

providing solutions for each industry

AUTOMOTIVE

www.tungaloy.com





INDUSTRY SOLUTIONS

y to the evelopm N The automotive industry, since its beginning in the 1890's,

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INDUSTRY

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has been one of the most powerful industries in the world. It continuosly demands new developments and improvements on the manufacturing processes.

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For this reason Tungaloy's engineering teams and factories are located near the major car plants to provide automotive clients with creative solutions to improve their production processes.

Tungaloy invests heavily in R&D to provide the automotive industry with advanced solutions for sustained growth.

Engine Transmission Brake Brake Axle Die&Mold Small Parts

F

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Face Milling - Roughing

Economical 16 cornered insert solution clamped on adjustable pocket design. Also available with quick change mounting design.

MillLine



Face Milling - Roughing

10-cornered insert with highly positive cutting edges and polished rake faces for roughing aluminum.

DrillLine TAILOREDTOOL

Boring-CamBore

Boring pilot and finishing cam-bore with indexable blades.



Ν



ENGINE



Face Milling - Finishing

Tangential PCD/CBN inserts on extra close-pitch cutter. Various insert geometries are available.





Adjustable runout

Tungaloy - Industry Solutions

DrillLine

Boring - CamBore

Line bar in carbide body with micro-bore unit for finish boring.

4

DrillLine

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TAILOREDTOOL

Reaming - Before seat pressing

Valve Seat, Valve Guide.

Tailored tool with brazed carbide or PCD for rough and finish reaming of parent hole before seat pressing, the option with centering module is available.

DrillLine

Reaming - After seat pressing

Valve Seat, Valve Guide.

6

Tailored tool with indexable PCD blades for rough and finish reaming of pressed seat and guide. Suitable for chamfering multi-angle seat profiles.



DrillLine



Drilling

Head-exchangeable drill reduces machine downtime. Available with chamfering adaptor.







Face Milling - Roughing

Economical 16 cornered insert solution clamped on adjustable pocket design. Also available with quick change mounting design.





Face Milling - Roughing

10-cornered insert with highly positive cutting edges and polished rake faces for roughing aluminum.

Also suitable for machining of installed cylinder liner.

Boring - Cylinder

3

Specially designed insert geometry reduces vibration.



Cylinder Block

ENGINE

7



Boring - Crank Bore

Line bar in carbide or steel body with micro-bore unit for finish boring.



Drilling

Head-exchangeable drill reduces machine downtime. Available with chamfering adaptor.





Tungaloy - Industry Solutions

MillLine TAILOREDTOOL

Side Face Milling-Bearing

Gang milling cutter with staggered positioning of the inserts to avoid vibration.









TungSlot

TecSlot

MillLine

TAILOREDTOOL Milling Crank Half Bore

Improved insert positioning to reduce steps.



MillLine TUNG-TRI **Shoulder Milling**

3-cornered positive insert with antivibration design. Suitable for machining components with low rigidity.



MillLine

Face Milling - Finishing

Tangential PCD/CBN inserts on extra close-pitch cutter. Various insert geometries are available.





Adjustable runout





Drilling

1

Double-sided, 6-cornered insert with reinforced central insert for stable drilling.



Drilling - Flange Hole

Head-exchangeable drill reduces machine downtime. Available with chamfering adaptor.

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Drilling - Oil Hole

Long solid carbide drill. MQL machining is applicable.







Crank Shaft

ENGINE

MillLine

TAILOREDTOOL

Hollow Milling - with Plunging Operation

Machining flange face by plunging operation in one pass.



TurnLine

Grooving

Multi-functional tool shortens cycle time as grooving, turning and facing can be performed in one operation.



Tungaloy - Industry Solutions

Hollow Milling - with Plunging Operation

Machining end face by plunging operation in one pass.



TurnLine

Turn Broach

A complete solution for roughing and finishing of journal with specially designed insert and geometry.

6



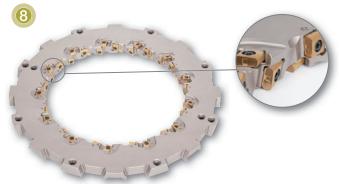
MillLine TAILOREDTOOL

8

Pin Milling

3

8-cornered insert with positive rake angle for smooth pin milling.



Facing & Centering

Specially designed DoPent cutter combined with centering-drill for facing and centering, which reduces cycle time.









