MITSUBISHI
MITSUBISHI MATERIALS

P610E

# AEROSPACE

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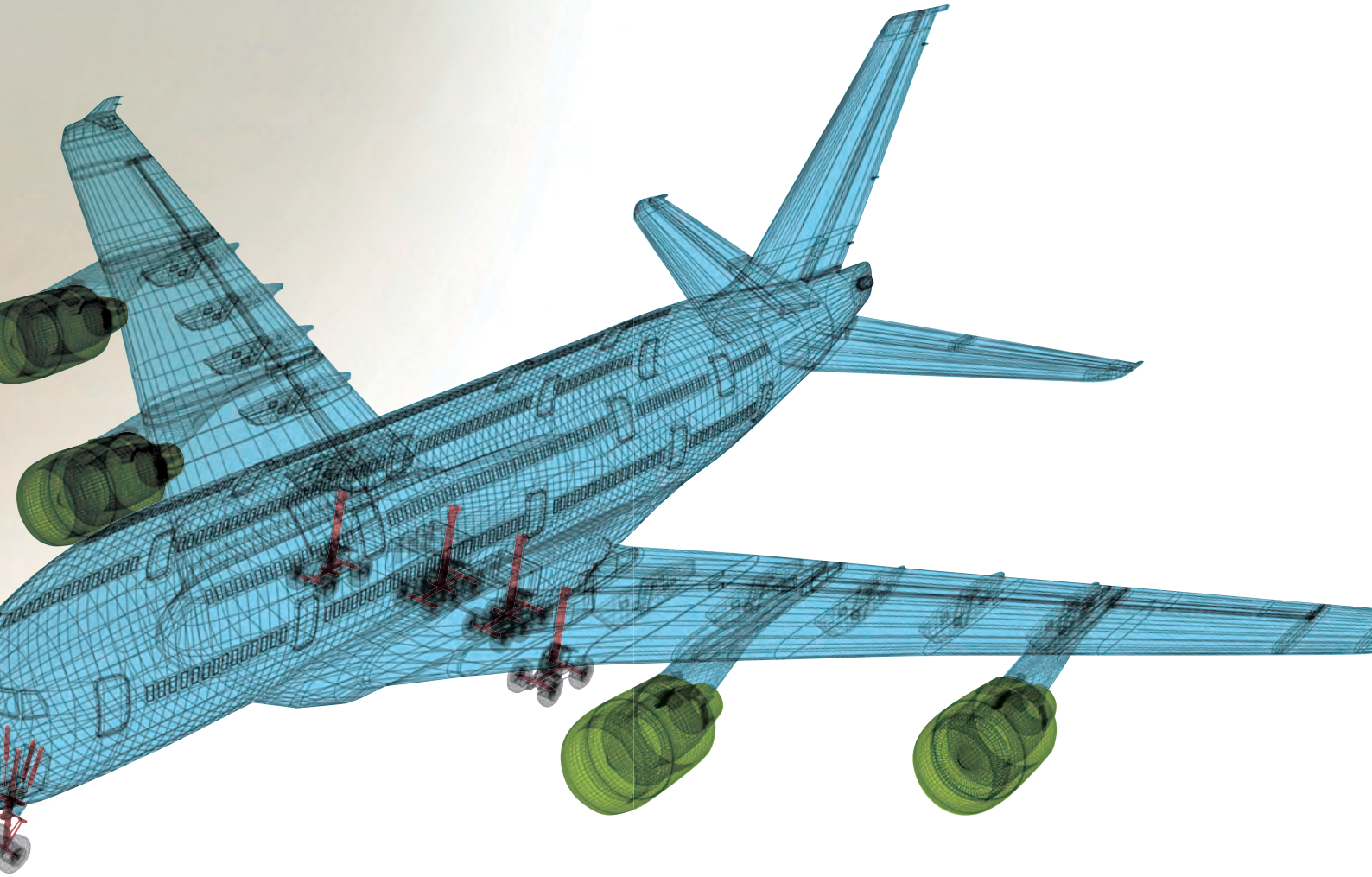
# AEROSPACE

Mitsubishi Materials is constantly engaging ultra modern technologies in the research and development of cutting tools. The results of this research provides solutions for the ever advancing requirements of the aerospace industry.

