

**NEW
PRODUCT!**

ASM90-LN Series

Shoulder milling & porcupine milling cutter

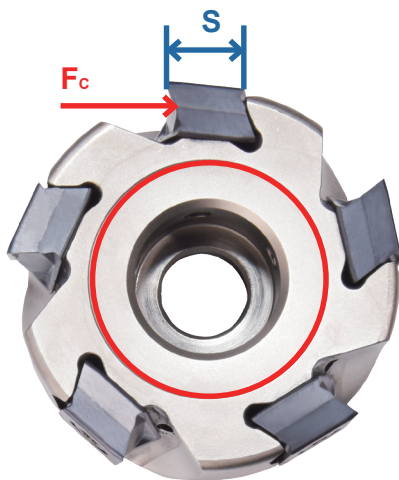


ACHTECK has launched its 90° shoulder milling cutter, with tangential double-sided 4 cutting edge inserts, which provides a good solution for shoulder milling.

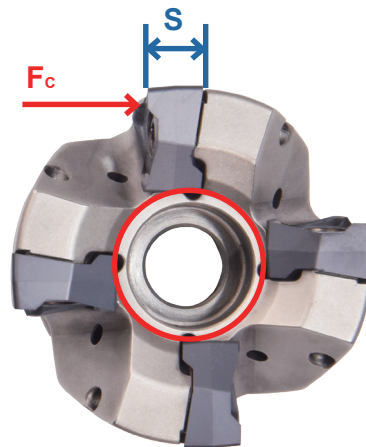
3 geometries, combined with the latest CVD and PVD coating technology, which can achieve better performance and surface quality, and cover most applications for different materials.

• ASM90-LN Shoulder Milling Cutter

- 90° accurate shoulder milling cutter with diameter range $\Phi 20$ - $\Phi 160$ MM
- LHNU 0904/1306 inserts can be used in shoulder milling and porcupine cutters
- With positive axial rake angle design, it can reduce cutting force, and get good chip evacuation
- Ground inserts, high insert indexing precision
- Corner radius: R0.4/0.8/1.2/1.6/2.0/2.4/3.1
- Wiper inserts for good surface quality
- Double sided 4 cutting edged inserts, more economic, and stronger cutting edge
- Multiple coupling types: Arbor cutter, cylindrical shank, screw modular shank
- Full tooth porcupine milling cutter



Tangential inserts



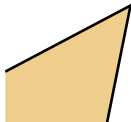
Radial inserts

- Advantages of tangential insert cutters:
 - Tool body core section is increased and the cutter body rigidity is strengthened;
 - Bigger insert thickness toward the cutting force direction, can resist heavier cutting force and achieve higher feed;

◆ Geometry features

Geometry	Edge shape	Working conditions
MR2		- used in stable cutting conditions - Suitable for medium and roughing applications

Geometry	Edge shape	Working conditions
MM3		- Easy-to-cut type - Used in weak cutting conditions - Suitable for semi-finishing and medium roughing applications

Geometry	Edge shape	Working conditions
FM2		- Sharp type - Designed for aluminum material machining Low cutting force and sharp cutting edge

◆ Grades

Grade	Coating	Materials					
		P	M	K	S	N	H
AP301U	PVD	●	◐		○		
AP351U	PVD	●	◐		○		
AP403M	PVD		●		◐		
AC301K	CVD			●			◐
AP351K	PVD			●			

● 1st option ◐ 2nd option ○ Supplementary application

Case Study

Workpiece: Wind power hub

Material: GGG40

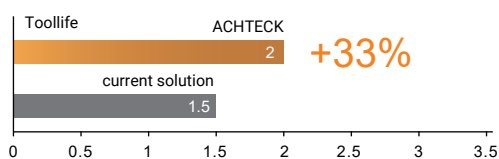
Inserts: LNHU 160708ER-MR2 AC301K

Cutter: ASM90-160-Z08-A40R-LN16

Process: flange face rough milling

Cutting parameters: $V_c=200\text{m/min}$, $a_p=8\text{mm}$, $a_e=100\text{mm}$, $f_z=0.22$

