

MillLine

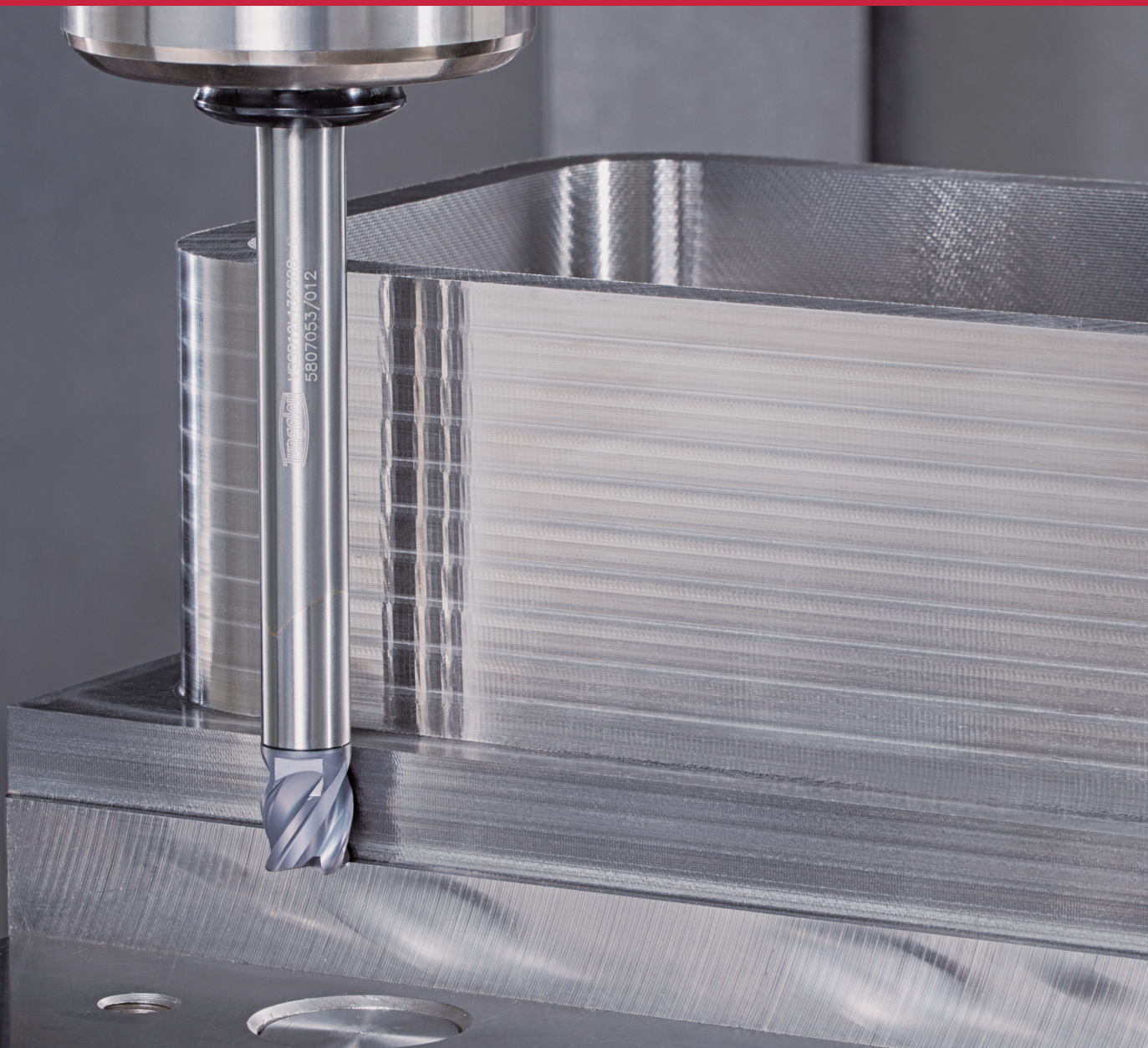


**TUNGMEISTER**

www.tungaloy.com

Tungaloy Report No. 381S1-G

**New Grade AH715** for longer tool life



**INDUSTRY 4.0**  
*FEED the SPEED!*



ACCELERATED MACHINING

MillLine

**TUNGMEISTER**  
TUNGALOY

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**The most effective tooling solution with the  
option of hundreds of tools!**

Tool changeover times can be measurably reduced!

