

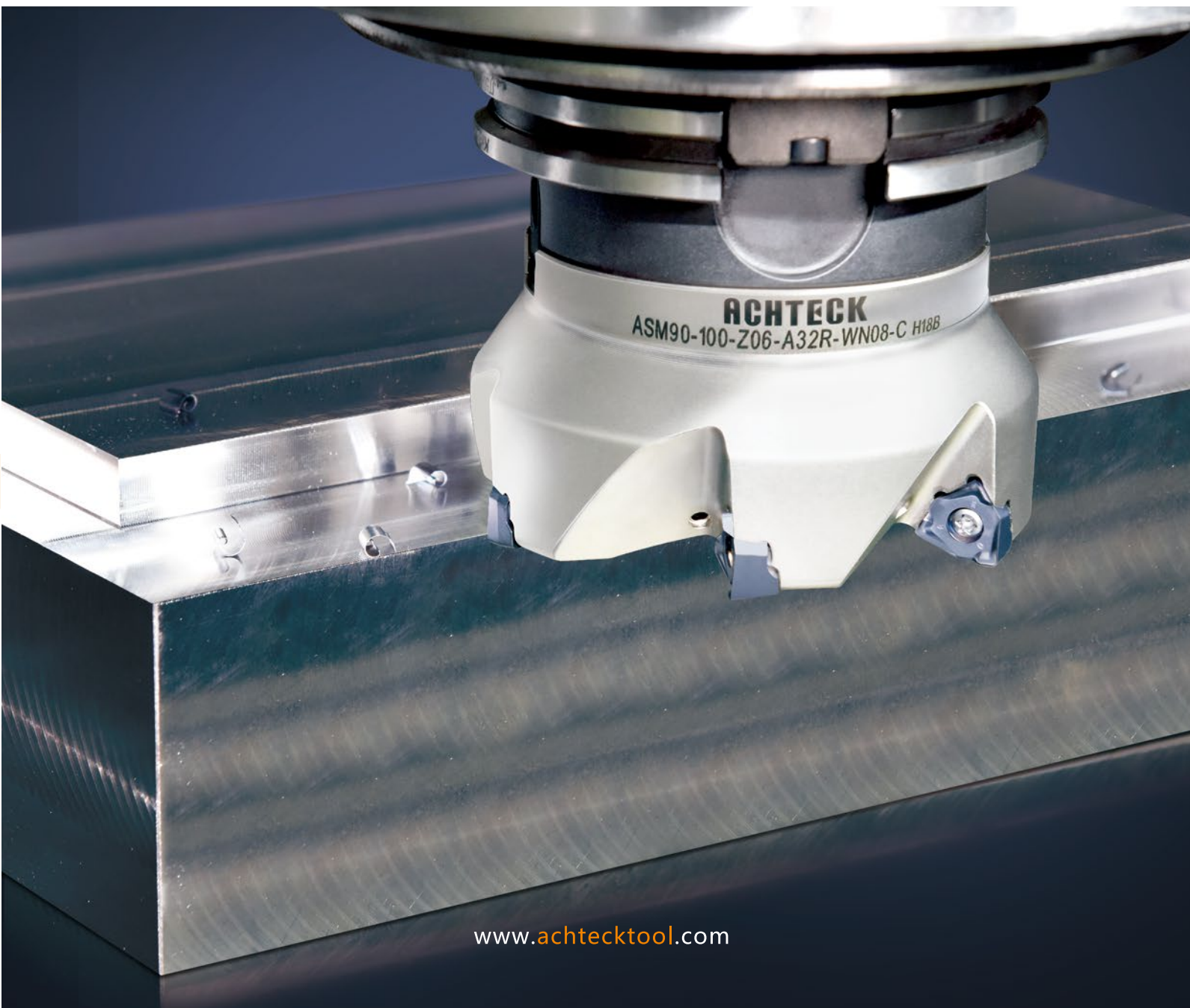
# ACHTECK

**NEW  
PRODUCT!**

## ASM90-WN08

### Shoulder Milling Cutter

With 6 cutting edges insert



Achteck is launching a 90 degree shoulder milling cutter ,mounted with a triangular double sided, six cutting edges insert, providing a very good shoulder milling solution. Six cutting edges insert provides an economical solution to reduce machining cost.




This new cutter with 90 degree kappa angle is ideal choice for shoulder milling. Three geometry MM3、 MM4 and MR2 combined with Achteck's CVD and PVD coating technology provides exceptional performance. ASM90-WN08 can achieve excellent performance, tool life, surface quality and minimal mismatch. Suitable to machining steel, stainless steel, cast iron,super alloy and other materials.

