

High feed sQuare Milling

# HQM

**KORLOY**  
TECH-NEWS



- Stable and high efficient cutting due to the design with high rigidity of 4 planar corners
- High speed and high feed cutting from the optimal rake angle and high helix cutting edge

## High feed sQuare Milling

# HQM

High-feed machining is a highly efficient processing method that removes workpieces quickly by reducing chip thickness, and it has recently gained significant attention. However, this method also presents several challenges.

First of all, it shortens tool life due to high cutting resistance. The rapid feed rates in high-feed machining lead to increase in cutting resistance which can easily cause insert fracture. This becomes problematic when machining difficult-to-cut materials used in the aerospace and power generation industries. In addition, the chip management is challenging in high-feed machining. Volume of chips removed at once is significant, it disturbs proper chip evacuation and damages both the tool and the workpiece, resulting in reduced surface finish and tool life.

To address these issues and maximize the effectiveness of high-feed machining, KORLOY launched the HQM.

The HQM features an optimized helical structure in its insert design and a high-rigidity clamping system which reduces cutting resistance during high-feed cutting and ramping operations, preventing insert fracture and maintaining stable tool life. Furthermore, the positive geometry and chip breaker design enable efficient chip management, protecting both the insert and the workpiece from damage, thereby extending tool life and ensuring a clean surface finish. Additionally, the increased insert thickness and the application of large screws in the high-rigidity clamping system, along with a dimpled surface structure that effectively controls heat generated during machining, allow for over a 20% increase in feed rate compared to conventional high-feed machining, enhancing productivity.

The **HQM** provides excellent tool life by suppressing edge wear during machining and improves wear resistance through its geometric features and customized coatings tailored to the workpiece.



### **Stable and high feed cutting**

- high rigidity helix structure.

### **Higher productivity (increased more than 20% of existing tools performance)**

- High rigidity clamping system

### **Good chip control**

- Positive shape and sharp chip breaker

### **Effective controlling cutting heat**

- The dimple shape of the insert rake surface

# Code system

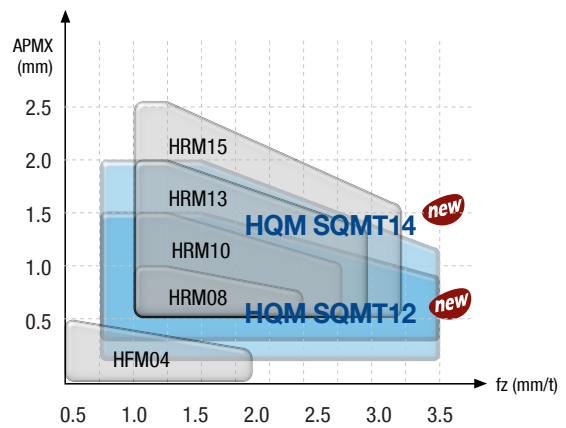
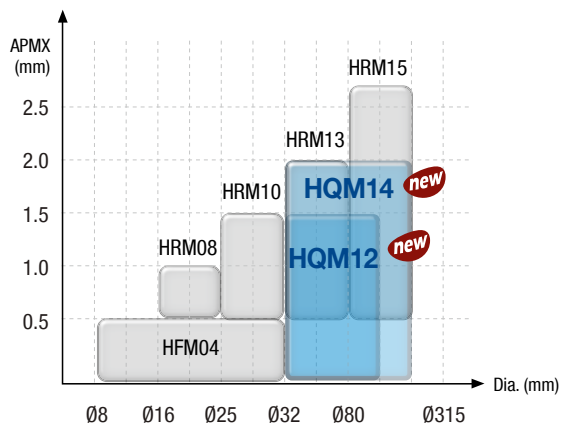
## Cutter type

<b>HQM</b>	<b>C</b>	<b>M</b>	<b>063</b>	<b>R</b>	<b>22</b>	<b>6</b>	<b>SQ14</b>
High feed sQuare Milling	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 SQ12 : SQMT12 SQ14 : SQMT14

