Expanded lineup of AquaREVO Series and the release of ZT-forming Taps

In the cutting tool industry, Nachi develops and proposes optimal products for both round tools (drills, taps, end mills, etc.) and precision tools (broaches, hobs, etc.), Nachi contributes to productivity improvement and cost reduction for a wide range of markets, which includes the automotive and industrial machinery fields.

In the future, the demand for a wide variety of round tools is expected to grow due to the small-lot production of a wide variety of products and the miniaturization of parts at the user's production site. Therefore, we will introduce new round tools such as the "Aqua REVO Series" and the "ZT-Forming Tap" that realizes an overwhelmingly long life and low torque as a new round tool.

Expanded lineup of "AquaREVO series"

1. Our initiatives

material, cutting geometry, and coating. In 2019, the AquaREVO Mill was launched. Both the AquaREVO Drill and AquaREVO Mill series exhibit versatile features and deliver increased tool life and high efficiency. The performance of the AquaREVO drill and AquaREVO mill have been evaluated by a wide range of users, which has caused the market share of both series to grow rapidly.

In 2021, the AquaREVO Drill Micro and AquaREVO Mill 4D are being released. The AquaREVO Drill Micro delivers "long tool life" and "stable machining", which are important aspects when drilling with small diameters. The AquaREVO Mill 4D is ideal for tall axial profile milling and deep pocket machining. By pursuing technological innovation, Nachi continues to provide added value to the manufacturing industry.

Target industries for drilling small diameter holes are the electrical machinery, semi-conductor, and automotive part fields. The AquaREVO Drill Micro uses a new material and cutting geometry to provide long tool life, high efficiency, and versatile features to our target consumers.

A newly developed, ultra-fine grain cemented carbide gives the AquaREVO Drill Micro an increased level of hardness and durability. In addition, a new flute shape design has been adopted for this series. This design emphasizes rigidity and chip removal, which achieves torsional fracture torque*1 that is 1.2 times higher (at Ø0.5) than the conventional products of other manufacturers. The optimized centripetal design coupled with the increased rigidity allows the AquaREVO Drill Micro to improve hole position accuracy by 25% compared to other manufacturers' products.

to the tool

Reference Dimensions: Typical Dimensions Ø0.5 Overall Length 38mm

Price 3,350 yen/pc. (including tax 3,685 yen/pc.) 10D dimensions: Ø0.5 to Ø1.99, total 150 dimensions

Reference Dimensions: Typical Dimensions Ø0.5 Overall Length 38mm Price 3,690 yen/pc. (including tax 4,059 yen/pc.)

Applicable to a wide range of automotive and industrial machinery applications. In addition to the

companies' conventional products.

Price 6,590 yen/pc. (including tax 7,249 yen/pc.)

"AquaREVO Mill 4D"

4D series to our lineup that implements a new cutting-edge form that is optimized for long blade lengths. 1 Features

Deflection of the tool during cutting is suppressed by increasing the web thickness*2

which improves the rigidity of the tool. In addition, a sharp cutting-edge shape has been

introduced to reduce the cutting load. This allows for stable machining by reducing

deflection in the machining surface of the workpiece by one-third that of other

the tool 2 Dimension range

300 million yen per year by 2024

150 million yen per year by 2024

*2 Web Thickness: Thickness of the portion formed by the groove bottom of the tip of

Four-flute 4D G Type (Gash land): Ø1 - Ø20 Total of 20 dimensions Reference Dimensions: Typical Dimensions Ø6.0, Overall Length 60mm

4. Launch Date and Target

We marketed the innovation of the new "Hyper Z Tap Series" in 2016. The cutting edge and flute shape, which combine stable machining accuracy and chip ejection, have

contributed to productivity improvement and cost reduction for users.

and low torque with a newly developed material, geometry, and coating.

Launch of ZT Forming Tap

However, in mass production lines such as the automotive part industry, increased tool life and stable machining are a requirement for productivity improvement. This has led to

1. Our initiatives

an increase in demand for taps that do not cause chip trouble. Responding to the needs of our customers, Nachi will introduce "ZT Forming taps" which are named are after their "Zenith" toughness. This tap series will deliver superior tool life

2. Outline of "ZT Forming Tap" (1) Innovation of ZT Forming Tap

form taps. High hardness is achieved while maintaining the durability of the high-speed

base metal.

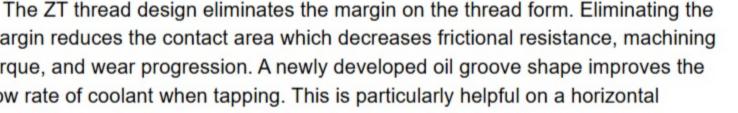
②Shape

①Material

margin reduces the contact area which decreases frictional resistance, machining torque, and wear progression. A newly developed oil groove shape improves the flow rate of coolant when tapping. This is particularly helpful on a horizontal machining center where coolant struggles to reach the tool tip.

Newly developed cobalt substrate with

refined grain structure for exclusive use with



END

based film, with improved durability, and an ultra-smooth polishing process.

3Coating

(2) Features 1 Long life

ZT coating provides excellent wear resistance, heat resistance, and low friction.

Regardless of the processing machine, the ZT tap will deliver more than three

The newly developed ZT coating maximizes performance by combining a AlTi

times the tool life than the conventional products of other manufacturers.

2 High accuracy

Introduction of a new cutting geometry has lowered torque levels and suppressed machining resistance. This allows for stable machining with minimal burr when threading.

Supports a wide range of workpieces, from highly ductile aluminum alloys to high

③Versatile use

hardness tempered steels. 3. Series and Dimension Range

chamfer.

Dimension range: M3 - M16 coarse/fine total 34 dimensions

Reference dimensions: Representative dimensions M6×1 Overall length 62mm 3,400 yen/pc. (including tax 3,740 yen/pc.)

Two types are available: the B type with 2-pitch chamfer and the P type with 4-pitch

4. Launch Date and Target

Sales target: 300 million yen per year by 2024

Synchronized worldwide launch on October 21, 2021

In 2018, the AquaREVO Drill was launched, a carbide drill series with an all-new

2. Outline of "AquaREVO Drill Micro"

①Features

*1 Torsional breakdown torque: Force that leads to breakage when torsion is applied

2 Dimension range 5D dimensions: Ø0.5 to Ø1.99, total 150 dimensions

3. Outline of "AquaREVO Mill 4D" previous AquaREVO Mill 1.5D·2.5D, we have added a

Synchronized worldwide launch on October 1, 2021 Sales Target: "AquaREVO Drill Micro"