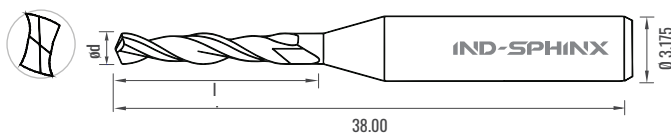




IMS



DLC
COAT

APPLICATION
Routing of Aluminium
Routing of IMS / Metal PCB / Heat sink PCBs

| Ø d DIAMETER | l FLUTE LENGTH | mm |
|--------------|----------------|----|
| 1.60 | 8.00 | - |
| 2.00 | 9.00 | - |
| 2.40 | 9.00 | - |
| 3.00 | 10.00 | - |

On request Inch / Special dimensions / Shank 3.00mm

FEATURES & BENEFITS
Longer tool life
Better finish
No pre drilling

RECOMMENDED PARAMETERS FOR ROUTING HIGH Tg WITH CERAMIC FILLERS (Tg ≥ 170° C)

| Ød mm | N RPM | f µm/rev | F x-y m/min | Fz m/min | Routing Depth m/min | Depth in to Backup |
|------------------|-----------------|-------------|------------------|----------------|------------------------|-----------------------|
| 1.60 | 40000 | 5.0 - 7.0 | 0.2 - 0.3 | 1.2 | 2.00 | 1.0 |
| 2.00 | 32000 | 9.0 - 15.0 | 0.3 - 0.5 | 1.2 | 2.50 | 1.0 |
| 2.40 | 28000 | 14.0 - 21.0 | 0.4 - 0.6 | 1.2 | 3.00 | 1.0 |
| 3.00 | 23000 | 26.0 - 35.0 | 0.6 - 0.8 | 1.2 | 3.00 | 1.0 |
| Ød Tool Diameter | N Spindle Speed | f Chip Load | F x-y Table Feed | Fz Z-Feed Rate | | |

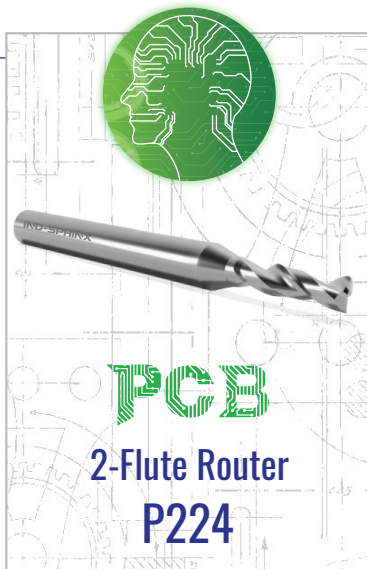
PACKING
10 tools per pack
50 tools per pack



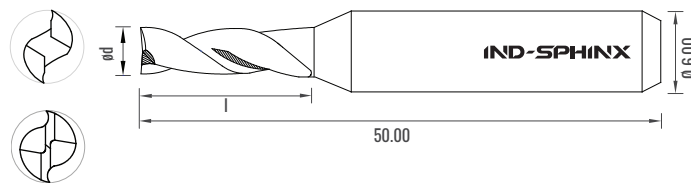
QUALITY • PRECISION • CONSISTENCY



www.indspinx.com
customerfocus@indspinx.com



IMS



Safe End
≥ø0.40 - 3.00 mm

Flat End
>ø3.00 - 6.00 mm

APPLICATION

Routing of inner and outer contours of Aluminium and Copper based IMS PCBs

| ød DIAMETER | l FLUTE LENGTH mm | |
|-------------|-------------------|-------|
| 0.40 | 2.00 | - |
| 0.60 | 2.00 | - |
| 0.80 | 2.00 | - |
| 1.00 | 3.00 | - |
| 1.20 | 3.00 | - |
| 1.50 | 3.00 | 5.00 |
| 1.60 | 3.00 | 5.00 |
| 1.80 | 5.00 | - |
| 2.00 | 4.00 | 6.00 |
| 2.40 | 6.00 | - |
| 3.00 | 6.00 | - |
| 4.00 | 6.00 | - |
| 5.00 | 7.00 | - |
| 6.00 | 8.00 | 10.00 |

On request Inch / Special dimensions

FEATURES & BENEFITS

Sharp cutting edge geometry leads to excellent surface finish on components

Wider flute space ease of chip evacuation ensuring tighter dimension control of routed PCBs

Unique shank design leads to less vibration in the routing process and enhances tool life