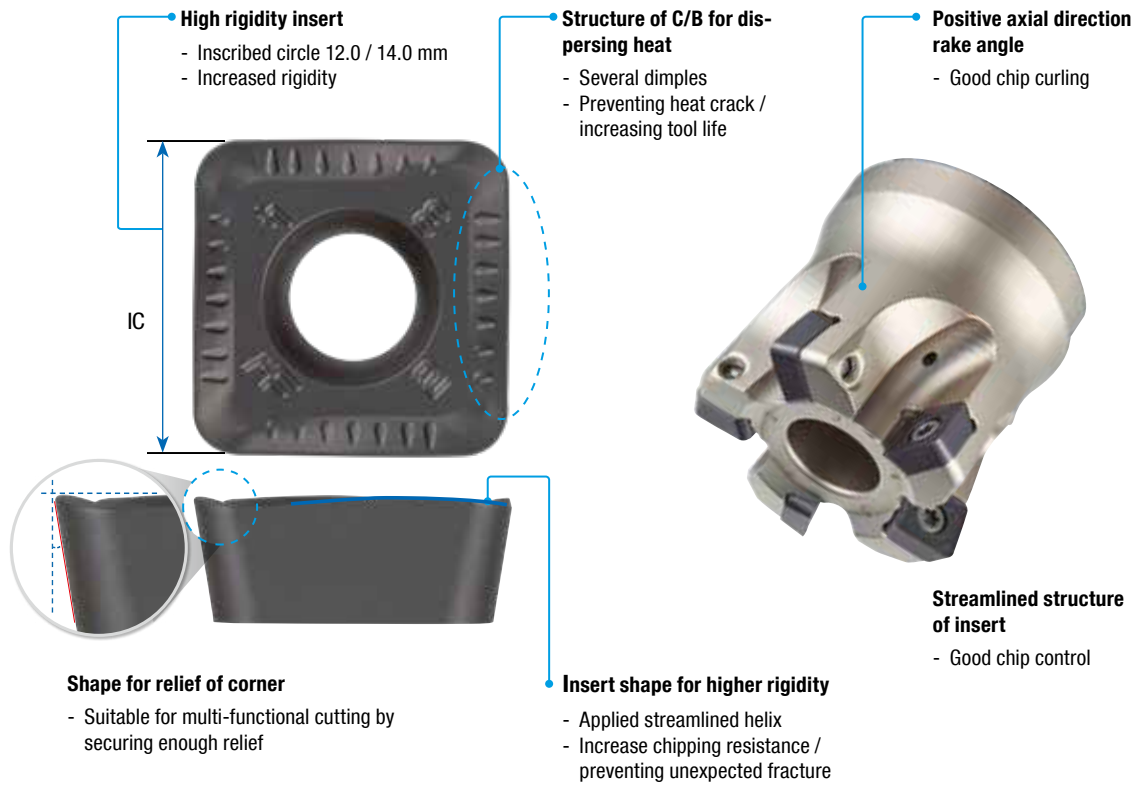
## Shank type

<b>HQM</b>	<b>S</b>	<b>032</b>	<b>R</b>	<b>3</b>	<b>W</b>	<b>32</b>	<b>150</b>	<b>SQ14</b>
High feed sQuare Milling	Type S : Shank	Machining dia. 032: Ø32 mm	Oil hole & Hand R: With oil hole, right-handed NR: Without oil hole, right-handed	No. of tooth 3: 3 Teeth	Shank type W: Weldon C: Cylindrical	Shank dia. 32 : Ø32mm	Overall length 150: 150mm	Available insert SQ12 : SQMT12 SQ14 : SQMT14

## Application range



# Feature



## Usage and features of chip breakers

Chip breaker	Cutting edge	Use	Feature
ML		For HRSA and Titanium	Guarantees high quality of performance from applying suitable for low cutting resistance chip breaker for HRSA cutting and high hardness cutting edge
MF		For finishing	Optimal for finishing due to low cutting load and low resistance chip breaker
MM		For general cutting	Suitable for general cutting range from design structure for general high feed cutting
None		For high hardness cutting	Good for high hardness die steel due to shape of strong cutting edge

## Recommended grade and cutting edge

Designation	Recommended insert and grade for different workpieces (●: 1 <sup>st</sup> recommendation)									
	P		M		K		S		H	
	C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade
<b>SQMT120516R</b> <b>SQMT140620R</b>	●MM ○MF ○ML	●PC3700 ○PC5300	●ML ○MF	●PC9540 ○PC5300	●MF ○MM	●PC6100 ○PC5300	●ML ○MF	●UNC840 ○UPC845 ○PC5300	○MM	○PC2510 ○PC2505
<b>SQMW120516</b> <b>SQMW140520</b>	○None	○PC5300	-	-	-	-	-	-	●None	●PC2510 ○PC2505

## Recommended cutting conditions \_ SQ12

ISO	Workpiece			Specific cutting force (N/mm <sup>2</sup> )	Brinell hardness (HB)	Grade	C/B		Grade	C/B		MM / MF
	Workpiece material	KS	ISO			PC3700	MM	MF	PC5300	MM	MF	
						vc (m/min)	fz (mm/t)		vc (m/min)	fz (mm/t)		
P	Non-ferrous alloy steel Mn < 1.65	SM25C	C25	1500	125	230	1.8	2.0	210	1.8	2.0	≥ 1.5
						305	1.4	1.5	280	1.4	1.5	
						380	0.9	1.0	350	0.9	1.0	
		SM45C	C45	1700	190	210	1.4	1.5	190	1.4	1.5	
						280	0.9	1.0	255	0.9	1.0	
						350	0.5	0.6	320	0.5	0.6	
	Low alloy steel ≤ 5%	SCM440	42CrMo4	1700	175	160	1.6	1.8	150	1.6	1.8	
						215	1.4	1.5	195	1.4	1.5	
						270	0.9	1.0	240	0.9	1.0	
	High alloy steel > 5%	STD11 STD61	X40CrMoV5-1	1950	200	120	0.9	1.0	110	0.9	1.0	
160						0.7	0.8	150	0.7	0.8		
200						0.4	0.4	190	0.4	0.4		

