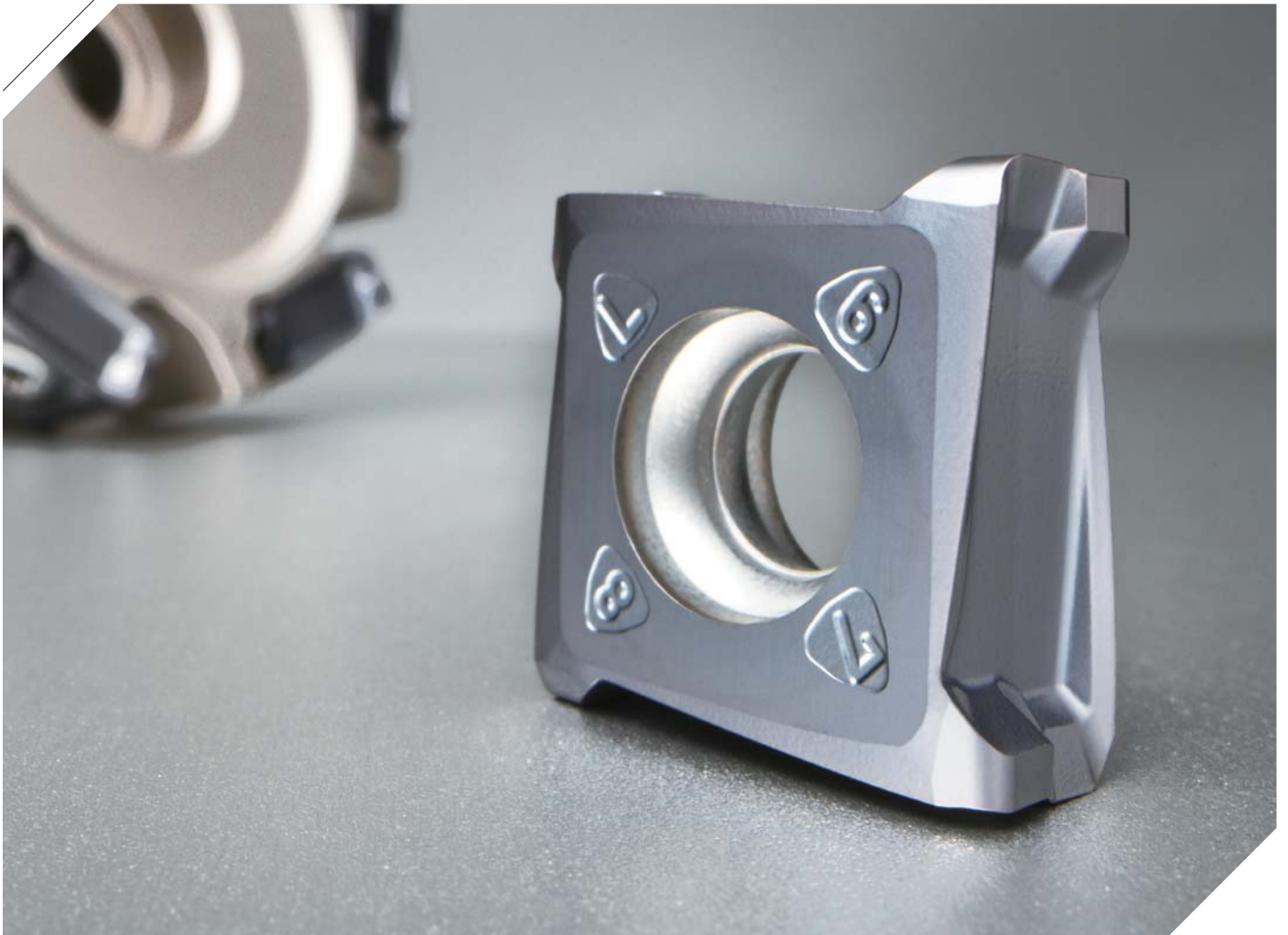


# TP8P

## Tangen-Pro series

### Right angle milling tool with tangential double-sided 8 corners

- Double-sided insert with 8 corners realizes high cost efficiency thanks to right angle milling with high depth of cut.
- Excellent for productivity improvement because tangential type insert ensures rigid clamping and allows more flutes (extra close pitch) in accordance with a cutter diameter.



Right angle milling tool with tangential double-sided 8 corners

# TP8P (Tangen-Pro series)

KORLOY launched Tangen-Pro **TP8P**, right angle milling tool with tangential 8 corners with KORLOY's differentiated manufacturing technology integration.

