

AEROSPACE

silmax.it



SILMAX®



QUALITY AS A STANDARD

Silmax è un'azienda italiana leader nella produzione di utensili da taglio, con una lunga storia e una forte propensione all'innovazione grazie a moderni impianti e tecnologie di ultime generazioni.

Da oltre 50 anni Silmax si distingue per precisione, passione e professionalità.

Silmax is an Italian leading cutting tools manufacturer, with a long history and strong attitude to innovation thanks to modern machines and last generation technology.

Since 50 years Silmax is known for precision, passion and professionalism.

Silmax ist ein führendes italienisches Unternehmen in der Herstellung von Zerspanungswerkzeugen mit einer langen Geschichte und einer großen Passion für Innovation dank moderner Systeme und Technologien der neuesten Generation.

Seit über 50 Jahren zeichnet sich Silmax durch Präzision, Leidenschaft und Professionalität aus.

Silmax est une entreprise italienne leader dans la production d'outils de coupe, avec une longue histoire et une forte propension à l'innovation grâce à des installations modernes et des technologies de dernière génération.

Depuis plus de 50 ans, Silmax se distingue par sa précision, sa passion et son professionnalisme.

LA NOSTRA STORIA OUR HISTORY / UNSERE GESCHICHTE / NOTRE HISTOIRE



1819	Paul Alessio inizia a forgiare i suoi primi utensili. La piccola officina si chiama "L'Usine".	Paul Alessio begins to forge his first tools. The small workshop is called "L'Usine".	Paul Alessio beginnt seine ersten Werkzeuge zu schmieden. Die kleine Werkstatt heißt "L'Usine".	Paul Alessio commence à forger ses premiers outils. Le petit atelier s'appelle « L'Usine ».
1955	Sotto la guida di Enrico M. Fumagalli l'"Usine" riprende l'attività produttiva.	Under the control of Enrico M. Fumagalli, the "Usine" resumed its tool production.	Unter der Leitung von Enrico M. Fumagalli nimmt die "Usine" die Produktionsaktivität wieder auf.	Sous la direction de Monsieur Enrico M. Fumagalli, « L'Usine » reprend son activité de production.
1975	"L'Usine" diventa Silmax, una moderna SPA.	"L'Usine" becomes the modern Silmax, SPA.	Aus "L'Usine" wird Silmax, modernes SPA.	« L'Usine » devient Silmax, une SPA moderne.
1984	Joint-venture Silmax Spa Balzers AG.	Joint-venture Silmax Spa Balzers AG.	Joint-venture Silmax Spa Balzers AG.	Joint-venture Silmax Spa Balzers AG.
2005	Silmax celebra i suoi 50 anni.	Silmax celebrates its 50th birthday.	Silmax feiert seine 50 Jahre.	Silmax fête son 50e anniversaire.
2012	Vengono inaugurate le sedi commerciali in India, Cina e Germania.	New commercial branches open in India, China and Germany.	Verkaufsbüros in Indien, China und Deutschland werden eröffnet.	Des bureaux de vente sont inaugurés en Inde, en Chine, en Allemagne.
2013	Silmax inaugura il nuovo centro di rivestimento.	Silmax new plant for PVD coating.	Silmax eröffnet das neue Zentrum der Beschichtung.	Silmax inaugure un nouveau centre de revêtement.
2019	Silmax 200 anni!	Silmax 200 years!	200 Jahre Silmax!	Silmax fête son 200 anniversaire!
2021	5 nuove rettifiche e 1 nuovo impianto PVD.	5 new grinding machines and 1 new PVD unit.	Fünf neue Schleifmaschinen und ein neues PVD-System.	5 nouvelles rectifieuses et 1 nouveau système PVD.
2022	Silmax continua la sua storia e il suo sviluppo sempre attenta a mantenere alta la qualità dei suoi prodotti e la soddisfazione dei suoi clienti.	Silmax continues its history and its development, always careful to maintain the high quality of its products and the satisfaction of its customers.	Silmax setzt seine Geschichte und Entwicklung mit dem Ziel fort, die hohe Qualität seiner Produkte und die Zufriedenheit seiner Kunden zu halten.	Aujourd'hui, Silmax poursuit son histoire et son développement en veillant toujours à maintenir en haute la qualité de ses produits et la satisfaction de ses clients.
2023	Silmax Precision Tools (Wuxi) Co., Ltd - Cina Apertura del sito produttivo a Wuxi City e per la produzione degli utensili standard e speciali per il crescente mercato locale.	Silmax Precision Tools (Wuxi) Co., Ltd - China Opening of the production site in Wuxi City for the manufacturing of standard and special tools for the growing local market.	Silmax Precision Tools (Wuxi) Co., Ltd - China Eröffnung des Produktionsstandorts in Wuxi City für die Herstellung von Standard- und Spezialwerkzeugen für den wachsenden lokalen Markt	Silmax Precision Tools (Wuxi) Co., Ltd - Chine Ouverture d'un site de production en Wuxi City pour la production d'outils standards et spéciaux destinés au marché local en expansion.
2024	Maggio – Accordo con il gruppo August Rüggeberg GmbH & Co. KG La multinazionale tedesca entra nel capitale del Gruppo Silmax con l'obiettivo di diventare un player globale nel settore degli utensili da taglio di alta precisione.	May - Agreement with the August Rüggeberg GmbH & Co. KG The German multinational company entered the capital of the Silmax Group, with the aim of becoming a global player in the sector of high precision cutting tools.	Mai - Vereinbarung mit der August Rüggeberg GmbH & Co. KG Das internationale ausgerichtete Unternehmen mit Stammsitz in Deutschland steigt in das Kapital der Silmax-Gruppe mit dem Ziel ein, gemeinsam zu wachsen, Synergien zu nutzen und sich zu einem Global Player im Bereich hochwertiger Zerspanungswerkzeuge zu entwickeln.	Mai - Accord avec le Groupe August Rüggeberg GmbH & Co. KG. La multinationale allemande est entrée dans le capital du groupe Silmax avec l'objectif de devenir un acteur mondial dans le domaine des outils de coupe de haute précision.
2025	Silmax Tools India Pvt Ltd Apertura del sito produttivo a Bangalore per la produzione degli utensili standard e speciali per il crescente mercato locale.	Silmax Tools India Pvt Ltd Opening of a manufacturing site in Bangalore for the production of standard and special tools for the growing local market.	Silmax Tools India Pvt Ltd Eröffnung einer Produktionsstätte in Bangalore für die Herstellung von Standard- und Spezialwerkzeugen für den wachsenden lokalen Markt.	2025 Silmax Tools India Pvt Ltd Ouverture d'un site de production à Bangalore pour la production d'outils standards et spéciaux destinés au marché local en expansion.

CATALOGHI SILMAX

SILMAX CATALOGUES / SILMAX-KATALOGE / CATALOGUES SILMAX



HM Metallo duro
HM Carbide



Frese per stampi
Mold End Mills



Foratura
Drilling



Silsaving
Silsaving



HSS Acciaio super rapido
HSS High Speed Steel



Punte a cannone
Gun Drills



Maschi
Taps



Soluzioni per impeller
Impeller solutions



Microutensili
Micro tools

UN APPROCCIO ESG

AN ESG APPROACH / EIN ESG-ANSATZ / UNE APPROCHE ESG

Il gruppo Silmax ha sempre adottato un approccio **ESG (Environmental, Social, and Corporate Governance)** che considera prioritari la **sostenibilità ambientale** e il **benessere dei dipendenti e dei clienti**. La società ha intrapreso un percorso virtuoso con l'adozione di iniziative che consentono di ricondurre a criteri di misurazione oggettivi e condivisi le attività.

Da un punto di vista operativo le attività svolte riguardano **impatti diretti** con adozione e miglioramento continuo di climate actions in termini di **riduzione dell'emissione di CO₂**. Significativi sono anche gli **impatti indiretti** ottenuti con lo sviluppo di strumenti informatici che riducano al minimo gli spostamenti dei dipendenti.

La circolarità dei prodotti Silmax è certificata attraverso l'adozione di un **carbon footprint report** e la predisposizione di una classificazione della **Product Carbon Footprint** che può essere integrata nella scheda prodotto.

The Silmax Group has always adopted an **ESG (Environmental, Social, and Corporate Governance) approach**, which considers **environmental sustainability** and **well-being of employees and customers** as a priority. The company has started a virtuous path by adopting initiatives that allow to base its activities on objective and shared measurement criteria.

From an operational point of view, the activities carried out regard **direct impacts**, with the adoption and continuous improvement of climate actions in terms of **CO₂ emission reduction**. Significant **indirect impacts** are also obtained through the development of IT tools that can minimise employees' travels.

The circularity of Silmax products is certified through the adoption of a **carbon footprint report** and the creation of a **Product Carbon Footprint** classification, which can be integrated into the product technical data sheet.

Die Silmax-Gruppe **hat immer einen ESG-Ansatz (Umwelt, Soziales und Corporate Governance)** verfolgt, der ökologische **Nachhaltigkeit und das Wohlergehen von Mitarbeitern und Kunden als Priorität betrachtet**. Das Unternehmen hat einen guten Weg eingeschlagen, indem es Initiativen ergriffen hat, die es ermöglichen, seine Aktivitäten auf objektive und gemeinsame Messkriterien zu stützen.

Aus operativer Sicht haben die durchgeföhrten Aktivitäten **direkte Auswirkungen** mit der Einföhrung und kontinuierlichen Verbesserung von Klimaschutzmaßnahmen im Hinblick auf die Verringerung der CO₂-Emissionen. Erhebliche **indirekte Auswirkungen** werden auch durch den Einsatz von IT-Tools erzielt, die die Reisetätigkeit der Mitarbeiter auf ein Minimum reduzieren können.

Die Kreislauffähigkeit von Silmax-Produkten wird durch einen Bericht über den CO₂-Fußabdruck und die Klassifizierung des Carbon Footprints von Produkten zertifiziert, die in das technische Produktdatenblatt integriert werden kann.

Le groupe Silmax a toujours adopté une **approche ESG (Environnementale, Sociale et de Gouvernance)** qui considère la **soutenabilité environnementale et le bien-être des employés et des clients** comme une priorité. L'entreprise s'est engagée dans une voie vertueuse, en adoptant des initiatives qui permettent de fonder ses activités sur des critères de mesure objectifs et communs.

D'un point de vue opérationnel, les activités réalisées regardent les **impacts directs**, avec l'adoption et l'amélioration continue d'actions climatiques en termes de **réduction des émissions de CO₂**. Des **impacts indirects** significatifs sont également obtenus par le développement d'outils informatiques qui peuvent minimiser les déplacements des employés.

La circularité des produits Silmax est certifiée par l'adoption d'un **rapport sur l'empreinte carbone** et la création d'une classification de l'empreinte carbone des produits, qui peut être intégrée dans la **Fiche Technique du Produit**.

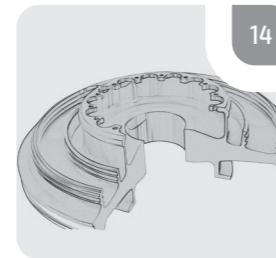
AEROENGINE

Aerospace by Systems

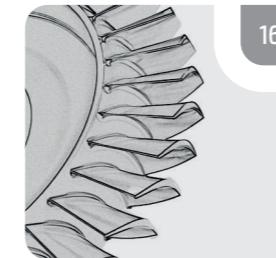
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Turbine Blade

Turbine Disc

Blisk
High Temperature



18



20

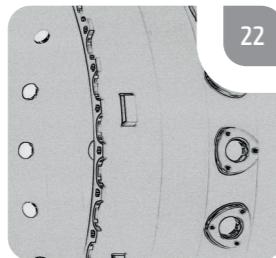


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Blisk
Low Temperature

Fan Casing

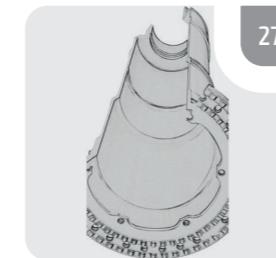
Fan Disc



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24



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Combustion Casing

Gear Box

Shaft



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Auxiliary Power Unit

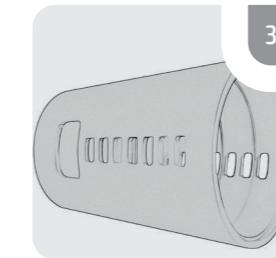
AIRFRAME

Aerospace by Systems

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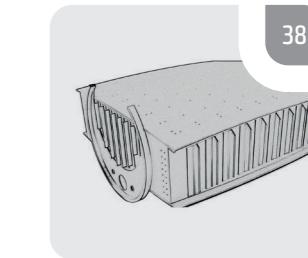
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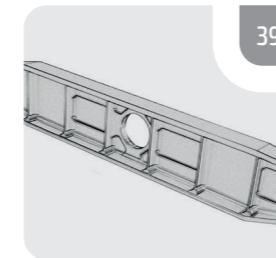
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Hinge

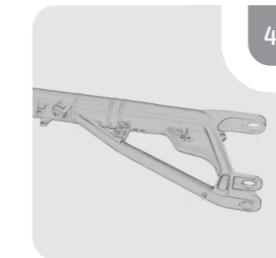
Body

Flap Track

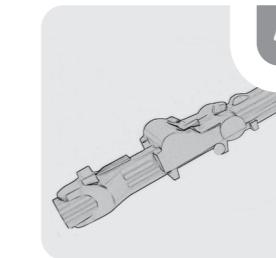
Central Wing Box



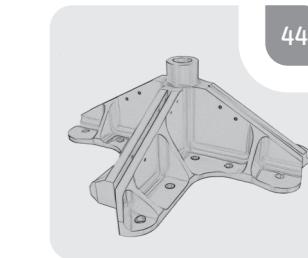
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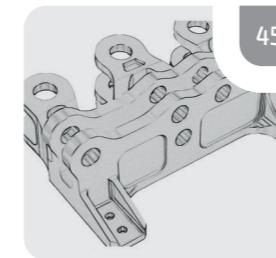
44

Landing Gear Beam

Landing Gear

Main Cylinder

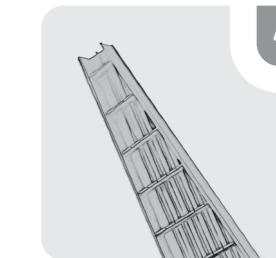
Thrust Fitting



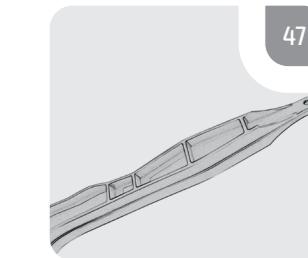
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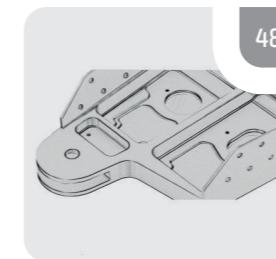
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Engine Mount

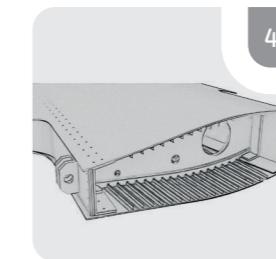
Shackle

Tail

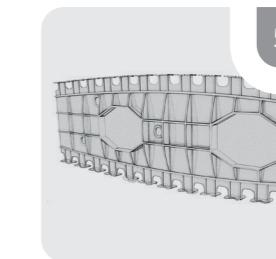
Trailing Edge



48



49



50

Pylon Bracket

Wing

Wing Rib

AEROSPACE

Benvenuti
nell'innovazione
dell'utensileria
aerospaziale con Silmax

La lavorazione nell'industria aerospaziale richiede soluzioni e innovazioni tecnologiche all'avanguardia. È fondamentale sviluppare metodi tecnicamente ed economicamente validi per lavorare nuovi materiali in modo affidabile e preciso.

Il **Gruppo Silmax** vanta una lunga esperienza nel settore aerospaziale, collaborando con le principali aziende a livello mondiale, contribuendo con soluzioni efficienti e innovative ai loro progetti più importanti.

La competenza ingegneristica di Silmax, grazie alla continua attività di ricerca e sviluppo, trasforma idee innovative in soluzioni competitive per la produzione in serie di materiali avanzati come superleghe, titanio, acciai legati, alluminio, magnesio e materiali compositi. Questi materiali, utilizzati in componenti critici, richiedono utensili di altissima qualità e precisione, che Silmax è in grado di fornire sia attraverso soluzioni standard sia con utensili speciali appositamente progettati.

