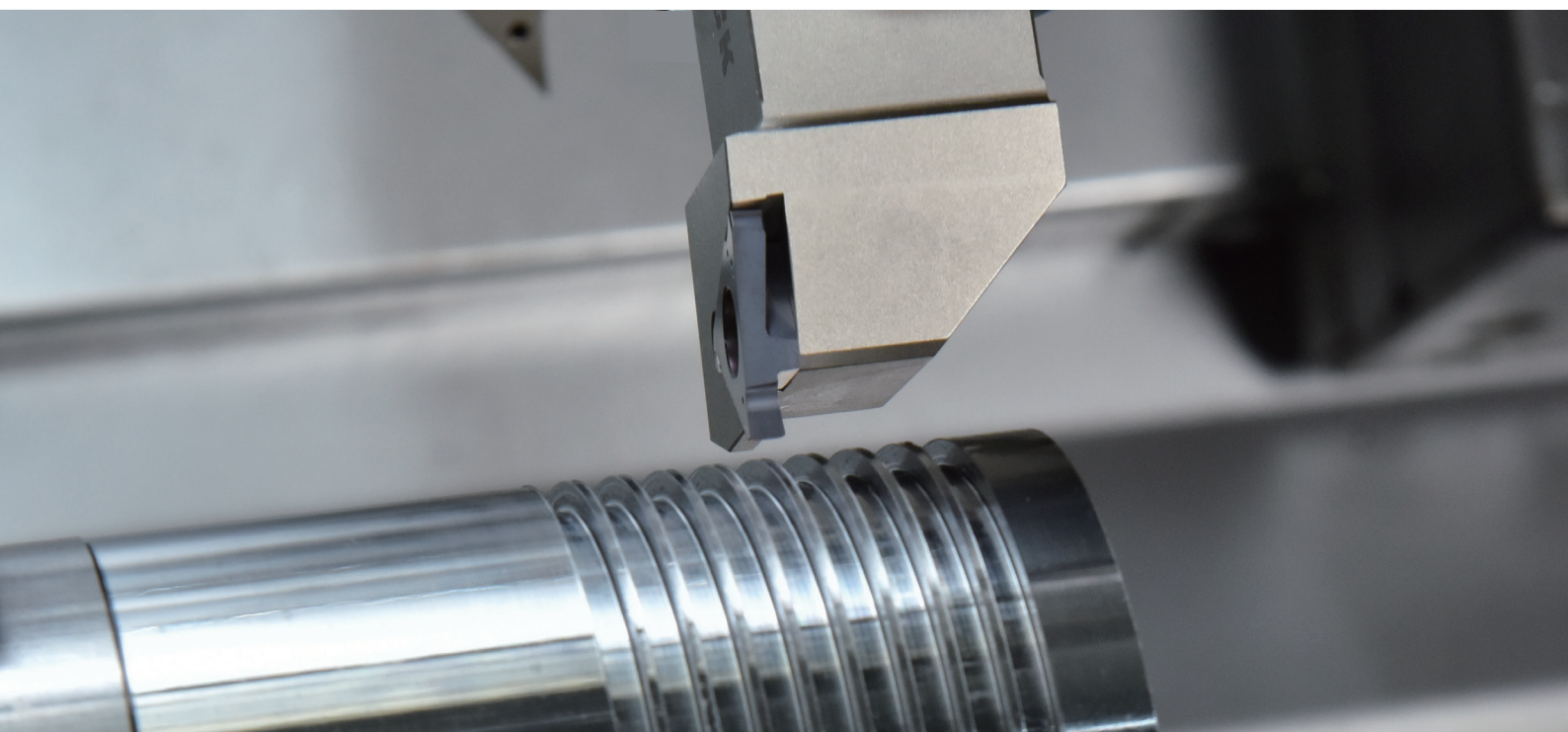


// 2025.03

Three teeth shallow grooving tools ——ATG



Universal grade AP301U

*Excellent stability for steel
and stainless steel parts*



NO.102

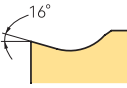
www.achtecktool.com

Three teeth shallow grooving tools

ATG

High precision width tolerance $\pm 0.025\text{mm}$,
Excellent stability for steel and stainless steel parts

