

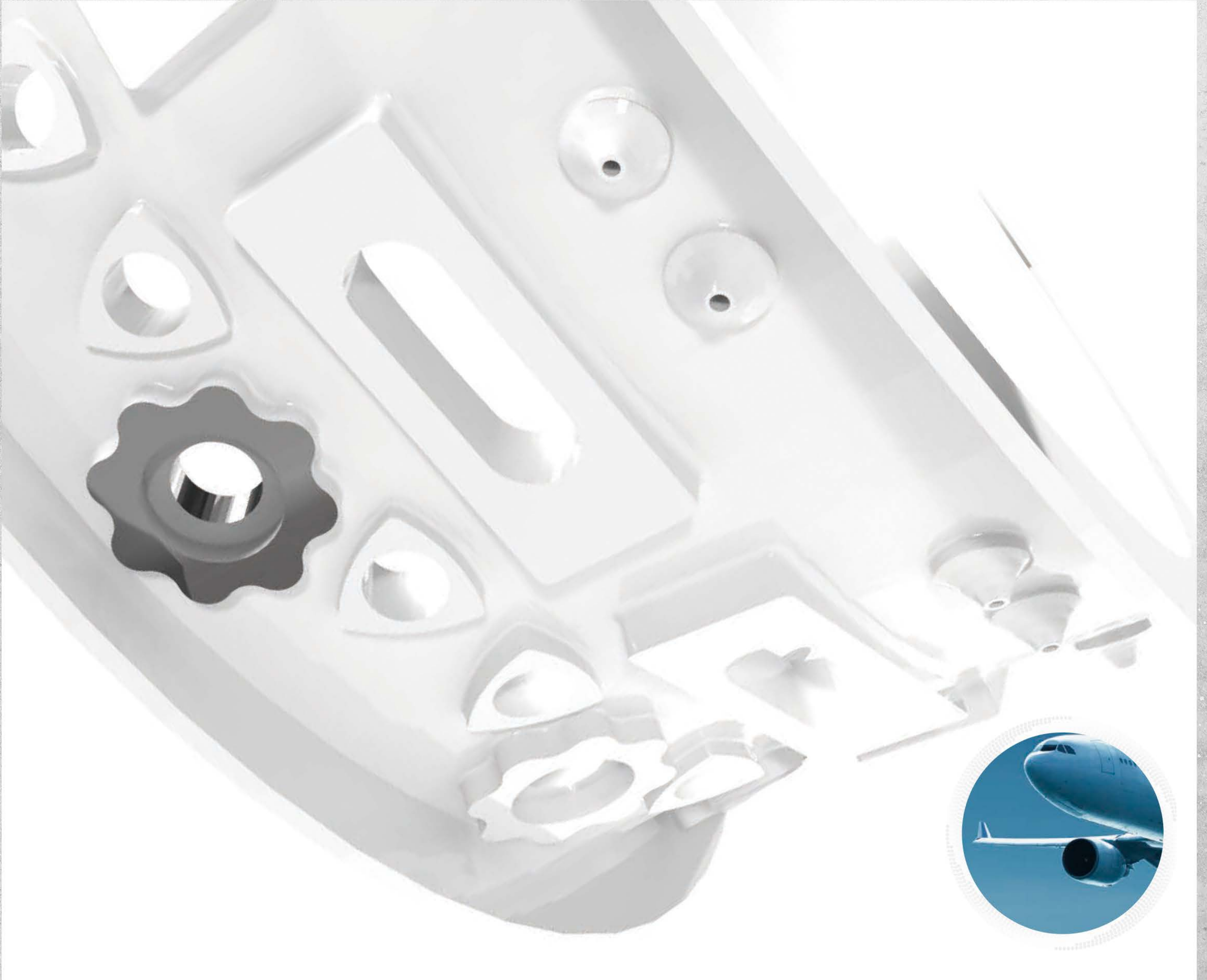
NEW PRODUCT NEWS



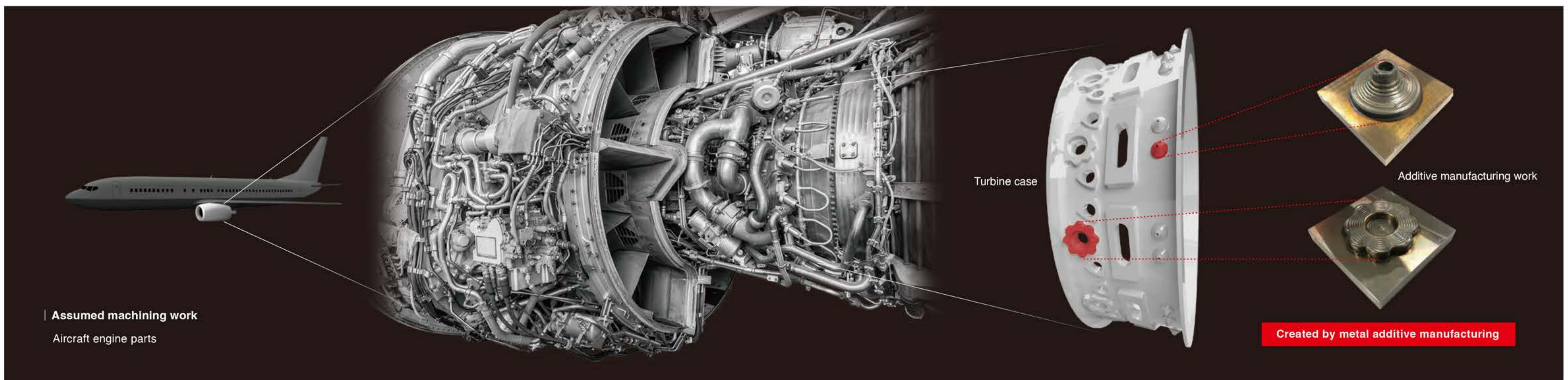
Sialon Ceramic

Metal additive manufacturing work processing

ROUGHING WITH METAL ADDITIVE MANUFACTURING WORK



Sialon Ceramic



Metal additive manufacturing work processing

Roughing with metal additive manufacturing work | Sialon ceramic

Achieving speedy rough cutting of metal additive manufacturing workpieces (nickel-based alloys)
Capable of high-speed machining about 10 times faster than carbide tools

