

# Aerospace Industry



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## Engine Part

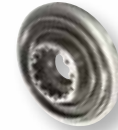
### Turbine Case

Ni - Based Superalloy



### Disk

Ni - Based Superalloy



### Spool

Ni - Based Superalloy



### Turbine Shaft

Ni - Based Superalloy



### Turbine Disk

Ni - Based Superalloy



### Blisk

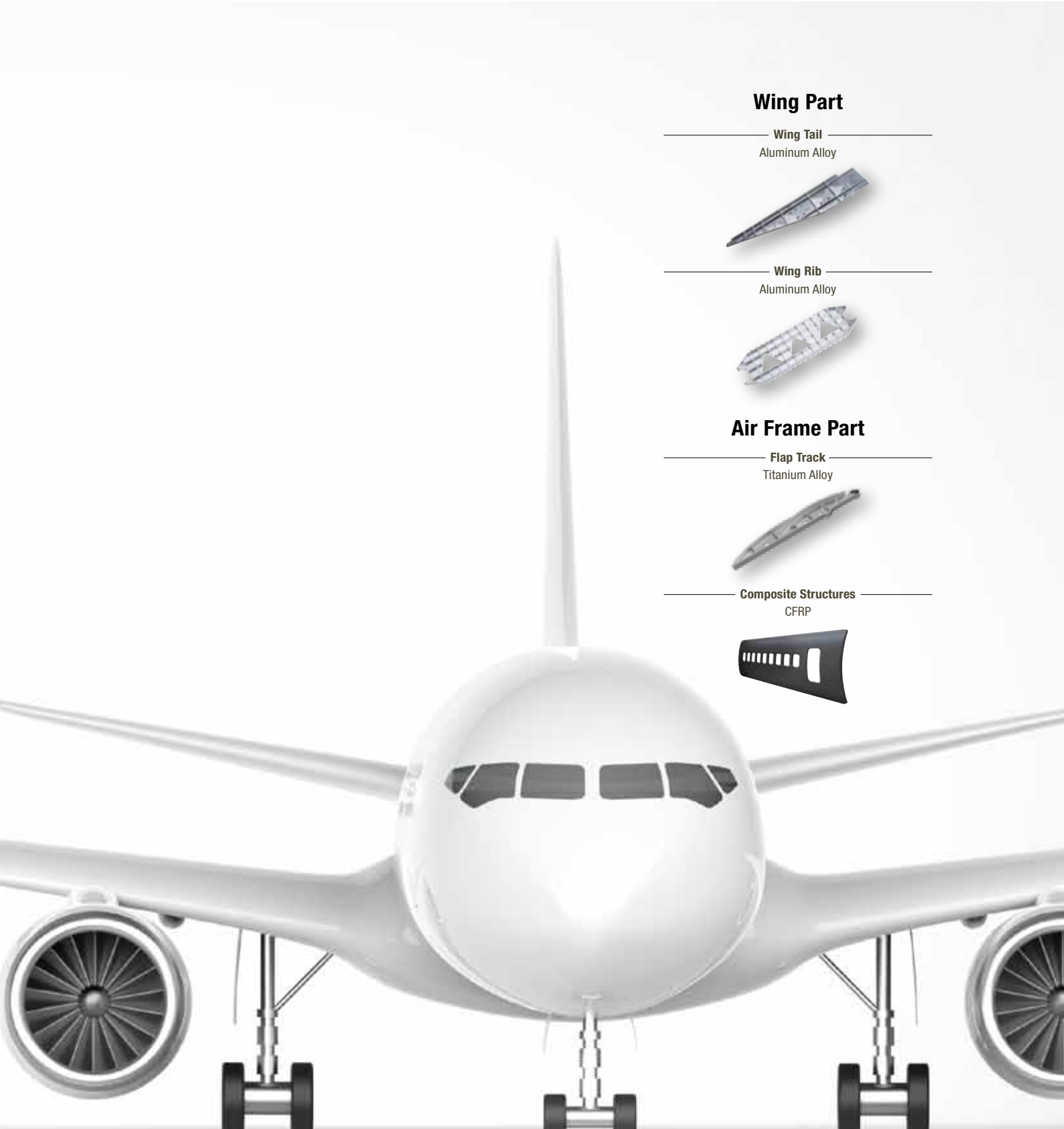
Ni - Based Superalloy



### Turbine Blade

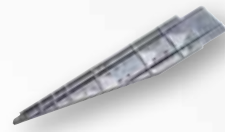
Titanium Alloy



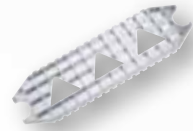


## Wing Part

Wing Tail  
Aluminum Alloy



Wing Rib  
Aluminum Alloy



## Air Frame Part

Flap Track  
Titanium Alloy



Composite Structures  
CFRP



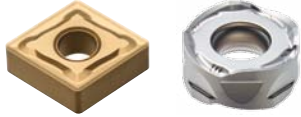
## Landing Part

Landing Gear  
Titanium Alloy



# Product Guide

## UNC805,UNC840



- Good performance in high speed machining
- For high speed and low feed machining
- For forged workpiece - for high hardness
- For large - sized workpiece (Ø200 or above)

## UPC810,UPC845



- Good performance in low speed and high feed machining
- For high interrupted cutting conditions
- For cast and round bar machining
- For low hardness

## FMR P - Positive

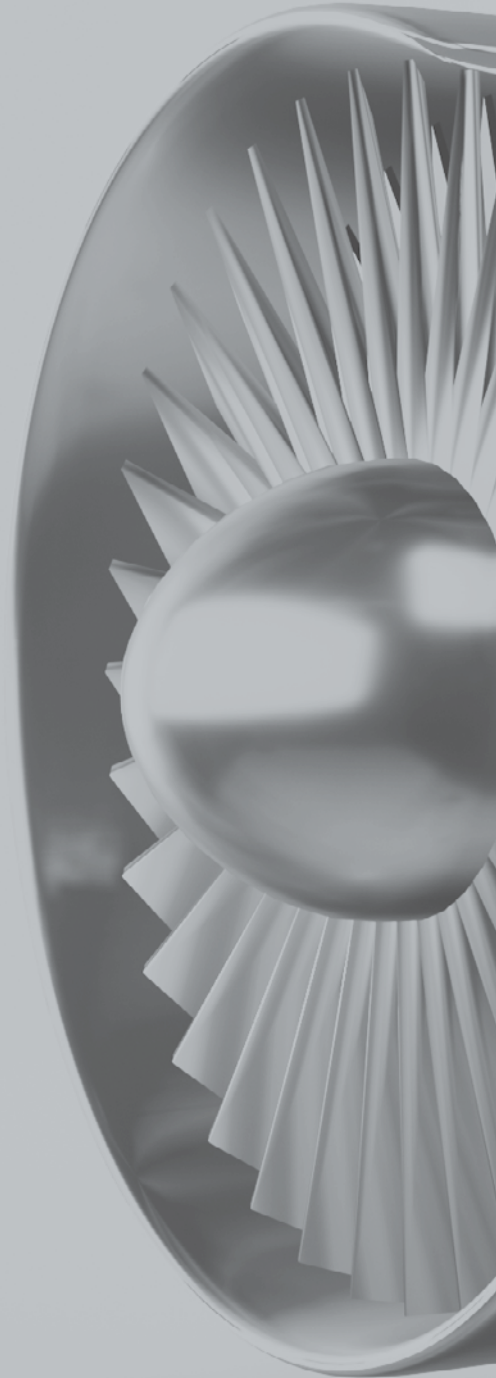


- Increased productivity by reduced production time
- Stable clamping & Anti - rotating system
- High rigidity body shape
- A variety of chip breakers and grades

## Rich Mill RMR



- Applied double sided round type insert for high economics.
- Stable clamping & Anti - rotating system.
- Increased productivity by reduced production time.



### Super Endmill for HRSA



- Aerospace and generator industries - endmill for parts such as engines and turbines made into hard - to - cut materials.
- Optimal endmill for Ni - based super alloy HRSA: Inconel718, Hastelloy, Waspaloy and etc.