ISO	Workpiece			Specific cutting force (N/mm <sup>2</sup> )	Brinell hardness (HB)	Grade	C/B		Grade	C/B		ML / MF
	Workpiece material	KS	ISO			PC9540	ML	MF	PC5300	ML	MF	
						vc (m/min)	fz (mm/t)		vc (m/min)	fz (mm/t)		
M	Ferritic / martensitic	STS405 STS430	X6CrAl13 X6Cr17	1800	200	100	1.4	1.6	130	1.4	1.6	≥ 1.5
						135	0.9	1.0	170	0.9	1.0	
						170	0.4	0.5	210	0.4	0.5	
		STS416 STS434	X12CrS13 X6CrMo17-1	2850	330	100	1.4	1.6	130	1.4	1.6	
						135	0.9	1.0	170	0.9	1.0	
						170	0.4	0.5	210	0.4	0.5	
	STS403 STS410	X12Cr13	2350	330	100	1.4	1.6	130	1.4	1.6		
					135	0.9	1.0	170	0.9	1.0		
					170	0.4	0.5	210	0.4	0.5		
	Austenitic	STS304 STS316	X5CrNi18-9, X2CrNi18-9 X5CrNiMo17-12-2 XCrNiMo17-12-3	2000	180	80	1.4	1.6	105	1.4	1.6	
						110	0.9	1.0	140	0.9	1.0	
						140	0.4	0.5	175	0.4	0.5	
Austenitic / ferritic	-	-	2450	260	65	1.4	1.6	80	1.4	1.6		
					85	0.9	1.0	110	0.9	1.0		
					105	0.45	0.5	140	0.45	0.5		

## Recommended cutting conditions \_ SQ12

Workpiece				Specific cutting force (N/mm <sup>2</sup> )	Brinell hardness (HB)	Grade	C/B		Grade	C/B		MF / MM
ISO	Workpiece material	KS	ISO			PC6100	MF	MM	PC5300	MF	MM	APMX(mm)
						vc (m/min)	fz (mm/t)		vc (m/min)	fz (mm/t)		
<b>K</b>	Gray cast iron	GC200	200	900	180	180	1.8	2.0	140	1.8	2.0	≥ 1.5
						240	0.9	1.0	190	0.9	1.0	
						300	0.45	0.5	240	0.45	0.5	
	Nodular graphite cast iron	GCD500	500-7	870	155	120	1.8	2.0	100	1.8	2.0	
						160	0.9	1.0	130	0.9	1.0	
						200	0.45	0.5	160	0.45	0.5	

Workpiece				Specific cutting force (N/mm <sup>2</sup> )	Brinell hardness (HB)	Grade	C/B		ML / MF
ISO	Workpiece material	KS	ISO			UNC840	ML	MF	APMX(mm)
						vc (m/min)	fz (mm/t)		
<b>S</b>	Nickel based	Inconel625	15156-3	2650	250	30	1	1.2	≥ 1.5
						40	0.7	0.8	
						50	0.3	0.3	
		Inconel718	9723	3000	320	30	1	1.2	
						40	0.7	0.8	
						50	0.3	0.3	
	Cobalt based alloy	Stellite	Stellite	3000~3100	300~320	15	1	1.2	
						20	0.7	0.8	
						25	0.3	0.3	
	Titanium alloy steel	Ti-6Al-4V	Nov-32	1400	320	40	1	1.2	
						50	0.7	0.8	
						60	0.3	0.3	

Workpiece				Specific cutting force (N/mm <sup>2</sup> )	Rockwell hardness (HRC)	Grade	C/B	Grade	C/B	MM
ISO	Workpiece material	KS	ISO			PC2510	None	PC2510	MM	APMX(mm)
						vc (m/min)	fz (mm/t)	vc (m/min)	fz (mm/t)	
<b>H</b>	High hardened steel (heat treatment)	STD61	X40CrMoV5-1	2750	50	80	0.1	80	0.1	≥ 1.5
						100	0.05	100	0.05	
						130	0.05	130	0.05	

## Recommended cutting conditions \_ SQ14

Workpiece				Specific cutting force (N/mm <sup>2</sup> )	Brinell hardness (HB)	Grade	C/B		Grade	C/B		MM / MF
ISO	Workpiece material	KS	ISO			PC3700	MM	MF	PC5300	MM	MF	APMX(mm)
						vc (m/min)	fz (mm/t)		vc (m/min)	fz (mm/t)		
<b>P</b>	Non-ferrous alloy steel Mn < 1.65	SM25C	C25	1500	125	230	2.0	2.4	210	2.0	2.4	≥ 2
						305	1.5	1.8	280	1.5	1.8	
						380	1.0	1.2	350	1.0	1.2	
		SM45C	C45	1700	190	210	1.5	1.8	190	1.5	1.8	
						280	1.0	1.2	255	1.0	1.2	
						350	0.6	0.7	320	0.6	0.7	
	Low alloy steel ≤ 5%	SCM440	42CrMo4	1700	175	160	1.8	2.2	150	1.8	2.2	
						215	1.5	1.8	195	1.5	1.8	
						270	1.0	1.2	240	1.0	1.2	
	High alloy steel > 5%	STD11 STD61	X40CrMoV5-1	1950	200	120	1.0	1.2	110	1.0	1.2	
						160	0.8	0.9	150	0.8	0.9	
						200	0.4	0.5	190	0.4	0.5	