Siamo orgogliosi di presentare il nostro nuovo catalogo tecnico dedicato al settore aerospace, che guida l'utente nella scelta dell'utensile più adatto. Il catalogo presenta una suddivisione del velivolo in due macrosistemi: **motore e parte strutturale**, dettagliando per ognuno i componenti caratteristici. Per ogni componente vengono illustrate le nostre soluzioni per le diverse lavorazioni significative.

Con **oltre 2.000 nuovi articoli, suddivisi in 50 famiglie**, il catalogo rappresenta la nostra risposta più completa e competitiva alle richieste del settore, sempre più orientato a soluzioni innovative, efficaci ed efficaci dal punto di vista produttivo. Gli utensili presenti a catalogo e online offrono un'ampia personalizzazione in termini di tipologia utensile, gamma diametri, raggi e collarini.

Welcome to
the innovation of
aerospace tooling
with Silmax

Machining in the aerospace industry demands cutting-edge solutions and continuous technological advancements. Developing technically and economically efficient machining methods for new materials—while ensuring process reliability and accuracy—is a key success factor.

Silmax Group boasts extensive experience in the aerospace sector, collaborating with leading companies worldwide and contributing efficient and innovative solutions to their most important projects.

Through continuous research and development, **our engineering expertise** transforms innovative ideas into competitive solutions for the solid machining of advanced materials, including superalloys, titanium, high-alloy steels, aluminum, magnesium, and composites. These high-performance materials, used in critical components, require exceptionally precise and high-quality tools—solutions that Silmax delivers, both as standard products and custom designs.

We are proud to introduce our new technical catalog dedicated to the aerospace sector, designed to help users select the most suitable tools. The catalog organizes aircraft components into two main categories: **engines and structural elements**, detailing key parts within each. For every component, we outline our recommended tooling solutions for various essential machining operations.

With **more than 2,000 new articles, across 50 product families**, the catalogue represents our most comprehensive and competitive response to the demands of the industry, which is increasingly oriented towards innovative, effective and productive solutions.

Willkommen zur Innovation
von Werkzeugen für
die Luft- und Raumfahrt
mit Silmax

Die Zerspanung in der Luft- und Raumfahrtindustrie erfordert modernste Lösungen und kontinuierliche technologische Weiterentwicklung. Die Entwicklung technisch und wirtschaftlich effizienter Bearbeitungsverfahren für neue Werkstoffe bei gleichzeitiger Gewährleistung der Prozesssicherheit und -genauigkeit ist ein wesentlicher Erfolgsfaktor.

Die **Silmax-Gruppe** verfügt über umfangreiche, langjährige Erfahrung im Bereich der Luft- und Raumfahrt, arbeitet mit führenden italienischen und internationalen Luftfahrtunternehmen zusammen und trägt zu deren wichtigsten Projekten bei.

Das **technische Know-how von Silmax** setzt dank kontinuierlicher Forschung und Entwicklung innovative Ideen in wettbewerbsfähige Lösungen für die Zerspanung von Werkstoffen wie Superallegierungen, Titan, hochlegierte Stähle, Aluminium, Magnesium und Verbundwerkstoffen um. Diese Werkstoffe, die in kritischen Komponenten zum Einsatz kommen, erfordern Werkzeuge von höchster Qualität und Präzision – Lösungen, die Silmax sowohl als Standardprodukte als auch als kunden-spezifische Sonderanfertigungen bereitstellt.

Wir sind stolz darauf, Ihnen unseren neuen technischen Katalog für die Luft- und Raumfahrt vorzustellen, der Sie bei der Auswahl der am besten geeigneten Werkzeuge unterstützt. Der Katalog unterteilt Flugzeugkomponenten in zwei Hauptkategorien: **Triebwerke und Strukturelemente**, wobei die wichtigsten Teile in jeder Kategorie aufgeführt sind. Für jedes Bauteil skizzieren wir unsere empfohlenen Werkzeuglösungen für verschiedene wichtige Bearbeitungsvorgänge.

Mit **über 2.000 neuen Artikeln in 50 Produktfamilien** stellt dieser Katalog unser bisher umfassendstes und wettbewerbsfähiges Angebot für die Luft- und Raumfahrtindustrie dar, in der Individualisierung und hohe Leistungsfähigkeit an erster Stelle stehen. Das Sortiment bietet umfangreiche individuelle Anpassungsmöglichkeiten in Bezug auf Werkzeugtyp, Durchmesseroptionen, Radien und Halsfreischliff.

Bienvenue dans
l'innovation de
l'outillage aérospatial
avec Silmax

La fabrication dans l'industrie aérospatiale exige des solutions et des innovations technologiques de pointe. Il est essentiel de développer des méthodes à la fois technique et économiquement viables pour usiner de nouveaux matériaux avec fiabilité et précision.

Le **Groupe Silmax** bénéficie d'une longue expérience dans le secteur aérospatial, et travaille avec des entreprises de premier plan dans le monde entier, apportant des solutions efficaces et innovantes à leurs projets les plus importants.

Grâce à une activité continue de recherche et développement, **l'expertise en ingénierie** de Silmax transforme des idées novatrices en solutions compétitives pour la production en série de matériaux avancés, tels que les superalliages, le titane, les aciers alliés, l'aluminium, le magnésium et les matériaux composites. Ces matériaux, utilisés dans des composants critiques, nécessitent des outils de la plus haute qualité et précision, que Silmax est en mesure de fournir, tant par des solutions standard que par des outils spéciaux conçus sur mesure.

Nous sommes fiers de présenter notre nouveau catalogue technique dédié au secteur aérospatial, conçu pour guider l'utilisateur dans le choix de l'outil le plus adapté. Ce catalogue propose une classification de l'avion en **deux systèmes principaux**: le moteur et la structure, en détaillant les composants caractéristiques de chacun. Pour chaque composant, nos solutions adaptées aux différents processus d'usinage clés sont illustrées.

Avec **plus de 2 000 nouveaux articles, répartis en 50 familles**, le catalogue représente notre réponse la plus complète et la plus compétitive aux demandes de l'industrie, qui s'oriente de plus en plus vers des solutions innovantes, efficaces et productives. Les outils présents dans le catalogue et en ligne offrent une large personnalisation en termes de type d'outil, gamme de diamètres, rayons et colliers.



Vantaggi Competitivi di Silmax

Il Gruppo Silmax si distingue nel settore aerospaziale per diversi vantaggi competitivi:

Qualità e Precisione

Gli utensili Silmax sono sinonimo di altissima qualità e precisione, garantendo prestazioni eccellenti anche nelle applicazioni più critiche.

Innovazione Continua

Grazie alla costante attività di ricerca e sviluppo, Silmax è in grado di trasformare idee innovative in soluzioni pratiche e competitive.

Personalizzazione

Silmax offre un'ampia gamma di utensili personalizzabili, permettendo ai clienti di scegliere soluzioni su misura per le loro esigenze specifiche.

Collaborazioni Strategiche

La lunga esperienza e le collaborazioni con le principali aziende aeronautiche italiane e internazionali permettono a Silmax di essere sempre all'avanguardia nel settore.

Efficienza e Affidabilità

I processi produttivi ottimizzati e l'uso di tecnologie avanzate garantiscono efficienza e affidabilità nella produzione di utensili.

Vi invitiamo a esplorare le nostre soluzioni e a scoprire come possiamo supportare il vostro successo nel settore aerospaziale. Con utensili che incarnano la nostra passione per l'innovazione e la qualità, Silmax si propone come partner per raggiungere nuovi traguardi, volando sempre più in alto.

Silmax's Competitive Advantages

The Silmax Group stands out in the aerospace sector thanks to several key advantages:

Uncompromising Quality and Precision

Our tools ensure top-tier accuracy and performance, even in the most demanding applications.

Continuous Innovation

Ongoing research and development allow us to turn groundbreaking ideas into practical, high-performance solutions.

Customization

We offer a broad selection of customizable tools, enabling clients to find the perfect fit for their specific needs.

Strategic Collaborations

Our long-standing collaborations with leading Italian and international aeronautical companies position us as a trend-setter in the aerospace industry.

Efficiency and Reliability

Optimized production processes and cutting-edge technology ensure maximum efficiency and reliability in tool manufacturing.

Die Vorteile von Silmax

Die Silmax-Gruppe zeichnet sich in der Luft- und Raumfahrt durch mehrere zentrale Leistungsmerkmale aus:

Qualität und Präzision

Unsere Werkzeuge gewährleisten höchste Qualität, Präzision und Leistung, selbst bei den anspruchsvollsten Anwendungen.

Kontinuierliche Innovation

Kontinuierliche Forschung und Entwicklung ermöglichen es uns, innovative Ideen in praktische, leistungsstarke Lösungen umzusetzen.

Individualisierung

Wir bieten eine breite Auswahl an Sonderanfertigungen, die es unseren Kunden ermöglichen, die perfekte Lösung für ihre spezifischen Bedürfnisse zu finden.

Strategische Kooperationen

Unsere langjährige Zusammenarbeit mit führenden italienischen und internationalen Luftfahrtunternehmen positioniert uns als Vorreiter in der Luft- und Raumfahrtindustrie.

Effizienz und Zuverlässigkeit

Optimierte Produktionsprozesse und modernste Technologie sorgen für maximale Effizienz und Zuverlässigkeit in der Werkzeugherstellung.

Les avantages compétitifs de Silmax

Le Groupe Silmax se distingue dans le secteur aérospatial par plusieurs avantages concurrentiels:

Qualité et Précision

Les outils Silmax sont synonymes de la plus haute qualité et précision, garantissant des performances excellentes même dans les applications les plus critiques.

Innovation Continue

Grâce à une activité constante de recherche et développement, Silmax est capable de transformer des idées innovantes en solutions pratiques et compétitives.

Personnalisation

Silmax offre une large gamme d'outils personnalisables, permettant aux clients de choisir des solutions sur mesure pour leurs besoins spécifiques.

Collaborations Stratégiques

La longue expérience et les collaborations avec les principales entreprises aéronautiques italiennes et internationales permettent à Silmax de rester à la pointe du secteur.

Efficacité et Fiabilité

Les processus de production optimisés et l'utilisation de technologies avancées garantissent efficacité et fiabilité dans la fabrication des outils.

We invite you to explore our solutions and discover how we can help drive your success in the aerospace industry. With tools that embody our passion for innovation and quality, Silmax is your trusted partner in reaching new heights.

Entdecken Sie jetzt unsere Lösungen und erfahren Sie, wie Sie mit Silmax an Ihrer Seite Ihren Erfolg in der Luft- und Raumfahrtindustrie steigern. Mit Werkzeugen, die unsere Leidenschaft für Innovation und Qualität verkörpern, ist Silmax Ihr zuverlässiger Partner, um das nächste Level zu erreichen!

Nous vous invitons à explorer nos solutions et à découvrir comment nous pouvons soutenir votre succès dans le secteur aérospatial. Avec des outils qui incarnent notre passion pour l'innovation et la qualité, Silmax se propose comme partenaire pour atteindre de nouveaux objectifs, en volant toujours plus haut.

AERØENGINE

S TURBINE BLADE Titanium / HRSA

- 1 Shoulder Milling**
- High axial and radial accuracy for precise 90° shoulders
 - Optimized tool geometry ensures smooth surface finish

TIS 1285R / 1385R / 1585R

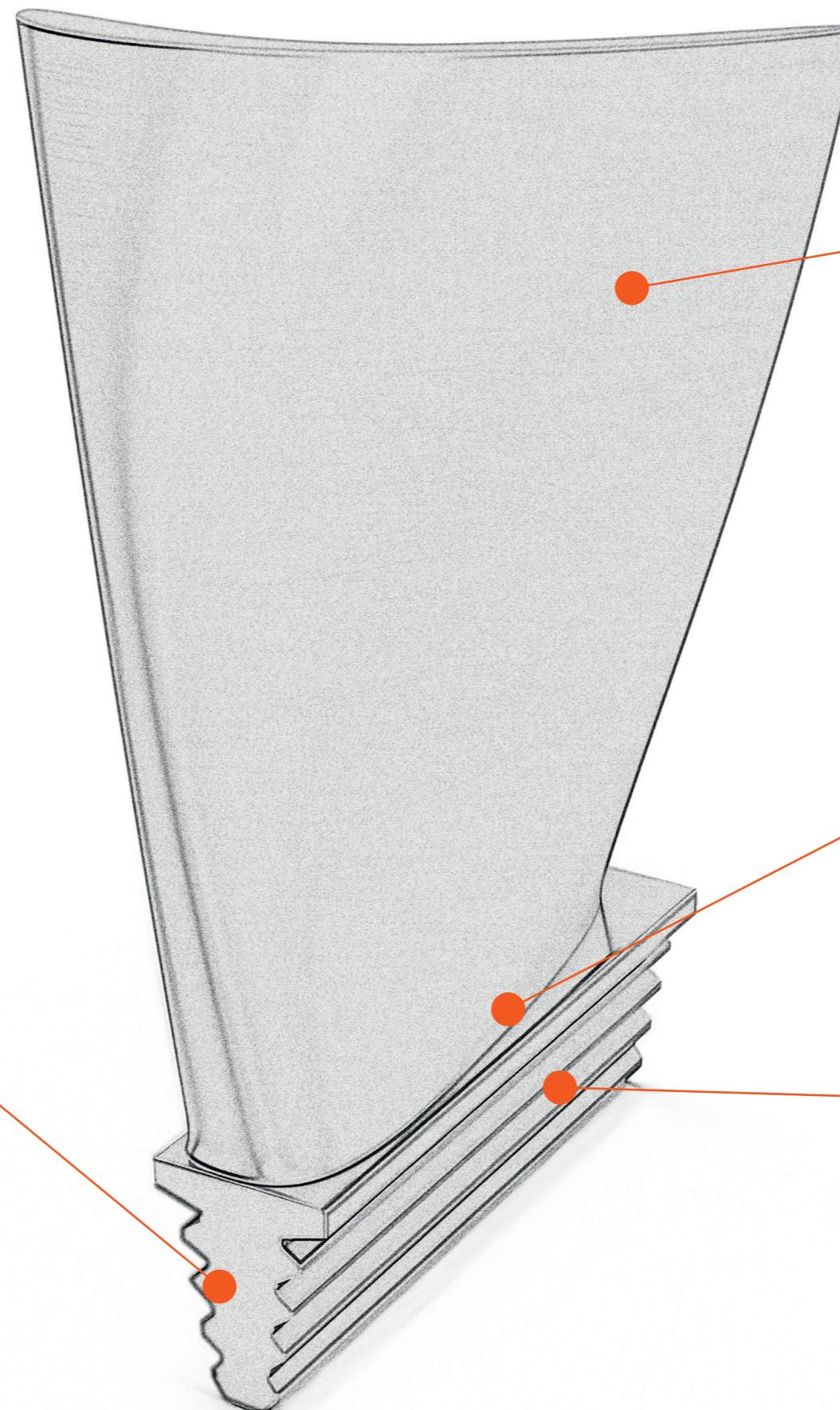
TIS 1386R / 1586R

TIS 1387R / 1587R

TIS 1285F / 1385F / 1585F

TIS 1386F / 1586F

TIS 1387F / 1587F



2 Airfoil Milling

- High-precision cutting for accurate aerodynamic profiles
- Consistent tool performance ensures tight tolerances
- Optimized tool geometry ensures smooth surface finish

