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Precision Products

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SCAN ME!

Palbit cutting tools, **ready for takeoff!**



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ENGINE parts

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LANDING GEAR parts

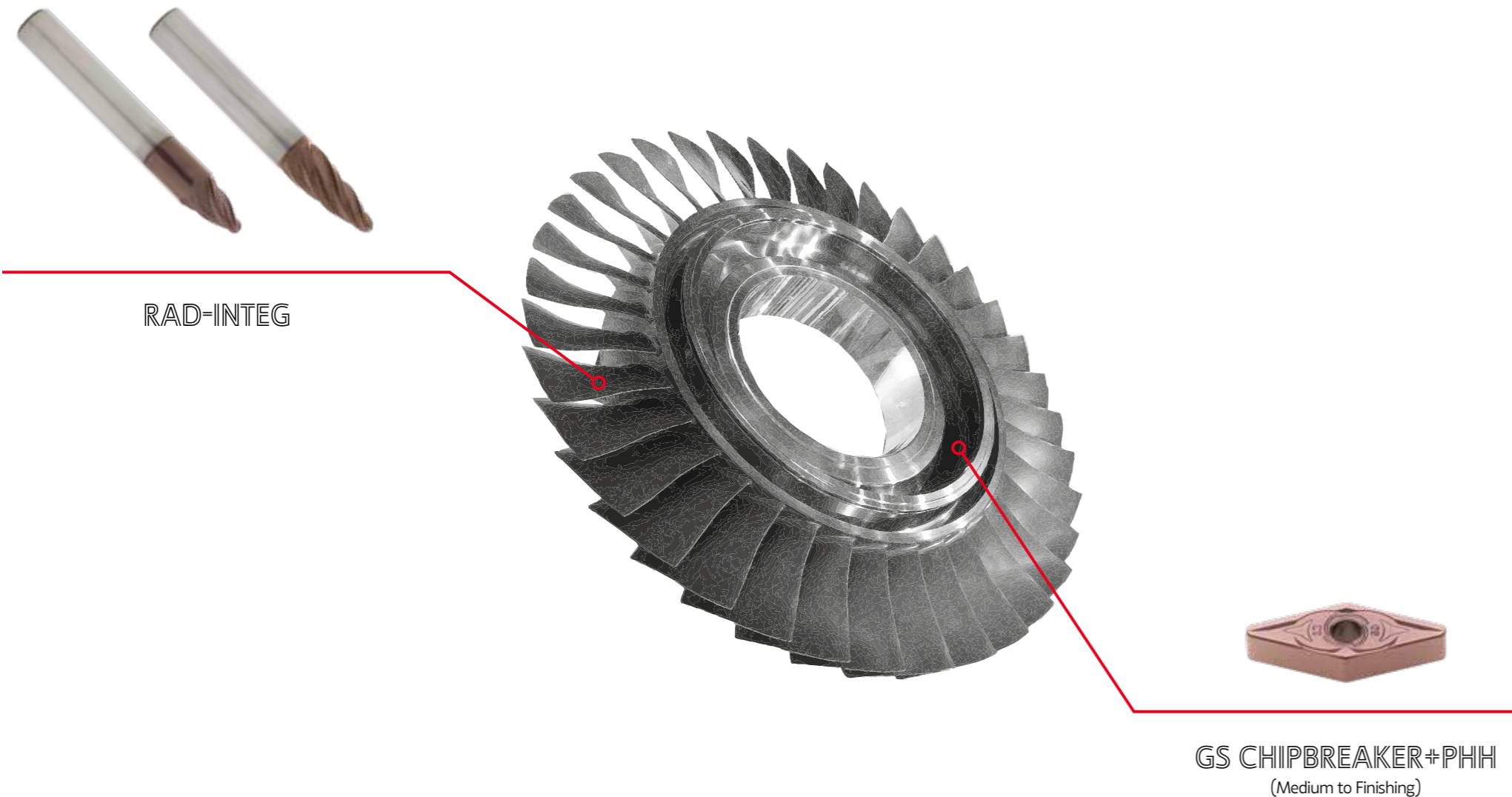
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ENGINE - BLISK

TITANIUM ALLOYS | HRSA

Blisks are present in both cold and hot side of the engine. They are a compound of several blades and a disc all machined in a single body. In order to machine the blisk, an advanced 5-axis machining centre is required as well as knowledge on how to machine HRSA and titanium. At Palbit we provide prompt technical support to our customers and help them increase their productivity.