### Composite Router Endmill



- Minimized machining troubles with our new design, inhibiting delamination, splintering and burrs
- The nano - crystalline diamond coating provides exceptional resistance to wear and flaking

### MSD Plus - S



- Improved productivity and excellent machinability
- Ensuring machinability with optimized blade design and chip pockets
- Extended tool life due to excellent high temp resistance to chipping

### Alpha Mill - X



- Stable machinability
- Enhanced clamping force due to thick and flat clamping side
- Smooth cutting, High speed and high feed machining
- High rake angled cutting edge and chip breaker

### HFMD



- Available for economical and highly efficient machining with implementation of double sided 4 corner inserts and increase in the number of teeth per cutter diameter
- Available for high speed/high feed machining with high helix edge design and excellent clamping stability

### Pro - V Mill



- Improved surface finish
  - Excellent surface finish and perpendicularity with high - precision products
- Excellent clamping stability
  - Satisfactory clamping force of inserts by the use of the key shape

**1** Future Mill  
<FMR P - Positive>  
[Turbine Case]  
: Contouring - Roughing



# TURBINE

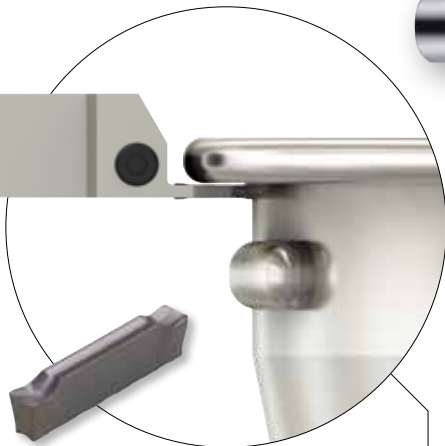
**2** Alpha Mill-X  
<AMXC>  
[Boss Parts]  
: Facing - Roughing, Finishing



**3** Super Endmill for HRSA  
<SRES>  
[Side, Hole]  
: Shouldering - Finishing



**4** KGT Holder  
<KGEHL (KGMN)>  
[Turbine Case]  
: Grooving - Finishing



KGMN type



**5** MSD Plus-S  
<MSDPH - S>  
[Core Hole]  
: Centering & Drilling



**6** Special Boring Bar  
<FBH/B>  
[Turbine Case Hole]  
: ID Boring - Finishing





**1** KGT Holder  
<KGFHR (KGMN)>  
[Disk Boring Seat]  
: Grooving - Finishing

DISK / SPOOL



**2** Tool Holder  
<Special>  
[Disk]  
: Internal Turning - Roughing, Finishing

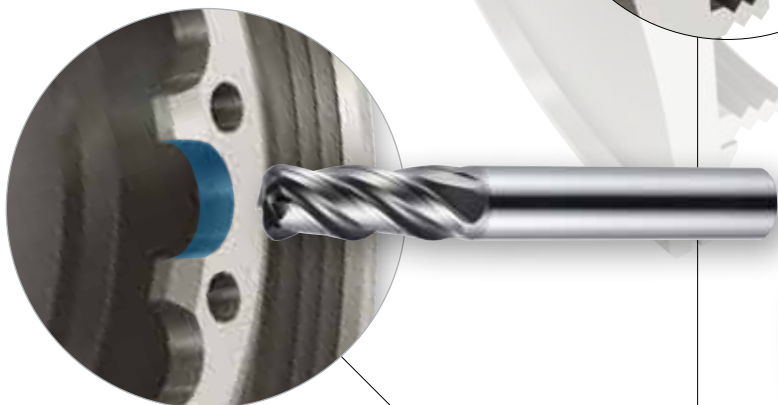


### 3 Super Endmill for HRSA

<SRES>

[Hole Half Side]

: Shouldering - Finishing

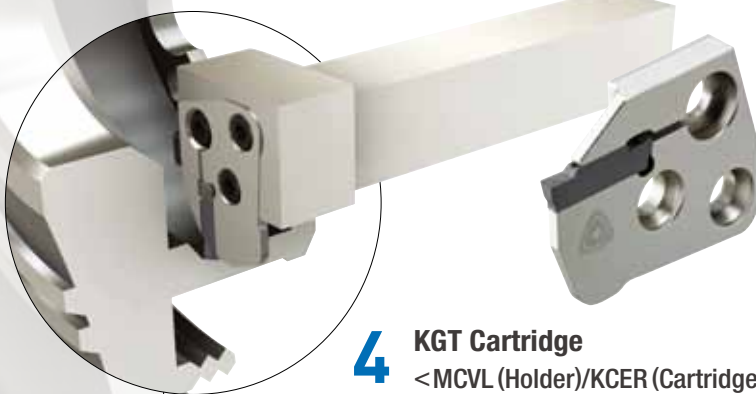


### 4 KGT Cartridge

<MCVL (Holder)/KCER (Cartridge)>

[Disk]

: Grooving - Roughing, Finishing

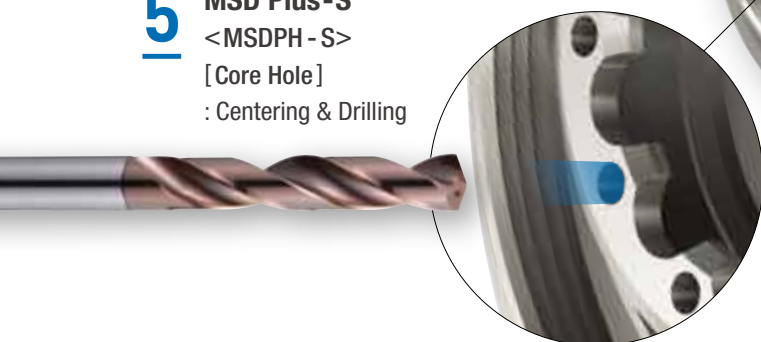


### 5 MSD Plus-S

<MSDPH - S>

[Core Hole]

: Centering & Drilling



### 6 KGT Holder

<KGEHR (KGMN)>

[Spool Ring Seat]