TIS 009W

TIS 010W

3 Blade Root Radius Milling

- Superior part finishing
- Consistent tool performance ensures tight tolerances

TIS 1181

TIS 9001 / 9002 / 9003 / 9004 / 9005

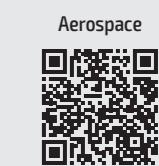
4 Blade Root Profile Milling

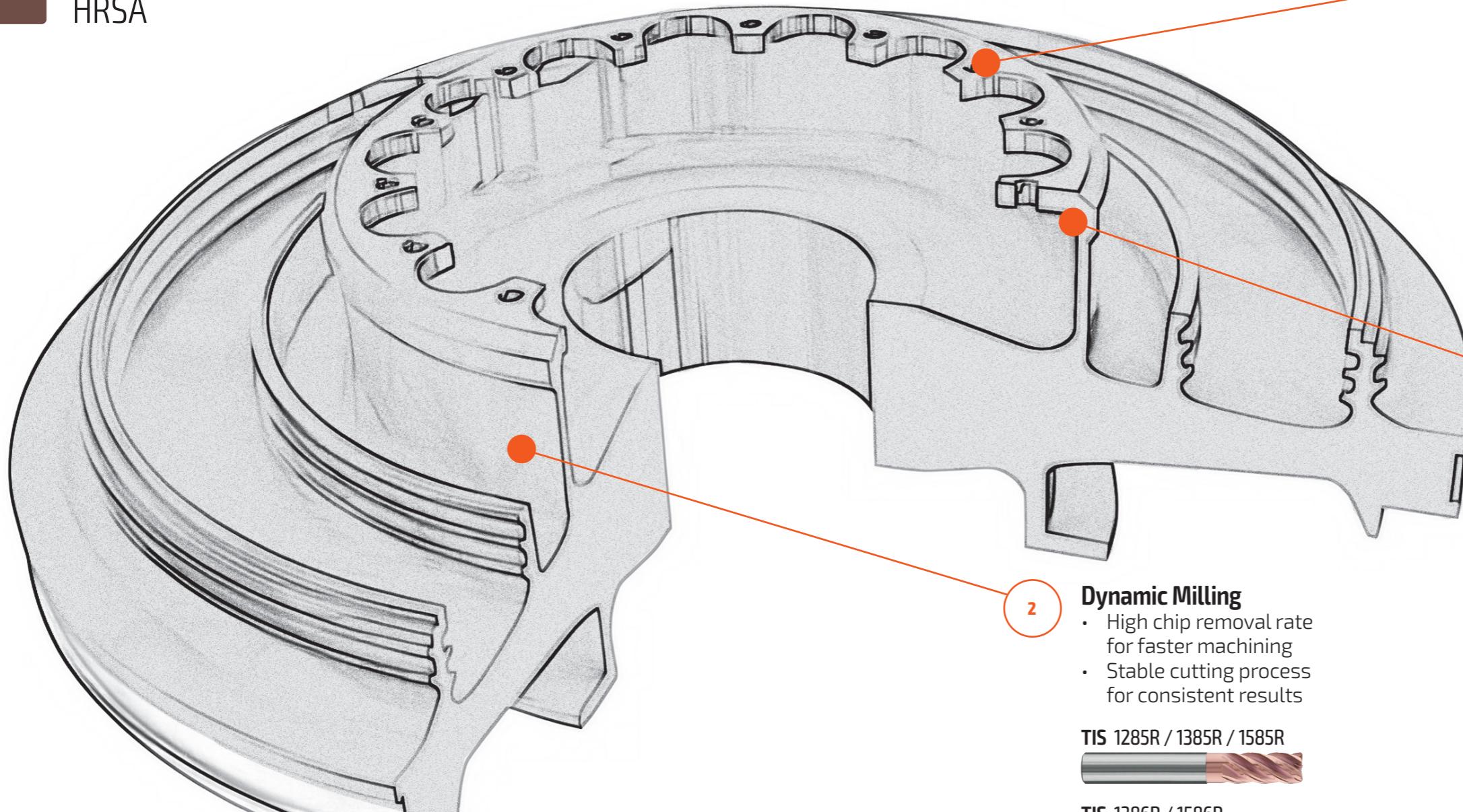
- Optimized tool geometry for each specific application
- High process reliability

SPECIAL



Scansione il Qr-code per consultare i parametri di lavoro.
Scan the Qr-code to view the working parameters.
Scannen Sie den QR-Code, um die Schnittwerte anzuzeigen.
Scannez le code Qr pour visualiser les paramètres de fonctionnement.



S TURBINE DISC
HRSA**1 Drilling**

- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U

**3 Contouring**

- Efficient roughing for high material removal rates
- Precision finishing ensures superior surface quality

TIS 1285R / 1385R / 1585R



TIS 1386R / 1586R



TIS 1387R / 1587R



TIS 1285F / 1385F / 1585F



TIS 1386F / 1586F



TIS 1387F / 1587F



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PHM



TIS



Aerospace



1

Dynamic Milling

- High chip removal rate for faster machining
- Stable cutting process for consistent results

TIS 1285R / 1385R / 1585R



TIS 1386R / 1586R



TIS 1387R / 1587R



S BLISK HIGH TEMPERATURE HRSA

2

Blade Pre-Finishing and Finishing

- Optimized cutting edge for superior surface quality
- Consistent tool performance ensures uniform blade profiles

TIS 1181



TIS 9001 / 9002 / 9003 / 9004 / 9005



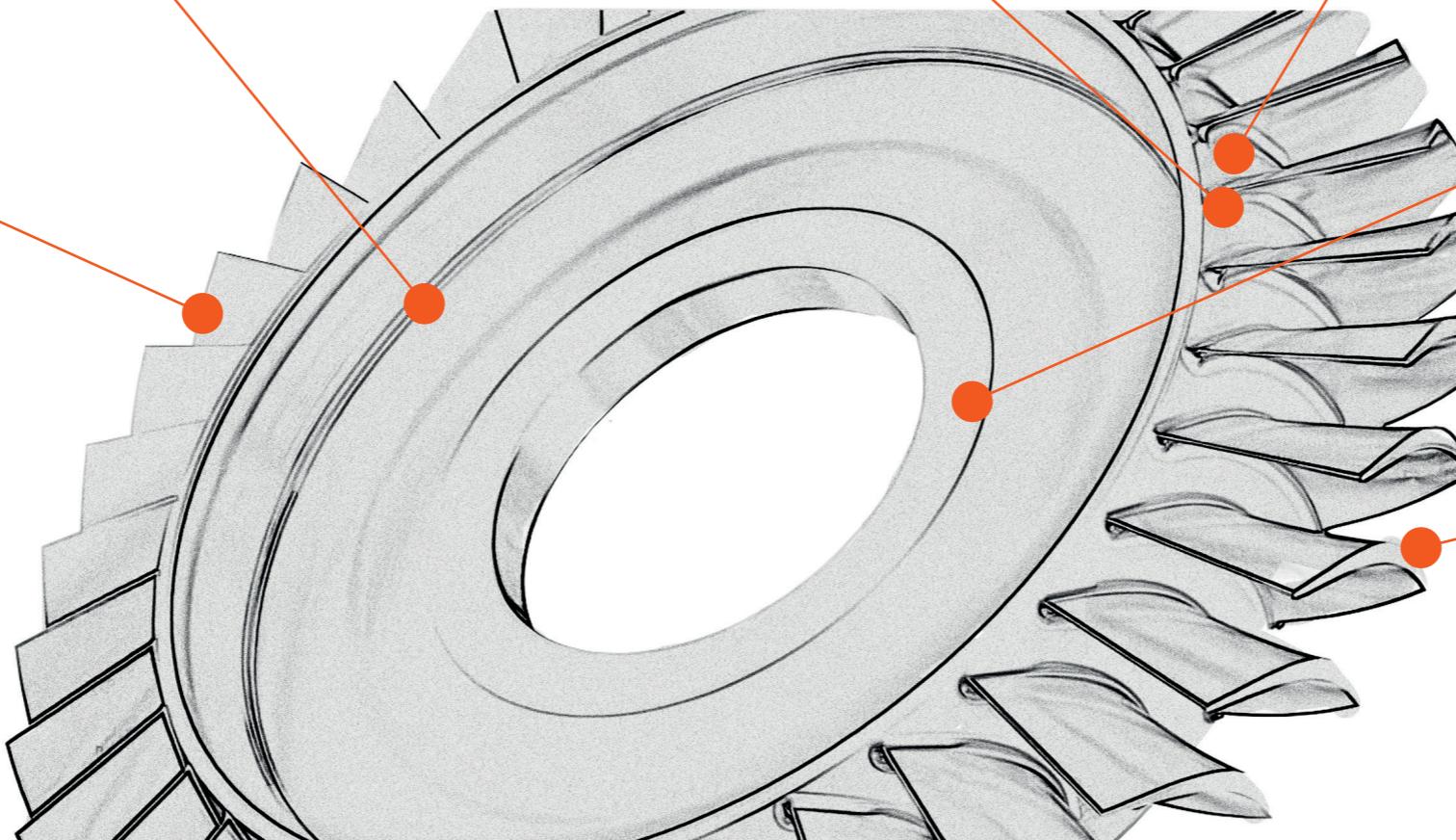
TIS 1285F / 1385F / 1585F



TIS 1386F / 1586F



TIS 1387F / 1587F



3

Plunge Milling and High feed

- Efficient material removal for reduced cycle times
- Robust tool design ensures stability in aggressive cuts

TIS 009W



Rough Hollowing

- High material removal rate for efficient cavity machining
- Optimized tool geometry for enhanced chip evacuation

TIS 1285R / 1385R / 1585R



TIS 1386R / 1586R



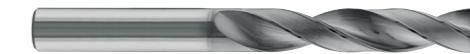
TIS 1387R / 1587R



Drilling

- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



Chamfering

- Superior part finishing
- Flat tip geometry for programming accuracy

ALH 0364



ALH 0365



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- 1 Dynamic Milling**
- High chip removal rate for faster machining
 - Stable cutting process for consistent results

TIS 1285R / 1385R / 1585R



TIS 1386R / 1586R



TIS 1387R / 1587R



- 2 Blade Pre-Finishing and Finishing**
- Optimized cutting edge for superior surface quality
 - Consistent tool performance ensures uniform blade profiles

TIS 1181



TIS 9001 / 9002 / 9003 / 9004 / 9005



TIS 1285F / 1385F / 1585F



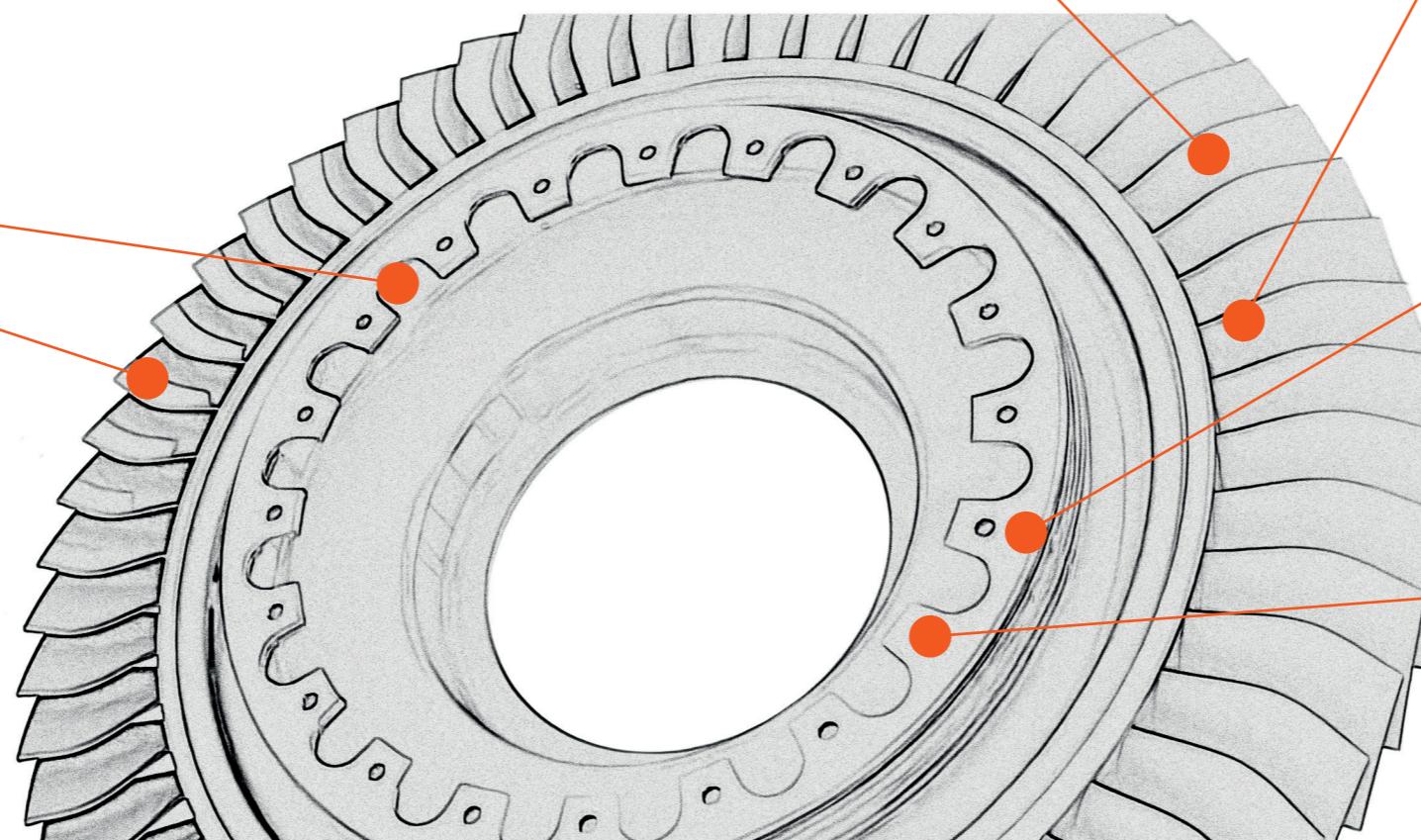
TIS 1386F / 1586F



TIS 1387F / 1587F



S BLISK LOW TEMPERATURE Titanium



- 3 Plunge Milling and High feed**
- Efficient material removal for reduced cycle times
 - Robust tool design ensures stability in aggressive cuts

TIS 009W



- 4 Rough Hollowing**
- High material removal rate for efficient cavity machining
 - Optimized tool geometry for enhanced chip evacuation

TIS 1285R / 1385R / 1585R



TIS 1386R / 1586R



TIS 1387R / 1587R



- 5 Drilling**
- Optimized point geometry for precise hole positioning
 - Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



- 6 Chamfering**
- Superior part finishing
 - Flat tip geometry for programming accuracy

ALH 0364



ALH 0365

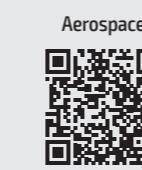


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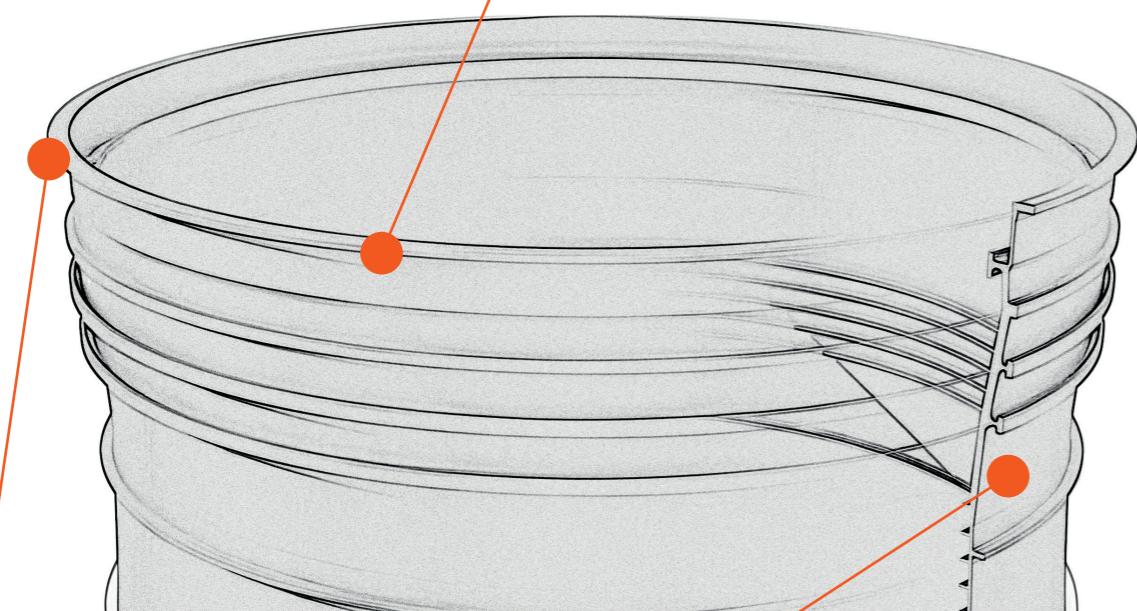
Scannen Sie den QR-Code, um die Schnittwerte anzuzeigen.

Scannez le code Qr pour visualiser les paramètres de fonctionnement.



