ACHTECK

NEW
PRODUCT!

APE90-LN13

Porcupine Milling Cutter



www.achtecktool.com

Porcupine Milling Cutter Naming System

A 1	PE 2	90 3	-	063 4	-	Z04 5	-	A 6	27 7	R 8	-	LN13 9	-	L56 10	-	F 11	-	C 12

1-Achteck

2-Machining type	
PE	Porcupine milling
SM	Square shoulder milling
PM	Profile milling
HM	High feed milling
DM	Side and face milling

3-Approch angle (Kr)	
Figure	Angle
90	90°
88	88°
60	60°
45	45°

4-Cutter dia.	
025	25mm
063	63mm
080	80mm
.	.
250	250mm

5-Number of teeth	
Z02	2 teeth
Z04	4 teeth
Z05	5 teeth
.	.
Z30	30 teeth

6-Connection	
A	Arbor
W	Weldon shank
C	Cylinder shank
N	Whistle noich shank
M	Screw modular

7-Connection size	
27	Connection diameter 27mm

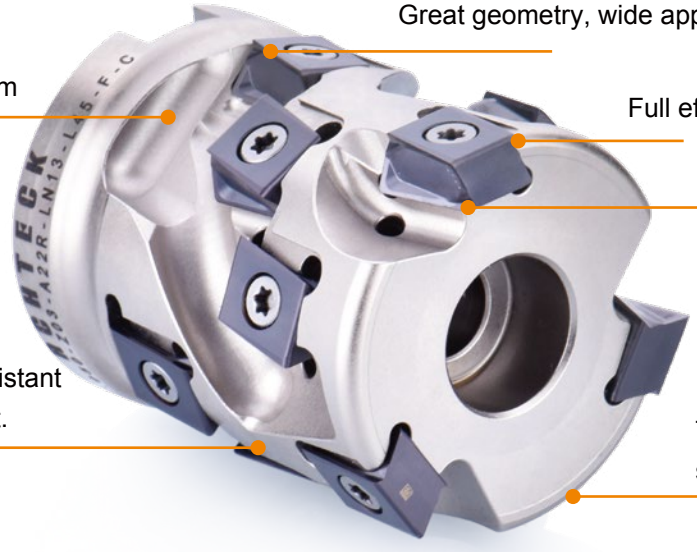
8-Hand of tool	
R	Right
L	Left
N	Neutral

9-Insert	
LN13	LN13 series insert

10-Valid cutting edge length Max	
L30	30mm
L45	45mm
L56	56mm

11-Cutter type	
F	Full teeth
H	Half teeth

12-Other	
-C	With internal coolant
No mark	Without internal coolant



Great geometry, wide applicability, medium machining

Large chip room

Full effective design

Inserts with 4 cutting edges, good economical solution

Tool body surface is nickel-plated, wear-resistant and corrosion-resistant.

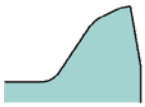
Tangential mounted inserts, strong rigidity tool body

APE90-LN13 Porcupine Milling Cutter

- Porcupine cutter with tangential mounted standard LN13 double-sided inserts with 4 cutting edges. Efficient, economic and strong application solution problem solver.
- Suitable for 2D-profiling, square shoulder milling with big ap. Even for face milling in combination with wiper insert.
- Accurate through coolant holes for each insert.
- Two sorts of interfaces. Weldon type and shell mill (Arbor).
- Weldon interface with diameter 40mm
- Shell mill (Arbor) interface with diameter 40-80mm apmax
- Weldon interface: apmax = 45mm
- Shell mill (Arbor) interface: apmax = 56mm
- All Corner radius inserts can be mounted in the first-row, without modify the cutter body.
- Corner radius inserts: R0.8/1.2/1.6/2.0/2.4/3.1



Chip breaker Features

Chip breaker name	Edge Preparation	Feature
MR2		• 35°rake angle; • Can used for most of materials; • For medium machining conditions;