Cutting: with coolant



Result comparison: ACHTECK insert tool life is 33% longer than the existing tool



Workpiece: Engine block

Material: GG25

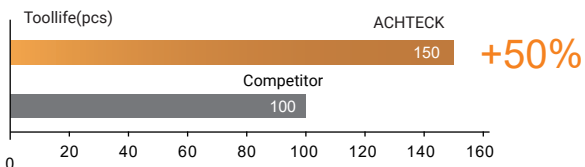
Inserts: LNHU 090408ER-MR2 AP351K

Cutter: ASM90-032-Z04-W32R-LN09-C

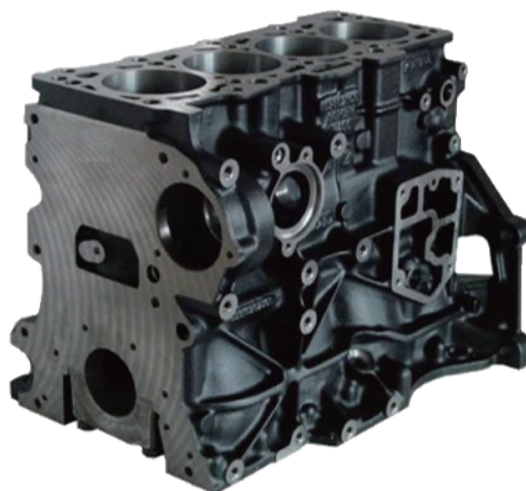
Process: cylinder block side face

Cutting parameters: $V_c=171\text{m/min}$, $a_p=3\text{mm}$, $a_e=16\text{mm}$, $f_z=0.13$

Cutting: with coolant

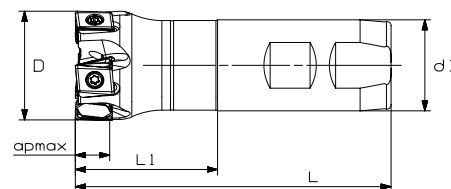


Result comparison: ACHTECK product tool life is 50% longer than that existing tool



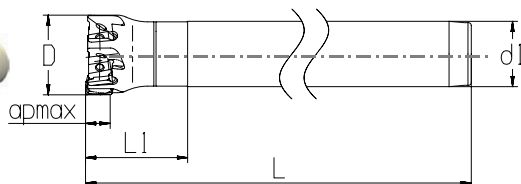
✦ Cutter

ASM90-LN Shoulder Milling



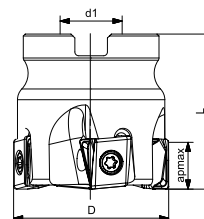
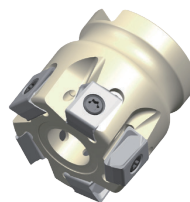
Product code	Size					with coolant	Z	Inserts
	D	d1	L	ISO	apmax			
ASM90-025-Z03-W25R-LN09-C	25	25	100	45	8.0		3	LNHU 0904
ASM90-025-Z04-W25R-LN09-C	25	25	100	45	8.0		4	
ASM90-032-Z04-W32R-LN09-C	32	32	110	50	8.0		4	
ASM90-032-Z05-W32R-LN09-C	32	32	110	50	8.0		5	
ASM90-040-Z04-W32R-LN09-C	40	32	110	25	8.0		4	
ASM90-040-Z06-W32R-LN09-C	40	32	110	25	8.0		6	LNHU 1306
ASM90-040-Z05-W32R-LN13-C	40	32	120	50	12.0		5	

ASM90-LN Shoulder Milling



Product code	Size					with coolant	Z	Inserts
	D	d1	L	ISO	apmax			
ASM90-020-Z02-C20R-LN09-L110	20	20	110	31	8.0		2	LNHU 0904
ASM90-020-Z03-C20R-LN09-L110	20	20	110	31	8.0		3	
ASM90-025-Z03-C25R-LN09-L200-C	25	25	200	40	8.0		3	
ASM90-025-Z04-C25R-LN09-L200-C	25	25	200	40	8.0		4	
ASM90-032-Z04-C32R-LN09-L250-C	32	32	250	50	8.0		4	
ASM90-032-Z05-C32R-LN09-L250-C	32	32	250	50	8.0		5	