| Applicable work material

Additively manufactured workpieces using nickel-based alloys

| Tooling application

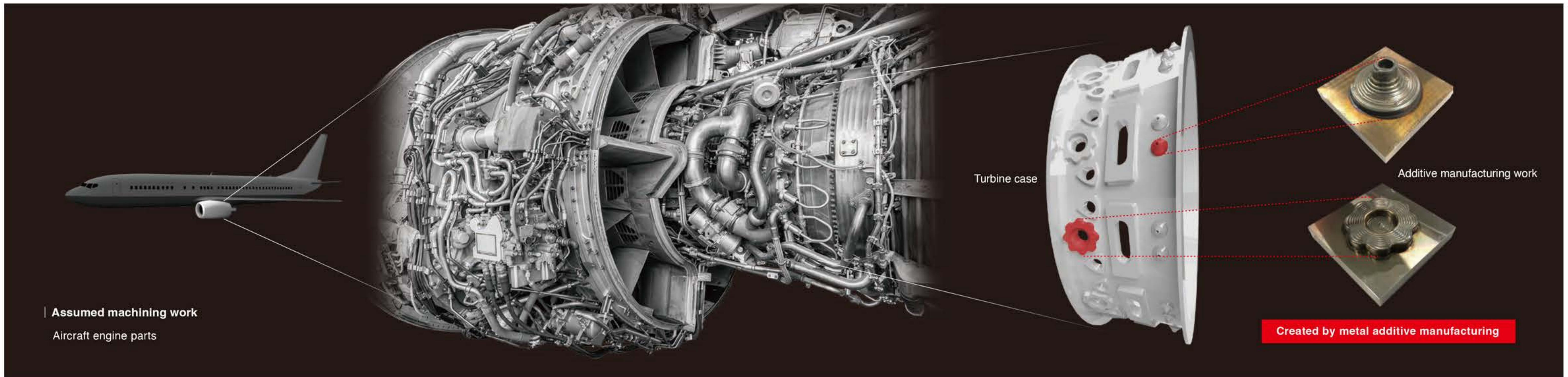


Milling : roughing operations



End milling : roughing operations

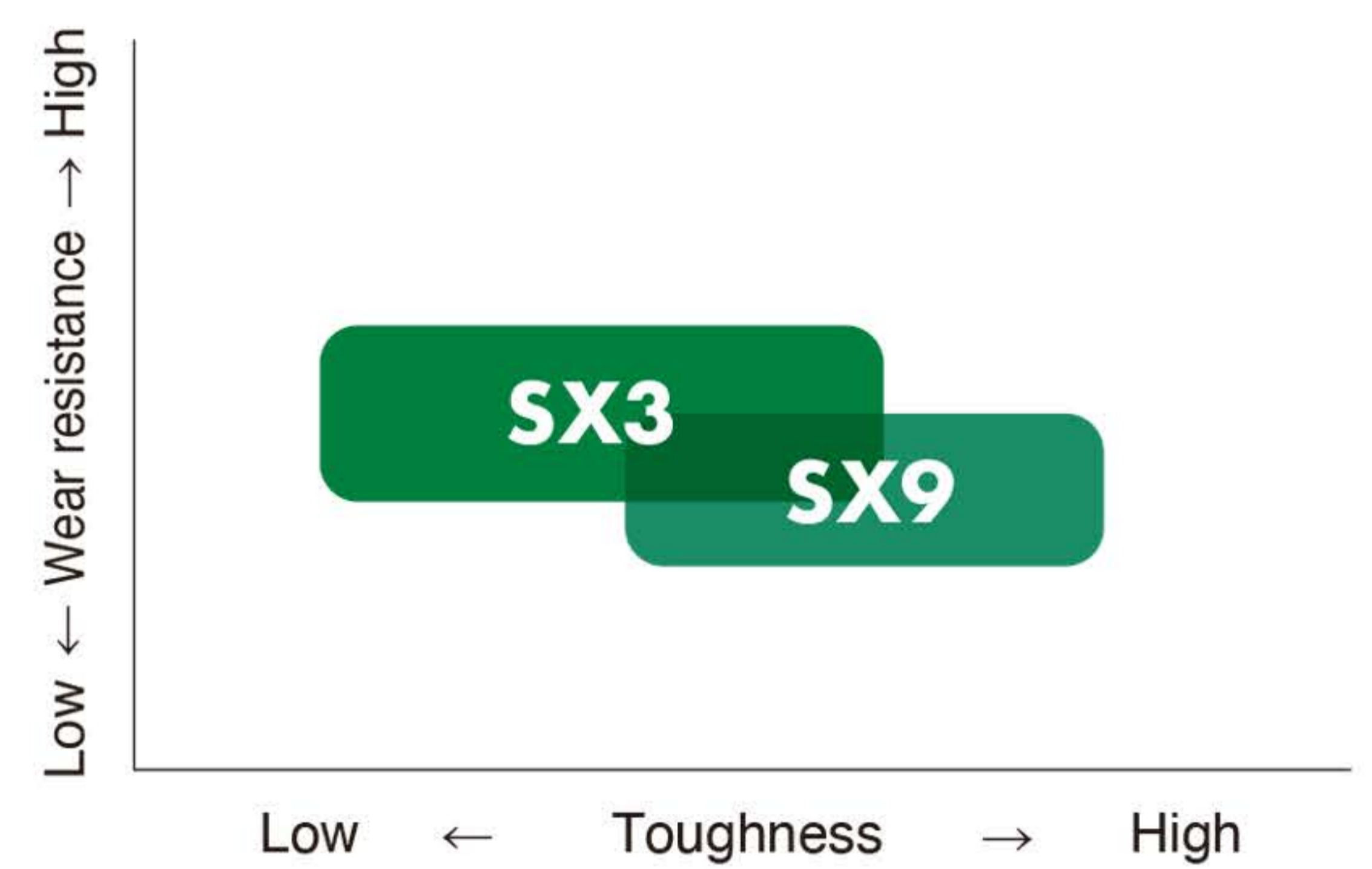
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Features

