



Thread milling without pre-drilled hole

WH(O)-EM-PNC

Volume 3

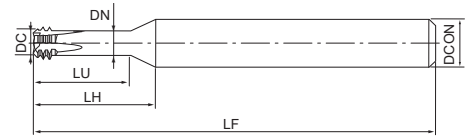


FEATURES: WH(O)-EM-PNC



WH-EM-PNC

Threading | Thread milling | Metric | Metric Fine



- Thread milling without pre-drilled hole
- WXS coating
- For hardened steels up to 62 HRC and stainless steels

P	P	P	P	M	K	K	N	N	S	S	H	H	H	
C < 0,2%	0,25 < C < 0,4	C ≥ 0,45%	SCM	INOX	GG	GGG	Al	AC, ADC	Ti	Ni	25-45 HRC	45-55 HRC	~65 HRC	
40-100	40-100	40-100	40-100	40-100	40-120	40-100	40-100	40-160	40-80	40-80	40-100	30-80	30-50	m/min
0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,1	0,01~0,05	0,01~0,05	0,01~0,1	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	mm/t
M	MF	CARBIDE	WXS	h6	LH									

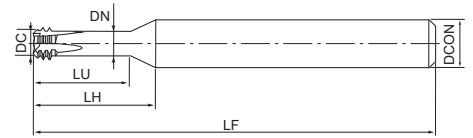
EDP	Minimum cutting bore diameter	TP	DC	LF	LU	LH	DN	DCON	NOF
48347003	M3	0,5	2,4	50	7,5	12,3	1,7	6	4
48347004	M4	0,7	3,1	50	9,9	14,2	2,18	6	4
48347005	M5	0,8	4	50	12	15,5	2,97	6	4
48347006	M6	1	4,6	50	14,5	17,5	3,36	6	4
48347008	M8	1,25	6,2	70	19,2	24,1	4,66	10	4
48347010	M10	1,5	7,5	70	23,7	27,7	5,78	10	4
48347012	M12	1,75	9	80	28,4	31,4	6,92	10	4

Threading | Thread milling

Metric | Metric Fine

WHO-EM-PNC NEW SIZE

Threading | Thread milling | Metric | Metric Fine



- Thread milling without pre-drilled hole
- WXS coating
- For hardened steels up to 62 HRC and stainless steels
- Centre through coolant

P ○ C < 0,2%	P ○ 0,25 < C < 0,4	P ○ C ≥ 0,45%	P ○ SCM	M ○ INOX	K ○ GG	K ○ GGG	N ○ Al	N ○ AC, ADC	S ● Ti	S ● Ni	H ● 25-45 HRC	H ● 45-55 HRC	H ● ~65 HRC	m/min
40-100	40-100	40-100	40-100	40-100	40-120	40-100	40-100	40-160	40-80	40-80	40-100	30-80	30-50	mm/t
0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,1	0,01~0,05	0,01~0,05	0,01~0,1	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	
M	MF	CARBIDE	WXS		h6	LH								

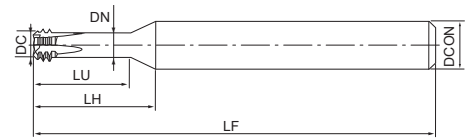
EDP	Minimum cutting bore diameter	TP	DC	LF	LU	LH	DN	DCON	NOF
48348003	M3	0,5	2,4	50	7,5	12,3	1,7	6	4
48348004	M4	0,7	3,1	50	9,9	14,2	2,18	6	4
48348005	M5	0,8	4	50	12	15,5	2,97	6	4
48348006	M6	1	4,6	50	14,5	17,5	3,36	6	4
48348008	M8	1,25	6,2	70	19,2	24,1	4,66	10	4
48348009	^{NEW} M10	1	7,5	70	23,7	27,7	5,78	10	4
48348010	M10	1,5	7,5	70	23,7	27,7	5,78	10	4
48348012	M12	1,75	9	80	28,4	31,4	6,92	10	4
48348014	M14	2	9	90	33	37,9	6,62	12	4
48348016	M16	2	11,7	90	37	39,5	9,36	12	4

Threading | Thread milling

Metric | Metric Fine

WHO-EM-PNC NEW

Threading | Thread milling | G



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- Centre through coolant

P ○ C < 0,2%	P ○ 0,25 < C < 0,4	P ○ C ≥ 0,45%	P ○ SCM	M ○ INOX	K ○ GG	K ○ GGG	N ○ Al	N ○ AC, ADC	S ● Ti	S ● Ni	H ● 25-45 HRC	H ● 45-55 HRC	H ● ~65 HRC	m/min
40-100	40-100	40-100	40-100	40-100	40-120	40-100	40-100	40-160	40-80	40-80	40-100	30-80	30-50	mm/t
0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,1	0,01~0,05	0,01~0,05	0,01~0,1	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	0,01~0,03	
G	CARBIDE	WXS		h6	LH									

