



Thread milling without pre-drilled hole

WH(O)-EM-PNC

Volume 3



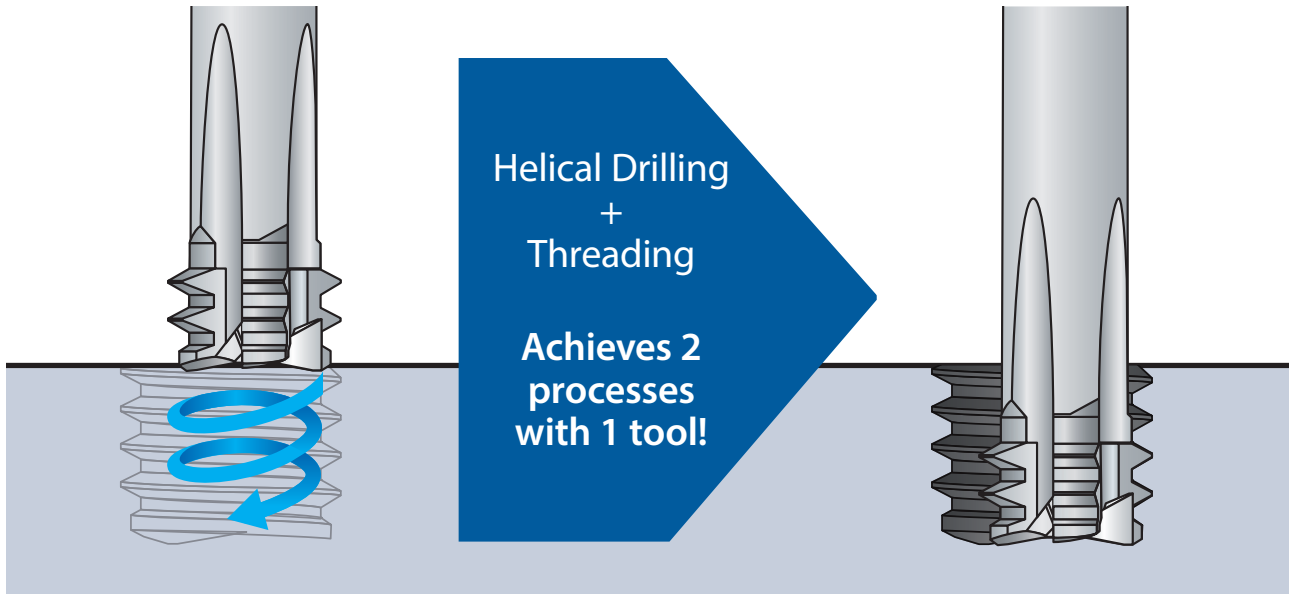
FEATURES: WH(O)-EM-PNC



WH(O)-EM-PNC: THREAD MILL WITH END-CUTTING EDGE FOR HIGH HARDNESS STEELS

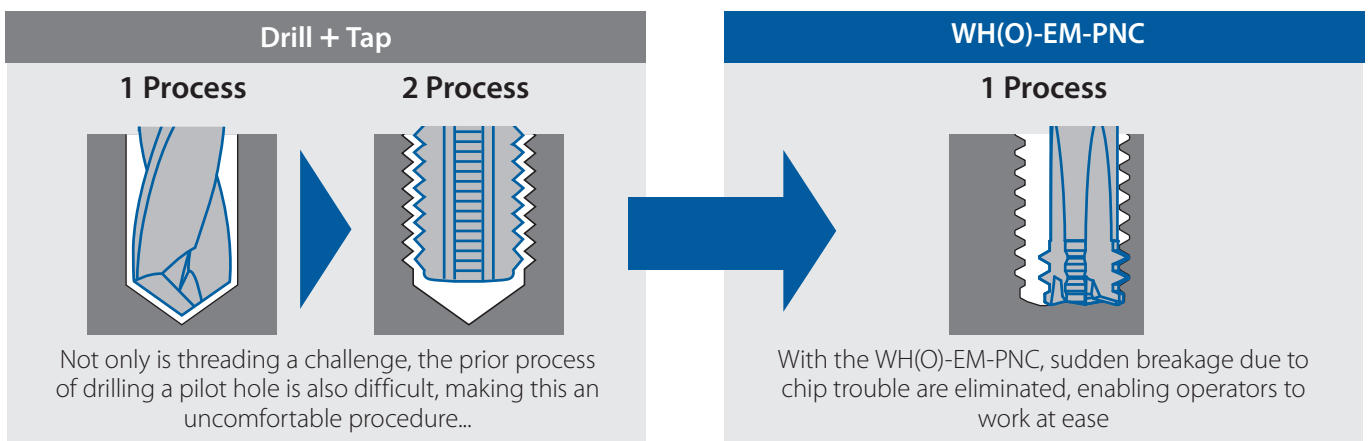
No pilot hole is required!
Stable machining without chip trouble

