

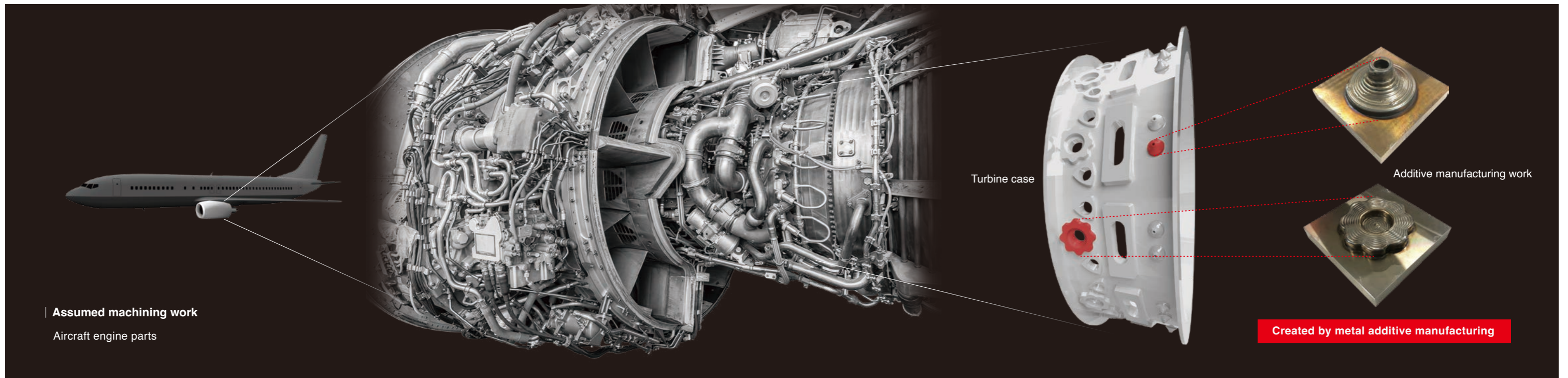
Metal additive manufacturing work processing

