

SA Grooving and Parting system



1. DIAMETAL

2. BIMU

3. IFANGER

4. ARNO

5. SPHINX

6. ZEUS

7. PRAMET

8. BECKER

9. WHIZCUT

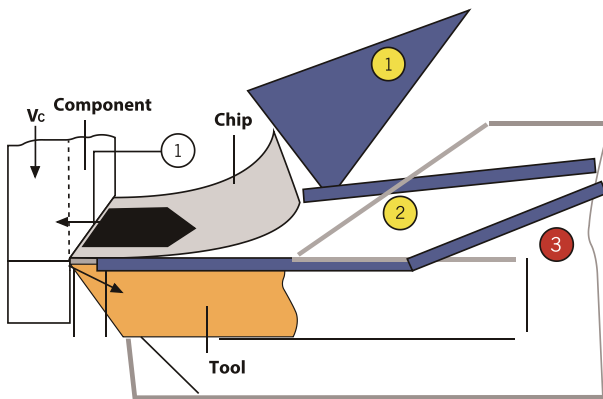
Introduction

ARNO-ACS cooling system

새로운 SA홀더들은 고압 사용을 위한 특허받은 새로운 시스템을 도입했다. 절삭유는 홀더와 인서트의 홀을 타고 날 끝으로 전해지는 시스템이다. 홀에서 나오는 절삭유의 압력으로 인해 소재의 칩들은 바닥으로 흐르며 최상의 가공조건을 제공한다.

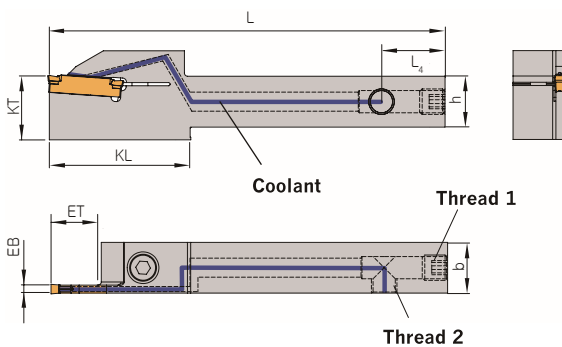
칩 말림 향상에 따른 주요 이점

- 원활한 절삭유 공급
- 냉각기능 향상에 따른 인서트 변형 및 파손 감소
- 인서트 마모율 감소 및 절단 모서리 파손 감소
- 원활한 칩핑
- 표면 조도 및 품질 개선
- 가공속도 증가에 따른 생산율 증대
- 인서트의 수명 증대

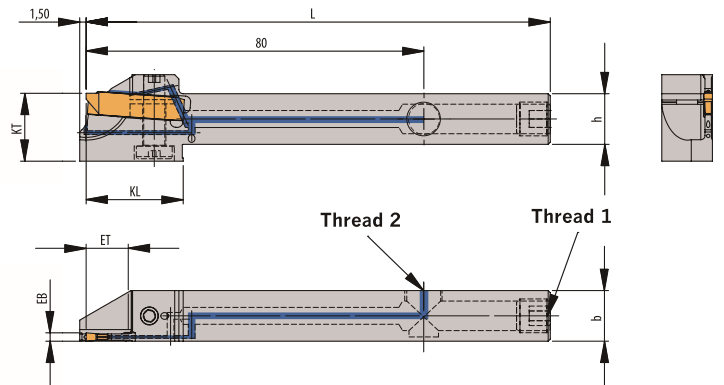


- ① External coolant from coolant jet
- ② Through tool coolant
- ③ New ACS-coolant through the insert seat

- ACS1

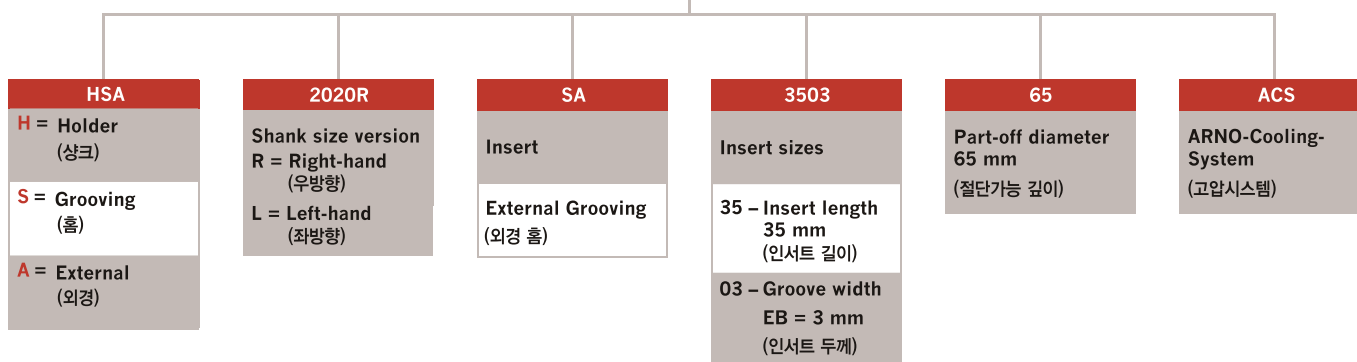


- ACS2

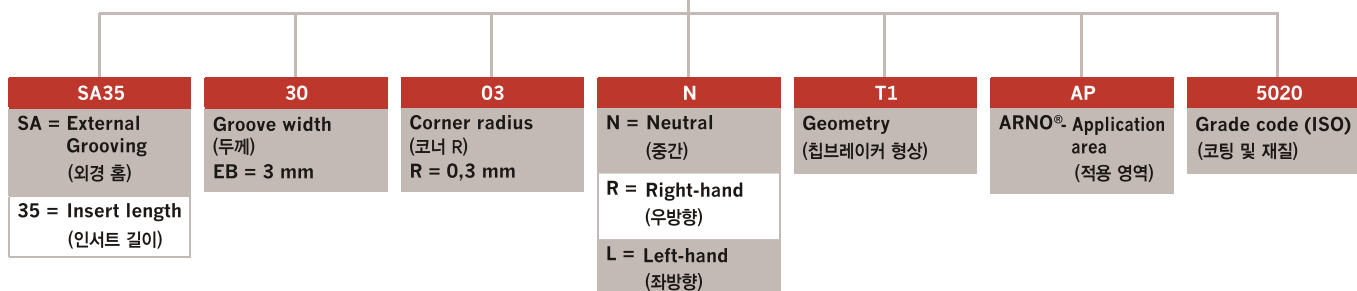


Designation system

Monoblock holders

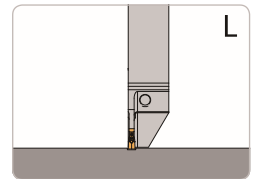
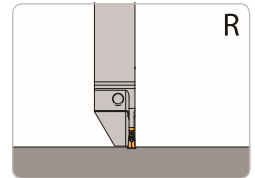
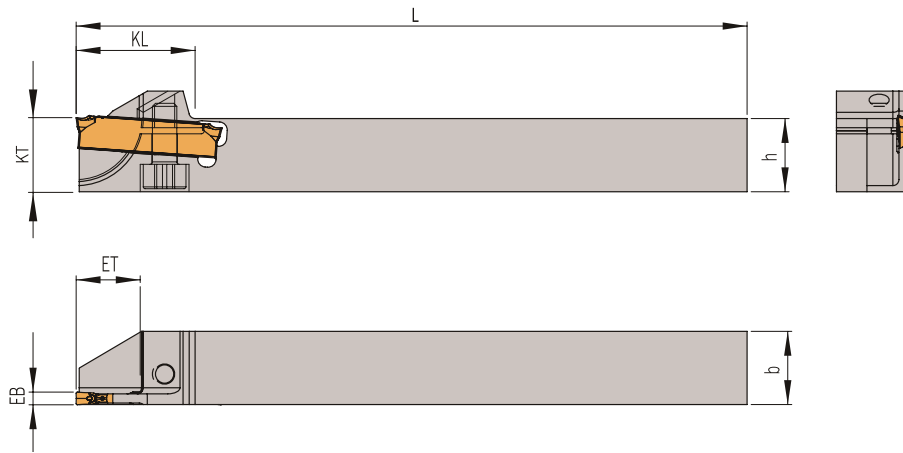


Inserts



Monoblock holders

HSA-U



Right-hand execution shown

For sliding head auto lathes (with clamping from below) – For easier handling

Designation	EB	ET	D _{max}	D _R	h	b	L	KL	KT	PG 37	Insert
HSA 1212U-L-SA16015-20	1,5	10	20	–	12	12	110	19,5	12	●	SA16-15...
HSA 1212U-R-SA16015-20	1,5	10	20	–	12	12	110	19,5	12	●	SA16-15...
HSA 1212U-L-SA24015-20	1,5	10,0	20	–	12	12	110	19,5	12	●	SA 24-15...
HSA 1212U-R-SA24015-20	1,5	10,0	20	–	12	12	110	19,5	12	●	SA 24-15...
HSA 1212U-R-SA2402-06	2,0	3,0	6	–	12	12	110	19,5	12	●	SA 24-20...
HSA 1212U-L-SA2402-12	2,0	6,0	12	–	12	12	110	19,5	12	●	SA 24-20...
HSA 1212U-R-SA2402-12	2,0	6,0	12	–	12	12	110	19,5	12	●	SA 24-20...
HSA 1212U-L-SA2402-20	2,0	10,0	20	–	12	12	110	19,5	12	●	SA 24-20...
HSA 1212U-R-SA2402-20	2,0	10,0	20	–	12	12	110	19,5	12	●	SA 24-20...
HSA 1616U-L-SA2402-32	2,0	16,0	32	–	16	16	110	25,5	16	●	SA 24-20...
HSA 1616U-R-SA2402-32	2,0	16,0	32	–	16	16	110	25,5	16	●	SA 24-20...