: Grooving - Finishing

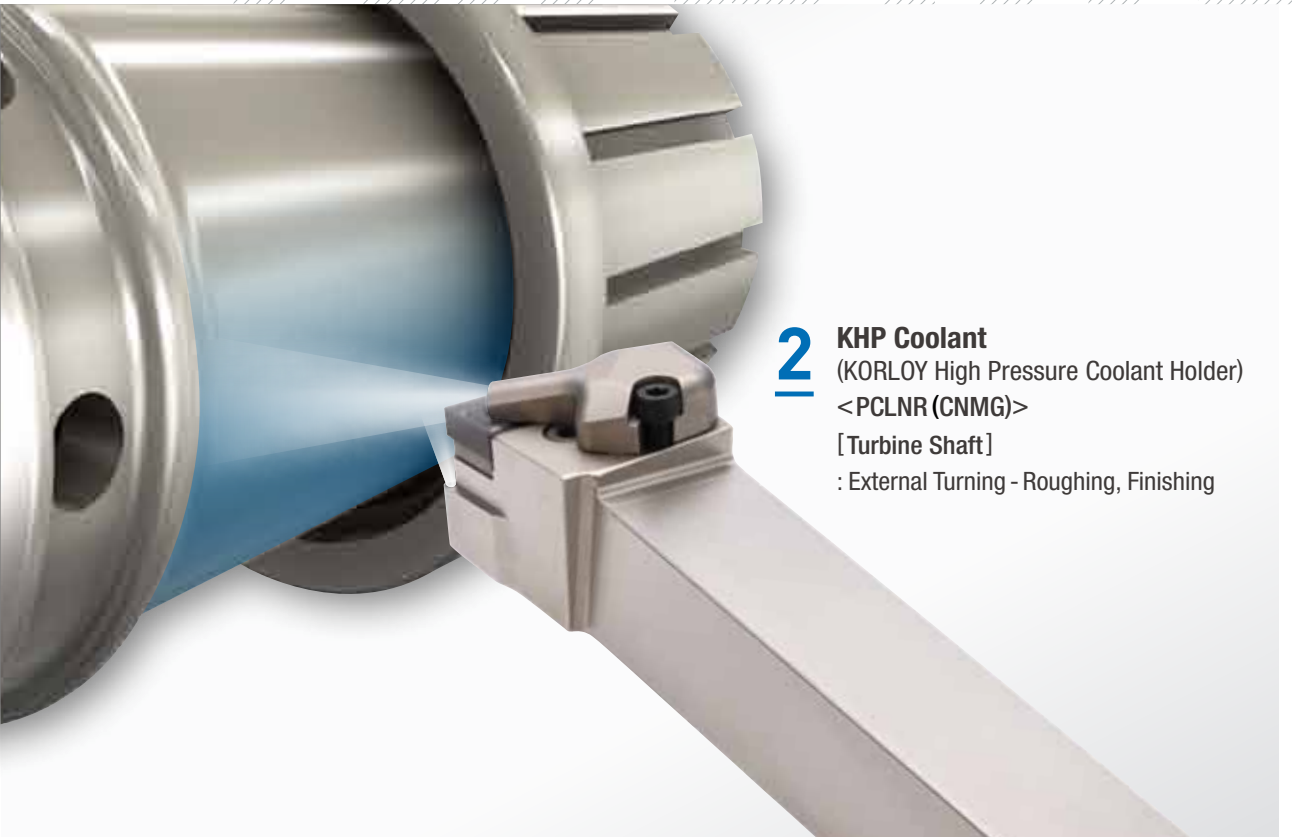




**1** **Lever Lock System Holder**  
<PRDNN (RCMT)>  
[Turbine Shaft]  
: External Turning - Roughing, Finishing

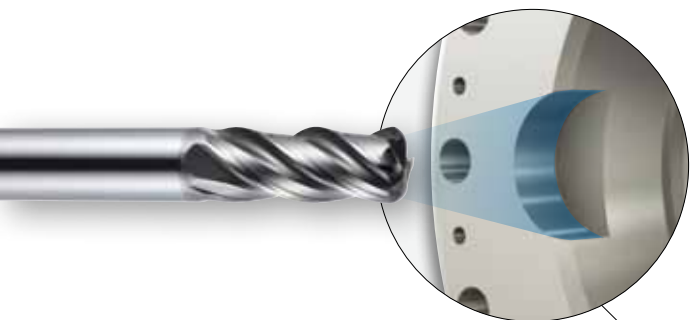
  
UNC805/UPC810

# Turbine

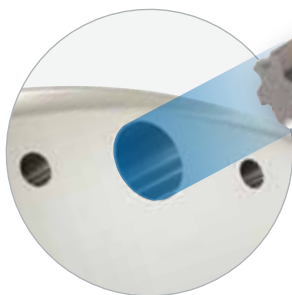


**2** **KHP Coolant**  
(KORLOY High Pressure Coolant Holder)  
<PCLNR (CNMG)>  
[Turbine Shaft]  
: External Turning - Roughing, Finishing