ASM90-LN Shoulder Milling



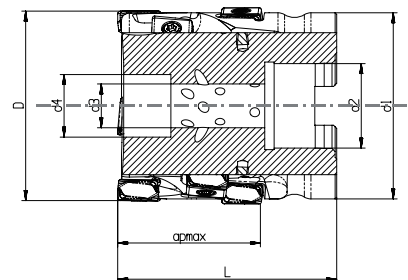
Product code	Size					with coolant	Z	Inserts
	D	d1	L	ISO	apmax			
ASM90-040-Z04-A16R-LN09-C	40	16	40	A	8.0		4	LNHU 0904
ASM90-040-Z06-A16R-LN09-C	40	16	40	A	8.0		6	
ASM90-050-Z05-A22R-LN09-C	50	22	40	A	8.0		5	
ASM90-050-Z07-A22R-LN09-C	50	22	40	A	8.0		7	
ASM90-063-Z07-A22R-LN09-C	63	22	40	A	8.0		7	
ASM90-063-Z10-A22R-LN09-C	63	22	40	A	8.0		10	
ASM90-080-Z09-A27R-LN09-C	80	27	50	A	8.0		9	
ASM90-080-Z13-A27R-LN09-C	80	27	50	A	8.0		13	
ASM90-040-Z04-A16R-LN13-C	40	16	40	A	12.0		4	LNHU 1306
ASM90-040-Z04-A16R-LN13-C	40	16	40	A	12.0		5	
ASM90-050-Z05-A22R-LN13-C	50	22	40	A	12.0		5	
ASM90-050-Z06-A22R-LN13-C	50	22	40	A	12.0		6	
ASM90-063-Z04-A22R-LN13-C	63	22	40	A	12.0		4	
ASM90-063-Z06-A22R-LN13-C	63	22	40	A	12.0		6	
ASM90-063-Z08-A22R-LN13-C	63	22	40	A	12.0		8	
ASM90-080-Z05-A27R-LN13-C	80	27	50	A	12.0		5	
ASM90-080-Z07-A27R-LN13-C	80	27	50	A	12.0		7	
ASM90-080-Z10-A27R-LN13-C	80	27	50	A	12.0		10	
ASM90-100-Z07-A32R-LN13-C	100	32	50	A	12.0		7	
ASM90-100-Z09-A32R-LN13-C	100	32	50	A	12.0		9	
ASM90-100-Z13-A32R-LN13-C	100	32	50	A	12.0		13	
ASM90-125-Z09-A40R-LN13-C	125	40	63	A	12.0		9	
ASM90-125-Z11-A40R-LN13-C	125	40	63	A	12.0		11	
ASM90-125-Z16-A40R-LN13-C	125	40	63	A	12.0		16	
ASM90-160-Z09-A40R-LN13	160	40	63	A	12.0		9	LNHU 1607
ASM90-160-Z13-A40R-LN13	160	40	63	A	12.0		13	
ASM90-063-Z04-A22R-LN16-C	63	22	40	A	15		4	
ASM90-080-Z05-A27R-LN16-C	80	27	50	A	15		5	
ASM90-100-Z06-A32R-LN16-C	100	32	50	A	15		6	
ASM90-125-Z07-A40R-LN16-C	125	40	63	A	15		7	
ASM90-160-Z08-A40R-LN16	160	40	63	A	15		8	

Size	Cutter accessories		
Cutter size	Screws	Wrench	Torque
ASM90-LN09	SP030083	DP-TP09	1.8Nm
ASM90-LN13	SP040115	DP-TP15	3.5Nm
ASM90-LN16	SP05013063	DT-TP20	5Nm

Machining types		
Face milling	Shouldering milling	slot milling

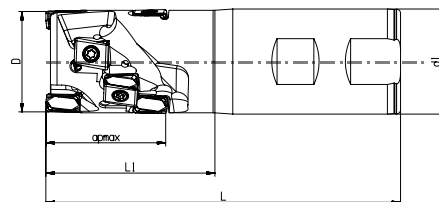
Remark: With internal coolant
 Without internal coolant