## Recommended cutting conditions \_ SQ14

Workpiece				Specific cutting force (N/mm <sup>2</sup> )	Brinell hardness (HB)	Grade	C/B		Grade	C/B		ML / MF
ISO	Workpiece material	KS	ISO			PC9540	ML	MF	PC5300	ML	MF	
						vc (m/min)	fz (mm/t)		vc (m/min)	fz (mm/t)		APMX (mm)
M	Ferritic / martensitic	STS405 STS430	X6CrAl13 X6Cr17	1800	200	100	1.6	1.9	130	1.6	1.9	≥ 2
						135	1.0	1.2	170	1.0	1.2	
						170	0.5	0.6	210	0.5	0.6	
		STS416 STS434	X12CrS13 X6CrMo17-1	2850	330	100	1.6	1.9	130	1.6	1.9	
						135	1.0	1.2	170	1.0	1.2	
						170	0.5	0.6	210	0.5	0.6	
	STS403 STS410	X12Cr13	2350	330	100	1.6	1.9	130	1.6	1.9		
					135	1.0	1.2	170	1.0	1.2		
					170	0.5	0.6	210	0.5	0.6		
	Austenitic	STS304 STS316	X5CrNi18-9, X2CrNi18-9 X5CrNiMo17-12-2 XCrNiMo17-12-3	2000	180	80	1.6	1.9	105	1.6	1.9	
						110	1.0	1.2	140	1.0	1.2	
						140	0.5	0.6	175	0.5	0.6	
Austenitic / ferritic	-	-	2450	260	65	1.6	1.9	080	1.6	1.9		
					85	1.0	1.2	110	1.0	1.2		
					105	0.5	0.6	140	0.5	0.6		

Workpiece				Specific cutting force (N/mm <sup>2</sup> )	Brinell hardness (HB)	Grade	C/B		Grade	C/B		MF / MM
ISO	Workpiece material	KS	ISO			PC6100	MF	MM	PC5300	MF	MM	
						vc (m/min)	fz (mm/t)		vc (m/min)	fz (mm/t)		APMX (mm)
K	Gray cast iron	GC200	200	900	180	180	2.0	2.4	140	2.0	2.4	≥ 2
						240	1.0	1.2	190	1.0	1.2	
						300	0.5	0.6	240	0.5	0.6	
	Nodular graphite cast iron	GCD500	500-7	870	155	120	2.0	2.4	100	2.0	2.4	
						160	1.0	1.2	130	1.0	1.2	
						200	0.5	0.6	160	0.5	0.6	

Workpiece				Specific cutting force (N/mm <sup>2</sup> )	Brinell hardness (HB)	Grade	C/B		ML / MF
ISO	Workpiece material	KS	ISO			UNC840	ML	MF	
						vc (m/min)	fz (mm/t)		APMX (mm)
S	Nickel based	Inconel625	15156-3	2650	250	30	1.2	1.3	≥ 2
						40	0.8	0.8	
						50	0.3	0.3	
		Inconel718	9723	3000	320	30	1.2	1.3	
						40	0.8	0.8	
						50	0.3	0.3	
	Cobalt based alloy	Stellite	Stellite	3000~3100	300~320	15	1.2	1.3	
						20	0.8	0.8	
						25	0.3	0.3	
	Titanium alloy steel	Ti-6Al-4V	Nov-32	1400	320	40	1.2	1.3	
						50	0.8	0.8	
						60	0.3	0.3	

Workpiece				Specific cutting force (N/mm <sup>2</sup> )	Rockwell hardness (HrC)	Grade	C/B		Grade	C/B		MM
ISO	Workpiece material	KS	ISO			PC2505	MM	None	PC2510	MM	None	
						vc (m/min)	fz (mm/t)		vc (m/min)	fz (mm/t)		APMX (mm)
H	High hardened steel (heat treatment)	STD61	X40CrMoV5-1	2750	50	80	0.1		70	0.1		≥ 2
						100	0.05		90	0.05		
						130	0.05		120	0.05		

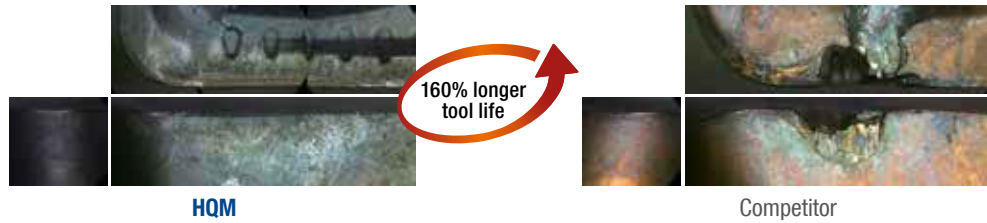
# Application Examples

## Wear resistance

**Workpiece** Die steel (KP4M), 300(L) × 200(W) × 100(H), Square lumber

**Cutting conditions**  $vc = 147 \text{ m/min} \cdot fz = 1.66 \text{ mm/t} \cdot ap = 1.0 \text{ mm} \cdot ae = 58 \text{ mm} \cdot \text{dry}$

**Tools** **Insert** SQMT140520R-MM(PC5300) **Holder** HQMCM080R-27-5-SQ14

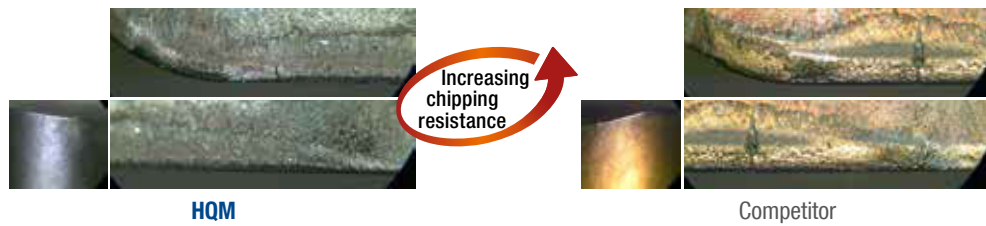


## Chipping resistance

**Workpiece** Die steel (KP4M), 300(L) × 200(W) × 100(H), Square lumber

**Cutting conditions**  $vc = 135 \text{ m/min} \cdot fz = 1.75 \text{ mm/t} \cdot ap = 0.8 \text{ mm} \cdot ae = 55 \text{ mm} \cdot \text{dry}$