- Additively shaped nickel-based alloys can be machined with high efficiency
- Uses a ceramic material that emphasizes chipping resistance
Achieves high-speed and stable machining
- Lineup of tools for milling and end milling

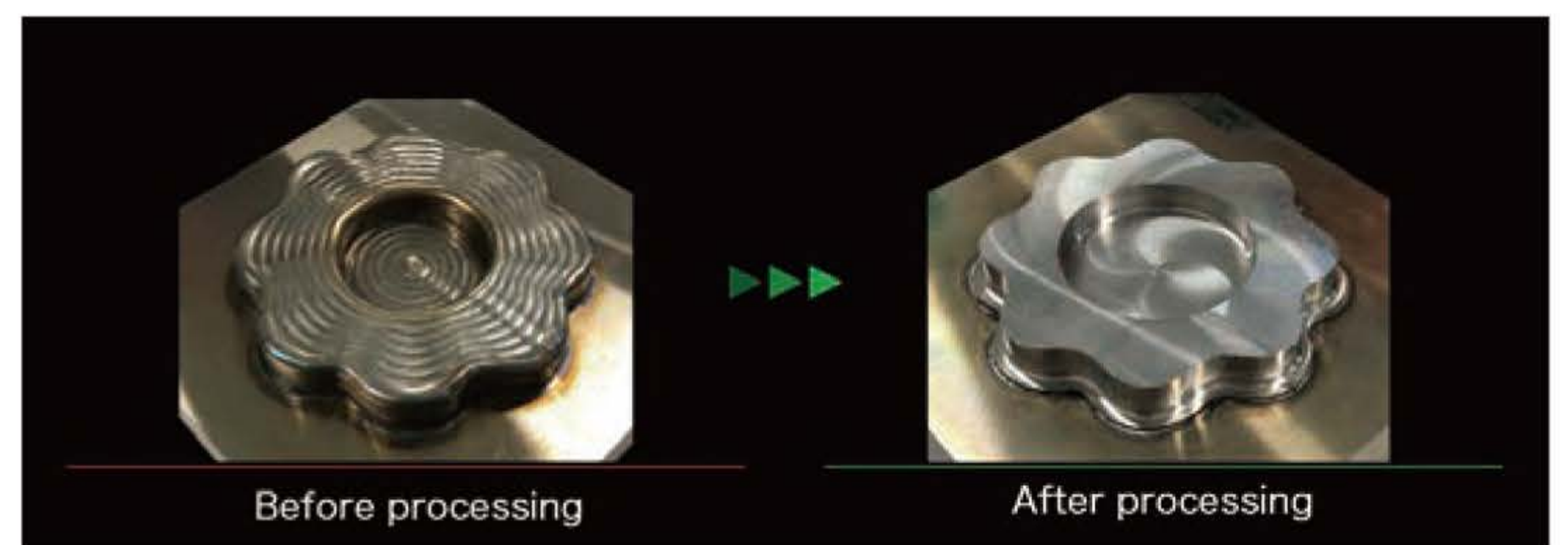
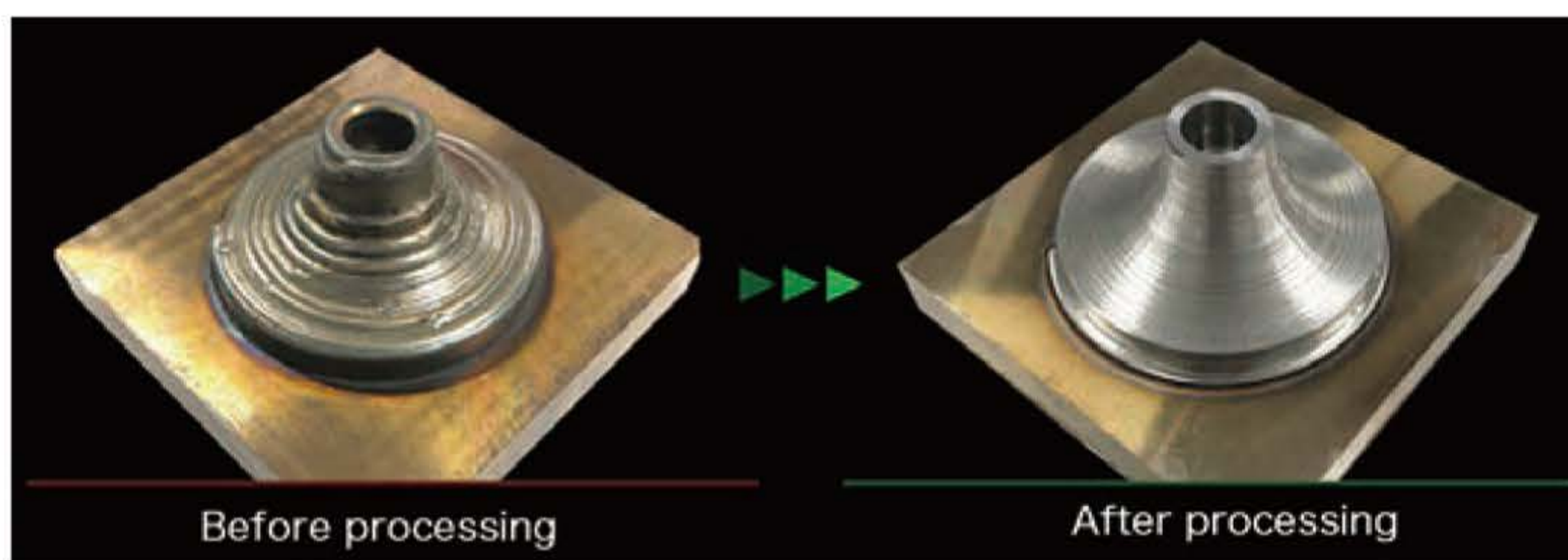
Grade characteristics