Insert Geometry Introduction

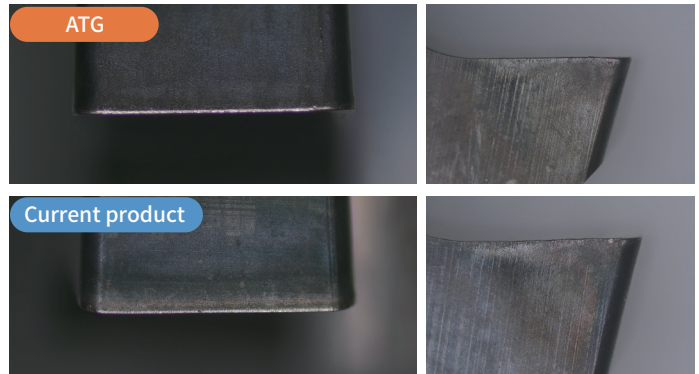
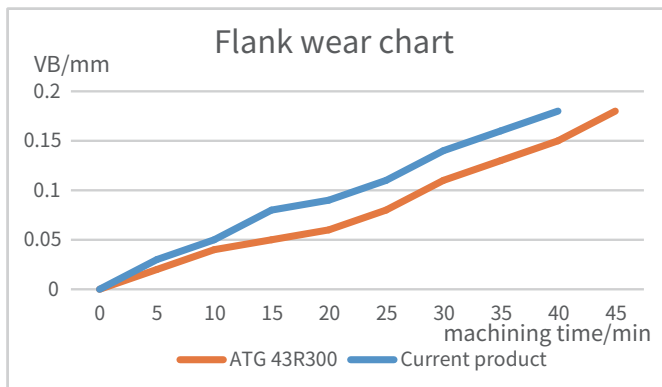
Geometry	Insert	Shape of cutting edge	Description	Geometry Width (mm)							
				External Grooving					Face Grooving		Internal Grooving
				Grooving	Parting off	Turning	Profiling	Under cut	Grooving	Turning	Grooving
ATG			- High precision insert - Positive insert reduces the vibration 3 teeth design, with good flexibility	0.33	-	-	0.5	-	-	-	0.33
				4.5	-	-	1.0 1.5 2.0 3.0 4.0	-	-	-	4.5

Grade application range and cutting parameter recommendation

Workpiece material	Steel					Stainless steel				
Machining process	Finishing $\longleftrightarrow$ Roughing					Finishing $\longleftrightarrow$ Roughing				
ISO Range	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40
AP301U			AP301U					AP301U		

Workpiece material		Hardness	Cutting speed (m/min)
P	Carbon steel	HB 125-350	80-200
	Low alloyed steel		
	High alloyed steel and tool steel		
M	Austenitic stainless steel	HB 200-300	60-180
	Austenitic/ferritic, duplex stainless steel		

Wear comparison in 4140 material



<Cutting Condition>

Insert: ATG 43R300-R010

Cutting Speed: $V_c=180\text{m/min}$

Feed: $f=0.2\text{mm/rev}$

Cutting Depth: $a_p=2.5\text{mm}$

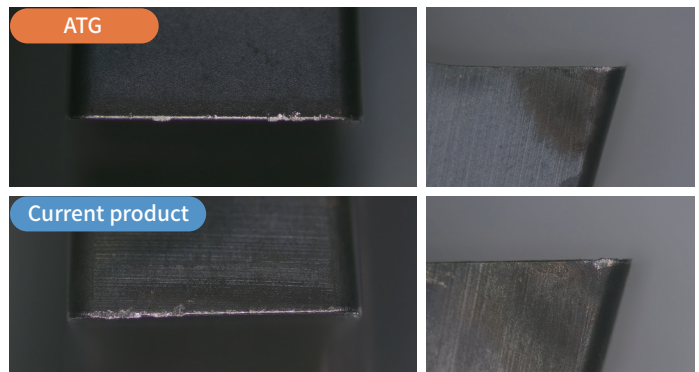
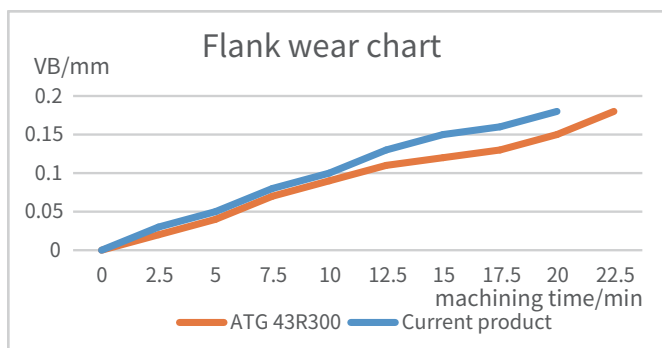
Material: 4340