| RECOMMENDED PARAMETERS FOR ROUTING ALUMINIUM and COPPER BASE PCB | | | | | | |
|--|---------------|----------|------------------------|----------------------|---------------------|--------------------|
| Ød mm | N RPM | f µm/rev | F _{x-y} m/min | F _z m/min | Routing Depth m/min | Depth in to Backup |
| 0.40 | 60000 - 80000 | 2.0 | 0.20 | 0.10 | 0.40 | 0.20 |
| 0.60 | 60000 - 80000 | 2.0 | 0.20 | 0.10 | 0.60 | 0.20 |
| 0.80 | 60000 - 80000 | 3.0 | 0.25 | 0.10 | 0.80 | 0.30 |
| 1.00 | 48000 - 58000 | 5.0 | 0.30 | 0.10 | 1.00 | 0.40 |
| 1.20 | 40000 - 48000 | 9.0 | 0.50 | 0.20 | 1.20 | 0.40 |
| 1.50 | 32000 - 38000 | 14.0 | 0.60 | 0.30 | 1.50 | 0.40 |
| 1.60 | 30000 - 36000 | 18.0 | 0.70 | 0.30 | 1.60 | 0.40 |
| 1.80 | 26000 - 32000 | 21.0 | 0.70 | 0.30 | 1.80 | 0.40 |
| 2.00 | 24000 - 28000 | 30.0 | 0.80 | 0.50 | 2.00 | 0.50 |
| 2.40 | 20000 - 24000 | 36.0 | 0.90 | 0.50 | 2.40 | 0.50 |
| 3.00 | 18000 - 20000 | 45.0 | 0.90 | 0.50 | 3.00 | 0.50 |
| 4.00 | 12000 - 14000 | 60.0 | 1.00 | 0.80 | 4.00 | 1.00 |
| 5.00 | 10000 - 12000 | 75.0 | 1.00 | 0.80 | 5.00 | 1.00 |
| 6.00 | 8000 - 12000 | 100.0 | 1.20 | 1.00 | 6.00 | 1.00 |

Ød Tool Diameter N Spindle Speed f Chip Load F_{x-y} Table Feed F_z Z-Feed Rate

Tabulated parameters provide guidelines which acts as starting points for optimising speeds and feeds at the user's end.

PACKING

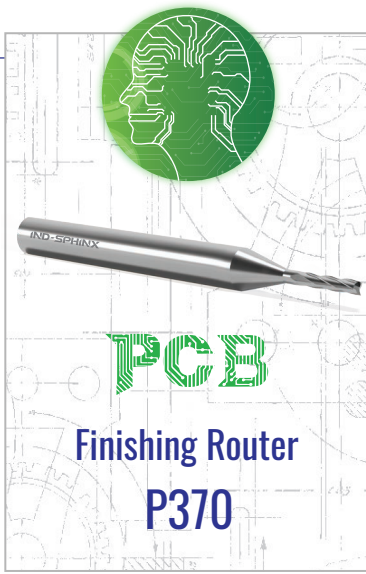
Single tool per pack



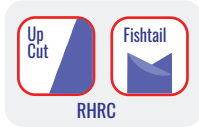
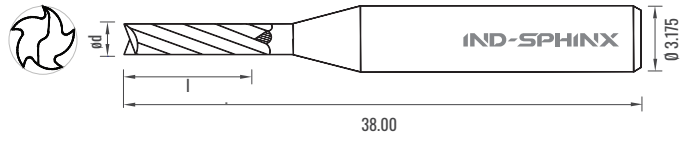
QUALITY • PRECISION • CONSISTENCY



www.indspinx.com
customerfocus@indspinx.com



FR4



APPLICATION
Especially used for edge trimming on pre-routed slots

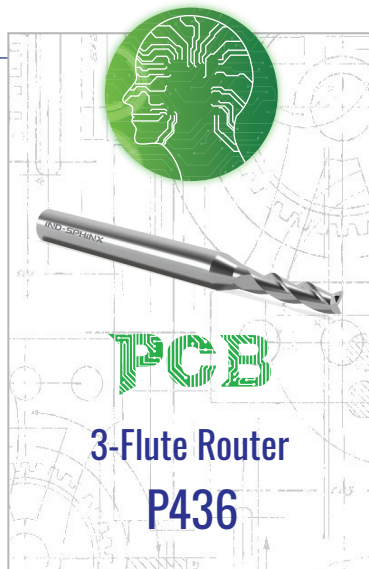
| Ø d DIAMETER | l FLUTE LENGTH mm |
|--------------|-------------------|
| 0.60 | 3.00 |
| 0.80 | 5.00 |
| 1.00 | 5.00 |
| 1.00 | 7.00 |
| 1.40 | 7.00 |
| 1.50 | 7.00 |
| 1.60 | 7.00 |
| 1.80 | 8.50 |
| 2.00 | 7.00 |
| 2.40 | 7.00 |
| 2.50 | 7.00 |

On request Inch / Special dimensions / Shank 3.00mm

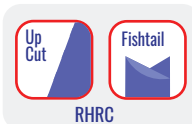
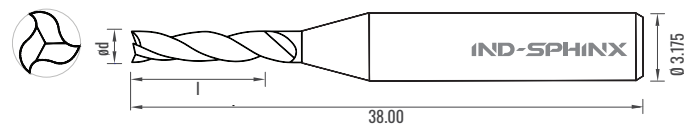
FEATURES & BENEFITS
Burr free routing of gold fingers
Excellent surface finish on pre-routed slots

PACKING
10 tools per pack
50 tools per pack





PTFE IMS Polymide



APPLICATION

Routing Aluminium and Copper
Heat sink PCBs

Routing Flexi and Flexirigid board

| Ø d DIAMETER | I FLUTE LENGTH | | mm |
|--------------|----------------|------|----|
| | | | |
| 0.60 | 3.00 | 5.00 | |
| 0.70 | 3.00 | - | |
| 1.00 | 5.00 | 7.50 | |
| 1.20 | 5.00 | - | |
| 1.50 | 7.00 | - | |
| 1.60 | 7.00 | - | |
| 1.80 | 7.00 | - | |
| 2.00 | 9.00 | - | |
| 2.40 | 9.00 | - | |
| 3.00 | 10.00 | - | |
| 3.175 | 10.00 | - | |

