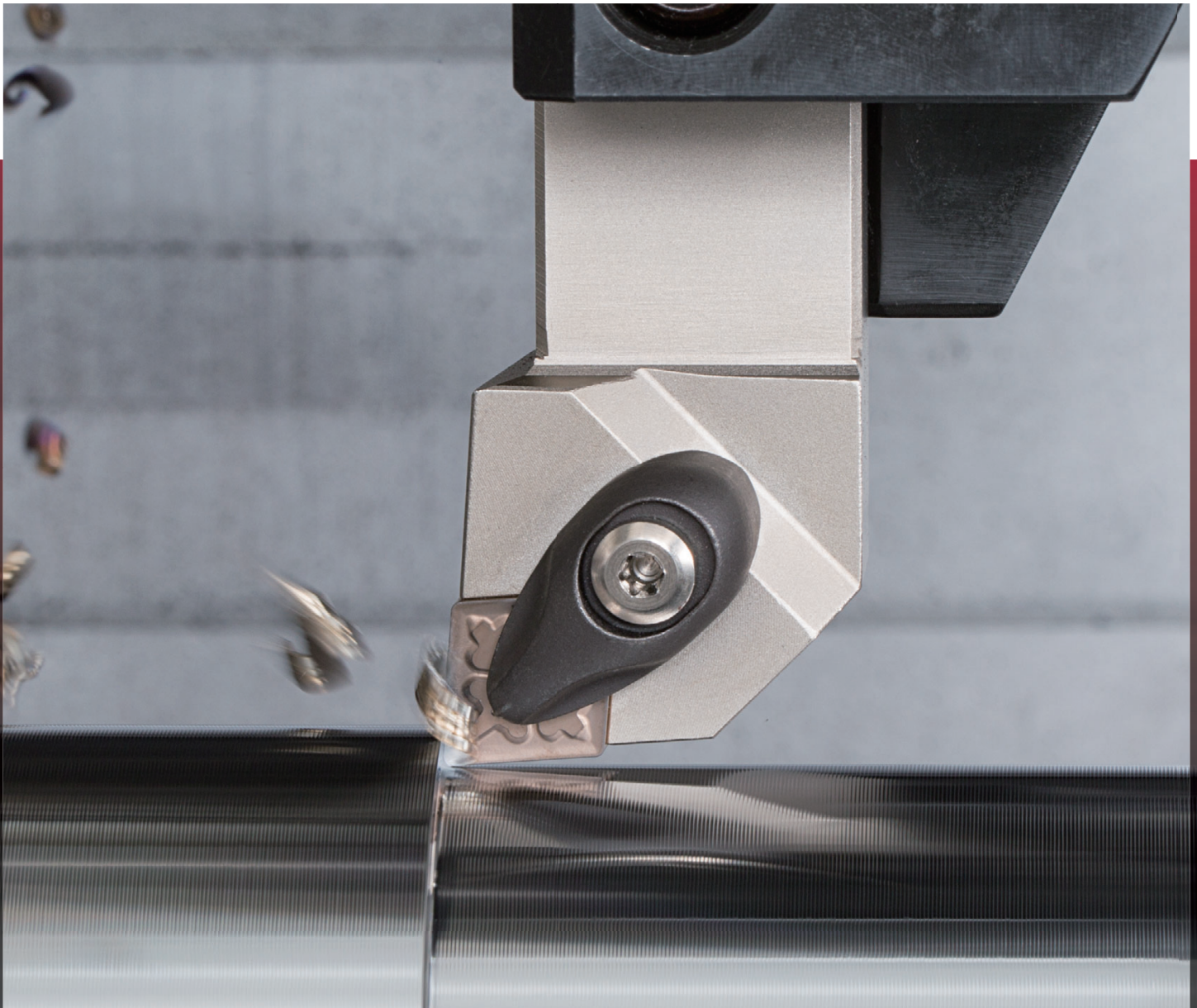


# T9200 SERIES

Tungaloy Report No. 513S1-G

**PS and PM chipbreakers are now available** on negative inserts for steel turning



# T9200 SERIES



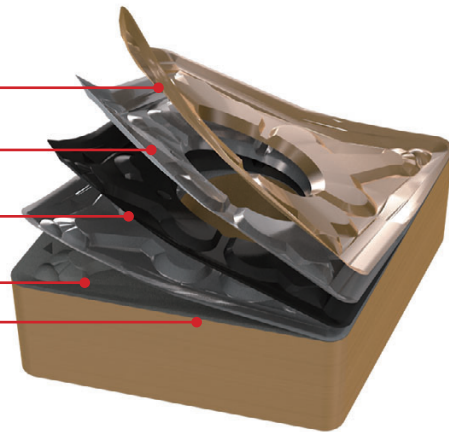
For more information

The T9200 series now offers new chipbreaker geometries **PS** and **PM** for steel turning

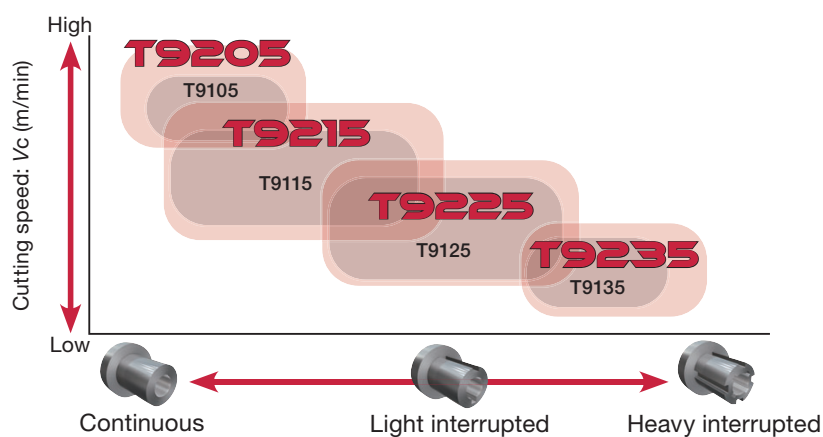
## PREMIUMTEC

A new surface treatment technology is applied, making T9200 series hard to break

- Outermost layer
- Ti-layer
- Al<sub>2</sub>O<sub>3</sub>
- Ti compound
- Specially designed substrate



### APPLICATION AREA

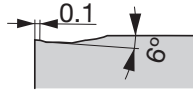


Application	Grade	Substrate			Coating layer	