Cutting conditions

Grade	Material	Operation type	Machining	Cutting speed (m/min)	Feed (mm/t)	DOC (mm)	Coolant
SX3 / SX9	Additive manufacturing workpiece (Nickel-based alloy)	Milling	Roughing	450 - 1000	0.07 - 0.12	-	DRY
SX9		End milling		300 - 1000	0.03	-	

Case study



Ceramic tools

About 7min

Competitor's carbide

About 140min

Cutting conditions : Vc=800m/min, f=0.1mm/t, F= 1750mm/min, DRY

Ceramic tools

About 1min

Competitor's carbide

About 8min

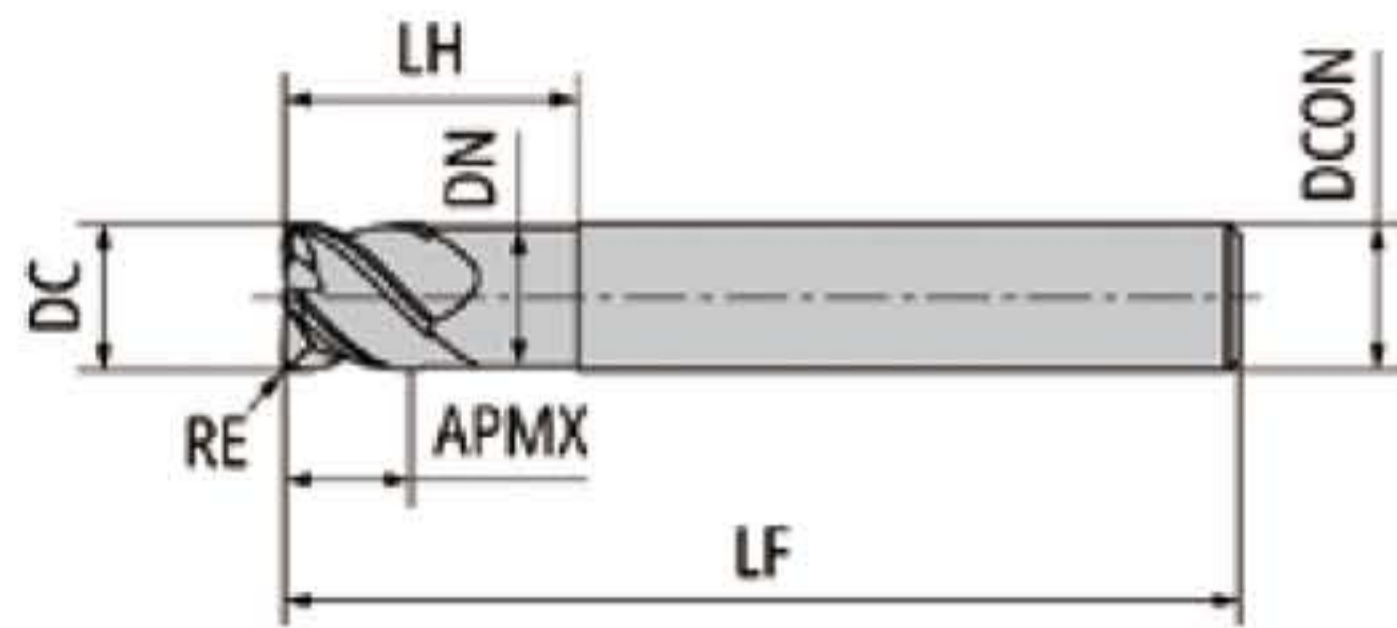
Cutting conditions : Vc=600m/min, f=0.03mm/t, F= 2292mm/min, DRY

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CERAMATIC

RCE..series for HRSA materials

RCE-H4



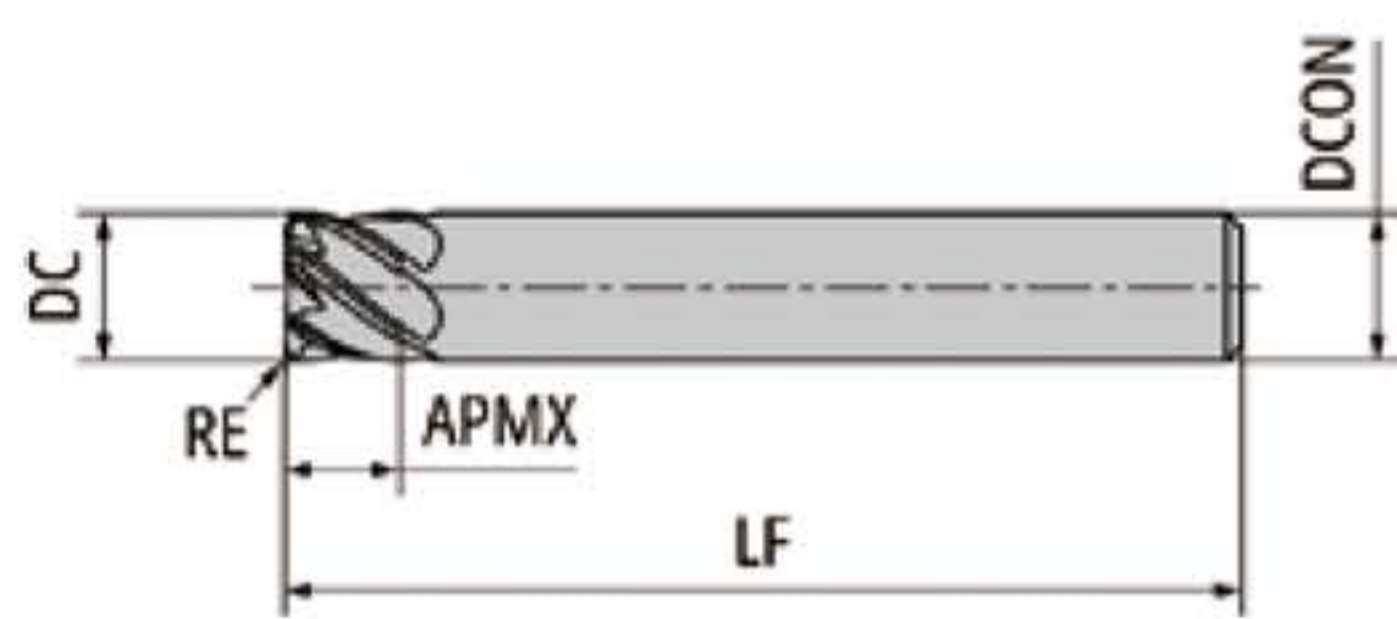
Tolerance

Unit: mm

DC	DC (e8)	DCON (h6)
8,10,3/8"	-0.024/-0.047	+0/-0.009
12,1/2"	-0.032/-0.059	+0/-0.011