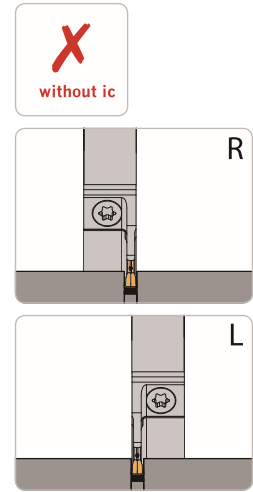
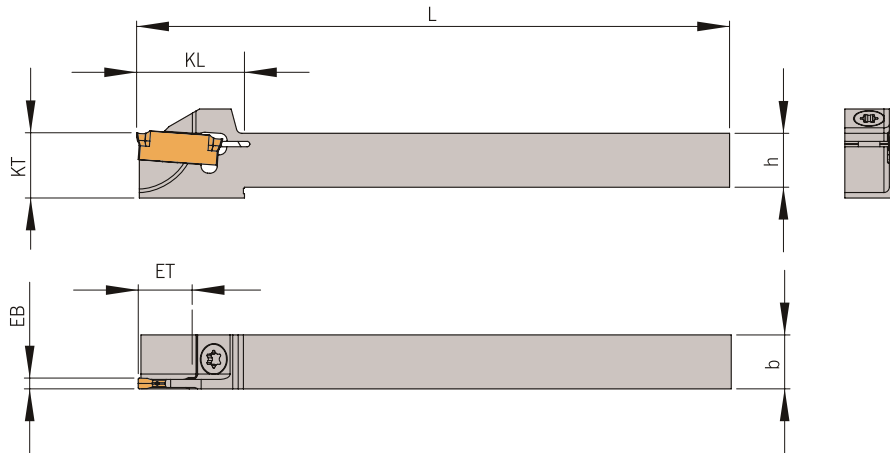
D_{max} = Maximum diameter in solid

Spare parts

Holder	Screw	Key
HSA 1212U...	DIN912 M4x10-12.9	KP 1111
HSA 1616U..	DIN912 M4x14-12.9	KP 1111

Monoblock holders

HSA



Right-hand execution shown

For sliding head auto lathes

Designation	EB	ET	D _{max}	D _R	h	b	L	KL	KT	PG 37	Insert
HSA 0808L-SA16015-12	1,5	6,0	12	-	8	8	110	16	10	●	SA 16-15...
HSA 0808R-SA16015-12	1,5	6,0	12	-	8	8	110	16	10	●	SA 16-15...
HSA 0808L-SA16015-16	1,5	8,0	16	-	8	8	110	18	10	●	SA 16-15...
HSA 0808R-SA16015-16	1,5	8,0	16	-	8	8	110	18	10	●	SA 16-15...
HSA 0808L-SA24015-12	1,5	6,0	12	-	8	8	110	16	10	●	SA 24-15...
HSA 0808R-SA24015-12	1,5	6,0	12	-	8	8	110	16	10	●	SA 24-15...
HSA 0808L-SA24015-16	1,5	8,0	16	-	8	8	110	18	10	●	SA 24-15...
HSA 0808R-SA24015-16	1,5	8,0	16	-	8	8	110	18	10	●	SA 24-15...
HSA 1010L-SA16015-20	1,5	10,0	20	-	10	10	110	20	12	●	SA 16-15...
HSA 1010R-SA16015-20	1,5	10,0	20	-	10	10	110	20	12	●	SA 16-15...
HSA 1010L-SA1602-20	2,0	10,0	20	-	10	10	110	20	12	●	SA 16-20...
HSA 1010R-SA1602-20	2,0	10,0	20	-	10	10	110	20	12	●	SA 16-20...
HSA 1010L-SA24015-20	1,5	10,0	20	-	10	10	110	20	12	●	SA 24-15...
HSA 1010R-SA24015-20	1,5	10,0	20	-	10	10	110	20	12	●	SA 24-15...
HSA 1010L-SA2402-20	2,0	10,0	20	-	10	10	110	20	12	●	SA 24-20...
HSA 1010R-SA2402-20	2,0	10,0	20	-	10	10	110	20	12	●	SA 24-20...
HSA 1212L-SA16015-20	1,5	13,0	26	-	12	12	110	-	-	●	SA 16-15...
HSA 1212R-SA16015-20	1,5	13,0	26	-	12	12	110	-	-	●	SA 16-15...
HSA 1212L-SA1602-20	2,0	10,0	20	-	12	12	110	-	-	●	SA 16-20...
HSA 1212R-SA1602-20	2,0	10,0	20	-	12	12	110	-	-	●	SA 16-20...
HSA 1212L-SA1603-26	3,0	13,0	26	-	12	12	110	-	-	●	SA 16-30...
HSA 1212R-SA1603-26	3,0	13,0	26	-	12	12	110	-	-	●	SA 16-30...
HSA 1212L-SA24015-20	1,5	10,0	20	-	12	12	110	-	-	●	SA 24-15...
HSA 1212R-SA24015-20	1,5	10,0	20	-	12	12	110	-	-	●	SA 24-15...
HSA 1212L-SA24015-26	1,5	13,0	26	-	12	12	110	-	-	●	SA 24-15...
HSA 1212R-SA24015-26	1,5	13,0	26	-	12	12	110	-	-	●	SA 24-15...
HSA 1212L-SA24015-32	1,5	16,0	32	-	12	12	110	26	16	●	SA 24-15...
HSA 1212R-SA24015-32	1,5	16,0	32	-	12	12	110	26	16	●	SA 24-15...
HSA 1212L-SA2402-20	2,0	10,0	20	-	12	12	110	-	-	●	SA 24-20...
HSA 1212R-SA2402-20	2,0	10,0	20	-	12	12	110	-	-	●	SA 24-20...
HSA 1212L-SA2402-26	2,0	13,0	26	-	12	12	110	-	-	●	SA 24-20...
HSA 1212R-SA2402-26	2,0	13,0	26	-	12	12	110	-	-	●	SA 24-20...
HSA 1212L-SA2402-32	2,0	16,0	32	-	12	12	110	26	16	●	SA 24-20...
HSA 1212R-SA2402-32	2,0	16,0	32	-	12	12	110	26	16	●	SA 24-20...
HSA 1212L-SA24025-26	2,5	13,0	26	-	12	12	110	-	-	●	SA 24-25...
HSA 1212R-SA24025-26	2,5	13,0	26	-	12	12	110	-	-	●	SA 24-25...
HSA 1212L-SA24025-32	2,5	16,0	32	-	12	12	110	26	16	●	SA 24-25...
HSA 1212R-SA24025-32	2,5	16,0	32	-	12	12	110	26	16	●	SA 24-25...

For sliding head auto lathes

Designation	EB	ET	D _{max}	D _R	h	b	L	KL	KT	PG 37	Insert
HSA 1616L-SA1602-20	2,0	10,0	20	–	16	16	110	–	–	●	SA 16-20...
HSA 1616R-SA1602-20	2,0	10,0	20	–	16	16	110	–	–	●	SA 16-20...
HSA 1616L-SA1602-26	2,0	13,0	26	–	16	16	110	–	–	●	SA 16-20...
HSA 1616R-SA1602-26	2,0	13,0	26	–	16	16	110	–	–	●	SA 16-20...
HSA 1616L-SA1603-26	3,0	13,0	26	–	16	16	110	–	–	●	SA 16-30...
HSA 1616R-SA1603-26	3,0	13,0	26	–	16	16	110	–	–	●	SA 16-30...
HSA 1616L-SA24015-32	1,5	16,0	32	–	16	16	110	–	–	●	SA 24-15...
HSA 1616R-SA24015-32	1,5	16,0	32	–	16	16	110	–	–	●	SA 24-15...
HSA 1616L-SA2402-26	2,0	13,0	26	–	16	16	110	–	–	●	SA 24-20...
HSA 1616R-SA2402-26	2,0	13,0	26	–	16	16	110	–	–	●	SA 24-20...
HSA 1616L-SA2402-32	2,0	16,0	32	–	16	16	110	–	–	●	SA 24-20...
HSA 1616R-SA2402-32	2,0	16,0	32	–	16	16	110	–	–	●	SA 24-20...
HSA 1616L-SA24025-32	2,5	16,0	32	–	16	16	110	–	–	●	SA 24-25...
HSA 1616R-SA24025-32	2,5	16,0	32	–	16	16	110	–	–	●	SA 24-25...
HSA 1616L-SA2403-20	3,0	10,0	20	–	16	16	110	–	–	●	SA 24-30...
HSA 1616R-SA2403-20	3,0	10,0	20	–	16	16	110	–	–	●	SA 24-30...
HSA 1616L-SA2403-26	3,0	13,0	26	–	16	16	110	–	–	●	SA 24-30...
HSA 1616R-SA2403-26	3,0	13,0	26	–	16	16	110	–	–	●	SA 24-30...
HSA 1616L-SA2403-32	3,0	16,0	32	–	16	16	110	–	–	●	SA 24-30...
HSA 1616R-SA2403-32	3,0	16,0	32	–	16	16	110	–	–	●	SA 24-30...
HSA 2020L-SA1603-26	3,0	13,0	26	–	20	20	110	–	–	●	SA 16-30...
HSA 2020R-SA1603-26	3,0	13,0	26	–	20	20	110	–	–	●	SA 16-30...
HSA 2020L-SA2402-20	2,0	10,0	20	–	20	20	110	–	–	●	SA 24-20...
HSA 2020R-SA2402-20	2,0	10,0	20	–	20	20	110	–	–	●	SA 24-20...
HSA 2020L-SA2402-32	2,0	16,0	32	–	20	20	110	25,5	20	●	SA 24-20...
HSA 2020R-SA2402-32	2,0	16,0	32	–	20	20	110	25,5	20	●	SA 24-20...
HSA 2020L-SA2403-32	3,0	16,0	32	–	20	20	110	–	–	●	SA 24-30...
HSA 2020R-SA2403-32	3,0	16,0	32	–	20	20	110	–	–	●	SA 24-30...

