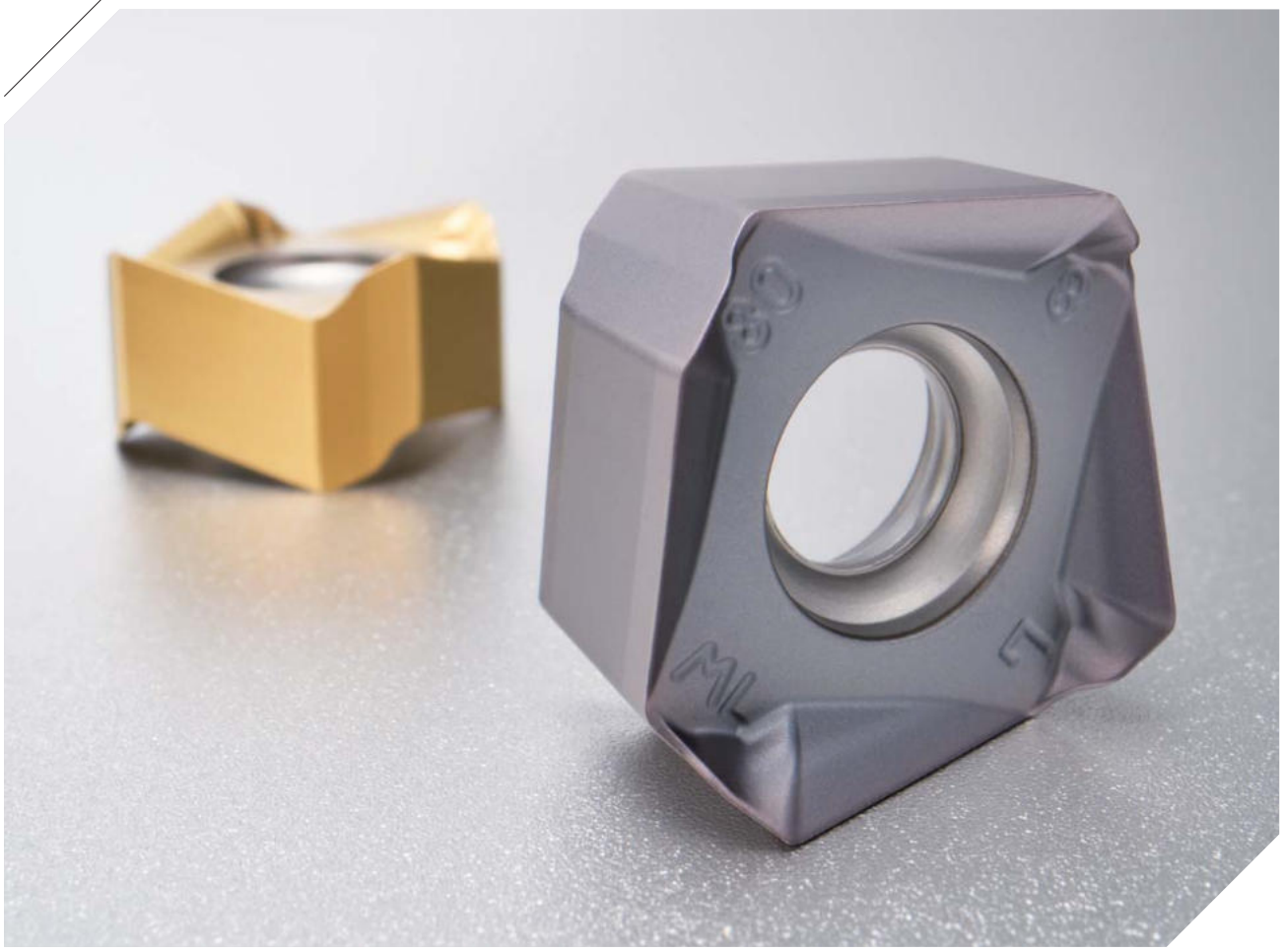
KORLOY
TECH-NEWS

RM8-X

High helix face milling tool with 8-cornered double-side inserts

- High performance in stainless steel machining due to sharp cutting edge and double reverse positive relief surface structure
- Economic tool by double-sided 8 corners and high helix right-handed shape realizing high depth of cut machining



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High helix face milling tool with 8-cornered double-side inserts

RM8-X

KORLOY launched face milling tool, RM8-X minimizing cutting load and enhancing stability in machining.