External Turning

25° included angle suitable for profile turning and under-cutting.



TurnLine



Grooving

Multi-functional tool shortens cycle time as grooving, turning and facing can be performed in one operation.



MillLine

Milling - Cam Milling

Tailored tool cam for milling with chamfer.



TecSlot









(4)



Facing & Centering

Specially designed DoPent cutter combined with centering-drill for facing and centering, which reduces cycle time.

DrillLine

Drilling

A solid carbide drill with high performance and long tool life.





Tungaloy - Industry Solutions



Shoulder Milling

Head changeable solid carbide endmill, drastically reduces set-up time.



DrillLine SOLIDDRILL

Drilling A solid carbide drill with high performance and long tool life.





MillLine TUNGSLOT

Slitting

6-cornered tangential insert with sharp cutting edge reduces burr, in slitting operation.





Connecting Rod

ENGINE



Face Milling

10-cornered inserts provide economical advantages. Cermet grade achieves excellent surface finish.



DrillLine TUNGSIX-DRILL

Drilling

Double-sided, 6-cornered insert with reinforced central insert for stable drilling.

DrillLine

TAILOREDTOOL

Drilling, Boring, & Chamfering

One tailored tool can be applicable for drilling, boring, and chamfering, which significantly reduces the number of required tools.





Face Turning - Roughing

Hexagonal 12-cornered ceramic insert for highly productive machining.



TurnLine

Face Turning - Finishing

• (2)

CBN insert with excellent fracture resistance achives long tool life.

Fly Wheel

ENGINE



Boring

Double-sided insert with positive cutting edges provides economic advantages in boring.



DrillLine

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Drilling

Head-exchangeable drill reduces machine downtime. Available with chamfering adaptor.





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TurnLine TUNGTURN

External Turning - Finishing

Special insert geometry for finishing slender parts.



TurnLine

Grooving

Uniquely designed 4-cornered insert with sharp cutting edges. Inserts are also available in tailored profile. MillLine **TUNGMEISTER** Balancing Operation

Head-changeable solid carbide endmill for balancing operation, reduces set-up time.

Impeller & PS Turbo Charger

ENGINE

Face Milling - Roughing

Double-sided insert with 16 cutting edges for roughing / semifinishing, ideal solution for high nickel + Cr or SiMo material.





Drilling

Head-exchangeable drill reduces machine downtime. Available with chamfering adaptor.



MillLine

Face Milling - Flange Back Face

Slotting cutter with economical 6-cornered insert. Applicable for face milling of back face of flange.









External Turning - Roughing

Small ECO insert in grade of T9100 series with PremiumTec.

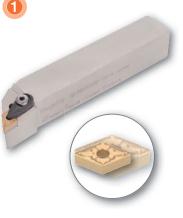


TurnLine

CBN inserts in BXM grade series provide long tool life and reliability in machining of hardened parts.



PSC system with polygonal design provides quick tool change, high accuracy, and high repeatability.





Transmission Shaft

TRANSMISSION

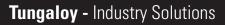


Grooving

Multi-functional tool shortens cycle time as grooving, turning and facing can be performed in one operation.









External Turning - Roughing

Small ECO insert in grade of T9100 series with PremiumTec.



Grooving

Uniquely designed 4-cornered insert with sharp cutting edges suitable for shallow grooving.





CVJ Pinion Final

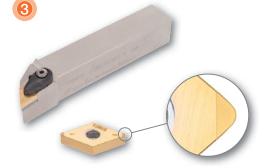
TRANSMISSION

TurnLine

T-CON SERIES H

External Turning - Finishing

CBN inserts in BXM grade series provide long tool life and reliability in machining of hardened parts.







MillLine

DOPENT

Face Milling - Roughing

10-cornered insert with highly positive cutting edges and polished rake face for roughing aluminum.





Shoulder Milling

Excellent aluminum cutter with highly positive insert. Suitable for machining with large depth of cut due to the secure insert clamping system.



MillLine TUNGSÄILL

Face Milling - Finishing

Tangential PCD/CBN inserts on extra close-pitch cutter. Various insert geometries are available.





Adiustable runout

Transmission Case Ν

TRANSMISSION



Drilling

Head-exchangeable drill reduces machine downtime. Available with chamfering adaptor.





Boring, Reaming, Slotting, and Profiling

Exclusively designed tools with PCD cutting edges for highly productive machining. Available in PCD-brazed type or PCD blade type.