ENGINE - BLADES

HRSA

The manufacturing of jet engine blades is a most demanding challenge in metal cutting. The blade materials have extremely low machinability and the blade geometry is often complex.

Palbit's TURBOMILL faces this challenge with extremely heat-resistant inserts and foolproof indexation cutters making it the best solution for the rough machining. For the machining of the foil-to-root/head a flexible endmill such as the RAD-INTEG, achieves the best productivity.



TEST REPORT



Cutter: 052A34290-05-05-022040
 Insert: RPHT 1204 M0E-LS
 Grade: PHH530

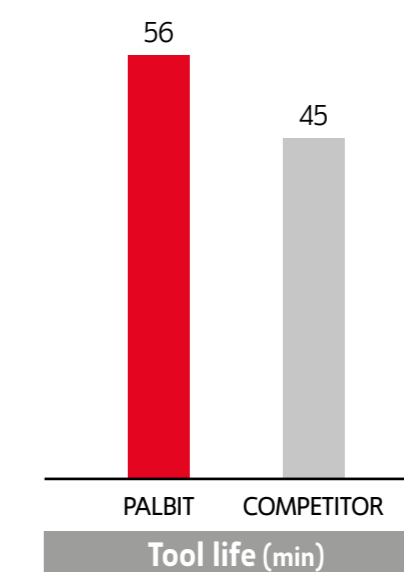


Palbit Insert



Competitor Insert

Workpiece material: AISI 316L - After 45 mins



Cutting speed: V_c	200 m/min
Feed per tooth: f_z	0,2 mm/tooth
Depth of cut: a_p	2,0 mm
Stepover : a_e	60%
Operation	Face milling
Coolant	Air

ENGINE - FAN DISK

TITANIUM ALLOYS

Fan discs are complex geometries with grooves and slots that are hard-to-reach and demand high accuracy. At Palbit we develop custom tools for every problem and deliver the highest quality products for the most demanding challenges.



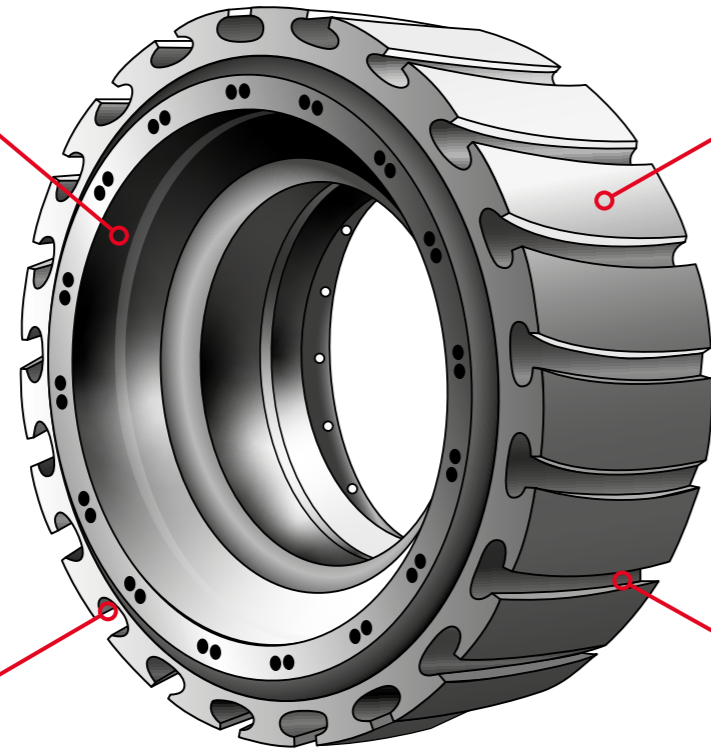
GS CHIPBREAKER+PHH
(Medium to Finishing)



DOMX
(Roughing)



INOX-INTEG



INOX-INTEG
(Roughing)

ENGINE - TURBINE DISK

HRSA

A turbine disc has to rotate at high speed in a relatively cool environment and is subjected to large rotational stresses. The limiting factor that affects the useful disc life is its resistance to fatigue cracking. Palbit's new GS chipbreaker and DOMX insert will increase tool life during Inconel machining operations.