EDP	Minimum cutting bore diameter	TP	DC	LF	LU	LH	DN	DCON	NOF
48348104	G1/16	28	5,8	57	18	19,2	4,4	6	4
48348100	G1/8	28	7,3	72	22	24,4	5,9	10	4
48348101	G1/4	19	9,8	72	30	31,5	7,7	10	4
48348105	G3/8	19	11,8	83	37	38,5	9,8	12	4
48348102	G1/2	14	15,7	100	47	48,8	12,9	16	4

Threading | Thread milling

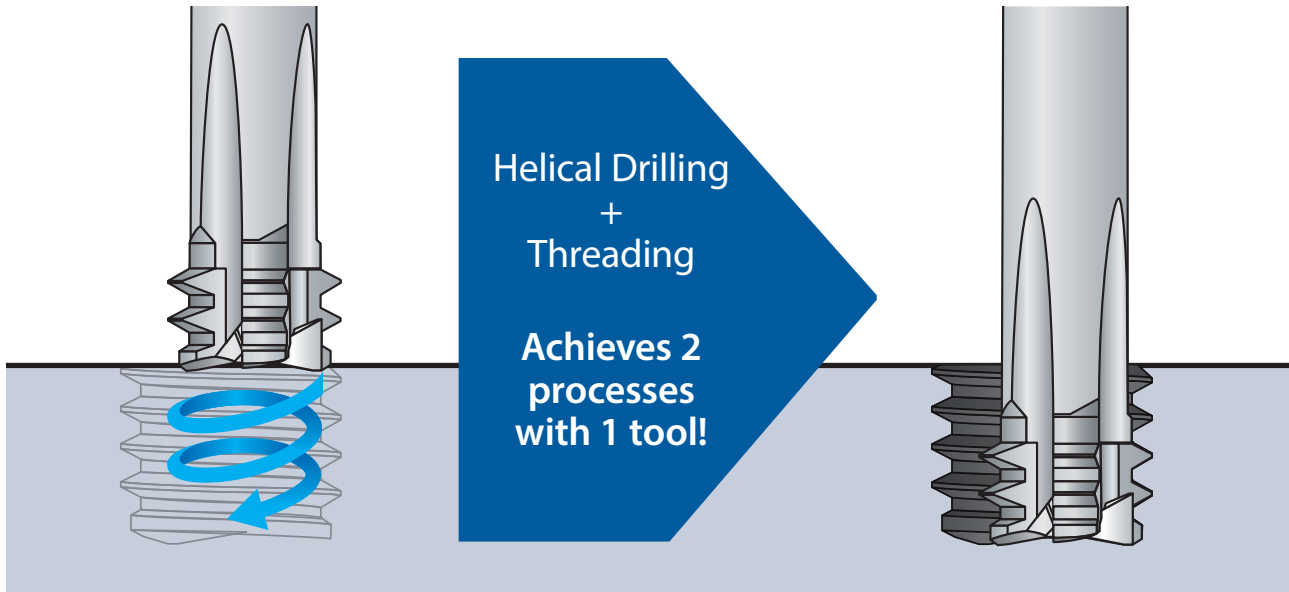


G

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

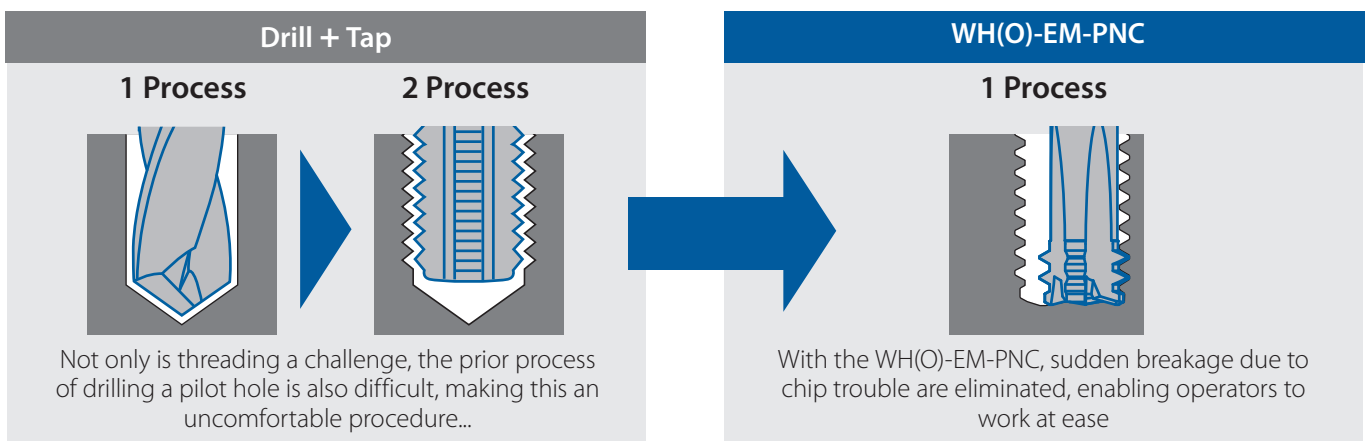
No pilot hole is required!
Stable machining without chip trouble