Grade application

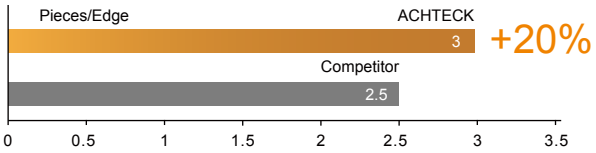
Grade	Coating	Material					
		P	M	K	S	N	H
AP301U	PVD	●	◐		○		
AP351U	PVD	●	◐		○		
AP401U	PVD		●		◐		
AC301K	CVD			●			◐
AP351K	PVD			●			

● Marked：1st Choice ◐ Marked：2nd Choice ○ Marked：Supplementary application

Case stories

Work piece:Base
Material:HT300
Insert:LNHU 130608ER-MR2 AC301K
Cutter description:APE90-040-Z02-W40R-LN13-L34-F-C
Machining type: Rough milling track surface
Cutting parameters:Vc=150m/min,ap=15mm,fz=0.14
Dry cutting



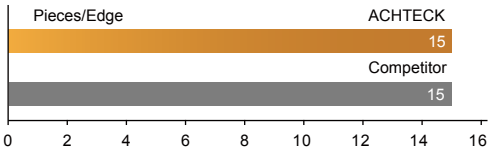


+20%

20% increase in spanlife of porcupine cutter

Work piece:Punch
Material:QT600
Insert:LNHU 130608ER-MR2 AC301K
Cutter description:APE90-063-Z04-A27R-LN13-L56-F-C
Machining type:Rough milling rectangular surface
Cutting parameters:Vc=158m/min,ap=35mm,ae=5mm,fz=0.15
Wet cutting



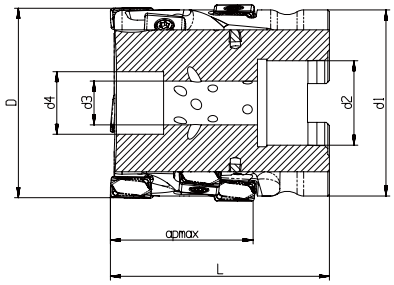


20% cost reduction per unit

Cutter stock item

APE90-LN13-C Arbor cutter

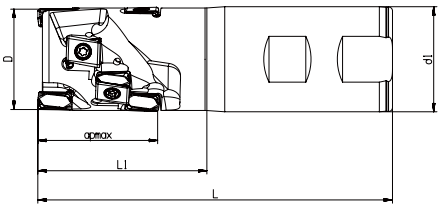




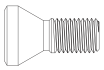
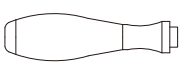
Designation	Dimension							Coolant	Z	Segment	Total Inserts	Insert
	D	d1	L	d2	d3	d4	apmax					
APE90-040-Z02-A16R-LN13-L34-F-C	40	39	55	16	9	15	34		2	3	6	LNHU 1306
APE90-040-Z02-A16R-LN13-L45-F-C	40	39	65	16	9	15	45		2	4	8	
APE90-050-Z03-A22R-LN13-L34-F-C	50	47.5	55	22	11	18	34		3	3	9	
APE90-050-Z03-A22R-LN13-L45-F-C	50	47.5	65	22	11	18	45		3	4	12	
APE90-063-Z04-A27R-LN13-L56-F-C	63	59.5	80	27	14	20	56		4	5	20	
APE90-063-Z04-A27R-LN13-L45-F-C	63	59.5	70	27	14	20	45		4	4	16	
APE90-080-Z05-A32R-LN13-L56-F-C	80	75.6	85	32	18	26	56		5	5	25	

APE90-LN13-C Weldon shank





Designation	Dimension					Coolant	Z	Segment	Total Inserts	Insert
	D	d1	L1	L	apmax					
APE90-040-Z02-W40R-LN13-L34-F-C	40	40	54	120	34		2	3	6	LNHU 1306
APE90-040-Z02-W40R-LN13-L45-F-C	40	40	64	135	45		2	4	8	

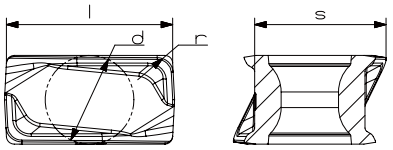
Dimension	Cutter spare parts			
Cutter diameter	Screw	Wrench		Torque
Φ40-Φ80	AST4112-60	ADT-T15		3.5Nm
		ADT-G16	BIT-T15	
				

