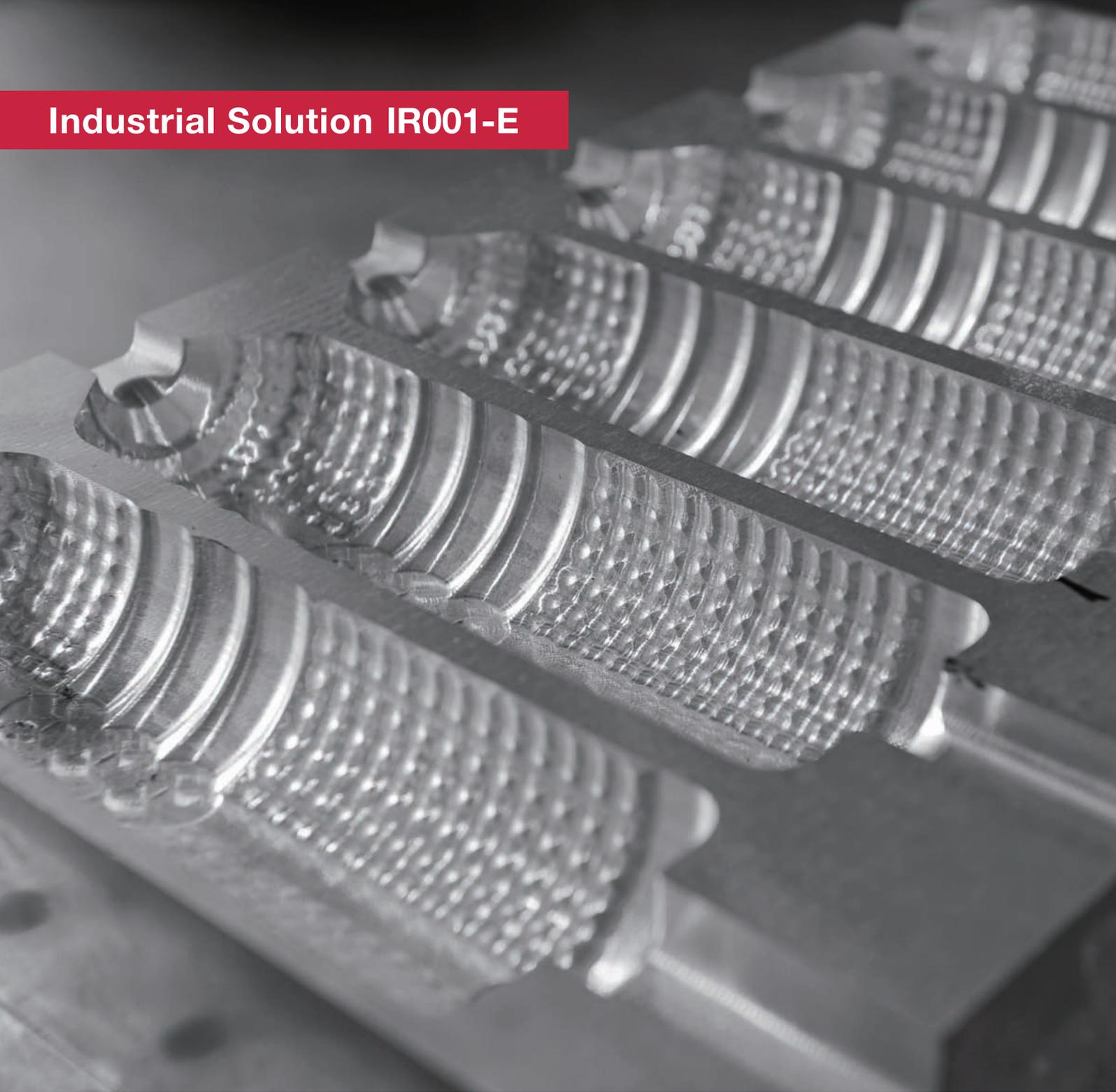


Industrial Solution IR001-E



# Die & Mold



**Tungaloy Corporation**

# Door Opening Solutions for Ultimate **Die and Mold** Machining



[www.tungaloy.co.jp](http://www.tungaloy.co.jp)

