

# GUHRING

RELIABLE AND COST-EFFICIENT  
THREAD PRODUCTION

- H6-SHANK
- UNIVERSAL APPLICATION
- REDUCED CYCLE TIMES
- LONGER TOOL LIFE



## Universal & Synchronised tapping

GUHRING - YOUR WORLD-WIDE PARTNER

## Universal and synchronised taps

Different materials require special tap geometries according to their specific characteristics in order to achieve optimal machining results. For the user having to machine many different materials it means stocking a multitude of different tools. Disadvantages are substantial stock-keeping including the subsequent space requirement and high capital commitment as well as the danger of picking the incorrect tool.

With the development of two new tap types, Guhring has eliminated these disadvantages. The new tools for universal and synchronised tapping enable the reliable machining of many different materials when the correct chucks and machines are applied. Both tool types are available with internal coolant and an extremely wear-resistant TiCN-coating.

### Universal taps

Universal taps are suitable for the application on conventional as well as on modern CNC machines. They enable process reliable tapping in different materials thanks to their special geometry with a long thread length.

### Synchronised taps

Synchronised taps are suitable for the application on synchronised CNC machines when clamped in synchro tapping chucks or rigidly clamped. Therefore, they do not require guidance. This enables a considerably shorter thread length and a very free-cutting tool geometry. Thanks to reduced friction and improved chip evacuation, considerably increased cutting rates can be applied whilst improving tool life.



Flat on shank  
on request! →



**NEW:**  
GÜHROSync – The best  
of both systems

The advantages of the perfect combination of hydraulic and synchro chuck. Detailed information can be found in the brochure GÜHROSync that is available upon request.

# Taps for universal and synchronised tapping



Through holes

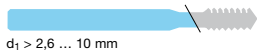
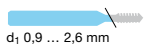


Blind holes

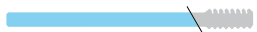
Thread depth			$\leq 3xD$		$\leq 3xD$			
Tool material			HSS-E-PM					
Type/form			N/B	N/B	NR50/C	NR50/C	VA R50/C	VA R50/C
Surface finish			<b>S</b>	<b>C</b>	<b>S</b>	<b>C</b>	<b>S</b>	<b>C</b>
Cooling			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>A</b>	<input checked="" type="checkbox"/>	<b>A</b>
Shank tolerance			h9	h9	h9	h9	h6	h6
			universal tapping				synchronised tapping	
Tools with colour-ring								
Thread type	Tolerance zone	Dim. to DIN 2184-1	Guhring no. Ø-range Prices on page					
<b>M</b>	<b>ISO 2 6H</b>	<b>DIN 371</b>	1285 M2 - M10 5	1287 M3 - M20 5	767 M3 - M10 8	1152 M5 - M10 8		
	<b>6HX</b>						761 M3 - M10 11	1139 M5 - M10 11
	<b>ISO 2 6H</b>	<b>DIN 376</b>	1286 M12 - M20 6		1098 M12 - M20 9	1293 M12 - M20 9		
	<b>6HX</b>						763 M12 - M20 12	1142 M12 - M20 12
<b>MF</b>	<b>ISO 2 6H</b>	<b>DIN 374</b>	1291 M8x1 - M24x2 7		1100 M8x1 - M20x1,5 10	1294 M8x1 - M20x1,5 10		
	<b>6HX</b>						764 M8x1 - M20x1,5 13	1144 M8x1 - M20x1,5 14
<b>BSP</b>	-	<b>DIN 5156</b>					4159 G 1/16 - G 1/2" 15	

## Shank designs

DIN 371



DIN 376 / DIN 374 / DIN 5156



## Type clarification

NR50 = Type N, 50° RH spiral  
VA R50 = Type VA, 50° RH spiral



○ bright   
 ○ steam tempered   
 ● nitrided   
 A TiAlN   
 C TiCN   
 S TiN   
 P AlCrN   
 M MolyGlide

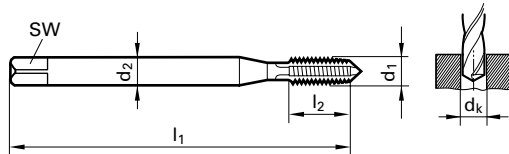
# M DIN 371

## ISO 2/6H

### Compass, page 4



<b>Guhring no.</b>	<b>1285</b>	<b>1287</b>
<b>Standard</b>	<b>DIN 2184-1</b>	
<b>Standard</b>	<b>DIN 371</b>	
<b>Tool material</b>	<b>HSS-E-PM</b>	
<b>Surface</b>	<b>S</b>	<b>C</b>
<b>Type</b>	<b>N</b>	<b>N</b>
<b>Form</b>	<b>B</b>	<b>B</b>
<b>Tolerance</b>	<b>ISO 2 / 6H</b>	<b>ISO 2 / 6H</b>
<b>Cutting direction</b>	<b>right-hand</b>	<b>right-hand</b>
<b>Discount group</b>	<b>103</b>	<b>103</b>