## AIR FRAME



## ENGINE



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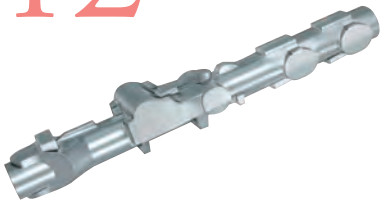

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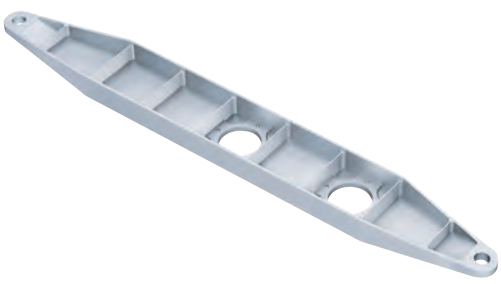
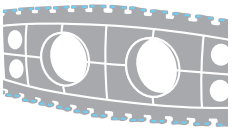


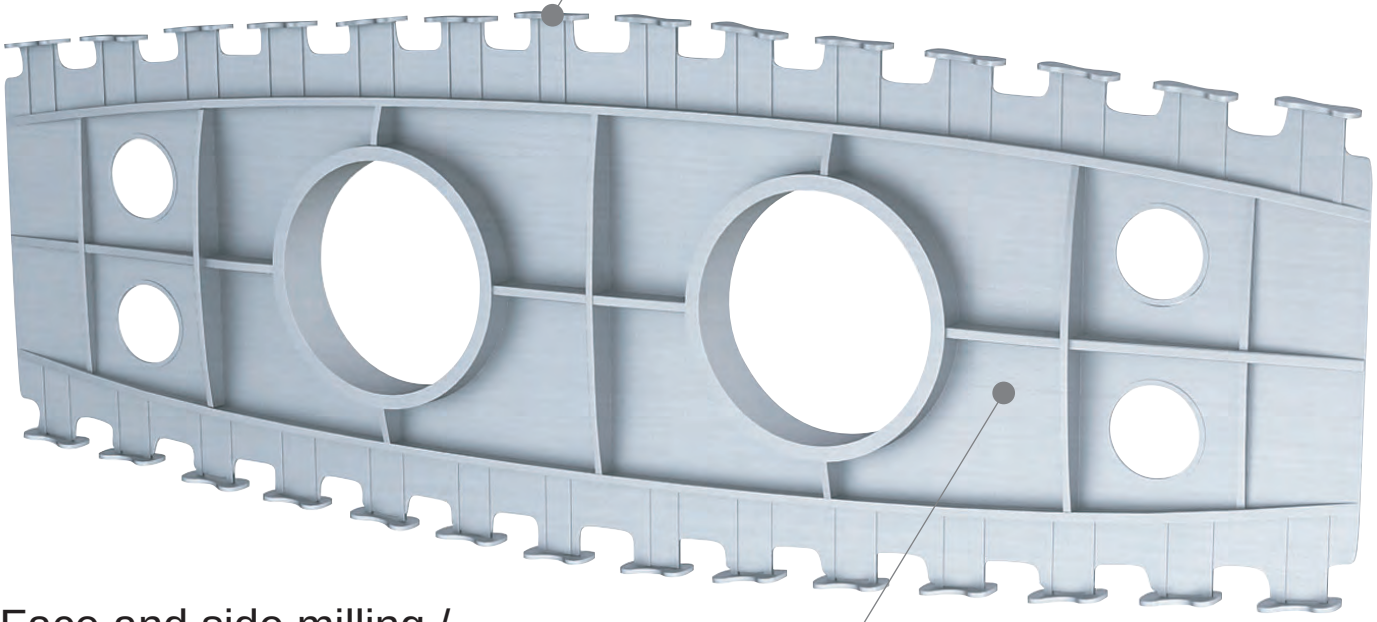
# AIR FRAME

## Work material [Aluminium alloy]

### Drilling

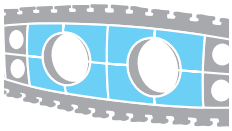
Solid carbide drills with sharp cutting edges reduces burrs when machining aluminium aerospace components.