**3** Super Endmill for HRSA  
<SRES>  
[Turbine Shaft Hole Half Side]  
: Shouldering - Finishing



**4** Straight Reamer  
<SCRH>  
[Turbine Shaft Hole & Guide]  
: Reaming - Finishing



**6** Top Solid Drill  
<TPDC>  
[Turbine Shaft Hole]  
: Centering & Drilling

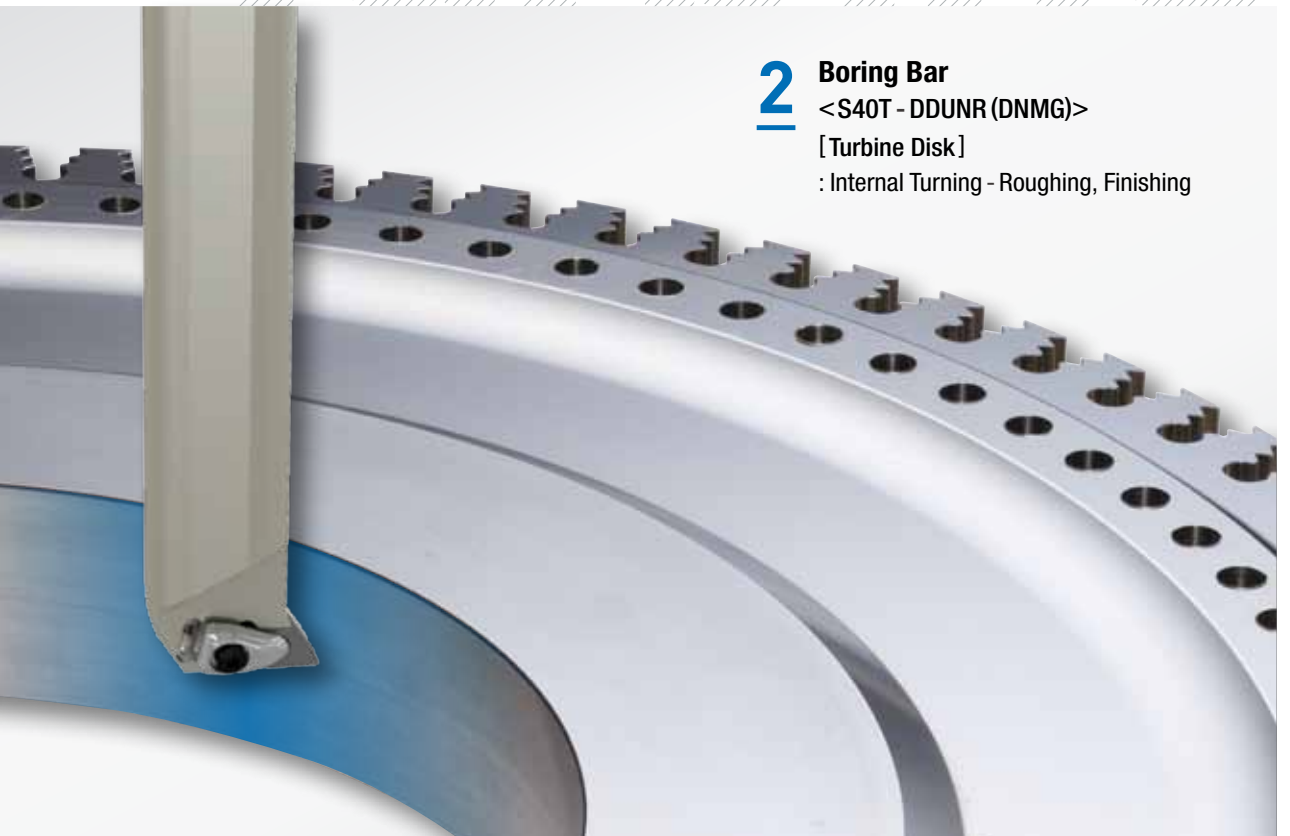


## 04. Turbine Disk (Ni - Based Superalloy)



**1** Tree Cutter  
<STE>  
[Turbine Disk Slot]  
: Slotting - Roughing, Finishing

# TURBINE

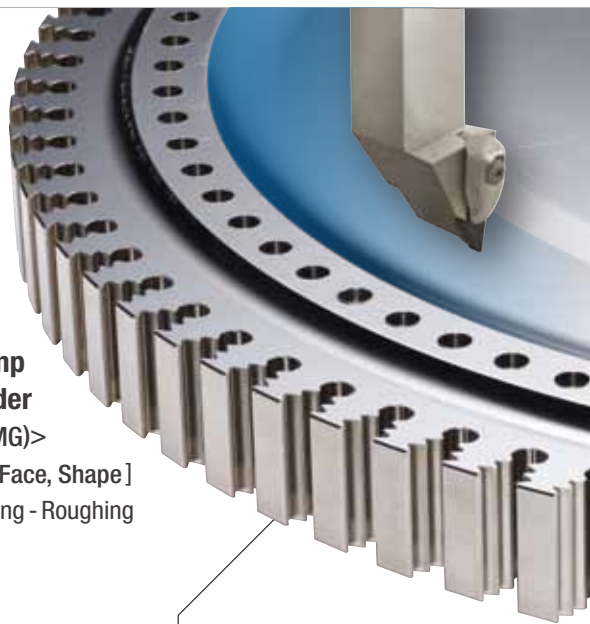


**2** Boring Bar  
<S40T - DDUNR (DNMG)>  
[Turbine Disk]  
: Internal Turning - Roughing, Finishing

**3** Indexable Drill  
<King Drill>  
[Turbine Disk Hole]  
: Drilling



**4** Double Clamp System Holder  
<DVJNR (VNMG)>  
[Turbine Disk Face, Shape]  
: External Turning - Roughing



**5** MSD Plus-S  
<MSDPH-S>  
[Turbine Disk Core Hole]  
: Centering & Drilling

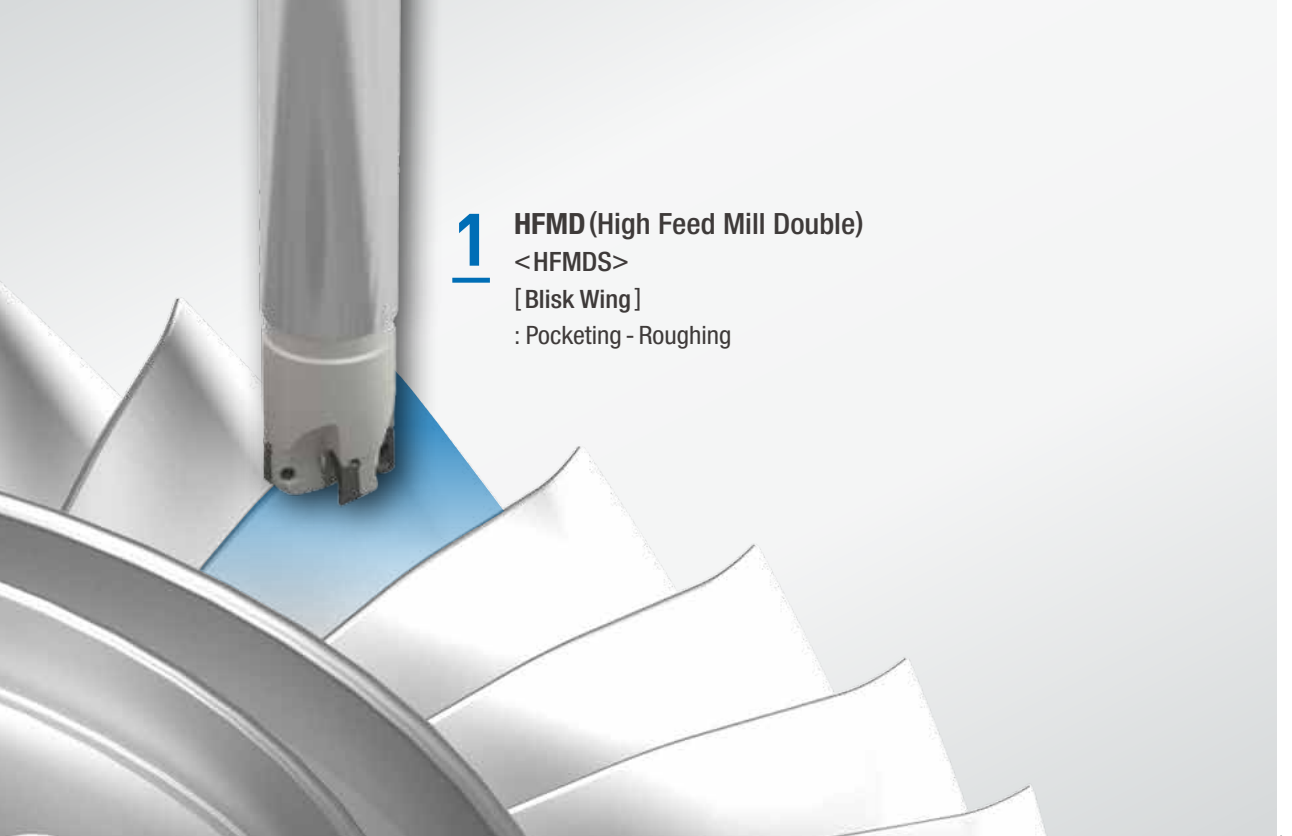


**6** TM Solid  
<STMHC>  
[Side Bolt Hole]  
: Threading - Roughing, Finishing

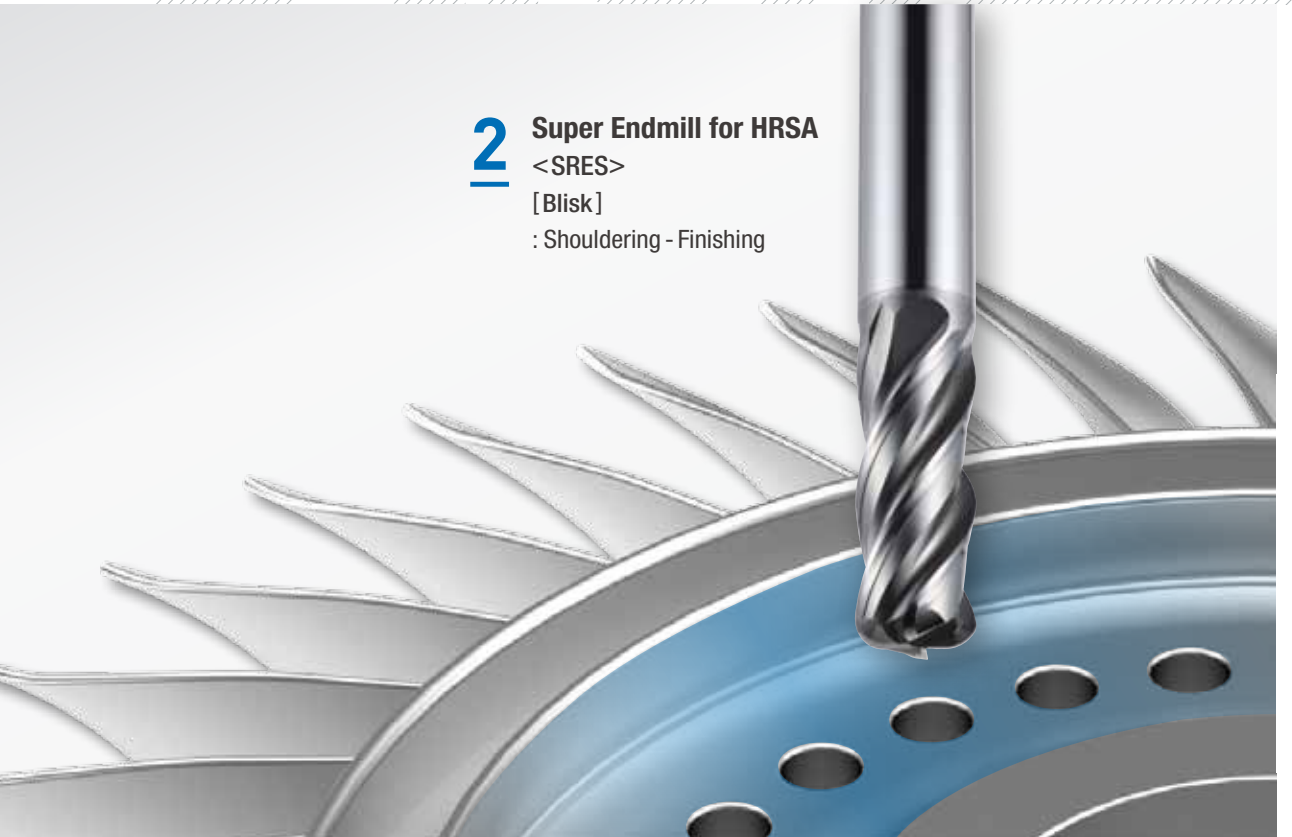


**7** Double Clamp System Holder  
<DCLNR (CNMG)>  
[Turbine Disk Face, Shape]  
: External Turning - Roughing, Finishing