GS CHIPBREAKER+PHH
(Medium to Finishing)



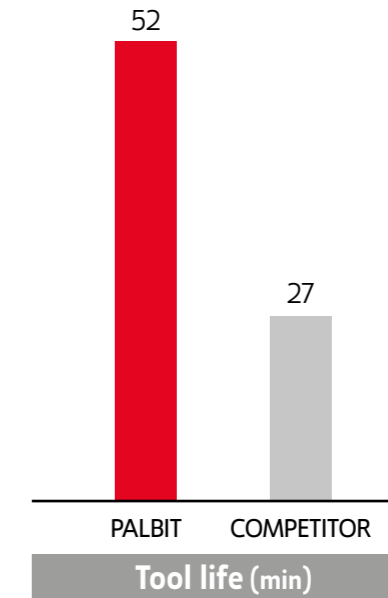
DOMX
(Roughing)



TEST REPORT



Toolholder: DDJN R 2525 M15-A-DX1
Insert: DOMX 1506R1-GS
Grade: PHH910



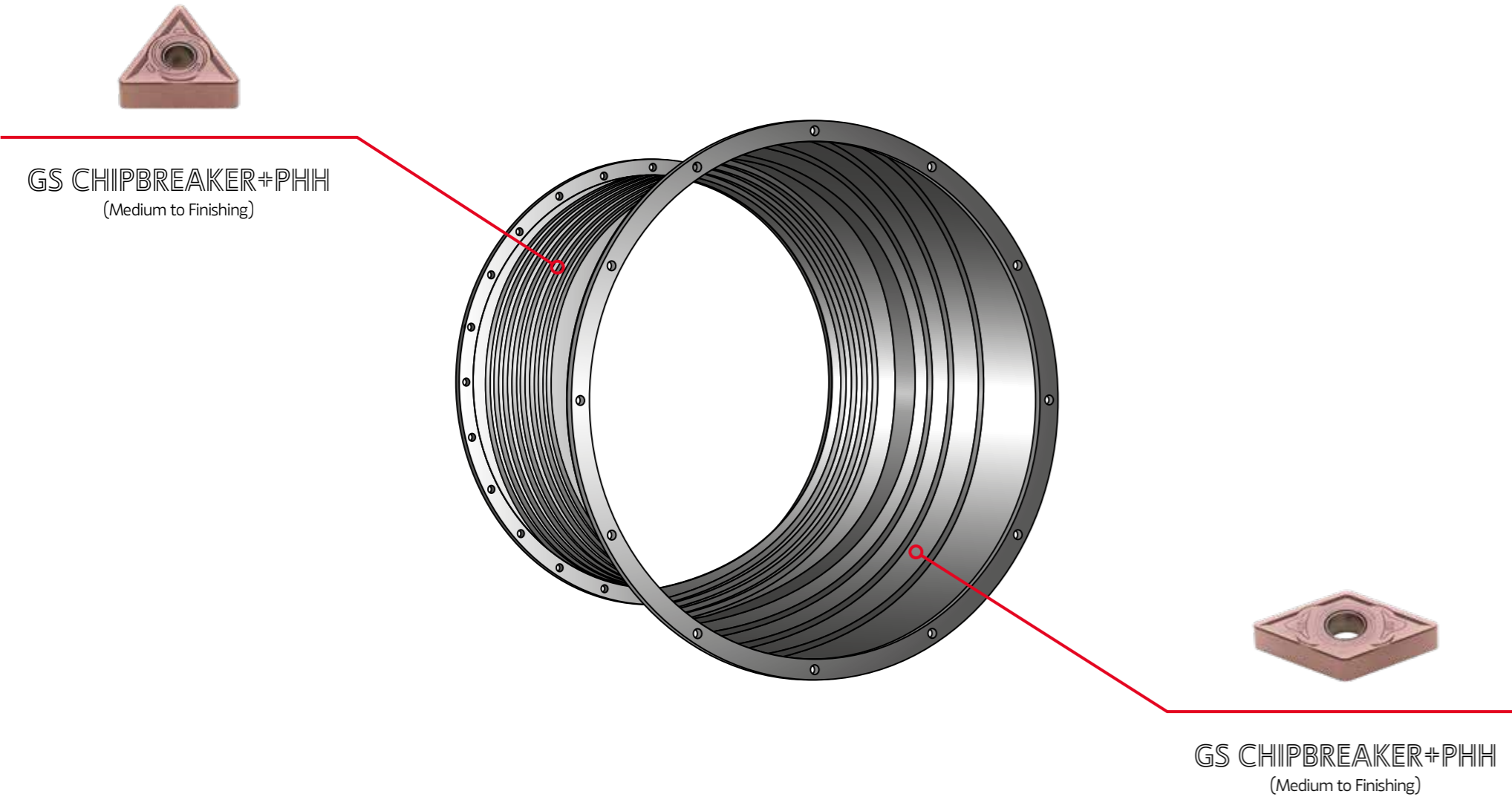
Workpiece material: Inconel 625 Alloy

Cutting speed: V_c	70 m/min
Feed rate: f_n	0,15 mm/rev
Depth of cut: a_p	0,6 mm
Operation	External Turning
Coolant	Yes

ENGINE - EXHAUST

TITANIUM ALLOYS

At the exhaust, the air flows at extremely high temperatures. This calls for the use of lightweight and heat-resistant materials such as titanium aluminide or other titanium alloys. Palbit developed the new GS chipbreaker specially to machine these heat-resistant materials.