### Face and side milling / Pocket milling

Indexable milling tools with extreme reliability drastically improve productivity in high speed aluminium machining.



**AXD Series**

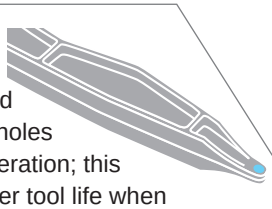
**ALIMASTER**

**MNS Drill**

# Work material [Titanium alloy]

## Drilling

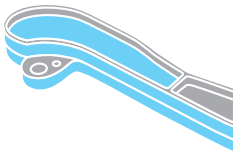
Solid carbide drills with sharp cutting edges and through coolant holes reduce heat generation; this enables longer tool life when machining titanium alloy.





## Side milling / Pocket milling

Milling tools that employ high welding resistance and good coolant distribution provides higher productivity during the machining of titanium alloys.



**APX Series**

**Coolstar Series**

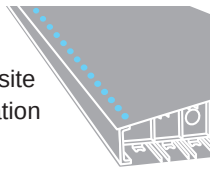
**TAW Drill**

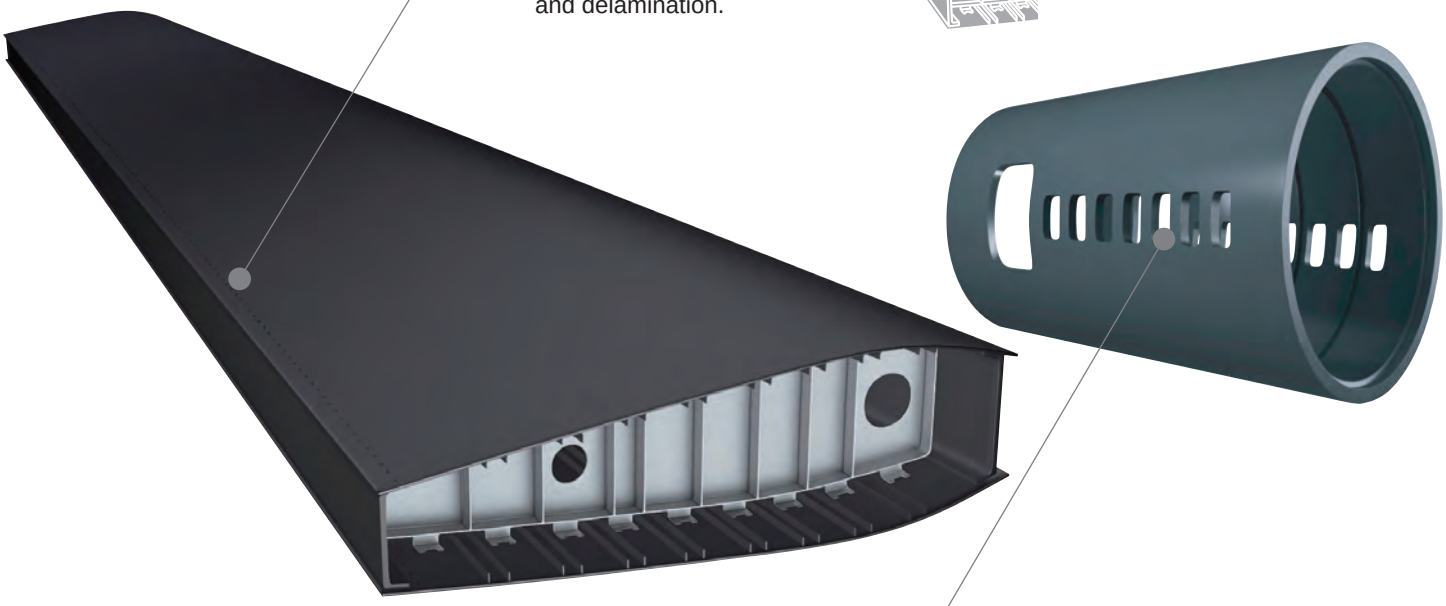
# AIR FRAME

## Work materials [CFRP, CF/Al, CF/Ti]

### Drilling

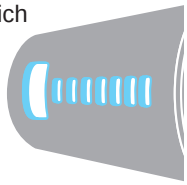
PCD drills / CVD diamond coated drills with optimized cutting geometry for composite materials reduce burr formation and delamination.