Threading | Thread milling



WH(O)-EM-PNC: IDEAL FOR HIGHLY DIFFICULT HIGH HARDNESS STEEL APPLICATIONS!

Helical drilling + threading can be done simultaneously, which reduces the risk of potential machining problems in the processing of high hardness steels



The risk of sudden tool breakage can be minimized by breaking chips into small and manageable pieces and evacuating them smoothly. Since no pilot hole is required, process integration and the risk of breakage can be avoided.

CUTTING DATA

| Tool | WH-EM-PNC M4 |
|---------------|--|
| Work Material | 1.2379 (Cold work tool steel) 60HRC |
| Cutting speed | 30 m/min (3.082 min ⁻¹) |
| Feed | 123 mm/min (0.01 mm/t) |
| Depth of cut | 8 mm |
| Coolant | Airblow |
| Machine | Exeron HSC600 |
| Interface | HSK-40 |
| Holder | Shrink holder |
| Hole type | Blind hole |

| Tool | WH-EM-PNC M4 |
|---------------|---|
| Work Material | 1.6582 (Alloy engineering steel) 1400-1550 N/mm ² |
| Cutting speed | 50 m/min (5.137 min ⁻¹) |
| Feed | 205 mm/min (0.01 mm/t) |
| Depth of cut | 9 mm |
| Coolant | Airblow |
| Machine | Hermle C32U |
| Interface | HSK63-A |
| Holder | Hydraulic chuck |
| Hole type | Blind hole |

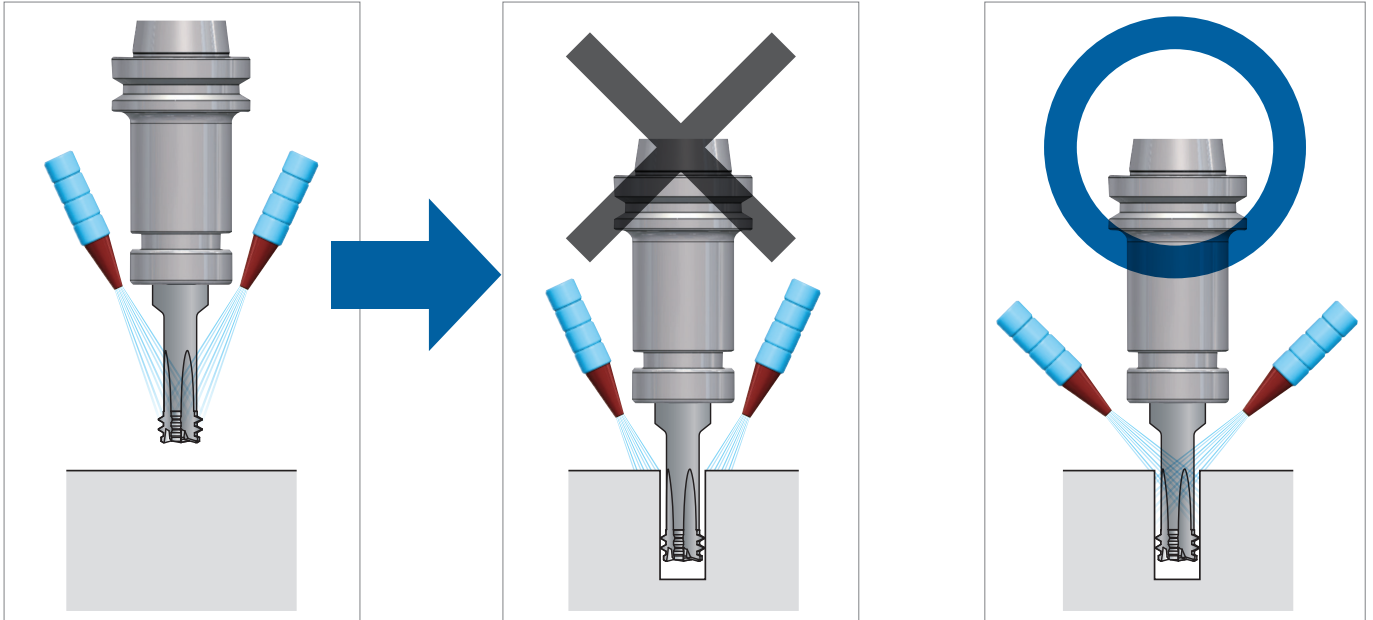
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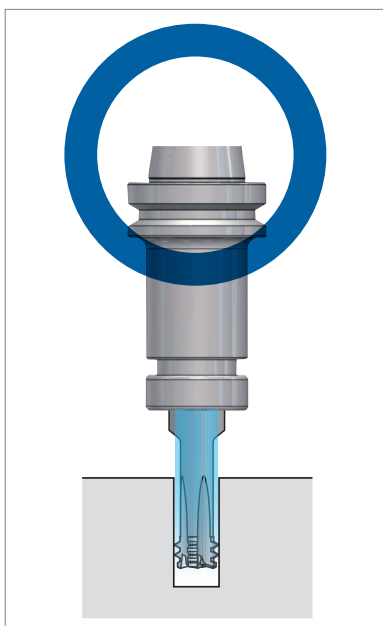
PROPER USAGE OF COOLANT