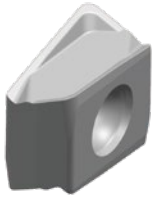
Application	
Facing	Shouldering
	

Remark: represent for coolant
represent for no coolant

Insert stock item

LNHU 1306



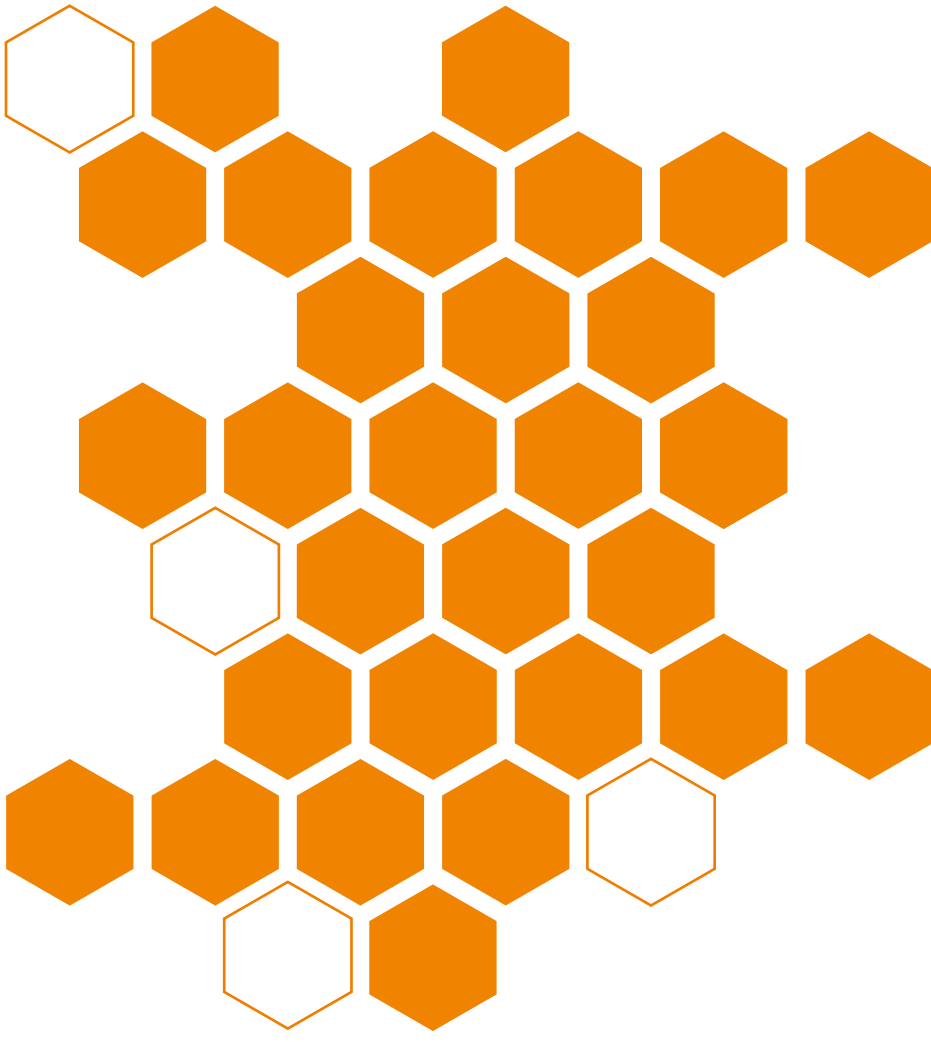
Insert	Designation	Dimensions				Grades						
						CVD coated		PVD coated				Uncoated
		l	d	s	r	AC301P	AC301K	AP301U	AP351U	AP401M	AP351K	AW100K
	LNHU 130608R-FM2	13.02	6.8	10.11	0.8							●
	LNHU 130608R-MM3	13.02	6.8	10.19	0.8					●		
	LNHU 130608R-MR2	13.02	6.8	10.15	0.8	●	●	●	●	●	●	
	LNHU 130612R-MR2	13.02	6.8	10.09	1.2		●		●	●		
	LNHU 130616R-MR2	13.02	6.8	10.03	1.6		●		●	●		
	LNHU 130620R-MR2	13.02	6.8	9.99	2.0				●	●		
	LNHU 130624R-MR2	13.02	6.8	9.92	2.4				●	●		
	LNHU 130631R-MR2	13.02	6.8	9.83	3.1		●		●	●		