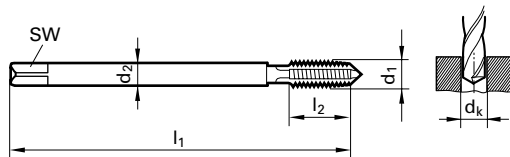
d1	P	d2	SW	dk	l1	l2
	mm	mm		mm	mm	mm
M 2	0.40	2.800	2.10	1.600	45.00	8.00
M 3	0.50	3.500	2.70	2.500	56.00	10.00
M 4	0.70	4.500	3.40	3.300	63.00	12.00
M 5	0.80	6.000	4.90	4.200	70.00	14.00
M 6	1.00	6.000	4.90	5.000	80.00	16.00
M 8	1.25	8.000	6.20	6.800	90.00	17.00
M10	1.50	10.000	8.00	8.500	100.00	20.00
M12	1.75	9.000	7.00	10.200	110.00	24.00
M16	2.00	12.000	9.00	14.000	110.00	26.00
M20	2.50	16.000	12.00	17.500	140.00	32.00

Availability	
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# M DIN 376 ISO 2/6H Compass, page 4



<b>Guhring no.</b>	<b>1286</b>
<b>Standard</b>	<b>DIN 2184-1</b>
<b>Standard</b>	<b>DIN 376</b>
<b>Tool material</b>	<b>HSS-E-PM</b>
<b>Surface</b>	<b>S</b>
<b>Type</b>	<b>N</b>
<b>Form</b>	<b>B</b>
<b>Cutting direction</b>	<b>ISO 2 / 6H</b>
<b>Tolerance</b>	<b>right-hand</b>
<b>Discount group</b>	<b>103</b>



d1	P	d2	SW	dk	l1	l2
	mm	mm		mm	mm	mm
M12	1,75	9,000	7,00	10,200	110,00	24,00
M14	2,00	11,000	9,00	12,000	110,00	26,00
M16	2,00	12,000	9,00	14,000	110,00	26,00
M18	2,50	14,000	11,00	15,500	125,00	30,00
M20	2,50	16,000	12,00	17,500	140,00	32,00

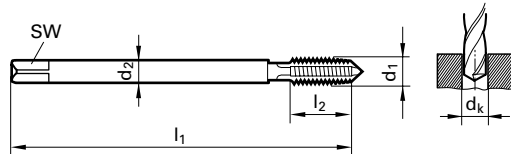
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# MF DIN 374 ISO 2/6H Compass, page 4



Through hole

<b>Guhring no.</b>	<b>1291</b>
<b>Standard</b>	<b>DIN 2184-1</b>
<b>Standard</b>	<b>DIN 374</b>
<b>Tool material</b>	<b>HSS-E-PM</b>
<b>Surface</b>	<b>S</b>
<b>Type</b>	<b>N</b>
<b>Form</b>	<b>B</b>
<b>Cutting direction</b>	<b>ISO 2 / 6H</b>
<b>Tolerance</b>	<b>right-hand</b>
<b>Discount group</b>	<b>103</b>



d1 X P	d2	SW	dk	l1	l2	Code no.
	mm		mm	mm	mm	
M 8 X1	6.000	4.90	7.000	90.00	17.00	8,005
M10 X1	7.000	5.50	9.000	90.00	17.00	10,005
M10 X1.25	7.000	5.50	8.800	100.00	20.00	10,006
M12 X1	9.000	7.00	11.000	100.00	20.00	12,005
M12 X1.25	9.000	7.00	10.800	100.00	20.00	12,006
M12 X1.5	9.000	7.00	10.500	100.00	20.00	12,007
M14 X1.25	11.000	9.00	12.800	100.00	20.00	14,006
M14 X1.5	11.000	9.00	12.500	100.00	20.00	14,007
M16 X1.5	12.000	9.00	14.500	100.00	22.00	16,007
M18 X1.5	14.000	11.00	16.500	110.00	25.00	18,007
M20 X1.5	16.000	12.00	18.500	125.00	25.00	20,007
M22 X1.5	18.000	14.50	20.500	125.00	25.00	22,007
M24 X1.5	18.000	14.50	22.500	140.00	28.00	24,007
M24 X2	18.000	14.50	22.000	140.00	28.00	24,008