### Trimming

Diamond coated end mills which have high wear resistance and extreme sharpness can provide stable cutting of composite materials.



**CVD Diamond**
**Coated End Mill**

**CVD Diamond**
**Coated Drill**

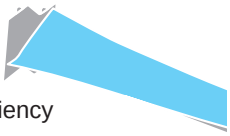
**PCD Drill**

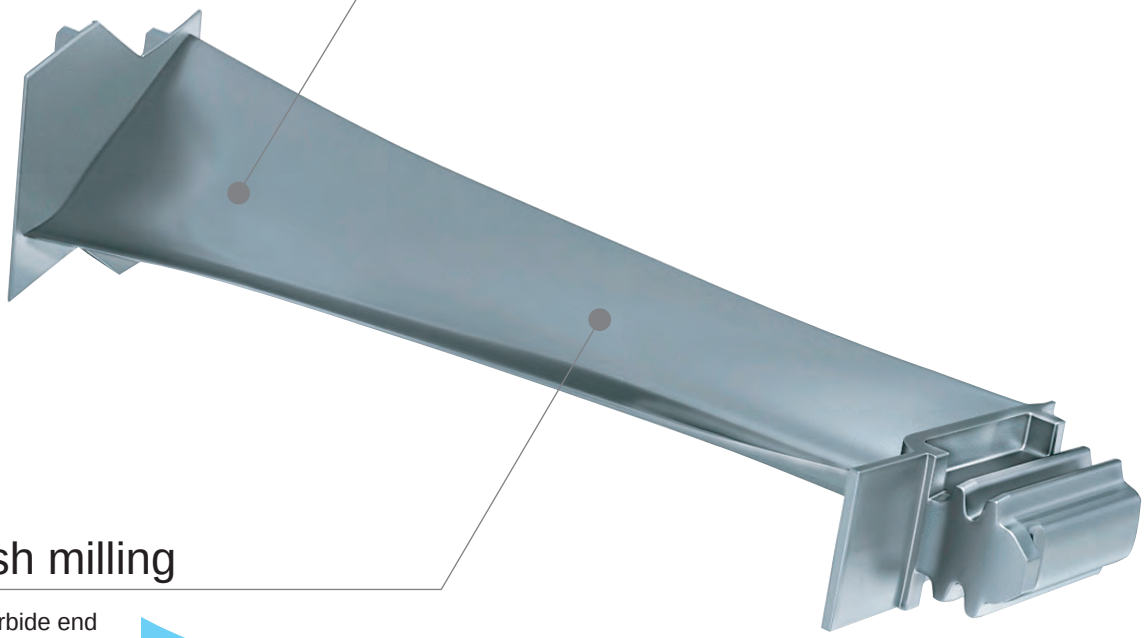
# ENGINE

## Work material [Titanium alloy]

### Rough milling

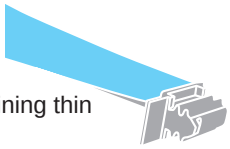
Indexable milling tools with a high cost performance ratio can provide high efficiency machining of titanium workpieces.





### Finish milling

Solid carbide end mills with a variable helix reduces vibration when machining thin titanium alloy parts.