**Tools** **Insert** SQMT140520R-MM(PC5300) **Holder** HQMCM080R-27-5-SQ14

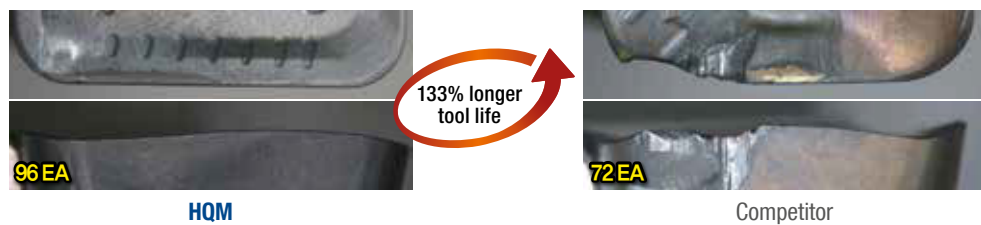


## Field Test - Wear resistance

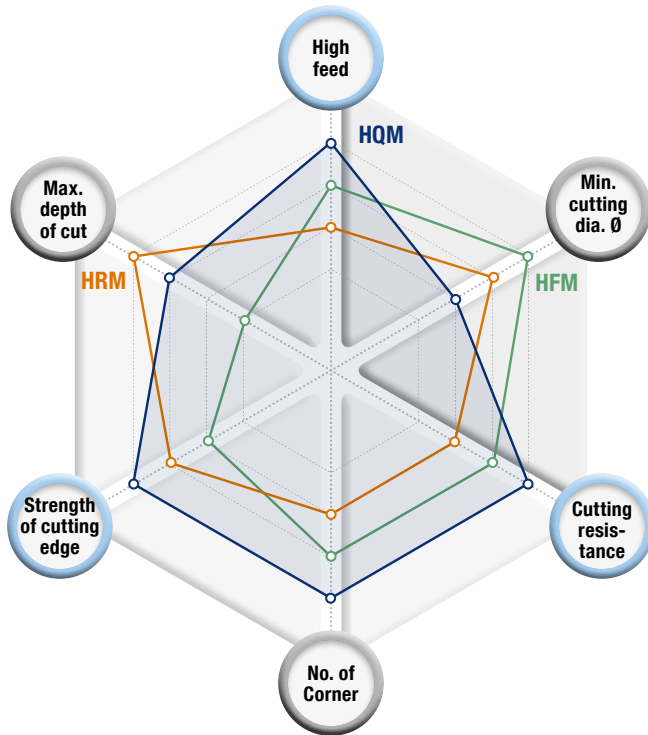
**Workpiece** Die steel (KP4M), 300(L) × 200(W) × 100(H), Square lumber

**Cutting conditions**  $vc = 150 \text{ m/min} \cdot fz = 1.7 \text{ mm/t} \cdot ap = 1.2 \text{ mm} \cdot ae = 60 \text{ mm} \cdot \text{dry}$

**Tools** **Insert** SQMT140520R-MM(PC5300) **Holder** HQMCM080R-27-5-SQ14



# Selection Guide for High feed tools



## HQM <sup>new</sup>

- High rigidity and high feed cutting
- Flat 4-cornered cutting
- Good chip evacuation



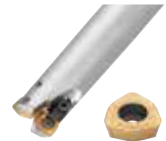
## HFM

- Small cutting diameter
- At least Ø8 mm



## HRM

- For general cutting
- Flat 3-cornerd cutting



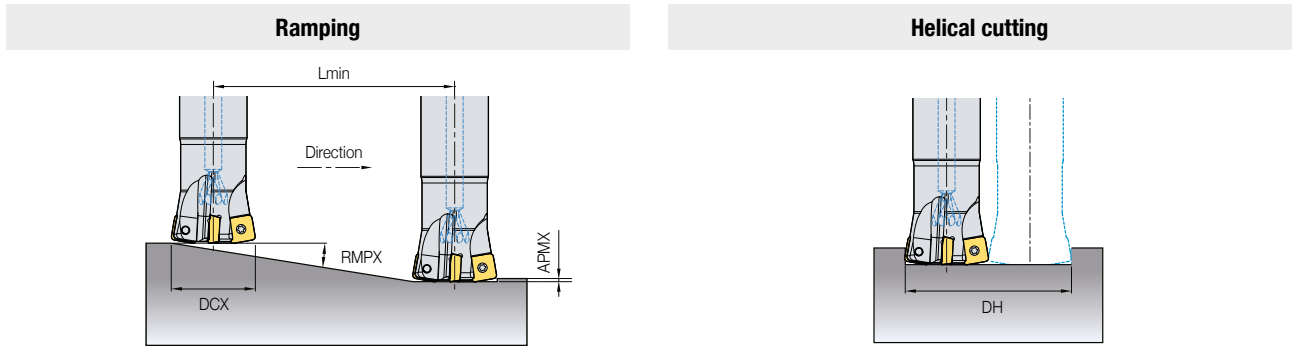
Items	High feed	Min. cutting diameter	Cutting resistance	No. of Corner	Strength of cutting edge	Max. depth of cut
HQM <sup>new</sup>	★★★★★	★★	★★★★★	★★★★★	★★★★★	★★★
HFM	★★★	★★★★★	★★★	★★★	★★	★
HRM	★★	★★★	★★	★★	★★★	★★★★★