Compared to the radial type milling cutters, tangential type insert, which is easier to get enough chip pocket space, can increase productivity because it can adopt extra close pitch and it can bear with increased table feed with its better clamping stability. In addition, the TP8P enhances smooth cutting reducing chattering and cutting resistance effectively in even high speed and high feed machining with its optimal sharp cutting edge.

Therefore, the TP8P increases more than 30% productivity than radial type with its sharp cutting edge and rigid clamping ensure to apply higher speed and feed. The combination of TP8P and PC5300 ensures to apply various workpieces and realizes high cutting performance steel and cast iron machining.

» **High cost efficiency**

- Double-sided insert with maximum 8 corners usable

» **Good cutting performance**

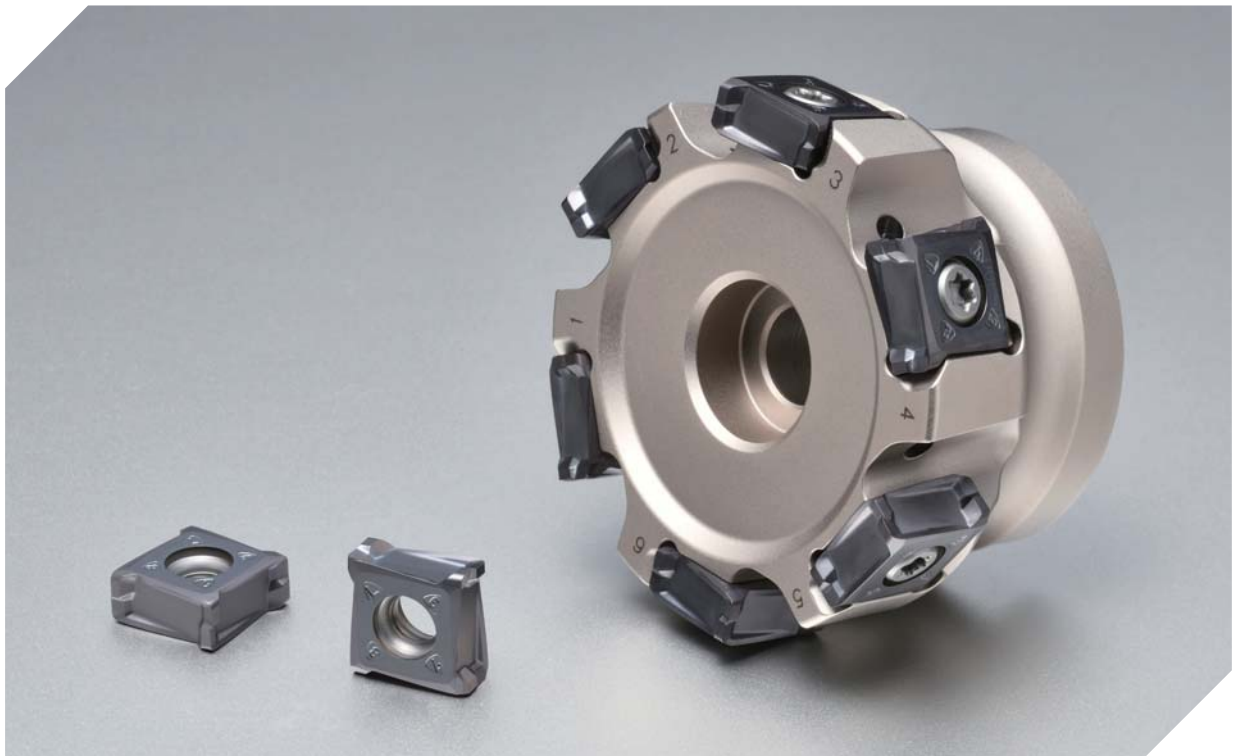
- High helix and sharp chip breaker

» **Stable clamping**

- Tangential-typed clamping structure

» **Right angle cutting with 1 step or multiple steps**

- Nose R, chamfer type insert




## Code system

Cutter type												
<b>TP8</b>	<b>P</b>	<b>C</b>	<b>M</b>	<b>063</b>	<b>R</b>	-	<b>22</b>	-	<b>6</b>	-	<b>S014</b>	
TP8 (Tangen-Pro)	Approach angle P: 90°	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 S014: SOKX14

Shank type												
<b>TP8</b>	<b>P</b>	<b>S</b>	<b>032</b>	<b>R</b>	-	<b>3</b>	<b>W</b>	<b>32</b>	-	<b>110</b>	-	<b>S014</b>
TP8 (Tangen-Pro)	Approach angle P: 90°	Type S: Shank	Machining dia. 032: Ø32 mm	Oil hole & hand R: With oil hole, right-handed NR: Without oil hole, right-handed			Shank type W: Weldon C: Cylinder	Shank dia. 32: Ø32 mm	Overall length 110: 110 mm			Available insert S014: SOKX14