S FAN CASING

Titanium



2 Edge preparation

- Extended reach for complex internal geometries
- CNC machining for the maximum process repeatability

ALH 0366



ALH 0367



ALH 0368



1

Drilling

- High chip removal rate for faster machining
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



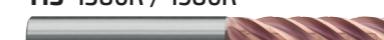
3 Dynamic Milling

- High chip removal rate for faster machining
- Stable cutting process for consistent results

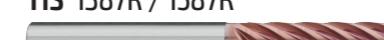
TIS 1285R / 1385R / 1585R



TIS 1386R / 1586R



TIS 1387R / 1587R



TIS



ALH



PHM

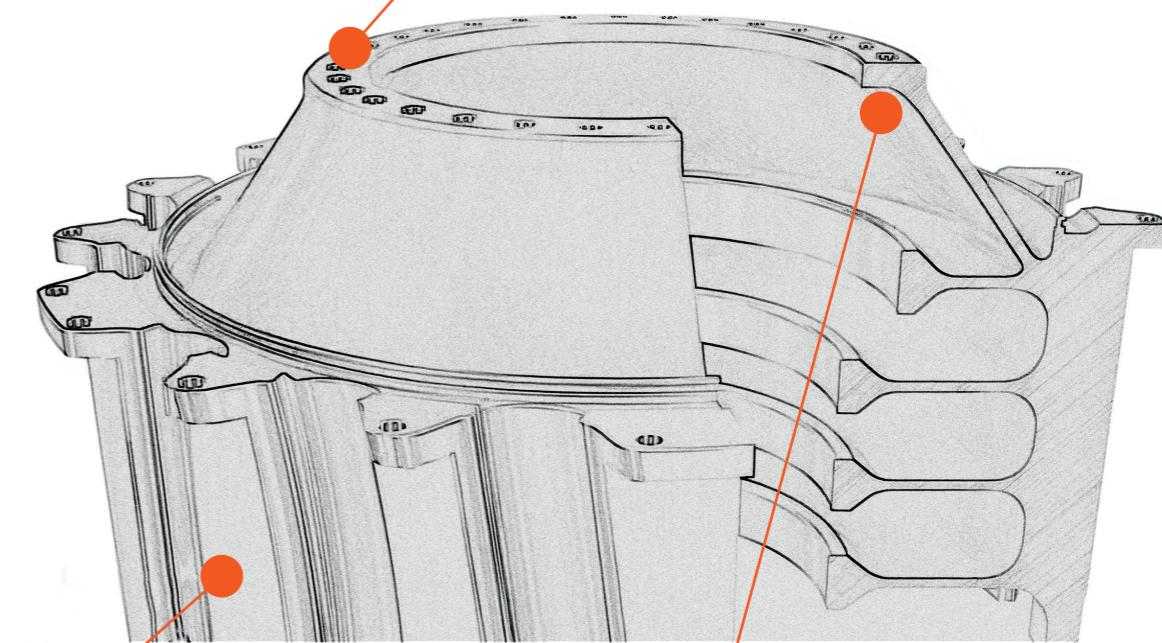


Aerospace



S FAN DISC

Titanium



2 Facing

- Superior part finishing
- Consistent tool performance ensures tight tolerances

TIS 1285F / 1385F / 1585F



TIS 1386F / 1586F



TIS 1387F / 1587F



1

Drilling

- High chip removal rate for faster machining
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



3 Internal Profile Milling

- Extended reach for complex internal geometries
- Optimized cutting edge ensures smooth surface finish

ALH 7740



ALH 7741



PHM



TIS



ALH



Aerospace



S COMBUSTION CASING

HRSA

1 Boring

- High-precision cutting for optimal hole accuracy
- Stable tool design ensures consistent surface finish

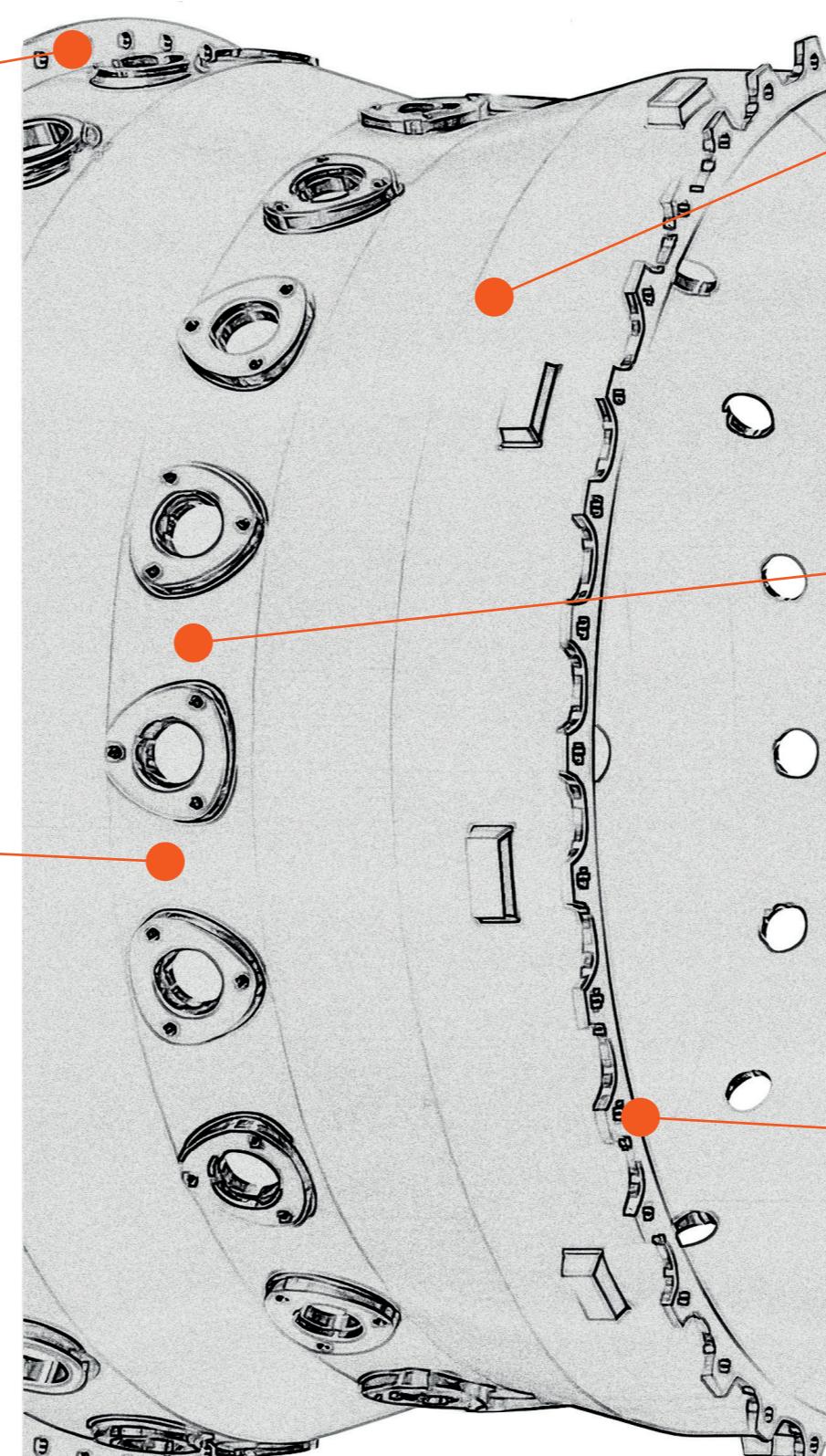
ALR 502



ALR 503



ALR 504



2 Finish Profiling

- Superior part finishing
- Consistent tool performance ensures tight tolerances

TIS 1285F / 1385F / 1585F



TIS 1386F / 1586F



TIS 1387F / 1587F



3 Face Milling

- High feed rates for efficient material removal
- Optimized insert geometry for superior surface finish

TIS 009W



TIS 010W



4 Rough Profiling

- Aggressive material removal for faster machining
- Robust tool design ensures stability in heavy cuts

TIS 1285R / 1385R / 1585R



TIS 1386R / 1586R



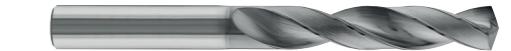
TIS 1387R / 1587R



5 Drilling

- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



Scansiona il Qr-code per consultare i parametri di lavoro.

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Scannez le code Qr pour visualiser les paramètres de fonctionnement.



ALR



TIS



Aerospace



TIS



PHM



Aerospace

P N S

GEAR BOX

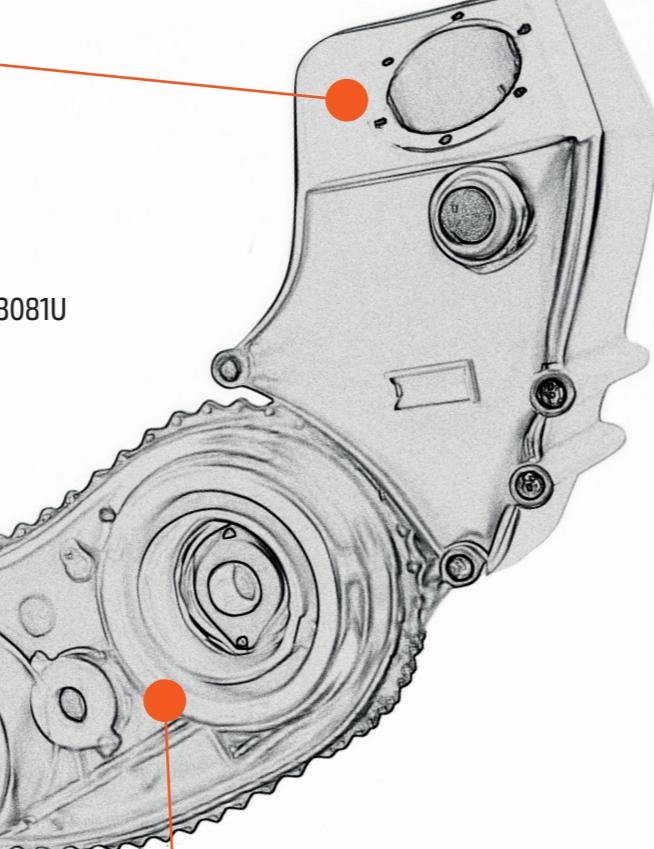
High Alloy Steel

1

Drilling

- High chip removal rate for faster machining
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



3

Contouring

- High chip removal rate for faster machining
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

HPC 1154



HPC 1155



HPC 1156



2

Profiling

- High chip removal rate for faster machining
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

HPC 013EV



1

Drilling

- High chip removal rate for faster machining
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHN 3051N / 3151N / 3201N / 3251N



2

Roughing

- High-speed machining for maximum material removal
- Optimized chip evacuation prevents built-up edge

ALU 1125



ALU 015W



ALU 016W

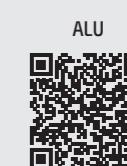


3

Finishing

- Superior part finishing
- Consistent tool performance ensures tight tolerances

ALU 1125



P N S

GEAR BOX

Titanium

1

Drilling

- High chip removal rate for faster machining
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



2

Rough Profiling

- High-speed machining for maximum material removal
- Optimized chip evacuation prevents built-up edge

HPC 013EV

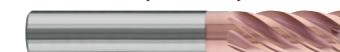


3

Finish Contouring

- Superior part finishing
- Consistent tool performance ensures tight tolerances

TIS 1285F / 1385F / 1585F



TIS 1386F / 1586F



TIS 1387F / 1587F



P

S

SHAFT

High-Alloy Steel / Titanium

1

Edge preparation

- Extended reach for complex internal geometries
- CNC machining for the maximum process repeatability

ALH 0366



ALH 0367



ALH 0368



2

Drilling

- High chip removal rate for faster machining
- Stable cutting process for consistent results
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



PHM



HPC



TIS



Aerospace



ALH



PHM



Aerospace



S AUXILIARY POWER UNIT

Titanium

1 Blade Pre-Finishing and Finishing

- Optimized cutting edge for superior surface quality
- Consistent tool performance ensures uniform blade profiles

TIS 1181



TIS 9001 / 9002 / 9003 / 9004 / 9005



TIS 1285F / 1385F / 1585F



TIS 1386F / 1586F



TIS 1387F / 1587F



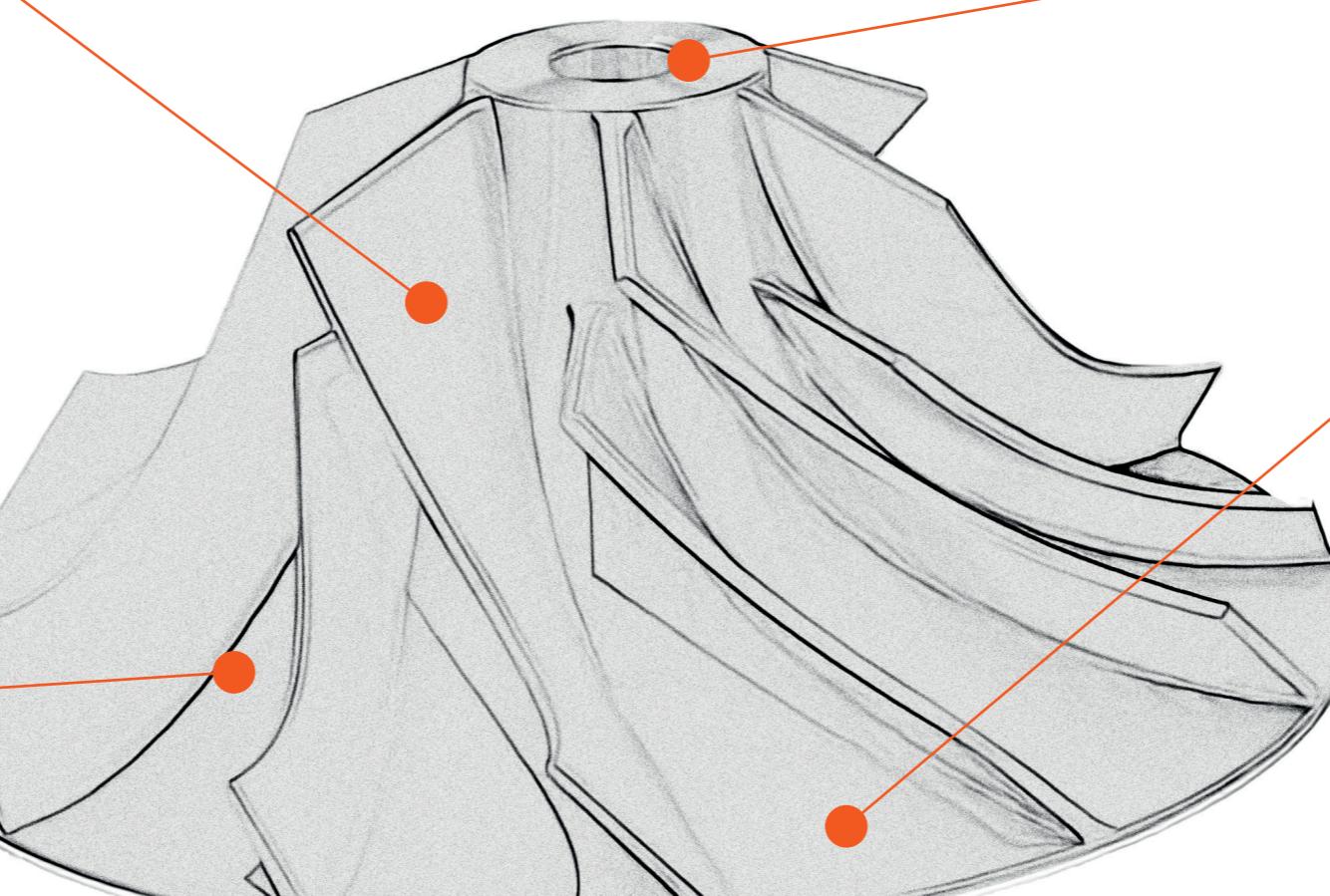
4 Hub Finishing

- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

TIS 133



TIS 9001 / 9002 / 9003 / 9004 / 9005



3 Drilling

- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



2 Roughing

- High-speed machining for maximum material removal
- Optimized chip evacuation prevents built-up edge

TIS 184EV



TIS 1285R / 1385R / 1585R



TIS 1386R / 1586R



TIS 1387R / 1587R

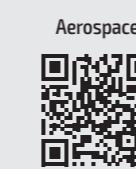


Scansione il Qr-code per consultare i parametri di lavoro.

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Scannen Sie den QR-Code, um die Schnittwerte anzuzeigen.

Scannez le code Qr pour visualiser les paramètres de fonctionnement.