		Specific gravity	Hardness (HRA)	T.R.S. (GPa)	Main composition	Thickness (µm)
<b>P</b>	T9205	14.2	91.5	2.4	Ti compound + Al <sub>2</sub> O <sub>3</sub>	18
	T9215	14	90.5	2.6	Ti compound + Al <sub>2</sub> O <sub>3</sub>	18
	T9225	13.8	89.8	2.7	Ti compound + Al <sub>2</sub> O <sub>3</sub>	18
	T9235	13.6	89	2.7	Ti compound + Al <sub>2</sub> O <sub>3</sub>	18

## ■ New chipbreaker geometries for steel turning

New

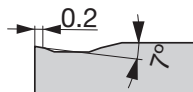
**PS**



Unique geometry to provide better crater wear resistance and chip control during turning at light cutting depths.

New

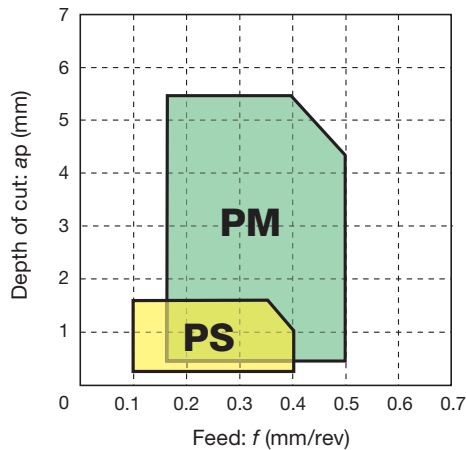
**PM**



Versatile geometry with optimized cutting edge design to provide superior chip control in wide range of applications.