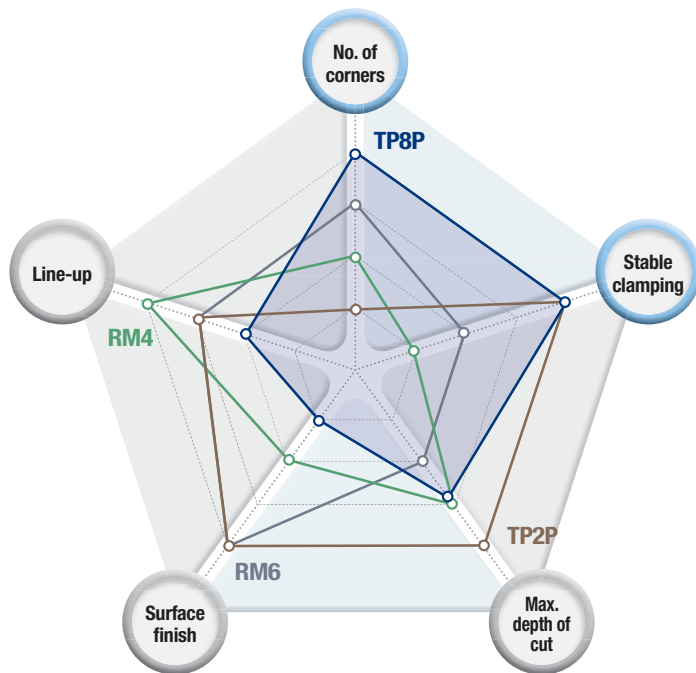
## Recommended grade and cutting edge

Chip breaker	Cutting edge shape	Recommended grade and cutting shape by workpiece materials (●: 1 <sup>st</sup> recommendation)	
		P	K
		Grade	Grade
ML		● PC5300	● PC5300

## Recommended cutting conditions

Workpiece				Specific cutting force (N/mm <sup>2</sup> )	HrC	Grade		Chip breaker	
ISO	Workpiece materials	ISO	AISI			PC5300	ML		
						vc (m/min)	fz (mm/t)	ap (mm)	
P	Carbon steel	C15E4 C15M2 C25	1015	1500	10 or under	150	0.15	2~7	
			1020			200	0.20		
			1025			250	0.15		
		C45 C60	1045	150		0.10			
	1050		200	0.20					
	Alloy steel	42CrMo4 41CrNiMo2	1060	1700	20~30	250	0.15		
			Die steel		-	KP4M	1700		20~40
	2020	27~30		200			0.15		
K	Gray cast iron	250 350	No 25 B No 35 B	900	23 or under	120	0.10	2~7	
						150	0.10		
						110	0.15		
	Ductile cast iron	400-15 150-10 600-3	60-40-18 65-45-12 80-55-06	870	10 or under	160	0.12		
						180	0.10		
						150	0.20		
						200	0.15		

## Tool selection guide



### TP8P *New*

- Maximum no. of corners
- Highly stable clamping



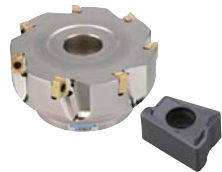
### TP2P

- Highly stable clamping
- Good cutting performance
- Excellent surface finish



### RM4

- Good for general use



### RM6

- Good surface finish
- High cost efficiency

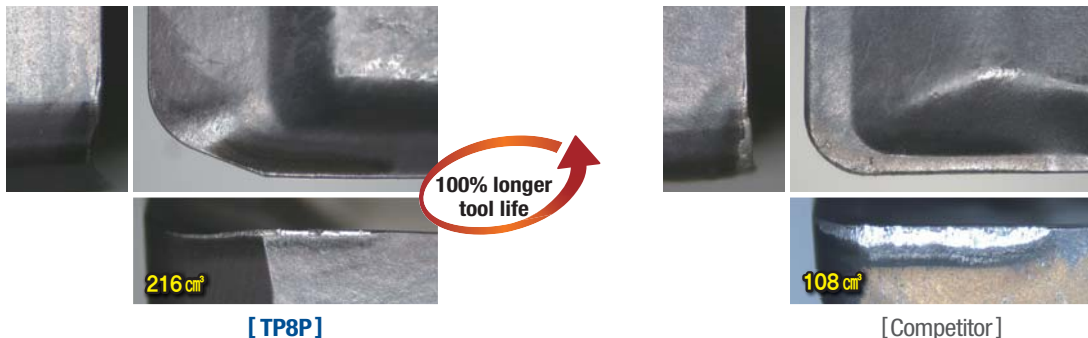


Tools	No. of corners	Stable clamping	Max. depth of cut	Surface finish	Line-up
TP8P <i>New</i>	★★★★★	★★★★★	★★★	★	★★
TP2P	★	★★★★★	★★★★★	★★★★★	★★★
RM4	★★	★	★★★	★★	★★★★★
RM6	★★★	★★	★★	★★★★★	★★★