TIS

Aerospace



PHM



TIS



Aerospace

AIRFRAME

P N S

HINGE

High-Alloy Steel

1 Dynamic Milling

- High chip removal rate for reduced machining time
- Consistent tool engagement ensures longer tool life

HPC 113EV



HPC 1192



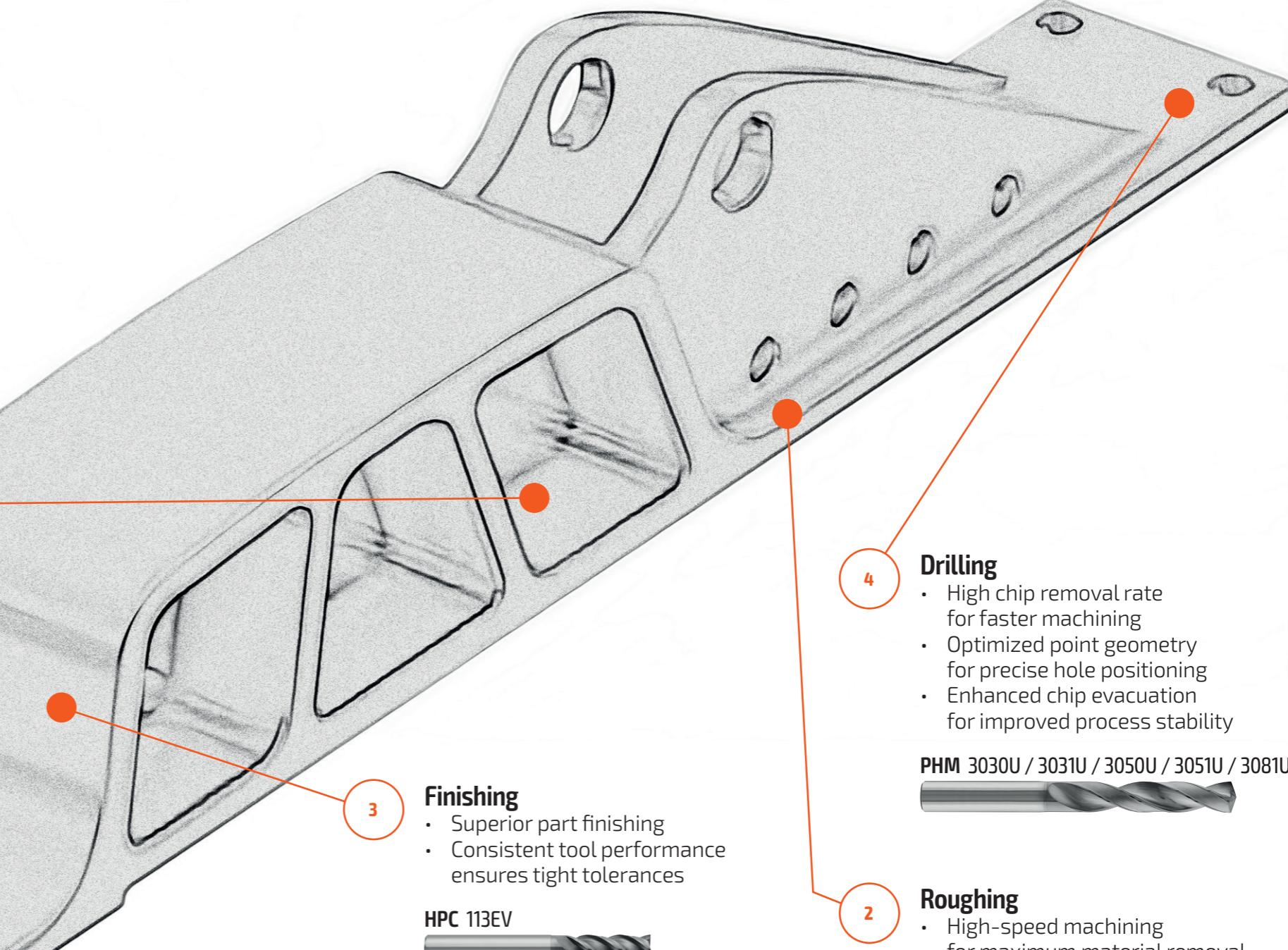
HPC 1193



HPC 1194



HPC 1195



2 Finishing

- Superior part finishing
- Consistent tool performance ensures tight tolerances

HPC 113EV



HPC 1155



HPC 1154



3 Drilling

- High chip removal rate for faster machining
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



4 Roughing

- High-speed machining for maximum material removal
- Optimized chip evacuation prevents built-up edge

HPC 013EV



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HPC

Aerospace



PHM



Aerospace

P N S

HINGE

Aluminium

- 1 Roughing**
- High-speed machining for maximum material removal
 - Optimized chip evacuation prevents built-up edge

ALU 1126



ALU 015W



ALU 016W



2 Finishing

- Superior part finishing
- Consistent tool performance ensures tight tolerances

ALU 1125



3 Dynamic Milling

- High chip removal rate for reduced machining time
- Consistent tool engagement ensures longer tool life

ALU 1193A



ALU 1195A



4 Drilling

- High chip removal rate for faster machining
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHN 3051N / 3151N / 3201N / 3251N



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ALU



Aerospace



ALU



PHN



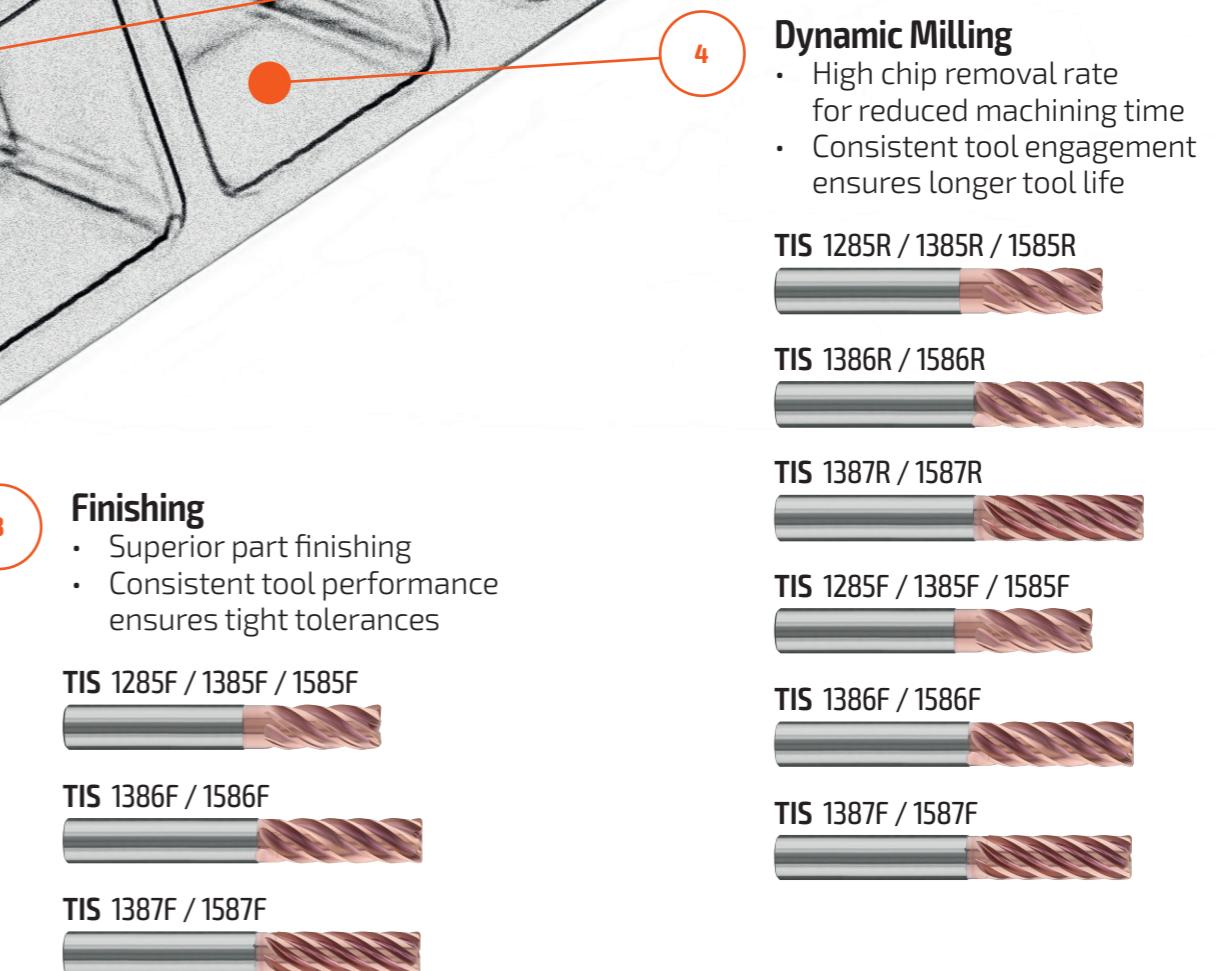
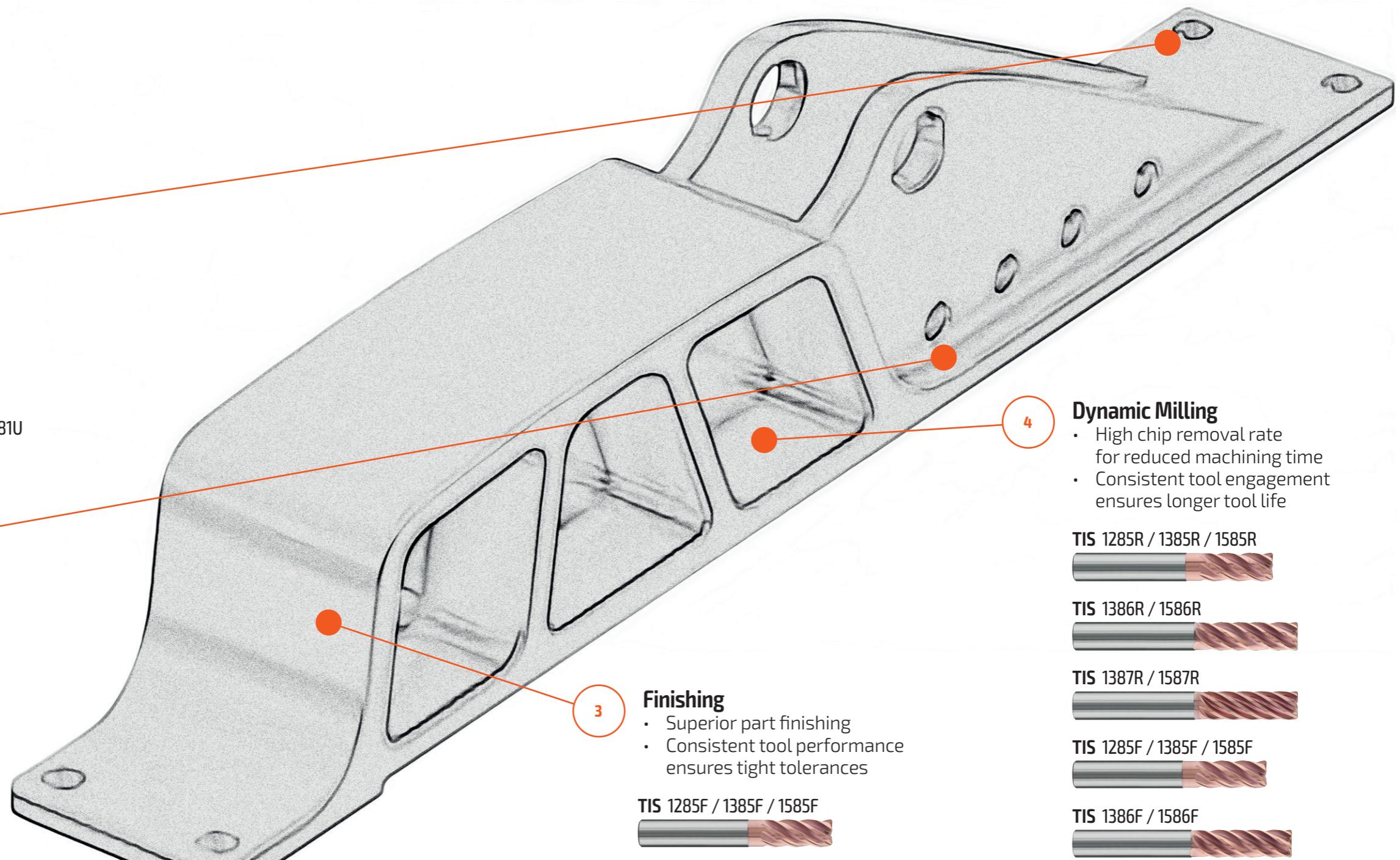
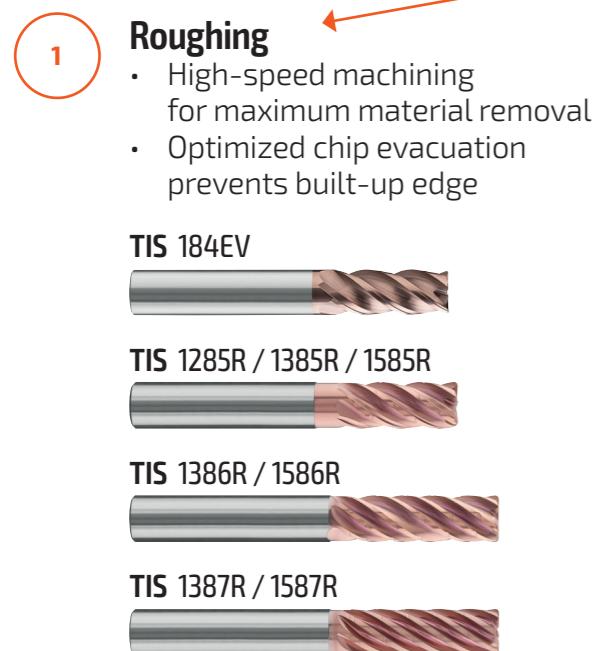
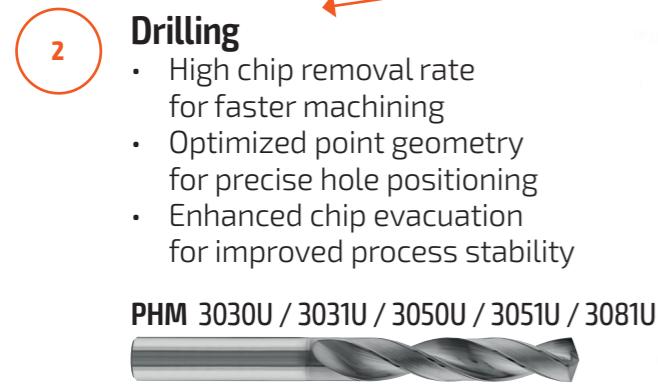
Aerospace



P N S

HINGE

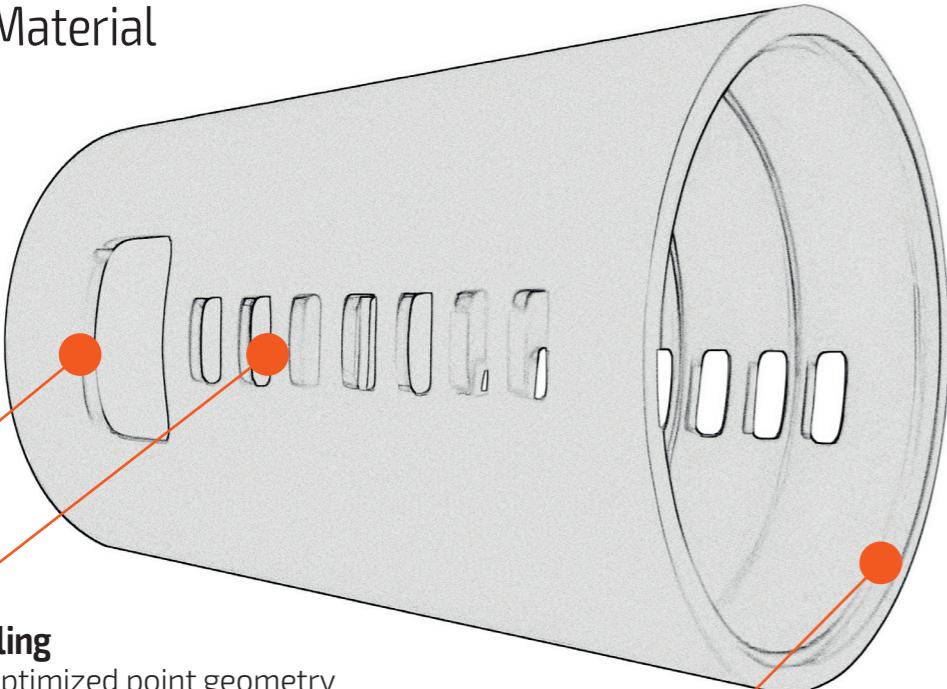
Titanium



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0 BODY Material



1 Drilling

- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

CMP 1780



2 Dynamic Milling

- High chip removal rate for faster machining
- Stable cutting process for consistent results

