NEW
PRODUCT!

ASM90-LN13

Tangential Shoulder Milling Cutter

For Facing , Shouldering and Slotting

Achteck is launching a new 90 degree big depth of cut shoulder milling cutter which is mounted tangential double sided four cutting edges insert. It provides a very good shoulder milling solution.

The new cutter with a 90 degree kappa angle is ideal choice for shoulder milling. The geometry MR2 combined with Achteck's CVD and PVD coating technology provide exceptional performance. It can achieve more excellent performance and better surface finish quality, and can cover steel, stainless steel, cast iron and superalloy materials machining.

The insert LN13..W has a wiper geometry provides a good surface finish and high productivity.

Product Features

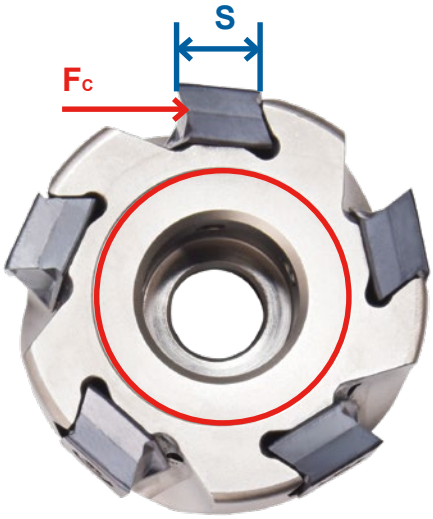
- The insert has 4 cutting edges, which is economical and strong cutting egde, and can be machined efficiently.
- General geometry MR2 has a short wiper. It has wide applicability and good surface roughness.
- Various corner radius range:R0.8,R1.2,R1.6,R2.0,R2.4,R3.1.
- High positive rake angle insert provides very smooth cutting and low cutting force.
- Series of products have 6 grades, wide application range;

- Precise 90 degree shoulder milling cutter, the diameter range: Ø 40-Ø160 mm;
- High-precision axial and radial runout;
- The insert is arranged tangentially, which makes it easier to install and lock the insert. The cutting edge is stronger, the body is stronger, and the number of teeth can be increased with the same diameter.
- Two kinds of pitch and sparse tooth design are mainly used for slot milling and shoulder milling, while close tooth design is mainly used for shoulder milling.
- The cutter design has a variety of interface forms: the screw modular type, the cylindrical type, the welden type and the shell mill (Arbor).
- Shining Nickel-plated cutter has well corrosion resistance and wear resistance.

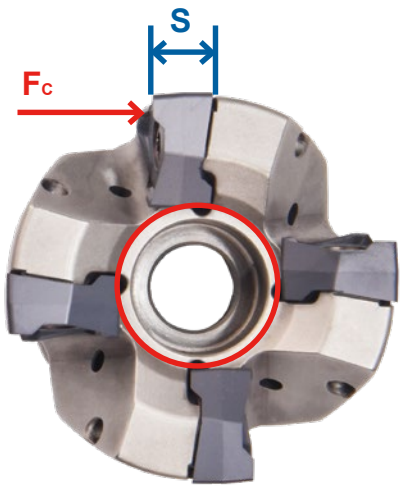
The advantages of the tangential design cutters:

-The core area increased greatly, and the rigidity of cutter body was strengthened.

-The direction of cutting force,insert thickness is large, can resist greater cutting force;

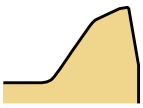


Tangential layout style



Conventional layout style

Chip breaker Features

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

Grade application

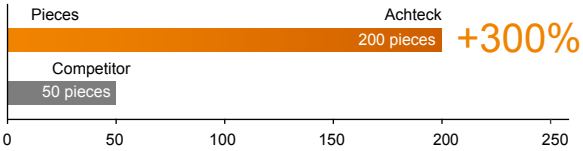
Grade	Coating	Material					
		P	M	K	S	N	H
AP301U	PVD	●	◐		○		
AP351U	PVD	●	◐		○		
AP401U	PVD		●		◐		
AC301P	CVD	●	◐	○			
AC301K	CVD			●			◐
AP351K	PVD			●			