APE90-LN Porcupine Cutter



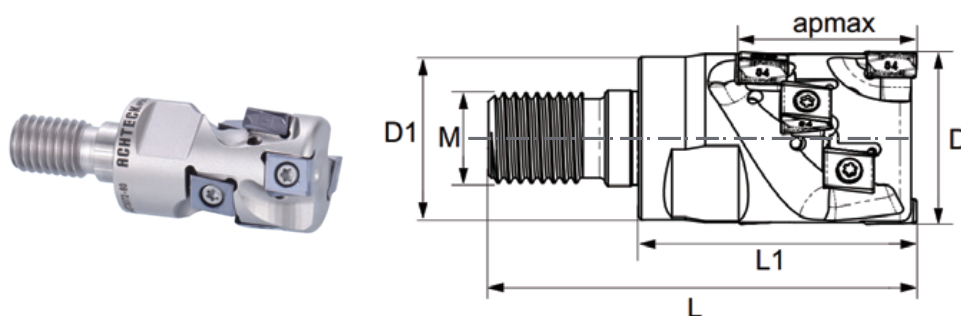
Product code	Dimension							with coolant	mounting bolts	z	Number of segments	Insert QTY	Inserts
	D	d1	L	d2	d3	d4	apmax						
APE90-040-Z03-A16R-LN09-L32-F-C	40	38	55	16	9	15	32		SH080400	3	4	12	LNHU 0904
APE90-040-Z03-A16R-LN09-L40-F-C	40	38	65	16	9	15	40		SH080500	3	5	15	
APE90-050-Z04-A22R-LN09-L48-F-C	50	47.5	75	22	11	18	48		SH100550	4	6	24	
APE90-040-Z02-A16R-LN13-L34-F-C	40	39	55	16	9	15	34		SH080400	2	3	6	LNHU 1306
APE90-040-Z02-A16R-LN13-L45-F-C	40	39	65	16	9	15	45		SH080500	2	4	8	
APE90-050-Z03-A22R-LN13-L34-F-C	50	47.5	55	22	11	18	34		SH100400	3	3	9	
APE90-050-Z03-A22R-LN13-L45-F-C	50	47.5	65	22	11	18	45		SH100500	3	4	12	
APE90-063-Z04-A27R-LN13-L56-F-C	63	59.5	80	27	14	20	56		SH120600	4	5	20	
APE90-063-Z04-A27R-LN13-L45-F-C	63	59.5	70	27	14	20	45		SH120500	4	4	16	
APE90-080-Z05-A32R-LN13-L56-F-C	80	75.6	85	32	18	26	56		SH160650	5	5	25	

APE90-LN Porcupine Cutter



Product code	Dimension					with coolant	Z	Number of segments	Inserts QTY	Inserts
	D	d1	L	L1	apmax					
APE90-025-Z02-W25R-LN09-L32-F-C	25	25	100	43	32		2	4	8	LNHU 0904
APE90-032-Z02-W32R-LN09-L32-F-C	32	32	105	44	32		2	4	8	
APE90-032-Z02-W32R-LN09-L40-F-C	32	32	110	50	40		2	5	10	
APE90-040-Z03-W40R-LN09-L40-F-C	40	40	125	55	40		3	5	15	
APE90-040-Z03-W40R-LN09-L48-F-C	40	40	130	59	48		3	6	18	
APE90-040-Z02-W40R-LN13-L34-F-C	40	40	120	54	34		2	3	6	LNHU 1306
APE90-040-Z02-W40R-LN13-L45-F-C	40	40	135	64	45		2	4	8	

APE90-LN Porcupine Cutter



Product code	Dimension						with coolant	Z	Number of segments	Insert QTY	Inserts
	D	d1	L	L1	M	apmax					
APE90-025-Z02-M12R-LN09-L24-F-C	25	23.4	64	40	12	24		2	3	6	LNHU 0904
APE90-032-Z02-M16R-LN09-L24-F-C	32	30	67	40	16	24		2	3	6	
APE90-032-Z02-M16R-LN09-L32-F-C	32	30	77	50	16	32		2	4	8	

Notice of inserts mounting:

1. For APE90-LN09 series: the end insert corner radius must be $R \leq 0.8$, and all side insert corner radius should be $R = 0.4$ to Have the right cutting edge overlapping.
2. APE90-LN13 series: the end insert corner radius must be $R \leq 2.4$, and all side insert corner radius should be $R = 0.8$ to haveThe right cutting edge overlapping.