RM8-X with right-handed high helix cutting edge can cut smoothly in high depth of cut machining and its optimal minor cutting edge ensures good surface finish. Double reverse positive shaped relief surface prevents notch wear due to work hardening layer and the variable chip breaker is implemented for good surface finish and strong cutting edge. To minimize welding with this strong cutting edge, high helix cutting edge and sharp chip breaker is adopted so it could realize high cutting performance and stable machining. In addition, RM8-X achieved the cost effectiveness with the insert's double side shape ensures maximum 8 corners.

RM8-X enhances longer tool life by preventing fracture of cutting edge and increasing wear resistance with those figural features above and customized grade selection per the workpiece material.

» Good machinability
- High helix cutting edge and sharp chip breaker ensure excellent machinability and high speed and high feed machining.

» High surface finish
- Optimal-shaped minor cutting edge enhances high quality of machining.

» Stable tool life
- Reverse positive shaped relief surface structure and the application of strengthened screws realize stable machining.

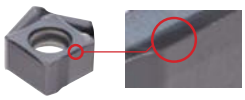
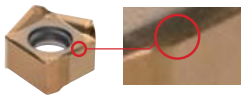
» Economical tool
- Maximum 8 corners per the insert are available with its double sided shape.

Code system

Cutter type

RMX8	A	C	M	063	R	-	22	-	6	SA14
Rich Mill RM8-X	Approach angle A: 45°	Type C: Cutter	Arbor M: Metric A: Inch None: Asia	Machining dia. 063: Ø63 mm	Oil hole & hand R: With oil hole, Right-handed NR: Without oil hole, Right-handed		Internal dia. 22: Ø22 mm		No. of tooth 6: 6 Teeth	Available insert SA14: SAGX14 (SNXM14 is available)

Recommended grade and cutting edge

Type	SAGX	SNMX
Features	Strong relief surface	Relief surface for surface finish
Workpiece	M / S / H	P / K
Shape	SAGX-ML ⟷ SAGX-MM	SNMX-MM
	Double reverse positive relief surface 	Negative relief surface 

Type	Recommended insert and grade for different workpieces (●: 1st recommendation)									
	P		M		K		S		H	
	C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade
SAGX140808ANER	○ML ○MM	○PC5300 ○PC3700	●ML ○MM	●PC9540 ○PC5300	○ML ○MM	○PC6510 ○PC5300	●ML ○MM	●PC5300	●MM	●PC2510 ○PC2505
SNMX140808ANER	●MM	●PC3700	-	-	●MM	●PC6510	-	-	-	-

Recommended cutting conditions

Workpiece				Specific cutting force (N/mm²)	Brinell hardness (HB)	Grade	C/B		Grade	C/B		ML, MM
ISO	Workpiece materials	ISO	AISI			PC3700	MM	ML	PC5300	MM	ML	
						vc (m/min)	fz (mm/t)		vc (m/min)	fz (mm/t)		ap (mm)
P	Non-ferrous alloy steel Mn < 1.65	C25	1025	1500	125	160	0.30	0.25	150	0.30	0.25	1~3
						215	**0.20**	**0.20**	**195**	**0.20**	**0.20**	
						270	0.10	0.10	240	0.10	0.10	
		C45	1045	1700	190	160	0.30	0.25	150	0.30	0.25	
						215	**0.20**	**0.20**	**195**	**0.20**	**0.20**	
						270	0.10	0.10	240	0.10	0.10	
	Low alloy steel ≤ 5%	42CrMo4	4140	1700	175	160	0.30	0.25	150	0.30	0.25	
						215	**0.20**	**0.20**	**195**	**0.20**	**0.20**	
						270	0.10	0.10	240	0.10	0.10	
	High alloy steel > 5%	X40CrMoV5-1	D2 H13	1950	200	150	0.20	0.25	130	0.20	0.25	
						195	**0.15**	**0.20**	**170**	**0.15**	**0.20**	
						240	0.10	0.10	210	0.10	0.10	

