

# meusburger

Standards for your success.

%

**WORKSHOP EQUIPMENT**

**SPRING  
SPECIAL OFFERS**

from 05.03. to 28.05.2024



# meusburger

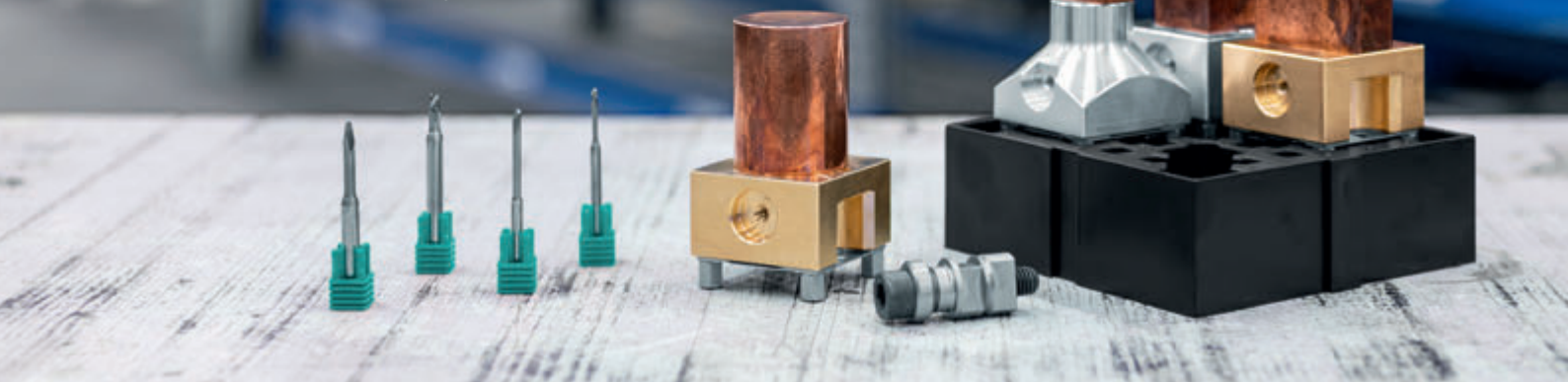
Standards for your success.



## Precise production of copper electrodes

High-quality electrode material and the right electrode holders, cutting tools and clamping options are usually difficult to find – but not with us!

› Discover more from page 34



## SPECIAL OFFER



### Universal foam cleaner VCF 15

› More on page 39





UP TO  
**-53%**

FOR A LIMITED TIME ONLY

## Spring starts with attractive prices

From 05.03. to 28.05.2024 you can benefit from unique discounts on selected products from our workshop equipment range.

See for yourself!

## Power on!

Our high-performance air file GDSF 2030 also scores top marks for demanding polishing work. That way large areas can be worked on quickly and precisely.

› More on page 5

Surface finishing equipment 4



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**SURFACE FINISHING EQUIPMENT**



**AIR FILE, HEAVY-DUTY, PREMIUM GDSF 2020**

**PRODUCT DESCRIPTION**

- » Perfect for light to heavy work
- » Extremely low vibration levels
- » Very robust and slim design
- » Practical slide valve

**RECOMMENDATION FOR USE**

- » Best suited for rough work and prolonged use

**SCOPE OF DELIVERY**

- » Hoses and clamping equipment



Stroke	No.	EUR	
0.5	GDSF 2020/0,5	<del>558.00</del>	405.00
2.2	GDSF 2020/2,2	<del>558.00</del>	405.00
4	GDSF 2020/4,0	<del>610.00</del>	445.00
9	GDSF 2020/9,0	<del>609.00</del>	445.00





**HIGH-PERFORMANCE AIR FILE** **GDSF 2030**

**PRODUCT DESCRIPTION**

- » High power
- » Ergonomic design
- » Adjustable stroke



**SCOPE OF DELIVERY**

- » Case, hose package, wrench, tool holder for 3 mm, 5 mm and 6 mm shank and safety glasses

Stroke	No.	EUR
4-10	GDSF 2030/ 4-10	<del>1,300.00</del> 910.00

**POLISHING STONE HOLDER FOR FILING MACHINE, FLEXIBLE** **V 76195**

**PRODUCT DESCRIPTION**

- » For polishing stones up to 13x6 mm
- » Shank Ø 4.8 mm
- » Adjustable stroke

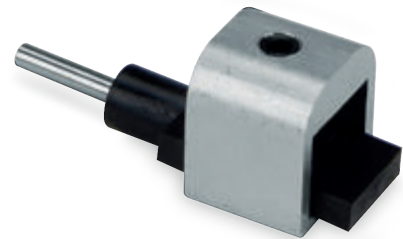


s	b	No.	EUR
6	13	V 76195/K/ 6x13	<del>51.50</del> 33.40
6	13	V 76195/L/ 6x13	<del>51.50</del> 33.40

**POLISHING STONE HOLDER FOR FILING MACHINE, SMALL** **V 76197**

**PRODUCT DESCRIPTION**

- » For polishing stones up to 13x6 mm
- » Shank Ø3 mm



h1	No.	EUR
4.5	V 76197/ 3x13	<del>19.90</del> 14.90
7	V 76197/ 6x13	<del>19.90</del> 14.90

**PRODUCT RECOMMENDATION**



**PRODUCT DESCRIPTION**

- » For working with air files such as GDSF 2030
- » Palm padded with vibrothane
- » Velcro fastener for optimal fit

**ANTI-VIBRATION GLOVES**

ASH 9110

54

**GOLD-COLOURED EDM POLISHING STONE, ALUMINIUM OXIDE, HARD BOND V 76110**
**PRODUCT DESCRIPTION**

- » Premium stone for EDM and milled surfaces
- » Quick material removal
- » Makes a soft, silky surface

**RECOMMENDATION FOR USE**

- » Work dry or with polishing oil
- » For polishing by hand or with hand filing machines



s	b	Grit	 Pce./PU	No.	EUR	
3	6	150	12	V 76110/ 3x 6/ 150	<del>33.90</del>	25.40
3	6	220	12	V 76110/ 3x 6/ 220	<del>33.90</del>	25.40
3	6	320	12	V 76110/ 3x 6/ 320	<del>39.80</del>	29.90
3	6	400	12	V 76110/ 3x 6/ 400	<del>41.10</del>	30.80
3	6	600	12	V 76110/ 3x 6/ 600	<del>44.10</del>	33.10
3	6	800	12	V 76110/ 3x 6/ 800	<del>68.00</del>	51.00
3	6	1000	12	V 76110/ 3x 6/1000	<del>68.00</del>	51.00
6	6	150	12	V 76110/ 6x 6/ 150	<del>39.80</del>	29.90
6	6	220	12	V 76110/ 6x 6/ 220	<del>39.80</del>	29.90
6	6	320	12	V 76110/ 6x 6/ 320	<del>44.10</del>	33.10
6	6	400	12	V 76110/ 6x 6/ 400	<del>46.90</del>	35.20
6	6	600	12	V 76110/ 6x 6/ 600	<del>52.00</del>	39.00
6	6	800	12	V 76110/ 6x 6/ 800	<del>72.00</del>	54.00
6	6	1000	12	V 76110/ 6x 6/1000	<del>72.00</del>	54.00

s	b	Grit	 Pce./PU	No.	EUR	
3	13	150	12	V 76110/ 3x13/ 150	<del>39.80</del>	29.90
3	13	220	12	V 76110/ 3x13/ 220	<del>39.80</del>	29.90
3	13	320	12	V 76110/ 3x13/ 320	<del>44.10</del>	33.10
3	13	400	12	V 76110/ 3x13/ 400	<del>44.10</del>	33.10
3	13	600	12	V 76110/ 3x13/ 600	<del>48.40</del>	36.30
3	13	800	12	V 76110/ 3x13/ 800	<del>75.50</del>	56.60
3	13	1000	12	V 76110/ 3x13/1000	<del>75.50</del>	56.60
6	13	150	12	V 76110/ 6x13/ 150	<del>49.90</del>	37.40
6	13	220	12	V 76110/ 6x13/ 220	<del>49.90</del>	37.40
6	13	320	12	V 76110/ 6x13/ 320	<del>58.50</del>	43.90
6	13	400	12	V 76110/ 6x13/ 400	<del>61.50</del>	46.10
6	13	600	12	V 76110/ 6x13/ 600	<del>68.00</del>	51.00
6	13	800	12	V 76110/ 6x13/ 800	<del>101.00</del>	75.80
6	13	1000	12	V 76110/ 6x13/1000	<del>101.00</del>	75.80


**GENERAL-PURPOSE POLISHING STONE, ALUMINIUM OXIDE, SOFT BOND V 76128**
**PRODUCT DESCRIPTION**



- » The soft bond perfectly adapts to the contours of the mould
- » General purpose polishing stone with high cutting performance suited for steel with high chrome and nickel content, tool steel as well as aluminium and copper

**RECOMMENDATION FOR USE**

- » Use polishing oil
- » For polishing by hand or with hand filing machines



s	b	Grit	 Pce./PU	No.	EUR	
3	6	180	12	V 76128/ 3x 6/180	<del>35.70</del>	26.80
3	6	220	12	V 76128/ 3x 6/220	<del>35.70</del>	26.80
3	6	320	12	V 76128/ 3x 6/320	<del>41.10</del>	30.80
3	6	400	12	V 76128/ 3x 6/400	<del>42.90</del>	32.20
3	6	600	12	V 76128/ 3x 6/600	<del>48.00</del>	36.00
3	13	180	12	V 76128/ 3x13/180	<del>39.30</del>	29.50
3	13	220	12	V 76128/ 3x13/220	<del>39.30</del>	29.50
3	13	320	12	V 76128/ 3x13/320	<del>46.30</del>	34.70
3	13	400	12	V 76128/ 3x13/400	<del>48.20</del>	36.20
3	13	600	12	V 76128/ 3x13/600	<del>58.00</del>	43.50

s	b	Grit	 Pce./PU	No.	EUR	
6	6	180	12	V 76128/ 6x 6/180	<del>39.30</del>	29.50
6	6	220	12	V 76128/ 6x 6/220	<del>39.30</del>	29.50
6	6	320	12	V 76128/ 6x 6/320	<del>42.90</del>	32.20
6	6	400	12	V 76128/ 6x 6/400	<del>44.90</del>	33.70
6	6	600	12	V 76128/ 6x 6/600	<del>63.00</del>	47.30
6	13	180	12	V 76128/ 6x13/180	<del>49.90</del>	37.40
6	13	220	12	V 76128/ 6x13/220	<del>49.90</del>	37.40
6	13	320	12	V 76128/ 6x13/320	<del>58.00</del>	43.50
6	13	400	12	V 76128/ 6x13/400	<del>60.00</del>	45.00
6	13	600	12	V 76128/ 6x13/600	<del>71.50</del>	53.60

**EXTRA POLISHING STONE, SILICON CARBIDE, SOFT BOND V 76184**

**PRODUCT DESCRIPTION**

- » The soft bond is ideal for contour finishing
- » For material removal without clogging for hardened steel with up to 55 HRC



**RECOMMENDATION FOR USE**

- » For polishing by hand or with hand filing machines
- » Use polishing oil

s	b	Grit	Pce./PU	No.	EUR	
3	6	150	12	V 76184/ 3x 6/ 150	<del>38.60</del> 29.00	
3	6	220	12	V 76184/ 3x 6/ 220	<del>38.60</del> 29.00	
3	6	320	12	V 76184/ 3x 6/ 320	<del>46.20</del> 34.70	
3	6	400	12	V 76184/ 3x 6/ 400	<del>48.70</del> 36.50	
3	6	600	12	V 76184/ 3x 6/ 600	<del>55.50</del> 41.60	
3	6	800	12	V 76184/ 3x 6/ 800	<del>69.50</del> 52.10	
3	6	1000	12	V 76184/ 3x 6/1000	<del>75.00</del> 56.30	
3	13	120	12	V 76184/ 3x13/ 120	<del>52.50</del> 39.40	
3	13	150	12	V 76184/ 3x13/ 150	<del>52.50</del> 39.40	
3	13	220	12	V 76184/ 3x13/ 220	<del>52.50</del> 39.40	
3	13	320	12	V 76184/ 3x13/ 320	<del>56.50</del> 42.40	
3	13	400	12	V 76184/ 3x13/ 400	<del>61.50</del> 46.10	
3	13	600	12	V 76184/ 3x13/ 600	<del>72.50</del> 54.40	
3	13	800	12	V 76184/ 3x13/ 800	<del>96.50</del> 72.40	
3	13	1000	12	V 76184/ 3x13/1000	<del>96.50</del> 72.40	

s	b	Grit	Pce./PU	No.	EUR	
6	6	150	12	V 76184/ 6x 6/ 150	<del>42.30</del> 31.70	
6	6	220	12	V 76184/ 6x 6/ 220	<del>42.30</del> 31.70	
6	6	320	12	V 76184/ 6x 6/ 320	<del>49.60</del> 37.20	
6	6	400	12	V 76184/ 6x 6/ 400	<del>51.50</del> 38.60	
6	6	600	12	V 76184/ 6x 6/ 600	<del>61.50</del> 46.10	
6	6	800	12	V 76184/ 6x 6/ 800	<del>79.00</del> 59.30	
6	6	1000	12	V 76184/ 6x 6/1000	<del>85.50</del> 64.10	
6	13	120	12	V 76184/ 6x13/ 120	<del>57.00</del> 42.80	
6	13	150	12	V 76184/ 6x13/ 150	<del>54.00</del> 40.50	
6	13	220	12	V 76184/ 6x13/ 220	<del>54.00</del> 40.50	
6	13	320	12	V 76184/ 6x13/ 320	<del>67.50</del> 50.60	
6	13	400	12	V 76184/ 6x13/ 400	<del>68.50</del> 51.40	
6	13	600	12	V 76184/ 6x13/ 600	<del>80.00</del> 60.00	
6	13	800	12	V 76184/ 6x13/ 800	<del>100.00</del> 75.00	
6	13	1000	12	V 76184/ 6x13/1000	<del>109.00</del> 81.80	