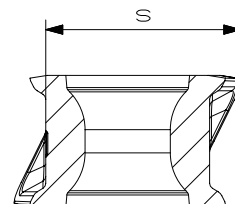
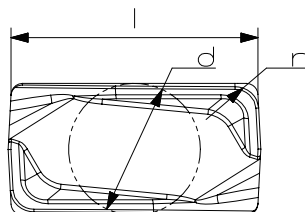
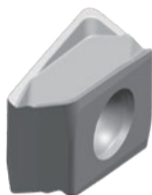
Size	Cutter accessories			
Cutter size	Screw	Wrench	Install wrench	Torque
ASM90-LN09	SP030083	DP-TP09	AFW-15/24	1.8Nm
ASM90-LN13	SP040115	DP-TP15		3.5Nm
ASM90-LN16	SP05013063	DT-TP20		5Nm

Machining types		
Face milling	Shoulding milling	slot milling

Mounting bolts	Product code	Bolt specification	Torque size
	SH080400	M8*40	41N-m
	SH080500	M8*50	41N-m
	SH100550	M10*55	81N-m
	SH100400	M10*40	81N-m
	SH100500	M10*50	81N-m
	SH120500	M12*50	142N-m
	SH120600	M12*60	142N-m
	SH160650	M16*65	350N-m

Inserts

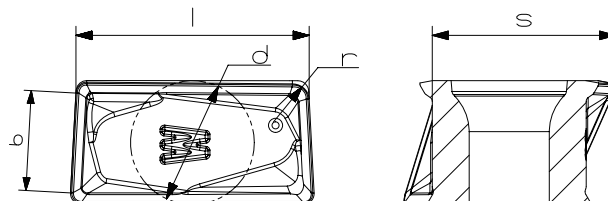
LNHU 0904

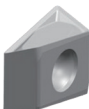


Inserts	Product code	Dimension					Materials						
							P			M	K		No coating
		l	d	s	r	b	AP301U	AC301P	AP351U	AP403M	AC301K	AP351K	AW100K
LNHU 0904	LNHU 090404ER-FM2	9	4.5	7.5	0.4	-							●
	LNHU 090404ER-MM3	9	4.5	7.5	0.4	-			●	●			
	LNHU 090404ER-MR2	9	4.5	7.5	0.4	-	●		●	●	●	●	
	LNHU 090408ER-MR2	9	4.5	7.45	0.8	-	●		●	●	●	●	
	LNHU 090412ER-MR2	9	4.5	7.4	1.2	-	●			●	●		
	LNHU 090416ER-MR2	9	4.5	7.35	1.6	-	●			●	●		
	LNHU 090420ER-MR2	9	4.5	7.31	2	-	●			●	●		
LNHU1306	LNHU 130608ER-FM2	13.02	6.8	10.11	0.8	-							●
	LNHU 130608ER-MM3	13.02	6.8	10.19	0.8	-				●			
	LNHU 130608ER-MR2	13.02	6.8	10.15	0.8	-		●	●	●	●	●	
	LNHU 130612ER-MR2	13.02	6.8	10.09	1.2	-			●	●	●		
	LNHU 130616ER-MR2	13.02	6.8	10.03	1.6	-			●	●	●		
	LNHU 130620ER-MR2	13.02	6.8	9.99	2	-			●	●			
	LNHU 130624ER-MR2	13.02	6.8	9.92	2.4	-			●	●			
	LNHU 130631ER-MR2	13.02	6.8	9.83	3.1	-			●	●	●		
LNHU 1607	 LNHU 160708ER-MR2	16	7.2	13	0.8		●		●		●	●	
	 LNHU 160716ER-MR2	16	7.2	13	1.6		●				●		

Inserts

Wiper inserts



Inserts	Product code	Dimension					Materials						
							P			M	K	No coating	
		l	d	s	r	b	AP301U	AC301P	AP351U	AP403M	AC301K	AP351K	AW100K
	LNHU 0904PDER-W	9.24	4.5	7.4	0.4	3.6	•				•		
	LNHU 1306PDER-W	13.39	6.8	10.02	0.8	5.6	•				•		