

## Metric Products

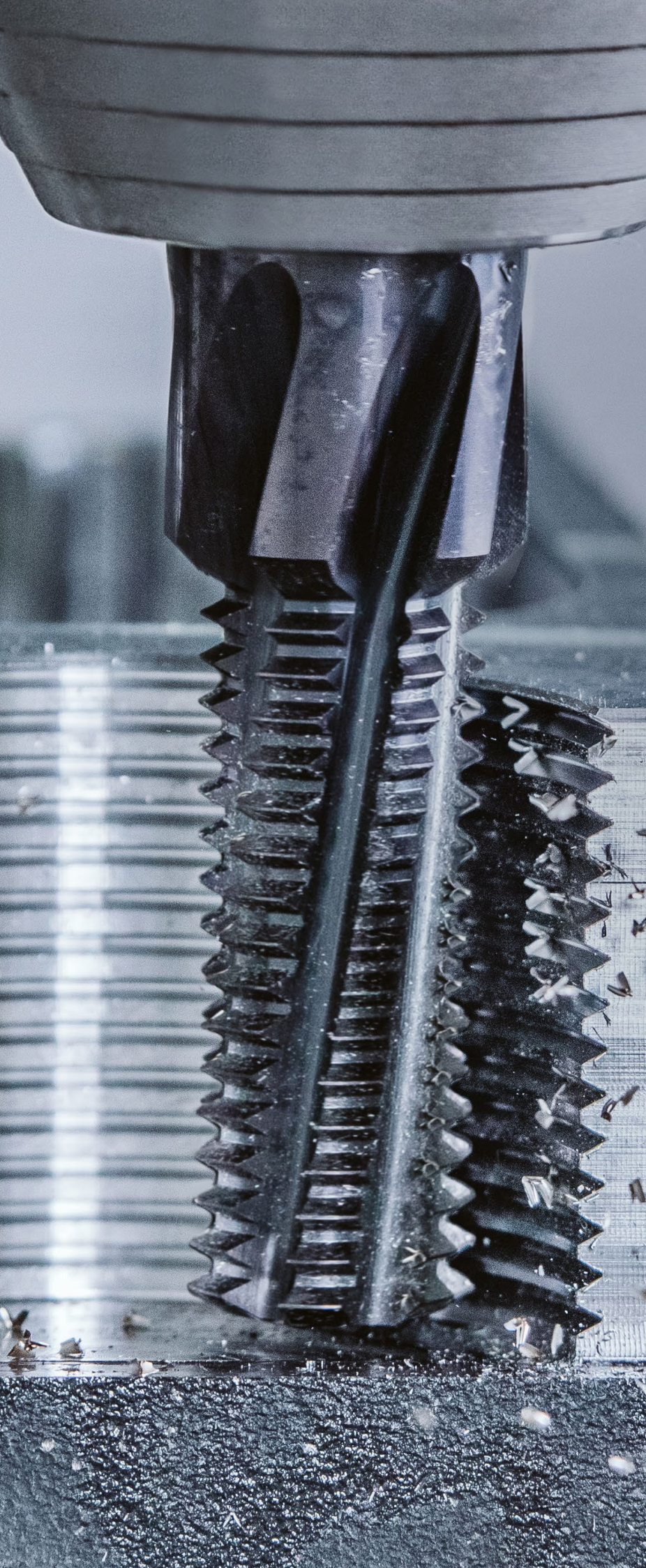
The entire content of this chapter can be found  
in the Metric Catalog.

Use the QR code or the link shown below.



<https://cutting.tools/us/en/digitalcatalogmetric>





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## WNT \ Performance

Premium quality tools for high performance.

The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.






## WNT \ Standard

Quality tools for standard applications.



The quality tools of the **WNT Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide. Tools from this product line are the first choice for many standard applications and guarantee optimal results.