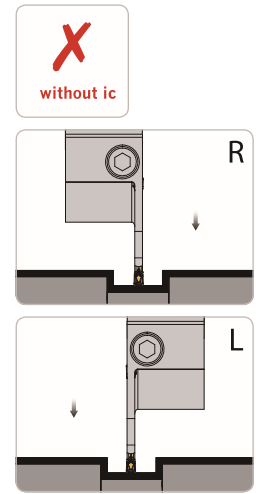
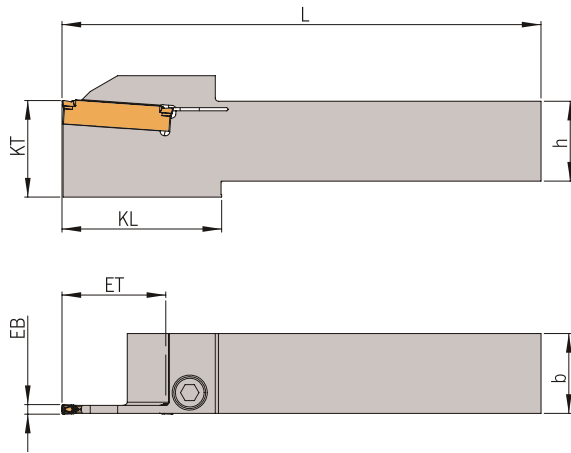
D_{max} = Maximum diameter in solid

Spare parts

Holder	Screw	Key
HSA 0808...	AS 0022-12	KS 8000
HSA 1010... - HSA 2020...	AS 0022	KS 8000

Monoblock holders

HSA



Right-hand execution shown

Monoblock holder

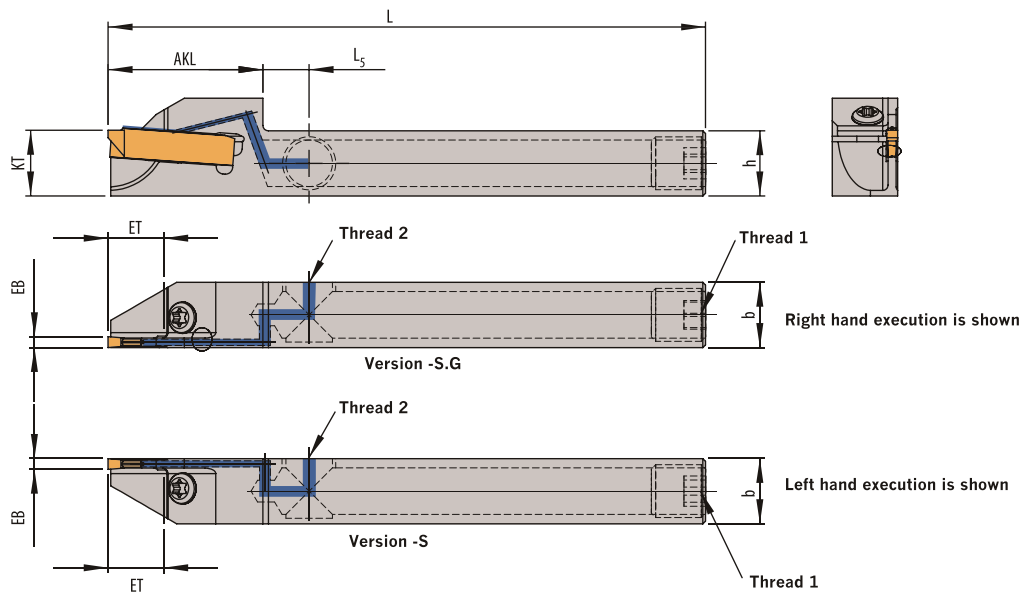
Designation	EB	ET	D _{max}	D _R	h	b	L	KL	KT	PG 37	Insert
HSA 1616L-SA24015-44	1,5	22,0	44	61	16	16	125	40	20	●	SA 24-15...
HSA 1616R-SA24015-44	1,5	22,0	44	61	16	16	125	40	20	●	SA 24-15...
HSA 1616L-SA2402-44	2,0	22,0	44	61	16	16	125	40	20	●	SA 24-20...
HSA 1616R-SA2402-44	2,0	22,0	44	61	16	16	125	40	20	●	SA 24-20...
HSA 1616L-SA2403-44	3,0	22,0	44	61	16	16	125	40	20	●	SA 24-30...
HSA 1616R-SA2403-44	3,0	22,0	44	61	16	16	125	40	20	●	SA 24-30...
HSA 2020L-SA24015-44	1,5	22,0	44	61	20	20	125	-	-	●	SA 24-15...
HSA 2020R-SA24015-44	1,5	22,0	44	61	20	20	125	-	-	●	SA 24-15...
HSA 2020L-SA2402-44	2,0	22,0	44	61	20	20	125	-	-	●	SA 24-20...
HSA 2020R-SA2402-44	2,0	22,0	44	61	20	20	125	-	-	●	SA 24-20...
HSA 2020L-SA24025-44	2,5	22,0	44	61	20	20	125	-	-	●	SA 24-25...
HSA 2020R-SA24025-44	2,5	22,0	44	61	20	20	125	-	-	●	SA 24-25...
HSA 2020L-SA2403-44	3,0	22,0	44	61	20	20	125	-	-	●	SA 24-30...
HSA 2020R-SA2403-44	3,0	22,0	44	61	20	20	125	-	-	●	SA 24-30...
HSA 2020L-SA3502-52	2,0	26,0	52	68	20	20	150	44	30	●	SA 35-20...
HSA 2020R-SA3502-52	2,0	26,0	52	68	20	20	150	44	30	●	SA 35-20...
HSA 2020L-SA3502-65	2,0	32,5	65	80	20	20	150	50	30	●	SA 35-20...
HSA 2020R-SA3502-65	2,0	32,5	65	80	20	20	150	50	30	●	SA 35-20...
HSA 2020L-SA3503-52	3,0	26,0	52	68	20	20	150	44	30	●	SA 35-30...
HSA 2020R-SA3503-52	3,0	26,0	52	68	20	20	150	44	30	●	SA 35-30...
HSA 2020L-SA3503-65	3,0	32,5	65	80	20	20	150	50	30	●	SA 35-30...
HSA 2020R-SA3503-65	3,0	32,5	65	80	20	20	150	50	30	●	SA 35-30...

Spare parts

Holder	Screw	Key
HSA 1616... - HSA 2020... D _{max} 44	DIN912 M5x16-12.9	KP 1321
HSA 2020... D _{min} 52/65	DIN912 M6x20-12.9	KP 5421

Monoblock holders

HSA-S-ACS1-S./S.G



Monoblock holder with through tool coolant ACS1 access from the side for swiss type machines

Designation	EB	ET	D _{max}	D _R	h	b	L	L ₅	AKL	KL	KT	Thread 1	Thread 2	PG 37	Insert
Left hand execution, coolant access from the side of the cutting edge															
HSA 1212S-L-SA2402-20-ACS1-H2-S2	2,0	10,0	20	-	12	12	110	8,5	28,5	-	12	G 1/8"	G 1/8"	●	SA 24-20...
HSA 1212S-L-SA2402-26-ACS1-H2-S2	2,0	13,0	26	-	12	12	110	8,5	31,5	-	12	G 1/8"	G 1/8"	●	SA 24-20...
HSA 1616S-L-SA2402-32-ACS1-H2-S2	2,0	16,0	32	-	16	16	110	8,5	34,5	-	16	G 1/8"	G 1/8"	●	SA 24-20...
HSA 1616S-L-SA2402-36-ACS1-H2-S2*	2,0	18,0	36	-	16	16	110	8,5	36,5	-	16	G 1/8"	G 1/8"	●	SA 24-20...
HSA 1616S-L-SA24025-32-ACS1-H2-S2	2,5	16,0	32	-	16	16	110	8,5	34,5	-	16	G 1/8"	G 1/8"	●	SA 24-25...
HSA 1616S-L-SA24025-36-ACS1-H2-S2*	2,5	18,0	36	-	16	16	110	8,5	36,5	-	16	G 1/8"	G 1/8"	●	SA 24-25...
HSA 1616S-L-SA2403-32-ACS1-H2-S2	3,0	18,0	32	-	16	16	110	8,5	36,5	-	16	G 1/8"	G 1/8"	●	SA 24-30...
HSA 1616S-L-SA2403-36-ACS1-H2-S2*	3,0	18,0	36	-	16	16	110	8,5	36,5	-	16	G 1/8"	G 1/8"	●	SA 24-30...

Right hand execution, coolant access from the opposite side of the cutting edge															
HSA 1212S-R-SA2402-20-ACS1-H2-S2G	2,0	10,0	20	-	12	12	110	8,5	28,5	-	12	G 1/8"	G 1/8"	●	SA 24-20...
HSA 1212S-R-SA2402-26-ACS1-H2-S2G	2,0	13,0	26	-	12	12	110	8,5	31,5	-	12	G 1/8"	G 1/8"	●	SA 24-20...
HSA 1616S-R-SA2402-32-ACS1-H2-S2G	2,0	16,0	32	-	16	16	110	8,5	34,5	-	16	G 1/8"	G 1/8"	●	SA 24-20...
HSA 1616S-R-SA2402-36-ACS1-H2-S2G*	2,0	18,0	36	-	16	16	110	8,5	36,5	-	16	G 1/8"	G 1/8"	●	SA 24-20...
HSA 1616S-R-SA24025-32-ACS1-H2-S2G	2,5	16,0	32	-	16	16	110	8,5	34,5	-	16	G 1/8"	G 1/8"	●	SA 24-25...
HSA 1616S-R-SA24025-36-ACS1-H2-S2G*	2,5	18,0	36	-	16	16	110	8,5	36,5	-	16	G 1/8"	G 1/8"	●	SA 24-25...
HSA 1616S-R-SA2403-32-ACS1-H2-S2G	3,0	18,0	32	-	16	16	110	8,5	36,5	-	16	G 1/8"	G 1/8"	●	SA 24-30...
HSA 1616S-R-SA2403-36-ACS1-H2-S2G*	3,0	18,0	36	-	16	16	110	8,5	36,5	-	16	G 1/8"	G 1/8"	●	SA 24-30...