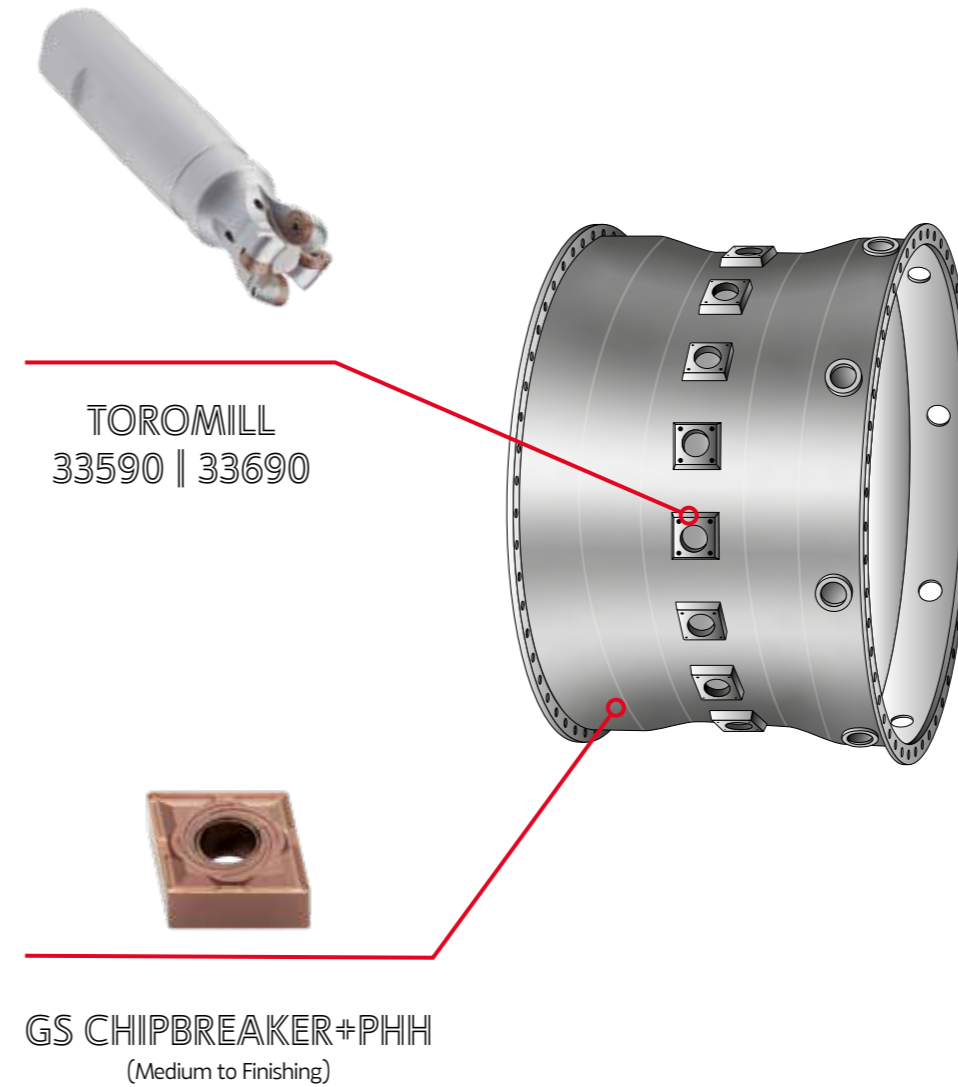


ENGINE - COMBUSTION CHAMBER

HRSA

Combustion chamber provide structural stability to the jet engine. They are a challenge for turning due to the high amount of material to be removed. With the new GS chipbreaker, all steps of turning are secured with maximum tool life.