The insert WN08..W has a long wiper geometry provides a good surface finish and high productivity.

## ● Product Features

- Six cutting edges negative inserts,good economy, strong large rake angle geometry, thickness 7.88.
- Three kinds of geometry,MM3、 MM4、 MR2, all with short wiper cutting edge, will obtain better surface roughness;
- Mounted with long wiper insert, it can obtain good surface roughness and maching efficiency.
- Corner radius of insert are R0.4/0.8/1.2/1.6;
- Positive rake angle insert, reduce cutting force.
- 6 differnent grades which cover a wide application area. AP301U,AP351U,AP351K,AP401U,AC301P,AC301K;
  
- Precise 90 degree shoulder milling cutter, cutter body diameter range: Ø 40-Ø160 mm;
- Three kinds of pitch design, coarse design are mainly used for slot milling and shoulder milling,close tooth design are mainly used for shoulder milling, extra close tooth design is mainly used for short chip materials and finishing machining.
- Light cutting behavior, benefits from the positive rake angle design;
- High-precision axial and radial run-out;
- The cutter design has a variety of interface forms: screw modular type, cylindrical type, weldon type and shell mill (Arbor).
- Shining Nickel-plated cutter has good corrosion resistance and wear resistance.

## • Chip breaker Features

Chip breaker name	Edge Preparation	Feature
<b>MR2</b> Stable type		<ul style="list-style-type: none"> <li>• Suitable for unstable cutting conditions</li> <li>• Best cutting edge stability;</li> <li>• High feedrate.</li> </ul>
<b>MM4</b> General type		<ul style="list-style-type: none"> <li>• First choice</li> <li>• Medium cutting conditions</li> <li>• General machining</li> </ul>
<b>MM3</b> Sharp type		<ul style="list-style-type: none"> <li>• Fine cutting conditions and finish operation;</li> <li>• Low cutting force ( used for small power machine )</li> </ul>

## • Grade application

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

● Marked : 1<sup>st</sup> Choice   ◐ Marked : 2<sup>nd</sup> Choice   ○ Marked : Supplementary application

## Case stories

Work piece: Bearing housing

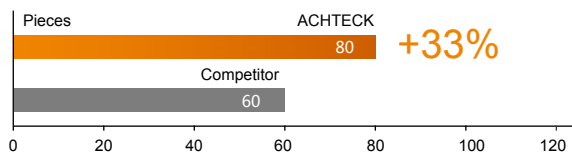
Material: Grey cast iron

Hardness: HB220

**Insert: WNGU 080608R-MM4 AC301K**

Cutter description: ASM90-063-Z07-A22R-WN08-C

Cutting parameters:  $V_c=260\text{m/min}$ ,  $f_z=0.12\text{mm/z}$   
 $a_p=2.0\text{mm}$ , Dry cutting



Tool life increase from 60pcs to 80pcs, 33% increase.

Work piece: Plate

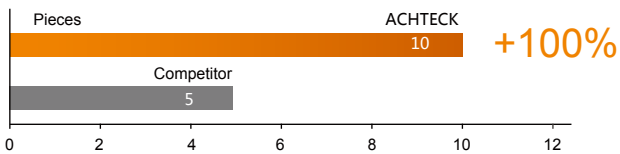
Material: HB400 wear resistance steel

Hardness: > 380HB

**Insert: WNGU 080608R-MM4 AC301P**

Cutter description: ASM90-080-Z07-A27R-WN08-C

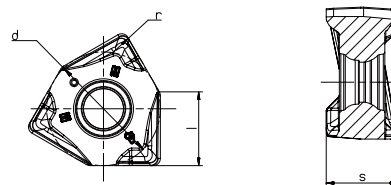
Cutting parameters:  $V_c=97\text{m/min}$ ,  $f_z=0.10\text{mm/z}$   
 $a_p=5.0\text{mm}$ , Dry cutting



The tool life was increased from 5 to 10 pcs , 100% raise .