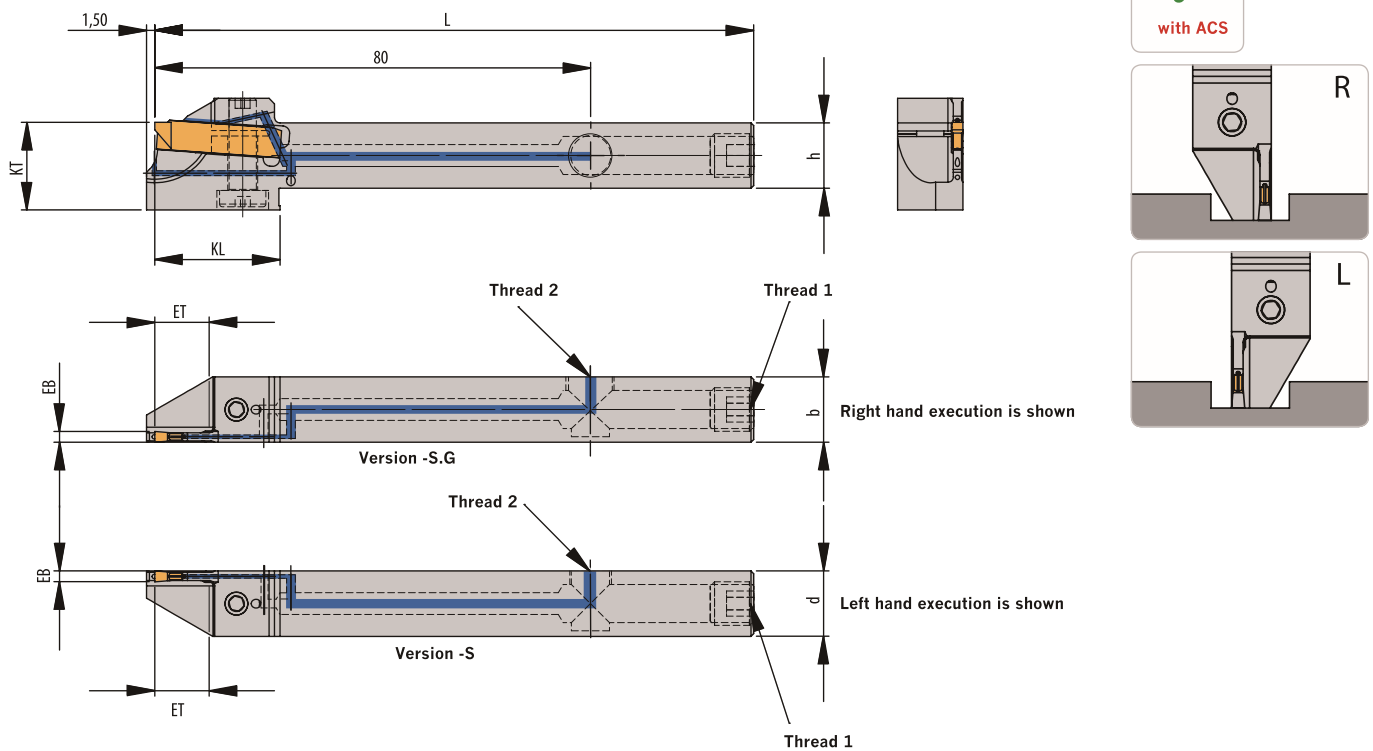
* Available from January 2017

Spare parts

Holder	Screw	Key
HSA 1212S...HSA 1616S...-SA24...ACS1...	AS 0022	KS 8000

Monoblock holders

HSA-UD-ACS2-S./S.G



Monoblock holder with through tool coolant (ACS2) access from the side – Locking from top and bottom

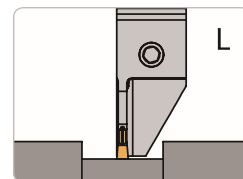
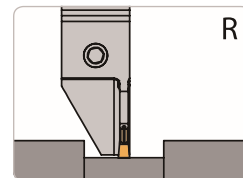
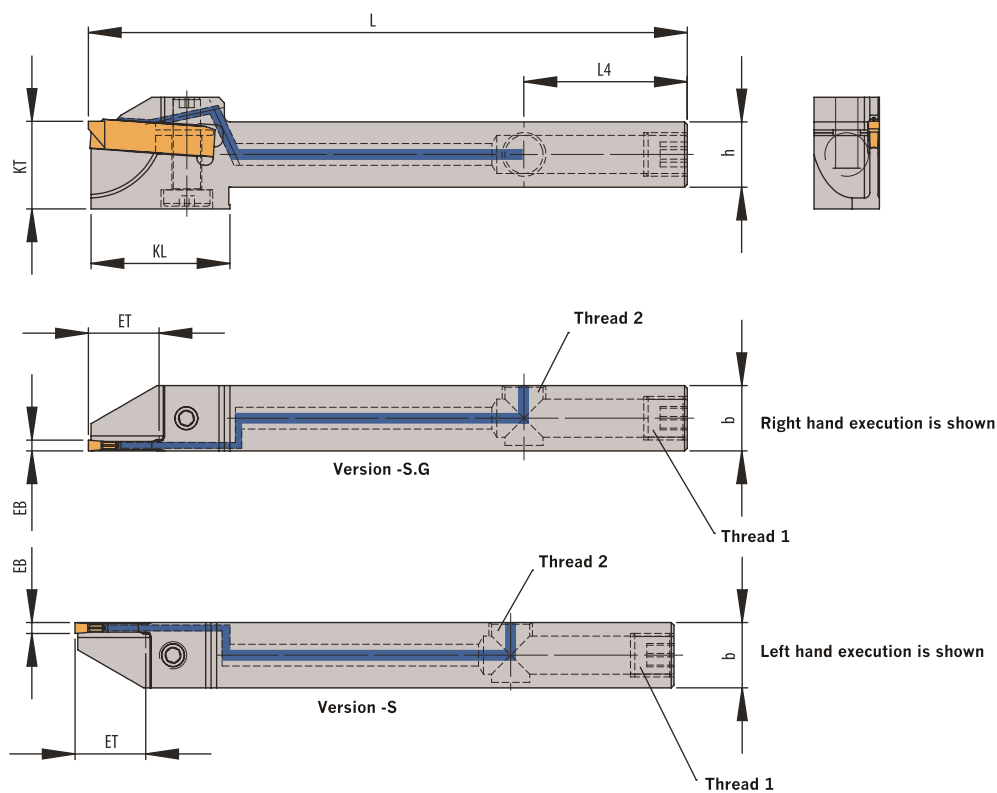
Designation	EB	ET	D _{max}	D _R	h	b	L	KL	KT	Thread 1	Thread 2	PG 37	Insert
Coolant access from the side of the cutting edge													
HSA 1212UD-L-SA2402-20-ACS2-S1	2,0	10,0	20	–	12	12	110	23	16	M8x1	M8x1	●	SA 24-20...
Coolant access from the opposite side of the cutting edge													
HSA 1212UD-R-SA2402-20-ACS2-S1G	2,0	10,0	20	–	12	12	110	23	16	M8x1	M8x1	●	SA 24-20...

Spare parts

Holder	Screw	Key
HSA 1212UD...-SA24...ACS2...	AS 0084	KS 3111

Monoblock holders

HSA-UD-ACS1-S./S.G



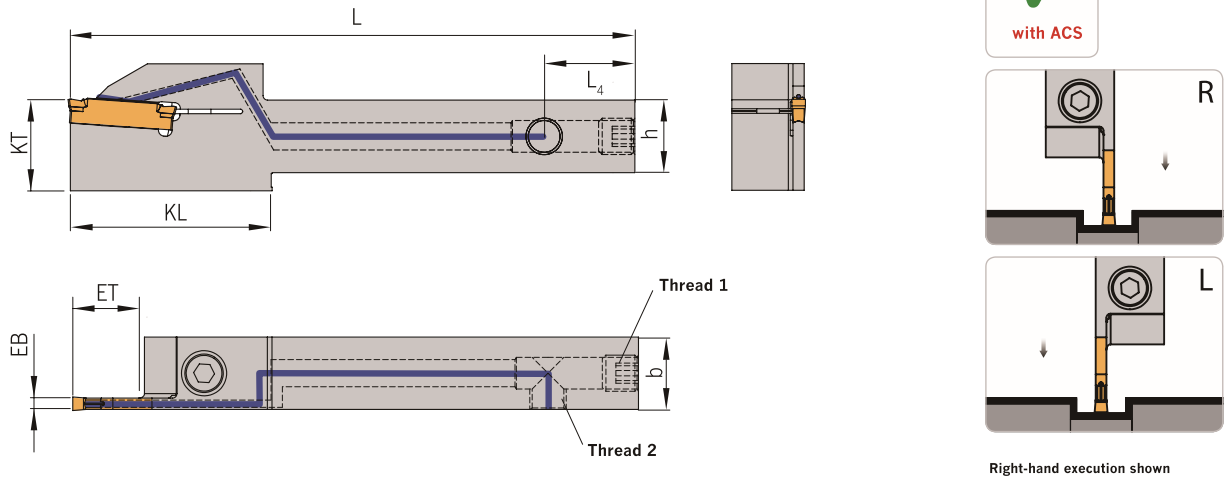
Monoblock holder with through tool coolant (ACS1) access from the side – Locking from top and bottom

Designation	EB	ET	D _{max}	D _R	h	b	L	L ₄	KL	KT	Thread 1	Thread 2	PG 37	Insert
Coolant access from the side of the cutting edge														
HSA 1212UD-L-SA2402-26-ACS1-S1	2,0	13,0	26	–	12	12	110	30	26	16	M8x1	M8x1	●	SA 24-20...
HSA 1212UD-L-SA2402-26-ACS1-S2	2,0	13,0	26	–	12	12	110	30	26	16	M8x1	G1/8"	●	SA 24-20...
Coolant access from the opposite side of the cutting edge														
HSA 1212UD-R-SA2402-26-ACS1-S1G	2,0	13,0	26	–	12	12	110	30	26	16	M8x1	M8x1	●	SA 24-20...
HSA 1212UD-R-SA2402-26-ACS1-S2G	2,0	13,0	26	–	12	12	110	30	26	16	M8x1	G1/8"	●	SA 24-20...