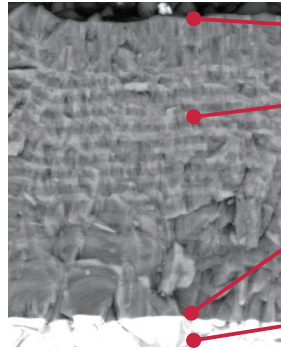
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## The new grade provides longer tool life thanks to the latest coating layer

### New AH715

- Unique nano-multilayered coating is made possible by Tungaloy's latest coating technology, providing 3 principal features



**Feature 1: Resistance to builtup-edge**

Coating layer to resist builtup-edge

**Feature 2: Resistance to wear, oxidation, and fracture**

2 coating layers for wear and oxidation resistance Layered alternatively to prevent crack from propagating to fracture

**Feature 3: Strong coating-substrate adhesion**

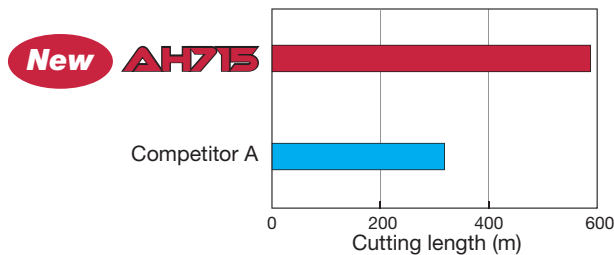
Coating is provided with strong adhesion between the coating layer and carbide substrate to prevent coating delamination

**Substrate**

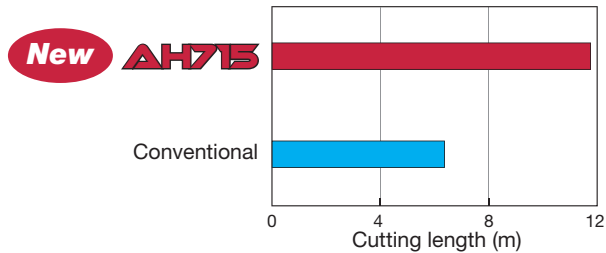
Carbide substrate features wear and fracture resistance

#### Tool life comparison in steel milling

AH715 provides longer tool life than existing grade

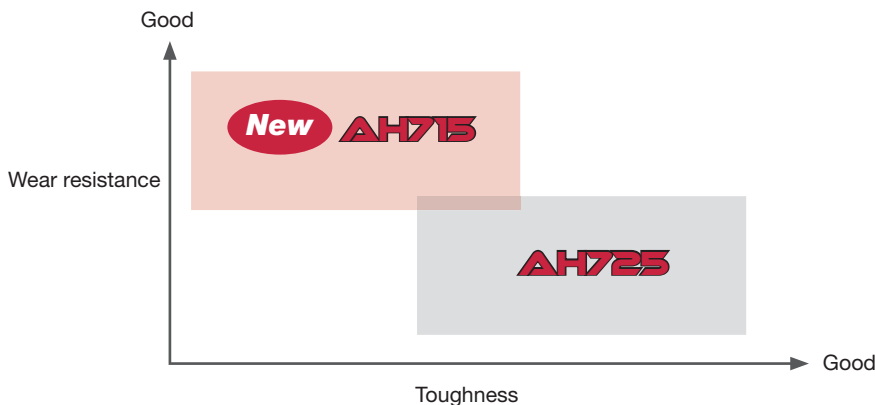


Shank : VSSD16L100S10-S  
 Head : VED160L12.0R05-04S10  
 Workpiece material : C55 (1055)  
 Cutting speed :  $V_c = 150$  m/min  
 Feed per tooth :  $f_z = 0.12$  mm/t  
 Depth of cut :  $a_p = 5$  mm  
 Width of cut :  $a_e = 1.5$  mm  
 Machine : V M/C, BT40



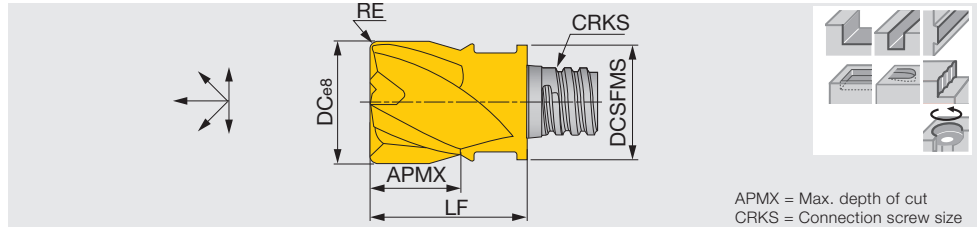
Shank : VSSD16L100S10-S  
 Head : VED160L12.0R05-04S10  
 Workpiece material : SKD11(D2) (HRC58)  
 Cutting speed :  $V_c = 60$  m/min  
 Feed per tooth :  $f_z = 0.05$  mm/t  
 Depth of cut :  $a_p = 5$  mm  
 Width of cut :  $a_e = 0.5$  mm  
 Machine : V M/C, BT40