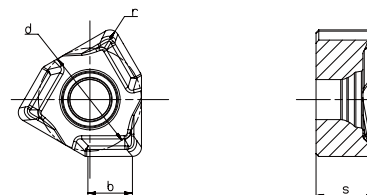
## ● Insert stock item

WNGU 08



Insert	Designation	Dimensions (mm)				Grades					
		l	d	s	r	CVD coated		PVD coated			
						AC301P	AC301K	AP301U	AP351U	AP401U	AP351K
	WNGU 080604R-MM3	8	12.5	7.88	0.4				●	●	
	WNGU 080608R-MM3	8	12.5	7.88	0.8			●	●	●	
	WNGU 080604R-MM4	8	12.5	7.88	0.4			●	●	●	●
	WNGU 080608R-MM4	8	12.5	7.88	0.8	●	●	●	●	●	●
	WNGU 080612R-MM4	8	12.5	7.88	1.2			●	●	●	
	WNGU 080616R-MM4	8	12.5	7.88	1.6			●	●	●	
	WNGU 080608R-MR2	8	12.5	7.88	0.8		●	●			●
	WNGU 080612R-MR2	8	12.5	7.88	1.2			●			●
	WNGU 080616R-MR2	8	12.5	7.88	1.6			●			●

WNHX 08

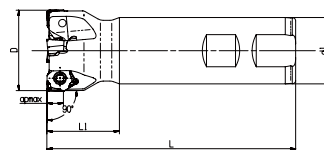


Insert	Designation	Dimensions (mm)				Grades					
		d	b	s	r	CVD coated		PVD coated			
						AC301P	AC301K	AP301U	AP351U	AP401U	AP351K
	WNHX 0806ZZR-W	11.3	4.8	6.47	1.0		●	●			

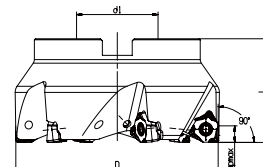
Remark: ● Represent for standard stock

## ● Cutter stock item

ASM90-WN08-C



Designation	Dimension					Coolant	Z	Insert
	D	d1	L	l1	apmax			
ASM90-040-Z03-W32R-WN08-C	40	32	120	35	8.0		3	WNGU 0806
ASM90-040-Z04-W32R-WN08-C	40	32	120	35	8.0		4	



Designation	Dimension				Coolant	Z	Insert
	D	d1	L	apmax			
ASM90-050-Z04-A22R-WN08-C	50	22	40	8.0		4	WNGU 0806
ASM90-050-Z05-A22R-WN08-C	50	22	40	8.0		5	
ASM90-063-Z06-A22R-WN08-C	63	22	40	8.0		6	
ASM90-063-Z07-A22R-WN08-C	63	22	40	8.0		7	
ASM90-080-Z07-A27R-WN08-C	80	27	50	8.0		7	
ASM90-080-Z09-A27R-WN08-C	80	27	50	8.0		9	
ASM90-100-Z08-A32R-WN08-C	100	32	50	8.0		8	
ASM90-100-Z11-A32R-WN08-C	100	32	50	8.0		11	
ASM90-125-Z11-A40R-WN08-C	125	40	63	8.0		11	
ASM90-125-Z13-A40R-WN08-C	125	40	63	8.0		13	
ASM90-160-Z12-A40R-WN08	160	40	63	8.0		12	

Remark: represent for coolant  
 represent for no coolant

Dimensions	Cutter spare parts			Torque
Cutter diameter	Screw	Wrench		
φ40-80	AST4085-60	AWT-T15		3.5Nm
φ100-160	AST4085-60	ADT-T15		
		ADT-G16	BIT-T15	