On request Inch / Special dimensions / Shank 3.00mm

FEATURES & BENEFITS

Excellent PCB edge finish
Efficient chip evacuation

| RECOMMENDED PARAMETERS FOR ROUTING | | | | | |
|------------------------------------|-------------|----------|-----------|----------|----------|
| Material | PE | PTFE | POLYIMIDE | Al | CU/BRASS |
| Cutting Speed m/min | 100 -120 | 100 -120 | 100 -120 | 200 -250 | 180 -220 |
| Ø d mm | f microns | | | | |
| 0.60 | 6 | 7 | 7 | 2 | 2 |
| 0.80 | 8 | 8 | 8 | 2 | 2 |
| 1.00 | 10 | 10 | 10 | 3 | 3 |
| 1.20 | 14 | 14 | 14 | 5 | 5 |
| 1.60 | 25 | 25 | 25 | 8 | 8 |
| 2.00 | 35 | 35 | 35 | 12 | 12 |
| 2.40 | 40 | 40 | 40 | 15 | 15 |
| 3.00 | 45 | 45 | 45 | 18 | 18 |
| 3.175 | 50 | 50 | 50 | 20 | 20 |
| Ød Tool Diameter | f Chip Load | | | | |

Tabulated parameters provide guidelines which acts as starting points for optimising speeds and feeds at the user's end.

PACKING

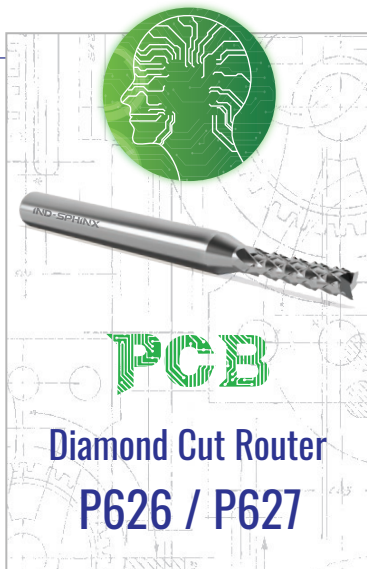
10 tools per pack
50 tools per pack



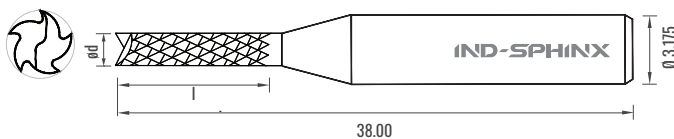
QUALITY • PRECISION • CONSISTENCY



www.indspinx.com
customerfocus@indspinx.com



FR4



APPLICATION

Diamond patterned standard router used for routing outer contours in PCBs

| Ø d DIAMETER | l FLUTE LENGTH | | mm |
|--------------|----------------|-------|----|
| 0.70 | 5.00 | - | |
| 0.80 / 0.90 | 5.00 | 7.00 | |
| 1.00 | 5.00 | 7.00 | |
| 1.10 | 5.00 | 7.00 | |
| 1.20 | 5.00 | 7.00 | |
| 1.30 | 5.00 | 7.00 | |
| 1.40 | 5.00 | 7.00 | |
| 1.50 / 1.60 | 8.50 | - | |
| 1.80 | 8.50 | - | |
| 2.00 | 9.00 | 10.50 | |
| 2.10 / 2.20 | 9.00 | 10.50 | |
| 2.30 | 9.00 | 10.50 | |
| 2.40 | 9.00 | 10.50 | |
| 2.50 | 9.00 | 10.50 | |
| 2.60 / 2.80 | 9.00 | - | |
| 2.90 | 9.00 | - | |
| 3.00 | 9.00 | 10.50 | |
| 3.175 | 9.00 | 10.50 | |

On request Inch / Special dimensions / Shank 3.00mm

FEATURES & BENEFITS

Long life and excellent performance under good vacuum conditions

| RECOMMENDED PARAMETERS FOR ROUTING FR4 | | | |
|--|-----------------|-----------------------------|------------------------------|
| Ød | N | F _{x-y} | F _z (Pre Drilled) |
| mm | RPM | m/min | m/min |
| 0.80 | 70000 | < 0.4 | 0.2 |
| 0.90 | 70000 | < 0.4 | 0.2 |
| 1.00 | 50000 | 0.4 - 0.6 | 0.4 |
| 1.20 | 50000 | 0.5 - 0.7 | 0.4 |
| 1.30 | 47000 | 0.5 - 0.7 | 0.5 |
| 1.40 | 43000 | 0.5 - 0.7 | 0.5 |
| 1.50 | 40000 | 0.6 - 0.8 | 0.5 |
| 1.60 | 38000 | 0.6 - 0.8 | 0.5 |
| 1.70 | 36000 | 0.7 - 1.0 | 0.5 |
| 1.80 | 34000 | 0.7 - 1.0 | 0.5 |
| 2.00 | 30000 | 1.0 - 1.4 | 0.5 |
| 2.40 | 25000 | 1.0 - 1.4 | 0.5 |
| 2.50 | 24000 | 1.0 - 1.4 | 0.5 |
| 3.00 | 20000 | 1.0 - 1.3 | 0.5 |
| 3.175 | 20000 | 1.0 - 1.3 | 0.5 |
| Ød Tool Diameter | N Spindle Speed | F _{x-y} Table Feed | F _z Z-Feed Rate |

Tabulated parameters provide guidelines which acts as starting points for optimising speeds and feeds at the user's end.