Item Number	Flute	center cutting edge	APMX		DC		DCON		DN		FHA °	LF		LH		RE		SiAlON ceramics grade
			mm	inch	mm	inch	mm	inch	mm	inch		mm	inch	mm	inch	mm	inch	
RCEM080H4R100S	4	No	6	.236	8	.315	8	.315	7.6	.299	35	60	2.362	16	.630	1	.039	●
RCEM100H4R125S	4	No	7.5	.295	10	.394	10	.394	9.6	.378	35	65	2.559	20	.787	1.25	.049	●
RCEM120H4R150S	4	No	9	.354	12	.472	12	.472	11.6	.457	35	70	2.756	24	.945	1.5	.059	●
RCEI375H4R047S	4	No	7.14	9/32	9.525	3/8	9.525	3/8	9.125	.359	35	63.5	2.500	19.05	3/4	1.19	.047	●
RCEI500H4R068S	4	No	9.525	3/8	12.7	1/2	12.7	1/2	12.3	.484	35	69.85	2.750	25.4	1.000	1.73	.068	●

RCE-J6



Tolerance

Unit: mm

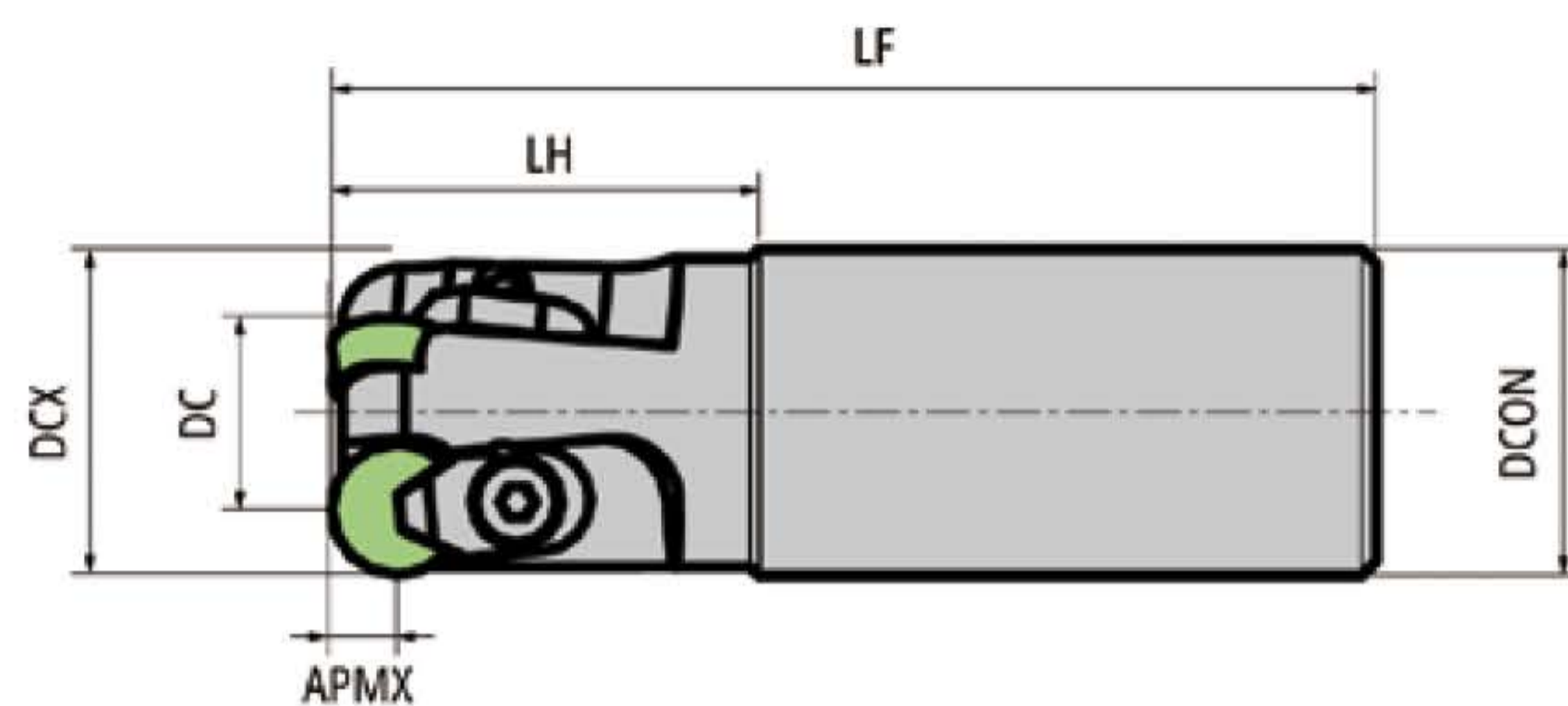
DC	DC (e8)	DCON (h6)
8,10,3/8"	-0.0098/-0.0185"	+0/-0.00035"
12,1/2"	-0.032/-0.059	+0/-0.011