**CUTTING FLUID, OIL BASED VLM 5**

**PRODUCT DESCRIPTION**

- » Special, non-water soluble cutting fluid for polishing stones

**ADVANTAGES**

- » For increased cutting performance of polishing stones
- » Does not contain any solvents, therefore better skin-tolerance when used for hand polishing
- » Prevents clogging of polishing stones



Containers	Content	No.	EUR	
Spray bottle	500ml	VLM 5/ 500	<del>16.20</del> 12.20	
Bottle	1000ml	VLM 5/1000	<del>23.40</del> 17.60	



**TILTABLE TABLE, MANUAL OPERATION, MINI HPO 2100**
**PRODUCT DESCRIPTION**

- » Tilttable and rotatable
- » Stable stand with fixing elements
- » Can be used with clamping plate or magnet

**SCOPE OF DELIVERY**

- » Including clamping equipment for the clamping plate

Max. loading	l x b x h	No.	EUR	
20 kg	340x280x240	HPO 2100/M	<del>1,763.00</del>	1,226.70

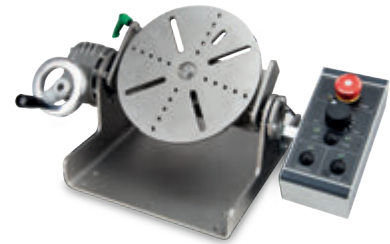

**TILTABLE TABLE, MINI, ELECTRIC HPO 2200**
**PRODUCT DESCRIPTION**

- » Speed and direction of rotation selectable
- » Tilttable and rotatable
- » Stable stand with fixing elements
- » Can be used with clamping plate or magnet

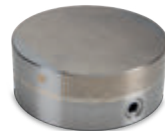
**SCOPE OF DELIVERY**

- » Including clamping equipment for the clamping plate

Max. loading	l x b x h	No.	EUR	
20 kg	430x280x240	HPO 2200/E	<del>3,410.00</del>	2,360.40


**ROUND MAGNET FOR MINI TILTABLE TABLE HPO 2600**
**PRODUCT DESCRIPTION**

- » Magnet can be switched on and off
- » Suitable for HPO 2100, HPO 2200



d	No.	EUR	
130	HPO 2600/130	<del>888.00</del>	601.80

**THREE-JAW CHUCK FOR MINI TILTABLE TABLE HPO 2700**
**PRODUCT DESCRIPTION**

- » Optimal for clamping cylindrical parts
- » Suitable for HPO 2100, HPO 2200

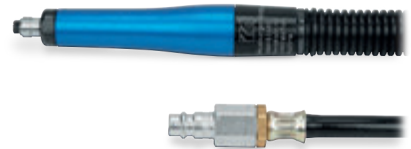


d	No.	EUR	
125	HPO 2700/125	<del>251.00</del>	187.50

**COMPACT AIR TURBINE GRINDER, PREMIUM GDST 2400**

**PRODUCT DESCRIPTION**

- » High speed for excellent machining quality
- » Ergonomic design
- » High concentricity for long continuous running times
- » Especially for fine milling, grinding, engraving and polishing work



**RECOMMENDATION FOR USE**

- » Do not use with lubricated air!

**SCOPE OF DELIVERY**

- » Hoses, ø 3 mm collet and clamping equipment

n max.	No.	EUR	
100,000	GDST 2400/100	<del>812.00</del>	631.90

**SET: SOLID CARBIDE MINI ROTARY BURRS, FINE CUT, SHANK Ø 3 V 72226/SET**

**PRODUCT DESCRIPTION**

- » Shank Ø3 mm
- » For pre-toughened and hardened steel < 54 HRC and for chrome steel



Set contents	No.	EUR	
» All V 72226 Mini rotary burrs in a set	V 72226/Set-20	<del>206.00</del>	151.00

**SET: DIAMOND MOUNTED POINTS V 72623/SET**

**PRODUCT DESCRIPTION**

- » Shank Ø3 mm
- » Diamond grit D126
- » Galvanic bond
- » Fine material removal for smooth surfaces



**RECOMMENDATION FOR USE**

- » Work with the lowest contact pressure possible
- » Fix as short as possible
- » Recommended speed 30,000-70,000 min<sup>-1</sup>

Set contents	No.	EUR	
» All diamond mounted points V 72623 in a set	V 72623/ Set-30	<del>95.50</del>	72.00

**FLEXIBLE SHAFT KIT 450W**
**GESB 1400/SET**
**PRODUCT DESCRIPTION**

- » Convenient kit containing all basic elements
- » Well-matched components

**SCOPE OF DELIVERY**

- » An adequate cable for connection to your mains



Set contents	n max.	No.	EUR
<ul style="list-style-type: none"> <li>» Hanging motor GESB 1200/J/24</li> <li>» Flexible shaft with expanding ring GESB 2240/J/6/2,0</li> <li>» Round foot control GESB 3240/24/PT</li> </ul>	24,000	GESB 1400/J/24/Set-5	<del>1,417.00</del> 1,120.00
<ul style="list-style-type: none"> <li>» Hanging motor GESB 1200/J/24</li> <li>» Flexible shaft with expanding ring GESB 2240/J/6/2,0</li> <li>» Desk control unit GESB 3260/24/PT</li> </ul>	24,000	GESB 1400/J/24/Set-6	<del>1,308.00</del> 1,029.00
<ul style="list-style-type: none"> <li>» Hanging motor GESB 1200/J/24</li> <li>» Flexible shaft with duplex spring GESB 2245/J/6/2,0</li> <li>» Round foot control GESB 3240/24/PT</li> </ul>	24,000	GESB 1400/J/24/Set-7	<del>1,439.00</del> 1,133.50
<ul style="list-style-type: none"> <li>» Hanging motor GESB 1200/J/24</li> <li>» Flexible shaft with duplex spring GESB 2245/J/6/2,0</li> <li>» Desk control unit GESB 3260/24/PT</li> </ul>	24,000	GESB 1400/J/24/Set-8	<del>1,330.00</del> 1,049.90

**STRAIGHT HANDPIECE FOR FLEXIBLE SHAFT**
**GESB 4010**
**PRODUCT DESCRIPTION**

- » Suitable for expanding rings and duplex springs
- » Suitable for collet Ø6 mm


**SCOPE OF DELIVERY**

- » Wrench and collets with Ø3 mm

d1	Weight	n max.	l	No.	EUR
3	139	24,000	140	GESB 4010/140	<del>249.00</del> 186.80

**ANGLE-TYPE HANDPIECE FOR FLEXIBLE SHAFT**
**GESB 4210**
**PRODUCT DESCRIPTION**

- » Suitable for expanding rings and duplex springs


**SCOPE OF DELIVERY**

- » Wrench and collets with Ø3 mm and Ø6 mm

d1	Weight	n max.	Angle	No.	EUR
-	230	24,000	90	GESB 4210/24/90	<del>414.00</del> 310.00





**FELT BOB, LAMELLA** **V 76725**

**PRODUCT DESCRIPTION**

- » Fan-shaped felt
- » Adapts to the surface



d1	l1	d3	Version	 Pce./PU	No.	EUR 	
20	10	3	Soft H25	10	V 76725/20x10/3/S	<del>77.50</del>	54.30
20	10	3	Medium H40	10	V 76725/20x10/3/M	<del>77.50</del>	54.30
20	20	3	Soft H25	10	V 76725/20x20/3/S	<del>80.00</del>	56.00
20	20	3	Medium H40	10	V 76725/20x20/3/M	<del>80.00</del>	56.00
25	10	3	Soft H25	10	V 76725/25x10/3/S	<del>79.00</del>	55.30
25	10	3	Medium H40	10	V 76725/25x10/3/M	<del>79.00</del>	55.30
25	20	3	Soft H25	10	V 76725/25x20/3/S	<del>84.00</del>	58.80
25	20	3	Medium H40	10	V 76725/25x20/3/M	<del>84.00</del>	58.80
25	20	6	Soft H25	10	V 76725/25x20/6/S	<del>84.00</del>	58.80
25	20	6	Medium H40	10	V 76725/25x20/6/M	<del>84.00</del>	58.80
40	20	6	Soft H25	10	V 76725/40x20/6/S	<del>99.50</del>	69.70
40	20	6	Medium H40	10	V 76725/40x20/6/M	<del>99.50</del>	69.70

**FELT BOB WITH SHANK, Ø6, MEDIUM**  
**V 76707**

**PRODUCT DESCRIPTION**

- » Shank ø 6 mm



d1	l1	 Pce./PU	No.	EUR 	
10	12	10	V 76707/A1/10x12	<del>18.40</del>	12.90
15	20	10	V 76707/A1/15x20	<del>21.90</del>	15.30
15	30	10	V 76707/A1/15x30	<del>24.40</del>	17.10
20	30	10	V 76707/A1/20x30	<del>32.10</del>	22.50
25	30	10	V 76707/A1/25x30	<del>44.60</del>	31.20
30	35	10	V 76707/A1/30x35	<del>55.50</del>	38.90
20	30	10	V 76707/A3/20x30	<del>49.50</del>	34.70
25	25	10	V 76707/E1/25x25	<del>42.70</del>	29.90
30	30	10	V 76707/E1/30x30	<del>52.50</del>	36.80
15	25	10	V 76707/G3/15x25	<del>23.80</del>	16.70
20	30	10	V 76707/G3/20x30	<del>32.10</del>	22.50
30	50	10	V 76707/G3/30x50	<del>74.00</del>	51.80

**BRASS FIBRE FELT BOB WITH SHANK Ø6**  
**V 76711**



**PRODUCT DESCRIPTION**

- » Shank ø 6 mm



**MATERIAL**

- » Felt reinforced with brass fibre

d1	l1	Grit	 Pce./PU	No.	EUR 	
16	20	120	10	V 76711/A1/16x20/120	<del>28.70</del>	23.00
20	20	120	10	V 76711/A1/20x20/120	<del>35.10</del>	28.20

**RUBBER BACKING PAD, QUICK-CHANGE**
**V 74870**
**PRODUCT DESCRIPTION**

- » Flexible rubber backing pad, quick-change
- » For V 74872 and V 72877 Sanding discs

Hardness	d	No.	EUR	
medium	23	V 74870/M/23	<del>20.70</del>	14.50
medium	23	V 74870/M/23-3	<del>17.60</del>	12.30
soft	33	V 74870/W/33	<del>26.80</del>	18.80
medium	33	V 74870/M/33	<del>22.20</del>	15.50
medium	33	V 74870/M/33-3	<del>20.10</del>	14.10
hard	33	V 74870/H/33	<del>24.40</del>	17.10
soft	45	V 74870/W/45	<del>25.90</del>	18.10
medium	45	V 74870/M/45	<del>25.90</del>	18.10
hard	45	V 74870/H/45	<del>28.10</del>	19.70


**SANDING DISC, QUICK-CHANGE, CORUNDUM  
V 74872**
**PRODUCT DESCRIPTION**

- » Quality abrasive paper, corundum
- » For tool steels
- » Always centred by quick-change piece



d	Grit	Pce./PU	No.	EUR	
25	60	100	V 74872/25/60	<del>68.00</del>	51.00
25	80	100	V 74872/25/80	<del>68.00</del>	51.00
25	120	100	V 74872/25/120	<del>68.00</del>	51.00
38	60	100	V 74872/38/60	<del>84.00</del>	63.00
38	80	100	V 74872/38/80	<del>84.00</del>	63.00
38	120	100	V 74872/38/120	<del>84.00</del>	63.00
38	180	100	V 74872/38/180	<del>92.50</del>	69.40
38	240	100	V 74872/38/240	<del>84.00</del>	63.00
50	36	100	V 74872/50/36	<del>127.00</del>	95.30
50	60	100	V 74872/50/60	<del>118.00</del>	88.50
50	80	100	V 74872/50/80	<del>118.00</del>	88.50
50	120	100	V 74872/50/120	<del>118.00</del>	88.50
50	180	100	V 74872/50/180	<del>118.00</del>	88.50
50	240	100	V 74872/50/240	<del>118.00</del>	88.50