**1** **HFMD (High Feed Mill Double)**  
<HFMS>  
[Blisk Wing]  
: Pocketing - Roughing



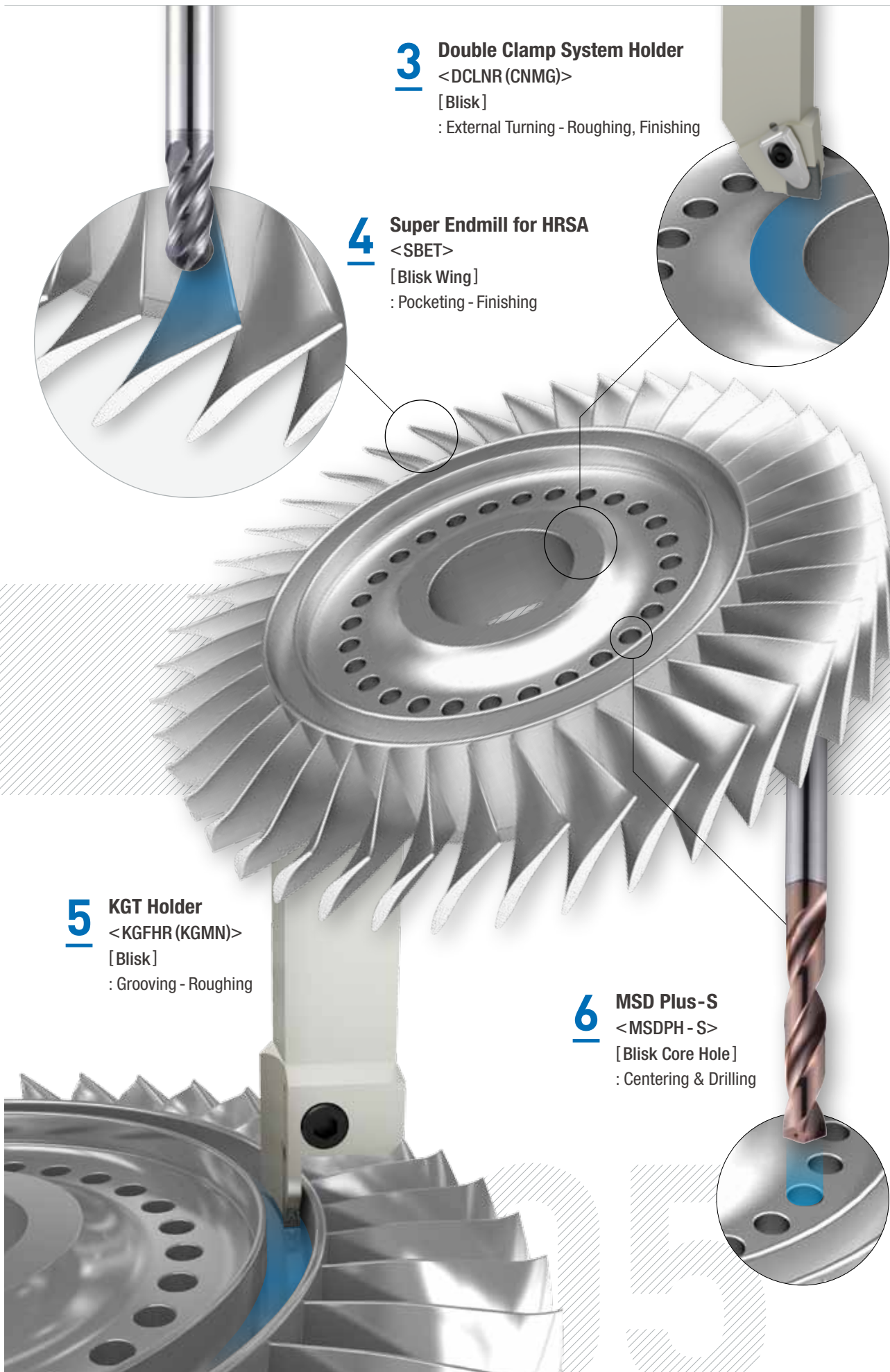
**2** **Super Endmill for HRSA**  
<SRES>  
[Blisk]  
: Shouldering - Finishing

**3** Double Clamp System Holder  
<DCLNR (CNMG)>  
[Blisk]  
: External Turning - Roughing, Finishing

**4** Super Endmill for HRSA  
<SBET>  
[Blisk Wing]  
: Pocketing - Finishing

**5** KGT Holder  
<KGFHR (KGMN)>  
[Blisk]  
: Grooving - Roughing

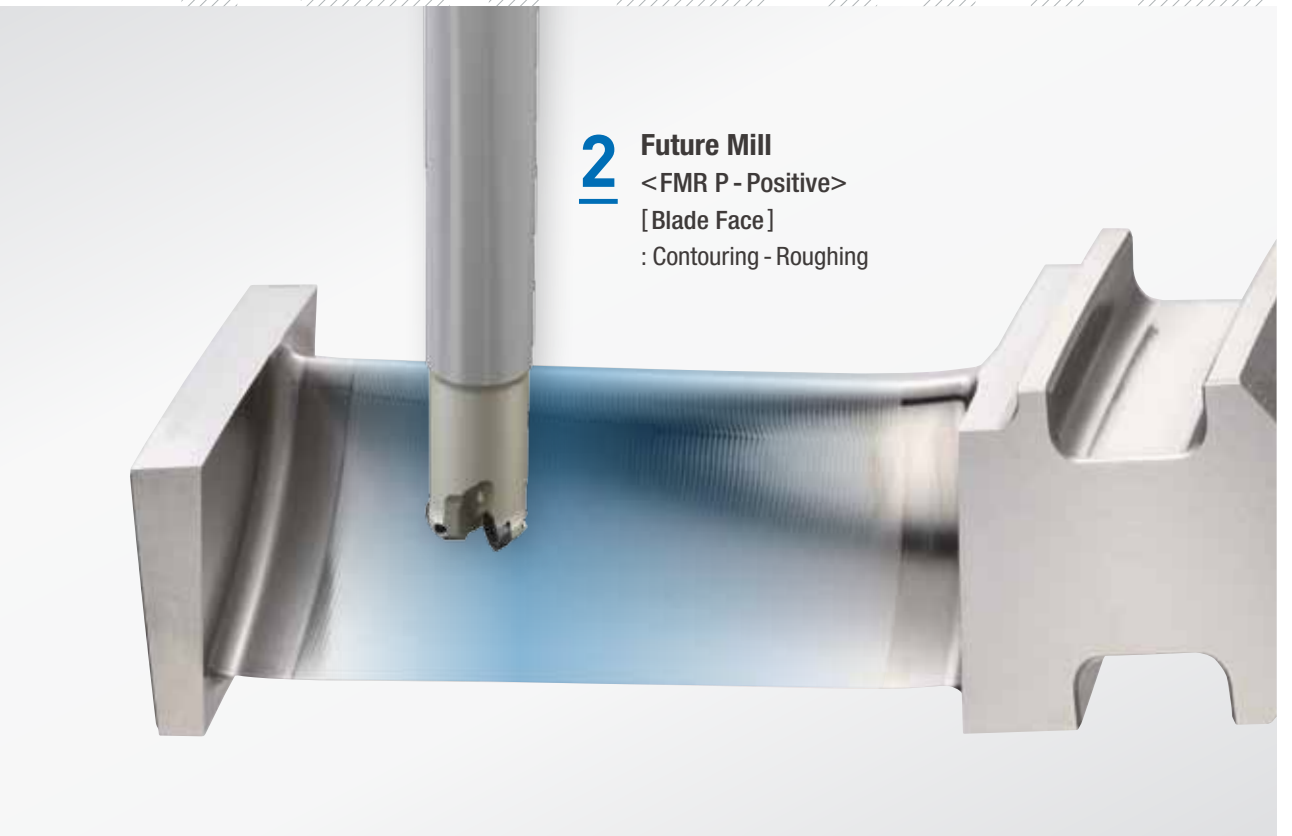
**6** MSD Plus-S  
<MSDPH - S>  
[Blisk Core Hole]  
: Centering & Drilling





**1** Super Endmill for HRSA  
[Blade Face]  
: Contouring - Finishing

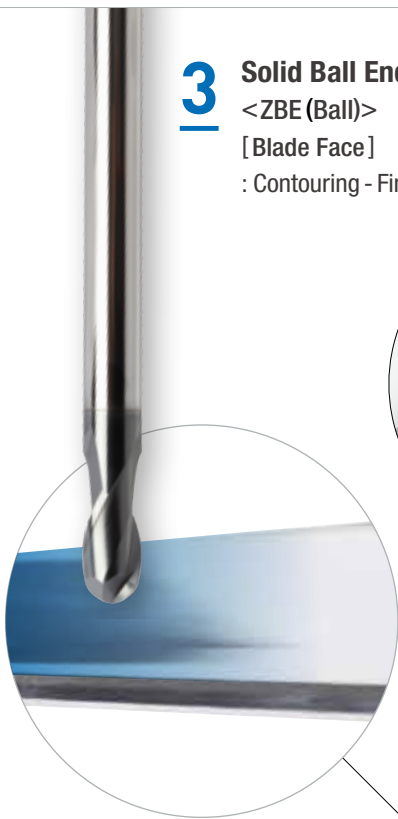
# TURBINE



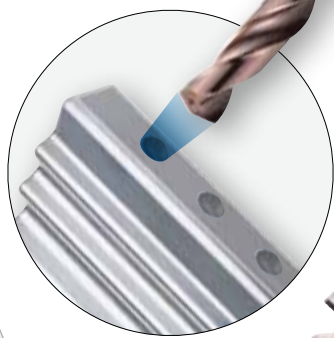
**2** Future Mill  
<FMR P - Positive>  
[Blade Face]  
: Contouring - Roughing



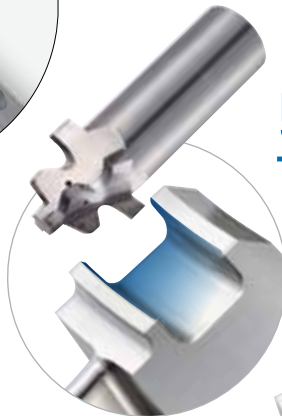
**3** Solid Ball Endmill  
<ZBE (Ball)>  
[Blade Face]  
: Contouring - Finishing