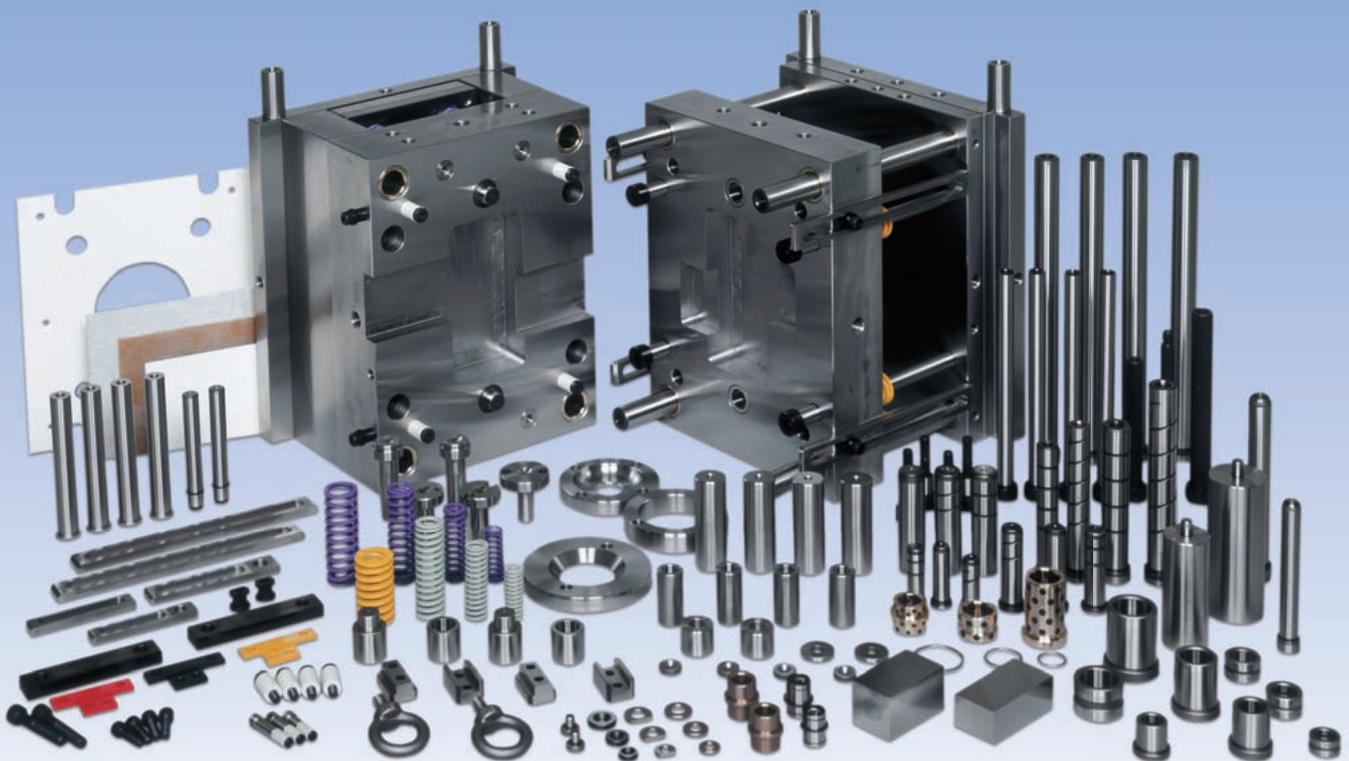


Ask for More of Tungaloy's  
Door Opening Solutions

# Ultimate tools for Die & Mold from Tungaloy

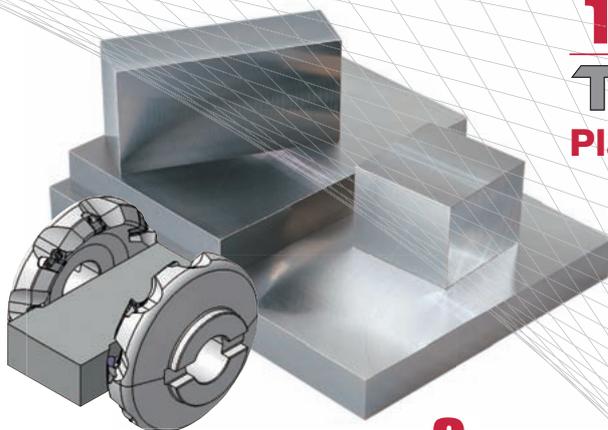
Daily products, such as plastic bottles and cell phones  
and many automotive components, are  
manufactured via “Die and Mold” machining.

Tungaloy’s exceptional cutting tools contribute significantly  
to the Die & Mold machining process.