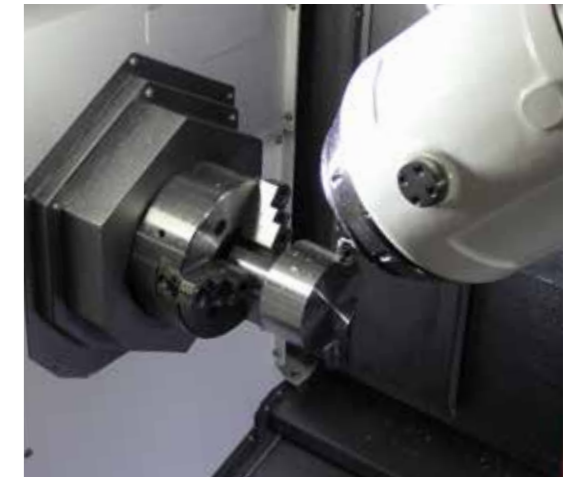
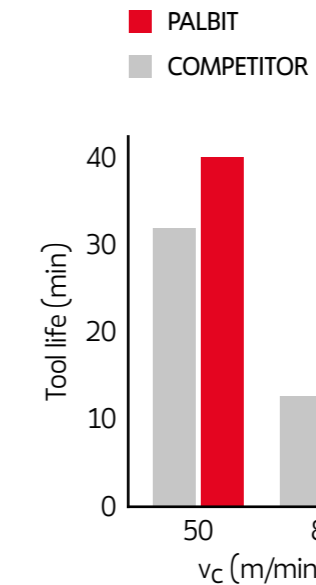
Because of the countless matings of this part also required copious milling operations. Palbit develops custom made solutions that give the customer the perfect answer to their demands.



TEST REPORT



Toolholder: DCLN L 2525 M12
Insert: CNMG 120408-GS
Grade: PHH910



Workpiece material: Inconel 625 Alloy

Feed rate: f_n	0,12 mm/rev
Depth of cut: a_p	0,5 mm
Operation	External Turning
Coolant	Yes

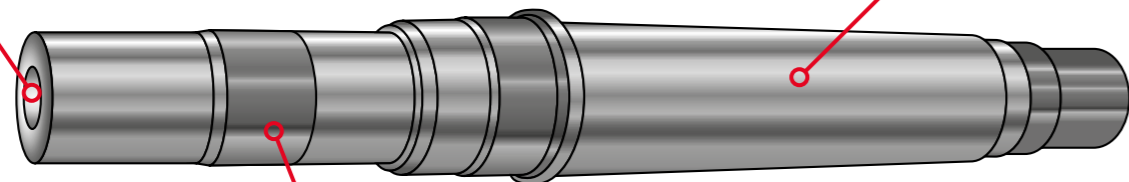
ENGINE - SHAFT

HRSA | MARAGING STEELS

The greatest challenge when machining the engine shaft is its length and hollowness. To overcome this difficulty Palbit has developed anti-vibration turning bars with up to 10 x ØD capability.



ANTI-VIBRATION
TOOLHOLDERS
(Internal Turning)



RCMT-GS
(Roughing)



COATED PCBN INSERTS
(External Turning)