**4** MSD Plus-S  
<MSDPH - S>  
[Blade Core Hole]  
: Centering & Drilling



**5** FORM-Tool  
[Blade Root Face]  
: Contouring - Finishing



**5** Special Cutter  
<KFF - TB2 - FIN, KTF - TB2 - ROU>  
[Blade Core]  
: Copying - Roughing, Finishing



**6** Special Cutter  
<KFF - TB2 - FIN, KTF - TB2 - ROU>  
[Blade Core]  
: Copying - Roughing, Finishing





**1** HSK/BT Tooling System  
<Multi - Edge Type>  
[Landing Gear]  
: Shouldering & Facing - Roughing

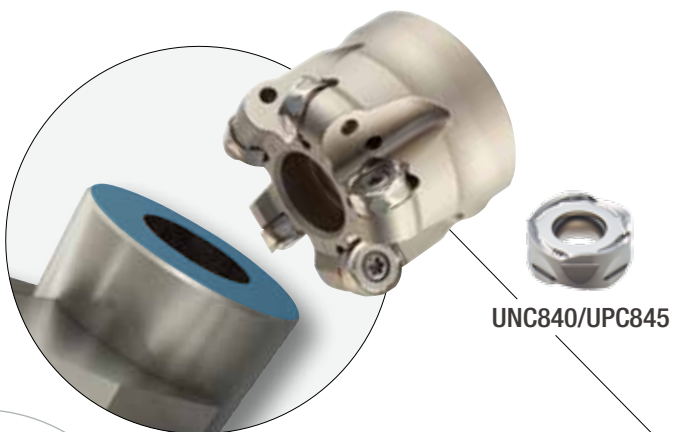
# Landing Gear



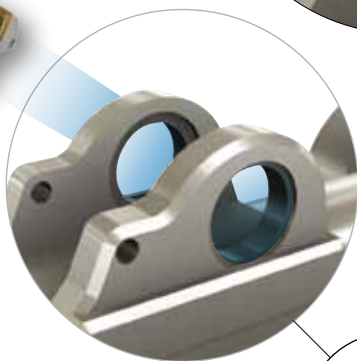
**2** Boring Bar  
<A32S - PCLNR (CNMG)>  
[Landing Gear]  
: Internal Turning - Roughing, Finishing



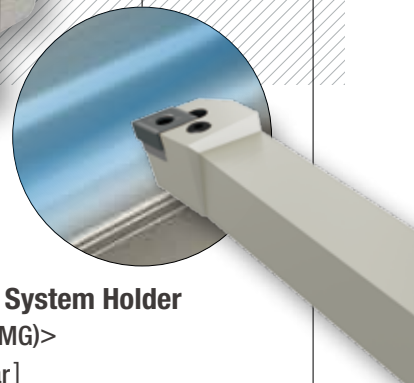
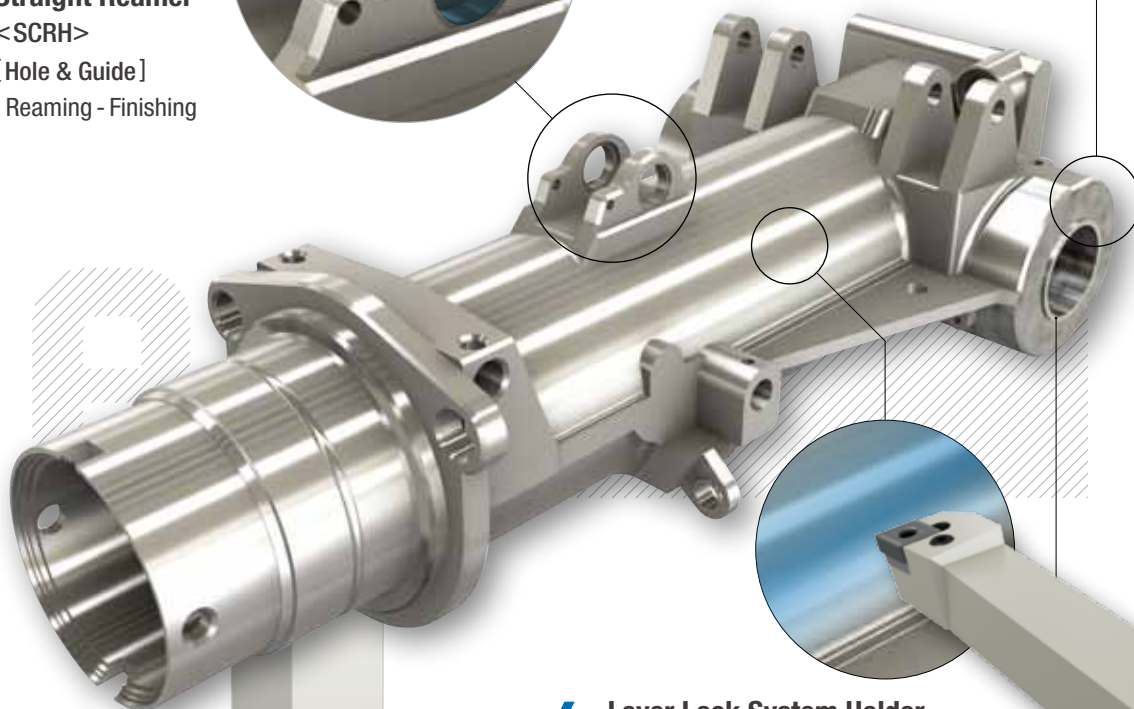
**4** Indexable Drill  
<King Drill>  
[Landing Gear Hole]  
: Drilling