Spare parts

Holder	Screw	Key
HSA 1212UD...	AS 0084	KP 3111

HSA-ACS1-S



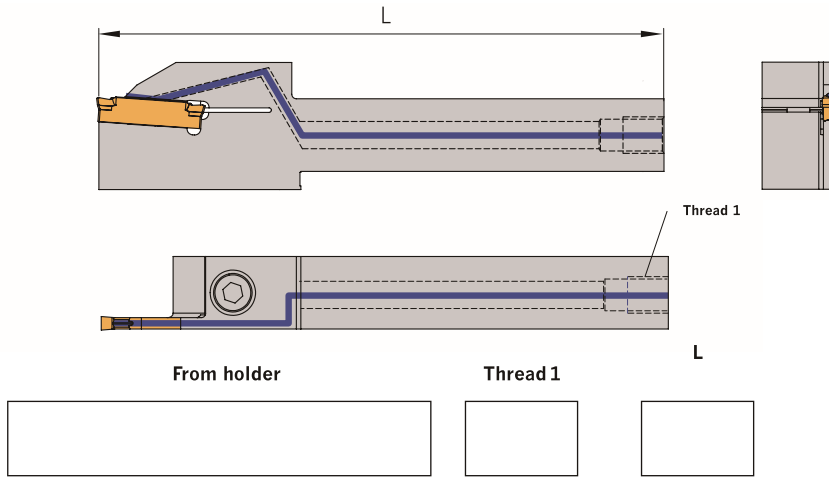
Monoblock holder with through tool coolant ACS1 access from the side

Designation	EB	ET	D _{max}	D _R	h	b	L	L ₄	KL	KT	Thread 1	Thread 2	PG 37	Insert
HSA 1616L-SA2402-32-ACS1-S1	2,0	16,0	32	-	16	16	125	20	38	20	M8x1	M8x1	●	SA 24-20...
HSA 1616R-SA2402-32-ACS1-S1	2,0	16,0	32	-	16	16	125	20	38	20	M8x1	M8x1	●	SA 24-20...
HSA 1616L-SA2403-32-ACS1-S1	3,0	16,0	32	-	16	16	110	20	38	20	M8x1	M8x1	●	SA 24-30...
HSA 1616R-SA2403-32-ACS1-S1	3,0	16,0	32	-	16	16	110	20	38	20	M8x1	M8x1	●	SA 24-30...
HSA 1616L-SA2403-44-ACS1-S1	3,0	22,0	44	61	16	16	125	20	45	20	M8x1	M8x1	●	SA 24-30...
HSA 1616R-SA2403-44-ACS1-S1	3,0	22,0	44	61	16	16	125	20	45	20	M8x1	M8x1	●	SA 24-30...
HSA 2020L-SA24025-44-ACS1-S1	2,5	22,0	44	61	20	20	125	20	43	20	M8x1	M8x1	●	SA 24-25...
HSA 2020R-SA24025-44-ACS1-S1	2,5	22,0	44	61	20	20	125	20	43	20	M8x1	M8x1	●	SA 24-25...
HSA 2020L-SA2403-32-ACS1-S1	3,0	16,0	32	-	20	20	125	20	-	-	M8x1	M8x1	●	SA 24-30...
HSA 2020R-SA2403-32-ACS1-S1	3,0	16,0	32	-	20	20	125	20	-	-	M8x1	M8x1	●	SA 24-30...
HSA 2020L-SA2403-44-ACS1-S1	3,0	22,0	44	61	20	20	125	20	-	-	M8x1	M8x1	●	SA 24-30...
HSA 2020R-SA2403-44-ACS1-S1	3,0	22,0	44	61	20	20	125	20	-	-	M8x1	M8x1	●	SA 24-30...
HSA 2020L-SA3503-52-ACS1-S1	3,0	26,0	52	68	20	20	150	20	44	30	M8x1	M8x1	●	SA 35-30...
HSA 2020R-SA3503-52-ACS1-S1	3,0	26,0	52	68	20	20	150	20	44	30	M8x1	M8x1	●	SA 35-30...
HSA 2020L-SA3503-65-ACS1-S1	3,0	32,5	65	80	20	20	150	20	50	30	M8x1	M8x1	●	SA 35-30...
HSA 2020R-SA3503-65-ACS1-S1	3,0	32,5	65	80	20	20	150	20	50	30	M8x1	M8x1	●	SA 35-30...
HSA 1616L-SA2402-32-ACS1-S2	2,0	16,0	32	-	16	16	125	20	38	20	M8x1	G 1/8"	●	SA 24-20...
HSA 1616R-SA2402-32-ACS1-S2	2,0	16,0	32	-	16	16	125	20	38	20	M8x1	G 1/8"	●	SA 24-20...
HSA 1616L-SA2403-32-ACS1-S2	3,0	16,0	32	-	16	16	110	20	38	20	M8x1	G 1/8"	●	SA 24-30...
HSA 1616R-SA2403-32-ACS1-S2	3,0	16,0	32	-	16	16	110	20	38	20	M8x1	G 1/8"	●	SA 24-30...
HSA 1616L-SA2403-44-ACS1-S2	3,0	22,0	44	61	16	16	125	20	45	20	M8x1	G 1/8"	●	SA 24-30...
HSA 1616R-SA2403-44-ACS1-S2	3,0	22,0	44	61	16	16	125	20	45	20	M8x1	G 1/8"	●	SA 24-30...
HSA 2020L-SA24025-44-ACS1-S2	2,5	22,0	44	61	20	20	125	20	-	-	M8x1	G 1/8"	●	SA 24-25...
HSA 2020R-SA24025-44-ACS1-S2	2,5	22,0	44	61	20	20	125	20	-	-	M8x1	G 1/8"	●	SA 24-25...
HSA 2020L-SA2403-32-ACS1-S2	3,0	16,0	32	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SA 24-30...
HSA 2020R-SA2403-32-ACS1-S2	3,0	16,0	32	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SA 24-30...
HSA 2020L-SA2403-44-ACS1-S2	3,0	22,0	44	61	20	20	125	20	-	-	M8x1	G 1/8"	●	SA 24-30...
HSA 2020R-SA2403-44-ACS1-S2	3,0	22,0	44	61	20	20	125	20	-	-	M8x1	G 1/8"	●	SA 24-30...
HSA 2020L-SA3503-52-ACS1-S2	3,0	26,0	52	68	20	20	150	20	44	30	M8x1	G 1/8"	●	SA 35-30...
HSA 2020R-SA3503-52-ACS1-S2	3,0	26,0	52	68	20	20	150	20	44	30	M8x1	G 1/8"	●	SA 35-30...
HSA 2020L-SA3503-65-ACS1-S2	3,0	32,5	65	80	20	20	150	20	50	30	M8x1	G 1/8"	●	SA 35-30...
HSA 2020R-SA3503-65-ACS1-S2	3,0	32,5	65	80	20	20	150	20	50	30	M8x1	G 1/8"	●	SA 35-30...

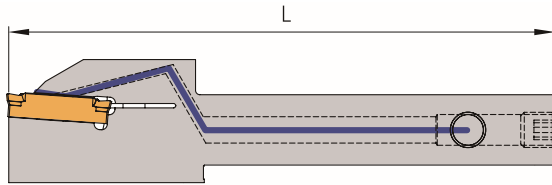
Enquiry holder HSA-ACS1 with special dimensions

Monoblock holder with through tool coolant access from the back

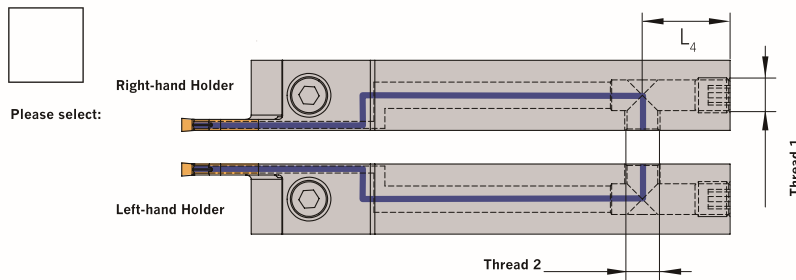
ARNO® Special Design



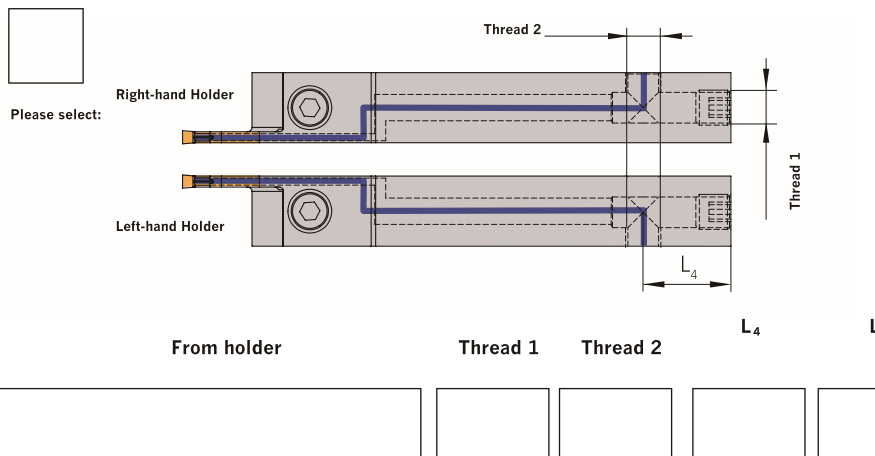
Monoblock holder with through tool coolant access from the side



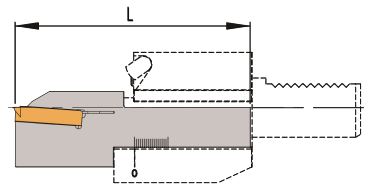
Design S. – Thread 2 is on the same side as the cutting edge



Design SG. – Thread 2 is on the opposite side of the cutting edge



This tool we produce to the price of the standard tool.