CMP 760



CMP 1753R



CMP 1751R



3 Plunging

- Optimized cutting edge minimizes delamination
- Controlled cutting forces for enhanced tool life

CMP 1751R



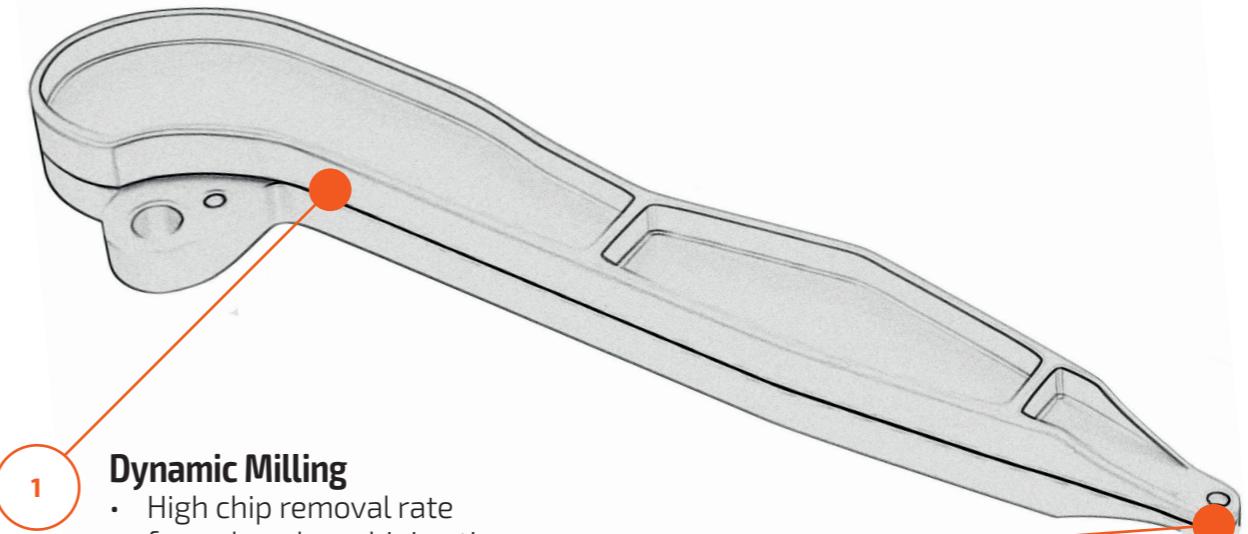
CMP 1751L



CMP 1751S



S FLAP TRACK Titanium



1 Dynamic Milling

- High chip removal rate for reduced machining time
- Consistent tool engagement ensures longer tool life

TIS 1285R / 1385R / 1585R



TIS 1386R / 1586R



TIS 1387R / 1587R



TIS 1285F / 1385F / 1585F



TIS 1386F / 1586F



TIS 1387F / 1587F



2 Drilling

- High chip removal rate for faster machining
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



Scansione il Qr-code per consultare i parametri di lavoro.

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CMP

Aerospace



TIS



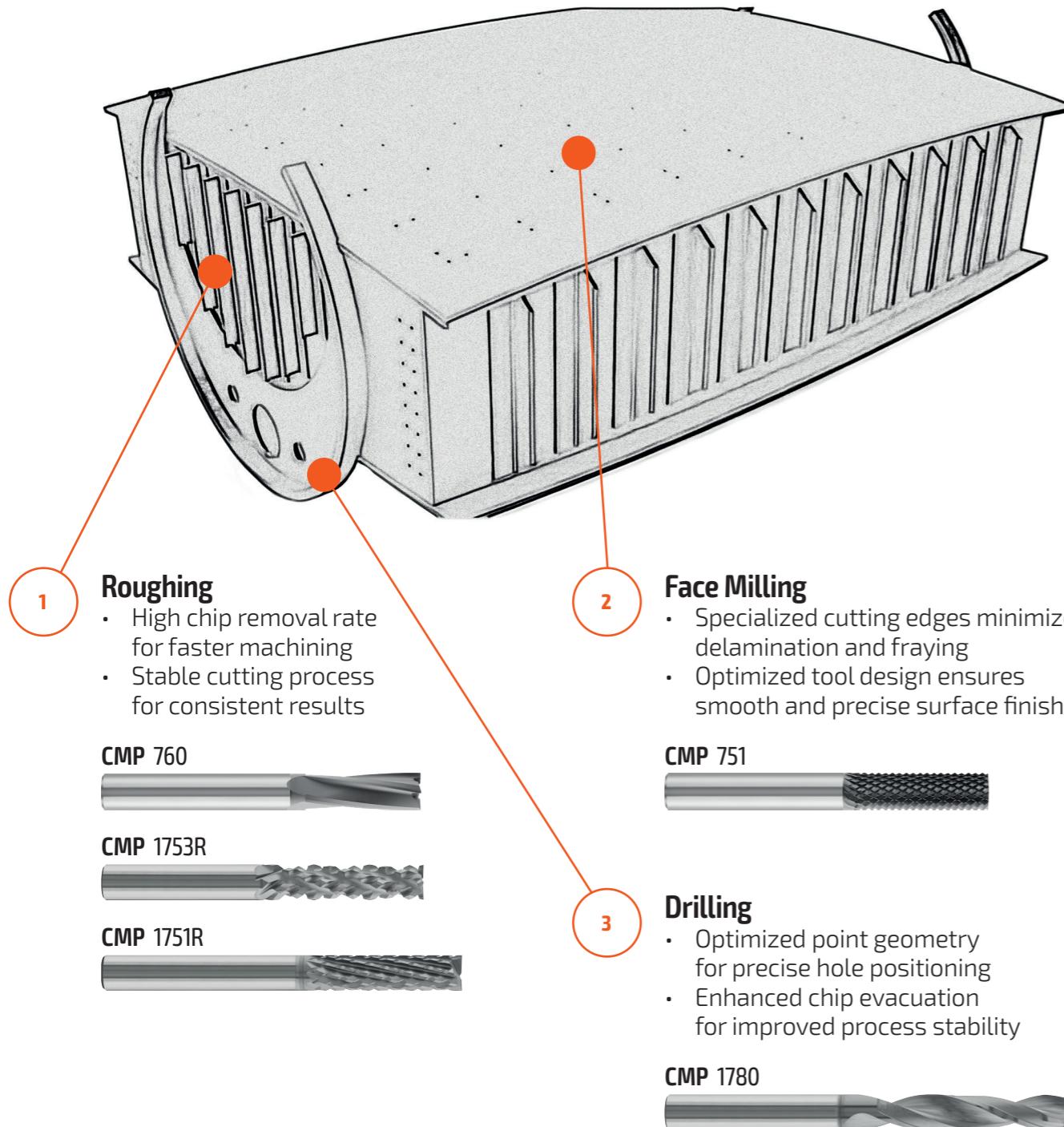
PHM



Aerospace

0 CENTRAL WING BOX

Material



Scansiona il Qr-code per consultare i parametri di lavoro.
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Scannez le code Qr pour visualiser les paramètres de fonctionnement.



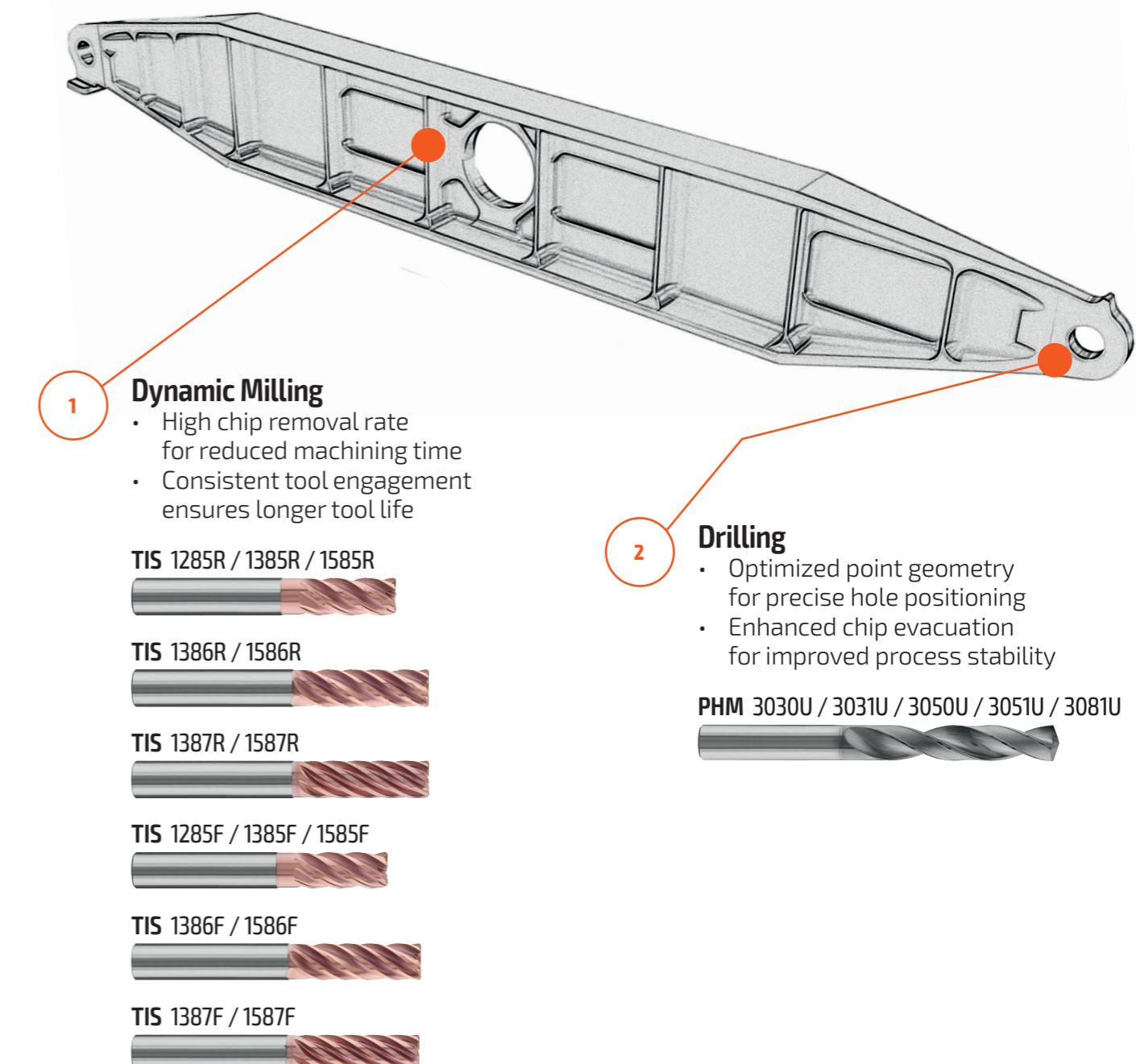
CMP



Aerospace

S LANDING GEAR BEAM

Titanium



TIS



PHM



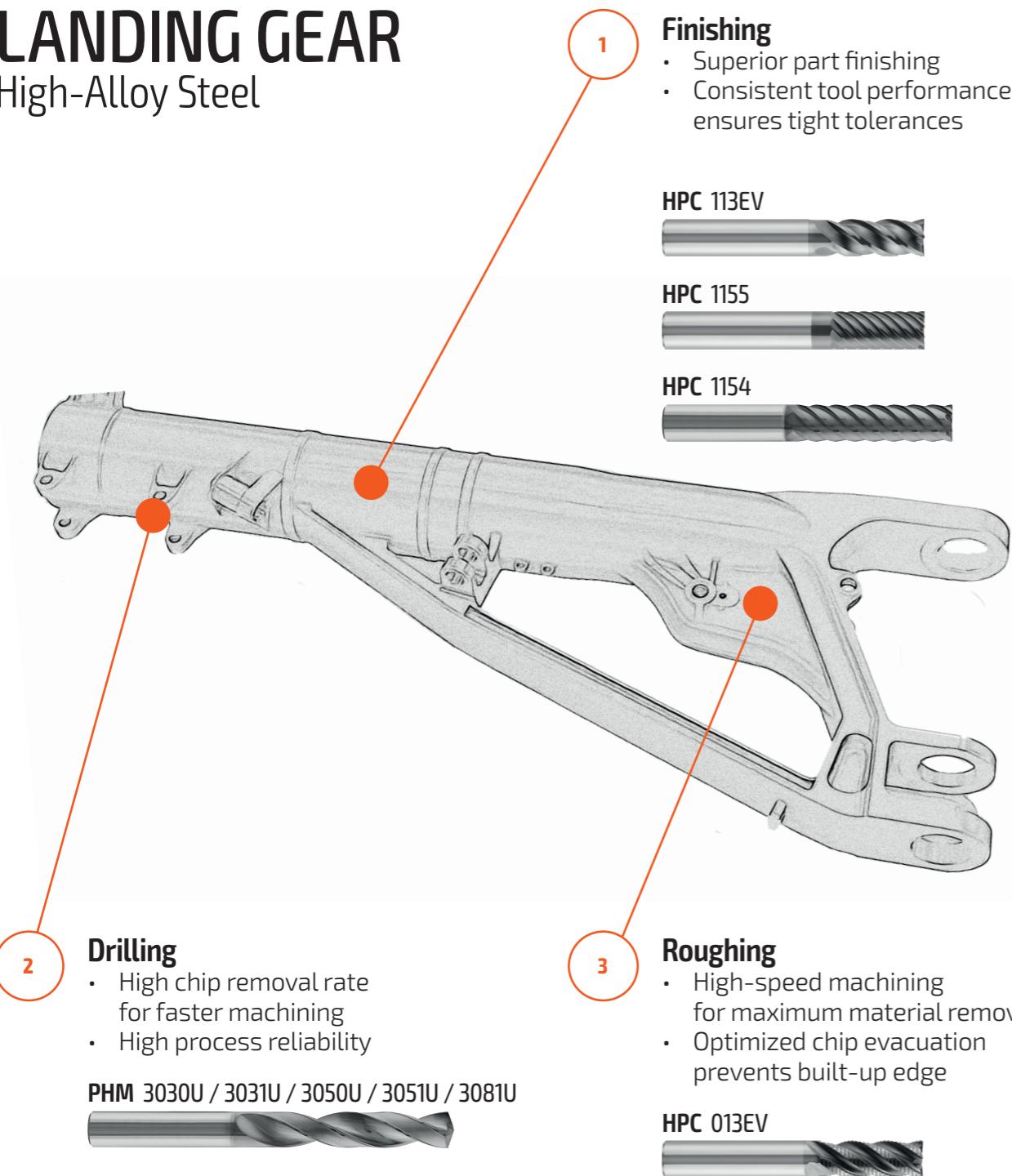
Aerospace

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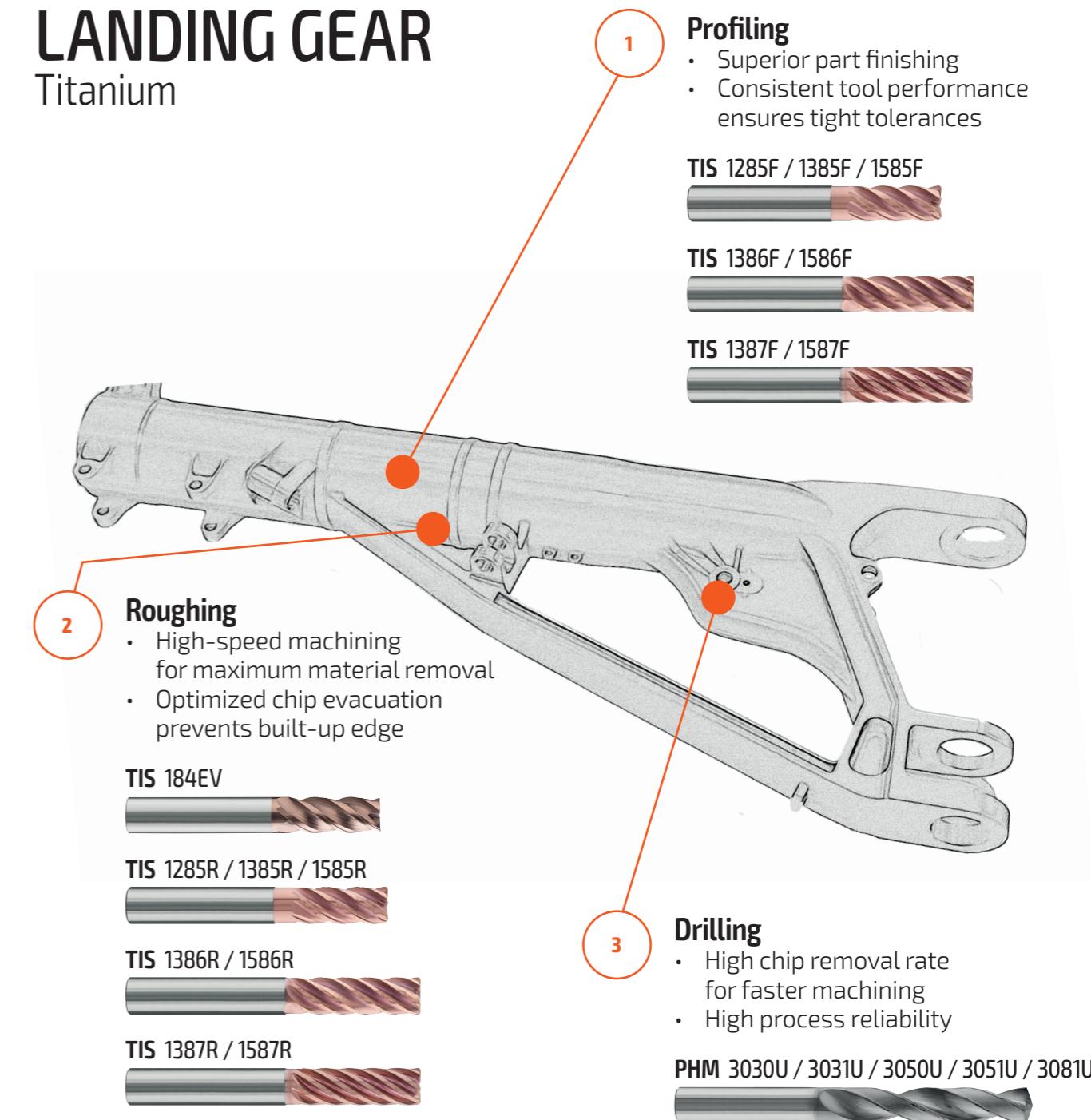
LANDING GEAR