PACKING

10 tools per pack
50 tools per pack

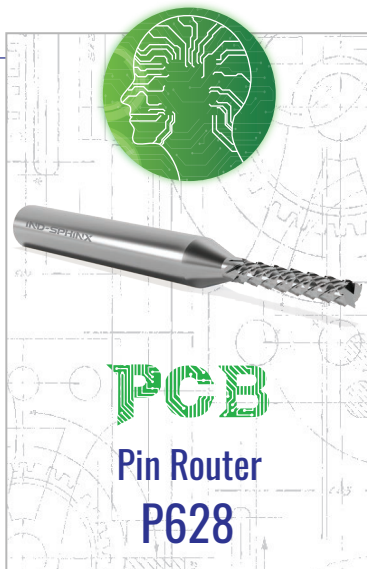


QUALITY • PRECISION • CONSISTENCY

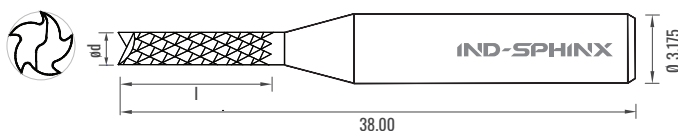


PEOPLE

www.indspinx.com
customerfocus@indspinx.com



FR4



LHRC

APPLICATION

Diamond patterned router used for routing contours in PCBs manual feeding machines

| Ø d DIAMETER | l FLUTE LENGTH | mm |
|--------------|----------------|----|
| 2.00 | 13.00 | |
| 2.40 | 13.00 | |
| 3.00 | 13.00 | |
| 3.175 | 13.00 | |

On request Inch / Special dimensions / Shank 3.00mm

FEATURES & BENEFITS

Extended flute for manual machining

| RECOMMENDED PARAMETERS FOR ROUTING FR4 | | | |
|--|-----------------|-----------------------------|----------------------------|
| Ød mm | N RPM | F _{x-y} m/min | F _z m/min |
| 2.00 | 30000 | 1.0 - 1.4 | 0.5 |
| 2.40 | 25000 | 1.0 - 1.4 | 0.5 |
| 3.00 | 20000 | 1.0 - 1.3 | 0.5 |
| 3.175 | 20000 | 1.0 - 1.3 | 0.5 |
| Ød Tool Diameter | N Spindle Speed | F _{x-y} Table Feed | F _z Z-Feed Rate |

Tabulated parameters provide guidelines which acts as starting points for optimising speeds and feeds at the user's end.

PACKING

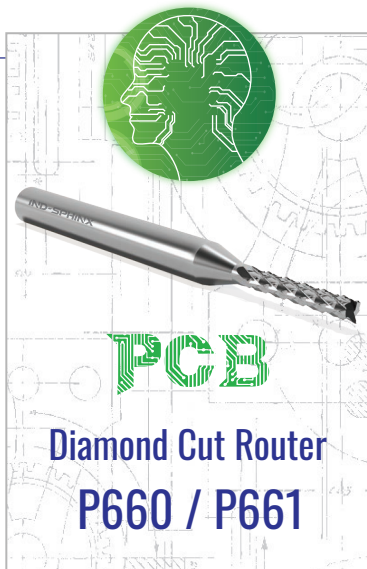
10 tools per pack
50 tools per pack



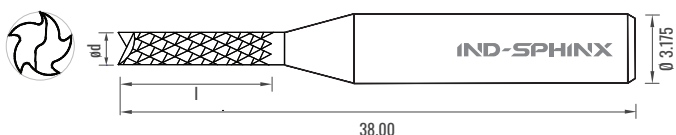
QUALITY • PRECISION • CONSISTENCY



www.indspinx.com
customerfocus@indspinx.com



FR4



APPLICATION
For routing of all Standard PCBs with aggressive feed rates on rigid spindles

| Ø d DIAMETER | l FLUTE LENGTH | | mm |
|--------------|----------------|-------|----|
| 0.50 | 3.00 | - | |
| 0.60 | 3.00 | - | |
| 0.80 | 3.00 | 5.00 | |
| 0.90 | 5.00 | - | |
| 1.00 | 5.00 | - | |
| 1.10 | 5.00 | 7.00 | |
| 1.20 | 5.00 | 7.00 | |
| 1.30 | 5.00 | 7.00 | |
| 1.40 | 5.00 | - | |
| 1.50 | 8.00 | - | |
| 1.60 | 8.00 | - | |
| 1.70 | 8.00 | - | |
| 1.80 | 8.00 | 9.50 | |
| 2.00 | 8.00 | 9.50 | |
| 2.40 | 8.00 | 10.50 | |
| 2.50 | 8.00 | 10.50 | |

On request Inch / Special dimensions / Shank 3.00mm

FEATURES & BENEFITS
Long life and excellent performance under good vacuum conditions