## Performance evaluation

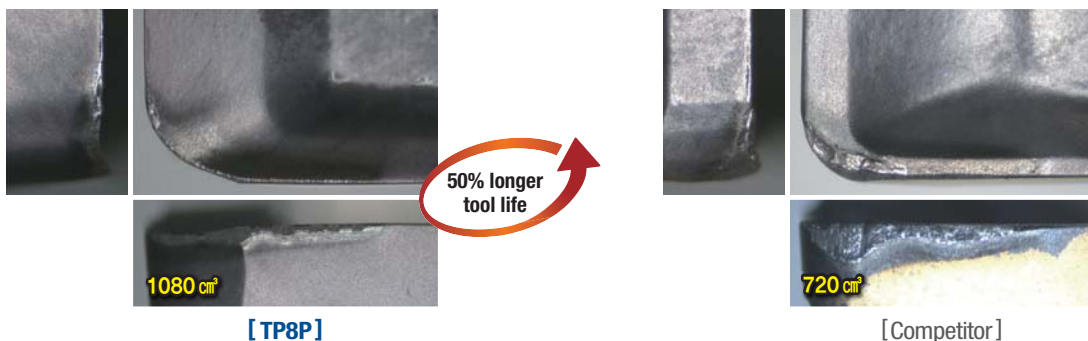
### Wear resistance

<b>Workpiece</b>	Cast iron (600-3), steel rectangular tube, 300 (L) × 200 (W) × 100 (H)	
<b>Cutting conditions</b>	vc (m/min) = 150, fz (mm/t) = 0.15, ap (mm) = 3.0, ae (mm) = 40, dry	
<b>Tools</b>	<b>Insert</b> SOKX1406XPNR-ML (PC5300)	<b>Holder</b> TP8PCM063R-22-6-S014


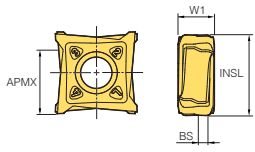

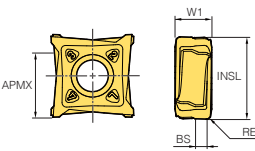


### Wear resistance

<b>Workpiece</b>	Cast iron (600-3), steel rectangular tube, 300 (L) × 200 (W) × 100 (H)	
<b>Cutting conditions</b>	vc (m/min) = 200, fz (mm/t) = 0.2, ap (mm) = 3.0, dry	
<b>Tools</b>	<b>Insert</b> SOKX1406XPNR-ML (PC5300)	<b>Holder</b> TP8PCM063R-22-6-S014



## Insert

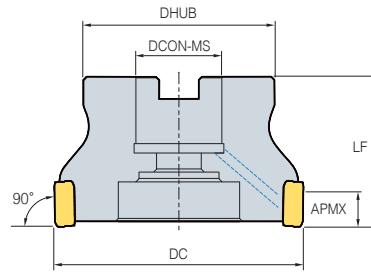
Picture	Designation	Coated	Dimensions (mm)					Geometries
		PC5300	INSL	W1	BS	RE	APMX	
	<b>SOKX</b> 1406XPNR-ML	●	14.47	6.5	1.35	-	11	
	<b>SOKX</b> 140608PNR-ML	●	14.47	6.5	1.69	0.8	11	

●: Stock item

# TP8PC(M)-S014



• AR: -6°  
• RR: -23° ~ -18°



(mm)