**5** Rich Mill RMR  
[Landing Gear Boss]  
: Facing - Roughing, Finishing

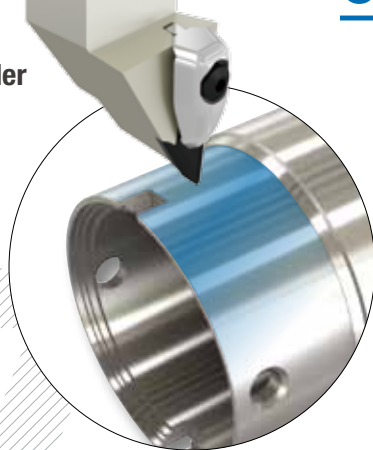


**3** Straight Reamer  
<SCRH>  
[Hole & Guide]  
: Reaming - Finishing



**6** Lever Lock System Holder  
<PCLNR (CNMG)>  
[Landing Gear]  
: External Turning - Roughing, Finishing

**7** Double Clamp System Holder  
<DVJNR (VNMG)>  
[Landing Gear]  
: External Turning - Roughing, Finishing

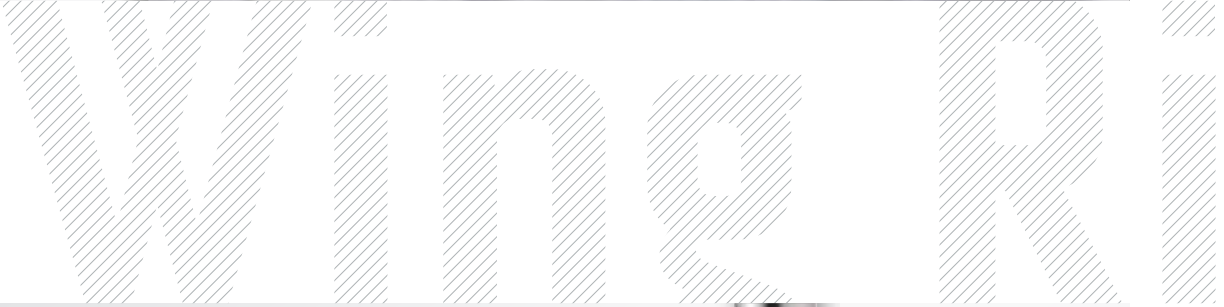


**8** Special Boring Bar  
<FBH/B>  
[Bore Hole]  
: Boring - Finishing





**1** Pro-V Mill  
<PAV (XDET)>  
[Wing Lib Bottom]  
: Ramping & Facing - Roughing



**2** Solid Endmil  
<RPAE (Wave Roughing)>  
[Wing Lib, Tail Face]  
: Shouldering - Roughing

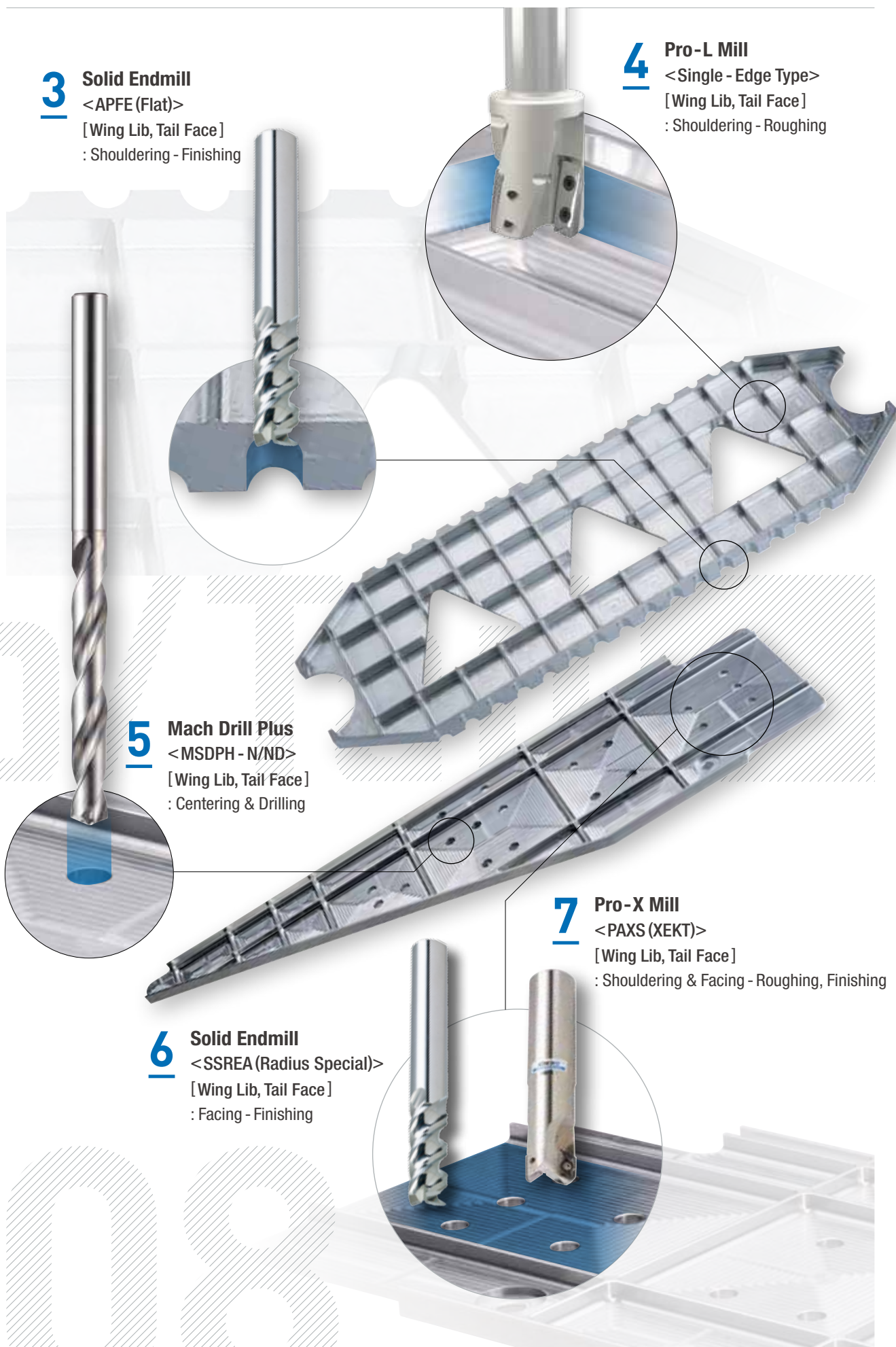
**3** Solid Endmill  
<APFE (Flat)>  
[Wing Lib, Tail Face]  
: Shouldering - Finishing

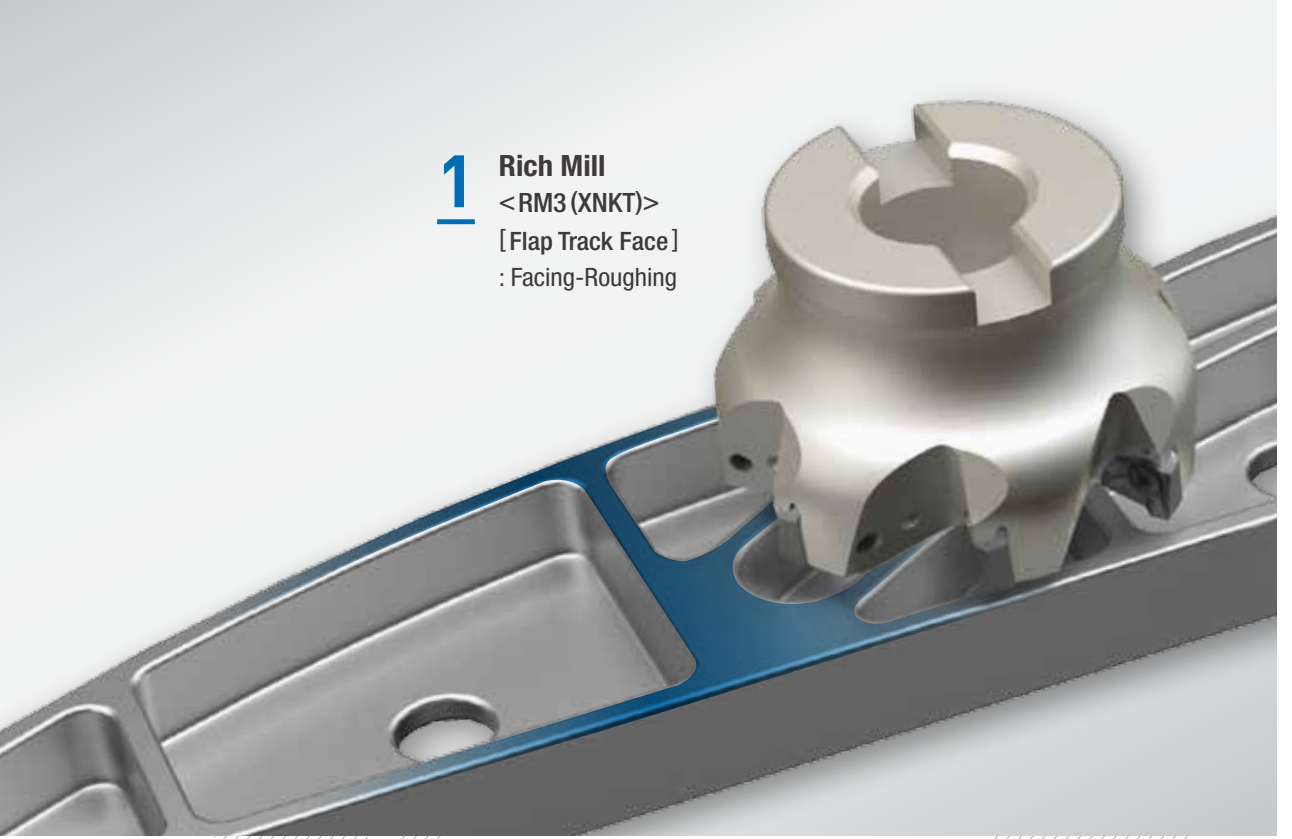
**4** Pro-L Mill  
<Single - Edge Type>  
[Wing Lib, Tail Face]  
: Shouldering - Roughing

