

Right angle milling tool with tangential double-sided 8 corners

# TP8P **Tangen Pro series**



- 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

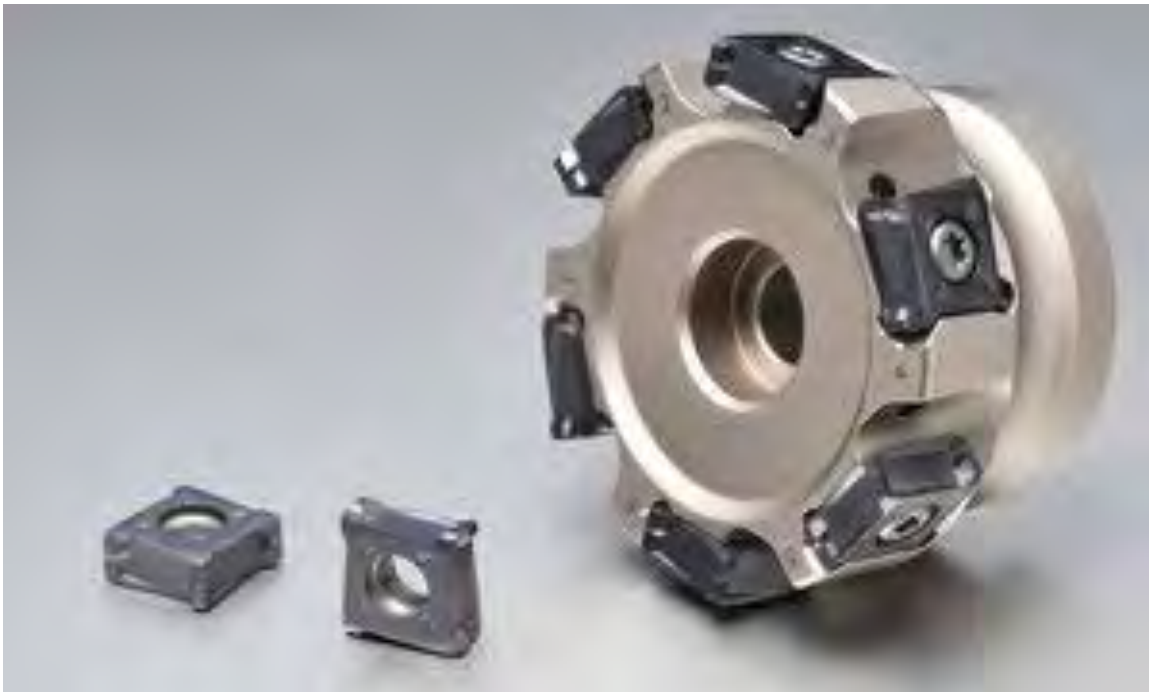
## TP8P Tangen Pro series

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.

Each cutting edge has a targeted coolant hole that extends the life of the cutting edges in heavy cutting conditions.

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

### Stable clamping

- Tangential-typed clamping structure

### Good cutting performance

- High helix and sharp chip breaker

### 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	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		No. of tooth 3: 3 teeth	Shank type W: Weldon C: Cylinder	Shank dia. 32: Ø32 mm		Overall length 110: 110 mm		Available insert S014: SOKX14