	Designation	Stock		DC	DHUB	DCON-MS	LF	APMX	
<b>TP8PCM</b>	040R-16-3-S014	●	3	40	34	16	40	11	0.18
	040R-16-4-S014	●	4	40	34	16	40	11	0.17
	050R-22-4-S014	●	4	50	45	22	40	11	0.28
	050R-22-5-S014	●	5	50	45	22	40	11	0.27
	050R-22-6-S014	●	6	50	45	22	40	11	0.28
	063R-22-6-S014	●	6	63	49	22	40	11	0.44
	063R-22-7-S014	●	7	63	49	22	40	11	0.45
	063R-22-8-S014	●	8	63	49	22	40	11	0.45
	080R-27-6-S014	●	6	80	60	27	50	11	0.87
	080R-27-7-S014	●	7	80	60	27	50	11	0.86
	080R-27-9-S014	●	9	80	60	27	50	11	0.89
	100R-32-8-S014	●	8	100	70	32	63	11	1.79
	100R-32-12-S014	●	12	100	70	32	63	11	1.80
	125R-40-9-S014	●	9	125	90	40	63	11	2.95
125R-40-15-S014	●	15	125	90	40	63	11	2.96	
<b>TP8PC</b>	080R-25.4-6-S014	●	6	80	60	25.4	50	11	0.90
	080R-25.4-7-S014	●	7	80	60	25.4	50	11	0.90
	080R-25.4-9-S014	●	9	80	60	25.4	50	11	0.92
	100R-31.75-8-S014	●	8	100	70	31.75	63	11	1.80
	100R-31.75-12-S014	●	12	100	70	31.75	63	11	1.82
	125R-38.1-9-S014	●	9	125	90	38.1	63	11	3.00
	125R-38.1-15-S014	●	15	125	90	38.1	63	11	3.00

●: Stock item

## Available inserts



SOKX-ML

Designation	Coated	
	PC5300	
<b>SOKX</b> 1406XPNR-ML	●	
140608PNR-ML	●	

●: Stock item

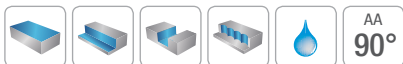
## Available arbors

	Designation	DCON	Available arbors
<b>TP8PCM</b>	040R-16-□-S014	16	BT□□-FMC16-□□
	050R-22-□-S014	22	BT□□-FMC22-□□
	063R-22-□-S014		
	080R-27-□-S014	27	BT□□-FMC27-□□
	100R-32-□-S014	32	BT□□-FMC32-□□
	125R-40-□-S014	40	BT□□-FMC40-□□
<b>TP8PC</b>	080R-25.4-□-S014	25.4	BT□□-FMA25.4-□□
	100R-31.75-□-S014	31.75	BT□□-FMA31.75-□□
	125R-38.1-□-SA14	38.1	BT□□-FMA38.1-□□

## Parts

Specification	Screw 	Wrench 
Ø40	FTGA0511-P	TW20-100
Ø50 ~ Ø125	FTGA0513-P	TW20-100

# TP8PS-S014



AA  
90°

• AR: -6°  
• RR: -29° ~ -23°

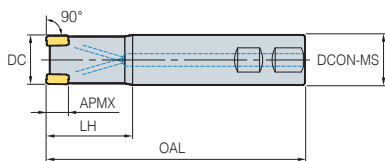


Fig. 1

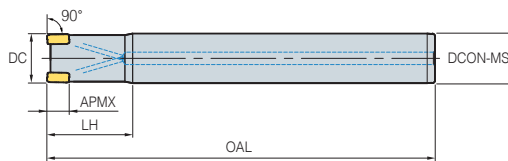


Fig. 2

(mm)

	Designation	Stock		DC	DCON-MS	LH	OAL	APMX		Fig.
<b>TP8PS</b>	032R-2W32-130-S014	●	2	32	32	40	130	11	0.70	1
	032R-3W32-130-S014	●	3	32	32	40	130	11	0.69	1
	032R-2C32-250-S014	●	2	32	32	50	250	11	1.40	2
	032R-3C32-250-S014	●	3	32	32	50	250	11	1.39	2
	040R-3W32-130-S014	●	3	40	32	40	130	11	0.78	1
	040R-4W32-130-S014	●	4	40	32	40	130	11	0.77	1
	040R-3C32-250-S014	●	3	40	32	50	250	11	1.51	2
	040R-4C32-250-S014	●	4	40	32	50	250	11	1.51	2

●: Stock item

## Available inserts



SOKX-ML

Designation	Coated	
	PC5300	
<b>SOKX</b> 1406XPNR-ML	●	
140608PNR-ML	●	

●: Stock item

## Parts

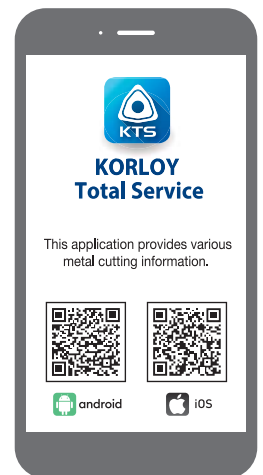
Specification	Screw 	Wrench 
Ø32	FTGA0511-P	TW20-100
Ø40	FTGA0513-P	TW20-100

### ⚠ For the safe metalcutting

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