**ABRASIVE FABRIC DISC, QUICK-CHANGE  
V 74877**
**PRODUCT DESCRIPTION**

- » For cleaning or matting
- » For tool steels
- » Always centred by quick-change piece





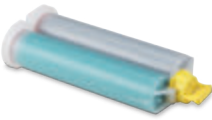


d	Grit	Pce./PU	No.	EUR	
38	80	50	V 74877/38/F	<del>66.00</del>	49.50
38	60	50	V 74877/38/M	<del>60.00</del>	45.00
50	120	50	V 74877/50/F	<del>80.50</del>	60.40
50	60	50	V 74877/50/M	<del>86.50</del>	64.90

**PRECISION IMPRESSION MATERIAL** V 76990

**PRODUCT DESCRIPTION**

- » Impression material from silicone for polished surfaces
- » Forms the surface from up to 0.1µm
- » Optimal for the evaluation of polished surfaces
- » Perfect for deep, non-visible grooves
- » Cures within 3 minutes




	Shape	 Pce./PU	No.	EUR 	
A		2	V 76990/A-2	<del>66.00</del>	46.20
A-2-S		2	V 76990/A-2-S	<del>65.00</del>	45.50
D		1	V 76990/D	<del>89.00</del>	62.30

**STORAGE BOX** BAB 1000

**PRODUCT DESCRIPTION**

- » High-quality storage box made of ABS
- » Offers space for three BAB 1500 slide-in cases
- » Secure stacking of multiple storage boxes easily possible thanks to linking system




I	No.	EUR 	
400	BAB 1000/ 3	<del>70.50</del>	56.20

**SLIDE-IN CASE FOR STORAGE BOX** BAB 1500

**PRODUCT DESCRIPTION**

- » High-quality slide-in case for BAB 1000
- » Available with different inner compartments
- » Spring-loaded cover with automatic locking



Type	No.	EUR 	
1	BAB 1500/ 1	<del>43.00</del>	34.60
2	BAB 1500/ 2	<del>43.00</del>	34.60
3	BAB 1500/ 3	<del>43.00</del>	34.60
4	BAB 1500/ 4	<del>43.00</del>	34.60
5	BAB 1500/ 5	<del>43.00</del>	34.60
6	BAB 1500/ 6	<del>43.00</del>	34.60



**CUTTING TOOLS**

**CARBIDE 3D TORUS MILLING CUTTER FOR HARD MACHINING, RELIEVED**
**WZF 27798**

**PRODUCT DESCRIPTION**

- » High precision-ground, robust cutting edges
- » High-performance milling cutters for HSC milling
- » with highest precision in the μ range

**MATERIAL**

- » Carbide, TiSiN coated



d	l2	R	No.	EUR	%
1	2	0.1	WZF 27798/ 1 / 2/0,1	<del>77.50</del>	56.00
1	2	0.2	WZF 27798/ 1 / 2/0,2	<del>77.50</del>	56.00
1	4	0.1	WZF 27798/ 1 / 4/0,1	<del>79.00</del>	57.00
1	4	0.2	WZF 27798/ 1 / 4/0,2	<del>79.00</del>	57.00
1	6	0.1	WZF 27798/ 1 / 6/0,1	<del>79.00</del>	57.00
1	6	0.2	WZF 27798/ 1 / 6/0,2	<del>79.00</del>	57.00
1	8	0.1	WZF 27798/ 1 / 8/0,1	<del>80.50</del>	58.00
1	8	0.2	WZF 27798/ 1 / 8/0,2	<del>80.50</del>	58.00
1	10	0.1	WZF 27798/ 1 / 10/0,1	<del>80.50</del>	58.00
1	10	0.2	WZF 27798/ 1 / 10/0,2	<del>80.50</del>	58.00
1	14	0.1	WZF 27798/ 1 / 14/0,1	<del>80.50</del>	58.00
1	14	0.2	WZF 27798/ 1 / 14/0,2	<del>80.50</del>	58.00
1.5	4	0.1	WZF 27798/ 1,5/ 4/0,1	<del>78.50</del>	57.00
1.5	4	0.15	WZF 27798/ 1,5/ 4/0,15	<del>78.50</del>	57.00

d	l2	R	No.	EUR	%
1.5	4	0.2	WZF 27798/ 1,5/ 4/0,2	<del>78.50</del>	57.00
1.5	6	0.1	WZF 27798/ 1,5/ 6/0,1	<del>80.00</del>	58.00
1.5	6	0.15	WZF 27798/ 1,5/ 6/0,15	<del>80.00</del>	58.00
1.5	6	0.2	WZF 27798/ 1,5/ 6/0,2	<del>80.00</del>	58.00
1.5	8	0.15	WZF 27798/ 1,5/ 8/0,15	<del>80.00</del>	58.00
1.5	8	0.2	WZF 27798/ 1,5/ 8/0,2	<del>80.00</del>	58.00
1.5	10	0.1	WZF 27798/ 1,5/ 10/0,1	<del>80.00</del>	58.00
1.5	10	0.2	WZF 27798/ 1,5/ 10/0,2	<del>80.00</del>	58.00
1.5	12	0.1	WZF 27798/ 1,5/ 12/0,1	<del>81.50</del>	59.00
1.5	12	0.2	WZF 27798/ 1,5/ 12/0,2	<del>81.50</del>	59.00
1.5	15	0.1	WZF 27798/ 1,5/ 15/0,1	<del>82.50</del>	58.90
1.5	15	0.2	WZF 27798/ 1,5/ 15/0,2	<del>82.50</del>	58.90
1.5	20	0.2	WZF 27798/ 1,5/ 20/0,2	<del>82.50</del>	58.90



d	l2	R	No.	EUR	%
2	4	0.2	WZF 27798/ 2 / 4/0,2	<del>78.50</del>	57.00
2	6	0.2	WZF 27798/ 2 / 6/0,2	<del>80.00</del>	58.00
2	8	0.2	WZF 27798/ 2 / 8/0,2	<del>80.00</del>	58.00
2	10	0.2	WZF 27798/ 2 /10/0,2	<del>80.00</del>	58.00
2	12	0.2	WZF 27798/ 2 /12/0,2	<del>81.50</del>	59.00
2	16	0.2	WZF 27798/ 2 /16/0,2	<del>82.50</del>	58.90
2	20	0.2	WZF 27798/ 2 /20/0,2	<del>82.50</del>	58.90
2	25	0.2	WZF 27798/ 2 /25/0,2	<del>86.00</del>	62.40
3	8	0.1	WZF 27798/ 3 / 8/0,1	<del>89.50</del>	64.30
3	8	0.2	WZF 27798/ 3 / 8/0,2	<del>89.50</del>	64.30
3	10	0.3	WZF 27798/ 3 /10/0,3	<del>90.50</del>	65.30
3	12	0.1	WZF 27798/ 3 /12/0,1	<del>91.50</del>	66.40
3	12	0.2	WZF 27798/ 3 /12/0,2	<del>91.50</del>	66.40
3	16	0.1	WZF 27798/ 3 /16/0,1	<del>91.50</del>	66.40
3	16	0.2	WZF 27798/ 3 /16/0,2	<del>91.50</del>	66.40
3	20	0.2	WZF 27798/ 3 /20/0,2	<del>97.00</del>	69.70
3	24	0.2	WZF 27798/ 3 /24/0,2	<del>99.00</del>	71.70
4	8	0.2	WZF 27798/ 4 / 8/0,2	<del>93.50</del>	67.70
4	8	0.4	WZF 27798/ 4 / 8/0,4	<del>93.50</del>	67.70
4	8	0.5	WZF 27798/ 4 / 8/0,5	<del>93.50</del>	67.70
4	8	1	WZF 27798/ 4 / 8/1	<del>93.50</del>	67.70
4	10	0.4	WZF 27798/ 4 / 10/0,4	<del>95.00</del>	68.70
4	12	0.2	WZF 27798/ 4 /12/0,2	<del>95.00</del>	68.70
4	12	0.5	WZF 27798/ 4 /12/0,5	<del>95.00</del>	68.70
4	12	1	WZF 27798/ 4 /12/1	<del>95.00</del>	68.70
4	16	0.2	WZF 27798/ 4 /16/0,2	<del>95.00</del>	68.70
4	16	0.5	WZF 27798/ 4 /16/0,5	<del>95.00</del>	68.70
4	16	1	WZF 27798/ 4 /16/1	<del>95.00</del>	68.70
4	20	0.2	WZF 27798/ 4 /20/0,2	<del>97.50</del>	70.70
4	20	0.5	WZF 27798/ 4 /20/0,5	<del>97.50</del>	70.70
4	20	1	WZF 27798/ 4 /20/1	<del>97.50</del>	70.70
4	24	0.2	WZF 27798/ 4 /24/0,2	<del>99.00</del>	71.70
4	24	0.5	WZF 27798/ 4 /24/0,5	<del>99.00</del>	71.70
4	24	1	WZF 27798/ 4 /24/1	<del>99.00</del>	71.70
4	28	0.2	WZF 27798/ 4 /28/0,2	<del>99.00</del>	71.70

d	l2	R	No.	EUR	%
4	28	0.5	WZF 27798/ 4 /28/0,5	<del>99.00</del>	71.70
4	28	1	WZF 27798/ 4 /28/1	<del>99.00</del>	71.70
5	8	0.2	WZF 27798/ 5 / 8/0,2	<del>91.50</del>	66.40
5	8	0.5	WZF 27798/ 5 / 8/0,5	<del>95.50</del>	68.70
5	15	0.2	WZF 27798/ 5 / 15/0,2	<del>95.00</del>	68.70
5	15	0.5	WZF 27798/ 5 / 15/0,5	<del>97.50</del>	70.70
6	12	0.2	WZF 27798/ 6 /12/0,2	<del>97.50</del>	70.70
6	12	0.3	WZF 27798/ 6 /12/0,3	<del>94.00</del>	67.70
6	12	0.5	WZF 27798/ 6 /12/0,5	<del>97.50</del>	70.70
6	12	1	WZF 27798/ 6 /12/1	<del>97.50</del>	70.70
6	15	0.5	WZF 27798/ 6 /15/0,5	<del>102.00</del>	73.40
6	15	0.6	WZF 27798/ 6 /15/0,6	<del>102.00</del>	73.40
6	16	0.2	WZF 27798/ 6 /16/0,2	<del>102.00</del>	73.40
6	16	0.3	WZF 27798/ 6 /16/0,3	<del>97.00</del>	69.70
6	16	0.5	WZF 27798/ 6 /16/0,5	<del>102.00</del>	73.40
6	16	1	WZF 27798/ 6 /16/1	<del>102.00</del>	73.40
6	20	0.2	WZF 27798/ 6 /20/0,2	<del>102.00</del>	73.40
6	20	0.3	WZF 27798/ 6 /20/0,3	<del>97.00</del>	69.70
6	20	0.5	WZF 27798/ 6 /20/0,5	<del>102.00</del>	73.40
6	20	1	WZF 27798/ 6 /20/1	<del>100.00</del>	72.00
6	30	0.3	WZF 27798/ 6 /30/0,3	<del>101.00</del>	72.40
6	30	1	WZF 27798/ 6 /30/1	<del>104.00</del>	75.10
8	16	0.5	WZF 27798/ 8 /16/0,5	<del>126.00</del>	89.40
8	16	1	WZF 27798/ 8 /16/1	<del>126.00</del>	89.40
8	30	0.8	WZF 27798/ 8 /30/0,8	<del>132.00</del>	95.50
8	40	0.5	WZF 27798/ 8 /40/0,5	<del>132.00</del>	95.50
8	40	1	WZF 27798/ 8 /40/1	<del>132.00</del>	95.50
10	20	0.5	WZF 27798/10 /20/0,5	<del>157.00</del>	112.90
10	20	1	WZF 27798/10 /20/1	<del>157.00</del>	112.90
10	30	1	WZF 27798/10 /30/1	<del>166.00</del>	119.90
10	50	1	WZF 27798/10 /50/1	<del>168.00</del>	119.80
10	40	0.5	WZF 27798/10 /40/0,5	<del>166.00</del>	119.90
10	40	1	WZF 27798/10 /40/1	<del>166.00</del>	119.90
12	24	1	WZF 27798/12 /24/1	<del>201.00</del>	145.10
12	40	1	WZF 27798/12 /40/1	<del>213.00</del>	153.10

**CARBIDE 3D FULL-RADIUS MILLING CUTTER FOR HARD MACHINING, RELIEVED**
**WZF 28796**

**PRODUCT DESCRIPTION**

- » High-performance milling cutters for HSC milling
- » High precision-ground, robust cutting edges
- » with highest precision in the μ range