# Die & Mold Components

**1.**  
**TUNG MILL**  
Plates for components



**2.**  
**DOFEED MINI**  
Cavity plates



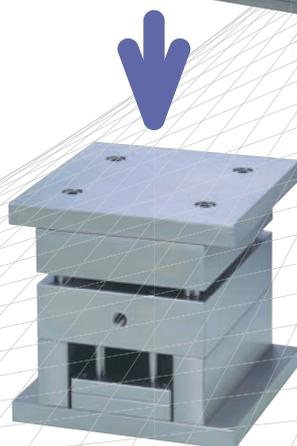
**3.**  
**TUNG MEISTER**  
Cores



**4.**  
**TUNG DRILL TWISTED**  
Injection plates / Mold bases



**Mold assemblies**

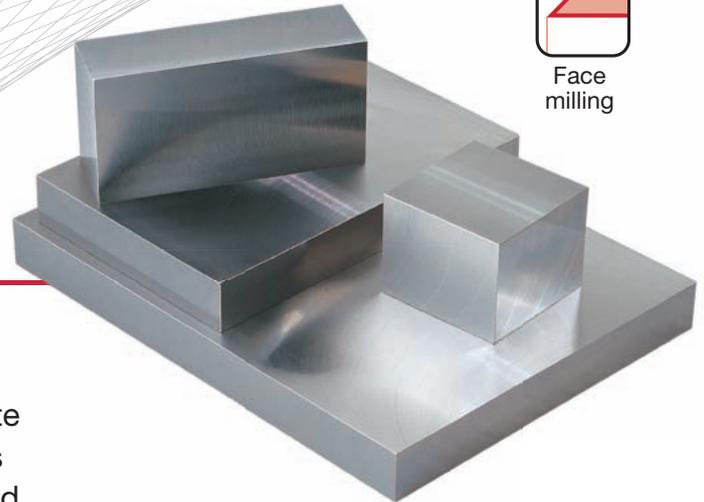


# 1. Face milling of plates

As a leading provider of milling tools, Tungaloy has a great deal of experience with regards to machining plates and providing innovative new products to enhance customers' productivity levels.

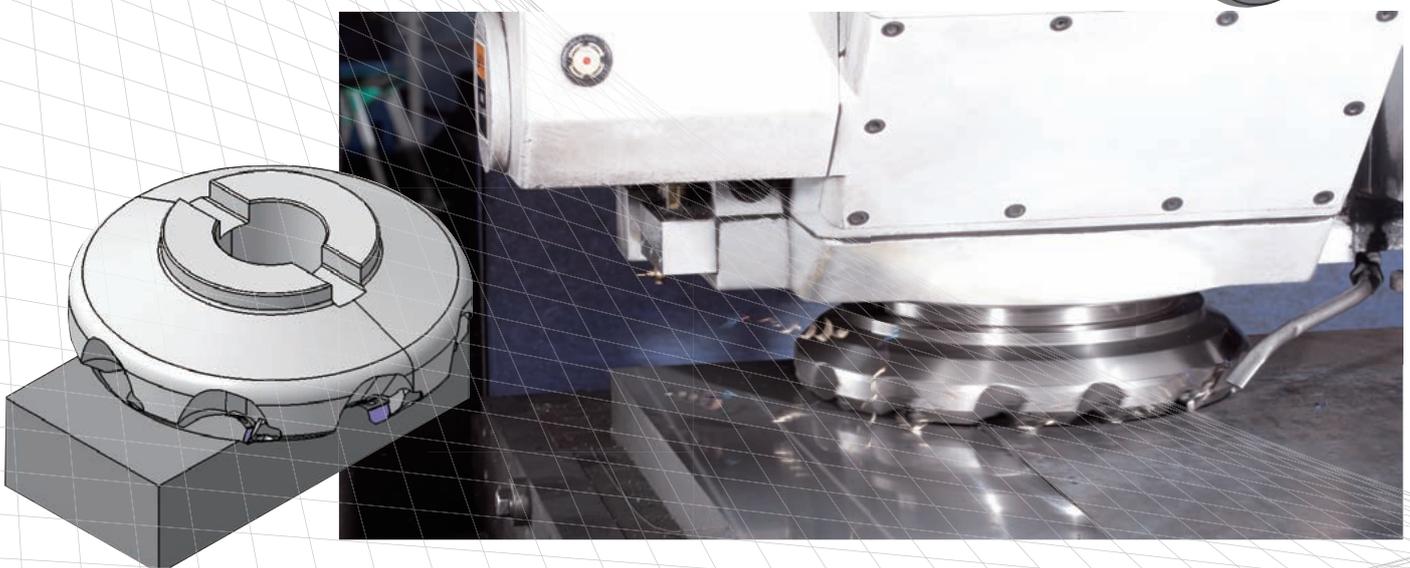
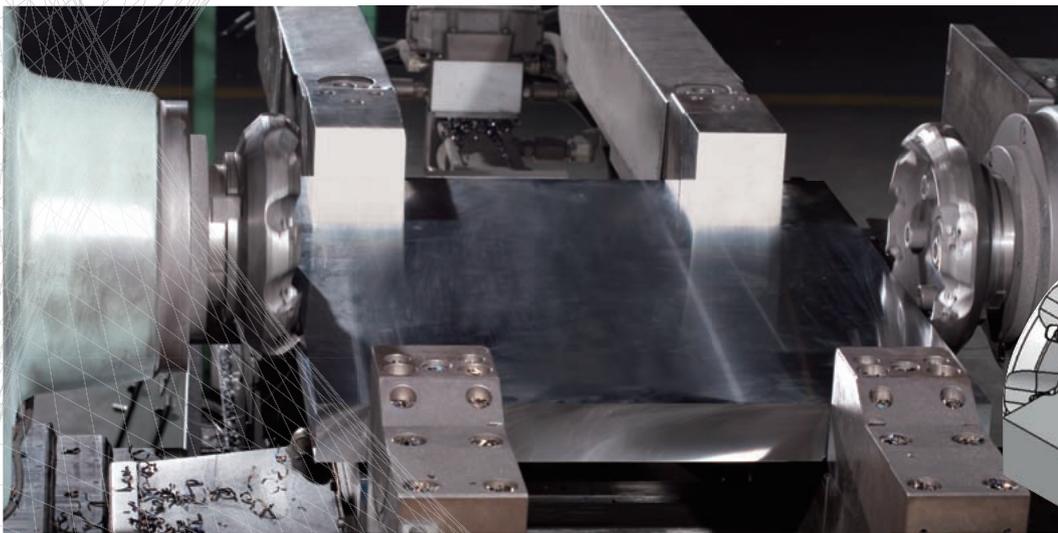