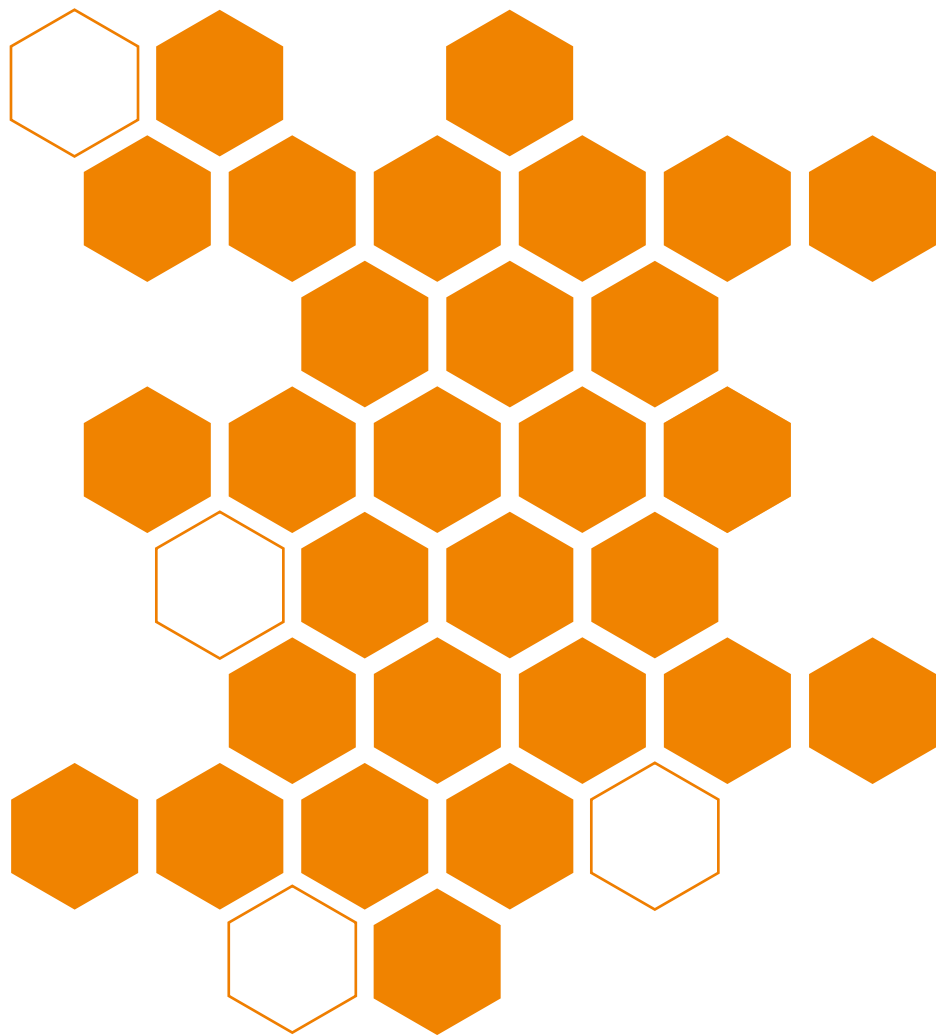
Application			
Facing	Shouldering	Slotting	Plunging

## Recommended cutting speed by materials

Machined Materials		Achteck Milling Grades Application Ranges										Cutting speed and feed rate															
		AC301K	AP351K	AP301U	AC301P	AP351U	AP401U	WN08				Geometry															
ISO	Material classification	Tensile strength (N/mm <sup>2</sup> )	Hardness (HB)	Feed rate (mm/z)										ap (mm)				Feed rate (mm/z)									
				Min	Med	Max	Min	Med	Max	Min	Med	Max	Min	Med	Max	Min	Max	Min	Max	Min	Max						
				Cutting speed (m/min)																							
P	Non-alloyed steel	<600	<180	450	340	290	430	230	120	230	205	170							0.12	-	0.22	0.10	-	0.28	0.15	-	0.30
		<950	<280	320	240	200	380	220	120	200	180	160								0.12	-	0.22	0.10	-	0.26	0.15	-
	700-950	200-280	290	210	185	340	240	120	200	155	110								0.12	-	0.22	0.10	-	0.26	0.15	-	0.30
	950-1200	280-355	280	210	200	260	150	80	180	130	90								0.12	-	0.18	0.10	-	0.20	0.15	-	0.26
	1200-1400	355-415	210	170	110	145	105	65	140	105	70								0.12	-	0.18	0.10	-	0.20	0.15	-	0.22
M	Duplex stainless steel	778	230	165	150	130	225	180	125	270	215	155	150	115	85				0.12	-	0.18	0.10	-	0.20	0.15	-	0.24
	Austenitic stainless steel	675	200	270	185	90	210	145	75	260	180	90	185	140	105				0.12	-	0.16	0.10	-	0.18	0.15	-	0.20
	Precipitation-hardening stainless steel	1013	300	300	225	165	140	130	90	170	150	110	125	95	70				0.12	-	0.12	0.10	-	0.13			
K	Grey cast iron	700	220	480	310	140	390	280	130										0.12	-	0.20	0.10	-	0.28	0.15	-	0.30
	Nodular Cast iron	880	260	450	295	140	420	300	140										0.12	-	0.20	0.10	-	0.28	0.15	-	0.30
	Malleable cast iron	800	250	500	365	230	430	290	230										0.12	-	0.18	0.10	-	0.24	0.15	-	0.26
S	Fe based alloy	943	280																0.12	-	0.13	0.10	-	0.15			
	Co based alloy	1076	320																0.12	-	0.12	0.10	-	0.13			
	Ni based alloy	1177	350																0.12	-	0.12	0.10	-	0.13			
	Ti-alloy	1262	370																0.12	-	0.13	0.10	-	0.15			
	Aluminum	260	75																								
N	Aluminum alloy	447	130																								
	Hardened steel	-	50-60HRC																								
H	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 coatings.

\* When slotting ,  $aps1/2apmax$



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