

# LPKF milling, drilling and routing tools

Reliable tools for LPKF ProtoMat circuit board plotters

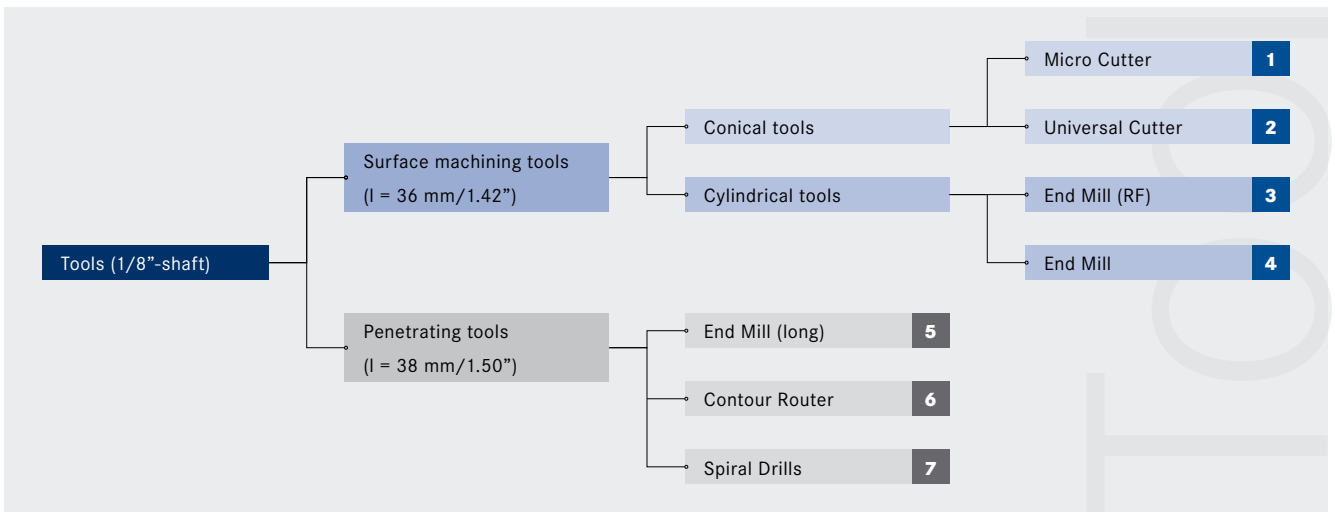
Order info

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 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  |
|---|--------|---------------------------|--|
|   | 115837 | 38 mm, d=1.00 mm (39 mil) | For cutting aluminum and routing soft materials for RF and microwave applications. |
|   | 115838 | 38 mm, d=2.00 mm (79 mil) |  |

### Contour router

Cylindrical custom-designed tool with yellow distance ring.

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

### Spiral Drill

Cylindrical tool with green distance ring.

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



## 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 126).

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