New

### Chipbreakers (complementary)



## ■ STANDARD CUTTING CONDITIONS

ISO	Operation	Chipbreaker	Grade	Depth of cut $a_p$ (mm)	Feed $f$ (mm/rev)	Cutting speed: $V_c$ (m/min)		
						Low carbon steels, alloy steels	Medium carbon steels, alloy steels	High carbon steels, alloy steels
<b>P</b>	Finishing	New PS	T9215	0.3 - 1.5	0.1 - 0.4	150 - 400	150 - 400	120 - 300
		T9225	0.3 - 1.5	0.1 - 0.4	120 - 300	120 - 300	100 - 250	
	Medium cutting	New PM	T9215	0.5 - 5.5	0.15 - 0.5	150 - 400	150 - 400	120 - 300
		T9225	0.5 - 5.5	0.15 - 0.5	120 - 300	120 - 300	100 - 250	

# T9200 SERIES

Insert **NEGATIVE TYPE**

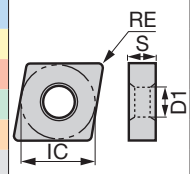
- : Continuous cutting
- : Light interrupted cutting
- : Heavy interrupted cutting

## CN



**Rhombic, 80° with hole**

<b>P</b>	Steel	●●●
<b>M</b>	Stainless	●●
<b>K</b>	Cast iron	●●
<b>N</b>	Non-ferrous	
<b>S</b>	Superalloy	
<b>H</b>	Hard material	



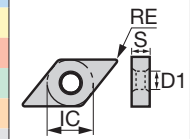
Application	Chipbreaker	Designation	Coated		Dimension (mm)			
			T9215	T9225	RE	IC	S	D1
Finishing		<b>PS</b> <b>CNMG120404-PS</b>	●●	●●	0.4	12.7	4.76	5.16
		<b>CNMG120408-PS</b>	●●	●●	0.8	12.7	4.76	5.16
		<b>CNMG120412-PS</b>	●●	●●	1.2	12.7	4.76	5.16
Medium cutting		<b>PM</b> <b>CNMG120404-PM</b>	●●	●●	0.4	12.7	4.76	5.16
		<b>CNMG120408-PM</b>	●●	●●	0.8	12.7	4.76	5.16
		<b>CNMG120412-PM</b>	●●	●●	1.2	12.7	4.76	5.16
		<b>CNMG120416-PM</b>	●●	●●	1.6	12.7	4.76	5.16

## DN



**Rhombic, 55° with hole**

<b>P</b>	Steel	●●●
<b>M</b>	Stainless	●●
<b>K</b>	Cast iron	●●
<b>N</b>	Non-ferrous	
<b>S</b>	Superalloy	
<b>H</b>	Hard material	



Application	Chipbreaker	Designation	Coated		Dimension (mm)			
			T9215	T9225	RE	IC	S	D1
Finishing		<b>PS</b> <b>DNMG150404-PS</b>	●●	●●	0.4	12.7	4.76	5.16
		<b>DNMG150408-PS</b>	●●	●●	0.8	12.7	4.76	5.16
		<b>DNMG150412-PS</b>	●●	●●	1.2	12.7	4.76	5.16
		<b>DNMG150604-PS</b>	●●	●●	0.4	12.7	6.35	5.16
		<b>DNMG150608-PS</b>	●●	●●	0.8	12.7	6.35	5.16
		<b>DNMG150612-PS</b>	●●	●●	1.2	12.7	6.35	5.16
Medium cutting		<b>PM</b> <b>DNMG150404-PM</b>	●●	●●	0.4	12.7	4.76	5.16
		<b>DNMG150408-PM</b>	●●	●●	0.8	12.7	4.76	5.16
		<b>DNMG150412-PM</b>	●●	●●	1.2	12.7	4.76	5.16
		<b>DNMG150604-PM</b>	●●	●●	0.4	12.7	6.35	5.16
		<b>DNMG150608-PM</b>	●●	●●	0.8	12.7	6.35	5.16
		<b>DNMG150612-PM</b>	●●	●●	1.2	12.7	6.35	5.16
		<b>DNMG150616-PM</b>	●●	●●	1.6	12.7	6.35	5.16

