

Launched the Burrless Series, which eliminates the deburring process.

1. Our approach to the market trend

In 2018, we launched the Aqua REVO Drill, a new carbide drill with renewed materials, shapes and coatings. In 2019, we launched the Aqua REVO Mill, a carbide end mill and afterward, expanded our tap lineup of "SG taps" and "Hyper Z taps" as well to contribute to customers improving productivity and cost reduction.

Generally, in the cutting process, a rough edge or ridge, called a "burr", is generated on the edge of the part. Burrs have an adverse effect on product quality and accuracy, which requires extra time and cost for a deburring process.

Utilizing the strengths of the technologies that we have cultivated so far, we developed the burrless series to minimize burrs and eliminate the deburring process. This has reversed the old concepts, "Burrs are highly likely to occur in the cutting process" and "deburring is necessary after the cutting".

On December 21, 2023, a lineup of drills, taps, and end mills was launched simultaneously to improve user productivity dramatically.

2. Overview of new products



(Combination of corner R and sharp edge)

(1) Aqua REVO Drills Burrless

① Features

The "C-point" is a new cutting edge design that reduces drill run-out. The "R-edge" reduces the cutting resistance and the depth of cut to achieve minimal burrs when drilling through holes, and eliminates the burrs remaining at the hole surface. Excellent burrless performance is demonstrated even in cross-hole applications, which are difficult to deburr. Long life and stable cutting are also realized under normal drilling conditions.



② Dimension range

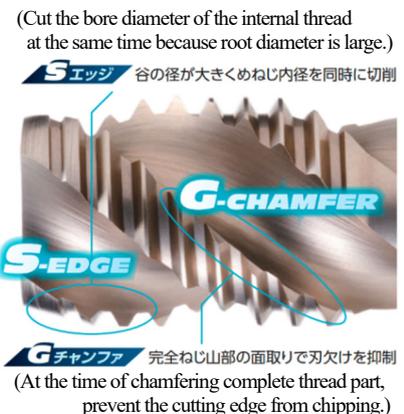
Dimensions range: φ2.0 to φ16.0
Reference dimensions: Typical dimensions φ6.0 (Overall length 82mm)
11,700 yen/piece (excluding tax)



(2) SG Spiral Taps Burrless

① Features

The "S-edge", which cuts the bore diameter of the hole at the same time, eliminates burrs generated on the minor diameter of the internal thread. In addition, the "G Chamfer" prevents the cutting edge from chipping through improved chip evacuation, which achieves the same tool life as general-purpose taps.



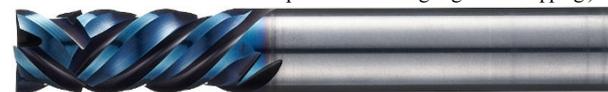
② Dimension range

Dimensions: M3~M12 All 26 dimensions, coarse and fine thread for through and blind holes
Reference dimensions: Typical dimensions M6×1 (Overall length 62mm)
3,220 yen/piece (excluding tax)

(3) Aqua REVO Mills Burrless

① Features

The "W Helical" design, combines a right-hand helix cutting edge on the point, and a left hand helix cutting edge on the shank side of the tool to minimize the burr on the top and bottom surfaces when side milling. In addition, the "C Chamfer", adopts a new shape at the cross section of the helical teeth to suppress the risk of steps in the intersection area of the twisted cutting-edges.



(Good cutting balance, minimizing burr on the top and bottom surface.)

Precision machining quality without burrs, and the same long tool life as normal products.

② Dimension range

4-Flutes 2.5D G
Dimensions range: φ6 to φ20
Reference dimensions: Typical dimensions φ10.0 (Overall length 70mm)
13,200 yen/piece (excluding tax)



3. Launch date and sales target

Launch date: December 21, 2023 worldwide release

Sales target: 300 million yen per year in the first year and 1 billion yen per year across the whole series in three years.

At least