**5** Mach Drill Plus  
<MSDPH - N/ND>  
[Wing Lib, Tail Face]  
: Centering & Drilling

**7** Pro-X Mill  
<PAXS (XEKT)>  
[Wing Lib, Tail Face]  
: Shouldering & Facing - Roughing, Finishing

**6** Solid Endmill  
<SSREA (Radius Special)>  
[Wing Lib, Tail Face]  
: Facing - Finishing





**1** Rich Mill  
<RM3 (XNKT)>  
[ Flap Track Face ]  
: Facing-Roughing

# FLAP TRACK

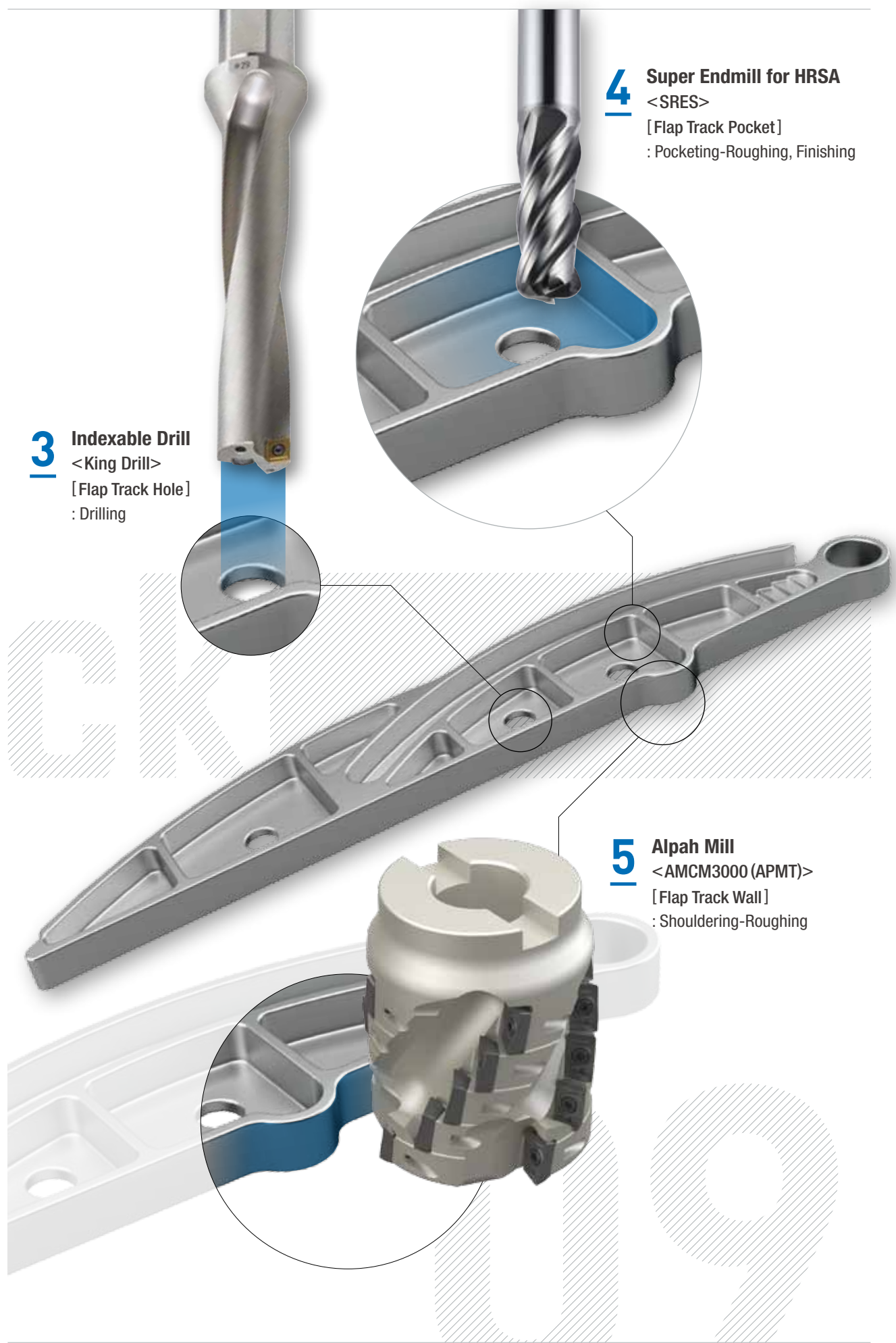


**2** Indexable Drill  
<King Drill>  
[ Flap Track Hole ]  
: Drilling

**4** Super Endmill for HRSA  
<SRES>  
[Flap Track Pocket]  
: Pocketing-Roughing, Finishing

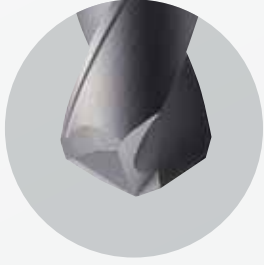
**3** Indexable Drill  
<King Drill>  
[Flap Track Hole]  
: Drilling

**5** Alph Mill  
<AMCM3000 (APMT)>  
[Flap Track Wall]  
: Shouldering-Roughing





**1** Mach Drill Plus  
<MSDPH - C>  
[Body & Wing]  
: Centering & Drilling



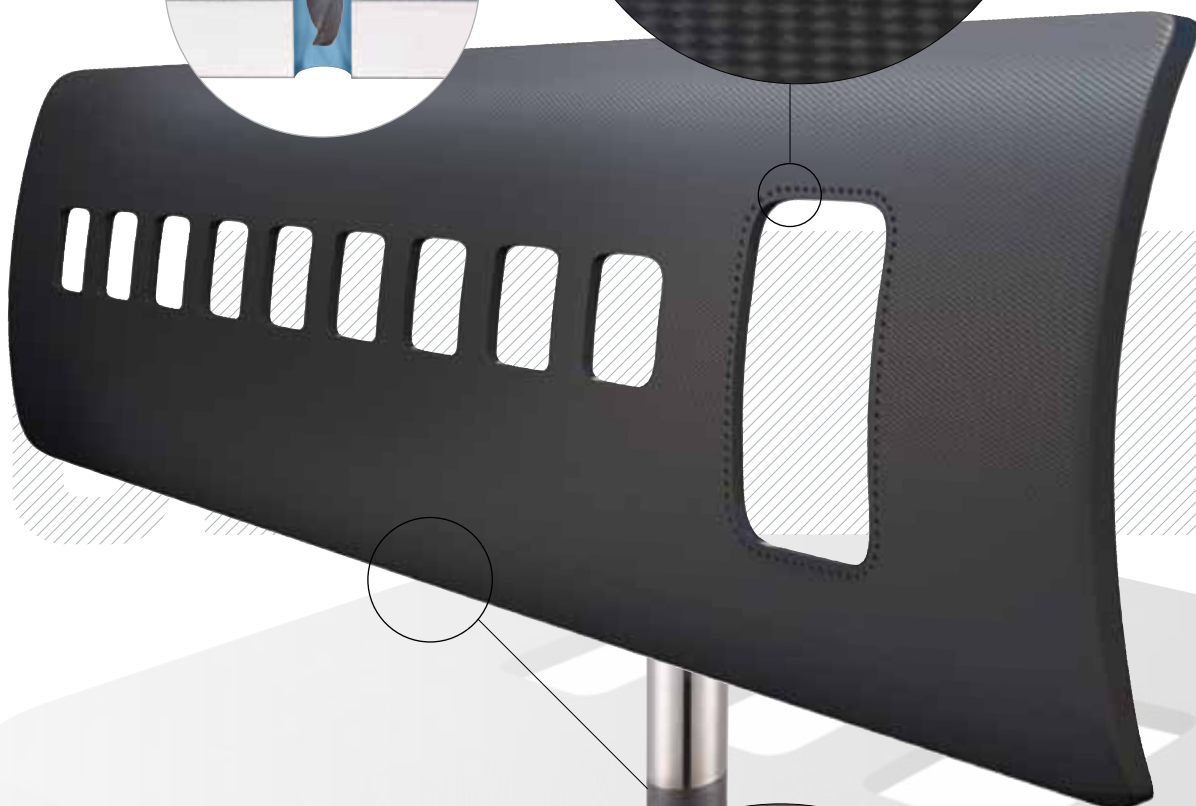
# COMPOS



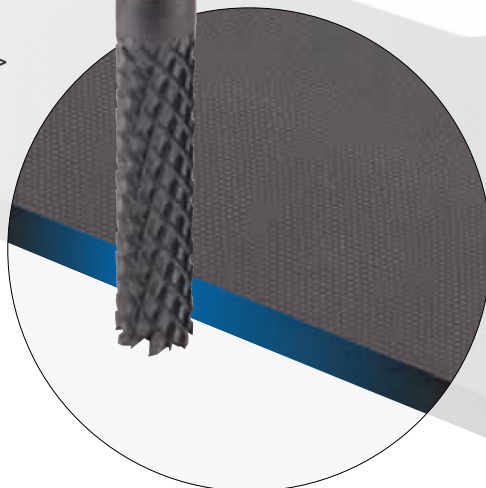
**2** Solid Endmill  
<Dual Helix Router Endmill (CCDR)>  
[Body Frame]  
: Shouldering-Finishing



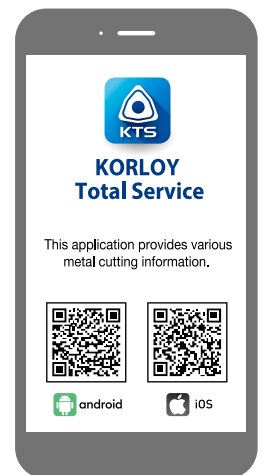
**3** MSD Plus CFRP  
<MSDPS - C>  
[Body Frame]  
: Drilling & Chamfering



**4** Solid Endmill  
<Router Endmill (CCR)>  
[Body Frame]  
: Shouldering-Roughing



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