**MATERIAL**

- » Carbide, TiSiN coated

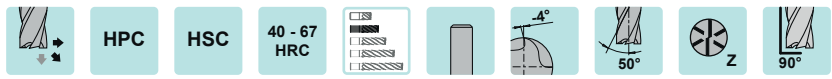


d	l2	No.	EUR	%
0.1	0.3	WZF 28796/ 0,1/ 0,3	<del>111.00</del>	79.70
0.2	0.3	WZF 28796/ 0,2/ 0,3	<del>83.50</del>	59.90
0.2	0.5	WZF 28796/ 0,2/ 0,5	<del>83.50</del>	59.90
0.2	1	WZF 28796/ 0,2/ 1	<del>83.50</del>	59.90
0.3	0.5	WZF 28796/ 0,3/ 0,5	<del>80.00</del>	58.00
0.3	0.75	WZF 28796/ 0,3/ 0,75	<del>80.00</del>	58.00
0.3	1	WZF 28796/ 0,3/ 1	<del>80.00</del>	58.00
0.3	2	WZF 28796/ 0,3/ 2	<del>80.00</del>	58.00
0.4	0.5	WZF 28796/ 0,4/ 0,5	<del>80.00</del>	58.00
0.4	1	WZF 28796/ 0,4/ 1	<del>80.00</del>	58.00
0.4	2	WZF 28796/ 0,4/ 2	<del>80.00</del>	58.00
0.4	3	WZF 28796/ 0,4/ 3	<del>80.00</del>	58.00
0.5	0.5	WZF 28796/ 0,5/ 0,5	<del>78.00</del>	55.90
0.5	1	WZF 28796/ 0,5/ 1	<del>78.00</del>	55.90
0.5	1.5	WZF 28796/ 0,5/ 1,5	<del>78.00</del>	55.90
0.5	2	WZF 28796/ 0,5/ 2	<del>78.00</del>	55.90
0.5	3	WZF 28796/ 0,5/ 3	<del>78.00</del>	55.90
0.5	4	WZF 28796/ 0,5/ 4	<del>78.00</del>	55.90
0.6	2	WZF 28796/ 0,6/ 2	<del>78.00</del>	55.90
0.6	3	WZF 28796/ 0,6/ 3	<del>78.00</del>	55.90
0.6	4.5	WZF 28796/ 0,6/ 4,5	<del>78.00</del>	55.90
0.6	6	WZF 28796/ 0,6/ 6	<del>78.00</del>	55.90
0.8	2	WZF 28796/ 0,8/ 2	<del>75.50</del>	54.60
0.8	4	WZF 28796/ 0,8/ 4	<del>75.50</del>	54.60
0.8	5	WZF 28796/ 0,8/ 5	<del>75.50</del>	54.60
0.8	6	WZF 28796/ 0,8/ 6	<del>75.50</del>	54.60
0.8	8	WZF 28796/ 0,8/ 8	<del>75.50</del>	54.60
0.8	10	WZF 28796/ 0,8/10	<del>75.50</del>	54.60
1	2	WZF 28796/ 1 / 2	<del>73.00</del>	52.60
1	2.5	WZF 28796/ 1 / 2,5	<del>73.00</del>	52.60
1	4	WZF 28796/ 1 / 4	<del>73.00</del>	52.60
1	6	WZF 28796/ 1 / 6	<del>73.00</del>	52.60
1	8	WZF 28796/ 1 / 8	<del>73.00</del>	52.60
1	10	WZF 28796/ 1 /10	<del>73.00</del>	52.60
1	14	WZF 28796/ 1 /14	<del>75.50</del>	54.60
1.5	4	WZF 28796/ 1,5/ 4	<del>74.50</del>	53.60
1.5	6	WZF 28796/ 1,5/ 6	<del>74.50</del>	53.60

d	l2	No.	EUR	%
1.5	8	WZF 28796/ 1,5/ 8	<del>74.50</del>	53.60
1.5	10	WZF 28796/ 1,5/10	<del>74.50</del>	53.60
1.5	15	WZF 28796/ 1,5/15	<del>77.50</del>	56.00
1.5	20	WZF 28796/ 1,5/20	<del>79.50</del>	56.90
2	4	WZF 28796/ 2 / 4	<del>74.50</del>	53.60
2	6	WZF 28796/ 2 / 6	<del>74.50</del>	53.60
2	8	WZF 28796/ 2 / 8	<del>74.50</del>	53.60
2	10	WZF 28796/ 2 /10	<del>75.50</del>	54.60
2	12	WZF 28796/ 2 /12	<del>75.50</del>	54.60
2	16	WZF 28796/ 2 /16	<del>76.00</del>	54.60
2	20	WZF 28796/ 2 /20	<del>79.50</del>	56.90
2	25	WZF 28796/ 2 /25	<del>79.50</del>	56.90
3	8	WZF 28796/ 3 / 8	<del>80.00</del>	58.00
3	12	WZF 28796/ 3 /12	<del>80.00</del>	58.00
3	16	WZF 28796/ 3 /16	<del>80.00</del>	58.00
3	20	WZF 28796/ 3 /20	<del>81.50</del>	59.00
3	24	WZF 28796/ 3 /24	<del>83.50</del>	59.90
4	8	WZF 28796/ 4 / 8	<del>80.00</del>	58.00
4	10	WZF 28796/ 4 /10	<del>80.00</del>	58.00
4	12	WZF 28796/ 4 /12	<del>80.00</del>	58.00
4	16	WZF 28796/ 4 /16	<del>80.00</del>	58.00
4	20	WZF 28796/ 4 /20	<del>81.50</del>	59.00
4	24	WZF 28796/ 4 /24	<del>83.50</del>	59.90
4	28	WZF 28796/ 4 /28	<del>83.50</del>	59.90
5	12	WZF 28796/ 5 /12	<del>80.00</del>	58.00
5	18	WZF 28796/ 5 /18	<del>80.00</del>	58.00
6	12	WZF 28796/ 6 /12	<del>80.00</del>	58.00
6	16	WZF 28796/ 6 /16	<del>80.00</del>	58.00
6	20	WZF 28796/ 6 /20	<del>80.00</del>	58.00
8	16	WZF 28796/ 8 /16	<del>107.00</del>	81.30
8	24	WZF 28796/ 8 /24	<del>120.00</del>	86.80
8	40	WZF 28796/ 8 /40	<del>115.00</del>	87.10
10	20	WZF 28796/10 /20	<del>128.00</del>	97.00
10	40	WZF 28796/10 /40	<del>136.00</del>	102.80
12	24	WZF 28796/12 /24	<del>167.00</del>	126.30
12	40	WZF 28796/12 /40	<del>180.00</del>	135.00



**CARBIDE FINISH MILLING CUTTER FOR HARD MACHINING, LONG** **WZF 13746**



**PRODUCT DESCRIPTION**

» High-performance milling cutter with centre cut for fine finishing

**MATERIAL**

» Carbide, TiSiN coated

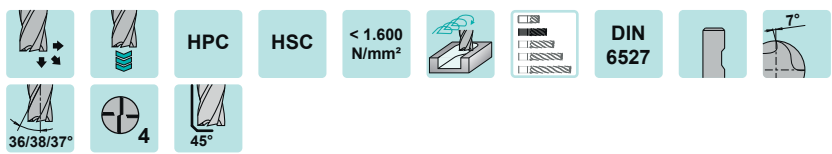


d	No.	EUR	%
3	WZF 13746/ 3	39.50	23.80
4	WZF 13746/ 4	51.50	30.50
5	WZF 13746/ 5	54.00	32.40

d	No.	EUR	%
6	WZF 13746/ 6	57.50	34.70
8	WZF 13746/ 8	72.00	43.30
10	WZF 13746/10	98.50	59.50

d	No.	EUR	%
12	WZF 13746/12	129.00	77.00
16	WZF 13746/16	189.00	113.40

**CARBIDE ROUGH / FINISH MILLING CUTTER, LONG** **WZF 126486**



**PRODUCT DESCRIPTION**

- » High-performance milling cutter with non-uniform pitch and centre cut
- » Relieved behind the cutting edge
- » With optimised front geometry for quick immersion

**MATERIAL**

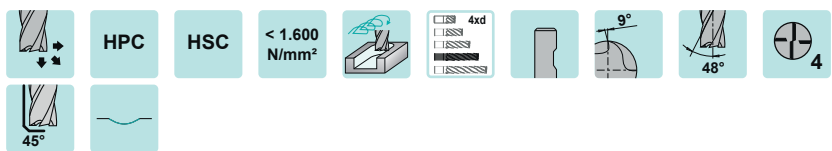
» Carbide, TiAlSiN coated



d	No.	EUR	%
4	WZF 126486/ 4	41.00	24.80
6	WZF 126486/ 6	41.00	24.80
8	WZF 126486/ 8	57.00	34.70

d	No.	EUR	%
10	WZF 126486/10	78.00	46.60
12	WZF 126486/12	96.00	57.50
16	WZF 126486/16	167.00	99.80

**CARBIDE ROUGH / FINISH MILLING CUTTER, EXTRA LONG** **WZF 126688**



**PRODUCT DESCRIPTION**

- » High-performance milling cutter with non-uniform pitch and centre cut
- » Cutting edge length 4xd
- » Reinforced core for increased stability from 6 mm
- » With chip breaker

**MATERIAL**

» Carbide, TiAlN multi-layer coated



d	No.	EUR	%
3	WZF 126688/ 3	49.10	29.40
4	WZF 126688/ 4	49.10	29.40
5	WZF 126688/ 5	49.10	29.40

d	No.	EUR	%
6	WZF 126688/ 6	49.10	29.40
8	WZF 126688/ 8	67.00	40.10
10	WZF 126688/10	101.00	60.30

d	No.	EUR	%
12	WZF 126688/12	130.00	78.20
16	WZF 126688/16	221.00	132.60
20	WZF 126688/20	305.00	183.00

**CARBIDE FINISH MILLING CUTTER, HIGH PRECISION**
**WZF 132565**

**PRODUCT DESCRIPTION**

- » High-performance milling cutter with non-uniform pitch and centre cut
- » Cutting edge lengths up to 4xd
- » Highest precision and cylindricity

**MATERIAL**

- » Carbide, TiAlN multi-layer coated



d	No.	EUR	%
8	WZF 132565/ 8/ 24	<del>64.50</del>	37.00
8	WZF 132565/ 8/ 32	<del>68.50</del>	40.00
10	WZF 132565/10/ 30	<del>85.50</del>	49.60
10	WZF 132565/10/ 40	<del>93.00</del>	53.60

d	No.	EUR	%
12	WZF 132565/12/ 36	<del>122.00</del>	70.50
12	WZF 132565/12/ 48	<del>125.00</del>	72.50
16	WZF 132565/16/ 48	<del>189.00</del>	109.20
16	WZF 132565/16/ 64	<del>214.00</del>	124.40

d	No.	EUR	%
20	WZF 132565/20/ 65	<del>324.00</del>	191.00
20	WZF 132565/20/ 82	<del>327.00</del>	197.70


**CARBIDE HFC ROUGH MILLING CUTTER, LONG**
**WZF 11512**

**PRODUCT DESCRIPTION**

- » High-performance high-feed milling cutter
- » From 5 mm with internal coolant

**MATERIAL**

- » Carbide, TiAlN coated



d	No.	EUR	%
3	WZF 11512/ 3	<del>69.50</del>	38.00
4	WZF 11512/ 4	<del>66.50</del>	36.80
5	WZF 11512/ 5	<del>73.50</del>	40.00

d	No.	EUR	%
6	WZF 11512/ 6	<del>79.00</del>	43.30
8	WZF 11512/ 8	<del>93.50</del>	51.90
10	WZF 11512/10	<del>112.00</del>	62.00

d	No.	EUR	%
12	WZF 11512/12	<del>165.00</del>	91.20
16	WZF 11512/16	<del>227.00</del>	124.90





**CARBIDE 3D TORUS MILLING CUTTER FOR COPPER, RELIEVED** **WZF 27896**



**PRODUCT DESCRIPTION**

- » with highest precision in the  $\mu$  range
- » Polished cutting edges and chip spaces
- » High-performance milling cutter for copper