Coolant: Wet

Time of failure: 43.2min

↑ The tool life **increase 28%** with the same cutting condition

Wear comparison in SUS304



<Cutting Condition>

Insert: ATG 43R300-R010

Cutting Speed: $V_c=120\text{m/min}$

Feed: $f=0.15\text{mm/rev}$

Cutting Depth: $a_p=2.0\text{mm}$

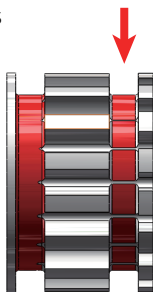
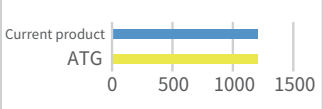
Material: 304

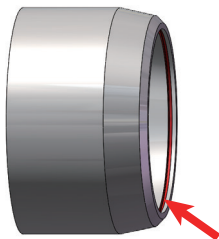
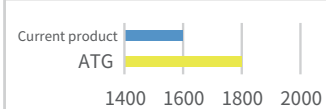
Coolant: Wet

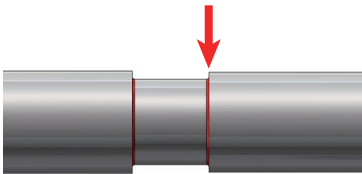
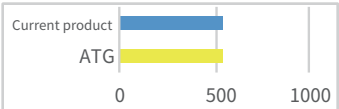
Time of failure: 21.4min

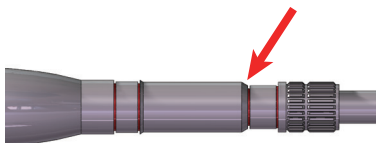
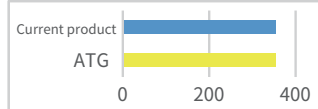
↑ The tool life **increase 15%** with the same cutting condition

Success stories

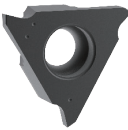
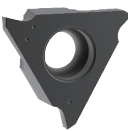
Insert	ATG 43R200T35-R020 AP301U
Workpiece	Shaft parts 
Material	20CrMn
Vc	200m/min
f	0.13mm/rev
ap	2.5mm
Coolant	Oil cooling
Result	 ATG has stable performance. With the same cutting condition, tool life is same and tool cost is decreased by 20%.

Insert	ATG 43R145T35-R020 AP301U
Workpiece	Auto parts 
Material	42CrMn
Vc	118m/min
f	0.08mm/rev
ap	2.0mm
Coolant	Oil cooling
Result	 ATG has stable performance. With the same cutting condition, tool life is increased by 12.5%

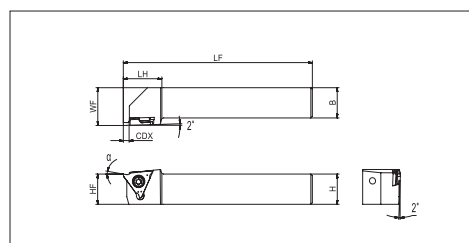
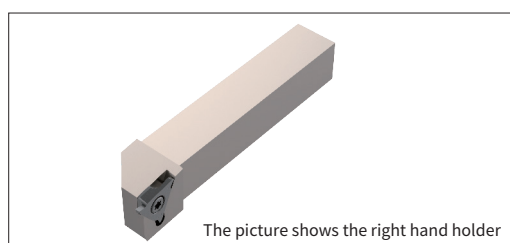
Insert	ATG 43R100T20-R050 AP301U
Workpiece	Brake spindle 
Material	20MnCr5
Vc	150m/min
f	0.05mm/rev
ap	1.6mm
Coolant	Oil cooling
Result	 ATG has stable performance. With the same cutting condition, tool life is same and tool cost is decreased by 25%.