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# M DIN 371

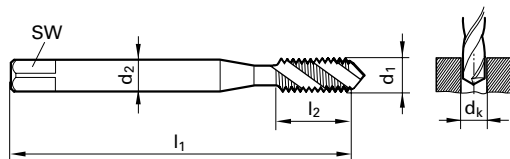
## ISO 2/6H

### Compass, page 4



Blind hole

<b>Guhring no.</b>	<b>767</b>	<b>1152</b>
<b>Standard</b>	DIN 2184-1	
<b>Standard</b>	DIN 371	
<b>Tool material</b>	HSS-E-PM	
<b>Surface</b>	<b>S</b>	<b>C</b>
<b>Type</b>	N R50	N R50
<b>Form</b>	C	C
<b>Tolerance</b>	ISO 2 / 6H	ISO 2 / 6H
<b>Cutting direction</b>	right-hand	right-hand
<b>Discount group</b>	103	103



d1	P	d2	SW	dk	l1	l2
	mm	mm		mm	mm	mm
M 3	0.50	3.500	2.70	2.500	56.00	6.00
M 4	0.70	4.500	3.40	3.300	63.00	7.50
M 5	0.80	6.000	4.90	4.200	70.00	8.50
M 6	1.00	6.000	4.90	5.000	80.00	11.00
M 8	1.25	8.000	6.20	6.800	90.00	14.00
M10	1.50	10.000	8.00	8.500	100.00	16.00

Availability	
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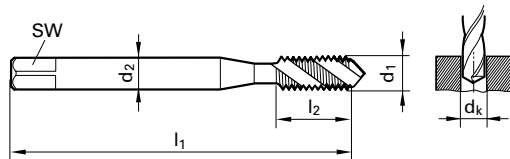


# M DIN 371 6HX Compass, page 4



Blind hole

<b>Guhring no.</b>	<b>761</b>	<b>1139</b>
<b>Standard</b>	<b>DIN 2184-1</b>	
<b>Standard</b>	<b>DIN 371</b>	
<b>Tool material</b>	<b>HSS-E-PM</b>	
<b>Surface</b>	<b>S</b>	<b>C</b>
<b>Type</b>	<b>VA R50</b>	<b>VA R50</b>
<b>Form</b>	<b>C</b>	<b>C</b>
<b>Tolerance</b>	<b>6HX</b>	<b>6HX</b>
<b>Cutting direction</b>	<b>right-hand</b>	<b>right-hand</b>
<b>Discount group</b>	<b>103</b>	<b>103</b>



d1	P	d2	SW	dk	l1	l2
	mm	mm		mm	mm	mm
M 3	0.50	3.500	2.70	2.500	56.00	2.50
M 4	0.70	4.500	3.40	3.300	63.00	3.50
M 5	0.80	6.000	4.90	4.200	70.00	4.00
M 6	1.00	6.000	4.90	5.000	80.00	5.00
M 8	1.25	8.000	6.20	6.800	90.00	6.30
M10	1.50	10.000	8.00	8.500	100.00	7.50

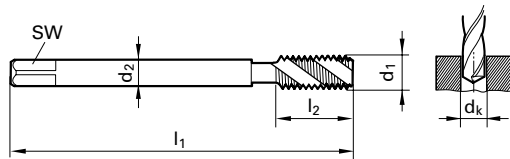
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# M DIN 376 6HX Compass, page 4



Blind hole

Guhring no.	763	1142
Standard	DIN 2184-1	
Standard	DIN 376	
Tool material	HSS-E-PM	
Surface	<b>S</b>	<b>C</b>
Type	VA R50	VA R50
Form	C	C
Tolerance	6HX	6HX
Cutting direction	right-hand	right-hand
Discount group	103	103



d1	P	d2	SW	dk	l1	l2
	mm	mm		mm	mm	mm
M12	1.75	9.000	7.00	10.200	110.00	8.80
M14	2.00	11.000	9.00	12.000	110.00	10.00
M16	2.00	12.000	9.00	14.000	110.00	10.00
M20	2.50	16.000	12.00	17.500	140.00	12.50