When using external coolant, ensure that the cutting fluid is properly positioned so that it is supplied into the hole.

Threading | Thread milling



If you are using a machining center with a through-spindle coolant system, the use of coolant through collet is recommended, or use WHO-EM-PNC



Please refer to the following table to select a suitable coolant for cutting.

| Work Material | WH(O)-EM-PNC | |
|---------------------|--------------|---------------|
| | Air Blow | Water-Soluble |
| High-hardness steel | ◎ | △ |
| General steel | × | ◎ |

◎ : Best
 △ : Shortening of tool life
 × : Not recommended

Water-soluble cutting fluids can be used with satisfactory result, although in some cases the durability is inferior to air-blow.

SUPPORT TOOLS FOR YOUR THREAD MILLING NEEDS

Troubled by the following problems?

Unsure of diameter correction value. Increase passes which results in longer setup time.

Visibility of internal thread pitch diameter at entry enables the reduction of passes to minimize setup time significantly.

Moreover, the DCT is able to measure pitch diameter smaller than the tolerance limit. The DCT can measure the pitch diameter of the female internal thread even if it does not fit into the Go-Gauge.

An incorrect diameter correction that result in a defective internal thread (gauge-out).

Visibility of internal thread pitch diameter at entry enables reliable diameter corrections.

The DCT is useful for reducing defective workpieces.

Unstable tool life

Digitized measurement ensures consistent internal thread pitch diameters after tool changes. The same starting and finishing position ensures consistent and stable tool life.

Solved with the Diameter Correction Tool DCT

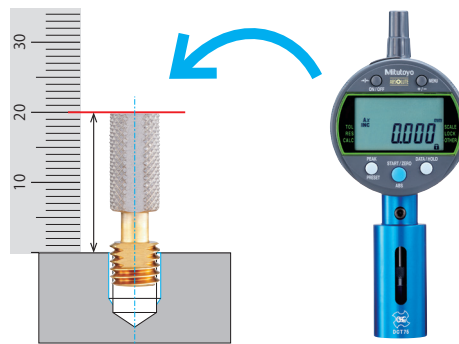
DCT

Simple measurement of pitch diameter by visual judgment



DCT75

Low-cost type
Measurement and calculation system



High-performance type
Digital display system

Eliminate measurement and calculation with the combination of a digital display.

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shaping your dreams

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