## Inserts

Workpiece	Picture	Designation	Coated						Dimension (mm)				Geometry	
			PC2510	PC3700	PC6100	PC9540	PC5300	UNG840	UPC845	IC	RE	S		APMX
Titanium, STS		SQMT 120516R-ML					▲	●	●	12	1.6	5	1.5	
		140520R-ML					▲	○	○	14	2	5.56	2	
STS, Cast iron		SQMT 120516R-MF		▲	▲	▲	▲	●	●	12	1.6	5	1.5	
		140520R-MF		▲	▲	▲	▲	●	●	14	2	5.56	2	
Steel		SQMT 120516R-MM		▲	▲		▲			12	1.6	5	1.5	
		140520R-MM		▲	▲		▲			14	2	5.56	2	
High hardness		SQMW 120516	▲				▲			12	1.6	5	1.5	
		140520	▲				▲			14	2	5.56	2	

▲ : Stock item Europe ● : Stock item Korea ○ : Production on demand

# Ramping and helical cutting

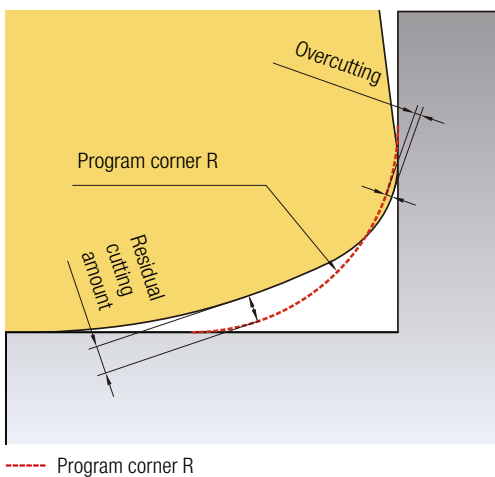


(mm)

Designation	DCX	IC	APMX	Ramping		Helical cutting			
				RMPX	Lmin	Min diameter (DHmin)	Max pitch	Max diameter (DHmax)	Max pitch
SQ12	32	12	1.5	1.7°	50.5	47	1.4	64	1.5
	40	12	1.5	1.8°	47.7	60	1.5	80	1.5
	50	12	1.5	1.1°	78.1	80	1.5	100	1.5
	52	12	1.5	1.1°	78.1	84	1.5	104	1.5
	63	12	1.5	0.7°	122.8	106	1.5	126	1.5
	66	12	1.5	0.7°	122.8	112	1.5	132	1.5
	80	12	1.5	0.5°	171.9	140	1.5	160	1.5
100	12	1.5	0.4°	214.9	180	1.5	200	1.5	
SQ14	32	14	2	2.2°	52.1	48	1.9	64	2.0
	40	14	2	2.9°	39.5	57	2.0	80	2.0
	52	14	2	1.5°	76.4	81	2.0	104	2.0
	63	14	2	1.1°	104.2	103	2.0	126	2.0
	66	14	2	0.9°	127.3	109	2.0	132	2.0
	80	14	2	0.8°	143.2	137	2.0	160	2.0
	100	14	2	0.6°	191.0	177	2.0	200	2.0

- When ramping and helical milling, table feed, vf (ipm) should be lower than 70% of the recommended cutting conditions.
- When helical milling, Max. pitch, DHmax should be lower than max. depth of cut, APMX.
- When ramping, the depth of cut should be lower than max. depth of cut, APMX.
- $Lmin = APMX / \tan(RMPX)$  (mm)
- Lmin: Min. length of ramping
- APMX: Depth of cut
- RMPX: Max. rake angle in ramping

## Precautions in corner R cutting



(mm)

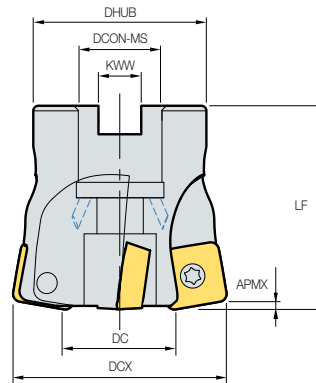
Designation	Program corner R	Nose R RE	APMX	Over cut	Uncut
SQMT120516R-MM	R1.5	1.6	1.5	0	1.5
	R2.0			0	1.42
	R3.0			0	1.26
	R3.5			0.05	1.18
	R4.0			0.17	1.10
	R4.5			0.33	1.02
	R5.0			0.50	0.94
SQMT140520R-MM	R1.5	2.0	2	0	1.73
	R3.0			0	1.46
	R3.5			0	1.37
	R4.0			0.03	1.29
	R4.5			0.14	1.21
	R5.0			0.27	1.12
	R5.5			0.45	1.04
R6.0	0.63	0.95			

- When writing CNC programs, entering the appropriate corner radius (R value) for each insert can lead to overcutting and residual cutting amounts in the corner machining areas, as described.
- To prevent overcutting, it is essential to create CNC programs that take the aforementioned overcutting amounts into account.