High-Alloy Steel



LANDING GEAR

Titanium



Scansione il Qr-code per consultare i parametri di lavoro.

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HPC



PHM



Aerospace



TIS



PHM



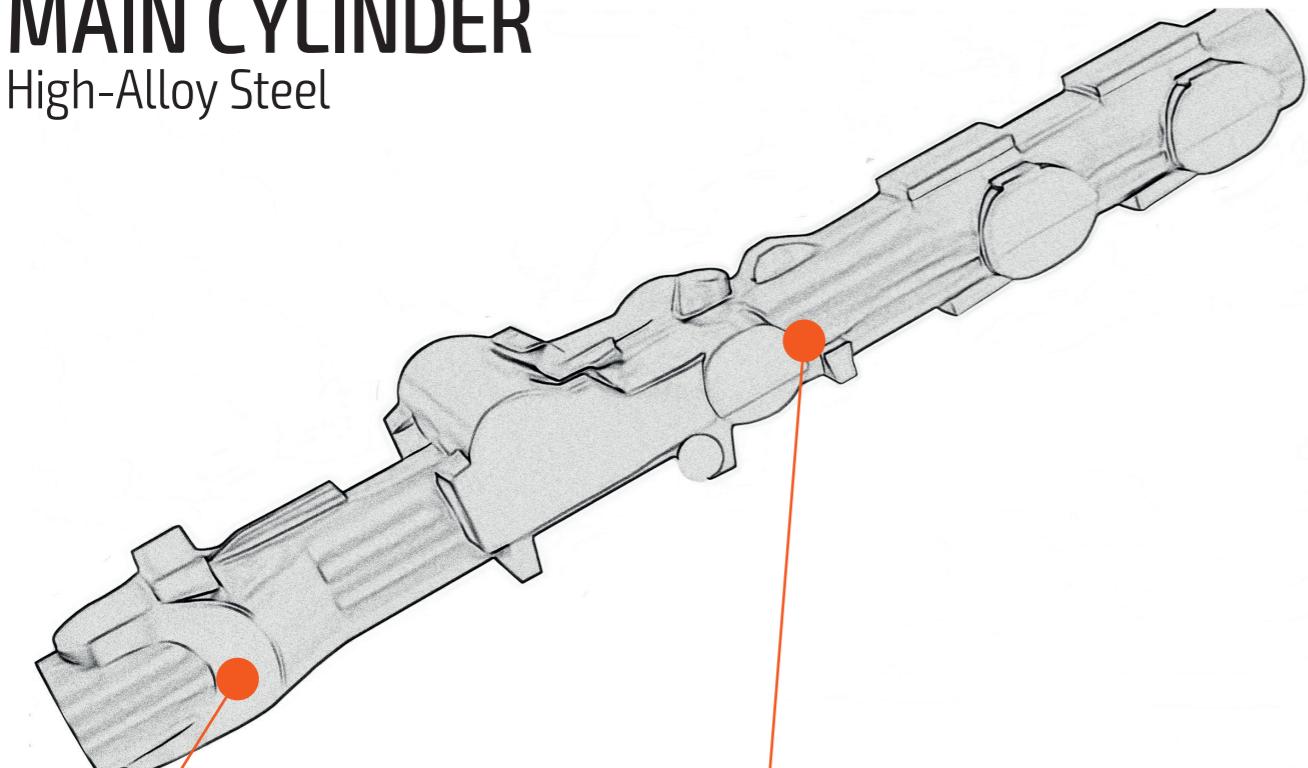
Aerospace

P

S

MAIN CYLINDER

High-Alloy Steel



1 Shoulder Milling

- High axial and radial accuracy for precise 90° shoulders
- Optimized tool geometry ensures smooth surface finish

HPC 151



2 Profile Milling

- High chip removal rate for faster machining
- High process reliability

SPECIAL HSS

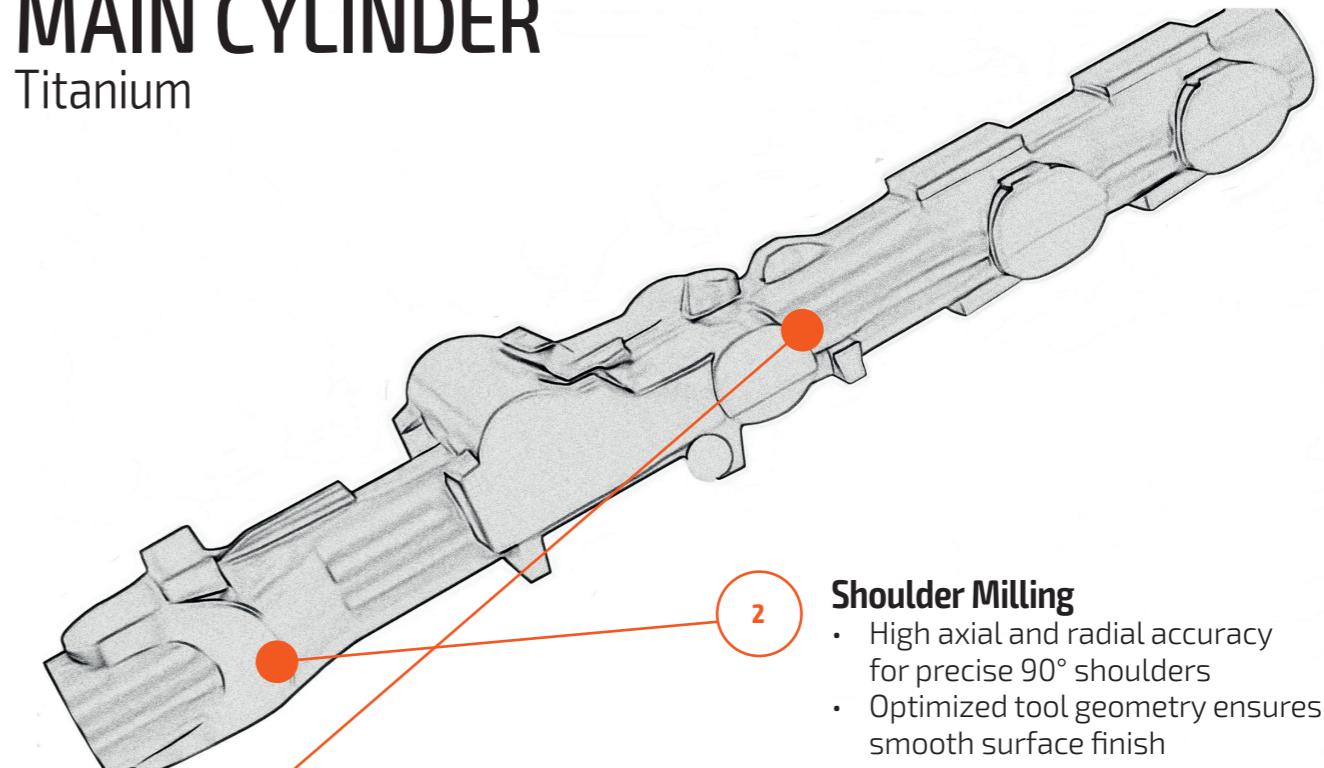


P

S

MAIN CYLINDER

Titanium



1 Shoulder Milling

- High axial and radial accuracy for precise 90° shoulders
- Optimized tool geometry ensures smooth surface finish

TIS 1285R / 1385R / 1585R



TIS 1386R / 1586R



TIS 1387R / 1587R



TIS 1285F / 1385F / 1585F



TIS 1386F / 1586F



TIS 1387F / 1587F



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Special tools



HPC



Aerospace



Special tools



TIS

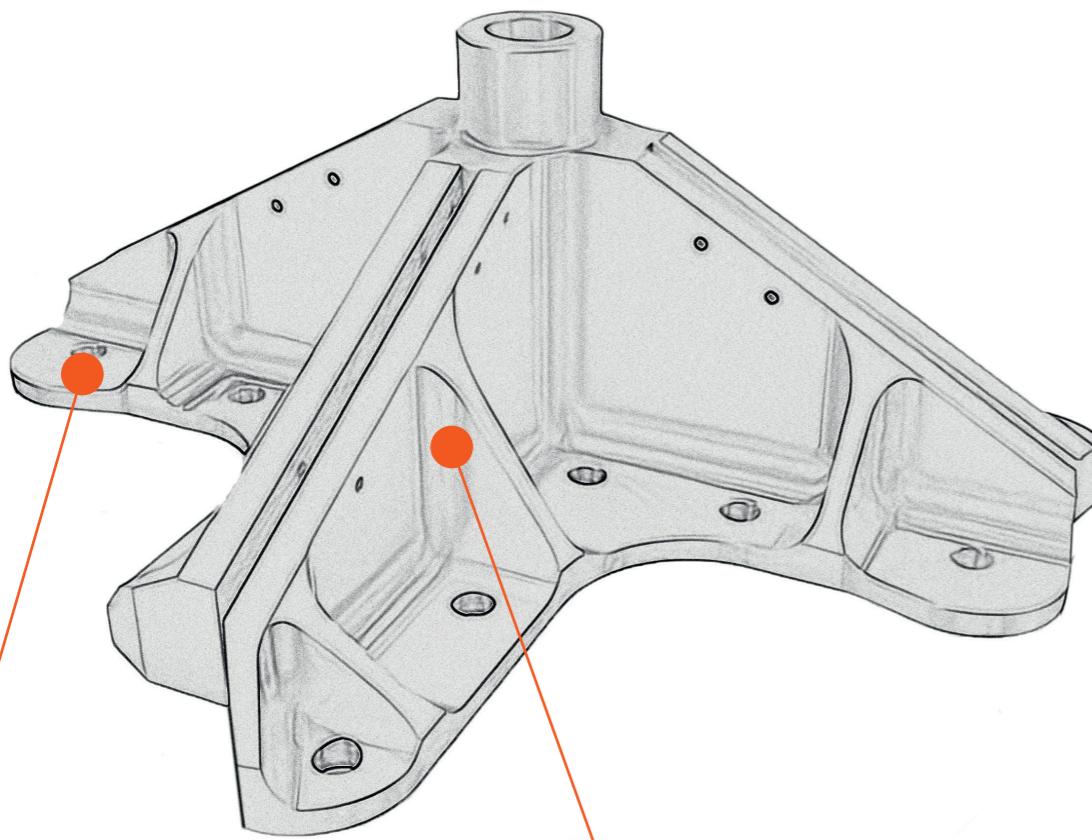


Aerospace

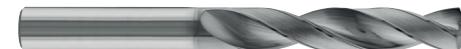


S THRUST FITTING

Titanium

**1****Drilling**

- High chip removal rate for faster machining
- High process reliability
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U**2****Plunge Milling**

- High stability for deep cavity machining
- Efficient chip evacuation for improved process reliability

TIS 183

Scansiona il Qr-code per consultare i parametri di lavoro.

Scan the Qr-code to view the working parameters.

Scannen Sie den QR-Code, um die Schnittwerte anzuzeigen.

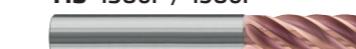
Scannez le code Qr pour visualiser les paramètres de fonctionnement.

S ENGINE MOUNT

Titanium

1**Profiling**

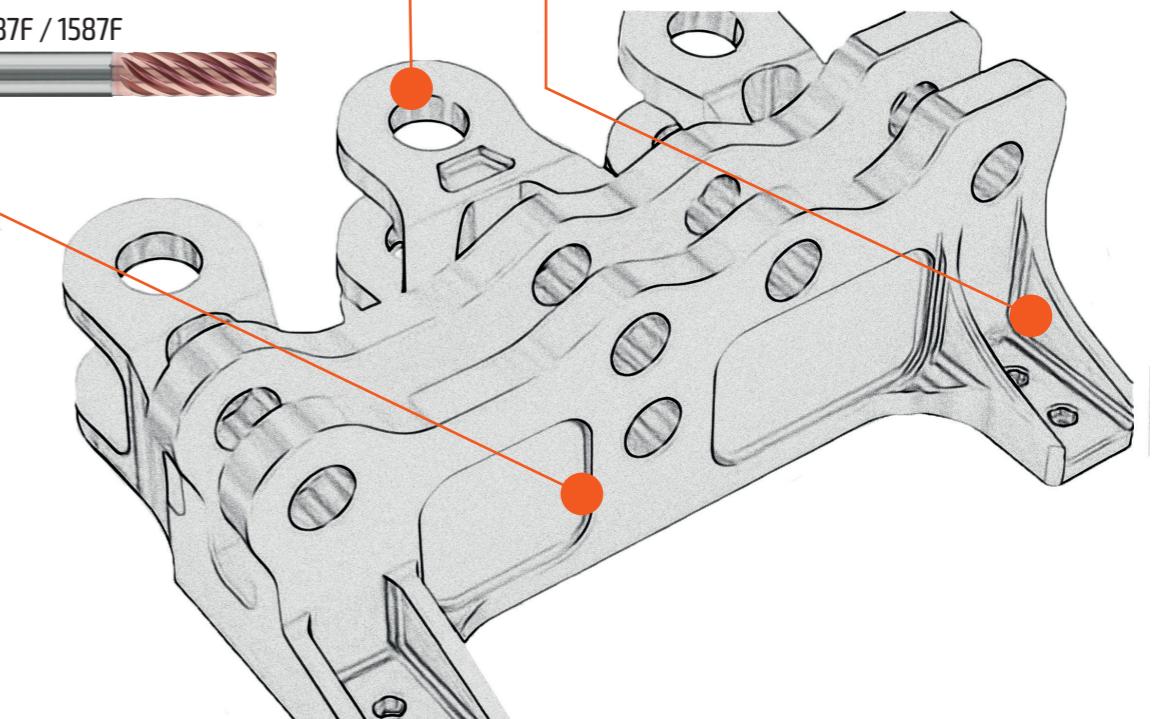
- Efficient roughing for high material removal rates
- Precision finishing ensures superior surface quality

TIS 1285R / 1385R / 1585R**TIS 1386R / 1586R****TIS 1387R / 1587R****TIS 1285F / 1385F / 1585F****TIS 1386F / 1586F****TIS 1387F / 1587F****2****Drilling**