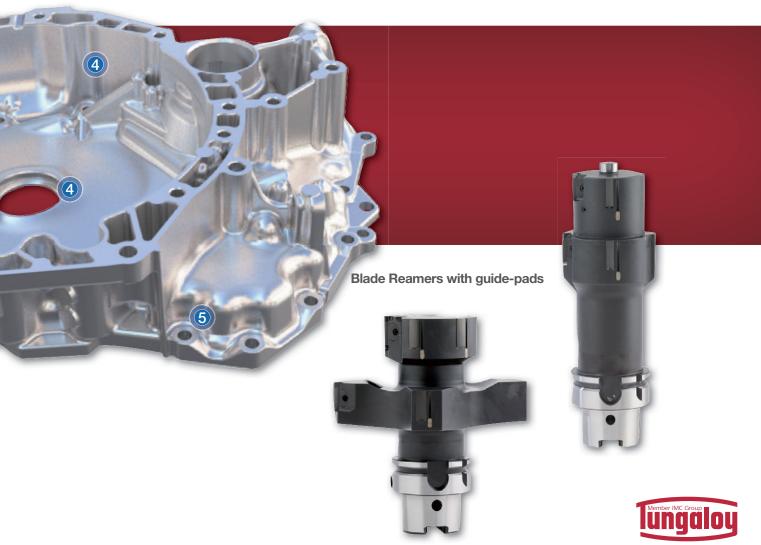
Slitting



Reaming + Chamfer



Formed Tool





TurnLine

Grooving

Multi-functional tool shortens cycle time as grooving, turning and facing can be performed in one operation.

TurnLine



Internal Turning - Finishing

CBN for long tool life and reliability in finishing of hardened steel.

TUNGCAP

PSC system with polygonal design provides quick tool change, high accuracy, and high repeatability.



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3

Idler Gear Ring Gear PH

TRANSMISSION



Drilling

3

Head-exchangeable drill reduces machine downtime. Available in tailored tools for drilling combined with chamfering or counterboring.

illing combined with chamfering or counterboring.





Drilling Head-exchangeable drill reduces machine downtime.



DrillLine



Drilling

Double-sided, 6-cornered insert with reinforced central insert for stable drilling.





MillLine TAILOREDTOOL

Internal Milling

Exclusively designed spherical cutter used on dedicated machines for milling of differential case.





Differential Case K

TRANSMISSION



External Turning - Roughing

Highly rigid "Double-clamp" system provides remarkable stability and high accuracy.



TurnLine TUNGCUT

Grooving

Multi-functional tool system for grooving and turning.









Slot Milling

Optimized insert positioning for slotting with large cutting width.



MillLine TAILOREDTOOL

Boring

Tailored tool for boring and countersincking with long damped adaptors for reducing vibration.



BRAKE



Drilling

Head-exchangeable drill reduces machine downtime.







Face Turning - Roughing

Hexagonal 12-cornered ceramic insert for highly productive machining.



ECOTURN

K

Face Turning - Roughing

1

Small ECO insert in grade of T9100 series with PremiumTec.

TurnLine

Face Turning - Finishing CBN for long tool life and reliability in finishing of cast iron.



BRAKE



Drilling

Head-exchangeable drill reduces machine downtime. Available with chamfering adaptor.







Milline TUNGSLOT Milling - Two Faces

Specially designed cutter with economical 6-cornered insert for milling two faces in one operation.



Face Milling

Suitable for face milling of narrow space close to the wall, economical doublesided insert, yet with sharp geometry to reduce cutting force.



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DrillLine TAILOREDTOOL

Boring & Chamfering

Specially designed tools for boring with steps and chamfering in one operation.





AXLE



Drilling

Head-exchangeable drill reduces machine downtime. Available with chamfering adaptor.



MillLine



3

Slotting

6-cornered tangential insert with sharp cutting edge reduces burr, in slitting operation.



Drilling

1

Double-sided, 6-cornered insert with reinforced central insert for stable drilling.

TurnLine

2

ECOTURN

Face & External Turning - Roughing

Small ECO insert in grade of T9100 series with PremiumTec.

TurnLine **DOMTURN** Boring

2

3

Double-sided insert with positive cutting edges provides economic advantages in boring.

Wheel Hub

AXLE

Drilling

Head-exchangeable drill reduces machine downtime.