Recommended cutting conditions

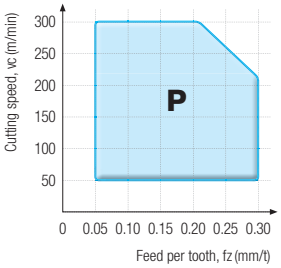
Workpiece				Specific cutting force (N/mm^2)	Brinell hardness (HB)	Grade	C/B		Grade	C/B		ML, MM
ISO	Workpiece materials	ISO	AISI			PC9540	ML	MM	PC5300	ML	MM	
						vc (m/min)	fz (mm/t)		vc (m/min)	fz (mm/t)		ap (mm)
M	Ferritic/ martensitic	X6CrAl13 X6Cr17	405 430	1800	200	120	0.20	0.25	120	0.20	0.25	1~3
						160	**0.10**	**0.15**	**160**	**0.10**	**0.15**	
						200	0.05	0.10	200	0.05	0.10	
		X12CrS13 X6CrMo17-1	416 434	2850	330	110	0.22	0.25	110	0.22	0.25	
						150	**0.12**	**0.15**	**150**	**0.12**	**0.15**	
						190	0.06	0.10	190	0.06	0.10	
		X12Cr13	403 410	2350	330	100	0.20	0.25	100	0.20	0.25	
						140	**0.10**	**0.15**	**140**	**0.10**	**0.15**	
						180	0.05	0.10	180	0.05	0.10	
	Austenitic	X5CrNi18-9 X2CrNi18-9 X5CrNiMo17-12-2 XCrNiMo17-12-3	304 316	2000	180	70	0.20	0.25	90	0.20	0.25	
						95	**0.10**	**0.15**	**120**	**0.10**	**0.15**	
						120	0.05	0.10	150	0.05	0.10	
	Austenitic/ ferritic (Duplex)	-	S31803 S32750	2450	260	60	0.20	0.25	70	0.20	0.25	
						80	**0.10**	**0.15**	**95**	**0.10**	**0.15**	
						100	0.05	0.10	120	0.05	0.10	

Workpiece				Specific cutting force (N/mm^2)	Brinell hardness (HB)	Grade	C/B		Grade	C/B		ML, MM
ISO	Workpiece materials	ISO	AISI			PC6510	ML	MM	PC5300	ML	MM	
						vc (m/min)	fz (mm/t)		vc (m/min)	fz (mm/t)		ap (mm)
K	Gray cast iron	200	No 30 B	900	180	140	0.25	0.3	120	0.25	0.3	1~3
						180	**0.20**	**0.2**	**160**	**0.20**	**0.2**	
						230	0.10	0.1	200	0.10	0.1	
	Nodular graphite cast iron	500-7	80-55-06	870	155	120	0.25	0.3	110	0.25	0.3	
						160	**0.20**	**0.2**	**145**	**0.20**	**0.2**	
						200	0.10	0.1	180	0.10	0.1	

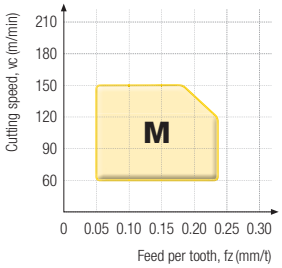
Workpiece				Specific cutting force (N/mm^2)	Brinell hardness (HB)	Grade	C/B		ML, MM
ISO	Workpiece materials	ISO	AISI			PC5300	ML	MM	
						vc (m/min)	fz (mm/t)		ap (mm)
S	Nickel based	15156-3	15156-3	2650	250	30	0.15	0.2	1~3
						45	**0.10**	**0.1**	
						60	0.05	0.1	
		9723	9723	3000	320	30	0.15	0.2	
						40	**0.10**	**0.1**	
						50	0.05	0.1	
	Cobalt based alloy	Stellite	Stellite	3000~3100	300~320	25	0.15	0.2	
						35	**0.10**	**0.1**	
						45	0.05	0.1	
	Titanium alloy steel	5832-11	5832-11	1400	320	30	0.20	0.2	
						50	**0.15**	**0.1**	
						70	0.05	0.1	

Workpiece				Specific cutting force (N/mm^2)	Rockwell hardness (H_RC)	Grade	C/B	Grade	C/B	MM
ISO	Workpiece materials	ISO	AISI			PC2510	MM	PC2505	MM	
						vc (m/min)	fz (mm/t)	vc (m/min)	fz (mm/t)	ap (mm)
H	High hardened steel (heat treatment)	X40CrMoV5-1	H13 (H_RC50)	2750	50	40	0.15	40	0.2	1~3
						55	**0.10**	**60**	**0.1**	
						70	0.10	80	0.1	