**APX Series**

**SRF/SUF**

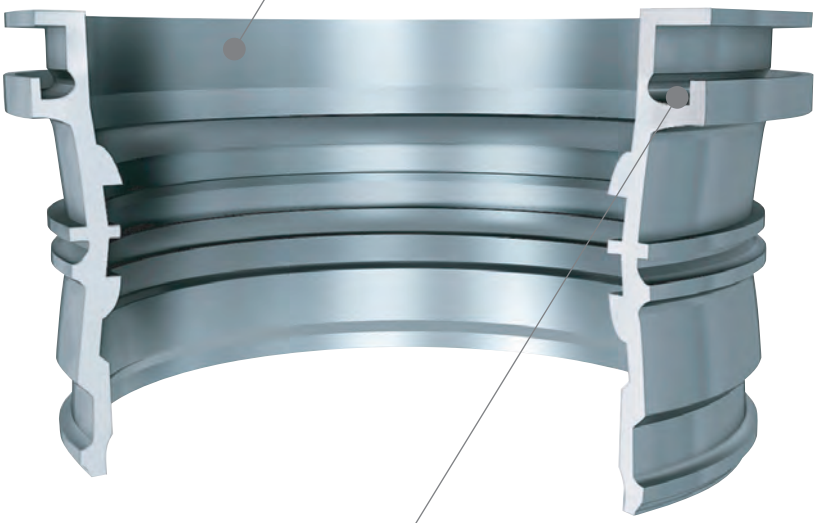
**Vibration Control**
**End Mill Series**

# ENGINE

## Work material [Titanium alloy]

### External and internal turning

Uncoated carbide grades, which are suitable for heat resistant alloy, are recommended for turning due to their ability to reduce built up edge or weld chipping.



### External and internal grooving

A modular grooving system with high performance and flexibility is recommended for machining titanium alloy workpieces.

**FJ/MJ/MS/GJ**
**RT9010**

**HSK-T Tools**

**GY Series**

## Drilling

Solid carbide drills with sharp cutting edges are effective in reducing burr formation and also increase hole accuracy on titanium alloy components.

## Surface milling

Solid end mills with a variable helix reduces vibration when machining thin titanium alloy components.

**Vibration Control**
**End Mill Series**

**W-STAR**

# ENGINE

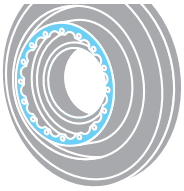
## Work material [Ni-based superalloy]

### External and internal turning

Inserts with a sharp cutting edge and optimised geometry reduces the affects of heat build up when turning Ni-based superalloys.

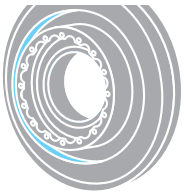
### Profile milling

Solid carbide end mills with a variable helix reduces vibration when machining thin Ni-based superalloy components.

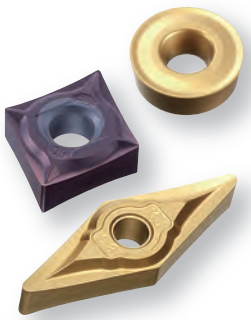


### Copy turning

A modular grooving system with high performance and flexibility is recommended for Ni-based superalloy machining.



**GY series**

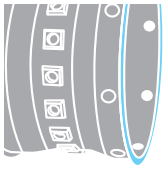


**FJ/MJ/MS/GJ**
**US905/VP05RT/VP10RT**

**Vibration Control**
**End Mill Series**

## External and internal turning

The combination of a heat resistant coated grade and a chip breaker geometry with ideal sharpness can provide higher efficiency when turning Ni-based superalloys.

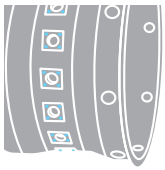


## Profile milling

To increase productivity small diameter, multi-flute indexable insert radius milling tools are highly recommended.

## Drilling

Solid carbide drills with sharp cutting edges and through coolant holes can reduce heat generation during machining; this enables long tool life when drilling Ni-based superalloys.



BRP

RRD

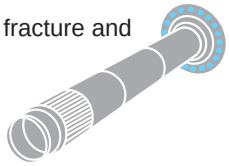
W-STAR

# ENGINE

## Work material [Maraging steel]

### Drilling

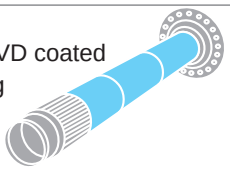
In applications where fracture and wear resistance are essential, solid carbide drills can provide long tool life when machining maraging steels.

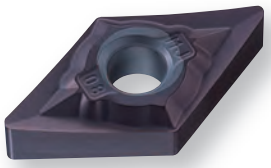




### External and internal turning

The combination of a PVD coated grade and a rigid tooling system provides high efficiency machining and long tool life for turning heat resistant alloys.





