



For more information

Face milling cutter

TPW / EPW

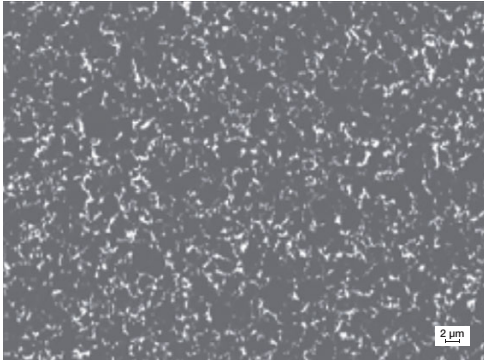
Tungaloy Report No. 358S1-G

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



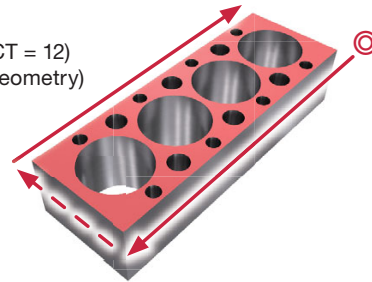
BX480 **K**

- High hardness
- High toughness
- High thermal conductivity

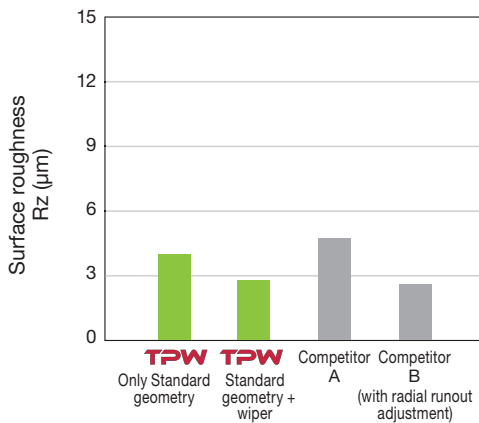
Enables high speed machining of cast iron

Cutting performance

K	Cutter	: TPW13R160M40.0E12 (DCX = 160 mm, CICT = 12)
	Insert	: 2-SWGW130508PDLR BX480 (Standard geometry) : WSGW130508PDLR BX480 (Wiper)
	Workpiece material	: FC300 / 300 (220HB)
	Cutting speed	: $V_c = 1,500$ m/min
	Feed per tooth	: $f_z = 0.15$ mm/t
	Depth of cut	: $a_p = 0.3$ mm
	Width of cut	: $a_e = 100 / 60$ mm
	Coolant	: Dry

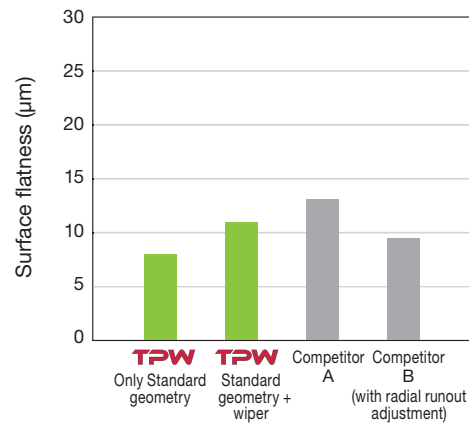


Surface roughness



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.

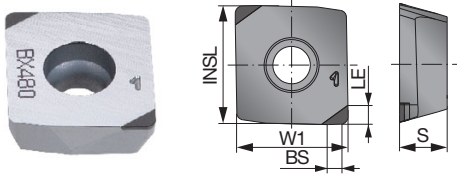
Surface flatness



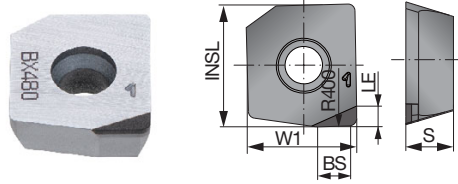
With standard inserts only, TPW provided better surface flatness compared to Competitor A or B.