Insert	ATG 32R150T25-R020 AP301U
Workpiece	Gear shaft 
Material	20CrMnTi
Vc	164m/min
f	0.08mm/rev
ap	2.0mm
Coolant	Oil cooling
Result	 ATG has stable performance. With the same condition, tool life is same and tool cost is decreased by 15%.

Tool holder

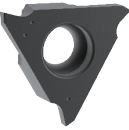
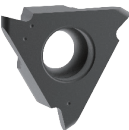
Tool holder		Size (mm)	Cutting depth (mm)	Insert (ATG)	Insert width (mm)	Cutting depth (mm)
ATGHR/L		20x20	2.50		0.33	0.80
		I	I		I	I
		25x25	5.00		4.50	5.00
ATGIR/L		25	2.80		0.33	0.05
		I	I		I	I
		32	3.00		4.50	2.00

ATGHR/L External Grooving Holder

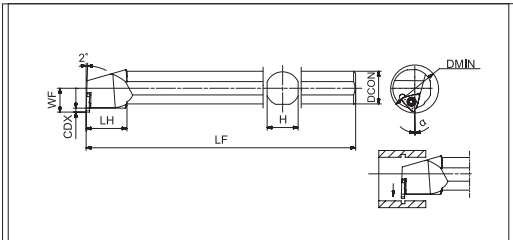
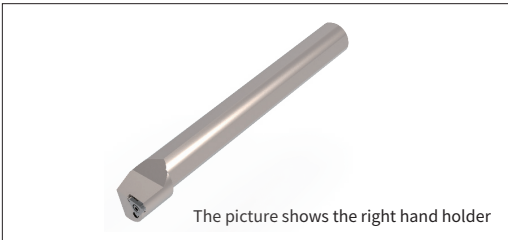


Product code		Dimension(mm)						Spare parts	
		H	B	LF	LH	WF	CDX	Screw	Wrench
									
ATGHR/L	2020K32-T25	20	20	125	24	25	2.5	SP040085	FT-TP15
	2525M32-T25	25	25	150	24	30	2.5		
	2020K43-10T40	20	20	125	25.5	25	4.0	SP05008550	FT-TP20
	2525M43-10T40	25	25	150	25.5	30	4.0		
	2020K43-20T45	20	20	125	25.5	25	4.5		
	2525M43-20T45	25	25	150	25.5	30	4.5		
	2020K43-20T55	20	20	125	25.5	25	5.5		
	2525M43-20T55	25	25	150	25.5	30	5.5		
	2020K43-30T55	20	20	125	25.5	25	5.5		
	2525M43-30T55	25	25	150	25.5	30	5.5		

Insert application

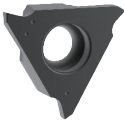
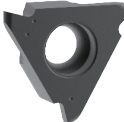
Application	Grooving	Profiling
Insert shape		
Product code		
ATGHR** 32	ATG 32R	ATG 32R
ATGHR** 43	ATG 43R	ATG 43R
ATGHL** 32	ATG 32L	ATG 32L
ATGHL** 43	ATG 43L	ATG 43L

ATGIR/L Internal Grooving Holder



Product code		Dimension(mm)						Spare parts	
		DMIN	DCON	LF	LH	WF	CDX	Screw	Wrench
									
ATGIR/L	25R32-35T28	35	25	220	30	17.5	2.8	SP040085	FT-TP15
	32S43-40T30	40	32	250	30	23.0	3.0	SP05008550	FT-TP20

Insert application

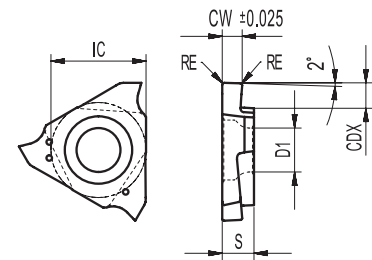
Application	Grooving	Profiling
Insert shape		
Product code		
ATGIR** 32	ATG 32L	ATG 32L
ATGIR** 43	ATG 43L	ATG 43L
ATGIL** 32	ATG 32R	ATG 32R
ATGIL** 43	ATG 43R	ATG 43R