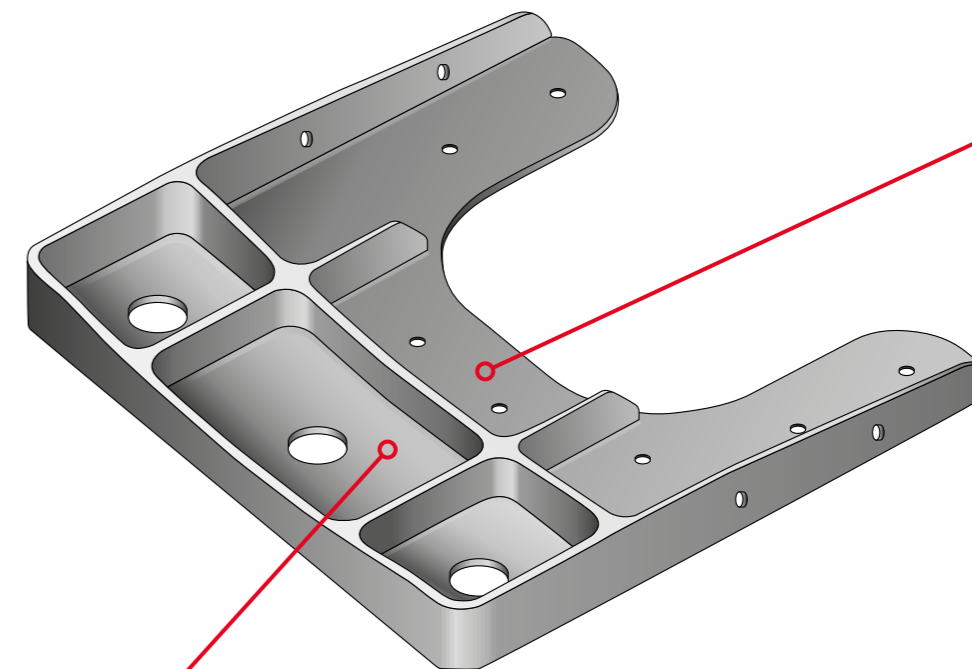
WING - PYLON

TITANIUM ALLOYS

The pylon brackets connect the wing to the jet engine, its design varies greatly for different models. The most common traits of pylons are the existence of both large plain surfaces and closed, hard-to-reach surfaces. Palbit faces this design diversity with a broad range of tooling solutions.



TOROMILL 33990



RAD-INTEG

WING - RIB

ALUMINIUM

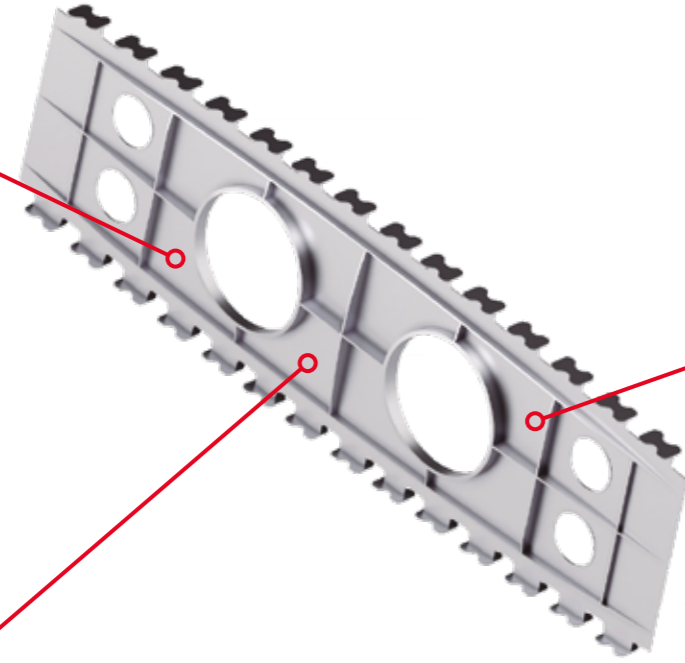
Being lightweight and structurally capable, aluminium is present in many airplane components. The milling of the wing rib balances the removal of large volumes of material and the challenges of machining thin walls.



ALUPRO 76090
(Face and Pocket Milling)



ALUPRO 77090
(Face and Pocket Milling)



AL-INTEG
(Pocket finishing)

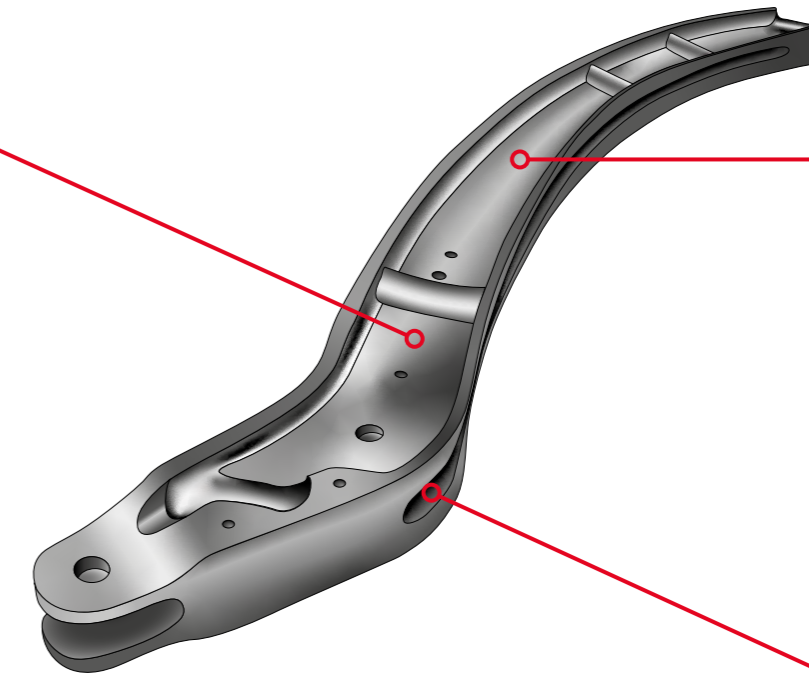
WING - FLAP | SLAT TRACK

TITANIUM ALLOYS | TEMPERED STEELS

The machining of both flat and slat tracks consists heavily in pocket and side milling.