## Symbol explanation

### Version

-  no drilling required
-  central internal coolant
-  Radial thro' coolant
-  Coolant supply either via the flange or centrally
-  left-hand cutting



### Shank

-  Plain cylindrical shank
-  Cylindrical shank with lateral driving face „Weldon“









- = Main Application
- = Extended application



### Thread / Flank angle

-  Explanation of the types of thread can be found on → **Page 6.**
-  Flank angle 60°

### Applications

-  Circlip Grooves
-  Full radius slot milling
-  Slot milling
-  Multipurpose milling
-  Chamfering and Deburring
-  Internal R/L
-  External R/L
-  Internal/External R/L

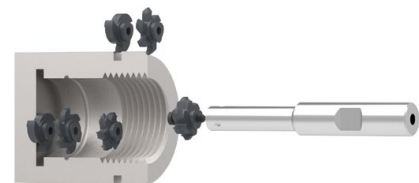
## Tool types

<b>System 300</b>	Circular milling cutter with solid carbide insert	<b>BGF</b>	Solid carbide drill thread milling cutter
<b>Polygon</b>	Circular shank milling cutter with carbide indexable insert (polygon insert seat)	<b>Micro Mill</b>	Solid Carbide Circular End Milling Cutter
<b>Mini Mill</b>	Circular milling cutter with solid carbide milling insert (with three-rib insert connection)	<b>ZBGF</b>	Solid carbide circular drill thread milling cutter
<b>MWN</b>	Multi-tooth thread milling cutter with carbide indexable inserts (straight insert seat) and Weldon flat	<b>SGF</b>	Thread milling cutter
<b>GZD</b>	Multi-tooth thread milling cutter with carbide indexable inserts (angled insert seat) and Weldon flat	<b>SFSE</b>	Thread milling cutter with chamfer facet
<b>GZG</b>	Multi-tooth thread milling cutter with carbide indexable inserts (straight insert seat) and Weldon flat	<b>SFSE Micro</b>	Thread milling cutter for smallest threads
<b>EAW</b>	Single-row thread milling cutter with carbide indexable inserts and Weldon flat	<b>HR</b>	Single-row shank thread milling cutter
<b>EWM</b>	Single-row thread milling cutter with carbide indexable insert and SK adapter		

## Overview Circular and Thread Milling Cutters

### Modular Circular Milling Cutters with Carbide Indexable Inserts (ModuSet)

- ▲ the perfect tool for every application
- ▲ various holders, depending on overhang
- ▲ the same threading insert for different pitches and diameters
- ▲ highest flexibility and stability
- ▲ in addition to circular thread milling, circular and linear milling operations can also be carried out



1st choice for small batch sizes and large threads

### Thread Milling Cutters with Indexable Carbide Inserts (ModuThread)

- ▲ exchange of the insert for different threads
- ▲ same threading insert for different diameters



### Solid Carbide Thread Milling Cutters (MonoThread)

- ▲ short machining times, ideal for volume production
- ▲ one tool for all thread types
- ▲ one thread milling cutter for different diameters with the same pitch



MicroMill



SGF



ZBGF



BGF

## Thread types

<b>M</b>	Metric ISO standard thread	<b>BSW</b>	Whitworth thread
<b>MF</b>	Metric ISO fine thread	<b>BSF</b>	Whitworth fine thread
<b>G</b>	Whitworth pipe thread	<b>NPT</b>	American taper pipe thread
<b>UN</b>	Unified thread	<b>Pg</b>	Steel conduit thread
<b>UNC</b>	Unified Standard Thread	<b>Tr</b>	Trapezoidal thread
<b>UNF</b>	Unified fine thread		

## Thread milling process description

### Thread milling

- ▲ Cutting
- ▲ Thread production by circular milling in the pitch (helical interpolation)
- ▲ Can be used for a wide range of materials up to 60 HRC
- ▲ Lower torque than taps and thread formers (no reversing of the spindle necessary)
- ▲ Thread machining to the bottom of the hole possible
- ▲ High-speed cutting (HSC) can be performed