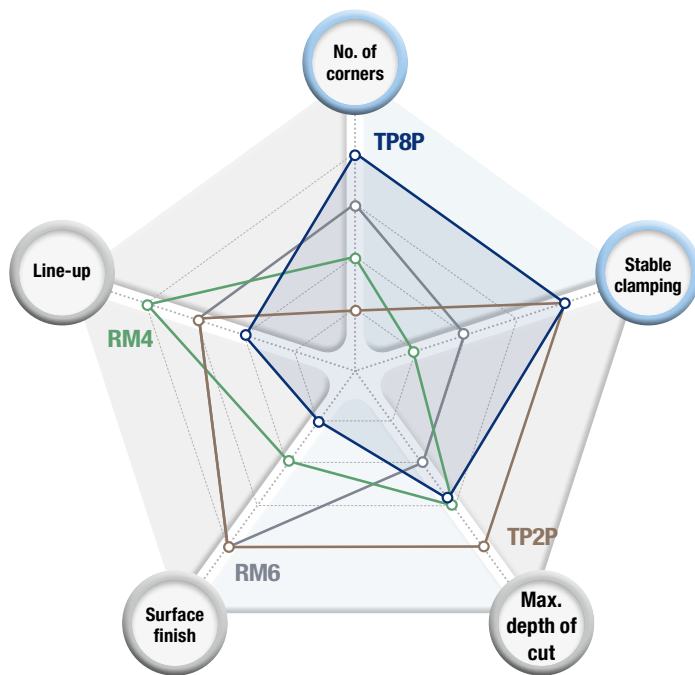
## Recommended grade and cutting edge

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> )	Brinell hardness (HB)	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 1020 1025	1500	< 180	150	0.15	2-7
						200	0.20	
						250	0.15	
	Alloy steel	C45 C60	1045 1050 1060	1700	180-290	150	0.10	
						200	0.20	
						250	0.15	
Die steel	-	KP4M	2020	270-290	120	0.10		
					150	0.10		
					110	0.15		
K	Gray cast iron	250 350	No 25 B No 35 B	900	< 240	160	0.12	2-7
						180	0.10	
						150	0.20	
	Ductile cast iron	400-15 150-10 600-3	60-40-18 65-45-12 80-55-06	870	< 180	200	0.15	

# Tool selection guide



## TP8P <sup>new</sup>

- 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

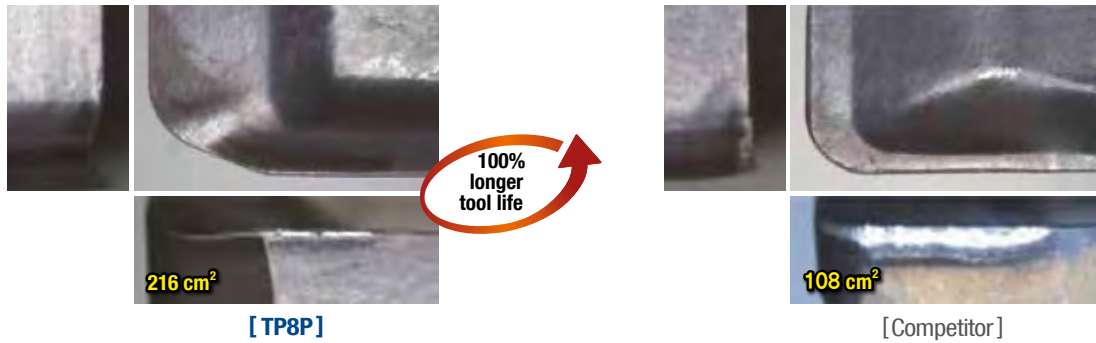


Tool	No. of corners	Stable clamping	Max. depth of cut	Surface finish	Line-up
TP8P <sup>new</sup>	★★★★★	★★★★★	★★★	★	★★
TP2P	★	★★★★★	★★★★★	★★★★★	★★★
RM4	★★	★	★★★	★★	★★★★★
RM6	★★★	★★	★★	★★★★★	★★★