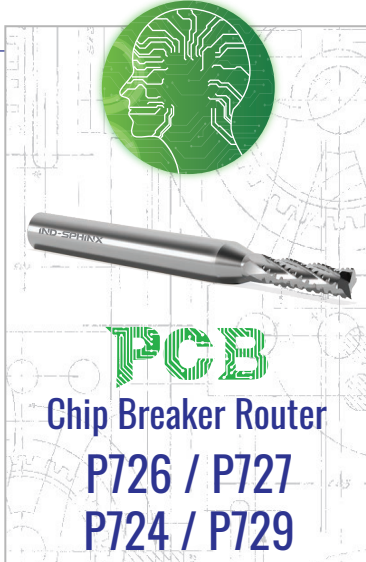
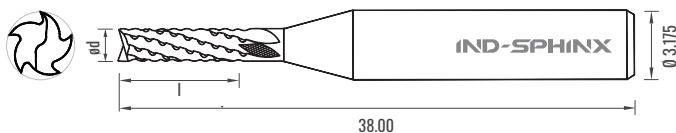
| RECOMMENDED PARAMETERS FOR ROUTING FR4 | | | |
|--|-----------------|-----------------|------------------------|
| Ød | N | F x-y | Fz |
| mm | RPM | m/min | (Pre Drilled) m/min |
| 0.60 | 70000 | < 0.2 | 0.2 |
| 0.80 | 70000 | < 0.4 | 0.2 |
| 0.90 | 70000 | < 0.4 | 0.2 |
| 1.00 | 50000 | 0.4 - 0.6 | 0.4 |
| 1.20 | 50000 | 0.5 - 0.7 | 0.4 |
| 1.30 | 47000 | 0.5 - 0.7 | 0.5 |
| 1.40 | 43000 | 0.5 - 0.7 | 0.5 |
| 1.50 | 40000 | 0.6 - 0.8 | 0.5 |
| 1.60 | 38000 | 0.6 - 0.8 | 0.5 |
| 1.70 | 36000 | 0.7 - 1.0 | 0.5 |
| 1.80 | 34000 | 0.7 - 1.0 | 0.5 |
| 2.00 | 30000 | 1.0 - 1.4 | 0.5 |
| 2.40 | 35000 | 1.4 - 1.6 | 0.5 |
| Ød Tool Diameter | N Spindle Speed | Fx-y Table Feed | Fz Z-Feed Rate |

Tabulated parameters provide guidelines which acts as starting points for optimising speeds and feeds at the user's end.

PACKING
10 tools per pack
50 tools per pack



FR4



| Ø d DIAMETER | I FLUTE LENGTH | | |
|--------------|----------------|------|------|
| | mm | | |
| 0.40 | 2.00 | - | - |
| 0.50 - 0.60 | 3.00 | 4.00 | - |
| 0.70 | 4.00 | 5.00 | - |
| 0.80 | 5.00 | 6.00 | 7.00 |
| 0.90 | 5.00 | 6.00 | 7.00 |
| 1.00 | 5.00 | 7.00 | 8.50 |
| 1.10 | 5.00 | 7.00 | 8.50 |
| 1.20 | 5.00 | 7.00 | 8.50 |
| 1.30 - 1.40 | 5.00 | 7.00 | 8.50 |
| 1.50 | 8.50 | - | - |
| 1.60 | 8.50 | - | - |
| 1.70 - 1.90 | 8.50 | - | - |
| 2.00 | 9.00 | - | - |
| 2.10 | 9.00 | - | - |
| 2.40 | 9.00 | - | - |
| 2.50 - 2.90 | 9.00 | - | - |
| 3.00 | 9.00 | - | - |
| 3.175 | 9.00 | - | - |

On request Inch / Special dimensions / Shank 3.00mm

APPLICATION

Spiral patterned standard router used for routing outer contours and inner contours of PCBs

Routing of inner slotting in the PCBs

FEATURES & BENEFITS

Smooth edge finish

Good dimensional control because of efficient chip evacuation

RECOMMENDED PARAMETERS FOR ROUTING FR4

| Ød mm | N RPM | F x-y m/min | Fz m/min |
|------------------|-----------------|-----------------|----------------|
| 0.40 | 70000 | < 0.1 | 0.2 |
| 0.50 | 70000 | < 0.2 | 0.2 |
| 0.60 | 70000 | < 0.3 | 0.2 |
| 0.80 | 70000 | < 0.4 | 0.2 |
| 1.00 | 70000 | 0.4 - 0.6 | 0.4 |
| 1.20 | 58000 | 0.5 - 0.7 | 0.4 |
| 1.30 | 54000 | 0.5 - 0.7 | 0.5 |
| 1.40 | 50000 | 0.5 - 0.7 | 0.5 |
| 1.50 | 46000 | 0.6 - 0.8 | 0.5 |
| 1.60 | 43000 | 0.6 - 0.8 | 0.5 |
| 1.70 | 41000 | 0.7 - 1.0 | 0.5 |
| 1.80 | 39000 | 0.7 - 1.0 | 0.5 |
| 2.00 | 35000 | 1.0 - 1.4 | 0.5 |
| 2.40 | 29000 | 1.0 - 1.4 | 0.5 |
| 2.50 | 28000 | 1.0 - 1.4 | 0.5 |
| 3.00 | 23000 | 1.0 - 1.3 | 0.5 |
| 3.175 | 22000 | 1.0 - 1.3 | 0.5 |
| Ød Tool Diameter | N Spindle Speed | Fx-y Table Feed | Fz Z-Feed Rate |

Tabulated parameters provide guidelines which acts as starting points for optimising speeds and feeds at the user's end.