Face milling



## TUNG MILL

TungMills are suitable for machining all kinds of plate materials such as carbon steel, alloy steel, stainless steel and aluminium alloys. Right-hand and left-hand cutters are available so the cutters can be used on any type of machining centres.



# DO PENT

With double sided inserts and 10 cutting corners, the DoPent face milling cutter reduces tooling costs drastically while demonstrating highly productive and economical machining.



## Special Surface Technology

# PREMIUMTEC

TUNGALOY

*Smooth insert surface prevents chip adhesion and improves chip flow.*

## T3130 **P** Steel

### PREMIUMTEC

CVD coated grade for steel milling. The combination of a new coating layer and unique substrate ensures excellent wear and impact resistance.



## AH120 **P** Steel

### PREMIUMTEC

PVD coated grade for general steel milling applications.



## NS740 **P** Steel

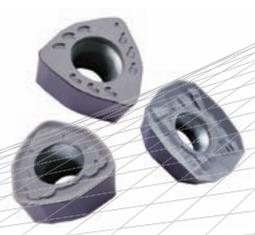
Unique cermet grade for steel milling that provides excellent surface finishes.



## AH130 **M** Stainless

### PREMIUMTEC

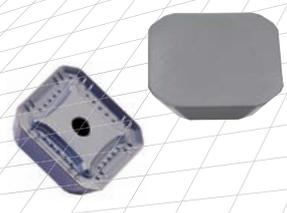
PVD coated grade for general stainless steel milling applications. Provides well-balanced wear and chipping resistance.



## AH140 **M** Stainless

### PREMIUMTEC

PVD coated grade for tough stainless steel milling applications with remarkable chipping resistance.

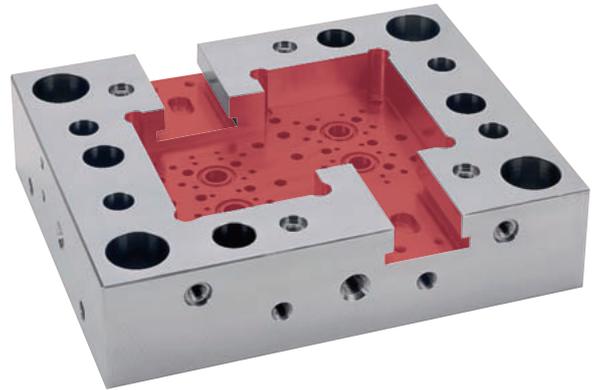
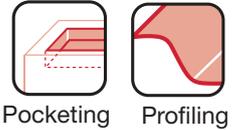


# 2. Cavity plate machining

## Roughing operations

**High  
Productivity**

Tungaloy's cutting tools provide high productivity levels in roughing operations while improving tool life.



