

整体叶盘、离心叶轮

Blisk, centrifugal impeller

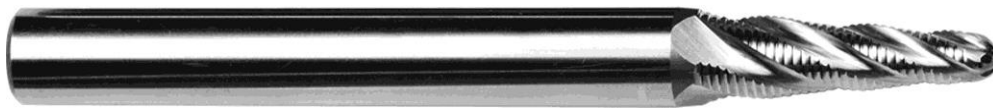
叶盘、叶轮的高科技含量的加工技术包括：高精度数控车削、叶盘通道的高效加工、复杂叶型曲面的五轴铣削等。它需要适合的槽刀，工件的结构形状需要槽刀能够避空，叶片轮廓的精加工可采用标准的[锥度球头立铣刀](#)产品系列。

High-tech content techniques of the blisk and impeller machining include: high precision CNC turning, efficient processing of blisk channel, five-axis milling of complex surface, etc. It requires suitable slot cutter, which can keep clearance of the workpiece structure. For blade profile finishing, standard taper ball end mills could be adopted.

叶轮通道开粗 Impeller channel roughing

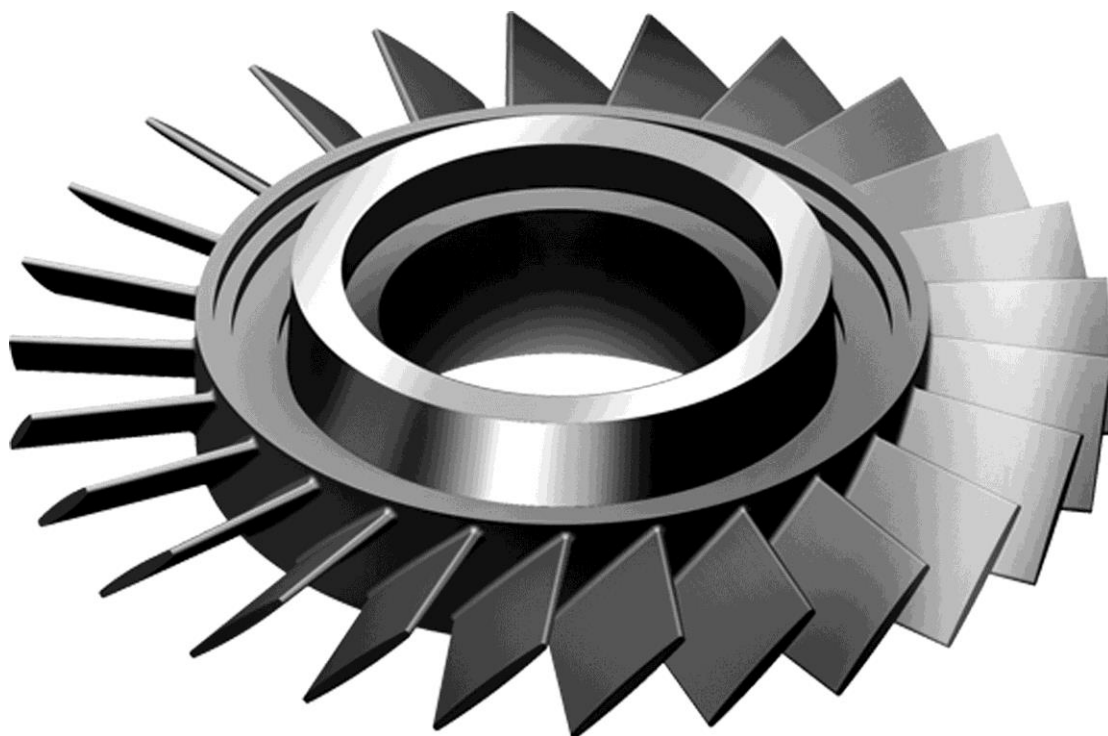


ZB-4W



带[锥度波刃铣刀](#)进行侧铣加工，以降低切削力，改善断屑性能，并达到减振的效果。采用较大的端齿后角和端齿宽，具浅槽深扁平状波形，周刃的抗崩缺性能高，排屑性能和刚性优异。

Apply tapered wavy flute endmill in milling operation, in order to reduce the cutting force, improve the performance of chip breaking, and achieve vibration reduction. Larger end teeth clearance angle and the tooth width are applied, with shallow groove deep flat wavy shape, high resistance to breakage of peripheral edge, excellent chip removal performance and rigidity.



叶盘通道开粗 Impeller channel roughing

圆柱波刃铣刀进行侧铣加工，切削效率高。

Cylindrical wavy flute milling cutter for milling machining, with high cutting efficiency



叶型精加工 Blade profile milling

TM-4R

涵盖不等齿铣刀及前波刃铣刀两个系列，可用于钛合金零部件的型腔铣、侧铣、槽铣、仿形铣等，多用于工件去粗后的[半精加工](#)和[精加工](#)。

Two series, uneven pitch endmills and front wavy edge endmills, be applied in the cavity milling, lateral milling slot milling, contour milling of titanium alloy parts, often applied in semi-finishing and finishing after roughing.



PML-2B

用[球头铣刀](#)按叶片的流线方向点铣加工，逐渐加工出叶片曲面。

End milling along the streamline direction of the blade by adopt ball-nose endmill, gradually producing curved surface.



叶根清根 Blade root back chipping

叶根清根部位倒圆较小，刀具悬深量大，刚性差，为增加刀具强度，使用[锥度球头铣刀](#)。

Small chamfering area at blade root, large overhang and poor rigidity, taper ball endmill is the choice for increase tool strength.



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