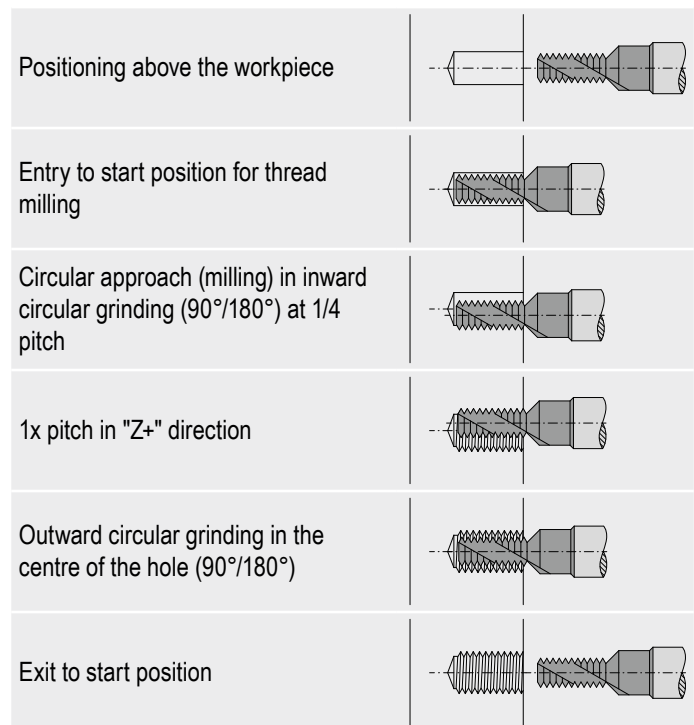
#### Advantages of thread milling

- ▲ Different tolerances can be produced with one tool
- ▲ One tool for blind hole and through hole machining
- ▲ Outstanding workpiece surfaces and dimensional accuracy guaranteed
- ▲ One tool for right and left-hand threads
- ▲ Low cutting pressure when machining thin-walled parts
- ▲ Precisely repeatable thread depth
- ▲ No chip issues and no chip root residues in the finished thread

#### Added advantages of thread milling cutters with chamfer facet

- ▲ Savings in tool change and setup times, resulting in significantly shorter machining times
- ▲ Optimisation of magazine assignment in the machine

### Process



Climb milling is shown here. Further information on the milling processes (climb and conventional milling) can be found on → **page 84**.

## Description of procedure, thread milling cutters

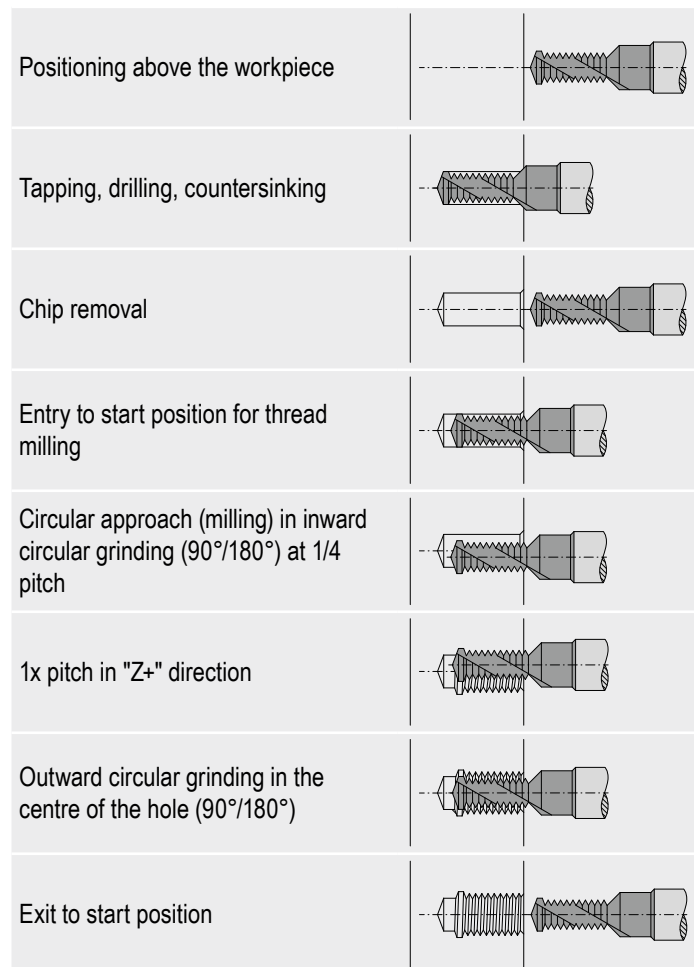
### Thread milling

- ▲ Cutting
- ▲ Production of a complete thread – drilling, countersinking and thread milling with just one tool
- ▲ Can be used in different materials (K/N)
- ▲ Prerequisite: CNC-controlled milling machine or machining centre with the helical interpolation function