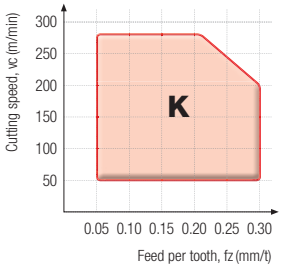
P Steel



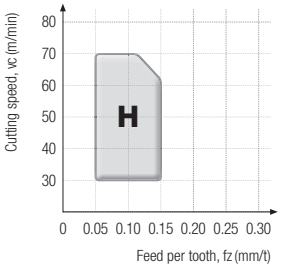
M Stainless steel



K Cast iron



H Hardened steel



Performance evaluation

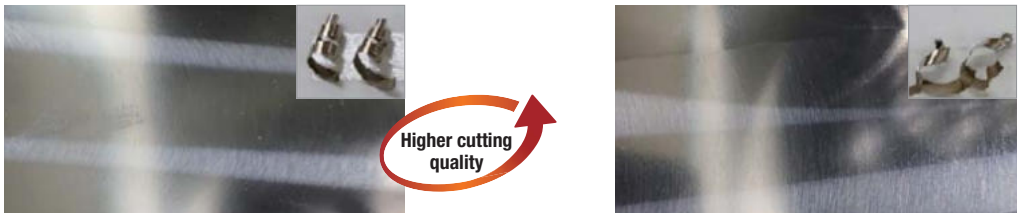
Wear resistance

Workpiece	Stainless steel (X5CrNiMo17-12-2), 300 (L) × 200 (W) × 100 (H), Steel rectangular tube
Cutting conditions	vc (m/min) = 120, fz (mm/t) = 0.15, ap (mm) = 2.0, ae (mm) = 50, dry
Tools	**Insert** SAGX140808ANER-ML (PC9540) **Holder** RMX8ACM63R-22-6-SA16

[RM8-X] [Competitor]

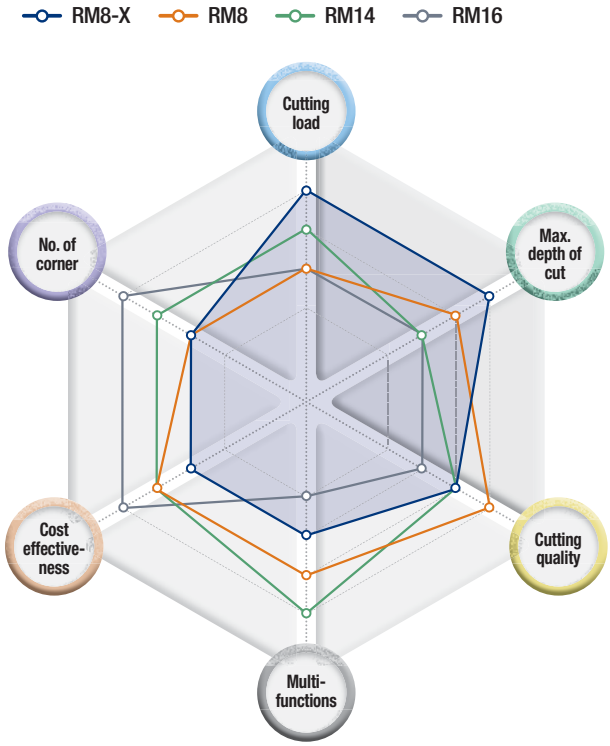
Surface finish

Workpiece	Alloy steel (42CrMo4), 300 (L) × 200 (W) × 100 (H), Steel rectangular tube
Cutting conditions	vc (m/min) = 300, fz (mm/t) = 0.25, ap (mm) = 2, dry
Tools	**Insert** SNMX140808ANER-ML (PC3700) **Holder** RMX8ACM63R-22-6-SA16



[RM8-X] [Competitor]

Tool selection guide



RM8-X New

- Lower cutting load
- Max. depth of cut

RM8

- Various line-up
- High cost competitiveness
- General use

RM14

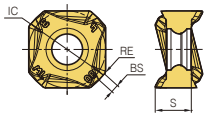
- Multi-functions
- More corners

RM16

- Maximum No. of cut
- High cost effectiveness

Tools	Cutting load	Max. depth of cut	Cutting quality	Multi-function	Cost effectiveness	No. of corner
RM8-X New	★★★★	★★★★	★★★	★★	★★	★★
RM8	★★	★★★	★★★★	★★★	★★★	★★
RM14	★★★	★★	★★★	★★★★	★★★	★★★
RM16	★★	★★	★★	★	★★★★	★★★★