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	0.8	0.5	●							2	13.8	13.1	5.6	1.5
WSGW130508PDLSR	0.8	-	●							2	14.3	12.8	5.6	3.7


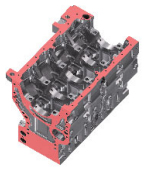

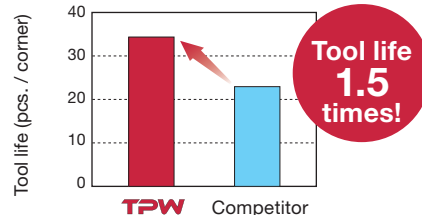
CBN inserts are not designed to be reground.
F2-SWGW... inserts are sold in 5 pcs per box. (The prefix "F" indicates five)

● : New product

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Grades	Shape	Cutting speed Vc (m/min)	Feed per tooth fz (mm/t)
K	Grey cast iron FC250, etc. 250, etc.	BX480	2-SWGW130508PDLSR	800 - 1500	0.05 - 0.3

PRACTICAL EXAMPLES

Workpiece type	Cylinder block	Cylinder block	
Cutter	TPW13R125M38.1-08 (DCX = 125 mm, CICT = 8)	TPW13 cutter (customized, DCX: 250 mm, CICT: 12 mm)	
Insert	2-SWGW130508PDLSR x6, WSWG130508PDLSR x2	2-SWGW130508PDLSR x10, WSWG130508PDLSR x2	
Grade	BX480	BX480	
	FC250 / 250	FC250 / 250	
Workpiece material	 K	 K	
Cutting conditions	Cutting speed: Vc (m/min)	800	1,178 ~ 1,257
	Feed per tooth: fz (mm/t)	0.11	0.05 ~ 0.11
	Feed speed : Vf (mm/min)	1,760	900 ~ 1,980
	Depth of cut : ap (mm)	0.2	0.2
	Width of cut : ae (mm)	~ 80	~ 200
	Machining	Face milling	Face milling
	Coolant	Dry	Dry
Machine	Horizontal M/C, KM100	Horizontal M/C, KM100	
Results	 <p>Tool life 3.2 times!</p> <p>TPW provided 3.2 times tool life thanks to its strong cutting edge design.</p>	 <p>Tool life 1.5 times!</p> <p>Thanks to its light-cutting geometry, TPW eliminated chatter, extending tool life by 1.5 times.</p>	

Tungaloy Corporation (Head office)

11-1 Yoshima-Kogyodanchi
Iwaki-city, Fukushima 970-1144 Japan
Phone: +81-246-36-8501
Fax: +81-246-36-8542
www.tungaloy.co.jp

Tungaloy-NTK America Inc.

3726 N Ventura Drive
Arlington Heights, IL 60004, U.S.A.
Phone: +1-888-554-8394
Fax: +1-888-554-8392
www.tungaloy.com/us

Tungaloy Canada

432 Elgin St. Unit 3
Brantford, Ontario N3S 7P7, Canada
Phone: +1-519-758-5779
Fax: +1-519-758-5791
www.tungaloy.com/ca

Tungaloy-NTK De Mexico S.A.

C. Los Arellano 113,
Parque Industrial Siglo XXI
Aguascalientes, AGS, Mexico 20290
Phone: +52-449-929-5410
Fax: +52-449-929-5411
www.tungaloy.com/mx

Tungaloy-NTK do Brasil Ltda.

Avd. Independencia N4158 Residencial Flora
13280-000 Vinhedo, São Paulo, Brasil
Phone: +55-19-38262757
Fax: +55-19-38262757
www.tungaloy.com/br

Tungaloy-NTK Germany GmbH.

Katzbergstr. 3a
D-40764 Langenfeld, Germany
Phone: +49-2173-90420-0
Fax: +49-2173-90420-19
www.tungaloy.com/de

Tungaloy France s.a.s

Les Fjords
19 avenue de Norvège
91140 Villebon Sur Yvette, France
Phone: +33-1-6486-4300
Fax: +33-1-6907-7817
www.tungaloy.com/fr

Tungaloy Italia S.r.l.

Via E. Andolfato 10
I-20126 Milano, Italy
Phone: +39-02-252012-1
Fax: +39-02-252012-65
www.tungaloy.com/it

Tungaloy Czech s.r.o.

Turanka 115
CZ-627 00 Brno, Czech Republic
Phone: +420-532 123 391
Fax: +420-532 123 392
www.tungaloy.com/cz

Tungaloy Ibérica S.L.

C/Miquel Servet, 43B, Nau 7
Pol. Ind. Bufalvent
ES-08243 Manresa (BCN), Spain
Phone: +34 93 113 1360
www.tungaloy.com/es

Tungaloy Scandinavia AB

Bultgatan 38
442 40 Kungälv, Sweden
Phone: +46-462119200
Fax: +46-462119207
www.tungaloy.com/se

Tungaloy Rus, LLC

Andropova avenue, h.18/7,
11 floor, office 3, 115432,
Moscow, Russia
Phone: +7-499-683-01-80
Fax: +7-499-683-01-81
www.tungaloy.com/ru

Tungaloy Polska Sp. z o.o.