## APPLICATION RANGE



## VEE\*\*-04..., VED\*\*-04...

TungMeister square head with 4 flutes for general purposes



APMX = Max. depth of cut  
CRKS = Connection screw size

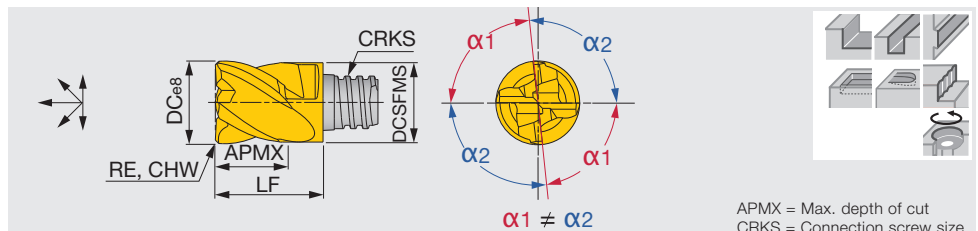
Designation	<b>New</b>	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE160L12.0R00-04S10	●	●	●	4	45°	16	15.3	12	-	S10	20.5	KEYV-S10	28
VED160L12.0R05-04S10	●	●	●	4	30°	16	15.3	12	0.5	S10	20.5	KEYV-S10	28

\*Torque: Recommended torque (N·m) for clamping.  
Packing quantity = 2 pcs.

●: Line up  
●: New

## VEE\*\*I...

TungMeister square head with irregular pitch flute for chatter free cutting



APMX = Max. depth of cut  
CRKS = Connection screw size

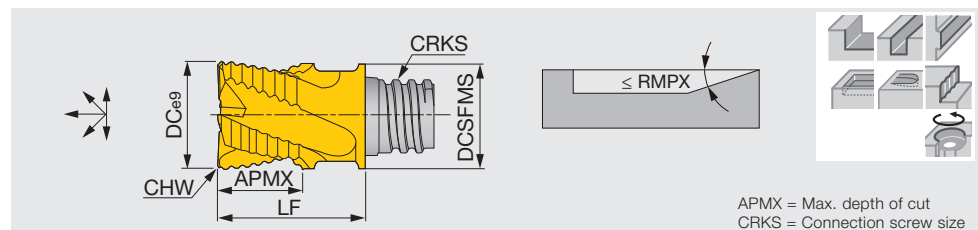
Designation	<b>New</b>	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VEE160L12.0C60I04S10	●	●	●	4	38°	16	15.3	12	-	0.6	S10	20.5	KEYV-S10	28

\*Torque: Recommended torque (N·m) for clamping.  
Packing quantity = 2 pcs.

●: Line up  
●: New

## VEE\*\*R...

TungMeister square head with serated edges for roughing



APMX = Max. depth of cut  
CRKS = Connection screw size

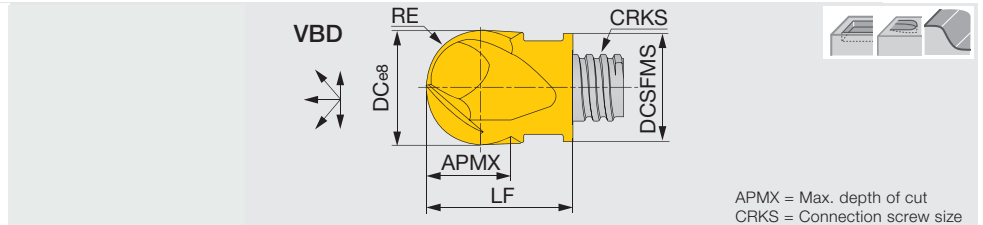
Designation	<b>New</b>	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	RMPX	Wrench	Torque*
VEE160L12.0C40R05S10	●	●	●	5	45°	16	15.3	12	0.4	S10	20.5	7°	KEYV-S10	28

\*Torque: Recommended torque (N·m) for clamping.  
Packing quantity = 2 pcs.