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# M DIN 374

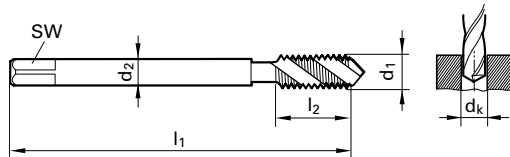
## 6HX

### Compass, page 4



Blind hole

<b>Guhring no.</b>	764	1144
<b>Standard</b>	DIN 2184-1	
<b>Standard</b>	DIN 374	
<b>Tool material</b>	HSS-E-PM	
<b>Surface</b>	<b>S</b>	<b>C</b>
<b>Type</b>	VA R50	VA R50
<b>Form</b>	C	C
<b>Cutting direction</b>	6HX	6HX
<b>Tolerance</b>	right-hand	right-hand
<b>Discount group</b>	103	103
























d1 X P	d2	SW	dk	l1	l2	Code no.
	mm		mm	mm	mm	
M 8 X1	6.000	4.90	7.000	90.00	11.00	8.005
M10 X1	7.000	5.50	9.000	90.00	11.00	10.005
M12 X1	9.000	7.00	11.000	100.00	11.00	12.005
M12 X1.5	9.000	7.00	10.500	100.00	16.00	12.007
M14 X1.5	11.000	9.00	12.500	100.00	15.00	14.007
M16 X1.5	12.000	9.00	14.500	100.00	15.00	16.007
M18 X1.5	14.000	11.00	16.500	110.00	16.00	18.007
M20 X1.5	16.000	12.00	18.500	125.00	16.00	20.007

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# Recommendations for taps

Material group	Tens. strength MPa (N/mm <sup>2</sup> )	Hardness HB	Cutting speed v <sub>c</sub> (m/min)			
			Universal		Synchro	
			without IC	with IC	without IC	with IC
 Structural steels  Free-cutting steels  Unalloyed case hardened steels  Unalloyed heat-treatable steels	≤ 850	–	15 - 20	20 - 25	20 - 25	20 - 30
	≤ 1000	–	15 - 20	20 - 25	20 - 25	20 - 30
	≤ 750	–	15 - 20	20 - 25	20 - 25	20 - 30
	≤ 850	–	15 - 20	20 - 25	20 - 25	20 - 30
 Alloyed case hardened steels  Alloyed heat-treatable steels  Alloyed tool steels  High speed tool steels	≥ 850 ... 1200	–	10 - 15	15 - 20	15 - 20	15 - 25
	≥ 850 ... 1200	–	10 - 15	15 - 20	15 - 20	15 - 25
	≤ 1000	–	8 - 12	10 - 15	10 - 15	10 - 18
	≥ 650 ... 1000	–	8 - 12	10 - 15	10 - 15	10 - 18
 Stainless and acid-resistant steels, sulphured austenitic martensitic	≤ 850	–	8 - 15	10 - 18	10 - 18	10 - 20
	≤ 850	–	8 - 15	10 - 18	10 - 18	10 - 20
	≤ 850	–	8 - 15	10 - 18	10 - 18	10 - 20
 Structural steels  Free-cutting steels  Case hardened steels  Heat-treatable steels  Nitriding steels  Spheroidal graphite cast iron	≤ 800	–	15 - 20	20 - 25	20 - 25	20 - 30
	≤ 1000	–	15 - 20	20 - 25	20 - 25	20 - 30
	≤ 1000	–	15 - 20	20 - 25	20 - 25	20 - 30
	≤ 1200	–	15 - 20	20 - 25	20 - 25	20 - 30
	≤ 1200	–	15 - 20	20 - 25	20 - 25	20 - 30
	–	≤ 240	20 - 25	25 - 30	25 - 30	25 - 40
 Aluminium and Al-alloys Al wrought alloys Al cast alloys ≤ 10 % Si > 10 % Si	≤ 400	–	20 - 25	25 - 30	25 - 30	25 - 50
	≤ 400	–	20 - 25	25 - 30	25 - 30	25 - 50
	≤ 600	–	20 - 25	25 - 30	25 - 30	25 - 50
	≤ 600	–	20 - 25	25 - 30	25 - 30	25 - 50
 Cast iron Spheroidal graphite cast iron Malleable cast iron	–	≤ 240	20 - 25	25 - 30	25 - 30	25 - 40
	–	≤ 240	20 - 25	25 - 30	25 - 30	25 - 40
	–	< 300	20 - 25	25 - 30	25 - 30	25 - 40
 Brass, short-chipping long-chipping	≤ 600	–	15 - 20	20 - 25	20 - 25	20 - 30
	≤ 600	–	15 - 20	20 - 25	20 - 25	20 - 30
 Plastics	–	–	7 - 12	10 - 15	10 - 15	10 - 20
 Magnesium-alloys	≤ 450	–	20 - 25	25 - 30	25 - 30	25 - 35
 Titanium and Ti-alloys Ni-alloys	≤ 1200	–	2 - 8	4 - 10	4 - 10	4 - 12
	≤ 1200	–	2 - 8	4 - 10	4 - 10	4 - 12

DRILLING

TAPPING/THREAD  
MILLING/FLUTELESS  
TAPPING

MILLING

REAMING

PCD/PCB



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# GUHRING

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