Item Number	Flute	center cutting edge	APMX		DC		DCON		DN		FHA °	LF		LH		RE		SiAlON ceramics grade
			mm	inch	mm	inch	mm	inch	mm	inch		mm	inch	mm	inch	SX9		
RCEM080J6R100S	6	No	6	.236	8	.315	8	.315	-	-	40	60	2.362	-	-	1	.039	●
RCEM100J6R125S	6	No	7.5	.295	10	.394	10	.394	-	-	40	65	2.559	-	-	1.25	.049	●
RCEM120J6R150S	6	No	9	.354	12	.472	12	.472	-	-	40	70	2.756	-	-	1.5	.059	●
RCEI375J6R047S	6	No	7.14	9/32	9.525	3/8	9.525	3/8	-	-	40	63.5	2.500	-	-	1.19	.047	●
RCEI500J6R068S	6	No	9.525	3/8	12.7	1/2	12.7	1/2	-	-	40	69.85	2.750	-	-	1.73	.068	●

Sialon Ceramic

Milling cutter for HRSA • hardened materials

JRPMW



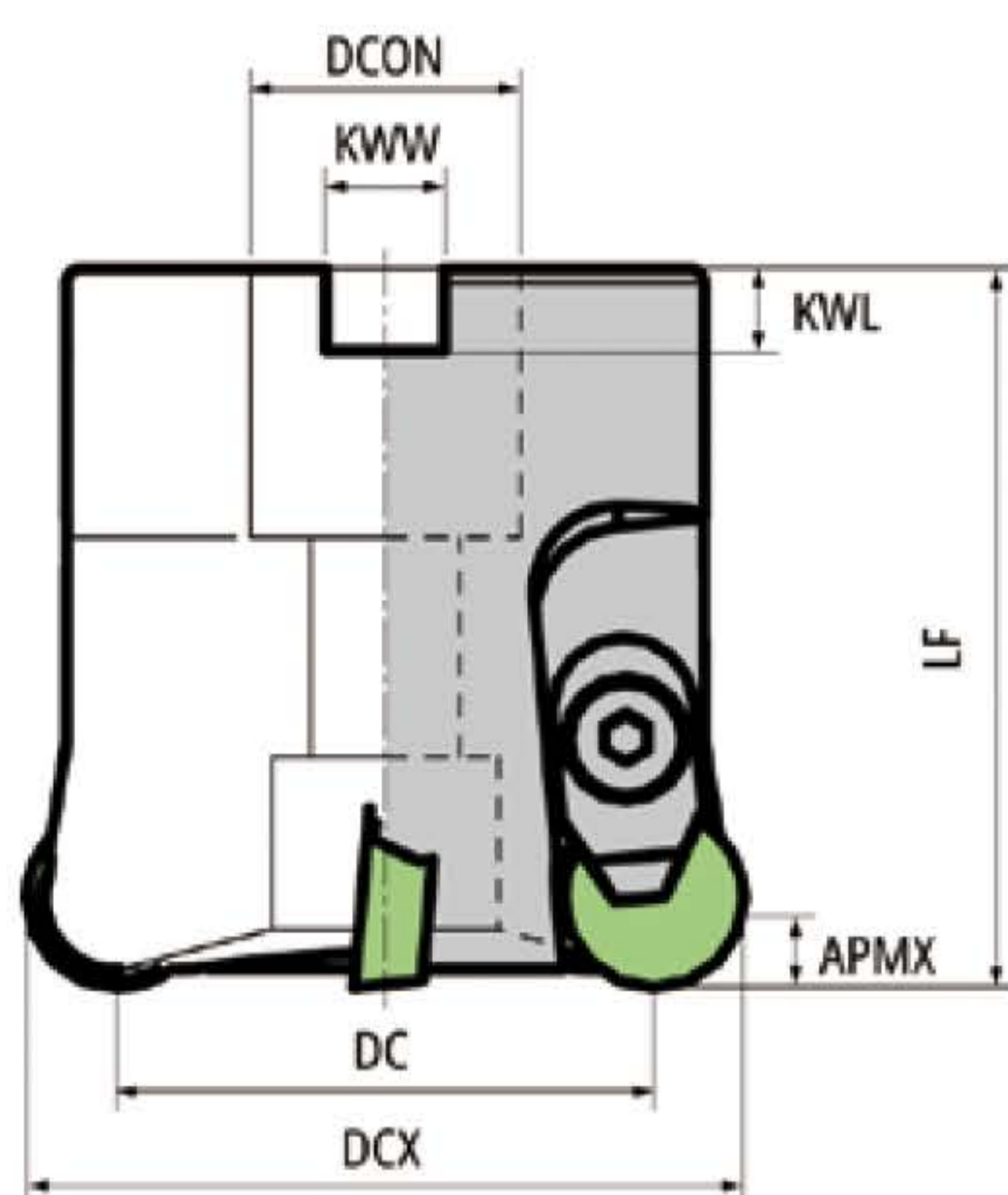
Code No.	Item Number(metric)	Stock	Hand	No. of edge	APMX mm	DC mm	DCON mm	DCX mm	GAMF °	GAMP °	KWL mm	KWW mm	LF mm	LH mm	Weight kg	Insert
5720719	JRPMW032E250R03	●	R	3	~3.2	19.3	25	32	-7.5	+5	-	-	120	40	0.42	RP..1204..
5719919	JRPMW032E320R03	●	R	3	~3.2	19.3	32	32	-7.5	+5	-	-	120	40	0.6	RP..1204..
5719927	JRPMW040E320R03	●	R	3	~3.2	27.3	32	40	-7.5	+5	-	-	120	40	0.72	RP..1204..

※ Weight includes parts and inserts.

Parts

Item Number(metric)	Clamp	Shim	Clamp Screw	Shim Screw	Wrench
JRPMW032E250R03	AMS-5T	-	AOB-5S-T25	-	LLR-T25
JRPMW032E320R03	AMS-5T	-	AOB-5S-T25	-	LLR-T25
JRPMW040E320R03	AMS-5T	-	AOB-5S-T25	-	LLR-T25

JRPMW



Code No..	Item Number(metric)	Stock	Hand	No. of edge	APMX mm	DC mm	DCON mm	DCX mm	GAMF °	GAMP °	KWL mm	KWW mm	LF mm	LH mm	Weight kg	Insert
5719935	JRPMW050S220R04	●	R	4	~3.2	37.3	22	50	-5	+5	6.3	10.4	50	-	0.35	RP..1204..
5726096	JRPMW063S220R04	●	R	4	~3.2	50.3	22	63	-5	+5	6.3	10.4	50	-	0.55	RP..1204..
5719943	JRPMW080S254R05	●	R	5	~3.2	67.3	25.4	80	-2.5	+5	6	9.5	50	-	0.87	RP..1204..