- High chip removal rate for faster machining
- High process reliability

PHM 3030U / 3031U / 3050U / 3051U / 3081U**3****Plunge Milling**

- High stability for deep cavity machining
- Efficient chip evacuation for improved process reliability

TIS 183**PHM****TIS****Aerospace****TIS****PHM****Aerospace**

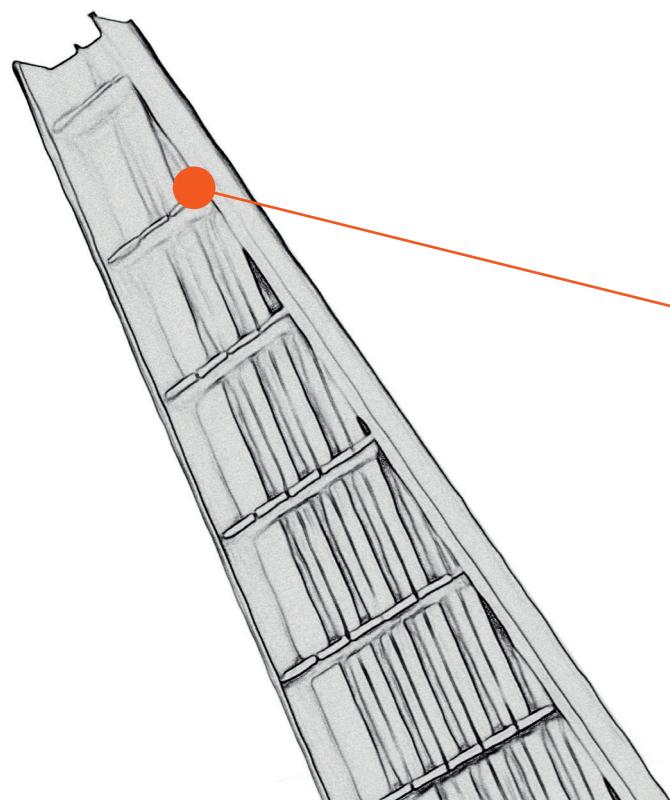
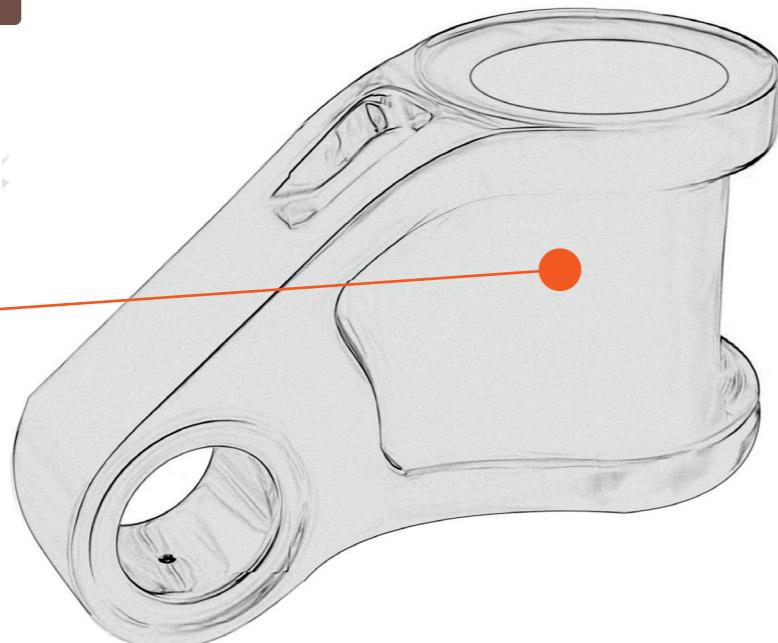
P M N S

SHACKLE

High-Alloy Steel, Stainless Steel, Aluminium, Titanium

- 1 High Feed**
- Efficient material removal for reduced cycle times
 - Robust tool design ensures stability in aggressive cuts

TIS 009W



TAIL Composite

- 1 Drilling**
- High chip removal rate for faster machining
 - High process reliability
 - Optimized point geometry for precise hole positioning
 - Enhanced chip evacuation for improved process stability

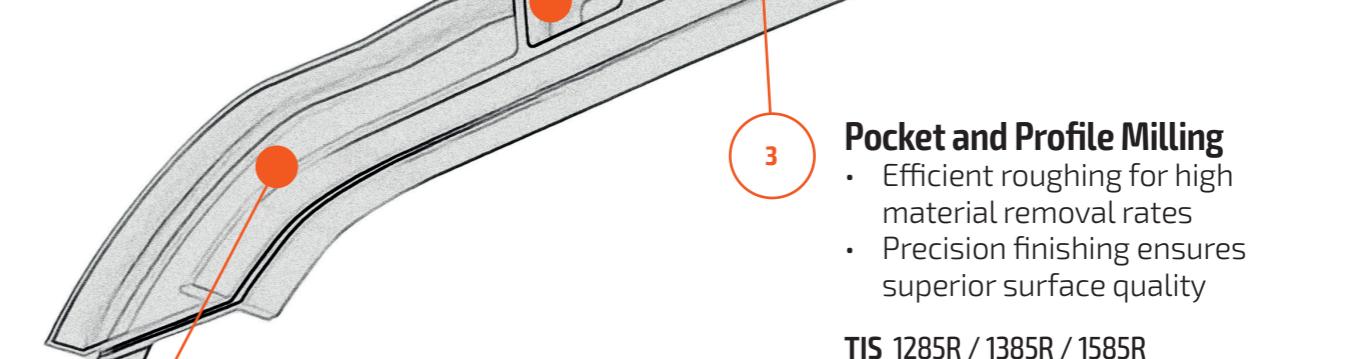
CMP 1780



TRAILING EDGE Stainless steel

- 1 Hollowing**
- High stability for deep cavity machining
 - Efficient chip evacuation for improved process reliability

TIS 184EV



- 2 Face Milling**
- High feed rates for efficient material removal
 - Optimized cutter design ensures superior surface finish

TIS 184EV



- 3 Pocket and Profile Milling**
- Efficient roughing for high material removal rates
 - Precision finishing ensures superior surface quality

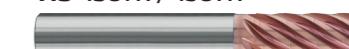
TIS 1285R / 1385R / 1585R



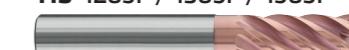
TIS 1386R / 1586R



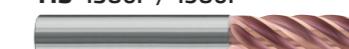
TIS 1387R / 1587R



TIS 1285F / 1385F / 1585F



TIS 1386F / 1586F



TIS 1387F / 1587F



TIS

Aerospace



CMP

Aerospace



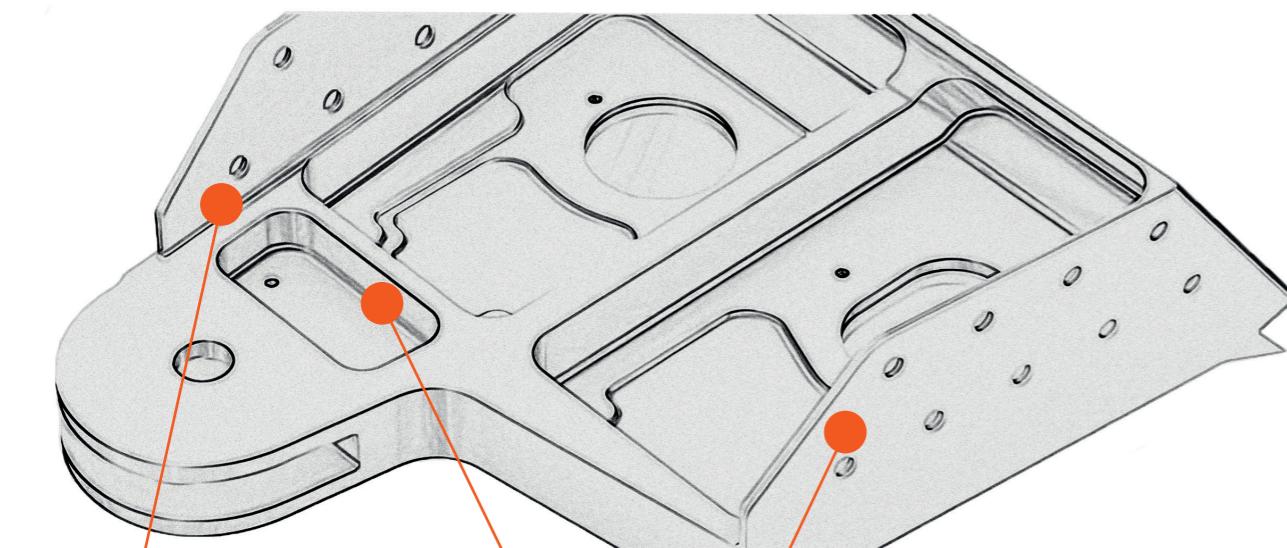
TIS

Aerospace



S PYLON BRACKET

Titanium



1 Drilling

- High chip removal rate for faster machining
- High process reliability
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

PHM 3030U / 3031U / 3050U / 3051U / 3081U



3 Plunge Milling

- High stability for deep cavity machining
- Efficient chip evacuation for improved process reliability

TIS 183



2 High Feed

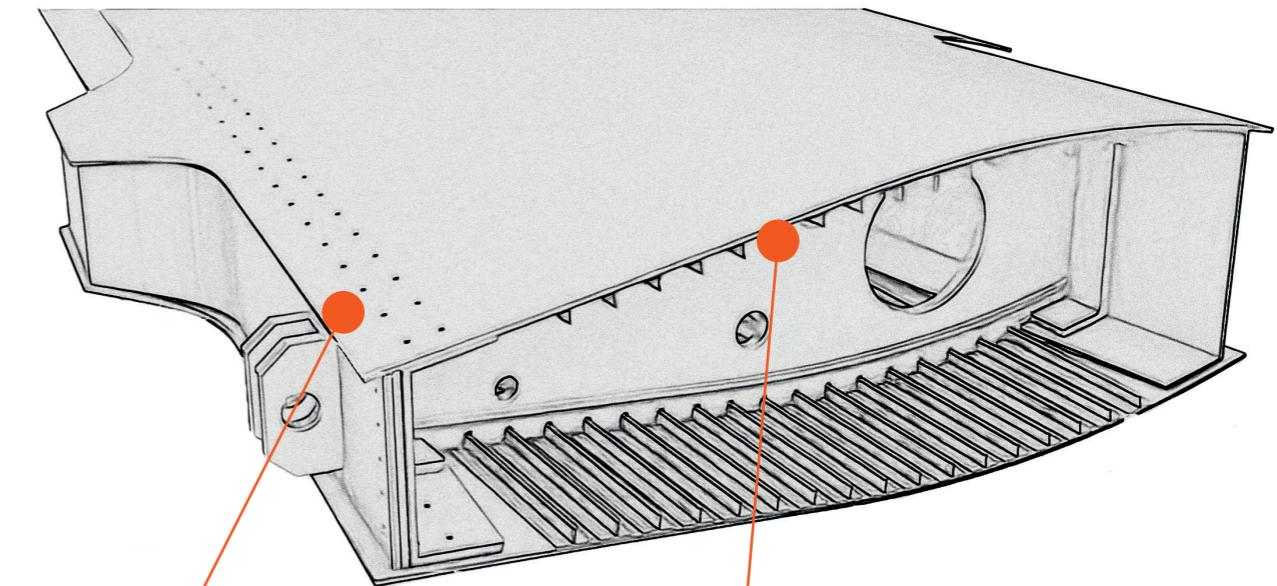
- Efficient material removal for reduced cycle times
- Robust tool design ensures stability in aggressive cuts

TIS 009W



O WING

Composite



1 Drilling

- High chip removal rate for faster machining
- Stable cutting process for consistent results
- Optimized point geometry for precise hole positioning
- Enhanced chip evacuation for improved process stability

CMP 1780



2 Contouring

- Superior part finishing
- Consistent tool performance ensures tight tolerances

CMP 1751R



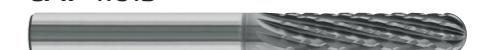
CMP 1751L



CMP 1751S



CMP 1751B



Scansiona il Qr-code per consultare i parametri di lavoro.
Scan the Qr-code to view the working parameters.
Scannen Sie den QR-Code, um die Schnittwerte anzuzeigen.
Scannez le code Qr pour visualiser les paramètres de fonctionnement.



PHM



TIS



Aerospace



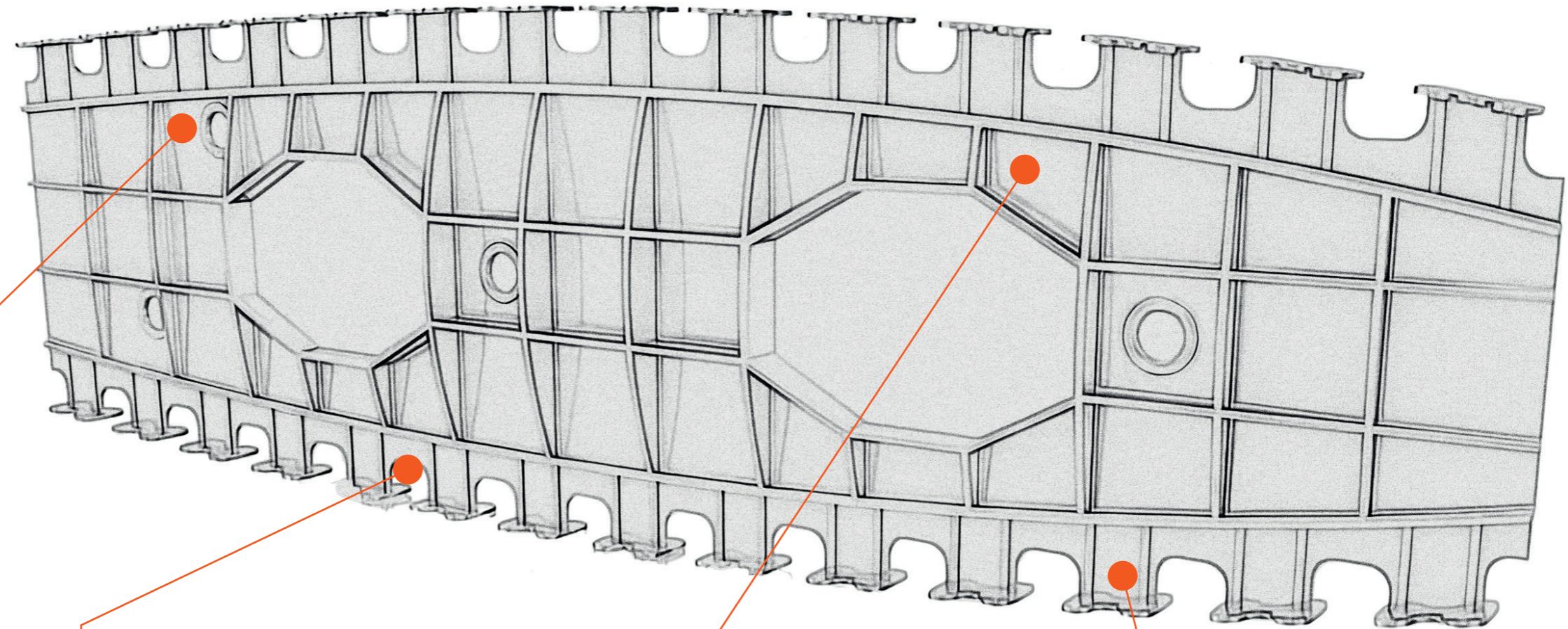
CMP



Aerospace

N WING RIB

Aluminium



- 1 Drilling**
- High chip removal rate for faster machining
 - High process reliability
 - Optimized point geometry for precise hole positioning
 - Enhanced chip evacuation for improved process stability

PHN 3051N / 3151N / 3201N / 3251N



- 2 Dynamic Milling**
- High chip removal rate for reduced machining time
 - Consistent tool engagement ensures longer tool life

ALU 1193A



ALU 1195A



- 3 Finishing**
- Superior part finishing
 - Consistent tool performance ensures tight tolerances

ALU 1125



- 4 Roughing**
- High-speed machining for maximum material removal
 - Optimized chip evacuation prevents built-up edge

ALU 1126



ALU 015W



ALU 016W



Scansione il Qr-code per consultare i parametri di lavoro.

Scan the Qr-code to view the working parameters.

Scannen Sie den QR-Code, um die Schnittwerte anzuzeigen.

Scannez le code Qr pour visualiser les paramètres de fonctionnement.

PHN



ALU



Aerospace



ALU



Aerospace



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