Ρ





MillLine

Rough Milling -Facing, Pocketing

High-feed milling provides incredibly high metal removal rates in prehardened steel and difficult-to-cut material.

MillLine



Rough Milling -Facing, Pocketing

Round insert with serrated cutting edge breaks chips. This provides low cutting force and reduces chattering in longoverhang machining.



Profile Milling - Finishing

Optimized insert geometry achieves highly precise finishing of dies and molds.



Machining of Die & Mold

DIE & MOLD



Deep Hole Drilling

Brazed carbide gundrill for deep hole operations.

DrillLine

TUNGALOY

Deep Hole Drilling

Indexable gundrill with 3-cornered insert, with chip-splitter. This combination increases productivity by 3 times compared to brazed gundrill.



MillLine

Milling

A wide variety of modular heads are available for various milling operations, such as high-feed milling, face milling, shoulder milling, and pocket milling.



Endmilling

Head-changeable solid carbide endmill. A wide variety of cutting heads are available for complete milling solution.











Drilling

1

Head-exchangeable drill reduces machine downtime. Available with chamfering adaptor.

MillLine

TUNGMEISTER

Shoulder Milling

Head changeable solid carbide endmill reduces set-up time.

DrillLine GUNDRILL Solid Gundrill

Ø0.9 - Ø3.0 small diameter solid carbide gundrill for precise drilling of common rail hole drilling.



SMALL PARTS



External Turning

Double-sided insert with positive cutting edges offers twice the number of corners compared to competitors, which provides economical advantages in turning of small parts.



TurnLine TETRACUT

Grooving

Uniquely designed 4-cornered insert with sharp cutting edges, suitable for grooving slender parts.



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Internal Turning

Solid carbide bars suitable for various internal turning operations of miniature parts.



Dr. Carbide

the cure for your machining needs

Right in your hands!

New Application Package





Download it Now!



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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.tungaloyamerica.com

Tungaloy Canada

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

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

Tungaloy do Brasil Ltda.

Rua dos Sabias N.104 13280-000 Vinhedo, São Paulo, Brazil Phone: +55-19-38262757 Fax: +55-19-38262757

Tungaloy Germany GmbH

An der Alten Ziegelei 1 D-40789 Monheim, Germany Phone: +49-2173-90420-0 Fax: +49-2173-90420-19

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.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.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.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.es

Tungaloy Scandinavia AB

Tungaloy Rus, LLC

36-D Harkovsky Lane 308009 Belgorod, Russia Phone: +7 4722 24 00 07 Fax: +7 4722 24 00 08 www.tungaloy.co.jp/ru

Tungaloy Polska Sp. z o.o.

Tungaloy U.K. Ltd

The Technology Centre, Wolverhampton Science Park Glaisher Drive, Wolverhampton West Midlands WV10 9RU, UK Phone: +44 121 4000 231 Fax: +44 121 270 9694 www.tungaloy.co.jp/uk salesinfo@tungaloyuk.co.uk

Tungaloy Hungary Kft

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

Tungaloy Benelux b.v.

Tungaloy Croatia

Josipa Kozarca 4 10432 Bregana, Croatia Phone: +385 1 3326 604 Fax: +385 1 3327 683 www.tungaloy.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

Tungaloy Cutting Tool (Thailand) Co.,Ltd.

Tungaloy Singapore (Pte.), Ltd.

62 Ubi Road 1, #06-11 Oxley BizHub 2 Singapore 408734 Phone: +65-6391-1833 Fax: +65-6299-4557

Tungaloy Vietnam

Unit 18, 4th Fl. Saigon Centre Building 65 Le Loi Blvd. Dist 1, Ho Chi Minh City, Vietnam Phone: +84-8-3827-0201 Fax: +84-8-3827-0203

Tungaloy India Pvt. Ltd.

Unit#13, B wing, 8th Fl. Kamala Mills Compound Trade World, Lower Parel (West) Mumbai - 4000 13. India Phone: +91-22-6124-8804 Fax: +91-22-6124-8899 www.tungaloy.co.jp/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

Tungaloy Malaysia Sdn Bhd

50 K-2, Kelana Mall, Jalan SS6/14 Kelana Jaya, 47301

Tungaloy Australia Pty Ltd

PO Box 2232, Rowville, Victoria 3178, 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 www.tungaloy.co.jp/id

unadio

www.tungaloy.com

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