### DOFEEDMINI

DoFeedMini is one of latest high feed milling cutters suitable for small component machining with a diameter from  $\varnothing 16 \sim \varnothing 32$  mm. This cutter has double sided inserts and 4 cutting edges to improve economy and tool costs.



### DOFEED

DoFeed is one of latest high feed milling cutters available for medium range machining between  $\varnothing 32 \sim \varnothing 80$  mm diameter. With 4 cutting edges and double sided inserts, the DoFeed is very economical.



### ROUNDSPLIT

Serrated cutting edges significantly reduce chattering even when machining with a long overhang.



### MILLFEED

MillFeed is the pioneer of high feed milling cutters, reducing the machining time in rough profiling operations.



# Shoulder milling / Slotting

**High Productivity**

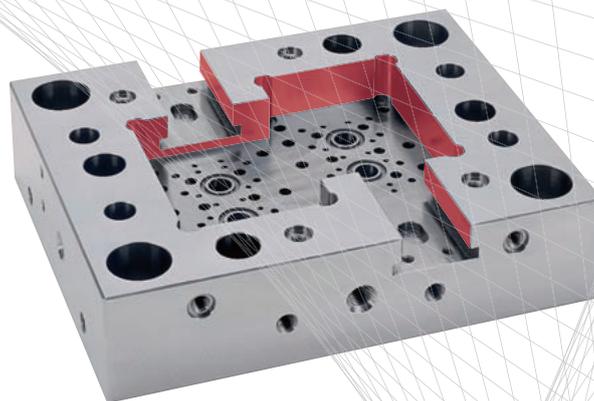
There is a wide variety of shoulder milling and slotting applications in the die and mold industry. Tungaloy has a vast selection of cutters available to meet the needs of the end user.



Slotting



Shoulder milling



## TECMILL

Tangential insert with tough cutting edges. Large rake angle and inclination reduce cutting forces



## TUNGREC

Highly productive semi-finish milling cutter with high accuracy 90 degree shoulders. Applicable for rough to finish machining with 20 µm straightness. The range offers a wide variation of solutions with 3 sizes of insert, 2 types of cutter body length and 2 types of pitch available. Tool diameter range is ø16 mm ~ ø160 mm.



## HYBRIDTACMILL

High precision indexable endmills with low cutting forces now offer a viable replacement for solid carbide endmills. Applicable for highly accurate shoulder milling with 20 µm straightness. Regrinding is not necessary.

**EPH type**  
Highly accurate endmill



**EVH type**  
Multi functional endmill



**EXH type**  
High feed milling endmill



# 3. Die engraving

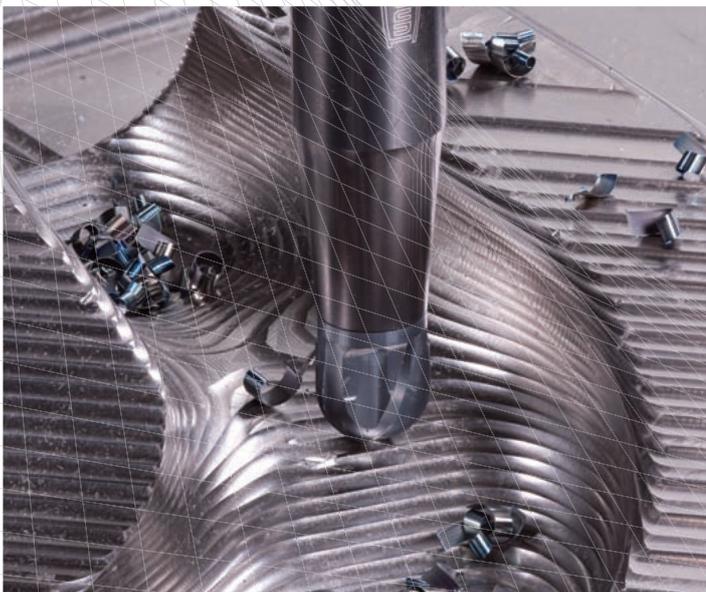
**Significantly reduced  
tool exchange time**

Usually, solid carbide endmills are used for die engraving. Tungaloy now proposes its innovative new indexable endmills, the “TungMeister”



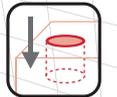
## TUNGMEISTER

This effective tooling solution offers the option of hundreds of tools with 3 kinds of shank material that include steel, carbide and heavy metal. Tool changeovers can be measurably reduced and regrinding is unnecessary. The accuracy of less than 40 µm guarantees consistent performance.