※ Weight includes parts and inserts.

Parts

Item Number(metric)	Clamp	Shim	Clamp Screw	Shim Screw	Wrench
JRPMW050S220R04	AMS-5T	ARP42A	AOB-5S-T25	M3*8	LLR-T25
JRPMW063S220R04	AMS-5T	ARP42A	AOB-5S-T25	M3*8	LLR-T25
JRPMW080S254R05	AMS-5T	ARP42A	AOB-5S-T25	M3*8	LLR-T25

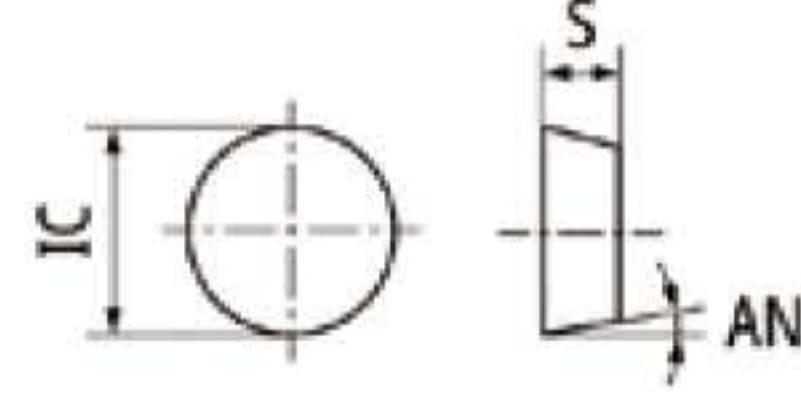
NEW PRODUCT NEWS



Sialon Ceramic

Inserts/ Positive

RPGN

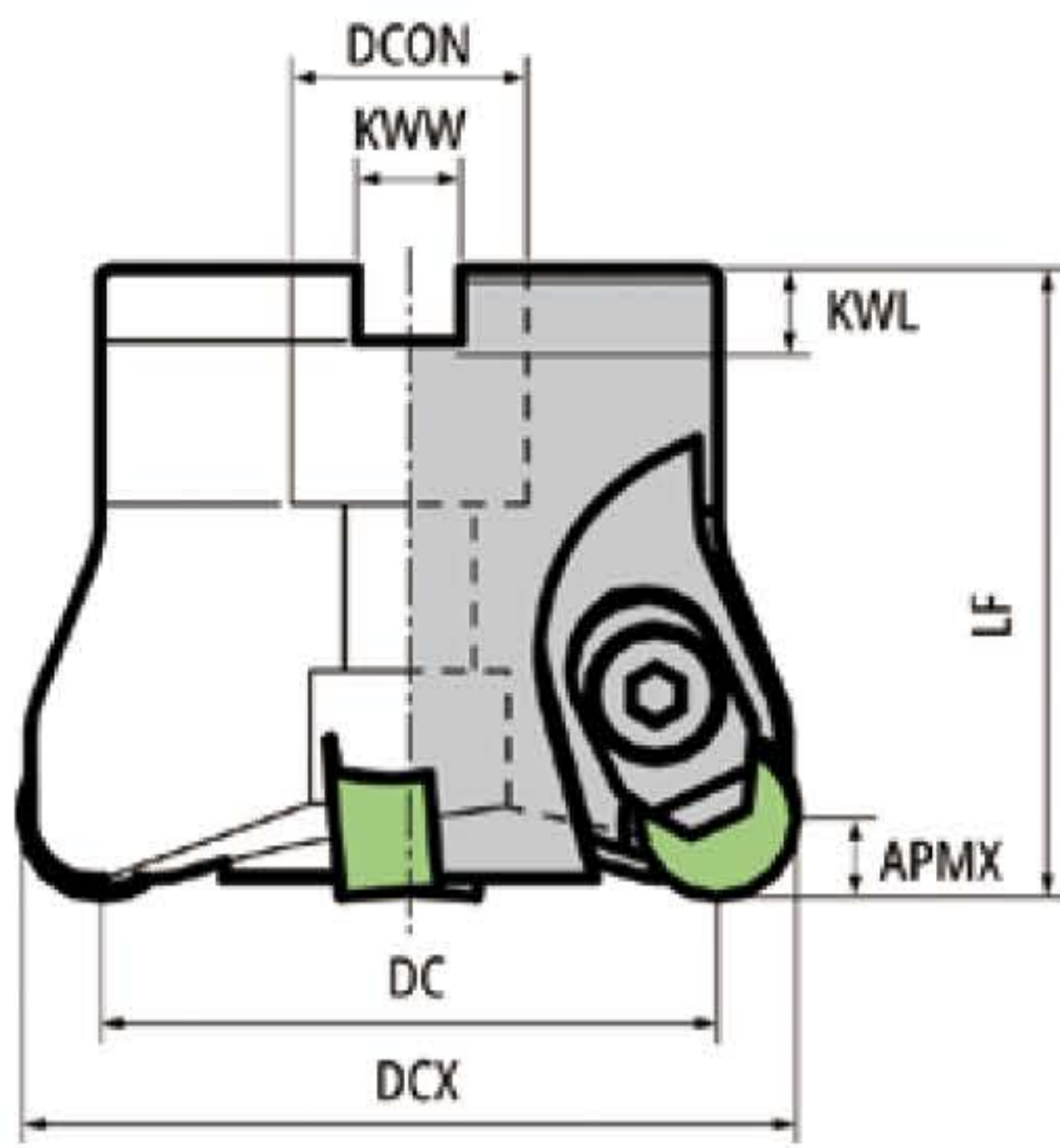


Steel	
Stainless Steel	
Cast Iron	● ● ● ● ○ ○ ○ ○ ● ● ○ ○
Non-Ferrous Material	
Heat Resistant Alloy	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
Hardened Material	● ○ ● ● ● ● ● ● ● ●
Others	