# HQMCM-SQ12



KAPR  
10°  
• AR: 3°  
• RR: -4°



(mm)

Designation	Stock	DCX	CICT	DCON-MS	DHUB	LF	KWW	APMX
050R-22-3-SQ12	●	50	3	22	47	50	10.4	1.5
050R-22-4-SQ12	▲	50	4	22	47	50	10.4	1.5
052R-22-4-SQ12	●	52	4	22	47	50	10.4	1.5
052R-22-5-SQ12	▲	52	5	22	47	50	10.4	1.5
063R-22-5-SQ12		63	5	22	58	50	10.4	1.5
063R-22-6-SQ12	▲	63	6	22	58	50	10.4	1.5
066R-27-5-SQ12	▲	66	5	27	58	50	12.4	1.5
066R-27-6-SQ12		66	6	27	58	50	12.4	1.5
066R-27-7-SQ12		66	7	27	58	50	12.4	1.5
080R-27-6-SQ12	●	80	6	27	70	60	12.4	1.5
080R-27-8-SQ12	▲	80	8	27	70	60	12.4	1.5
100R-32-6-SQ12		100	6	32	78	70	14.4	1.5
100R-32-8-SQ12	▲	100	8	32	78	70	14.4	1.5

## Available inserts



SQMT-ML



SQMT-MF





SQMT-MM



SQMW

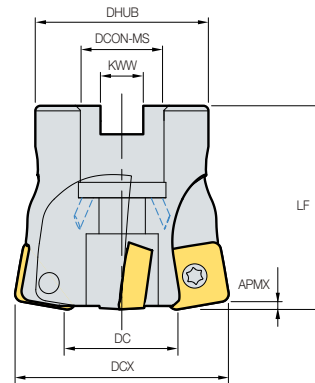
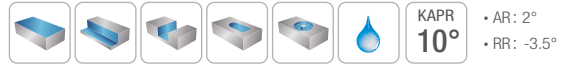
Designation	Coated						
	PC2510	PC3700	PC6100	PC9540	PC5300	UNC840	UPC845
SQMT	120516R-ML				▲	●	●
	120516R-MF		▲	▲	▲	●	●
	120516R-MM		▲	▲		▲	
SQMW	120516	▲			▲		

## Parts

Specification	Screw 	Wrench 
Ø50 - Ø100	FTKA0408	TW15S

▲ : Stock item Europe ● : Stock item Korea ○ : Production on demand

# HQMCM-SQ14



(mm)

	Designation	Stock	DCX	CICT	DCON-MS	DHUB	LF	KWW	APMX
HQMCM	052R-22-3-SQ14		52	3	22	47	50	10.4	2
	052R-22-4-SQ14	●	52	4	22	47	50	10.4	2
	052R-22-5-SQ14	▲	52	5	22	47	50	10.4	2
	063R-22-4-SQ14		63	4	22	58	50	10.4	2
	063R-22-5-SQ14	●	63	5	22	58	50	10.4	2
	063R-22-6-SQ14	▲	63	6	22	58	50	10.4	2
	066R-27-5-SQ14	▲	66	5	27	58	50	10.4	2
	066R-27-6-SQ14		66	6	27	58	50	10.4	2
	080R-27-5-SQ14	●	80	5	27	70	60	12.4	2
	080R-27-6-SQ14	▲	80	6	27	70	60	12.4	2
	100R-32-6-SQ14	●	100	6	32	78	70	14.4	2
	100R-32-8-SQ14	▲	100	8	32	78	70	14.4	2

## Available inserts



Designation		Coated						
		PC2510	PC3700	PC6100	PC9540	PC5300	UNC840	UPC845
SQMT	140520R-ML					▲	○	○
	140520R-MF		▲	▲	▲	▲	●	●
	140520R-MM		▲	▲		▲		
SQMW	140520	▲				▲		

## Available arbors

Designation	DCON	Available arbors
HQMCM	22	BT□□-FMC22-□□
050R-22-□-SQ12		
052R-22-□-SQ12		
063R-22-□-SQ12		
066R-22-□-SQ12		

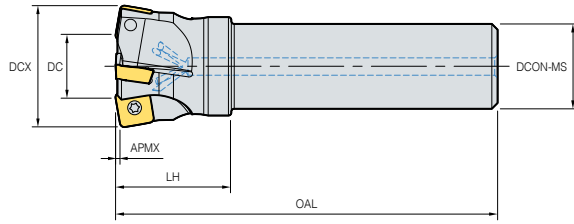
Designation	DCON	Available arbors
HQMCM	27	BT□□-FMC27-□□
066R-27-□-SQ12		
080R-27-□-SQ12	32	BT□□-FMC32-□□
100R-32-□-SQ12		

## Parts

Specification	Screw 	Wrench 
Ø52 - Ø100	FTGA0510-P	TW20-100

▲: Stock item Europe ●: Stock item Korea ○: Production on demand

# HQMS-SQ12



(mm)