Product code

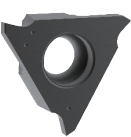
Shallow Grooving Series

ATG: Applied to external and internal shallow grooving

Product code	IC	S	D1
ATG 32-	9.525	3.18	4.4
ATG 43-	12.7	4.76	5.5
ATG 43R/L450	12.7	5.0	5.5



The picture shows the right hand holder

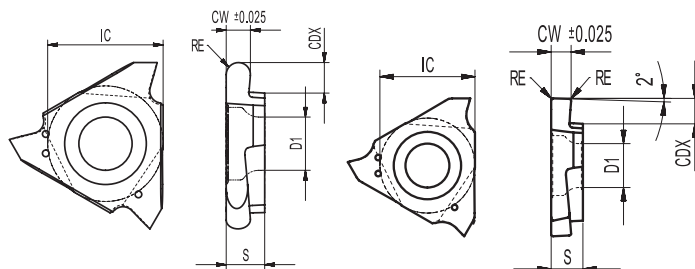
		Machining conditions				● Good condition 🌀 General condition ✖ Bad condition							
						●	✖	🌀	✖	●	🌀	●	●
		Inserts	Product code	Cutting parameter		Dimensions		P			M		K
Grooving	CDX			CW	RE	AP301U	AP330M	AC230P	AP330M	AP301U	AC230P	AP301U	AW100K
	ATG 32R/L033T08-R005	0.03-0.08	0.8	0.33	0.05	●				●		●	
	ATG 32R/L050T12-R005	0.03-0.08	1.2	0.50	0.05	●				●		●	
	ATG 32R/L075T20-R005	0.03-0.08	2.0	0.75	0.05	●				●		●	
	ATG 32R/L095T20-R005	0.03-0.08	2.0	0.95	0.05	●				●		●	
	ATG 32R/L100T20-R005	0.03-0.08	2.0	1.00	0.05	●				●		●	
	ATG 32R/L110T20-R005	0.03-0.08	2.0	1.10	0.05	●				●		●	
	ATG 32R/L120T20-R005	0.03-0.08	2.0	1.20	0.05	●				●		●	
	ATG 32R/L125T20-R020	0.04-0.09	2.0	1.25	0.20	●				●		●	
	ATG 32R/L130T20-R020	0.04-0.09	2.0	1.30	0.20	●				●		●	
	ATG 32R/L140T25-R020	0.04-0.09	2.5	1.40	0.20	●				●		●	
	ATG 32R/L145T25-R020	0.04-0.09	2.5	1.45	0.20	●				●		●	
	ATG 32R/L150T25-R020	0.04-0.09	2.5	1.50	0.20	●				●		●	
	ATG 32R/L160T25-R020	0.04-0.09	2.5	1.60	0.20	●				●		●	
	ATG 32R/L170T25-R020	0.04-0.09	2.5	1.70	0.20	●				●		●	
	ATG 32R/L175T25-R020	0.04-0.09	2.5	1.75	0.20	●				●		●	
	ATG 32R/L200T25-R020	0.04-0.09	2.5	2.00	0.20	●				●		●	
	ATG 32R/L225T25-R020	0.04-0.09	2.5	2.25	0.20	●				●		●	
	ATG 32R/L250T25-R020	0.05-0.10	2.5	2.50	0.20	●				●		●	
	ATG 32R/L300T25-R020	0.05-0.10	2.5	3.00	0.20	●				●		●	
	ATG 43R/L100T20-R010	0.03-0.08	2.0	1.00	0.10	●				●		●	
	ATG 43R/L125T20-R010	0.04-0.09	2.0	1.25	0.10	●				●		●	
	ATG 43R/L125T20-R020	0.04-0.09	2.0	1.25	0.20	●				●		●	
	ATG 43R/L130T30-R010	0.04-0.09	3.0	1.30	0.10	●				●		●	
	ATG 43R/L130T30-R020	0.04-0.09	3.0	1.30	0.20	●				●		●	
	ATG 43R/L140T35-R020	0.04-0.09	3.5	1.40	0.20	●				●		●	
	ATG 43R/L145T35-R020	0.04-0.09	3.5	1.45	0.20	●				●		●	
	ATG 43R/L150T35-R010	0.04-0.09	3.5	1.50	0.10	●				●		●	
	ATG 43R/L150T35-R020	0.04-0.09	3.5	1.50	0.20	●				●		●	
	ATG 43R/L170T35-R020	0.04-0.09	3.5	1.70	0.20	●				●		●	
	ATG 43R/L175T35-R020	0.04-0.09	3.5	1.75	0.20	●				●		●	
	ATG 43R/L185T35-R020	0.04-0.09	3.5	1.85	0.20	●				●		●	
	ATG 43R/L195T35-R020	0.04-0.09	3.5	1.95	0.20	●				●		●	