**FJ/MJ/MS/GJ**
**VP05RT/VP10RT**

**HSK-T Tools**

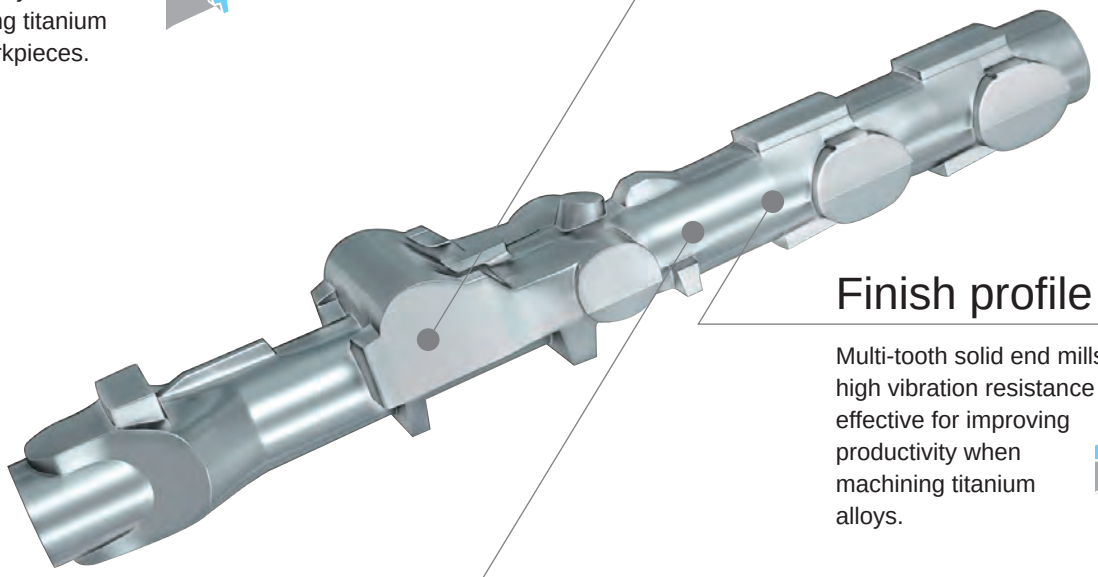
**MPS/MWS**

# LANDING GEAR

## Work material [Titanium alloy]

### Rough milling

Indexable milling tools with ideal rigidity and low cutting resistance can improve productivity when machining titanium alloy workpieces.

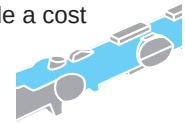


### Finish profile milling

Multi-tooth solid end mills with high vibration resistance are effective for improving productivity when machining titanium alloys.

### Rough profile milling

Indexable milling tools with high precision inserts provide a cost reduction when machining titanium alloys.