**MATERIAL**

» Carbide, polished



d	l2	R	No.	EUR	%
0.2	1.5	0.02	WZF 27896/0,2/1,5/0,02	<del>79.00</del>	57.00
0.3	1.5	0.02	WZF 27896/0,3/1,5/0,02	<del>75.00</del>	53.60
0.3	3	0.02	WZF 27896/0,3/3 /0,02	<del>75.00</del>	53.60
0.4	2	0.02	WZF 27896/0,4/2 /0,02	<del>75.00</del>	53.60
0.4	4	0.02	WZF 27896/0,4/4 /0,02	<del>75.00</del>	53.60
0.5	2.5	0.05	WZF 27896/0,5/ 2,5/0,05	<del>68.50</del>	49.20
0.5	5	0.05	WZF 27896/0,5/ 5 /0,05	<del>68.50</del>	49.20
0.5	7.5	0.05	WZF 27896/0,5/ 7,5/0,05	<del>68.50</del>	49.20
0.5	10	0.05	WZF 27896/0,5/10 /0,05	<del>68.50</del>	49.20
0.6	3	0.05	WZF 27896/0,6/ 3 /0,05	<del>67.00</del>	48.20
0.6	6	0.05	WZF 27896/0,6/ 6 /0,05	<del>67.00</del>	48.20
0.8	4	0.05	WZF 27896/0,8/ 4 /0,05	<del>67.00</del>	48.20
0.8	8	0.05	WZF 27896/0,8/ 8 /0,05	<del>67.00</del>	48.20
1	5	0.1	WZF 27896/1 / 5 /0,1	<del>65.50</del>	47.20
1	10	0.1	WZF 27896/1 /10 /0,1	<del>65.50</del>	47.20
1	15	0.1	WZF 27896/1 /15 /0,1	<del>67.50</del>	48.20
1.5	5	0.1	WZF 27896/1,5/ 5 /0,1	<del>65.50</del>	47.20
1.5	10	0.1	WZF 27896/1,5/10 /0,1	<del>65.50</del>	47.20
1.5	15	0.1	WZF 27896/1,5/15 /0,1	<del>67.00</del>	48.20
1.5	20	0.1	WZF 27896/1,5/20 /0,1	<del>67.50</del>	48.20
2	6	0.2	WZF 27896/2 /6 /0,2	<del>65.50</del>	47.20
2	12	0.2	WZF 27896/2 /12 /0,2	<del>67.00</del>	48.20
2	18	0.2	WZF 27896/2 /18 /0,2	<del>67.50</del>	48.20

d	l2	R	No.	EUR	%
2	24	0.2	WZF 27896/2 /24 /0,2	<del>67.50</del>	48.20
2	30	0.2	WZF 27896/2 /30 /0,2	<del>67.50</del>	48.20
3	9	0.2	WZF 27896/3 / 9 /0,2	<del>67.00</del>	48.20
3	18	0.2	WZF 27896/3 /18 /0,2	<del>67.50</del>	48.20
3	30	0.2	WZF 27896/3 /30 /0,2	<del>67.50</del>	48.20
4	12	0.2	WZF 27896/4 /12 /0,2	<del>70.50</del>	50.60
4	24	0.2	WZF 27896/4 /24 /0,2	<del>75.00</del>	53.60
5	15	0.5	WZF 27896/5 /15 /0,5	<del>70.50</del>	50.60
5	30	0.5	WZF 27896/5 /30 /0,5	<del>74.00</del>	53.60
6	18	0.5	WZF 27896/6 /18 /0,5	<del>70.50</del>	50.60
6	30	0.5	WZF 27896/6 /30 /0,5	<del>74.00</del>	53.60
8	16	0.5	WZF 27896/8 /16 /0,5	<del>89.50</del>	64.30
8	30	0.5	WZF 27896/8 /30 /0,5	<del>93.50</del>	67.70
8	16	1	WZF 27896/8 /16 /1	<del>89.50</del>	64.30
8	30	1	WZF 27896/8 /30 /1	<del>93.50</del>	67.70
10	20	0.5	WZF 27896/10 /20 /0,5	<del>111.00</del>	79.70
10	30	0.5	WZF 27896/10 /30 /0,5	<del>114.00</del>	81.70
10	20	1	WZF 27896/10 /20 /1	<del>111.00</del>	79.70
10	30	1	WZF 27896/10 /30 /1	<del>114.00</del>	81.70
12	24	0.5	WZF 27896/12 /24 /0,5	<del>134.00</del>	97.00
12	30	0.5	WZF 27896/12 /30 /0,5	<del>140.00</del>	101.00
12	24	1	WZF 27896/12 /24 /1	<del>134.00</del>	97.00
12	30	1	WZF 27896/12 /30 /1	<del>140.00</del>	101.00

**CARBIDE 3D FULL-RADIUS MILLING CUTTER FOR COPPER, RELIEVED**
**WZF 28896**

**PRODUCT DESCRIPTION**

- » with highest precision in the  $\mu$  range
- » Polished cutting edges and chip spaces
- » High-performance milling cutter for copper

**MATERIAL**

- » Carbide, polished



d	l2	No.	EUR	%
0.2	1.5	WZF 28896/0,2/ 1,5	<del>79.00</del>	57.00
0.3	1.5	WZF 28896/0,3/ 1,5	<del>74.00</del>	53.60
0.3	3	WZF 28896/0,3/ 3	<del>75.00</del>	53.60
0.3	4.5	WZF 28896/0,3/ 4,5	<del>75.00</del>	53.60
0.3	6	WZF 28896/0,3/ 6	<del>75.00</del>	53.60
0.4	2	WZF 28896/0,4/ 2	<del>75.00</del>	53.60
0.4	4	WZF 28896/0,4/ 4	<del>75.00</del>	53.60
0.4	6	WZF 28896/0,4/ 6	<del>75.00</del>	53.60
0.5	2.5	WZF 28896/0,5/ 2,5	<del>68.50</del>	49.20
0.5	5	WZF 28896/0,5/ 5	<del>68.50</del>	49.20
0.5	7.5	WZF 28896/0,5/ 7,5	<del>68.50</del>	49.20
0.5	10	WZF 28896/0,5/ 10	<del>68.50</del>	49.20
0.6	3	WZF 28896/0,6/ 3	<del>68.50</del>	49.20
0.6	6	WZF 28896/0,6/ 6	<del>68.50</del>	49.20
0.6	9	WZF 28896/0,6/ 9	<del>68.50</del>	49.20
0.6	12	WZF 28896/0,6/ 12	<del>68.50</del>	49.20
0.8	4	WZF 28896/0,8/ 4	<del>67.00</del>	48.20
0.8	8	WZF 28896/0,8/ 8	<del>67.00</del>	48.20
0.8	12	WZF 28896/0,8/ 12	<del>67.00</del>	48.20
0.8	16	WZF 28896/0,8/ 16	<del>67.00</del>	48.20
1	5	WZF 28896/1 / 5	<del>65.50</del>	47.20
1	10	WZF 28896/1 / 10	<del>65.50</del>	47.20
1	15	WZF 28896/1 / 15	<del>67.50</del>	48.20
1	20	WZF 28896/1 / 20	<del>68.50</del>	49.20

d	l2	No.	EUR	%
1.5	5	WZF 28896/1,5/ 5	<del>65.50</del>	47.20
1.5	10	WZF 28896/1,5/ 10	<del>65.50</del>	47.20
1.5	15	WZF 28896/1,5/ 15	<del>67.00</del>	48.20
1.5	20	WZF 28896/1,5/ 20	<del>67.50</del>	48.20
2	6	WZF 28896/2 / 6	<del>65.50</del>	47.20
2	12	WZF 28896/2 / 12	<del>67.00</del>	48.20
2	18	WZF 28896/2 / 18	<del>67.50</del>	48.20
2	24	WZF 28896/2 / 24	<del>67.50</del>	48.20
2	30	WZF 28896/2 / 30	<del>67.50</del>	48.20
3	9	WZF 28896/3 / 9	<del>67.00</del>	48.20
3	18	WZF 28896/3 / 18	<del>67.50</del>	48.20
3	30	WZF 28896/3 / 30	<del>67.50</del>	48.20
4	12	WZF 28896/4 / 12	<del>70.50</del>	50.60
4	24	WZF 28896/4 / 24	<del>75.00</del>	53.60
5	15	WZF 28896/5 / 15	<del>70.50</del>	50.60
5	30	WZF 28896/5 / 30	<del>74.00</del>	53.60
6	18	WZF 28896/6 / 18	<del>70.50</del>	50.60
6	30	WZF 28896/6 / 30	<del>74.00</del>	53.60
8	16	WZF 28896/8 / 16	<del>79.00</del>	57.00
8	30	WZF 28896/8 / 30	<del>83.00</del>	60.00
10	20	WZF 28896/10 / 20	<del>99.00</del>	71.70
10	30	WZF 28896/10 / 30	<del>105.00</del>	75.40
12	24	WZF 28896/12 / 24	<del>128.00</del>	93.00
12	30	WZF 28896/12 / 30	<del>130.00</del>	93.50

**CARBIDE DRILL WITH INNER COOLANT SUPPLY, 8XD** **WZB 12225**



**PRODUCT DESCRIPTION**

» High-performance drill with parabolic slot profile

**MATERIAL**

» Carbide, TiAlN multi-layer coated



d	No.	EUR	%
3	WZB 12225/ 3	<del>129.00</del>	67.00
3.1	WZB 12225/ 3,1	<del>129.00</del>	67.00
3.2	WZB 12225/ 3,2	<del>129.00</del>	67.00
3.3	WZB 12225/ 3,3	<del>129.00</del>	67.00
3.4	WZB 12225/ 3,4	<del>129.00</del>	67.00
3.5	WZB 12225/ 3,5	<del>129.00</del>	67.00
3.6	WZB 12225/ 3,6	<del>129.00</del>	67.00
3.7	WZB 12225/ 3,7	<del>129.00</del>	67.00
3.8	WZB 12225/ 3,8	<del>129.00</del>	67.00
3.9	WZB 12225/ 3,9	<del>129.00</del>	67.00
4	WZB 12225/ 4	<del>129.00</del>	67.00
4.1	WZB 12225/ 4,1	<del>129.00</del>	67.00
4.2	WZB 12225/ 4,2	<del>129.00</del>	67.00
4.3	WZB 12225/ 4,3	<del>129.00</del>	67.00
4.5	WZB 12225/ 4,5	<del>129.00</del>	67.00
4.6	WZB 12225/ 4,6	<del>129.00</del>	67.00
4.8	WZB 12225/ 4,8	<del>129.00</del>	67.00

d	No.	EUR	%
4.9	WZB 12225/ 4,9	<del>129.00</del>	67.00
5	WZB 12225/ 5	<del>129.00</del>	67.00
5.1	WZB 12225/ 5,1	<del>129.00</del>	67.00
5.2	WZB 12225/ 5,2	<del>129.00</del>	67.00
5.3	WZB 12225/ 5,3	<del>129.00</del>	67.00
5.5	WZB 12225/ 5,5	<del>129.00</del>	67.00
5.6	WZB 12225/ 5,6	<del>129.00</del>	67.00
5.8	WZB 12225/ 5,8	<del>129.00</del>	67.00
5.9	WZB 12225/ 5,9	<del>129.00</del>	67.00
6	WZB 12225/ 6	<del>129.00</del>	67.00
6.1	WZB 12225/ 6,1	<del>160.00</del>	82.70
6.2	WZB 12225/ 6,2	<del>160.00</del>	82.70
6.5	WZB 12225/ 6,5	<del>160.00</del>	82.70
6.8	WZB 12225/ 6,8	<del>160.00</del>	82.70
6.9	WZB 12225/ 6,9	<del>160.00</del>	82.70
7	WZB 12225/ 7	<del>160.00</del>	82.70
7.1	WZB 12225/ 7,1	<del>160.00</del>	82.70

d	No.	EUR	%
7.2	WZB 12225/ 7,2	<del>160.00</del>	82.70
7.4	WZB 12225/ 7,4	<del>160.00</del>	82.70
7.8	WZB 12225/ 7,8	<del>200.00</del>	104.30
7.9	WZB 12225/ 7,9	<del>200.00</del>	104.30
8	WZB 12225/ 8	<del>200.00</del>	104.30
8.1	WZB 12225/ 8,1	<del>200.00</del>	104.30
8.2	WZB 12225/ 8,2	<del>200.00</del>	104.30
8.5	WZB 12225/ 8,5	<del>200.00</del>	104.30
8.6	WZB 12225/ 8,6	<del>200.00</del>	104.30
8.8	WZB 12225/ 8,8	<del>200.00</del>	104.30
8.9	WZB 12225/ 8,9	<del>200.00</del>	104.30
9	WZB 12225/ 9	<del>200.00</del>	104.30
9.1	WZB 12225/ 9,1	<del>200.00</del>	104.30
9.3	WZB 12225/ 9,3	<del>200.00</del>	104.30
9.8	WZB 12225/ 9,8	<del>200.00</del>	104.30
9.9	WZB 12225/ 9,9	<del>200.00</del>	104.30
10	WZB 12225/10	<del>200.00</del>	104.30

**CARBIDE DRILL WITH INNER COOLANT SUPPLY, 25XD** **WZB 10231**



**PRODUCT DESCRIPTION**

» High-performance drill with parabolic slot profile

**MATERIAL**

» Carbide, TiAlN coated



d	No.	EUR	%
3	WZB 10231/ 3	<del>246.00</del>	142.90
4	WZB 10231/ 4	<del>268.00</del>	156.00
5	WZB 10231/ 5	<del>313.00</del>	182.20

d	No.	EUR	%
6	WZB 10231/ 6	<del>371.00</del>	217.70
8	WZB 10231/ 8	<del>473.00</del>	270.70
10	WZB 10231/10	<del>578.00</del>	322.00

d	No.	EUR	%
12	WZB 10231/12	<del>662.00</del>	378.00

**CARBIDE DRILL WITHOUT INNER COOLANT SUPPLY, FOR HARDENED STEEL**
**WZB 10253**
**48 - 63  
HRC**
**DIN  
6537.2**

**PRODUCT DESCRIPTION**

- » High stability
- » Optimal chip-breaking and short chips
- » For hardened materials up to 63 HRC