●: Stock available ○: Stock Limitation

Shallow Grooving Series

ATG: Applied to external and internal shallow grooving

Product code	IC	S	D1
ATG 32-	9.525	3.18	4.4
ATG 43-	12.7	4.76	5.5
ATG 43R/L450	12.7	5.0	5.5



The picture shows the right hand holder

Inserts	Product code	Machining conditions				● Good condition ● General condition ● Bad condition							
		Cutting parameter		Dimensions		P		M		K		N	
		Grooving f (mm/rev)	CDX	CW	RE	AP301U	AP330M	AC230P	AP330M	AP301U	AC230P	AP301U	AW100K
	ATG 43R/L200T35-R010	0.04-0.09	3.5	2.00	0.10	●				●		●	
	ATG 43R/L200T35-R020	0.04-0.09	3.5	2.00	0.20	●				●		●	
	ATG 43R/L225T35-R020	0.04-0.09	3.5	2.25	0.20	●				●		●	
	ATG 43R/L230T35-R020	0.05-0.10	3.5	2.30	0.20	●				●		●	
	ATG 43R/L250T50-R010	0.05-0.10	5.0	2.50	0.10	●				●		●	
	ATG 43R/L250T50-R030	0.05-0.10	5.0	2.50	0.30	●				●		●	
	ATG 43R/L265T50-R030	0.05-0.10	5.0	2.65	0.30	●				●		●	
	ATG 43R/L280T50-R030	0.05-0.10	5.0	2.80	0.30	●				●		●	
	ATG 43R/L300T50-R010	0.05-0.10	5.0	3.00	0.10	●				●		●	
	ATG 43R/L300T50-R030	0.05-0.10	5.0	3.00	0.30	●				●		●	
	ATG 43R/L325T50-R030	0.05-0.10	5.0	3.25	0.30	●				●		●	
	ATG 43R/L330T50-R030	0.05-0.12	5.0	3.30	0.30	●				●		●	
	ATG 43R/L350T50-R010	0.05-0.12	5.0	3.50	0.10	●				●		●	
	ATG 43R/L350T50-R030	0.05-0.12	5.0	3.50	0.30	●				●		●	
	ATG 43R/L400T50-R010	0.05-0.12	5.0	4.00	0.10	●				●		●	
	ATG 43R/L400T50-R040	0.05-0.12	5.0	4.00	0.40	●				●		●	
	ATG 43R/L430T50-R040	0.05-0.12	5.0	4.30	0.40	●				●		●	
	ATG 43R/L450T50-R040	0.05-0.12	5.0	4.50	0.40	●				●		●	
	ATG 32R/L050T12-R025	0.03-0.08	1.2	0.50	0.25	●				●		●	
	ATG 32R/L100T12-R050	0.03-0.08	1.2	1.00	0.50	●				●		●	
	ATG 32R/L150T25-R075	0.04-0.09	2.5	1.50	0.75	●				●		●	
	ATG 32R/L200T25-R100	0.04-0.09	2.5	2.00	1.00	●				●		●	
	ATG 32R/L300T25-R150	0.05-0.10	2.5	3.00	1.50	●				●		●	
	ATG 43R/L100T20-R050	0.03-0.08	2.0	1.00	0.50	●				●		●	
	ATG 43R/L150T35-R075	0.04-0.09	3.5	1.50	0.75	●				●		●	
	ATG 43R/L200T35-R100	0.04-0.09	3.5	2.00	1.00	●				●		●	
	ATG 43R/L250T40-R125	0.05-0.10	5.0	2.50	1.25	●				●		●	
	ATG 43R/L300T40-R150	0.05-0.10	5.0	3.00	1.50	●				●		●	
	ATG 43R/L400T50-R200	0.05-0.12	5.0	4.00	2.00	●				●		●	

●: Stock available ○: Stock Limitation