# 4. Holemaking in injection plates

**Reduced machining cost**



Holemaking

Die and mold components often require a lot of holes. To this end, Tungaloy proposes a number of new highly productive holemaking tools that can deliver reduced machining times.



## TUNGDRILLTWISTED

Highly economical indexable drills applicable for diameters from  $\varnothing 12.5$  mm ~  $\varnothing 54$  mm with reduced machining time and costs.



## GIGAJETDRILL

DSX type solid carbide drills with oil hole, available in  $\varnothing 3$  mm ~  $\varnothing 20$  mm diameter and 3xD and 5xD depth enable the end user to reduce machining times significantly.



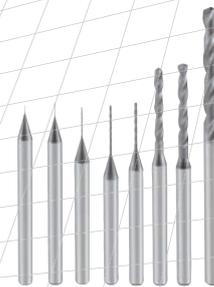
## GIGAPOWDRILL

DSE type solid drills are suitable for highly productive holemaking without the requirement for an internal coolant supply.



## GIGAMINIDRILL

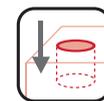
DSM type small diameter solid drills reduce cutting time and improve tool life when machining in the  $\varnothing 0.1$  mm ~  $\varnothing 3.0$  mm diameter range.



# 4. The machining of cooling holes in mold bases

## Reduced machining cost

There are many deep-hole-drilling operations in die and mold, such as cooling holes. For such applications, Tungaloy now offers a vast range of gundrilling solutions.

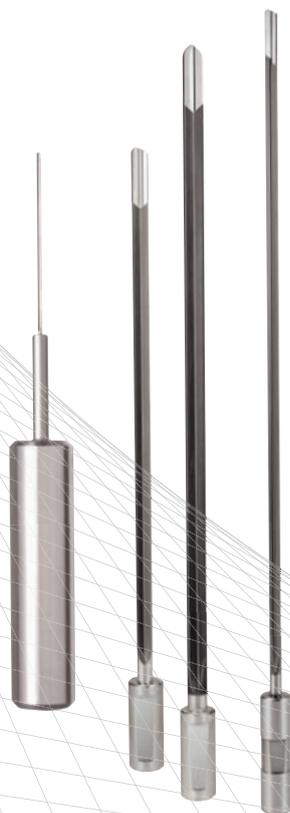


Holemaking



## GUNDRILL

Standard GunDrills are available from  $\varnothing 1.8$  mm ~  $\varnothing 30$  mm diameter and  $200 \times D$  machining depth. The SF type GunDrills can double productivity levels. The SD type solid GunDrills are suitable for small and deep hole processing with diameters from  $\varnothing 0.9$  mm. Additionally, the R-GunDrills are available for spherical hole making to prevent heat cracks.



## TUNGGUN

TungGun is the innovative new indexable gundrill with a unique connection system that is exchangeable over 15 times.



# Tooling system for a wide variety of unique functions

## TUNG HOLD

Tooling system for unique function and wide variation



## TUNG SHRINK

**Thermal shrinking holder**

Available in various adapters for quick changeovers.



## TUNG HYDRO

**Hydraulic chuck**

A run-out of less than 0.003 mm.



## TUNG BORE

### TUNG DRILL TWISTED

**Tool diameter adjustable holder**

The tool diameter can be adjusted when used on a machining center



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**Iwaki plant (Japan)**

Products: Cutting tools

**Nagoya plant (Japan)**

Products: Cutting tools

**Kyusyu plant (Japan)**

Products: PCBN and PCD tools

**Nirasaki plant (Japan)**

Products: Cutting tools  
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Wear resistant tools  
Civil Engineering tools

**Yamato plant (Japan)**

Products: Cutting tools

**Tungaloy Precision Co.,Ltd. (Japan)**

Products: Cutting tools

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**Tungaloy de Mexico S.A.**

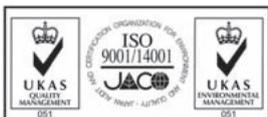
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