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

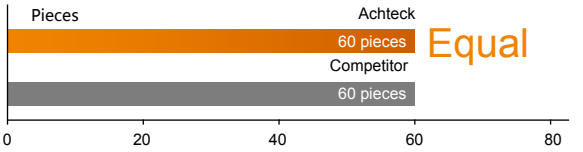
- When slotting or contouring with ae >50%*D, ap≤6mm recommended;
- When contouring with ae<25%*D, it is possible to use Max ap=12mm;

Case stories

Work piece:Break plate
Material:Nodular cast iron
Hardness:HB200
Insert:LNHU130608ER-MR2 AC301K
Cutter description:ASM90-080-Z07-A27R-LN13-C
Cutting parameters:Vc=250m/min,fz=0.16mm/z
ap=2.0mm,Wet cutting



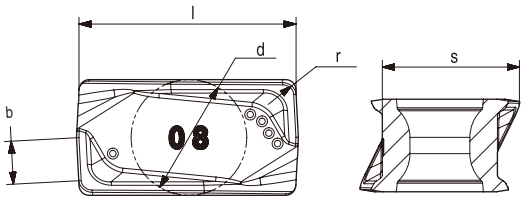
Work piece:Turbo Charger
Material:Heat-resistant stainless steel
Hardness:HRC32-34
Insert:LNHU130608ER-MR2 AP351U
Cutter description:ASM90-050-Z05-A22R-LN13-C
Cutting parameters:Vc=110m/min,fz=0.12mm/z
ap=3.0mm,Wet cutting

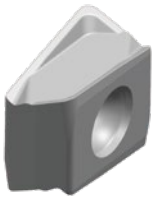


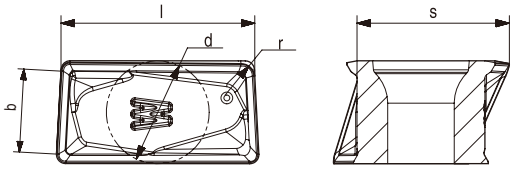
Same tool life, but CPP decreased to 40%;

Insert stock item

LNHU 1306



Insert	Designation	Dimensions (mm)				Grades						
						CVD coated		PVD coated				Uncoated
		l	d	s	r	AC301P	AC301K	AP301U	AP351U	AP401U	AP351K	AW100K
	LNHU 130608ER-FM2	13.2	6.8	10.11	0.8							●
	LNHU 130608ER-MR2	13.2	6.8	10.15	0.8		●	●	●	●	●	
	LNHU 130612ER-MR2	13.2	6.8	10.9	1.2				●	●		
	LNHU 130616ER-MR2	13.2	6.8	10.05	1.6				●	●		
	LNHU 130620ER-MR2	13.2	6.8	9.99	2.0				●	●		
	LNHU 130624ER-MR2	13.2	6.8	9.92	2.4				●	●		
	LNHU 130631ER-MR2	13.2	6.8	9.86	3.1				●	●		



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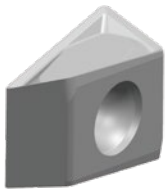
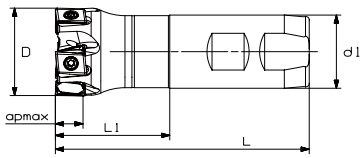
	LNHU 1306PDER-W	13.39	6.8	10.02	0.8		●	●				

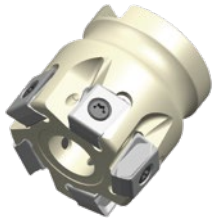
Remark: ● represent for standard stock
○ represent for Mark-To-Order

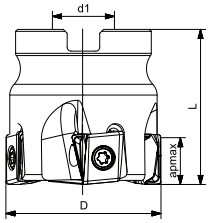
Cutter stock item

ASM90-LN13-C

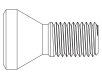
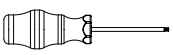


Designation	Dimension					Coolant	Z	Insert
	D	d1	L	l1	apmax			
ASM90-040-Z5-W32R-LN13-C	40	32	111	50	12.0		5	LNHU 1306





