

# IND-SPHINX<sup>®</sup>

PCB DRILLS | PCB ROUTERS  
PCB SPECIALS

## PCB Product Range








**Wide Range**  
**Easy Availability**  
**Application Support**  
**Tools for Diverse Materials**

[www.indsphinx.com](http://www.indsphinx.com)



QUALITY • PRECISION • CONSISTENCY

PRODUCT	DIAMETER RANGE mm	ARTICLE	APPLICATION
 PCB undercut drills Diamond Coated	0.30 - 0.45	X637D	Drilling of IMS PCBs and laminates with ceramic fillers
 PCB undercut drills Diamond Coated	0.50 - 1.25	X638D	Drilling of IMS PCBs and laminates with ceramic fillers
 PCB standard drills Diamond Coated	1.30 - 3.175	X835D	Drilling of IMS PCBs and laminates with ceramic fillers
 PCB inverse drills Diamond Coated	3.20 - 6.50	X534D	Drilling of IMS PCBs and laminates with ceramic fillers
 PCB chamfering cutter Diamond Coated	6.00 / 6.35 45°/60°/75°/90°/120°/140°	X681C / X688C	Suitable for scoring and chamfering in IMS PCBs, HighTg material and laminate with fillers
Multilayer drills ultra micro	0.050 - 0.090	D840	Drilling small through holes, via holes and Foils & inner layers
Multilayer drills super micro	0.100 - 0.190	D840	Drilling small through holes and via holes
Multilayer drills main range	0.200 - 1.150	D840	Drilling multi layers boards, thick panels and flexible boards
Standard micro drills	0.200 - 0.650	D835	Drilling small PTH holes in DS and 4-6 layers boards
Standard main range drills	0.700 - 3.175	D835	Drilling in all standard PCBs
Standard inverse drills	3.200 - 7.500	D835	Drilling in all standard PCBs
High performance inverse drills	3.200 - 7.500	D534	High performance drilling in all PCBs and High Tg boards for better registration • Drilling in IMS PCBs
High performance inverse chip breaker drills	3.200 - 7.500	D532	High performance drilling in all standard PCBs and High Tg boards for better registration and efficient chip removal
PCB center drills	0.30 - 0.60	D580	For countersinking in FR-4, Plastics, Inox Stainless steel, MS, Brass,Copper and Aluminium.
Multilayer drills (variable web)	0.150 - 0.650	D620	Drilling of high layer boards, thick panels, High Tg and High Cu content laminates
Multilayer drills (high helix)	0.150 - 0.50	D645	High performance drilling in high stacks, BT and BGA application
Undercut drills (standard geometry)	0.200 - 2.500	D635	Drilling of high layer boards and High Tg laminates
Slot drills	0.300 - 3.175	D546	Drilling PTH slots in all standard PCBs
Micro via drills	0.075 - 0.300	D550	Drilling micro via and blind holes
Micro via taper drills	0.075 - 0.400	D551	Drilling of inner layers and foils
PCB stack hole drills	3.150 / 3.175	D835	Drilling on PCB stack
PCB fixture drills	0.70 - 3.175	D835	For PCB fixture drilling
Isolation path cutter (30°, 60°, 90°)	0.75 - 1.60	D842 / G843 / G844	Used for isolation path cutting in prototype PCB for R&D and training institutions.

**ALSO AVAILABLE:**

PCB Specials

Circular cutters

Tools for metal based PCBs



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[customerfocus@indspinx.com](mailto:customerfocus@indspinx.com)