**MATERIAL**

- » Carbide, TiAlN multi-layer coated



d	No.	EUR	%
2.6	WZB 10253/ 2,6	<del>67.00</del>	39.00
2.9	WZB 10253/ 2,9	<del>68.00</del>	39.00
3	WZB 10253/ 3	<del>70.00</del>	41.10
3.4	WZB 10253/ 3,4	<del>70.00</del>	41.10
3.9	WZB 10253/ 3,9	<del>71.50</del>	41.00
4	WZB 10253/ 4	<del>75.00</del>	43.30
4.3	WZB 10253/ 4,3	<del>75.00</del>	43.30
5	WZB 10253/ 5	<del>81.50</del>	47.30
4.9	WZB 10253/ 4,9	<del>79.00</del>	46.30

d	No.	EUR	%
5.1	WZB 10253/ 5,1	<del>81.50</del>	47.30
5.6	WZB 10253/ 5,6	<del>81.50</del>	47.30
5.9	WZB 10253/ 5,9	<del>93.50</del>	54.60
6	WZB 10253/ 6	<del>97.00</del>	55.90
6.9	WZB 10253/ 6,9	<del>97.00</del>	55.90
7.1	WZB 10253/ 7,1	<del>97.00</del>	55.90
7.9	WZB 10253/ 7,9	<del>131.00</del>	75.00
8	WZB 10253/ 8	<del>136.00</del>	79.10
8.6	WZB 10253/ 8,6	<del>136.00</del>	79.10

d	No.	EUR	%
9.1	WZB 10253/ 9,1	<del>136.00</del>	79.10
9.9	WZB 10253/ 9,9	<del>172.00</del>	100.00
10	WZB 10253/10	<del>178.00</del>	103.20
10.4	WZB 10253/10,4	<del>178.00</del>	103.20
10.6	WZB 10253/10,6	<del>178.00</del>	103.20
11.9	WZB 10253/11,9	<del>248.00</del>	143.00
12	WZB 10253/12	<del>258.00</del>	150.00
14.1	WZB 10253/14,1	<del>315.00</del>	182.70

**CARBIDE NC-CENTRE DRILL, 90°  
WZB 11444**
**< 54  
HRC**

**PRODUCT DESCRIPTION**

- » For centre drilling

**MATERIAL**

- » Carbide, TiAlN coated



d	No.	EUR	%
3	WZB 11444/ 3	<del>19.60</del>	13.60
4	WZB 11444/ 4	<del>22.40</del>	14.70
5	WZB 11444/ 5	<del>23.70</del>	15.70
6	WZB 11444/ 6	<del>25.60</del>	16.80
8	WZB 11444/ 8	<del>36.30</del>	24.10
10	WZB 11444/10	<del>47.60</del>	31.40
12	WZB 11444/12	<del>74.00</del>	49.30

**HSS-E NC-CENTRE DRILL, 90°  
WZB 31424**
**< 1.400  
N/mm²**

**PRODUCT DESCRIPTION**

- » For centre drilling

**MATERIAL**

- » HSS-E, TiAlN coated



d	No.	EUR	%
3	WZB 31424/ 3	<del>9.15</del>	6.30
4	WZB 31424/ 4	<del>10.30</del>	7.30
5	WZB 31424/ 5	<del>11.70</del>	7.40
6	WZB 31424/ 6	<del>17.80</del>	11.50
8	WZB 31424/ 8	<del>24.10</del>	15.70
10	WZB 31424/10	<del>25.60</del>	16.80
12	WZB 31424/12	<del>32.80</del>	22.00

**CARBIDE METRIC THREAD TAP FOR BLIND AND THROUGH HOLES** **WZG 12151**

**M**   **55 - 63 HRC** **DIN 371**  

**PRODUCT DESCRIPTION**

- » For hardened steel
- » For ISO metric threads

**MATERIAL**

- » Carbide, TiCN coated


**P** **M** **K** **N** **S** **H**



d	No.	EUR	%
M 3	WZG 12151/ 3	<del>137.00</del>	74.90
M 4	WZG 12151/ 4	<del>137.00</del>	74.90
M 5	WZG 12151/ 5	<del>151.00</del>	83.00
M 6	WZG 12151/ 6	<del>175.00</del>	97.00

d	No.	EUR	%
M 8	WZG 12151/ 8	<del>207.00</del>	113.00
M10	WZG 12151/10	<del>259.00</del>	141.80
M12	WZG 12151/12	<del>310.00</del>	167.00

**HSS-E-PM METRIC THREAD TAP FOR BLIND AND THROUGH HOLES** **WZG 32141**

**M**   **43 - 54 HRC** **DIN 371**  

**PRODUCT DESCRIPTION**

- » For hardened steel
- » For ISO metric threads

**MATERIAL**

- » HSS-E-PM, TiCN coated



**P** **M** **K** **N** **S** **H**



d	No.	EUR	%
M 3	WZG 32141/ 3	<del>31.20</del>	17.80
M 4	WZG 32141/ 4	<del>31.20</del>	17.80
M 5	WZG 32141/ 5	<del>31.00</del>	17.80
M 6	WZG 32141/ 6	<del>42.00</del>	24.10

d	No.	EUR	%
M 8	WZG 32141/ 8	<del>46.80</del>	27.20
M10	WZG 32141/10	<del>62.50</del>	36.80
M12	WZG 32141/12	<del>73.00</del>	42.00

**HSS-E-PM METRIC THREAD TAP FOR BLIND HOLES** **WZG 341318**

**M**  **< 1.400 N/mm²** **DIN 371**  

**PRODUCT DESCRIPTION**

- » For ISO metric threads

**MATERIAL**

- » HSS-E-PM, TiAlN coated

**P** **M** **K** **N** **S** **H**



d	No.	EUR	%
M 4	WZG 341318/ 4	<del>23.80</del>	14.70
M 5	WZG 341318/ 5	<del>28.40</del>	17.80
M 6	WZG 341318/ 6	<del>31.80</del>	19.90

d	No.	EUR	%
M 8	WZG 341318/ 8	<del>35.70</del>	22.00
M10	WZG 341318/10	<del>45.70</del>	29.30
M12	WZG 341318/12	<del>72.50</del>	45.20

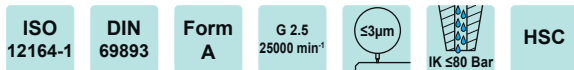


## CLAMPING EQUIPMENT



### HYDRAULIC EXPANSION CHUCK, SHORT, SLIM, DIN 69893

HWZ 1161



#### PRODUCT DESCRIPTION

- » With integrated length adjustment screw
- » High clamping forces
- » Optimal workpiece surfaces and longer service lives thanks to very good damping properties
- » Best concentricity
- » With Balluff chip hole

#### RECOMMENDATION FOR USE

- » For clamping tools with cylindrical shank and h6 shank tolerance
- » Use in combination with reduction sleeve enables flexible clamping
- » For drilling, reaming and milling

#### SCOPE OF DELIVERY

- » Includes built-in length adjustment screw, user guide and hexagon key



Interface	d1	A	No.	EUR	
HSK-A 63	6	70	HWZ 1161/HSK-A 63/ 6/ 70	493.00	345.10
HSK-A 63	8	70	HWZ 1161/HSK-A 63/ 8/ 70	493.00	345.10
HSK-A 63	10	80	HWZ 1161/HSK-A 63/10/ 80	493.00	345.10
HSK-A 63	12	85	HWZ 1161/HSK-A 63/12/ 85	452.00	316.40
HSK-A 63	16	90	HWZ 1161/HSK-A 63/16/ 90	493.00	345.10
HSK-A 63	20	90	HWZ 1161/HSK-A 63/20/ 90	452.00	316.40

**HYDRAULIC EXPANSION CHUCK, SHORT, SLIM, DIN 69871** **HWZ 2261**

ISO 7388-1
DIN 69871
Form AD/AF
G 2.5 25000 min<sup>-1</sup>
≤3µm
IK ≤80 Bar
HSC



**PRODUCT DESCRIPTION**

- » With integrated length adjustment screw
- » High clamping forces
- » Optimal workpiece surfaces and longer service lives thanks to very good damping properties
- » Best concentricity
- » With Balluff chip hole

**RECOMMENDATION FOR USE**

- » For clamping tools with cylindrical shank and h6 shank tolerance
- » Use in combination with reduction sleeve enables flexible clamping
- » For drilling, reaming and milling

**SCOPE OF DELIVERY**

- » Includes built-in length adjustment screw, user guide and hexagon key

Interface	d1	A	No.	EUR	%
SK 40	6	80.5	HWZ 2261/SK40/ 6/ 80,5	<del>439.00</del> 307.30	
SK 40	8	80.5	HWZ 2261/SK40/ 8/ 80,5	<del>439.00</del> 307.30	
SK 40	10	80.5	HWZ 2261/SK40/10/ 80,5	<del>439.00</del> 307.30	

Interface	d1	A	No.	EUR	%
SK 40	12	80.5	HWZ 2261/SK40/12/ 80,5	<del>381.00</del> 266.70	
SK 40	16	80.5	HWZ 2261/SK40/16/ 80,5	<del>439.00</del> 307.30	
SK 40	20	80.5	HWZ 2261/SK40/20/ 80,5	<del>381.00</del> 266.70	

**SIDE LOCK ARBOR, DIN 69893** **HWZ 1101**

ISO 12164-1
DIN 69893
DIN 69882-4
Form A
G 2.5 25000 min<sup>-1</sup>
≤3µm
HSC
HPC



**PRODUCT DESCRIPTION**

- » Optimal running smoothness due to hard turned shanks
- » Hard reworked puller grooves, HSK shoulder and HSK ejection surface
- » With Balluff chip hole

**RECOMMENDATION FOR USE**

- » For clamping tools with cylindrical shank according to DIN 1835 type B and DIN 6359 type HB

**SCOPE OF DELIVERY**

- » Includes clamping screw

Interface	d1	A	No.	EUR	%
HSK-A 63	6	65	HWZ 1101/HSK-A 63/ 6/ 65	<del>126.00</del> 94.60	
HSK-A 63	6	120	HWZ 1101/HSK-A 63/ 6/120	<del>148.00</del> 111.00	
HSK-A 63	8	65	HWZ 1101/HSK-A 63/ 8/ 65	<del>126.00</del> 94.60	
HSK-A 63	8	120	HWZ 1101/HSK-A 63/ 8/120	<del>148.00</del> 111.00	
HSK-A 63	10	65	HWZ 1101/HSK-A 63/10/ 65	<del>117.00</del> 88.50	
HSK-A 63	10	120	HWZ 1101/HSK-A 63/10/120	<del>137.00</del> 102.80	
HSK-A 63	12	80	HWZ 1101/HSK-A 63/12/ 80	<del>117.00</del> 88.50	
HSK-A 63	12	120	HWZ 1101/HSK-A 63/12/120	<del>137.00</del> 102.80	
HSK-A 63	14	80	HWZ 1101/HSK-A 63/14/ 80	<del>117.00</del> 88.50	

Interface	d1	A	No.	EUR	%
HSK-A 63	16	80	HWZ 1101/HSK-A 63/16/ 80	<del>117.00</del> 88.50	
HSK-A 63	16	120	HWZ 1101/HSK-A 63/16/120	<del>137.00</del> 102.80	
HSK-A 63	18	80	HWZ 1101/HSK-A 63/18/ 80	<del>117.00</del> 88.50	
HSK-A 63	20	80	HWZ 1101/HSK-A 63/20/ 80	<del>117.00</del> 88.50	
HSK-A 63	20	120	HWZ 1101/HSK-A 63/20/120	<del>137.00</del> 102.80	
HSK-A 63	25	110	HWZ 1101/HSK-A 63/25/110	<del>128.00</del> 96.10	
HSK-A 63	32	110	HWZ 1101/HSK-A 63/32/110	<del>126.00</del> 94.60	
HSK-A 63	40	125	HWZ 1101/HSK-A 63/40/125	<del>355.00</del> 267.60	

**SIDE LOCK ARBOR, DIN 69871**
**HWZ 2201**
**ISO**  
7388-1

**DIN**  
69871

**DIN**  
6359

**Form**  
AD/AF

**G 2.5**  
25000 min<sup>-1</sup>

**HPC**
**PRODUCT DESCRIPTION**

- » Optimal running smoothness due to hard turned shanks
- » With Balluff chip hole

**RECOMMENDATION FOR USE**

- » For clamping tools with cylindrical shank according to DIN 1835 type B and DIN 6359 type HB

**SCOPE OF DELIVERY**

- » Includes clamping screw

Interface	d1	A	No.	EUR	%
SK 40	6	50	HWZ 2201/SK40/ 6/ 50	<del>67.00</del>	50.20
SK 40	8	50	HWZ 2201/SK40/ 8/ 50	<del>67.00</del>	50.20
SK 40	10	50	HWZ 2201/SK40/10/ 50	<del>60.00</del>	45.10
SK 40	12	50	HWZ 2201/SK40/12/ 50	<del>60.00</del>	45.10
SK 40	14	50	HWZ 2201/SK40/14/ 50	<del>60.00</del>	45.10
SK 40	16	63	HWZ 2201/SK40/16/ 63	<del>60.00</del>	45.10
SK 40	18	63	HWZ 2201/SK40/18/ 63	<del>60.00</del>	45.10
SK 40	20	63	HWZ 2201/SK40/20/ 63	<del>60.00</del>	45.10
SK 40	25	100	HWZ 2201/SK40/25/100	<del>79.00</del>	59.30
SK 40	32	100	HWZ 2201/SK40/32/100	<del>87.00</del>	65.30