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

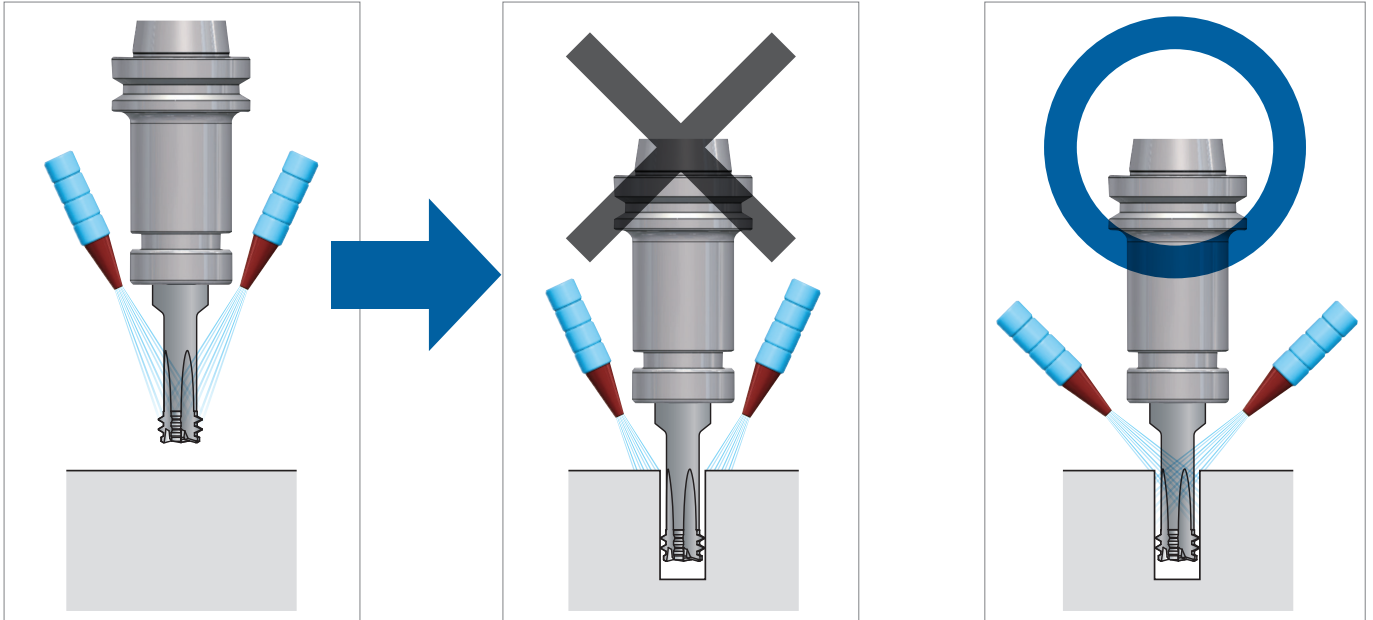
Tool	WH-EM-PNC M4
Work Material	Vanadis (Cold work steel) 64HRC
Cutting speed	30 m/min (3.082 min ⁻¹)
Feed	123 mm/min (0.01 mm/t)
Depth of cut	8 mm
Coolant	Airblow
Machine	n.a.
Interface	n.a.
Holder	Shrink holder
Hole type	Blind hole



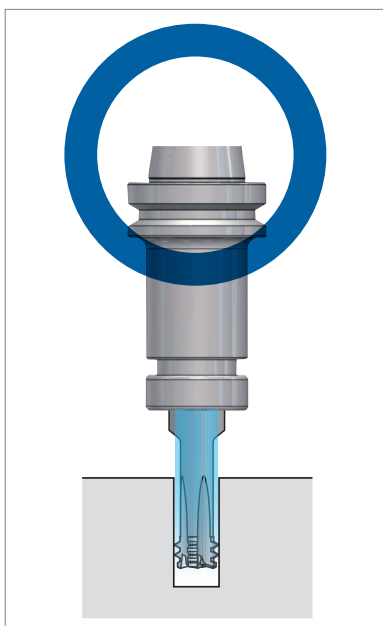
PROPER USAGE OF COOLANT

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

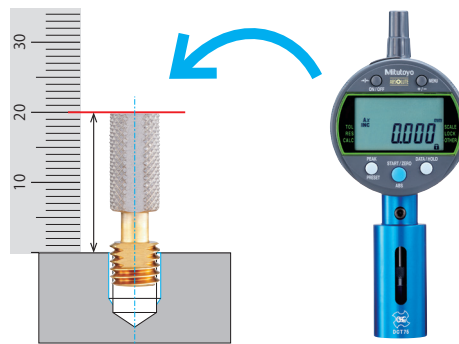
DCT

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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