Roughing with metal additive manufacturing work | Sialon ceramic



Solutions For Aerospace Industry





Assumed machining work
Aircraft engine parts

Turbine case

Additive manufacturing work

Created by metal additive manufacturing

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



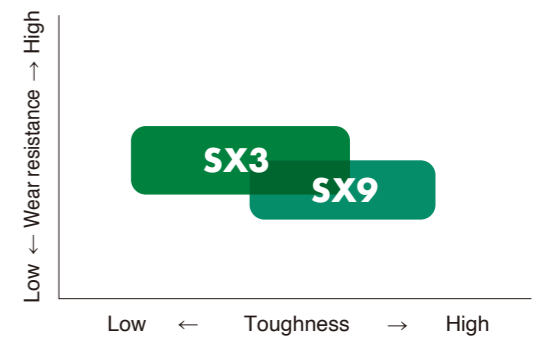
Milling : roughing operations

End milling : roughing operations

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

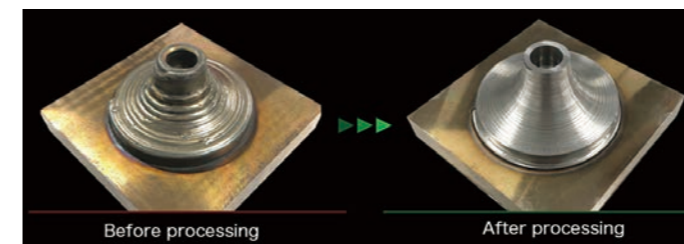
Grade characteristics



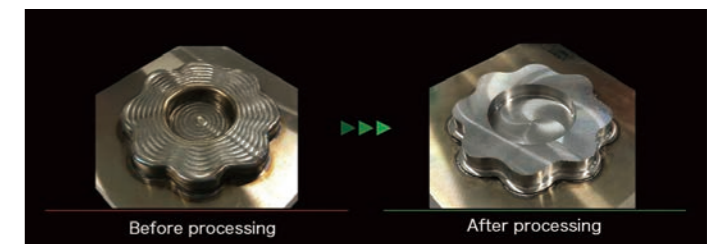
Cutting conditions

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



Ceramic tools	About 1min
Competitor's carbide	About 8min

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

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

CERAMATIC

RCE..series for HRSA materials

RCE-H4

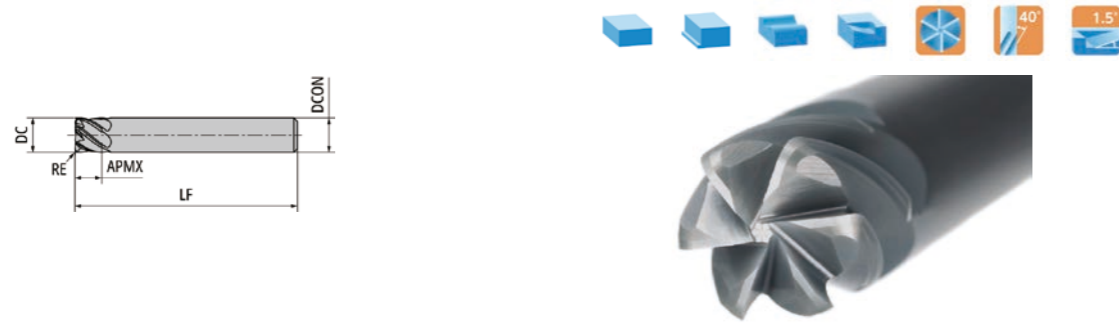


Tolerance Unit: mm

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



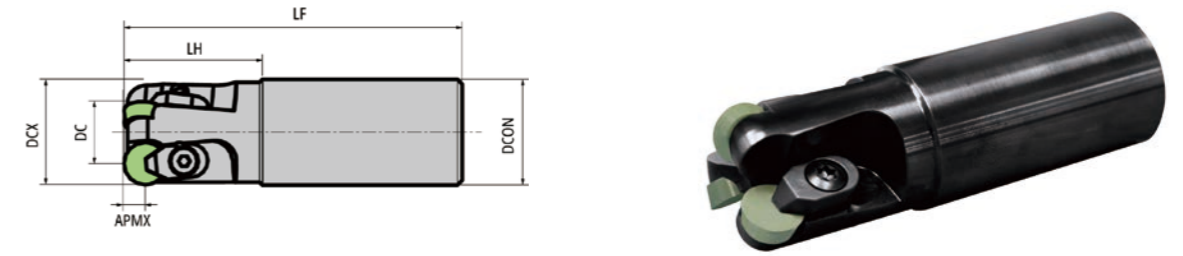
Tolerance Unit: mm

DC	DC (e8)	DCON (h6)
8,10,3/8"	-.00098/-0.0185"	+0/-0.0035"
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	
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	●

Milling cutter for HRSA • hardened materials

JRPMW



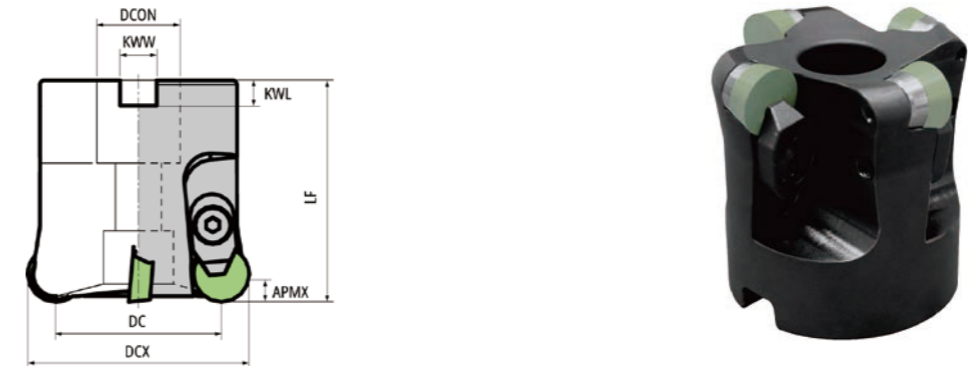
Code No.	Item Number(metric)	Stock	Hand	No. of edge	APMX mm	DC mm	DCON mm	DCX mm	GAMF °	GAMP °	KWL mm	KWW mm	LF mm	LH mm	Weight kg	Insert
5720719	JRPMW032E250R03	●	R	3	~3.2	19.3	25	32	-7.5	+5	-	-	120	40	0.42	RP.1204..
5719919	JRPMW032E320R03	●	R	3	~3.2	19.3	32	32	-7.5	+5	-	-	120	40	0.6	RP.1204..
5719927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



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Sample request



YouTube Channel

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