LINEPRO 57045
(Face Milling)



TOROMILL 33590 | 33690
(Pocket milling)

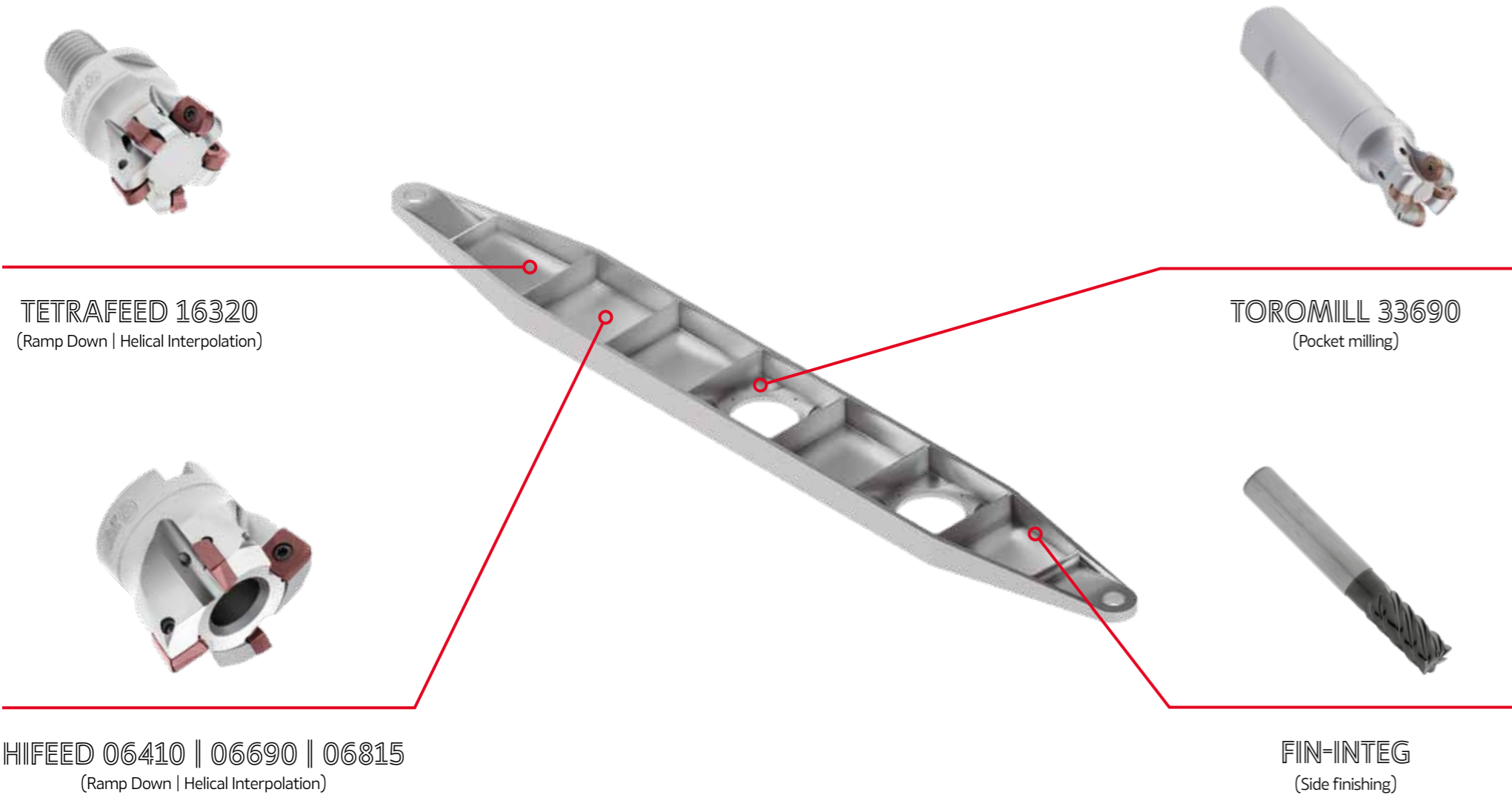


SPECIAL SLOTTING SOLUTIONS

LANDING GEAR - BEAM

Like in many fuselage components, the landing gear beam is produced in titanium alloys. Being such a difficult material to machine, a lot of effort/expertise is put into our tools and grades in order to overcome short tool life, chatter and many other hardships.