# Performance evaluation

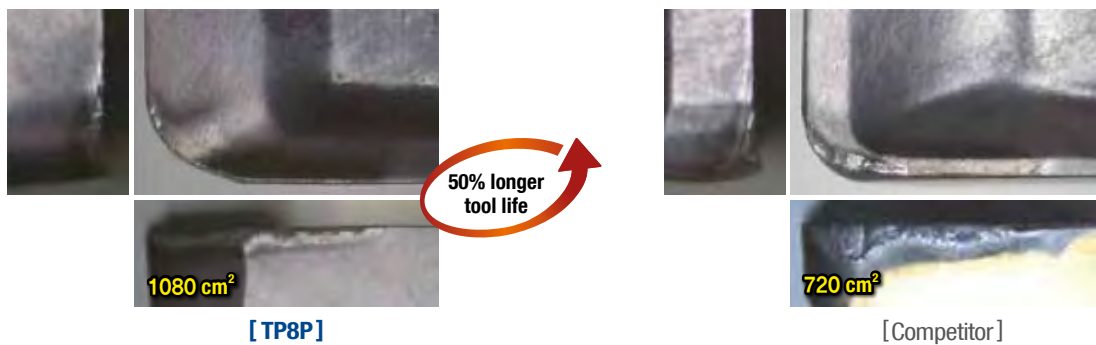
## Wear resistance

<b>Workpiece</b>	Cast iron (600-3) · 300 × 200 × 100 mm · rectangular tube		
<b>Cutting conditions</b>	vc = 150 m/min · fz = 0,15 mm/t · ap = 3,0 mm · ae = 40 mm · 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) · 300 × 200 × 100 mm · rectangular tube		
<b>Cutting conditions</b>	vc = 200 m/min · fz = 0,2 mm/Z · ap = 3,0 mm · dry		
<b>Tools</b>	<b>Insert</b> SOKX1406XPNR-ML (PC5300)	<b>Holder</b> TP8PCM063R-22-6-S014	

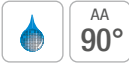


## Insert

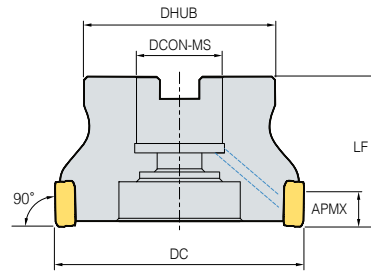
Picture	Designation	Coated	Dimensions (mm)					Geometries
		PC5300	INSL	W1	BS	RE	APMX	
	SOKX 1406XPNR-ML	●	14,47	6,5	1,35	-	11	
	SOKX 140608PNR-ML	●	14,47	6,5	1,69	0,8	11	

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

# TP8PCM-SO14



• AR: -6°  
• RR: -23°--18°



(mm)

Designation	Stock		DC	DHUB	DCON-MS	LF	APMX	
<b>TP8PCM</b> 040R-16-3-S014	●	○	40	34	16	40	11	0,18
040R-16-4-S014	●	○	40	34	16	40	11	0,17
050R-22-4-S014	●	○	50	45	22	40	11	0,28
050R-22-5-S014	●	○	50	45	22	40	11	0,27
050R-22-6-S014	●	○	50	45	22	40	11	0,28
063R-22-6-S014	●	○	63	49	22	40	11	0,44
063R-22-7-S014	●	○	63	49	22	40	11	0,45
063R-22-8-S014	●	○	63	49	22	40	11	0,45
080R-27-6-S014	●	○	80	60	27	50	11	0,87
080R-27-7-S014	●	○	80	60	27	50	11	0,86
080R-27-9-S014	●	○	80	60	27	50	11	0,89
100R-32-8-S014	●	○	100	70	32	63	11	1,79
100R-32-12-S014	●	○	100	70	32	63	11	1,80
125R-40-9-S014	●	○	125	90	40	63	11	2,95
125R-40-15-S014	●	○	125	90	40	63	11	2,96

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

## Available inserts



SOKX-ML

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

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

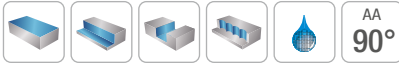
## Available arbors

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

Designation	Screw 	Wrench 
Ø40	FTGA0511-P	TW20-100
Ø50 - Ø125	FTGA0513-P	TW20-100

