

PTM



HAWK → „WinWerth“

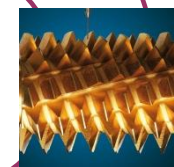
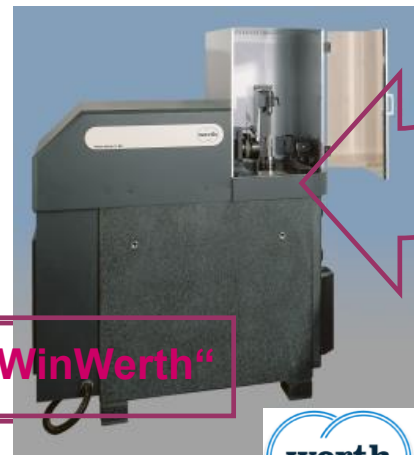
ident number - Involute	2449	pressure angle left	20°00'00"	lead	32.162
module	2.540	pressure angle right	20°00'00"	number of flutes	22
thread direction	R	addendum	3.540	cutting face distance	0.000
number of threads	4	tooth depth	5.700	flute lead	-2109.705
tip circle diameter	90.000	tooth thickness	3.990	axial measuring length	100.000

(4) radial runout left		(5) axial runout left		(5) axial runout right		(4) radial runout right		
nominal	actual	nominal	actual	nominal	actual	nominal	actual	
tp	4.0 AAA	4.0 AAA	0.6 AAA	tp	2.0 AAA	9.0 C	tp	4.0 AAA
(6) radial runout of tooth tip		(7) shape and position of cutting face		(8, 10) flute pitch		(11) flute lead		
mm	1.00 2.00 3.00 4.00 5.00	mm	1.00 2.00 3.00 4.00 5.00	mm	25.00 50.00 75.00	mm	0.000 100.000	
nominal	actual	nominal	actual	nominal	actual	nominal	actual	
sk	12.0 AAA	7.0 AAA	24.5 A	fn	12.0 AAA	9.7 AAA	fn	38.0 AAA
(14, 15) hob lead left		(14, 16) hob lead right		(16, 17) base pitch left		(16, 17) base pitch right		
nominal	actual	nominal	actual	nominal	actual	nominal	actual	
PH	4.0 AAA	4.0 AAA	3.0 AAA	fo	4.0 AAA	4.0 AAA	12.0 A	
PR	4.0 AAA	1.0 AAA	2.0 AAA	fo	4.0 AAA	4.0 AAA	12.0 B	

axial pitch left		axial pitch right	
nominal	actual	nominal	actual
l	8.0 AAA	8.0 AAA	11.0 A

tolerance table:		esco GmbH	
DIN 9148	AAA	HOB	
stat:	1	date: 09.03.2012, 14:37:59	
werth		Inspector: ESCO	
esco		job name: 2449	
30 µm		hob number: 1	

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Measuring instruction

Technology: **Hob.tec**

Rotation axis setup

Set up reference left right extern left extern right

DIN No. 4 Radial runout (test collar) Radial runout (shank) Radial runout (end of shank)

DIN No. 5 Axial runout (test collar)

DIN No. 6 Radial runout at tooth tip from start 1 tooth 105
 Radial runout at tooth root to start 4 tooth 119
 Cylindricity at tooth tip in flute at start 1 tooth 1
 Cylindricity at tooth root Offset 1st tooth 0 Number 12

DIN No. 7 Dev. of shape and pos. of face at start 1 tooth 33
 Roughness of cutting face at start 1 tooth 1

DIN No. 8-10 Flute pitch from start 1 tooth 105
to start 1 tooth 118

DIN No. 11 Flute direction in flute at start 1 tooth 1
Offset 1st tooth 0 2nd tooth 12

DIN No. 12, 13 Profile at the cutting edge
 Profile behind the cutting edge 0.1 mm
 Relief check
 Flank roughness 0.1 mm to 1 mm behind cutting edge 4 Sections
 Tooth tip relief Start mm behind cutting edge
 Flank relief Measuring 0.2 mm from the tooth tip
 Land width

DIN No. 14, 15 Lead from start 1 tooth 98
to start 1 tooth 142

DIN No. 16, 17 Base pitch from start 1 tooth 110
 Axial pitch in flute at start 1 tooth 1
 Tooth thickness fluctuation Offset 1st tooth 0 Number 12

OK Cancel

- Multisensor Measurement of Hobs with Involute Tooth Profiles (Image Processing, Scanning Probe, Werth Fiber Probe)
- Measurement behind the Cutting Edge, also for Micro-Hobs
- Control of Profile behind the Cutting Edge for Regrinding
- Flexible References possible (Points, Shaft, Test Collar)
- Integrated Roughness Measurement
- Tool Fixturing in Chuck or „Between Points“
- Highest Accuracy, 3D-Certification according to DIN/ISO

