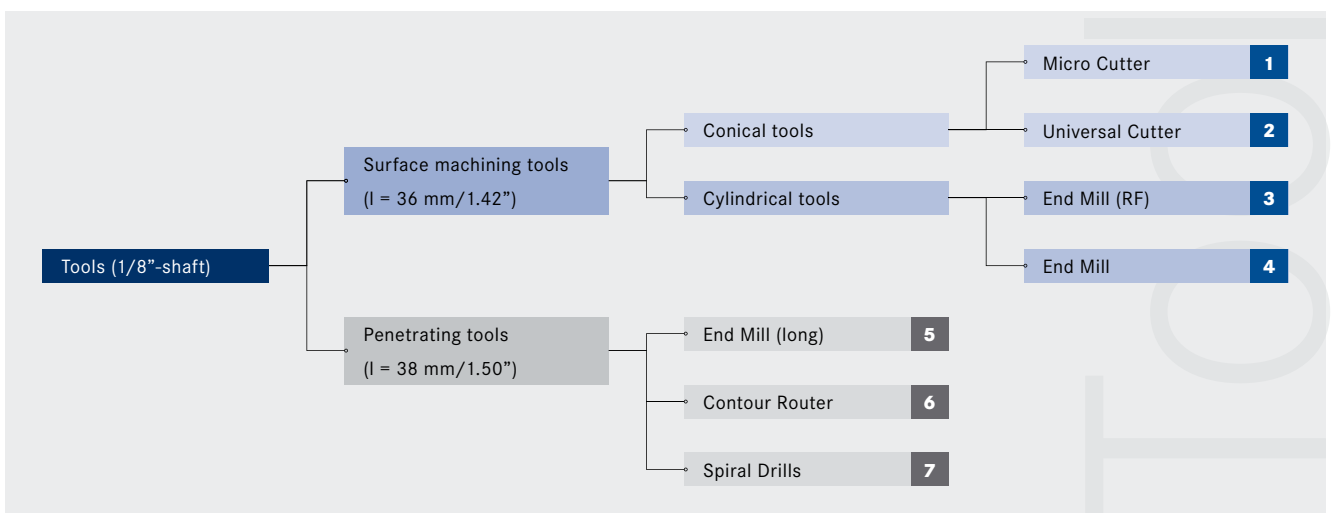
Order info

Inside front cover



LPKF's commitment to the highest-quality components extends to every piece of tooling. Custom-designed for LPKF, these milling, drilling, and routing bits are 100% top-quality carbide, resulting in the longest possible life, precise cuts, and reduced drill flex. Tools are divided

into two main groups – 36 mm (1.42") long tools for *surface* work (milling bits and endmills), and 38 mm (1.5") long bits that are intended to work *through* the material, such as contour routers, and drill bits.



### Micro Cutter/Fine-Line Milling Tool 1/8"

Conical custom-designed tool with orange distance ring.

1	Part #	Size	Application
	<b>115836</b>	36 mm, 0.10-0.15 mm (4-6 mil)	For fine isolation tracks on 18 μm copper.

### Universal Cutter 1/8"

Conical custom-designed tool with orange distance ring.

2	Part #	Size	Application
	<b>115835</b>	36 mm, 0.2-0.5 mm (8-20 mil)	For cutting isolation tracks in any copper board material with variable copper thickness.

### End Mill (RF) 1/8"

Cylindrical custom-designed tool with blue distance ring.

3	Part #	Size	Application
	<b>115832</b>	36 mm, d=0.15 mm (6 mil)	For minimal substrate removal to cut isolation tracks in RF applications.
	<b>115833</b>	36 mm, d=0.25 mm (10 mil)	
	<b>115834</b>	36 mm, d=0.40 mm (16 mil)	

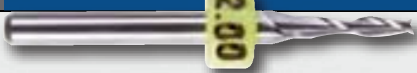
### End Mill 1/8"

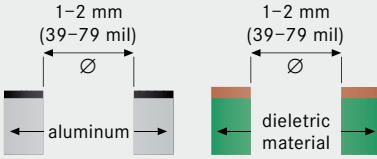
Cylindrical custom-designed tool with violet distance ring.

4	Part #	Size	Application
	<b>115839</b>	36 mm, d=0.80 mm (31 mil)	For engraving aluminum front panels, for rub-out areas and wider isolation tracks.
	<b>115840</b>	36 mm, d=1.00 mm (39 mil)	
	<b>115841</b>	36 mm, d=2.00 mm (79 mil)	
	<b>115842</b>	36 mm, d=3.00 mm (118 mil)	

### End Mill long 1/8"


Cylindrical custom-designed tool with light green distance ring.

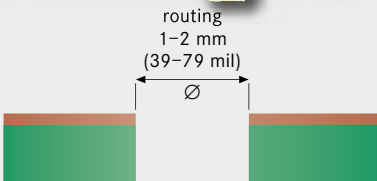
5	Part #	Size	Application
	<a href="#">115837</a>	38 mm, d=1.00 mm (39 mil)	For cutting aluminum and routing soft materials for RF and microwave applications.
	<a href="#">115838</a>	38 mm, d=2.00 mm (79 mil)	



### Contour router





Cylindrical custom-designed tool with yellow distance ring.