# TP8PS-SO14



AA  
90°  
• AR: -6°  
• RR: -29°--23°

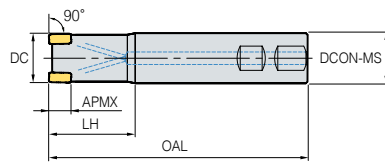


Fig. 1

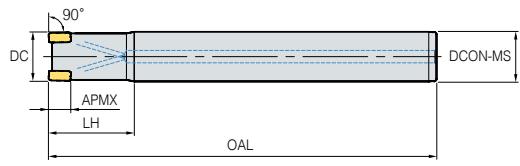


Fig. 2

(mm)

	Designation	Stock		DC	DCON-MS	LH	OAL	APMX		Fig.
TP8PS	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 Europe ● : Stock item Korea ○ : Production on demand

## Available inserts



SOKX-ML

Designation	Coated PC5300
SOKX 1406XPNR-ML	●
140608PNR-ML	●

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

## Parts

Designation	Screw	Wrench
∅32	FTGA0511-P	TW20-100
∅40	FTGA0513-P	TW20-100

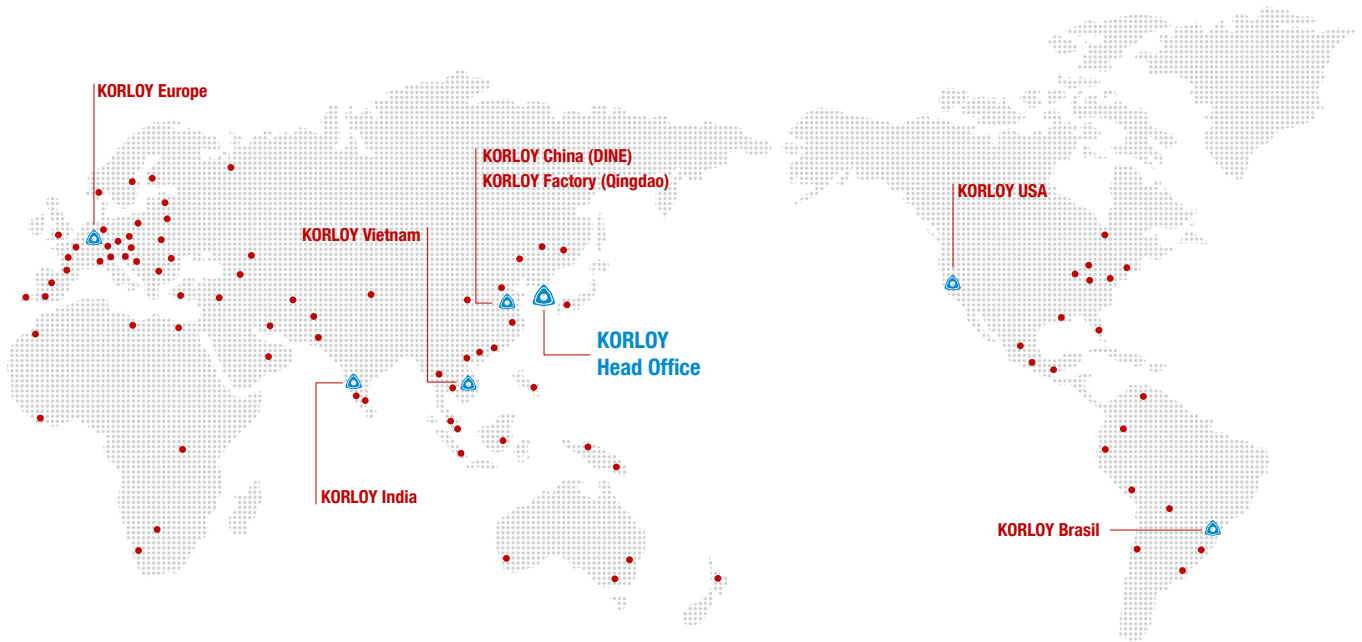
### ⚠ For the safe metalcutting

- 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 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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