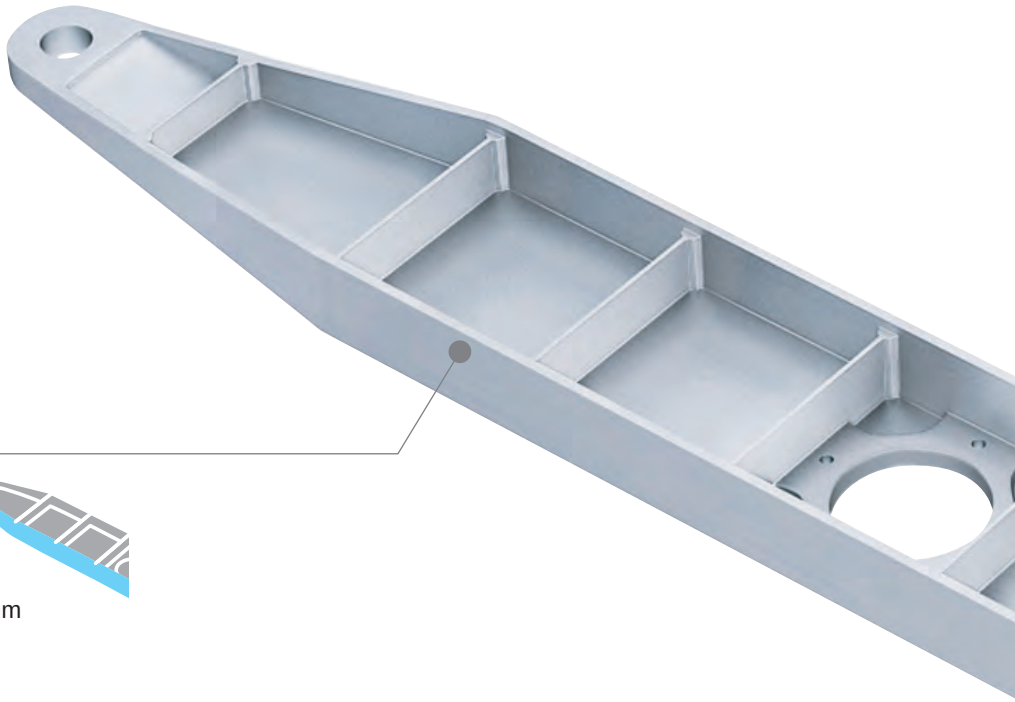
**VFX5/6**

**SRM2**

**Vibration Control**
**End Mill Series**

# LANDING GEAR

## Work material [Titanium alloy]



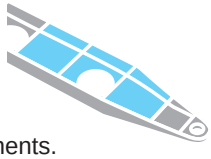
### Side milling

Shell type end mills with long cutting edges, ideal rigidity and low cutting resistance can provide high efficiency machining of titanium alloys.



### Finish pocket milling

Solid carbide end mills with a variable helix reduce vibration when machining thin titanium alloy components.



**VFX5/6**

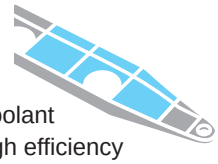
**APX Series**

**RRD**

**Coolstar Series**

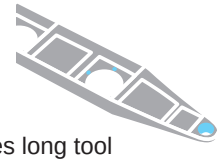
## Rough pocket milling

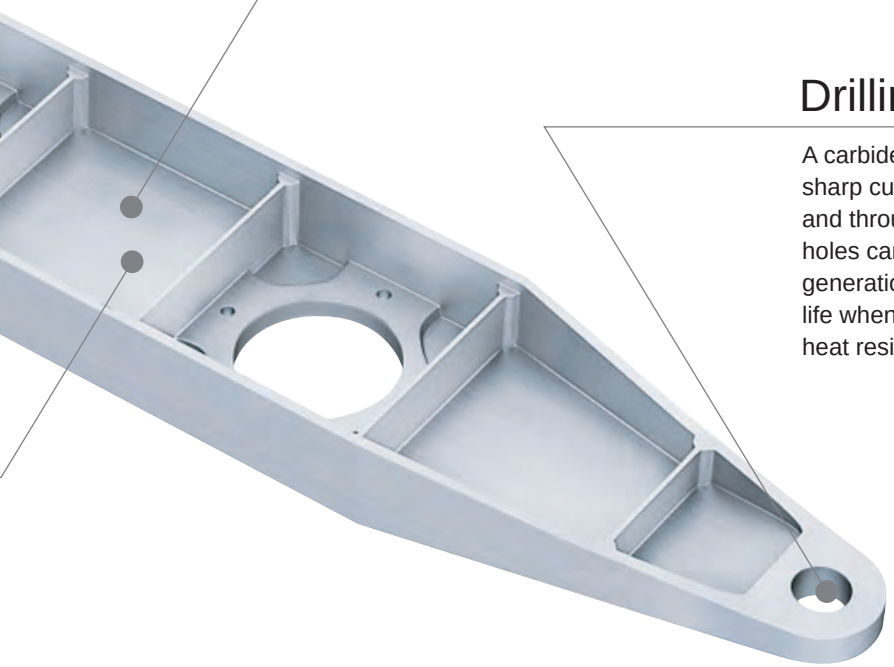
The combination of a milling tool with through coolant holes and a high pressure coolant system can provide high efficiency and long tool life when machining titanium alloy components.



## Drilling

A carbide drill with sharp cutting edges and through coolant holes can reduce heat generation; this enables long tool life when machining titanium and heat resistant alloy parts.