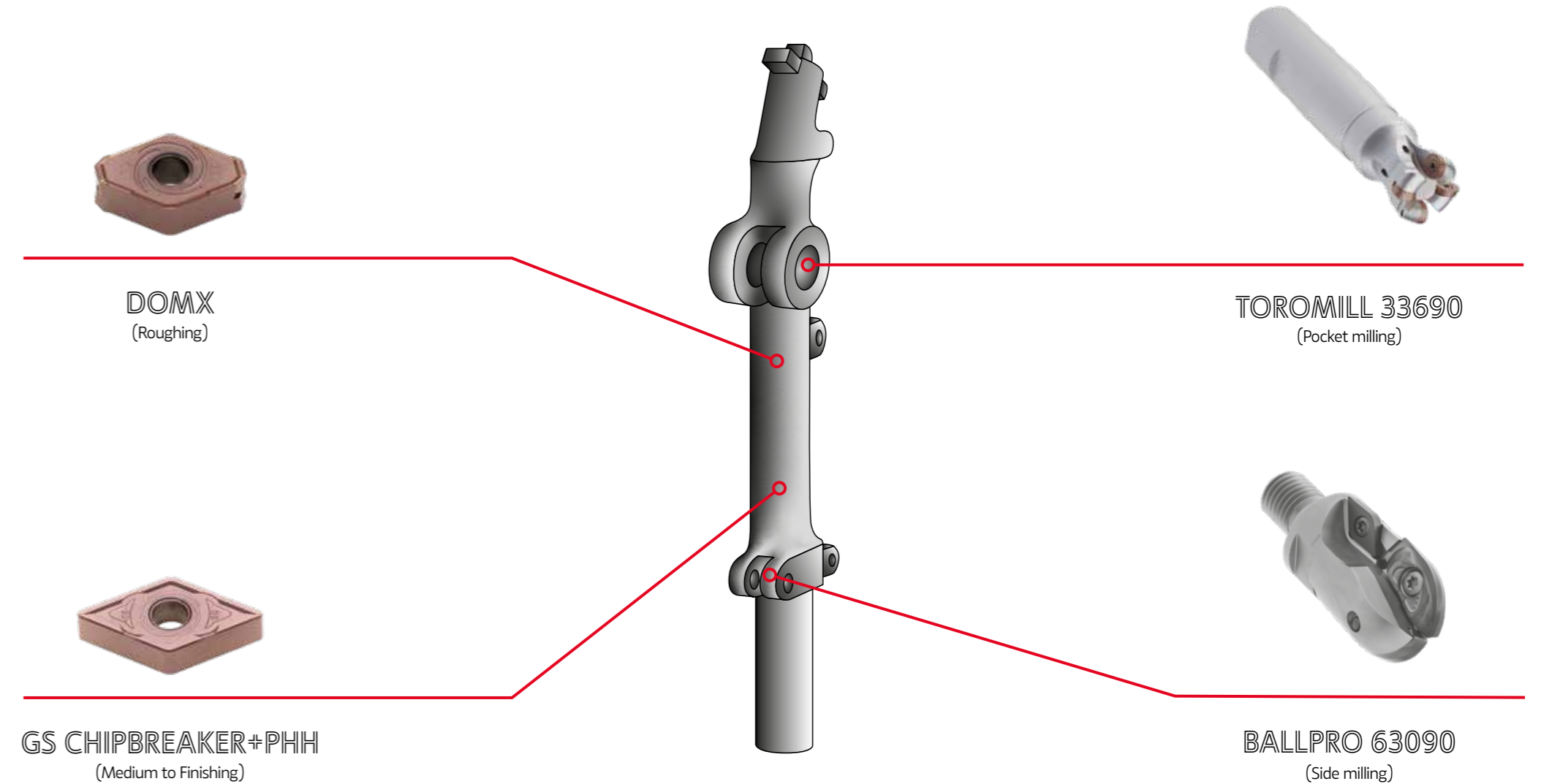
TITANIUM ALLOYS



LANDING GEAR - STRUT CYLINDER

The main cylinder cushions the landing impact and integrate many components. Being such a complex components it required an copious amount of operations.

TITANIUM ALLOYS | ALLOY STEELS





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SINCE 1916

ENGINE

WING

LANDING GEAR

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