Designation	Dimension				Coolant	Z	Insert
	D	d1	L	apmax			
ASM90-040-Z04-A16R-LN13-C	40	16	40	12.0		4	LNHU 1306
ASM90-040-Z05-A16R-LN13-C	40	16	40	12.0		5	
ASM90-050-Z05-A22R-LN13-C	50	22	40	12.0		5	
ASM90-050-Z06-A22R-LN13-C	50	22	40	12.0		6	
ASM90-063-Z04-A22R-LN13-C New	63	22	40	12.0		4	
ASM90-063-Z06-A22R-LN13-C	63	22	40	12.0		6	
ASM90-063-Z08-A22R-LN13-C	63	22	40	12.0		8	
ASM90-080-Z05-A27R-LN13-C New	80	27	50	12.0		5	
ASM90-080-Z07-A27R-LN13-C	80	27	50	12.0		7	
ASM90-080-Z10-A27R-LN13-C	80	27	50	12.0		10	
ASM90-100-Z07-A32R-LN13-C New	100	32	50	12.0		7	
ASM90-100-Z09-A32R-LN13-C	100	32	50	12.0		9	
ASM90-100-Z13-A32R-LN13-C	100	32	50	12.0		13	
ASM90-125-Z09-A40R-LN13-C New	125	40	63	12.0		9	
ASM90-125-Z11-A40R-LN13-C	125	40	63	12.0		11	
ASM90-125-Z16-A40R-LN13-C	125	40	63	12.0		16	
ASM90-160-Z09-A40R-LN13 New	160	40	63	12.0		9	
ASM90-160-Z13-A40R-LN13	160	40	63	12.0		13	

Dimension	Cutter spare parts		
Cutter diameter	Screw	Wrench	Torque
φ40-160			3.5Nm
	AST4112-60	ADT-T15	

Application		
Facing	Shouldering	Slotting
		

Remark: represent for coolant
represent for no coolant

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			AC301P			AP351U			AP401U			LN13				
				CVD			PVD			PVD			CVD			PVD			PVD			Geometry				
				-			-			P15-35			P25-40			P30-45			P20-40			MR2				
				-			-			M15-35			M25-40			M30-45			M20-40							
				K10-40			K15-40			-			-			-			-							
				-			-			-			-			S30-45			S20-40							
				-			-			-			-			-			-							
				-			-			-			-			-			-							
				Feed(mm/z)																						
				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)																		ap(mm)			Feed(mm/z)		
P	Non-alloyed steel	<600	<180							450	340	290	430	230	120	230	205	170				0.6	-	12	0.12	-	0.24
		<950	<280							320	240	200	380	220	120	200	180	160							0.12	-	0.18
	Alloyed steel	700-950	200-280							290	210	185	340	240	120	200	155	110							0.12	-	0.18
		950-1200	280-355							280	210	200	260	150	80	180	130	90							0.12	-	0.14
		1200-1400	355-415							210	170	110	145	105	65	140	105	70							0.12	-	0.14
M	Duplex stainless steel	778	230							165	150	130	225	180	125	270	215	155	150	115	85				0.12	-	0.16
	Austenitic stainless steel	675	200							270	185	90	210	145	75	260	180	90	185	140	105				0.12	-	0.15
	Precipitation-hardening stainless steel	1013	300							300	225	165	140	130	90	170	150	110	125	95	70				0.12	-	0.14
K	Grey cast iron	700	220	480	310	140	390	280	130																0.12	-	0.30
	Nodular cast iron	880	260	450	295	140	420	300	140																0.12	-	0.24
	Malleable cast iron	800	250	500	365	230	430	290	230																0.12	-	0.18
S	Fe based alloy	943	280													45	40	30							0.12	-	0.14
	Co based alloy	1076	320													45	40	30							0.12	-	0.14
	Ni based alloy	1177	350													45	40	30							0.12	-	0.14
	Ti-alloy	1262	370													100	70	45							0.12	-	0.14
N	Aluminum	260	75																								
	Aluminum alloy	447	130																								
H	Hardened steel	-	50-60HRC																								
	Chilled cast iron	-	55HRC																								

* 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)

* When slotting , ap=1/2apmax