● : New



# T9200 SERIES

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

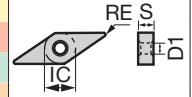
## Insert NEGATIVE TYPE

### VN



**Rhombic, 35°  
with hole**

Material	Steel	Stainless	Cast iron	Non-ferrous	Superalloy	Hard material
P	●●●✱	●●	●●	●	●	●
M	●●	●●●	●	●	●	●
K	●●	●	●●●	●	●	●
N	●	●	●	●●●	●	●
S	●	●	●	●	●●●	●
H	●	●	●	●	●	●●●



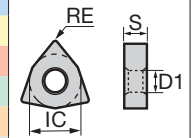
Application	Chipbreaker	Designation	Coated		Dimension (mm)			
			T9215	T9225	RE	IC	S	D1
Finishing		<b>PS</b> VNMG160404-PS	●	●	0.4	9.525	4.76	3.81
		VNMG160408-PS	●	●	0.8	9.525	4.76	3.81
Medium cutting		<b>PM</b> VNMG160408-PM	●	●	0.8	9.525	4.76	3.81
		VNMG160412-PM	●	●	1.2	9.525	4.76	3.81

### WN



**Trigon, 80°  
with hole**

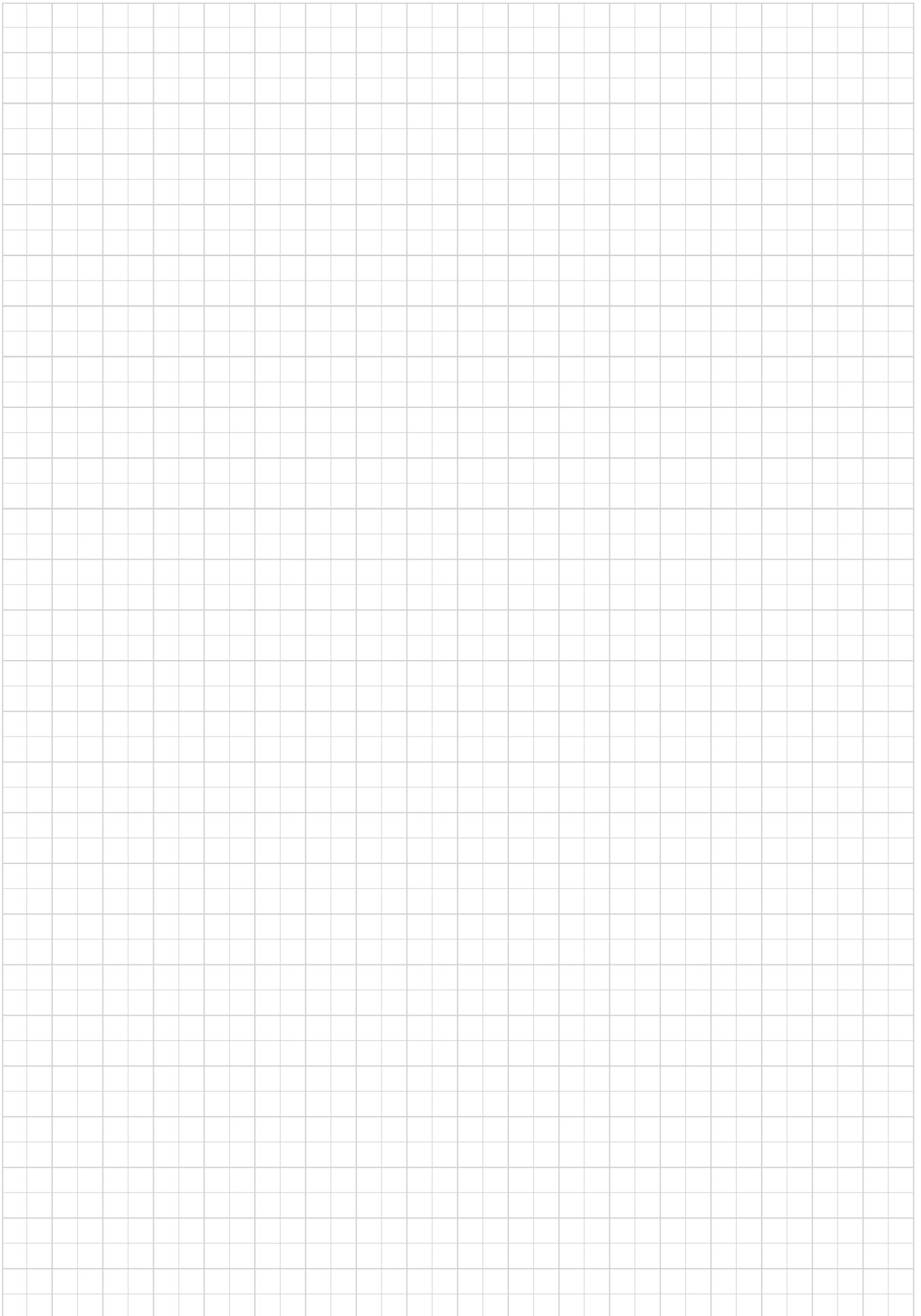
Material	Steel	Stainless	Cast iron	Non-ferrous	Superalloy	Hard material
P	●●●✱	●●	●●	●	●	●
M	●●	●●●	●	●	●	●
K	●●	●	●●●	●	●	●
N	●	●	●	●●●	●	●
S	●	●	●	●	●●●	●
H	●	●	●	●	●	●●●