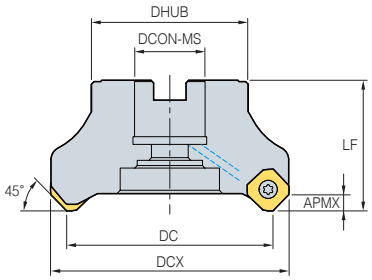
Insert

Picture	Designation	Coated					Dimensions (mm)					Geomotries
		PC2510	PC3700	PC6510	PC9540	PC5300	IC	BS	S	RE	APMX	
	**SAGX** 140808ANER-ML				●	●	14.0	1.21	6.58	0.8	5.5	
	**SAGX** 140808ANER-MM					●	14.0	1.21	6.58	0.8	5.5	
	**SNMX** 140808ANER-MM		●	●		●	14.0	1.21	6.58	0.8	5.5	

●: Stock item

RMX8AC(M)-SA14

AA 45°
• AR : -8°
• RR : -11° ~ -9°



(mm)

	Designation	Stock		DCX	DC	DHUB	DCON-MS	LF	APMX	kg
RMX8ACM	050R-22-4-SA14		4	62.5	50	42	22	40	5.5	0.34
	050R-22-5-SA14	●	5	62.5	50	42	22	40	5.5	0.38
	063R-22-5-SA14		5	75.5	63	42	22	40	5.5	0.56
	063R-22-6-SA14	●	6	75.5	63	42	22	40	5.5	0.54
	080R-27-6-SA14		6	92.5	80	60	27	50	5.5	1.00
	080R-27-8-SA14	●	8	92.5	80	60	27	50	5.5	1.04
	100R-32-8-SA14		8	112.5	100	70	32	50	5.5	2.05
	100R-32-10-SA14	●	10	112.5	100	70	32	50	5.5	2.06
	125R-40-8-SA14		8	137.5	125	90	40	63	5.5	3.34
	125R-40-12-SA14	●	12	137.5	125	90	40	63	5.5	3.34
RMX8AC	080R-25.4-6-SA14		6	92.5	80	60	25.4	50	5.5	1.02
	080R-25.4-8-SA14	●	8	92.5	80	60	25.4	50	5.5	1.06
	100R-31.75-8-SA14		8	112.5	100	70	31.75	63	5.5	2.08
	100R-31.75-10-SA14	●	10	112.5	100	70	31.75	63	5.5	2.09
	125R-38.1-8-SA14		8	137.5	125	90	38.1	63	5.5	3.43
	125R-38.1-12-SA14	●	12	137.5	125	90	38.1	63	5.5	3.35

●: Stock item

Available inserts


SAGX-ML


SAGX-MM


SNMX-MM

	Designation	Coated				
		PC2510	PC3700	PC6510	PC9540	PC5300
SAGX	140808ANER-ML				●	●
	140808ANER-MM					●
SNMX	140808ANER-MM		●	●		●

●: Stock item

Available arbors

	Designation	DCON	Available arbors
RMX8ACM	050R-22-□-SA14	22	BT□□-FMC22-□□
	063R-22-□-SA14		
	080R-27-□-SA14	27	BT□□-FMC27-□□
	100R-32-□-SA14	32	BT□□-FMC32-□□
	125R-40-□-SA14	40	BT□□-FMC40-□□

	Designation	DCON	Available arbors
RMX8AC	080R-25.4-□-SA14	25.4	BT□□-FMC25.4-□□
	100R-31.75-□-SA14	31.75	BT□□-FMC31.75-□□
	125R-38.1-□-SA14	38.1	BT□□-FMC38.1-□□

Parts

Specification	Screw	Wrench
		
Ø50 ~ Ø125	FTNA0513	TW20-100

⚠ For the safe metalcutting

- Use safety supplies such as protective gloves to prevent possible injury while touching the edge of tools.
- Use safety glasess or safety cover to hedge possible dangers. Inappropriate usage or excessive cutting condition may lead tool's breakage or even the fragment's scattering.
- Clamp the workpiece tightly enough to prevent its movement while its machining.
- Properly manage the tool change phase because the inordinately used tool can be easily broken under the excessive cutting load or severe wear, and it may threat the operator's safety.
- Use safety cover because chips evacuated during cutting are hot and sharp and may cause burns and cuts. To remove chips safely, stop machining, put on protective gloves, and use a hook or other tools.
- Prepare for fire prevention measures as the use of the non-water soluble cutting oil may cause fire.
- Use safety cover and other safety supplies because the spare parts or the inserts can be pulled out due to centrifugal force while high speed machining.

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TN93-EM-01 / 20220510