**SHORT DRILL CHUCK, DIN 69893**
**HWZ 1173**
**ISO**  
12164-1

**DIN**  
69893

**Form**  
A

**G 6.3**  
25000 min<sup>-1</sup>

**PRODUCT DESCRIPTION**

- » Suitable for clockwise and counter clockwise rotation
- » With Balluff chip hole

**SCOPE OF DELIVERY**

- » Includes hexagon key and user manual

Interface	d1	A	No.	EUR	%
HSK-A 63	0.5-13	104	HWZ 1173/HSK-A 63/0,5-13/104	<del>371.00</del>	262.00
HSK-A 63	2.5-16	109	HWZ 1173/HSK-A 63/2,5-16/109	<del>381.00</del>	267.00



**SHORT DRILL CHUCK, DIN 69871** **HWZ 2273**

<b>ISO</b> 7388-1	<b>DIN</b> 69871	<b>Form</b> A	<b>G 6.3</b> 25000 min <sup>-1</sup>	
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**PRODUCT DESCRIPTION**

- » Suitable for clockwise and counter clockwise rotation
- » With Balluff chip hole

**SCOPE OF DELIVERY**

- » Includes hexagon key and user manual

Interface	d1	A	No.	EUR	
SK 40	0.5-13	90	HWZ 2273/SK40/0,5-13/ 90	<del>300.00</del>	210.00
SK 40	2.5-16	95	HWZ 2273/SK40/2,5-16/ 95	<del>326.00</del>	228.20

**QUICK-ACTION DRILL CHUCK** **HWZ 3373**

**PRODUCT DESCRIPTION**

- » Best concentricity
- » Best clamping force due to automatic reclamping proportional to the cutting force
- » User-friendly design ensures easy and efficient clamping
- » For clockwise rotation only



Clamping range	Holding fixture	No.	EUR	
0-10	B 16	HWZ 3373/0-10/B16	<del>414.00</del>	85.50
1-13	B 16	HWZ 3373/1-13/B16	<del>422.00</del>	91.50
3-16	B 16	HWZ 3373/3-16/B16	<del>431.00</del>	98.30

**TAPER MANDREL FOR DRILL CHUCK TAPER** **HWZ 9300**

**PRODUCT DESCRIPTION**

- » Suited for drill chuck taper
- » 100% hardened and ground



MK	Holding fixture	No.	EUR	
MK 1	B 16	HWZ 9300/MK1/B16	<del>10.20</del>	7.60
MK 2	B 16	HWZ 9300/MK2/B16	<del>13.00</del>	9.70
MK 3	B 16	HWZ 9300/MK3/B16	<del>17.00</del>	12.80

**DRILLING MACHINE VICE** **HWS 505**

**PRODUCT DESCRIPTION**

- » Stable body made of high-quality casting
- » Maximum flexibility due to side and front fastening options
- » Reversible clamping jaws with step, ground on both sides
- » With jaw width of 110 and 135 mm
- » Fixed jaws with one lengthwise and two crosswise V-grooves



**MATERIAL**

- » Body made of special casting

**SCOPE OF DELIVERY**

- » V-groove jaws
- » Stepped jaws

b	No.	EUR	
110	HWS 505/110	<del>383.00</del>	302.00
135	HWS 505/135	<del>465.00</del>	366.00

**HIGH-PRESSURE MECHANICAL VICE, ALL SURFACES GROUND**
**HWS 600**
**PRODUCT DESCRIPTION**

- » Version R with regulator for presetting the clamping force
- » All surfaces ground with a parallelism of 0.02 mm, therefore ideal for horizontal and vertical machining
- » Compact and stable monoblock body from GGG-70 which maintains its total length
- » Easy to clean through fully enclosed spindle and additional side window
- » Accuracy of 0.01 mm in clamping repeatability


**SCOPE OF DELIVERY**

- » HWS 5602 Clamping jaws (2 pcs.)
- » HWS 5660 Clamping shoes (4 Pcs.)
- » HWS 5670 Handle

b	No.	EUR	
125	HWS 600R/125	<del>3,025.00</del>	2,129.00
160	HWS 600R/160	<del>4,234.00</del>	2,963.80

**TOP JAW, PLAIN, FOR HWS 600**  
**HWS 6002**
**PRODUCT DESCRIPTION**

- » Suitable for HWS 600


**SCOPE OF DELIVERY**

- » 1 clamping jaw including screws

b	No.	EUR	
125	HWS 6002/125	<del>151.00</del>	112.90
160	HWS 6002/160	<del>176.00</del>	133.00

**TOP JAW, PLAIN / SERRATED / WITH CLAWS FOR HWS 600**  
**HWS 6004**
**PRODUCT DESCRIPTION**

- » Suitable for HWS 600


**SCOPE OF DELIVERY**

- » 1 clamping jaw including screws

b	No.	EUR	
125	HWS 6004/125	<del>322.00</del>	241.50
160	HWS 6004/160	<del>338.00</del>	251.00

**STEPPED JAW**  
**HWS 5606**
**PRODUCT DESCRIPTION**

- » Suitable for HWS 500, HWS 600 and HWS 650


**MATERIAL**

- » 1.2510 hardened

**SCOPE OF DELIVERY**

- » 1 clamping jaw
- » Including screws

b	No.	EUR	
125	HWS 5606/125	<del>201.00</del>	152.00
160	HWS 5606/160	<del>232.00</del>	174.00

**STEPPED JAW WITH CLAWS**  
**HWS 5610**
**PRODUCT DESCRIPTION**

- » Suitable for HWS 500, HWS 600 and HWS 650


**MATERIAL**

- » 1.2510 hardened

**SCOPE OF DELIVERY**

- » 1 clamping jaw
- » Including screws

b	No.	EUR	
125	HWS 5610/125	<del>319.00</del>	238.90
160	HWS 5610/160	<del>380.00</del>	285.00



**SET: PARALLEL BASES** **HWS 1300/SET**

**PRODUCT DESCRIPTION**

» Precision-ground in pairs to hold workpieces parallelly in place

**MATERIAL**

» Steel, case-hardened



Set contents	Pair / PU	No.	EUR	
All HWS 1300 Parallel bases with b=125 mm in set	24	HWS 1300/125/P /Set-24	<del>773.00</del>	521.00
All HWS 1300 Parallel bases with b=150 mm in set	24	HWS 1300/150/P /Set-24	<del>817.00</del>	555.40

**SET: PARALLEL BASES, MAGNETIC** **HWS 1302/SET**

**PRODUCT DESCRIPTION**

- » Precision-ground in pairs to hold workpieces parallelly in place
- » High-quality neodymium magnets guarantee an optimal adhesion
- » Reduced set-up times through easy installation
- » Magnetic adhesion on one side prevents the adhesion of chips

**MATERIAL**

» 1.1269 hardened



Set contents	Pair / PU	No.	EUR	
All parallel bases, magnetic HWS 1302 with b=125 mm in a Set	5	HWS 1302/ 2,5/125/Set-5	<del>445.00</del>	288.00
All parallel bases, magnetic HWS 1302 with b=160 mm in a Set	5	HWS 1302/ 2,5/160/Set-5	<del>463.00</del>	301.00

**WORKPIECE STOP, 3-DIMENSIONAL** **HWS 1600**

**PRODUCT DESCRIPTION**

- » Stepless adjustment in 5 axes
- » Quick and easy setting
- » M8 thread for HWS 9016 T-slot nuts or for direct mounting

**SCOPE OF DELIVERY**

» Delivery includes HWS 9016 T-nut (M8x12)

M	b1	No.	EUR	
M 8	12	HWS 1600/8/12	<del>238.00</del>	154.70



**CLAMPING CLAW FOR THREADS, WITH COUNTERHOLDER, ADJUSTABLE HWS 120**
**PRODUCT DESCRIPTION**

- » The compression piece and the counterholder are connected undetachably to the clamping claw
- » Two clamping surfaces - for covering various applications and clamping heights
- » Quick clamping of injection moulds onto injection moulding machines



HWS 9012	d	No.	EUR	%
M12x100	13	HWS 120/12/100/13	<del>73.50</del>	51.80
M12x125	13	HWS 120/12/125/13	<del>79.00</del>	55.10
M12x125	17	HWS 120/12/125/17	<del>82.00</del>	57.10
M12x160	17	HWS 120/12/160/17	<del>82.50</del>	57.80
M16x125	17	HWS 120/16/125/17	<del>82.50</del>	57.80
M16x160	17	HWS 120/16/160/17	<del>85.00</del>	59.50
M20x160	21	HWS 120/20/160/21	<del>122.00</del>	85.80
M20x200	21	HWS 120/20/200/21	<del>123.00</del>	87.00
M20x250	25	HWS 120/20/250/25	<del>163.00</del>	114.10
M24x200	25	HWS 120/24/200/25	<del>165.00</del>	115.20
M24x250	25	HWS 120/24/250/25	<del>169.00</del>	118.20

**i** Specified clamping force in optimal clamping position (smallest distance of the clamping screws to the clamping area)

**CLAMPING CLAW, INFINITELY ADJUSTABLE HWS 110**
**PRODUCT DESCRIPTION**

- » Designed for highest load: made from forged and tempered steel
- » Enables quick, space-saving bridging of different clamping heights, without having to use shims on the machine tables
- » Particularly suitable for the clamping of cutting and stamping dies



b1	h1	No.	EUR	%
12	125	HWS 110/12/12/125	<del>60.50</del>	42.40
14	125	HWS 110/12/14/125	<del>62.00</del>	43.50
16	160	HWS 110/16/16/160	<del>66.50</del>	46.60
18	160	HWS 110/16/18/160	<del>66.50</del>	46.60



**ELECTRODE HOLDER WITH DOWEL PINS, STEEL  
HER 1122**

**PRODUCT DESCRIPTION**

- » Compatible with ITS-50
- » Prepared for chip encoding
- » Includes fastening screws

**MATERIAL**

» 1.2083

b1	Pce./PU	No.	EUR	
15	1	HER 1122/15	<del>424.00</del>	80.50
15	12	HER 1122/15/Set-12	<del>4,355.00</del>	884.00

**ELECTRODE HOLDER WITH DOWEL PINS, BRASS  
HER 1422**

**PRODUCT DESCRIPTION**

- » Compatible with ITS-50
- » Prepared for chip encoding
- » Includes fastening screws

**MATERIAL**

» 2.0401

b1	Pce./PU	No.	EUR	
15	1	HER 1422/15	<del>97.50</del>	63.30
15	12	HER 1422/15/Set-12	<del>1,029.00</del>	667.00

**ELECTRODE HOLDER WITH DOWEL PINS, ALUMINIUM  
HER 1622**

**PRODUCT DESCRIPTION**

- » Compatible with ITS-50
- » Prepared for chip encoding
- » Includes fastening screws

**MATERIAL**

» 3.3547

b1	Pce./PU	No.	EUR	
15	1	HER 1622/15	<del>70.00</del>	50.70
15	12	HER 1622/15/Set-12	<del>872.00</del>	569.50

**ELECTRODE HOLDER WITH DOWEL PINS, ROUND, ALUMINIUM  
HER 1624**

**PRODUCT DESCRIPTION**

- » Compatible with ITS-50
- » Prepared for chip encoding
- » Includes a fastening screw

**MATERIAL**

» 3.3547

b1	Pce./PU	No.	EUR	
15	1	HER 1624/15	<del>92.00</del>	59.80
15	12	HER 1624/15/Set-12	<del>1,051.00</del>	680.00

**MONOBLOCK ELECTRODE HOLDER WITH DOWEL PINS, STEEL  
HER 1222**

**PRODUCT DESCRIPTION**

- » The reference element is milled directly into the electrode holder
- » Prepared for chip encoding
- » Includes fastening screws

**MATERIAL**

» 1.0038, black oxidized

b1	Pce./PU	No.	EUR	
15	1	HER 1222/15	<del>432.00</del>	90.00
15	12	HER 1222/15/Set-12	<del>4,521.00</del>	1,032.00



**ELECTRODE HOLDER, SQUARE, ADJUSTABLE, BRASS  
HER 1412**



**PRODUCT DESCRIPTION**

» Compatible with ITS-50

**MATERIAL**

» Head: 1.2083, Base: 2.0401

b2	No.	EUR	
15	HER 1412/15	<del>292.00</del>	189.80
25	HER 1412/25	<del>340.00</del>	233.00

**ELECTRODE HOLDER, SQUARE, ADJUSTABLE, STEEL  
HER 1112**



**PRODUCT DESCRIPTION**

» Original reference elements  
» Compatible with ITS-50

**MATERIAL**

» 1.2083, hardened

b2	No.	EUR	
15	HER 1112/15	<del>441.00</del>	288.90
25	HER 1112/25	<del>467.00</del>	302.90