Ul. Irysowa 1, 55-040 Bielany
Wroclawskie, Poland
Phone: +48 607 907 237
www.tungaloy.com/pl

Tungaloy-NTK UK Ltd.

Suite 3, Pioneer House, Mill Street,
Cannock, WS11 0EF, UK
Phone: +44 121 4000 231
Fax: +44 121 270 9694
www.tungaloy.com/uk

Tungaloy Hungary Kft

Erzsébet királyné útja 125
H-1142 Budapest, Hungary
Phone: +36 1 781-6846
Fax: +36 1 781-6866
www.tungaloy.com/hu

Tungaloy Turkey

Serifali Mah.bayraktar Bulvari Kule Sk. No:26
34775 Umraniye / Istanbul / Turkey
Phone: +90 216 540 04 67
Fax: +90 216 540 04 87
www.tungaloy.com/tr

Tungaloy Benelux b.v.

Tjalk 70
NL-2411 NZ Bodegraven, Netherlands
Phone: +31 172 630 420
Fax: +31 172 630 429
www.tungaloy.com/nl

Tungaloy Croatia

Ulica bana Josipa Jelačića 87,
10430, Samobor, Croatia
Phone: +385 1 3326 604
Fax: +385 1 3327 683
www.tungaloy.com/hr

Tungaloy Cutting Tool (Shanghai) Co. Ltd.

Rm No 401 No.88 Zhabei
Jiangchang No.3 Rd
Shanghai 200436, China
Phone: +86-21-3632-1880
Fax: +86-21-3621-1918
www.tungaloy.com/cn

Tungaloy Cutting Tools Taiwan Co. Ltd.

9F, No.293, Zhongyang Rd,
Xinzhuang Dist, New Taipei City,
24251 Taiwan
Phone: +886-2-8521-9986
Fax: +886-2-8521-8935
www.tungaloy.com/tw

Tungaloy-NTK Cutting Tool (Thailand) Co.,Ltd.

Interlink tower 4th Fl.
1858/5-7 Bangna-Trad Road
km.5 Bangna, Bangna, Bangkok 10260
Thailand
Phone: +66-2-751-5711
Fax: +66-2-751-5715
www.tungaloy.com/th

Tungaloy Singapore (Pte.), Ltd.

62 Ubi Road 1, #06-11 Oxley BizHub 2
Singapore 408734
Phone: +65-6391-1833
Fax: +65-6299-4557
www.tungaloy.com/sg

Tungaloy-NTK Vietnam LLC

3rd Floor, Licogi 13 Tower, 164 Khuat Duy
Tien, Nhan Chinh, Thanh Xuan District,
Hanoi, Vietnam
Phone: +84 24 63282086
www.tungaloy.com/vn

Tungaloy India Pvt. Ltd.

One International Center,
Unit # 902-A, 9th Floor,
Tower 1, Senapati Bapat Marg,
Elphinstone Road (West),
Mumbai 400013, India
Phone: +91-22-6124-8803
Fax: +91-22-6124-8899
www.tungaloy.com/in

Tungaloy Korea Co., Ltd

#1312, Byucksan Digital Valley 5-cha
Beotkkot-ro 244, Geumcheon-gu
153-788 Seoul, Korea
Phone: +82-2-2621-6161
Fax: +82-2-6393-8952
www.tungaloy.com/kr

Tungaloy Malaysia Sdn Bhd

50 K-2, Kelana Mall, Jalan SS6/14
Kelana Jaya, 47301
Petaling Jaya, Selangor Darul Ehsan
Malaysia
Phone: +603-7805-3222
Fax: +603-7804-8563
www.tungaloy.com/my

Tungaloy Australia Pty Ltd

Unit 68 1470 Ferntree Gully Road
Knoxfield 3180 Victoria, Australia
Phone: +61-3-9755-8147
Fax: +61-3-9755-6070
www.tungaloy.com/au

PT. Tungaloy Indonesia

Ruko Blok AA.10 No3&5, Grand Wisata,
Lambangjaya, Tambun Selatan, Bekasi,
17510 Indonesia
Phone: +62-21-8261-5808
Fax: +62-21-8261-5809
www.tungaloy.com/id



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