#### Advantages

- ▲ Shortest machining times thanks to high cutting speeds and feeds
- ▲ Savings in tool change and setup times, resulting in significantly shorter machining times
- ▲ Optimisation of magazine assignment in the machine
- ▲ Different tolerances can be produced with one tool
- ▲ Outstanding workpiece surfaces and dimensional accuracy guaranteed
- ▲ One tool for blind hole and through hole machining
- ▲ Precisely repeatable thread depth
- ▲ No chip issues and no chip root residues in the finished thread
- ▲ High-speed cutting (HSC) can be performed

#### Process



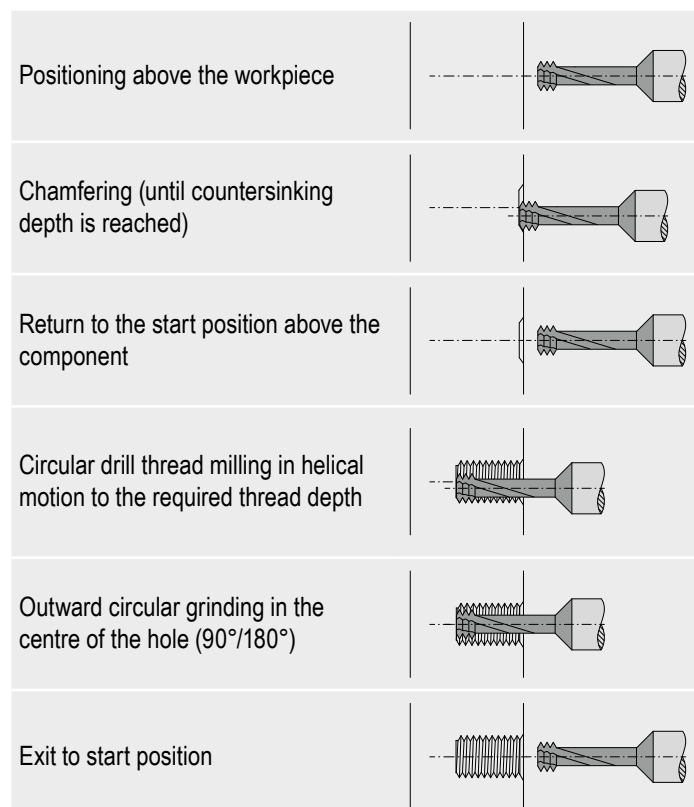
### Zirkular-Bohrgewindefräsen

- ▲ Cutting
- ▲ Production of a complete thread – drilling, countersinking and thread milling with just one tool
- ▲ Can be used in different materials (H/S/O)
- ▲ Prerequisite: CNC-controlled milling machine or machining centre with the helical interpolation function

#### Advantages














- ▲ Shortest machining times due to simultaneous creation of the tap hole and thread
- ▲ Savings in tool change and setup times, resulting in significantly shorter machining times
- ▲ Optimisation of magazine assignment in the machine
- ▲ Different tolerances can be produced with one tool
- ▲ Outstanding workpiece surfaces and dimensional accuracy guaranteed
- ▲ One tool for blind hole and through hole machining
- ▲ Precisely repeatable thread depth
- ▲ Optimum chip removal and no chip root residues in the finished thread