Remark by using the KMH holders (VDI) Form C

When using VDI holders Form C, please set overall length (L) by following maximum lengths:

Designation	L
HSA 1616L-SA2403-32-ACS1-..	92,0
HSA 1616R-SA2403-32-ACS1-..	92,0
HSA 1616L-SA2403-44-ACS1-..	99,0
HSA 1616R-SA2403-44-ACS1-..	99,0
HSA 2020L-SA2403-32-ACS1-..	96,0
HSA 2020R-SA2403-32-ACS1-..	96,0
HSA 2020L-SA2403-44-ACS1-..	103,0
HSA 2020R-SA2403-44-ACS1-..	103,0
HSA 2020L-SA3503-52-ACS1-..	113,0
HSA 2020R-SA3503-52-ACS1-..	113,0
HSA 2020L-SA3503-65-ACS1-..	119,0
HSA 2020R-SA3503-65-ACS1-..	119,0
HSA 2525L-SA2403-44-ACS1-..	115,5
HSA 2525R-SA2403-44-ACS1-..	115,5
HSA 2525L-SA3503-52-ACS1-..	128,0
HSA 2525R-SA3503-52-ACS1-..	128,0
HSA 2525L-SA3503-65-ACS1-..	134,0
HSA 2525R-SA3503-65-ACS1-..	134,0



F1

연한 재질에 탁월한 제품

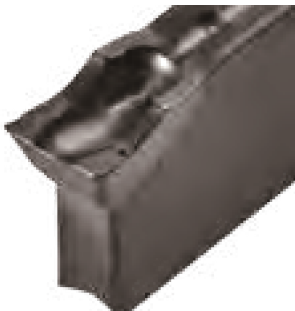
- 구성인선 형성 최소화
- 샤프하게 가공할 수 있어 얇은 소재에 적합



T1

칩 배출에 탁월한 제품

- 강, SUS용
- 얇은 제품 가공에 적합



S1

부드러운 절삭 가공 제품

- 특히 SUS에 적합
- 강용 제품의 문제 해결에 적합



M1

C형상의 네거티브 제품

- 중, 고강도 재질용
- 모든 재질에 적합
- 원소재 절단시 우선 추천 제품



ALU

날카로운 날 형상 제품

- ALU나 비철합금 제품 가공 시 우선 추천 제품
- 날 끝 연마급 인서트
- High positive 디자인
- 폴리싱된 칩브레이커

Grade description (재종)

Coated (코팅)

AM5040

PVD 코팅의 초경

단단한 코팅이며 중속 정도의 정삭 가공에서 전반적으로 사용.
주로 SUS나 강종에 사용.

AP2220

다분자층의 CVD 코팅

마모 저항과 모서리 절삭의 안정성을 추구한 우수 조합의 등급.
주로 합금강 및 주물소재에 적합하다.
안정적으로는 중속~고속에서 SUS 작업에 추천.

AP2240

CVD로 코팅된 초경

AP2240은 강하고 내열성을 가지고 있어 긴 공구 수명을 제공하며
제품의 정도를 향상 시킴.
강종과 주철에 사용하고 SUS에도 사용 될 수 있다.

AP5020

PVD로 코팅된 초경

저속 및 중속에서 전반적으로 사용 된다.
주로 강종과 SUS에 주로 적용되고 고온합금과
비철금속의 홈과 절단 소재로도 적합하다.

AP5030

PVD로 코팅된 초경

주로 강종에 전반적으로 사용 된다.
강한 특성을 가지고 있는 이 소재는 (ISO P30-P35) 범위의
스테인리스강에도 적합.

AP5820+

PVD로 코팅된 초경

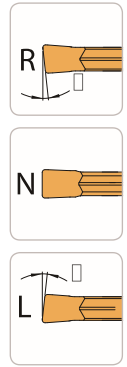
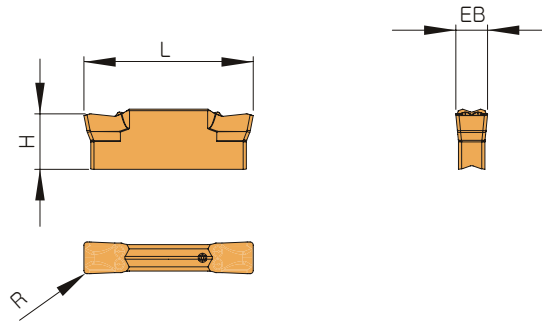
높은 내마모성을 가진 소재이다.
주로 강철기계가공과 인코넬, 스테인리스강과 같은 고온합금에 사용 된다.
고압시스템으로 사용 시 효과가 더 크다.

Uncoated (비코팅)

AN1015

비코팅의 초경 소재이며 주로 ALU,
비철소재에 사용 시 조도개선의 효과가 있다.
샤프한 절삭성 및 칩배출을 위해 연마 및 폴리싱 처리가 되어 있다.

SA16



Designation	EB*	H	L	R	χ	Grades						
						coated						uncoated
						AM5040	AP2220	AP2240	AP5020	AP5030	AP5820+	AN1015
SA16-1501R-S1-15**	1,5	5,5	16,00	0,1	15°				●			
SA16-1502N-S1	1,5	5,5	16,00	0,2	0°				●			
SA16-2001L-S1-12**	2,0	5,5	16,00	0,1	12°	●						
SA16-2001L-T1-15**	2,0	5,5	16,00	0,1	15°				●			
SA16-2001R-S1-12**	2,0	5,5	16,00	0,1	12°	●						
SA16-2001R-T1-15**	2,0	5,5	16,00	0,1	15°				●			
SA16-2002N-F1	2,0	5,5	16,00	0,2	0°		●		●			
SA16-2002N-S1	2,0	5,5	16,00	0,2	0°	●			●			
SA16-2002N-T1	2,0	5,5	16,00	0,2	0°		●		●			
SA16-3002L-S1-12**	3,0	5,5	16,00	0,2	12°	●						
SA16-3002R-S1-12**	3,0	5,5	16,00	0,2	12°	●						
SA16-3003L-M1	3,0	5,5	16,00	0,3	0°				●			
SA16-3003L-S1	3,0	5,5	16,00	0,3	0°	●						
SA16-3003L-T1	3,0	5,5	16,00	0,3	0°				●			
SA16-3003N-M1	3,0	5,5	16,00	0,3	0°		●		●			
SA16-3003N-S1	3,0	5,5	16,00	0,3	0°	●			●			
SA16-3003N-T1	3,0	5,5	16,00	0,3	0°		●		●			
SA16-3003R-M1	3,0	5,5	16,00	0,3	0°			●				
SA16-3003R-S1	3,0	5,5	16,00	0,3	0°	●						
SA16-3003R-T1	3,0	5,5	16,00	0,3	0°				●			

Remark: When using left- or right-handed inserts the holder may be needing modification.

**Ground version

* Toleranz EB		
SA16...	EB 2-3	+/- 0,04

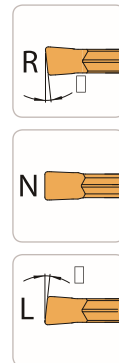
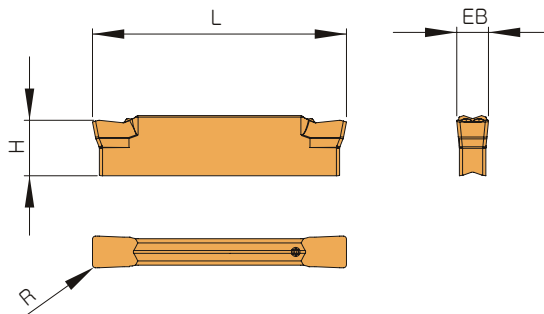
● Main application

○ Secondary application

	P	M	K	N	S	H
AM5040	○	●				
AP2220		○	●			
AP2240			●			
AP5020	●			○	○	
AP5030				○		
AP5820+						
AN1015						

Inserts

SA24



Designation	EB*	H	L	R	χ	Grades						
						coated					uncoated	
						AM5040	AP2220	AP2240	AP5020	AP5030	AP5820+	AN1015
SA24-15005L-T1-15**	1,5	5,5	24,00	0,05	15°				●			
SA24-15005R-T1-15**	1,5	5,5	24,00	0,05	15°				●			
SA24-1500L-S1-15**	1,5	5,5	24,00	0,0	15°				●			
SA24-1500R-S1-15**	1,5	5,5	24,00	0,0	15°				●			
SA24-1501L-S1-15**	1,5	5,5	24,00	0,1	15°				●			
SA24-1501R-S1-15**	1,5	5,5	24,00	0,1	15°				●			
SA24-1502N-S1	1,5	5,5	24,00	0,2	0°				●			
SA24-1502N-T1	1,5	5,5	24,00	0,2	0°				●			
SA24-2000R-T1-15**	2,0	5,5	24,00	0,0	15°				●			
SA24-2001L-S1-12**	2,0	5,5	24,00	0,1	12°	●						
SA24-2001L-S1-15**	2,0	5,5	24,00	0,1	15°				●			
SA24-2001L-T1-15**	2,0	5,5	24,00	0,1	15°				●			
SA24-2001R-S1-12**	2,0	5,5	24,00	0,1	12°	●						
SA24-2001R-S1-15**	2,0	5,5	24,00	0,1	15°				●			
SA24-2001R-T1-15**	2,0	5,5	24,00	0,1	15°				●			
SA24-2002L-S1-8**	2,0	5,5	24,00	0,2	8°				●			
SA24-2002R-S1-8**	2,0	5,5	24,00	0,2	8°				●			
SA24-2002N-F1	2,0	5,5	24,00	0,2	0°		●		●			
SA24-2002N-M1	2,0	5,5	24,00	0,2	0°		●	●	●			
SA24-2002N-S1	2,0	5,5	24,00	0,2	0°	●		●	●	●		
SA24-2002N-T1	2,0	5,5	24,00	0,2	0°		●	●	●		●	
SA24-2502L-S1	2,5	5,5	24,00	0,2	0°	●			●			
SA24-2502L-S1-8**	2,5	5,5	24,00	0,2	8°				●			
SA24-2502L-T1	2,5	5,5	24,00	0,2	0°				●			
SA24-2502R-S1	2,5	5,5	24,00	0,2	0°	●			●			
SA24-2502R-S1-8**	2,5	5,5	24,00	0,2	8°				●			
SA24-2502R-T1	2,5	5,5	24,00	0,2	0°				●			
SA24-2502N-T1	2,5	5,5	24,00	0,2	0°						●	
SA24-2503N-M1	2,5	5,5	24,00	0,3	0°				●			
SA24-2503N-S1	2,5	5,5	24,00	0,3	0°	●			●	●		
SA24-2503N-T1	2,5	5,5	24,00	0,3	0°				●	●		

Remark: When using left- or right-handed inserts the holder may be needing modification.