●: Line up  
●: New

## VBD\*\* -BG...

TungMeister ball nose head with 4 flutes and helical ground edge for finishing



APMX = Max. depth of cut  
CRKS = Connection screw size

Designation	<b>New</b>	AH715	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBD160L12.0-BG-04S10	●	●		4	30°	16	15.3	12	7.978	S10	20.5	KEYV-S10	28

• The tolerance of R : ± 0.012

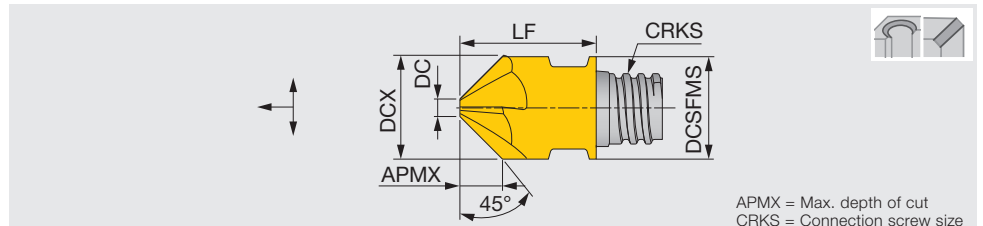
\*Torque: Recommended torque (N·m) for clamping.

Packing quantity = 2 pcs.

●: Line up  
●: New

## VCA\*\* -06...

TungMeister head with 4 or 6 flutes for countersinking and chamfering



APMX = Max. depth of cut  
CRKS = Connection screw size

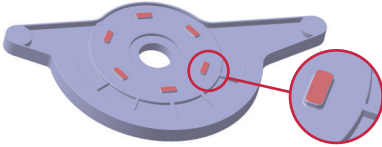

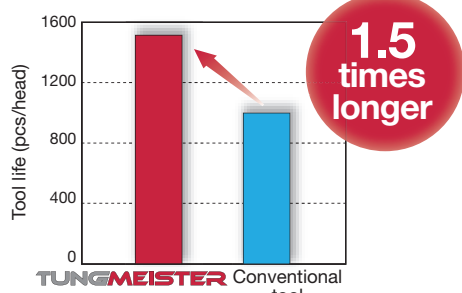
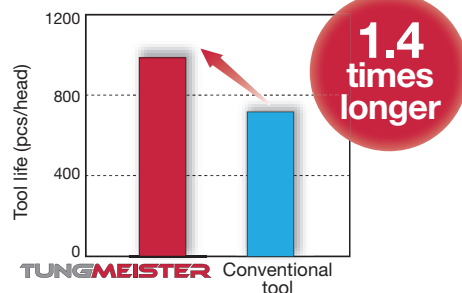
Designation	<b>New</b>	AH715	AH725	NOF	FHA	DCX	DCSFMS	APMX	DC	CRKS	LF	Wrench	Torque*
VCA160L06.5A45-06S10	●	●		6	0°	16	16	6.5	3	S10	20.3	KEYV-S10	28

\*\*Torque: Recommended torque (N·m) for clamping.

Packing quantity = 2 pcs.

●: Line up  
●: New

# PRACTICAL EXAMPLES

Workpiece type		Cover	Bolt sheat
Shank		VSSD16L100S10-S (Steel, $\phi 16$ )	VSSD16L100S10-S (Steel, $\phi 16$ )
Head		VED160L12.0R05-04S10 ( $\phi 16$ )	VED160L12.0C60I04S10 ( $\phi 16$ )
Grade		AH715 FC250	AH715 FCD400
Workpiece material			
Cutting conditions	Cutting speed :Vc (m/min)	250	60
	Feed per tooth :fz (mm/t)	0.12	0.08
	Depth of cut :ap (mm)	1	2
	Width of cut :ae (mm)	10	16
	Coolant	Dry	Wet
Results		 <p>AH715 adopted latest coating layer, so it was improved wear and chipping resistance. The result was 1.5 times longer and more stable tool life than conventional tool.</p>	 <p>AH715 adopted latest coating layer, so it was improved wear resistance. The result was 1.4 times longer tool life than conventional tool, and surface finish was kept good longer time.</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 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 Courtaboef - Le Rio  
1 rue de la Terre de feu  
F-91952 Courtaboef 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  
Wrocławskie, 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

Dudullu, OSB 4. Cad No:4  
34776 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  
Fax: +886-2-8521-8935  
www.tungaloy.com/tw

## Tungaloy Cutting Tools (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 Vietnam

LE04.38, Lexington Residence  
67 Mai Chi Tho St., Dist. 2,  
Ho Chi Minh City, Vietnam  
Phone: +84-2837406660  
www.tungaloy.com/sg

## 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-ca  
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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