Designation		Stock	DCX	CICT	DCON-MS	OAL	LH	APMX
HQMS	032R-2W32-150-SQ12		32	2	32	150	50	1.5
	032R-3W32-150-SQ12	▲	32	3	32	150	50	1.5
	040R-3W32-150-SQ12		40	3	32	150	50	1.5
	040R-4W32-150-SQ12	▲	40	4	32	150	50	1.5

## Available inserts



SQMT-ML



SQMT-MF





SQMT-MM



SQMW

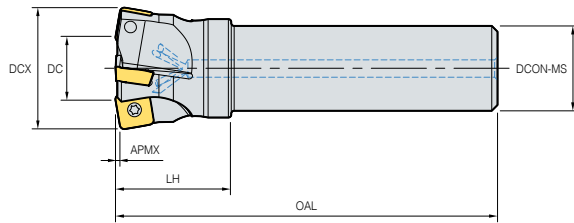
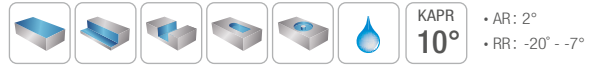
Designation	Coated						
	PC2510	PC3700	PC6100	PC9540	PC5300	UNC840	UPC845
SQMT	120516R-ML				▲	●	●
	120516R-MF		▲	▲	▲	●	●
	120516R-MM		▲	▲		▲	
SQMW	120516	▲			▲		

## Parts

Specification	Screw 	Wrench 
032 - 040	FTKA0408	TW15S

▲: Stock item Europe ●: Stock item Korea ○: Production on demand

# HQMS-SQ14



(mm)

Designation		Stock	DCX	CICT	DCON-MS	OAL	LH	APMX
HQMS	032R-2W32-150-SQ14	▲	32	2	32	150	50	2
	040R-2W32-150-SQ14		40	2	32	150	50	2
	040R-3W32-150-SQ14	▲	40	3	32	150	50	2

## Available inserts



SQMT-ML



SQMT-MF





SQMT-MM



SQMW

Designation	Coated						
	PC2510	PC3700	PC6100	PC9540	PC5300	UNC840	UPC845
SQMT	140520R-ML				▲	○	○
	140520R-MF		▲	▲	▲	●	●
	140520R-MM		▲	▲		▲	
SQMW	140520	▲			▲		

## Parts

Specification	Screw 	Wrench 
032 - 040	FTKA0408	TW15S

▲: Stock item Europe ●: Stock item Korea ○: Production on demand

# Notes



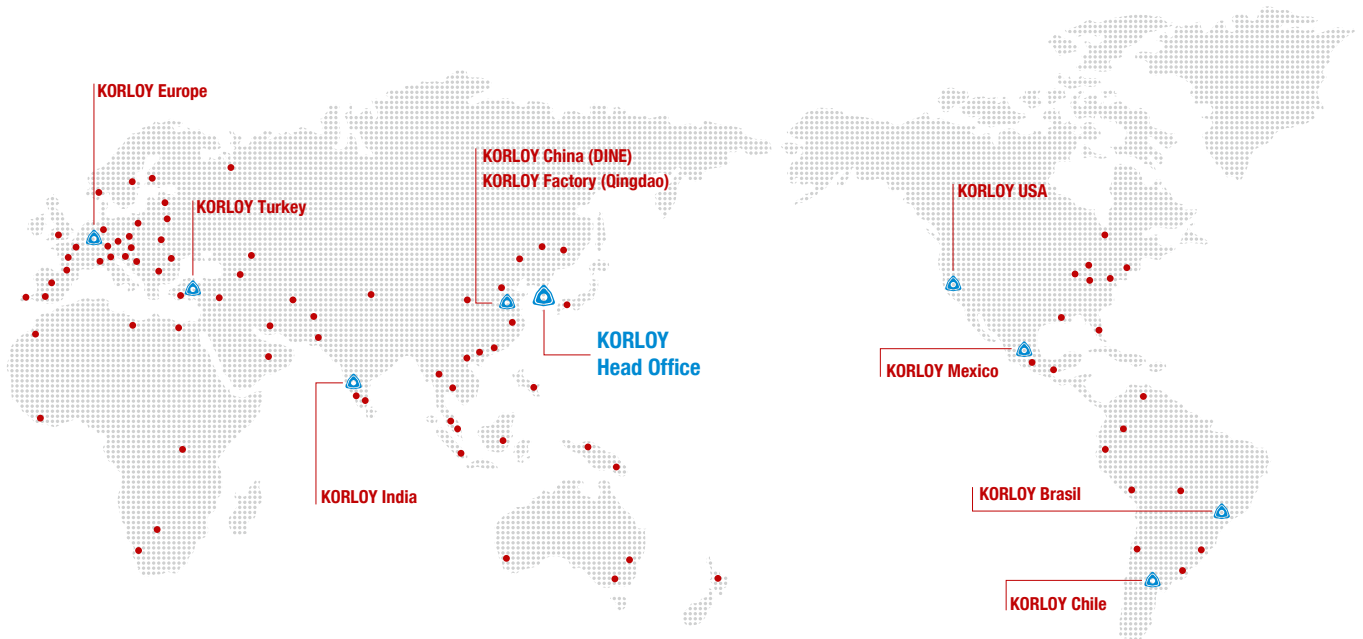
## For the safe metalcutting

- Use safety supplies such as protective gloves to prevent possible injury while touching the edge of tools.
- Use safety glasses 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 threaten 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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