● Main application

○ Secondary application

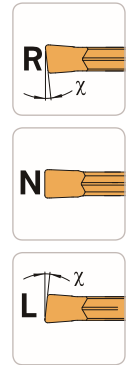
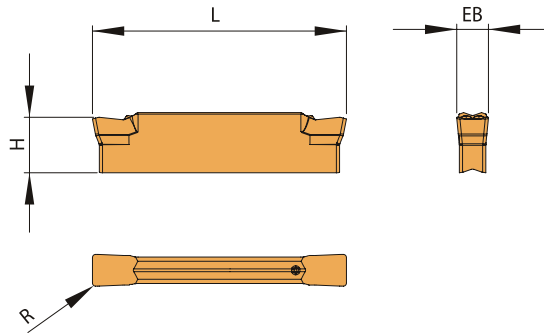
P	○	●	●	●	●	●	
M	●	○	○	○	○	○	
K		●	●				
N				○			
S				○		●	
H							

** Ground version

* Toleranz EB

SA24... EB 2-3 +/- 0,04

SA24



Designation	EB*	H	L	R	χ	Grades						uncoated	
						AM5040	AP2220	AP2240	AP5020	AP5030	AP5820+	AN1015	
SA24-3002L-S1-12**	3,0	5,5	24,00	0,2	12°	●							
SA24-3002L-T1-15**	3,0	5,5	24,00	0,2	15°				●				
SA24-3002R-S1-12**	3,0	5,5	24,00	0,2	12°	●							
SA24-3003L-M1	3,0	5,5	24,00	0,3	0°		●	●	●				
SA24-3003L-S1	3,0	5,5	24,00	0,3	0°	●							
SA24-3003L-T1	3,0	5,5	24,00	0,3	0°		●		●				
SA24-3003N-M1	3,0	5,5	24,00	0,3	0°		●	●	●				
SA24-3003N-S1	3,0	5,5	24,00	0,3	0°	●		●	●	●			
SA24-3003N-T1	3,0	5,5	24,00	0,3	0°		●	●	●	●	●		
SA24-3003R-M1	3,0	5,5	24,00	0,3	0°		●	●	●				
SA24-3003R-S1	3,0	5,5	24,00	0,3	0°	●							
SA24-3003R-T1	3,0	5,5	24,00	0,3	0°		●		●				
SA24-2001L-ALU-15**	2,0	5,5	24,00	0,1	15°							●	
SA24-2001R-ALU-15**	2,0	5,5	24,00	0,1	15°							●	
SA24-2002N-ALU**	2,0	5,5	24,00	0,2	0°							●	
SA24-3002L-ALU-15**	3,0	5,5	24,00	0,2	15°							●	
SA24-3002R-ALU-15**	3,0	5,5	24,00	0,2	15°							●	
SA24-3003N-ALU**	3,0	5,5	24,00	0,3	0°							●	

Remark: When using left- or right-handed inserts the holder may be needing modification.

** Ground version

* Toleranz EB

SA24...	EB 2-3	+/- 0,04
	EB 4	+/- 0,05
SA24... -ALU	EB 2-3	+/- 0,02

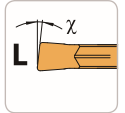
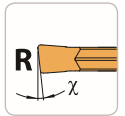
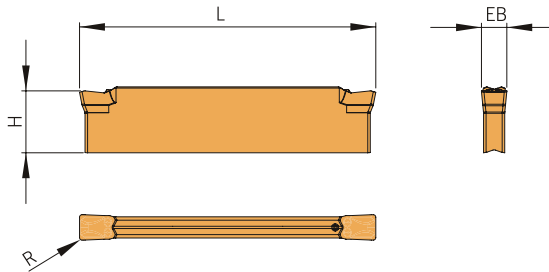
● Main application

○ Nebenanwendung

P	○	●	●	●	●	●		
M	●	○	○	○	○	○		
K		●	●				○	
N					○		●	
S					○		●	○
H								

Inserts

SA35



Designation	EB*	H	L	R	χ	Grades						
						AM5040	AP2220	AP2240	AP5020	AP5030	AP5820+	AN1015
SA35-2001L-S1-12**	2,0	7,5	35,00	0,1	12°	●						
SA35-2001R-S1-12**	2,0	7,5	35,00	0,1	12°	●						
SA35-2002L-M1	2,0	7,5	35,00	0,2	0°				●			
SA35-2002N-F1	2,0	7,5	35,00	0,2	0°		●		●			
SA35-2002N-M1	2,0	7,5	35,00	0,2	0°				●			
SA35-2002N-S1	2,0	7,5	35,00	0,2	0°	●		●	●			
SA35-2002N-T1	2,0	7,5	35,00	0,2	0°		●		●			
SA35-2002R-M1	2,0	7,5	35,00	0,2	0°				●			
SA35-3002L-S1-12**	3,0	7,5	35,00	0,2	12°	●						
SA35-3002R-S1-12**	3,0	7,5	35,00	0,2	12°	●						
SA35-3003L-M1	3,0	7,5	35,00	0,3	0°		●	●	●			
SA35-3003L-S1	3,0	7,5	35,00	0,3	0°				●			
SA35-3003L-T1	3,0	7,5	35,00	0,3	0°		●		●			
SA35-3003N-M1	3,0	7,5	35,00	0,3	0°	●	●	●	●			
SA35-3003N-S1	3,0	7,5	35,00	0,3	0°	●		●	●	●		
SA35-3003N-T1	3,0	7,5	35,00	0,3	0°		●	●	●			
SA35-3003R-M1	3,0	7,5	35,00	0,3	0°		●	●	●			
SA35-3003R-S1	3,0	7,5	35,00	0,3	0°				●			
SA35-3003R-T1	3,0	7,5	35,00	0,3	0°		●		●			
SA35-2000L-ALU-15**	2,0	7,5	35,00	0,0	15°							●
SA35-2000R-ALU-15**	2,0	7,5	35,00	0,0	15°							●
SA35-2001L-ALU-15**	2,0	7,5	35,00	0,1	15°							●
SA35-2001R-ALU-15**	2,0	7,5	35,00	0,1	15°							●
SA35-2002N-ALU**	2,0	7,5	35,00	0,2	0°							●
SA35-3002L-ALU-15**	3,0	7,5	35,00	0,2	15°							●
SA35-3002R-ALU-15**	3,0	7,5	35,00	0,2	15°							●
SA35-3003N-ALU**	3,0	7,5	35,00	0,3	0°							●

Remark: When using left- or right-handed inserts the holder may be needing modification.

**Ground version

* Toleranz EB

SA35...	EB 2-3	+/- 0,04
	EB 4-6	+/- 0,05
	-ALU	+/- 0,02

● Main application

○ Secondary application

P	○	●	●	●	●	
M	●	○	○	○	○	
K		●	●			○
N				○		●
S				○		○
H						

Recommended cutting data

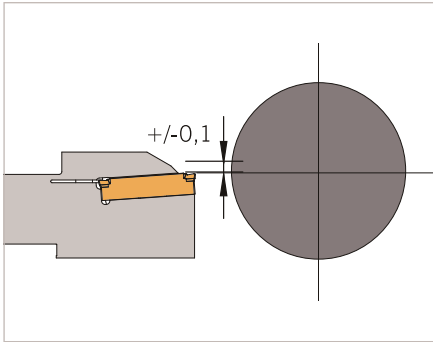
Grooving

ISO	Material	Tensile strength (N/mm ²)	Cutting speed V _c (m/min)							
			coated					uncoated		
			AM5040	AP2220	AP2240	AP5020	AP5030	AP5820+	AN1015	
P	Unalloyed steel and cast steel	<0.15% C/hardened and tempered	350	120-200	130-250	130-250	120-220	120-200	120-200	-
		0.15 - 0.45% C/hardened and tempered	650	80-150	110-180	110-190	80-150	80-150	80-150	-
		>0.45% C/hardened and tempered	1000	60-140	70-150	70-170	60-140	60-140	60-140	-
	Low alloyed steel and cast steel	annealed	600	80-160	120-190	120-200	80-170	80-170	80-170	-
		hardened and tempered	900	60-130	110-150	110-180	60-130	60-130	60-130	-
			1200	60-120	70-130	70-150	60-120	60-120	60-120	-
	High alloyed steel	annealed	700	80-140	90-140	90-170	80-140	80-140	80-140	-
	High alloyed tool steel and cast steel	hardened	1100	50-120	70-130	70-160	50-120	50-120	50-120	-
Stainless steel	ferritic, annealed	700	60-160	110-200	120-200	60-170	60-170	60-170	-	
Cast steel	martensitic, hardened and tempered	1000	50-100	60-130	60-100	50-100	50-100	50-100	-	
M	Stainless steel	austenitic and austenitic/ ferritic, chilled	450-600	60-160	100-200	100-170	60-180	60-170	60-170	-
			600-900	50-90	120-150	60-90	50-90	50-90	50-90	-
K	Cast iron	pearlitic/ferritic	500-700	-	100-160	100-200	-	-	-	120-160
			700-850	-	110-180	90-180	-	-	-	100-150
		pearlitic/martensitic	800-1100	-	130-200	80-150	-	-	-	90-140
	Cast iron with nodular graphite	ferritic	550	-	100-160	100-160	-	-	-	130-170
		pearlitic	800	-	120-220	70-140	-	-	-	90-130
	Malleable cast iron	ferritic	450	-	90-180	100-200	-	-	-	140-200
pearlitic		750	-	-	80-150	-	-	-	120-160	
N	Aluminium alloys long chipping	not heat treatable	200	-	-	-	100-500	-	-	300-500
		heat treatable, heat treated	350	-	-	-	100-300	-	-	200-300
	Casted aluminium alloys	≤ 12% Si, heat treated	250	-	-	-	100-500	-	-	100-500
		≤ 12% Si, heat treatable, heat treated	300	-	-	-	100-300	-	-	100-300
		≤ 12% Si, not heat treatable	450	-	-	-	100-200	-	-	100-200
	Copper and copper alloys (Brass/Bronze)	Lead alloys, Pb > 1%	400	-	-	-	100-500	-	-	250-500
		Brass, Bronze	300	-	-	-	100-500	-	-	200-500
		Aluminium bronze	500	-	-	-	100-300	-	-	150-300
Copper and elektrolyte copper		200	-	-	-	100-300	-	-	150-300	
Non-ferrous materials	Duroplastic	-	-	-	-	80-180	-	-	80-180	
	Re-inforced plastics	-	-	-	-	60-150	-	-	60-150	
	Hard rubber	-	-	-	-	100-220	-	-	100-200	
S	High temperature resistant alloys	Fe-alloyed, annealed	700	-	-	-	20-50	-	30-55	30-45
		Fe-alloyed, heat treated	950	-	-	-	20-40	-	30-50	20-35
		Ni- or Co-alloyed, annealed	800	-	-	-	15-25	-	25-35	15-25
		Ni- or Co-alloyed, casting	1100	-	-	-	10-20	-	15-25	10-20
		Ni- or Co-alloyed, heat treated	1200	-	-	-	10-20	-	15-25	10-20
	Titanium alloys	Pure titan	500-700	-	-	-	50-120	-	50-120	60-120
Alpha- and Beta-alloys	heat treated	700-1000	-	-	-	30-50	-	35-60	30-50	
H	Hardened steel	hardened	55 HRC	-	-	-	-	-	-	-
			60 HRC	-	-	-	-	-	-	-
	Hard cast iron	casting	41 HRC	-	-	-	-	-	-	-
Hardened cast iron	hardened	55 HRC	-	-	-	-	-	-	-	

The recommended cutting data are only approximate values.
It may be necessary to adjust them to each individual machining application.