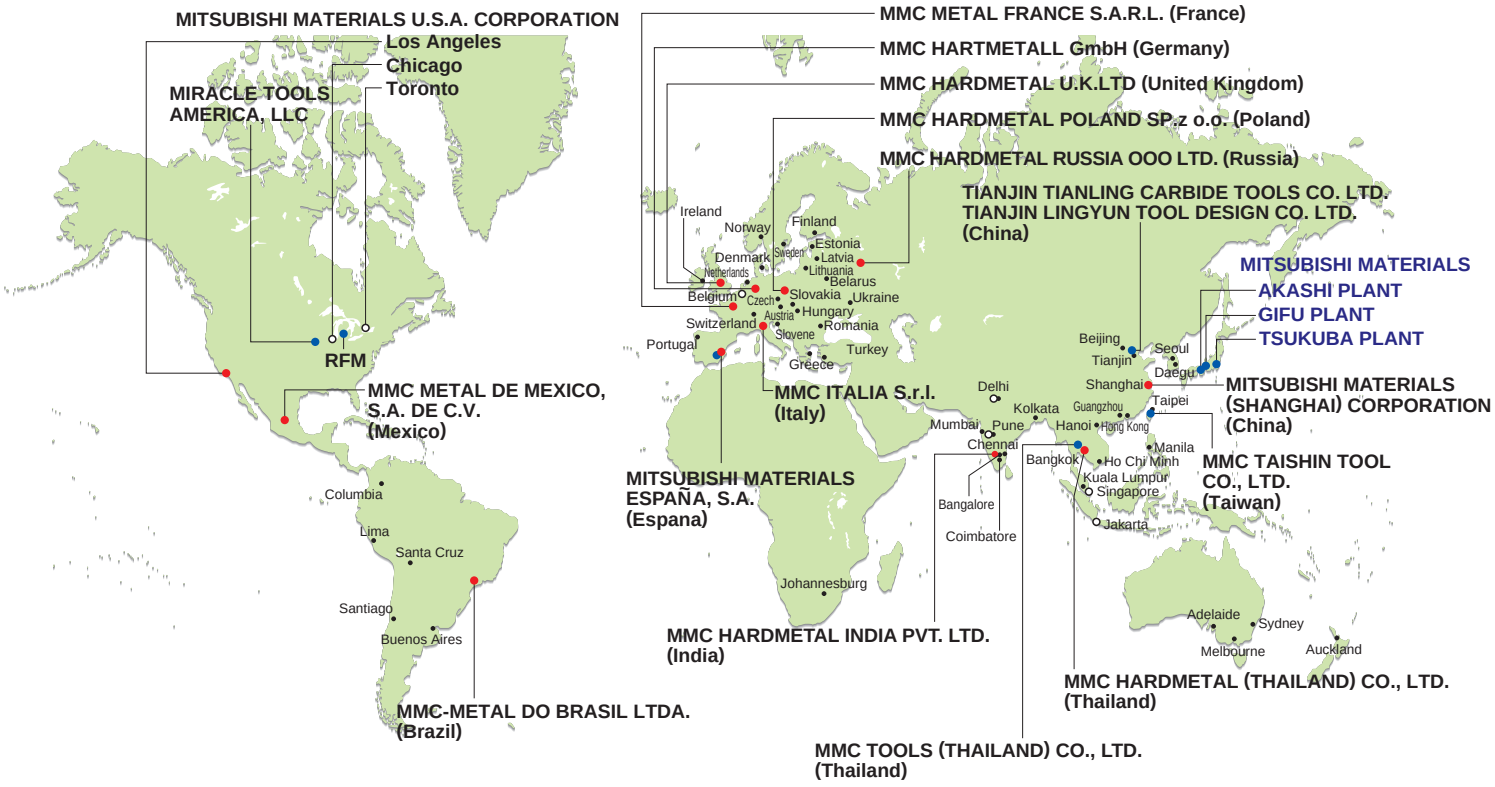


**Vibration Control**
**End Mill Series**

**TAW**

**W-STAR**

# MITSUBISHI Global Network




- **Sales Office**
- **Factory**
- **Representative Office**
- **Agency**

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2012.07.(2,5IDD)
Printed in Germany