#### Process



## Toolfinder

		Tool types	Tool properties	from bore diameter in mm
ModuSet	Modular Circular Milling Cutters with Carbide Indexable Inserts	<b>Polygon</b> 	<ul style="list-style-type: none"> <li>▲ high power transmission through polygon connection</li> <li>▲ 3 and 6 edged inserts</li> <li>▲ stable holders in solid carbide and steel</li> </ul>	9,6
		<b>Mini Mill</b> 	<ul style="list-style-type: none"> <li>▲ three interlocking rib location</li> <li>▲ compatible with popular manufacturer systems</li> <li>▲ 3 and 6 edged inserts</li> <li>▲ stable holders in solid carbide and steel</li> </ul>	9,6
		<b>System 300</b> 	<ul style="list-style-type: none"> <li>▲ proven circular milling tool</li> <li>▲ 3 edged inserts</li> </ul>	7,9
ModuThread	Thread Milling Cutters with Indexable Carbide Inserts	<b>MWN</b> 	<ul style="list-style-type: none"> <li>▲ multi tooth thread milling cutter</li> <li>▲ double sided inserts</li> <li>▲ exclusively for thread production</li> <li>▲ holder for tapered threads</li> </ul>	9,0
		<b>GZD</b> 	<ul style="list-style-type: none"> <li>▲ multi tooth drilling and thread milling cutter</li> <li>▲ for thread milling in solid material</li> <li>▲ core hole and thread with one tool</li> </ul>	14,0
		<b>GZG</b> 	<ul style="list-style-type: none"> <li>▲ multi tooth thread milling cutter</li> <li>▲ exclusively for thread production</li> </ul>	18,5
		<b>EAW</b> 	<ul style="list-style-type: none"> <li>▲ single-row thread milling cutter</li> <li>▲ inserts with 2 or 4 cutting edges</li> <li>▲ exclusively for production of the thread</li> <li>▲ insert holder with cylindrical shank DIN 1835</li> </ul>	17,5
		<b>EWM</b> 	<ul style="list-style-type: none"> <li>▲ single-row thread milling cutter</li> <li>▲ inserts with 4 cutting edges</li> <li>▲ exclusively for production of the thread</li> <li>▲ monoblock insert holder with steep taper DIN 69871</li> </ul>	43,0
MonoThread	Solid Carbide Thread Milling Cutters	<b>Micro Mill</b> 	<ul style="list-style-type: none"> <li>▲ solid carbide circular milling cutter for small diameters</li> </ul>	1,25
		<b>BGF</b> 	<ul style="list-style-type: none"> <li>▲ drill thread milling cutter</li> <li>▲ core hole, countersink, thread and thread undercut with one tool</li> </ul>	2,45
		<b>ZBGF</b> 	<ul style="list-style-type: none"> <li>▲ circular drill thread milling cutter</li> <li>▲ core hole, countersink and thread with one tool</li> </ul>	2,3
		<b>SFSE Micro</b> 	<ul style="list-style-type: none"> <li>▲ solid carbide shank thread milling cutter with chamfer facet</li> <li>▲ just one tool for countersink and thread</li> <li>▲ specially developed for the smallest threads in hard materials</li> </ul>	0,75
		<b>SFSE</b> 	<ul style="list-style-type: none"> <li>▲ solid carbide thread milling cutter with chamfering facet</li> <li>▲ only one tool for threading and chamfering</li> </ul>	2,4
		<b>SGF</b> 	<ul style="list-style-type: none"> <li>▲ solid carbide thread milling cutter without chamfering facet</li> <li>▲ exclusively for thread production</li> </ul>	2,4
		<b>HR</b> 	<ul style="list-style-type: none"> <li>▲ single-row shank thread milling cutter</li> <li>▲ exclusively for production of the thread</li> <li>▲ up to 3xD in materials up to 60 HRC</li> </ul>	3,14

Thread / Flank angle								Applications					Tool holder
													
M	G	BSW	UN	UNC	Pg	NPT	Tr						
MF		BSF		UNF									
16+17	18	18		20			19	10+11	12+13	14	14	15	21
29+30	30							22	23+24 25	24	26	27+28	31-33
37	38	38						34+35	36		36		39
40	41		41		42	42							43+44
45	45												46
47	48		49		48								50
51	51		51										52
53			53										54
56									55		55		
57+58													
59													
61													
62+63	64			66		65							
67	68			69		68							
70+71	72												
73	74	74		75									
76													
60													