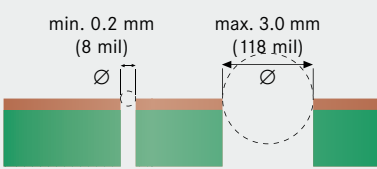
6	Part #	Size	Application
	<a href="#">115844</a>	38 mm, d=1.00 mm (39 mil)	For routing inner and outer board contours and holes >2.4 mm (>94 mil).
	<a href="#">115845</a>	38 mm, d=2.00 mm (79 mil)	



### Spiral Drill

Cylindrical tool with green distance ring.

7	Part #	Size	Application
	<a href="#">115846</a>	38 mm, d=0.20 mm (8 mil)	For drilling holes <2.4 mm (<94 mil).
	<a href="#">115847</a>	38 mm, d=0.30 mm (12 mil)	
	<a href="#">115848</a>	38 mm, d=0.40 mm (16 mil)	
	<a href="#">115849</a>	38 mm, d=0.50 mm (20 mil)	
	<a href="#">115850</a>	38 mm, d=0.60 mm (24 mil)	
	<a href="#">115851</a>	38 mm, d=0.70 mm (28 mil)	
	<a href="#">115852</a>	38 mm, d=0.80 mm (31 mil)	
	<a href="#">115853</a>	38 mm, d=0.85 mm (33 mil)	
	<a href="#">115854</a>	38 mm, d=0.90 mm (35 mil)	
	<a href="#">115855</a>	38 mm, d=1.00 mm (39 mil)	
	<a href="#">115856</a>	38 mm, d=1.10 mm (43 mil)	
	<a href="#">115857</a>	38 mm, d=1.20 mm (47 mil)	
	<a href="#">115858</a>	38 mm, d=1.30 mm (51 mil)	
	<a href="#">115859</a>	38 mm, d=1.40 mm (55 mil)	
	<a href="#">115860</a>	38 mm, d=1.50 mm (59 mil)	
	<a href="#">115861</a>	38 mm, d=1.60 mm (63 mil)	
	<a href="#">115862</a>	38 mm, d=1.70 mm (67 mil)	
	<a href="#">115863</a>	38 mm, d=1.80 mm (71 mil)	
	<a href="#">115864</a>	38 mm, d=1.90 mm (75 mil)	
	<a href="#">115865</a>	38 mm, d=2.00 mm (79 mil)	
	<a href="#">115866</a>	38 mm, d=2.10 mm (83 mil)	
	<a href="#">115867</a>	38 mm, d=2.20 mm (87 mil)	
	<a href="#">115868</a>	38 mm, d=2.30 mm (91 mil)	
	<a href="#">115869</a>	38 mm, d=2.40 mm (94 mil)	
	<a href="#">115870</a>	38 mm, d=2.95 mm (116 mil)	
	<a href="#">115871</a>	38 mm, d=3.00 mm (118 mil)	



## Tool set with 1/8" shaft and distance rings

For all LPKF ProtoMat models. Includes tools with pressed-on distance rings.

Part #	Content
115909	5x Spiral Drill 1/8", 38 mm (1.5"), d=0.60 (24 mil)
	5x Spiral Drill 1/8", 38 mm (1.5"), d=0.70 (278 mil)
	5x Spiral Drill 1/8", 38 mm (1.5"), d=0.80 (31 mil)
	5x Spiral Drill 1/8", 38 mm (1.5"), d=0.90 (35 mil)
	5x Spiral Drill 1/8", 38 mm (1.5"), d=1.00 (39 mil)
	2x Spiral Drill 1/8", 38 mm (1.5"), d=1.10 (43 mil)
	2x Spiral Drill 1/8", 38 mm (1.5"), d=1.30 (51 mil)
	2x Spiral Drill 1/8", 38 mm (1.5"), d=1.50 (59 mil)
	2x Spiral Drill 1/8", 38 mm (1.5"), d=3.00 (118 mil)
	1x Contour Router 1/8", 38 mm (1.5"), d=1.00 (39 mil)
	1x Contour Router 1/8", 38 mm (1.5"), d=2.00 (79 mil)
	2x End Mill 1/8", 36 mm (1.4"), d=1.00 mm (39 mil)
	1x End Mill 1/8", 36 mm (1.4"), d=2.00 (79 mil)
	2x End Mill (RF) 1/8", 36 mm (1.4"), d=0.40 (16 mil)
	10x Universal Cutter 1/8", 36 mm (1.4"), 0.2–0.5 mm (8–20 mil)



Plotters

Laser

Plating

Multilayer

SMT/Finishing

Tech Guide

Index

## RF and Microwave Set with distance rings

Part #	Contents
116394	Tools with distance rings:
	5x End Mill (RF) 1/8", 36 mm, d=0.25 mm (10 mil)
	3x End Mill (RF) 1/8", 36 mm, d=0.40 mm (16 mil)
	3x End Mill (RF) 1/8", 36 mm, d=0.15 mm (6 mil)
	5x End Mill 1/8", 36 mm, d=1.00 mm (39 mil)
	2x End Mill 1/8", 36 mm, d=2.00 mm (79 mil)
	2x End Mill 1/8", 38 mm, d=2.00 mm (79 mil)

The tool sets may differ depending on your country of origin. Please contact your local representative for details (page 124).

LPKF recommends only tools manufactured by LPKF and assumes no liability for machine damage or work quality when non-LPKF tooling is used.