PACKING

10 tools per pack

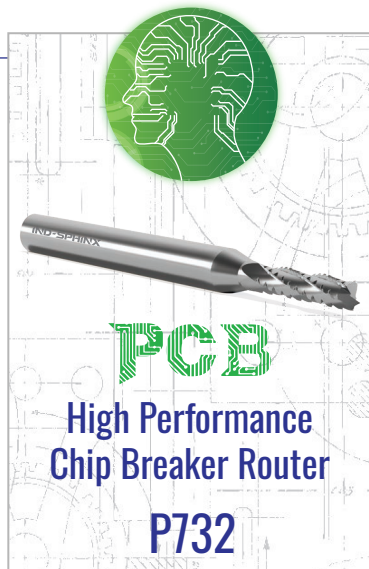
50 tools per pack



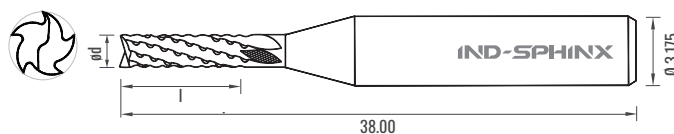
QUALITY • PRECISION • CONSISTENCY



www.indspinx.com
customerfocus@indspinx.com



FR4



APPLICATION

Spiral patterned special router used for routing outer contours and inner contours PCBs

Routing of inner slotting in the PCBs

FEATURES & BENEFITS

Smooth edge finish

Good dimensional control because of efficient chip evacuation

PACKING

10 tools per pack
50 tools per pack

| Ø d DIAMETER | l FLUTE LENGTH | mm |
|--------------|----------------|------|
| 0.40 | 2.50 | - |
| 0.50 | 3.00 | - |
| 0.60 | 3.00 | - |
| 0.80 | 5.00 | - |
| 0.90 | 5.00 | - |
| 1.00 | 5.00 | - |
| 1.10 | 5.00 | - |
| 1.20 | 5.00 | 7.00 |
| 1.30 / 1.40 | 5.00 | - |
| 1.50 | 6.00 | - |
| 1.60 | 7.50 | - |
| 1.80 | 7.50 | - |
| 2.00 | 7.50 | - |
| 2.40 | 8.50 | - |
| 2.50 | 8.50 | - |
| 3.00 | 8.50 | - |
| 3.175 | 8.50 | - |

On request Inch / Special dimensions / Shank 3.00mm

| RECOMMENDED PARAMETERS FOR ROUTING FR4 | | | | |
|--|-----------------|-----------------------------|----------------------------|---------------|
| Ød | N | F _{x-y} | F _z | |
| | | | Without Pre-Drilling | With Drilling |
| mm | RPM | m/min | | |
| 0.40 | 70000 | < 0.2 | 0.2 | 0.4 |
| 0.50 | 70000 | < 0.3 | 0.2 | 0.4 |
| 0.60 | 70000 | < 0.3 | 0.2 | 0.4 |
| 0.70 | 70000 | 0.3 - 0.4 | 0.2 | 0.4 |
| 0.80 | 70000 | 0.3 - 0.4 | 0.2 | 0.4 |
| 0.90 | 70000 | 0.3 - 0.4 | 0.2 | 0.4 |
| 1.00 | 70000 | 0.4 - 0.6 | 0.2 | 0.4 |
| 1.20 | 58000 | 0.5 - 0.7 | 0.4 | 0.8 |
| 1.30 | 54000 | 0.5 - 0.7 | 0.4 | 0.8 |
| 1.40 | 50000 | 0.5 - 0.7 | 0.4 | 0.8 |
| 1.50 | 46000 | 0.6 - 0.8 | 0.5 | 1.0 |
| 1.60 | 43000 | 0.6 - 0.8 | 0.5 | 1.0 |
| 1.70 | 41000 | 0.7 - 1.0 | 0.5 | 1.0 |
| 1.80 | 39000 | 0.7 - 1.0 | 0.5 | 1.0 |
| 2.00 | 35000 | 1.0 - 1.4 | 0.5 | 1.2 |
| 2.40 | 29000 | 1.0 - 1.4 | 0.5 | 1.2 |
| 2.50 | 28000 | 1.0 - 1.4 | 0.5 | 1.4 |
| 3.00 | 24000 | 0.8 - 1.2 | 0.5 | 1.4 |
| 3.175 | 23000 | 0.8 - 1.2 | 0.5 | 1.4 |
| Ød Tool Diameter | N Spindle Speed | F _{x-y} Table Feed | F _z Z-Feed Rate | |

Tabulated parameters provide guidelines which acts as starting points for optimising speeds and feeds at the user's end.