Remarked: ● represent for standard stock

Recommended cutting speed by materials

Machined Materials				Achteck Milling Grades Application Ranges						Cutting depth and feed
ISO	Material classification	Tensile strength (N/mm²)	Hardness (HB)	AC301K	AP351K	AP301U	AP351U	AP401M	AW100K	APE90-LN13
				CVD	PVD	PVD	PVD	PVD	-	
				-	-	P15-35	P30-45	P25-35	-	
				-	-	M15-35	M25-35	M30-45	-	Cutter diameter
				K10-40	K15-40	-	-	-	-	Φ40-80
				-	-	S30-45	S30-45	S30-45	-	apmax
				-	-	-	-	-	N05-15	34-56
				-	-	-	-	-	-	Geometry
				Feed(mm/z)						MM3 / MR2
				Min Med Max	Min Med Max	Min Med Max	Min Med Max	Min Med Max	Min Med Max	Min - Max / Min - Max
				Cutting speed(m/min)						Feed(mm/z)
P	Non-alloyed steel	<600	<180			450 340 290	230 205 170	450 340 290		0.10 - 0.20 / 0.10 - 0.22
		<950	<280			320 240 200	200 180 160	320 240 200		0.10 - 0.16 / 0.10 - 0.18
	Alloyed steel	700-950	200-280			290 210 185	200 155 110	290 210 185		0.10 - 0.16 / 0.10 - 0.18
		950-1200	280-355			280 210 200	180 130 90	280 210 200		0.10 - 0.14 / 0.10 - 0.16
		1200-1400	355-415			210 170 110	140 105 70	210 170 110		0.10 - 0.14 / 0.10 - 0.16
M	Duplex stainless steel	778	230			165 150 130	270 215 155	150 115 85		0.10 - 0.16 / 0.10 - 0.18
	Austenitic stainless steel	675	200			270 185 90	260 180 90	185 140 105		0.10 - 0.14 / 0.10 - 0.14
	Precipitation-hardening stainless steel	1013	300			300 225 165	170 150 110	125 95 70		0.10 - 0.14 / 0.10 - 0.14
K	Grey cast iron	700	220	480 310 140	390 280 130	290 220 150				0.12 - 0.22
	Nodular cast iron	880	260	450 295 140	350 250 120	180 130 70				0.12 - 0.20
	Malleable cast iron	800	250	336 220 100	270 200 100	390 300 190				0.12 - 0.18
S	Fe based alloy	943	280			50 40 30	45 40 30	50 40 30		0.08 - 0.12 / 0.10 - 0.14
	Co based alloy	1076	320			45 38 30	45 40 30	45 38 30		0.08 - 0.12 / 0.10 - 0.14
	Ni based alloy	1177	350			45 38 30	45 40 30	45 38 30		0.08 - 0.12 / 0.10 - 0.14
	Ti-alloy	1262	370			100 75 30	100 70 45	100 75 30		0.08 - 0.12 / 0.10 - 0.14
N	Aluminum	260	75						50 40 30	
	Aluminum alloy	447	130						45 38 30	
H	Hardened steel	-	48-55HRC			70 50 40				0.08 - 0.12
	Chilled cast iron	-	55HRC			65 50 40				0.10 - 0.12

* The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, work piece clamping and cooants. Average chip thinckness(hm = fz x Sin KappaR)



GANZHOU ACHTECK TOOL TECHNOLOGY CO.,LTD.

Address:Ganzhou Economic Development Area,jiangxi,China
Tele:0086-797-8086879 Fax:0086-797-8166100 E-mail:export@achtecktool.com