PRODUCT	DIAMETER RANGE mm	ARTICLE	APPLICATION
 PCB Diamond cut routers Diamond Coated	0.80 - 3.175	X626R	FT • Routing of all standard PCBs • Routing of PCBs with High Tg and abrasive fillers
 PCB chip breaker routers Diamond Coated	0.40 - 3.175	X740R / X727R Updraft / Downdraft	FT • Routing of all standard PCBs • Routing of PCBs with High Tg and abrasive fillers
 PCB 1-flute routers Diamond Coated	1.60 - 3.00	X926R / X924R	FT • Routing of all standard PCBs • Routing of PCBs with High Tg and abrasive fillers
 PCB 2-flute routers Diamond Coated	0.40 - 3.00	X829R / X328R	SE • Routing of all standard PCBs • Routing of PCBs with High Tg and abrasive fillers
 PCB V score routers Diamond Coated	2.00/2.40/3.175	X845V	Suitable for scoring and chamfering in IMS PCBs, HighTg material and laminate with fillers
Diacut routers LHRC	0.70 - 3.175	P626 / P627* Updraft / Downdraft	FT Depaneling of all assembled PCBs
Hi-feed diacut routers RHRC	0.50 - 2.50	P660 Updraft	FT Routing of PCBs with aggressive feed rates with rugged spindles
Diacut routers RHRC	0.50 - 2.50	P661* Updraft	DP Routing of all standard PCBs with less deflection
Chip-breaker routers RHRC	0.40 - 3.175	P726 Updraft	FT Routing of PCBs with better edge finish under efficient vaccum conditions
Chip-breaker routers LHRC	0.40 - 3.175	P727* Downdraft	FT Depaneling of assembled PCBs with better edge finish under efficient vaccum conditions and less deflection
Chip-breaker routers RHRC	0.40 - 3.175	P729* Updraft	DP Routing of PCBs with better edge finish and routing inner contours with less deflection
High performance chip-breaker routers RHRC	0.400 - 3.175	P732 Updraft	FT Routing of inner slots and complex contours in PCBs
1-flute routers RHRC	0.400 - 3.175	P926 Updraft	SE Routing Alu, Cu heat sinks and flexible boards and teflon
2-flute Aluminium Routers	0.40 - 3.00	P829	FE Routing of IMS PCBs with ceramic fillers
2-flute Routers RHRC	0.250 - 3.175	P826 / P820 Updraft	FT SE Routing Alu, Cu heat sinks and flexible boards and teflon
3-flute routers RHRC	0.600 - 3.175	P436 Updraft	FT Routing Al, Cu, Plastics
Pin routers	2.00/2.40/3.175	P628 Updraft	FT For manual feed routing machines
Finishing routers	0.60 - 2.50	P370	PCB routing outer and inner contours with very high surface finish requirements
2-flute Aluminium routers	1.60 - 3.00	P024	DP High performance routers for non ceramic filler Aluminium PCBs
2-flute Alu routers RHRC	0.400 - 3.175	P424 P422*	DP SE Routing Al, Cu panels / IMS / Metal PCB / heat sinks PCB
V-score router helical	2.00 - 3.175	G845	For V-scoring PCBs and routing insulation paths in prototypes
V-grove routers	30°/45°/60°/90°	G846	For V-scoring PCBs and routing insulation paths in prototypes
Chamfering cutters	6.00 / 6.35	C681	For countersinking in FR-4,Plastics,Inox, Stainless steel, MS,Brass,Copper and Aluminium.

**OTHER ROUTERS**

- \* Article are on request (non-stock)

- Other special geometry routers and end mills on request

KEY TO POINT GEOMETRY:

FT FISH TAIL

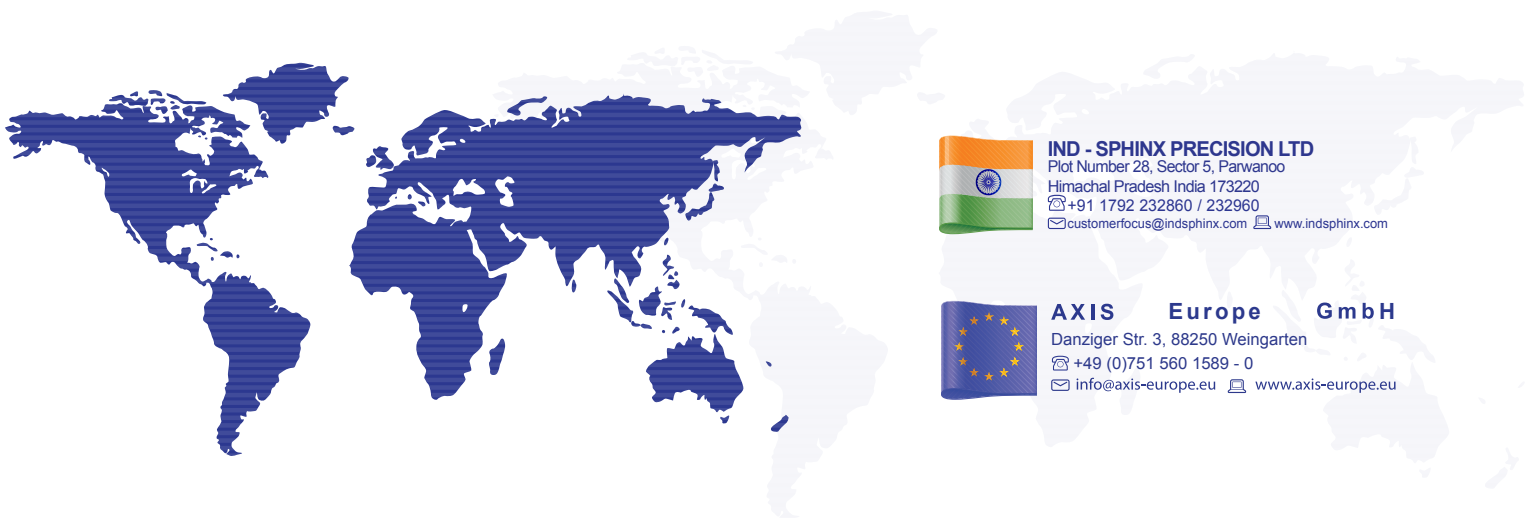
DP DRILL POINT

SE SAFE END



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