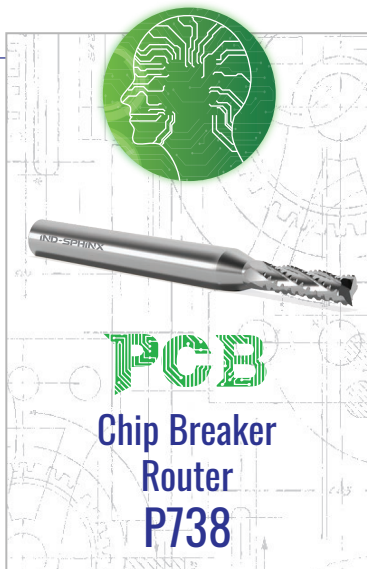


QUALITY • PRECISION • CONSISTENCY

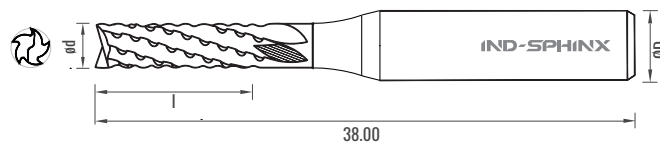


PEOPLE

www.indspinx.com
customerfocus@indspinx.com



FR4



APPLICATION

Spiral patterned standard router used for routing outer contours and inner contours of PCBs

Routing of inner slotting in the PCBs

| Ø d DIAMETER | l FLUTE LENGTH | | mm |
|--------------|----------------|-------|---------|
| 1.10 | 6.50 | - | |
| 1.20 | 6.00 * | 7.00 | |
| 1.30 | 7.00 | - | |
| 1.40 | 7.00 | 8.50 | |
| 1.50 | 7.50 | 8.50 | |
| 1.60 | 7.50 * | 8.50 | |
| 1.70 | 7.50 | 8.50 | |
| 1.80 | 7.50 * | 8.50 | |
| 1.90 | 7.50 | 8.50 | |
| 2.00 | 7.50 | 9.00 | 10.00 * |
| 2.10 | 9.00 | - | |
| 2.20 | 9.00 | - | |
| 2.30 | 9.00 | - | |
| 2.40 | 9.00 | 10.50 | |
| 2.50 | 9.00 | 10.50 | |
| 3.00 | 10.00 | - | |
| 3.175 | 10.00 | - | |

* : Non stock items / Articles

On request : Inch / Special dimensions / Shank 3.00mm

FEATURES & BENEFITS

Smooth edge finish

Good dimensional control because of robust design

Long tool life

High feed

| RECOMMENDED PARAMETERS FOR ROUTING HIGH Tg WITH CERAMIC FILLERS (Tg ≥ 170° C) | | | |
|---|-----------------|-------------|------------------|
| Ød | N | F x-y | Fz (Pre Drilled) |
| mm | RPM | m/min | m/min |
| 0.40 | 115000 | < 0.1 | 0.6 |
| 0.50 | 115000 | < 0.2 | 0.6 |
| 0.60 | 96000 | < 0.3 | 0.6 |
| 0.80 | 70000 | < 0.4 | 1.0 |
| 1.00 | 57000 | 0.4 - 0.6 | 1.0 |
| 1.10 | 48000 | 0.50 | 1.5 |
| 1.20 | 48000 | 0.50 | 1.5 |
| 1.30 | 48000 | 0.50 | 1.5 |
| 1.40 | 40000 | 0.50 | 1.5 |
| 1.50 | 38000 | 0.60 | 2.0 |
| 1.60 | 36000 | 0.70 | 2.0 |
| 1.70 | 36000 | 0.70 | 2.0 |
| 1.80 | 32000 | 0.80 | 2.0 |
| 1.90 | 32000 | 0.80 | 2.0 |
| 2.00 | 29000 | 1.00 | 2.0 |
| 2.10 | 29000 | 1.00 | 2.0 |
| 2.20 | 29000 | 1.00 | 2.0 |
| 2.30 | 24000 | 1.10 | 2.0 |
| 2.40 | 24000 | 1.10 | 2.0 |
| 2.50 | 22900 | 1.10 | 2.0 |
| 3.00 | 19000 | 1.00 | 2.0 |
| 3.175 | 18000 | 1.00 | 2.0 |
| Ød Tool Diameter | N Spindle Speed | f Chip Load | Fz Z-Feed Rate |

Tabulated parameters provide guidelines which acts as starting points for optimising speeds and feeds at the user's end.

PACKING

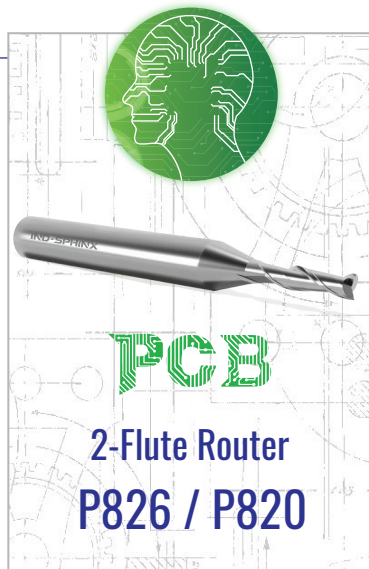
10 tools per pack
50 tools per pack



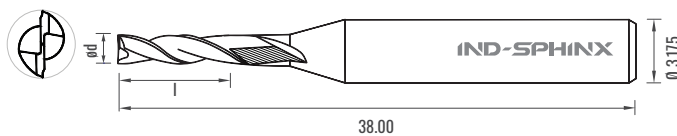
QUALITY • PRECISION • CONSISTENCY



www.indspinx.com
customerfocus@indspinx.com



PTFE IMS Polymide



APPLICATION

Routing Aluminium and Copper
Heat sink PCBs

Routing Flexi and Flexirigid boards

| Ø d DIAMETER | FLUTE LENGTH | | mm |
|--------------|--------------|------|----|
| 0.25 - 0.30 | 1.00 | - | |
| 0.40 | 1.50 | - | |
| 0.50 - 0.70 | 3.00 | - | |
| 0.80 | 5.00 | - | |
| 1.00 | 5.00 | - | |
| 1.10 | 5.00 | 8.00 | |
| 1.20 | 5.00 | 8.00 | |
| 1.50 | 6.00 | 8.00 | |
| 1.60 | 6.00 | 8.00 | |
| 1.90 | 6.00 | 8.00 | |
| 2.00 | 8.00 | - | |
| 2.40 | 8.00 | - | |
| 2.50 | 8.00 | - | |
| 3.00 | 10.00 | - | |
| 3.175 | 10.00 | - | |

