



For more information

Face milling cutter

**TPW** / **EPW**

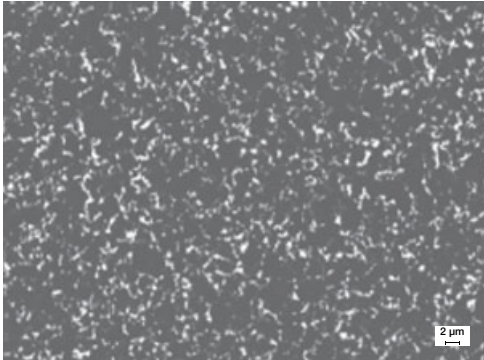
Tungaloy Report No. 358S1-US

Introducing **CBN inserts** for increased productivity and tool life in cast iron



## CBN grade inserts for high-speed cast iron machining

- High CBN content grade composed of extremely dense medium CBN grains



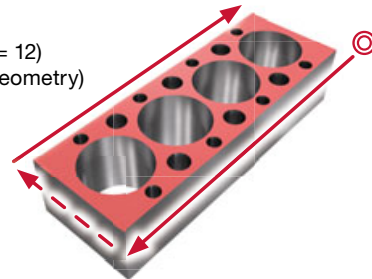
### BX480 **K**

- High hardness
- High toughness
- High thermal conductivity

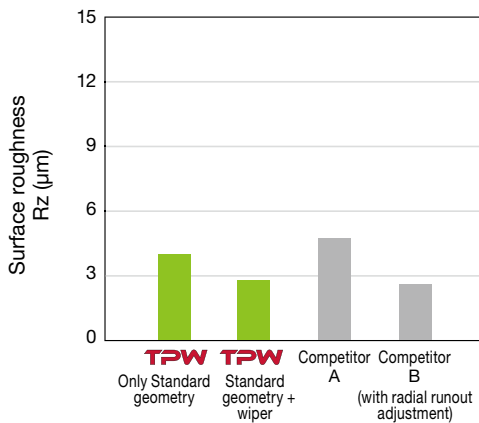
**Enables high speed machining of cast iron**

### Cutting performance

<b>K</b>	Cutter	: TPW13R600U200A15 (DCX = 6.000", CICT = 12)
	Insert	: 2-SWGW130508PDLR BX480 (Standard geometry) : WSGW130508PDLR BX480 (Wiper)
	Workpiece material	: Class 30 (220HB)
	Cutting speed	: $V_c = 4,921$ sfm
	Feed per tooth	: $f_z = 0.006$ ipt
	Depth of cut	: $a_p = 0.012$ "
	Width of cut	: $a_e = 3.937$ " / 2.362"
	Coolant	: Dry

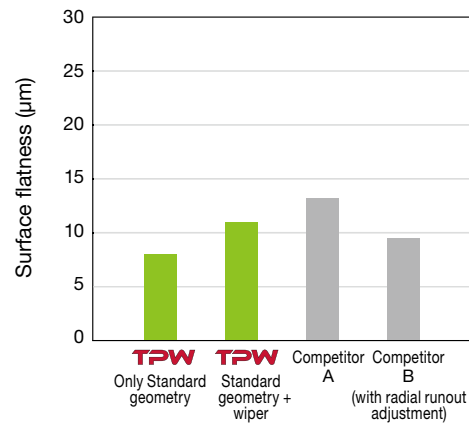


#### Surface roughness



**With standard inserts only and no wiper, TPW provided better surface roughness compared to Competitor A with no radial run-out adjustments. With standard + wiper inserts mixed, TPW provided the same surface quality as the competitor B with radial run-out adjustments.**

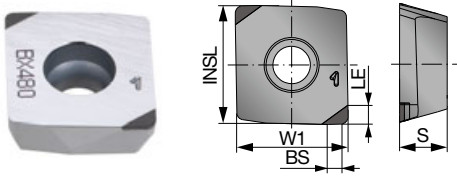
#### Surface flatness



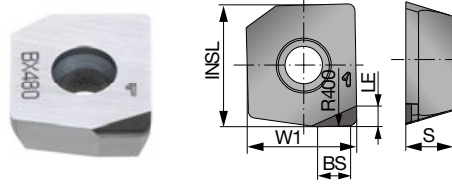
**With standard inserts only, TPW provided better surface flatness compared to Competitor A or B.**

# INSERTS

## F2-SWGW...



## WSGW... (Wiper edge)



P	Steel								
M	Stainless								
K	Cast iron	★							
N	Non-ferrous								
S	Superalloys								
H	Hard materials								

★ : First choice  
☆ : Second choice

Designation	RE	APMX	CBN							LE	INSL	W1	S	BS
			BX480											
F2-SWGW130508PDLSR	0.031	0.020	●							0.079	0.543	0.516	0.220	0.059
WSGW130508PDLSR	0.031	-	●							0.079	0.563	0.504	0.220	0.146




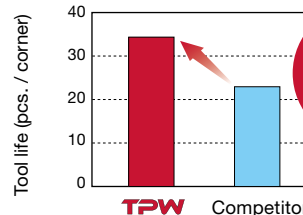
CBN inserts are not designed to be reground.  
F2-SWGW... inserts are sold in 5 pcs per box. (The prefix "F" indicates five)

● : New product

## STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Grades	Shape	Cutting speed Vc (sfm)	Feed per tooth fz (ipt)
K	Gray cast iron Class 25, etc.	BX480	2-SWGW130508PDLSR	2625 - 4921	0.002 - 0.012

## PRACTICAL EXAMPLES

Workpiece type	Cylinder block	Cylinder block	
Cutter	TPW13R500U0150A08 (DCX = 5.000", CICT = 8)	TPW13 cutter (customized, DCX: 10.000", CICT = 12)	
Insert	2-SWGW130508PDLSR x6, WSWG130508PDLSR x2	2-SWGW130508PDLSR x10, WSWG130508PDLSR x2	
Grade	BX480	BX480	
	Class 25	Class 25	
Workpiece material	 <b>K</b>	 <b>K</b>	
Cutting conditions	Cutting speed: Vc (sfm)	2,625	3,865 - 4,124
	Feed per tooth: fz (ipt)	0.004	0.002 - 0.004
	Feed speed : Vf (ipm)	69.291	35.433 - 77.953
	Depth of cut : ap (in)	0.008	0.008
	Width of cut : ae (in)	- 3.150	- 7.874
	Machining	Face milling	Face milling
	Coolant	Dry	Dry
Machine	Horizontal M/C, KM100	Horizontal M/C, KM100	
Results	 <p><b>Tool life 3.2 times!</b></p> <p>TPW provided 3.2 times tool life thanks to its strong cutting edge design.</p>	 <p><b>Tool life 1.5 times!</b></p> <p>Thanks to its light-cutting geometry, TPW eliminated chatter, extending tool life by 1.5 times.</p>	

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