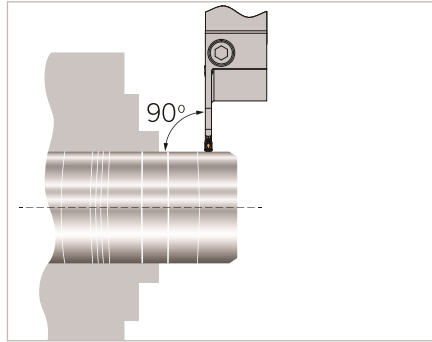
Application reference

Edge height (센터 높이)



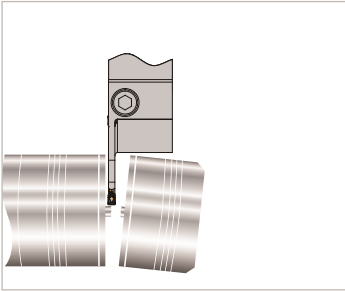
공구의 높이는 소재의 중심으로부터 +/- 0.1mm 안에 있어야 한다.

Tool positioning (절단 홀더의 위치)

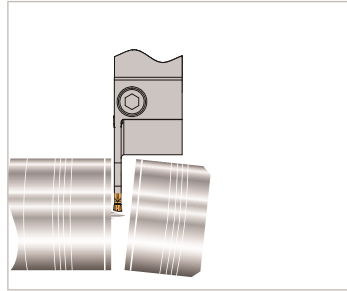


절단 홀더의 각도는 소재와 홀더간의 각도를 90° 로 유지해야 한다.

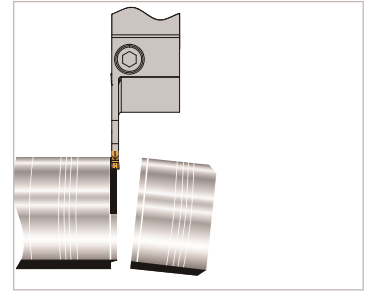
Recommendations for parting-off (절단을 위한 권장사항)



소재 절단시 5파이를 남겨둔 상태에서 이송속도를 50%로 줄인다.
소재의 중심을 넘어서 내려간다면 파손의 위험이 있다.



절삭성을 증대하기 위해서 앞날각이 있는 R타입 / L타입을 권장 한다.
각이 있는 타입 사용 시 한쪽 쓸림현상이 발생 할 수 있다.
회전수와 이송속도를 20%~50%까지 줄이길 권장한다.

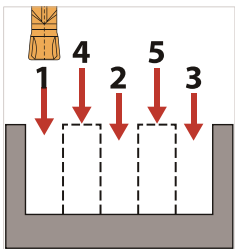


칩 말림이나 링 칩 발생을 방지하기 위해선 앞날각이 있는 R타입 / L타입을 사용하고 회전수와 이송속도를 20%~50%까지 줄이길 권장한다.

Machining of external grooves (외경 홈 가공시)

넓은 홈의 작업시에는 먼저 황삭으로 여러번 나눠서 홈을 찍은 후 홈 터닝 정식 작업으로 칫수를 보정한다.

Multiple grooving (넓은 홈 작업시 작업 순서)



사진상 1, 2, 3, 그리고 4, 5의 순서로 홈 작업을 한다.
이렇게 하면 인서트 코너쪽을 보호 할 수 있으며 칩 브레이커의 중심에서 칩핑이 발생한다.
4, 5 순서의 두께는 (0.6~0.8) x 인서트 두께가 되어야 한다.

General (일반)

절단 하고자 하는 파이에 맞는 홀더와 인서트 두께를 선정해야 한다.
공구들은 진동을 줄이고 공구의 수명을 늘리기 위해선 홀더의 돌출부가 최소로 나와 있어야 한다.

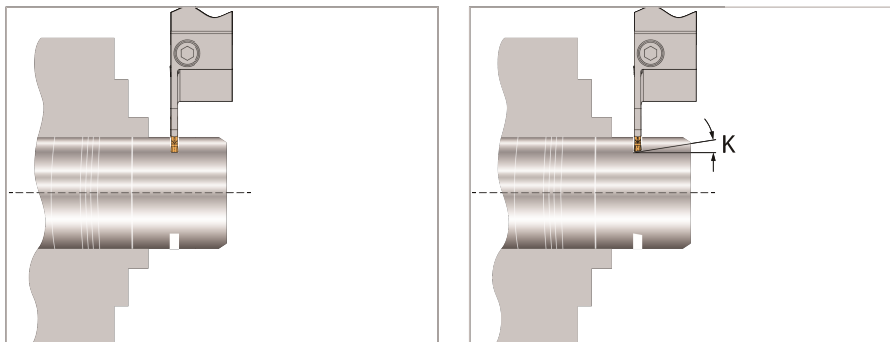
인서트를 선택할 때 고려할 것:

- 절단하고자 하는 소재의 지름
- 소재에 따른 칩 브레이커
- 앞날 각과 코너R

가능한 폭이 좁은 인서트를 선택하는 것이 좋다.
인서트의 폭을 줄임으로써 절삭 부하가 줄어들고 버려지는 소재를 줄일 수 있어 원가를 절감할 수 있으며 대량 생산에 용이하다. 가능하다면 더 좋은 칩핑을 위해 앞날 각이 없는 N타입 인서트를 권장한다.

Application reference

Effects on machining (기계 가공에서의 효과)



Criteria (기준)	Neutral insert	Right or left insert
Stability (안정성)	Good	Bad
Leftover pips (잔재량)	Big	Good
Burr formation (버 발생)	Big	Good
Vibrations (흔들림)	Less good	High
Surface finish (표면 조도)	Good	Bad
Straightness (직진도)	Good	Bad
Chip flow (칩 배출)	Good	Bad
Tool life (공구 수명)	Good	Bad

When selecting corner radius:

코너 R 을 선택할 때

- 코너 R이 작을수록 부하가 감소하고, Burr형성이 감소한다.
- 코너 R이 클수록 내마모성이 좋아지고 공구 수명이 길어진다.

Pip free parting-off

절삭성 및 칩 말림 개선

절삭성을 올리고 칩 말림을 줄이기 위해선 앞날 각이 있는 것을 사용하길 권장한다. 큰 각도의 사용은 칩 말림과 절삭성을 줄일 수 있지만 직진도와 조도는 떨어질 수 있으며 공구의 수명도 줄어 들 수 있다. 최대한 안정적으로 사용하기 위해 항상 홀더는 작업 소재에 맞게 최소한의 돌출타입으로 사용 한다.

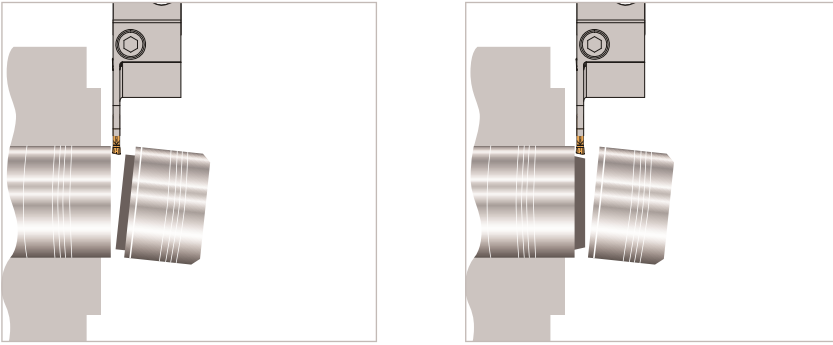
Burr free parting-off

Burr 개선

Burr 발생을 줄이기 위해선 앞날 각이 있는 것을 사용하길 권장한다. 앞날 각이 큰 인서트 일수록 burr 발생은 개선 될 수 있다. 최대한 안정적으로 사용하기 위해 항상 홀더는 작업 소재에 맞게 최소한의 돌출타입을 사용함으로 직진도와 공구수명을 개선할 수 있다.

Application reference

Parting-off tube (파이프 소재 절단시)



Wall thickness in mm	Insert width
< 5	1,5
5-8	1,5-2
8-12	2,5
12-...	3

절단 소재에 맞지 않는 과도하게 돌출된 홀더를 사용 시 떨림이나 공구파손 및 조도가 나빠질 수 있다.

최대한 안정적으로 사용하기 위해 항상 홀더는 작업 소재에 맞게 최소한의 돌출타입으로 사용해야 하며 앞날 각이 클수록 절삭 부하는 줄어든다.

Parting-off small diameters and thin walled components

작은 파이와 얇은 소재 절단 시

절단 부하를 줄이기 위해선 앞날 각이 있는 타입을 사용하며 절단 폭도 좁을수록 좋다.

Precision grooving

정밀한 홈 작업

경제적이고 생산적인 방법으로 홈 작업을 할 수 있다.
홈 폭도 다양하게 있으며 폭의 공차는 $\pm 0.02\text{mm}$ 이다.

Application recommendations