Application	Chipbreaker	Designation	Coated		Dimension (mm)			
			T9215	T9225	RE	IC	S	D1
Finishing		<b>PS</b> WNMG080404-PS	●	●	0.4	12.7	4.76	5.16
		WNMG080408-PS	●	●	0.8	12.7	4.76	5.16
		WNMG080412-PS	●	●	1.2	12.7	4.76	5.16
Medium cutting		<b>PM</b> WNMG080408-PM	●	●	0.8	12.7	4.76	5.16
		WNMG080412-PM	●	●	1.2	12.7	4.76	5.16
		WNMG080416-PM	●	●	1.6	12.7	4.76	5.16

● : New

# MEMO



### 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 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 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 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 Germany GmbH

An der Alten Ziegelei 1  
D-40789 Monheim, Germany  
Phone: +49-2173-90420-0  
Fax: +49-2173-90420-19  
www.tungaloy.com/de

### Tungaloy France S.A.S.

ZA Courtaboeuf - Le Rio  
1 rue de la Terre de feu  
F-91952 Courtaboeuf Cedex, 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  
Fax: +34 93 876 2798  
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 U.K. Ltd

Gallan Park, Watling Street,  
Cannock, WS110XG, 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,  
Xinzhuan Dist, New Taipei City,  
24251 Taiwan  
Phone: +886-2-8521-9986  
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www.tungaloy.com/tw

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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/sing

### Tungaloy Vietnam

LE04.38, Lexington Residence  
67 Mai Chi Tho St., Dist. 2,  
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Phone: +84-2837406660  
www.tungaloy.com/sing

### Tungaloy India Pvt. Ltd.

Indiabulls Finance Centre,  
Unit # 902-A, 9th Floor,  
Tower 1, Senapati Bapat Marg,  
Elphinstone Road (West),  
Mumbai-400013, India  
Phone: +91-22-6124-8804  
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

Kompleks Grand Wisata Block AA-10 No.3-5  
Cibitung  
Bekasi 17510, Indonesia  
Phone: +62-21-8261-5808  
Fax: +62-21-8261-5809  
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