Shape	ItemNumber		CECC	EPSR	IC	S	AN	RE	D1	D2	INSL	S1	W1	BIDEMICS				NTK CeramiX	Alumin-based Ceramics							Silicon nitride Ceramics						Whisker Ceramics					
	(Metric)	(Inch)												120 PVD	JP2 PVD	JX1	JX3		450 PVD	HC1	HW2	HC2	HC4	HC6	HC7	ZC7 PVD	SX3	SX5	SX7	SX9	SX6	SP9 CVD	WA1	WA5			
																																			°	mm	mm
	RPGN060200T00520	RPG21.5T0220	T00520	-	6.35	2.38	11	-	-	-	-	-	-	-																					●		
	RPGN090300T00520	RPG32T0220	T00520	-	9.525	3.18	11	-	-	-	-	-	-	-																					●		
	RPGN120400E004	RPG43E02	E004	-	12.7	4.76	11	-	-	-	-	-	-	-																							
	RPGN120400EM02X	RPG43EA01X	EM02X	-	12.7	4.76	11	-	-	-	-	-	-	-																							
	RPGN120400T00520	RPG43T0220	T00520	-	12.7	4.76	11	-	-	-	-	-	-	-																							●
	RPGN120400T00525	RPG43T0225	T00525	-	12.7	4.76	11	-	-	-	-	-	-	-																							●
	RPGN120400T00820	RPG43T0320	T00820	-	12.7	4.76	11	-	-	-	-	-	-	-																							●
	RPGN120400T01020	RPG43T0420	T01020	-	12.7	4.76	11	-	-	-	-	-	-	-																							●

Sialon Ceramic

JRNMW



Code No.	Item Number(Metric)	Stock	Hand	No. of edge	APMX mm	DC mm	DCON mm	DCX mm	GAMF °	GAMP °	KWL mm	KWW mm	LF mm	Weight kg	Insert
5719950	JRNMW050S220R03	●	R	3	~3.2	37.3	22	50	-10	-5	6	10	50	0.42	RN..1207..
5719968	JRNMW063S220R04	●	R	4	~3.2	50.3	22	63	-10	-5	6	10	50	0.55	RN..1207..
5719976	JRNMW080S254R05	●	R	5	~3.2	67.3	25.4	80	-10	-5	6	9.5	50	0.85	RN..1207..

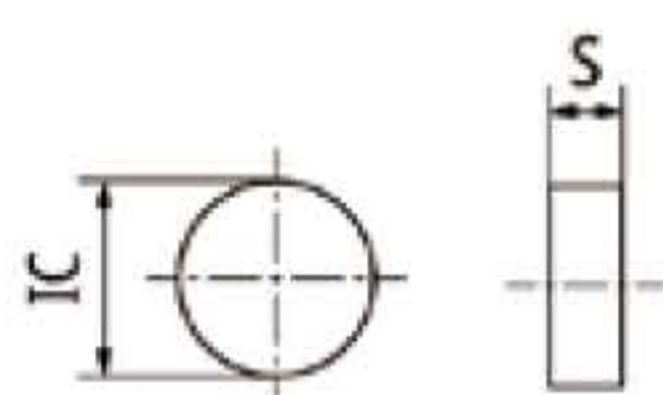
※ Weight includes parts and inserts.

Parts

Item Number(Metric)	Clamp	Clamp Screw	Wrench
JRNMW050S220R03	AMS-6T	AOB-6S-T30	LLR-T30
JRNMW063S220R04	AMS-6T	AOB-6S-T30	LLR-T30
JRNMW080S254R05	AMS-6T	AOB-6S-T30	LLR-T30

Inserts/ Negative

RNGN



Steel	
Stainless Steel	
Cast Iron	● ● ● ● ○ ○ ○ ○ ● ● ○ ○
Non-Ferrous Material	
Heat Resistant Alloy	● ● ● ● ● ● ● ● ● ● ● ●
Hardened Material	● ○ ● ● ● ●
Others	

Shape	Item Number	CECC	EPSR	IC	S	AN	RE	D1	D2	INSL	S1	W1	BIDEMICS				NTK CeramiX	Alumin-based Ceramics					Silicon nitride Ceramics					Whisker Ceramics									
													PVD	PVD	PVD	PVD	450	HC1	HW2	HC2	HC4	HC6	HC7	ZC7	SX3	SX5	SX7	SX9	SX6	SP9	CVD	WA1	WA5				
	RNGN120700E002	RNG45E01	E002	-	12.7	7.94	-	-	-	-	-	-	-																								
	RNGN120700E004	RNG45E02	E004	-	12.7	7.94	-	-	-	-	-	-	-																								
	RNGN120700E007	RNG45E03	E007	-	12.7	7.94	-	-	-	-	-	-	-																								
	RNGN120700K20015	RNG45K7915	K20015	-	12.7	7.94	-	-	-	-	-	-	-																								
	RNGN120700S02025	RNG45S0825	S02025	-	12.7	7.94	-	-	-	-	-	-	-																								
	RNGN120700T00520	RNG45T0220	T00520	-	12.7	7.94	-	-	-	-	-	-	-																								
	RNGN120700T00525	RNG45T0225	T00525	-	12.7	7.94	-	-	-	-	-	-	-																								
	RNGN120700T00820	RNG45T0320	T00820	-	12.7	7.94	-	-	-	-	-	-	-																								
	RNGN120700T01020	RNG45T0420	T01020	-	12.7	7.94	-	-	-	-	-	-	-																								
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	RNGN120700Z01520	RNG45Z0620	Z01520	-	12.7	7.94	-	-	-	-	-	-	-																								
	RNGN120700Z02025	RNG45Z0825	Z02025	-	12.7	7.94	-	-	-	-	-	-	-																								

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