On request Inch / Special dimensions / Shank 3.00mm

FEATURES & BENEFITS

Excellent PCB edge finish

| RECOMMENDED PARAMETERS FOR ROUTING | | | | | |
|------------------------------------|-------------|----------|-----------|----------|----------|
| Material | PE | PTFE | POLYIMIDE | Al | CU/BRASS |
| Cutting Speed m/min | 100 -120 | 100 -120 | 100 -120 | 200 -250 | 180 -220 |
| Ø d mm | f microns | | | | |
| 0.25 | 3 | 3 | 3 | 1 | 1 |
| 0.40 | 5 | 5 | 5 | 2 | 2 |
| 0.60 | 6 | 6 | 6 | 2 | 2 |
| 0.80 | 8 | 8 | 8 | 3 | 3 |
| 1.00 | 10 | 10 | 10 | 3 | 3 |
| 1.20 | 14 | 14 | 14 | 5 | 5 |
| 1.60 | 25 | 25 | 25 | 8 | 8 |
| 2.00 | 35 | 35 | 35 | 12 | 12 |
| 2.40 | 40 | 40 | 40 | 15 | 15 |
| 3.00 | 45 | 45 | 45 | 18 | 18 |
| 3.175 | 50 | 50 | 50 | 20 | 20 |
| Ød Tool Diameter | f Chip Load | | | | |

Tabulated parameters provide guidelines which acts as starting points for optimising speeds and feeds at the user's end.

PACKING

10 tools per pack
50 tools per pack

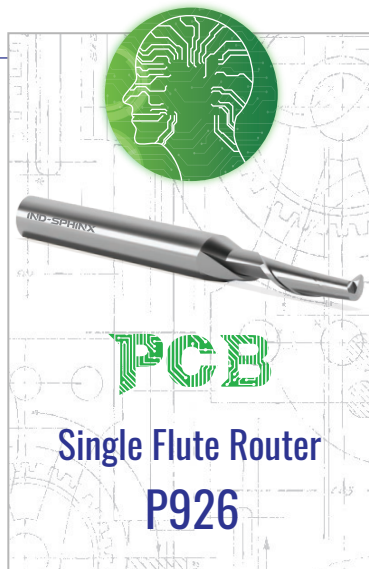


QUALITY • PRECISION • CONSISTENCY



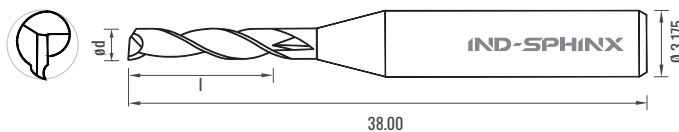
PEOPLE

www.indspphinx.com
customerfocus@indspphinx.com



PTFE

Polymide



RHRC

APPLICATION

Routing teflon and flexible boards

PE, PTFE, Polymide

| Ø d DIAMETER | l FLUTE LENGTH mm |
|--------------|-------------------|
| 0.40 | 2.00 |
| 0.50 | 3.00 |
| 0.60 | 3.00 |
| 0.80 | 3.00 |
| 1.00 | 3.00 |
| 1.20 | 4.00 |
| 1.40 | 4.00 |
| 1.50 | 4.00 |
| 1.60 | 5.00 |
| 1.80 | 5.00 |
| 2.00 | 8.00 |
| 2.40 | 8.00 |
| 2.50 | 9.00 |
| 3.00 | 9.00 |
| 3.175 | 9.00 |

On request Inch / Special dimensions / Shank 3.00mm

FEATURES & BENEFITS

For material producing long chips

Thin prepegs routing

| RECOMMENDED PARAMETERS FOR ROUTING | | | |
|------------------------------------|-------------|----------|-----------|
| Material | PE | PTFE | POLYIMIDE |
| Cutting Speed m/min | 100 -120 | 100 -120 | 100 -120 |
| Ø d mm | f microns | | |
| 0.40 | 4 | 4 | 4 |
| 0.60 | 6 | 6 | 6 |
| 0.80 | 8 | 8 | 8 |
| 1.00 | 10 | 10 | 10 |
| 1.20 | 14 | 14 | 14 |
| 1.60 | 25 | 25 | 25 |
| 2.00 | 35 | 35 | 35 |
| 2.40 | 40 | 40 | 40 |
| 3.00 | 45 | 45 | 45 |
| 3.175 | 50 | 50 | 50 |
| Ød Tool Diameter | f Chip Load | | |

Tabulated parameters provide guidelines which acts as starting points for optimising speeds and feeds at the user's end.

PACKING

10 tools per pack

50 tools per pack



QUALITY • PRECISION • CONSISTENCY



PEOPLE

www.indspinx.com

customerfocus@indspinx.com