**CENTRING PLATE WITH FEET, FOR ITS-50  
HER 1822**



**PRODUCT DESCRIPTION**

» Compatible with ITS-50  
» Including stands and screws

Pce./PU	No.	EUR	
12	HER 1822/12	<del>205.00</del>	141.20
50	HER 1822/50	<del>778.00</del>	532.00

**SYSTEM STAND FOR ELECTRODE HOLDER  
HER 1890**



**PRODUCT DESCRIPTION**

» For arranging and storing ITS-50 and ITS-100 electrode holders

b	Pce./PU	No.	EUR	
135	10	HER 1890/135	<del>49.30</del>	36.90

**ELECTRODE HOLDER, SQUARE, ADJUSTABLE, STEEL  
HER 1212**



**PRODUCT DESCRIPTION**

» Original reference elements

**MATERIAL**

» 1.2083, hardened

b2	No.	EUR	
15	HER 1212/15	<del>458.00</del>	295.00
25	HER 1212/25	<del>480.00</del>	312.10

**ADAPTER FOR SYSTEM HOLE PATTERN  
V 95500**

**PRODUCT DESCRIPTION**

» Adapter for clamping electrodes with hole patterns to the most widely used clamping system  
» Non-corrosive and reusable

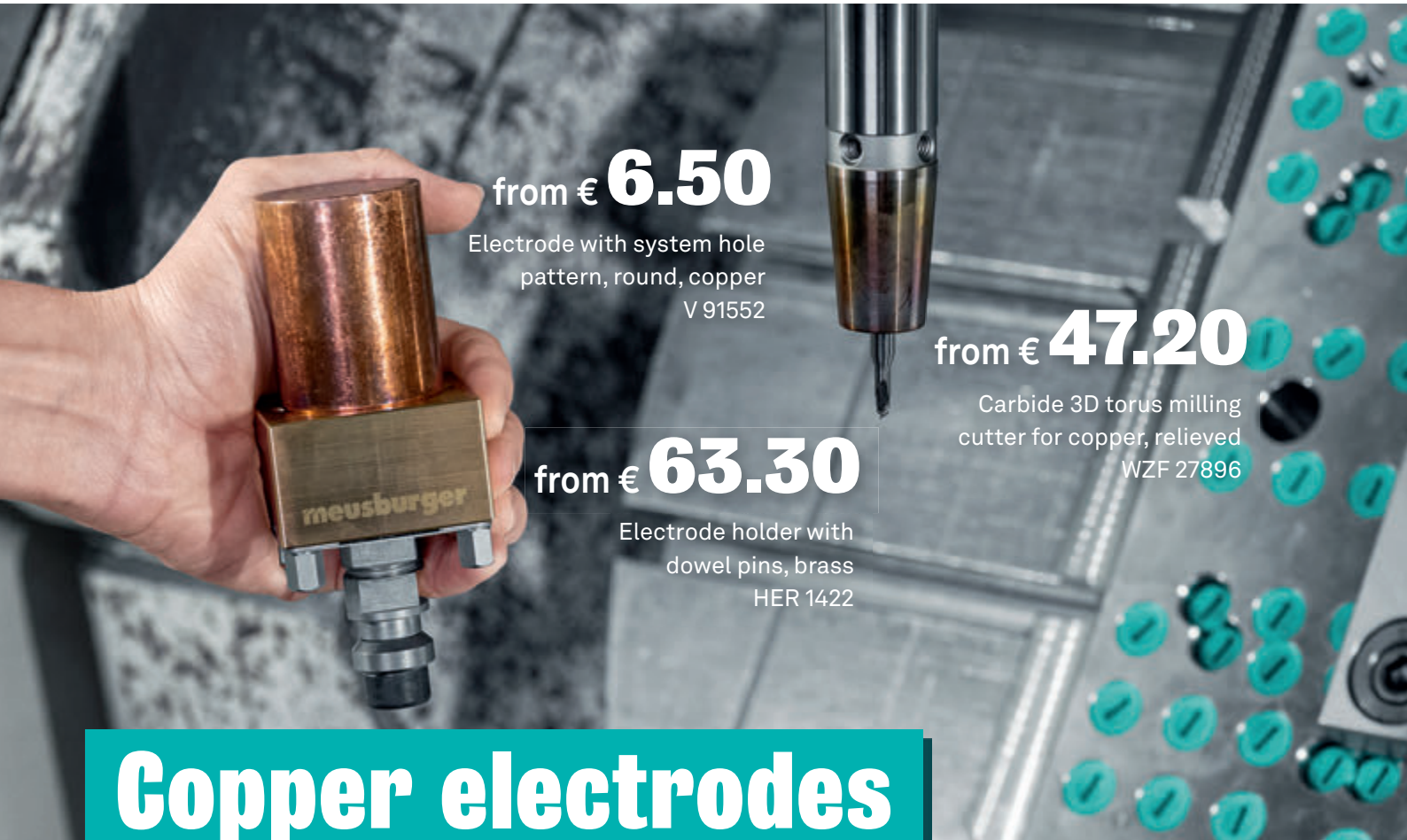


**MATERIAL**

» 1.2312, nitrided

b2	No.	EUR	
15	V 95500/15	<del>88.50</del>	66.50
25	V 95500/25	<del>95.50</del>	71.90




**from € 6.50**

 Electrode with system hole pattern, round, copper  
V 91552

**from € 47.20**

 Carbide 3D torus milling cutter for copper, relieved  
WZF 27896

**from € 63.30**

 Electrode holder with dowel pins, brass  
HER 1422

# Copper electrodes

**Precision production**

## The basis must be right

A high-quality base material is the alpha and omega of every electrode. That is why our range of copper electrodes includes a variety of different designs: from classic bar material to prefabricated copper electrodes and electrodes with system hole pattern.

## Precise positioning

Clamp your electrodes easily and efficiently on your clamping system. Our electrodes with system hole pattern along with the right electrode holders guarantee maximum precision and repeatable accuracy.

The dowel pin system combines the lowest possible loss of material with easy manufacturing and handling.



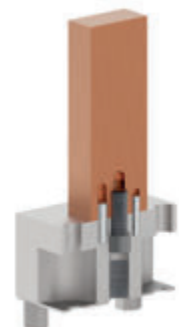
V 91550



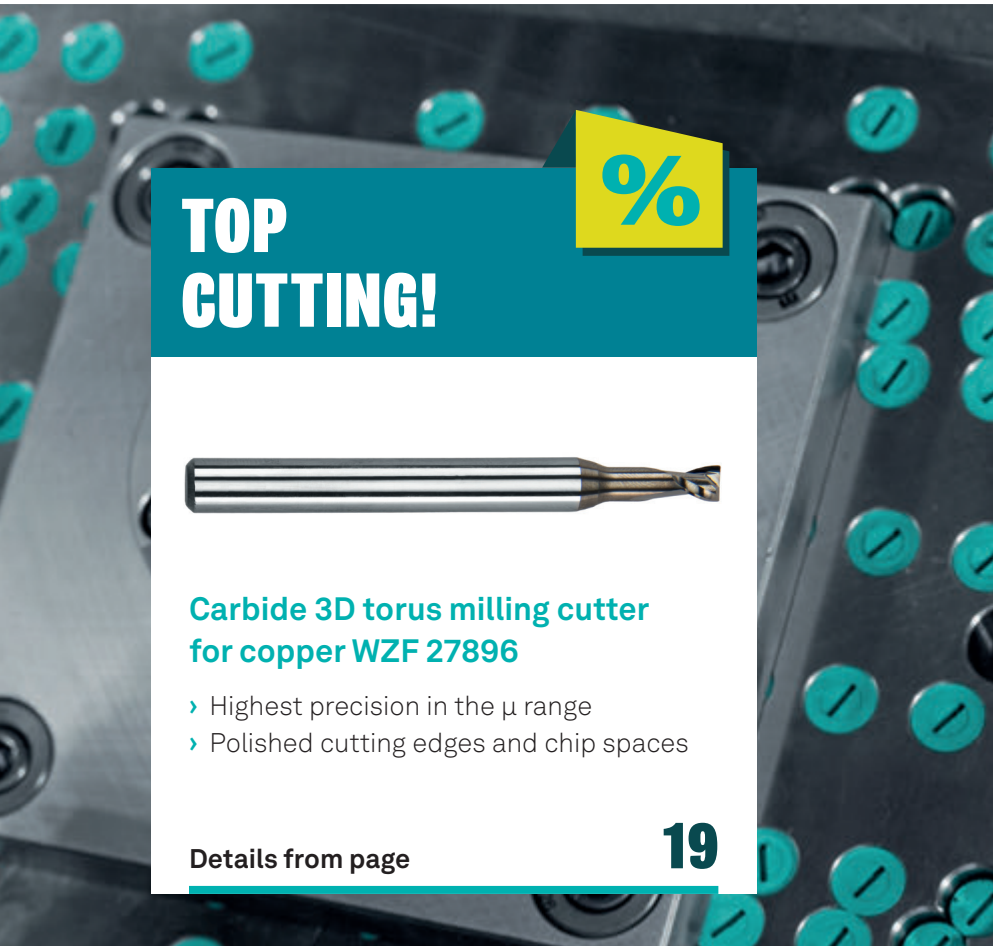
V 91552



HER 1422



Dowel pin system



# TOP CUTTING!



## Carbide 3D torus milling cutter for copper WZF 27896

- › Highest precision in the  $\mu$  range
- › Polished cutting edges and chip spaces

Details from page

19

## Chips are flying here

Copper materials are very sensitive to heat. That means incorrectly used cutting tools can lead to warping of the electrode and built-up edges on the tool. To avoid this, milling cutters with a specially adapted geometry are needed. Additionally, sharp cutting edges also ensure controlled chip formation and thus optimum results.

### Machining challenges:

- › Milling of complex and filigree contours
- › Small radii and deep crosspieces
- › Reaching the highest precision and surface quality



Milling copper correctly



LEARN MORE!



Markus Sperger  
Product manager

## FROM PRACTICAL EXPERIENCE

With the cutting data calculator you get the right cutting values in no time at all. You will also find valuable information and tips on how to use the tool perfectly.

[cutting-data.meusburger.com](http://cutting-data.meusburger.com)

## FURTHER PRODUCTS



Electrode holder, square, adjustable, brass HER 1412

See page 33



Quick-action clamping chuck for ITS-50/ITS-100, hand chuck HER 3030

Find details in our portal:  
[www.meusburger.com](http://www.meusburger.com)

**ELECTRODE WITH SYSTEM HOLE PATTERN, COPPER**
**V 91550**
**MATERIAL**

» 2.0060 (E-Cu 57)



b1	l1	H	No.	EUR	%
10	30	30	V 91550/10/30/30	<del>6.85</del>	4.60
10	30	50	V 91550/10/30/50	<del>8.85</del>	5.90
10	40	30	V 91550/10/40/30	<del>8.10</del>	5.40
10	40	50	V 91550/10/40/50	<del>10.70</del>	7.20
10	50	30	V 91550/10/50/30	<del>9.25</del>	6.20
10	50	50	V 91550/10/50/50	<del>12.60</del>	8.40
15	30	30	V 91550/15/30/30	<del>8.70</del>	5.80
15	30	50	V 91550/15/30/50	<del>11.80</del>	7.90
15	40	30	V 91550/15/40/30	<del>10.50</del>	7.10
15	40	50	V 91550/15/40/50	<del>14.40</del>	9.60
15	50	30	V 91550/15/50/30	<del>12.40</del>	8.30
15	50	50	V 91550/15/50/50	<del>17.20</del>	11.50
20	20	30	V 91550/20/20/30	<del>8.10</del>	5.40
20	20	50	V 91550/20/20/50	<del>10.70</del>	7.20
20	30	30	V 91550/20/30/30	<del>10.50</del>	7.10

b1	l1	H	No.	EUR	%
20	30	50	V 91550/20/30/50	<del>14.40</del>	9.60
20	40	30	V 91550/20/40/30	<del>12.90</del>	8.60
20	40	50	V 91550/20/40/50	<del>18.10</del>	12.20
20	50	30	V 91550/20/50/30	<del>15.30</del>	10.20
20	50	50	V 91550/20/50/50	<del>21.60</del>	14.40
25	25	30	V 91550/25/25/30	<del>10.80</del>	7.30
25	25	50	V 91550/25/25/50	<del>14.90</del>	10.00
25	30	30	V 91550/25/30/30	<del>12.40</del>	8.30
25	30	50	V 91550/25/30/50	<del>17.20</del>	11.50
25	40	30	V 91550/25/40/30	<del>15.30</del>	10.20
25	40	50	V 91550/25/40/50	<del>21.60</del>	14.40
25	50	30	V 91550/25/50/30	<del>18.30</del>	12.30
25	50	50	V 91550/25/50/50	<del>26.20</del>	17.60
30	30	30	V 91550/30/30/30	<del>14.00</del>	9.30
30	30	50	V 91550/30/30/50	<del>19.80</del>	13.30

**i** For prices and other lengths refer to the online shop

**ELECTRODE WITH SYSTEM HOLE PATTERN, ROUND, COPPER**
**V 91552**
**MATERIAL**

» 2.0060 (E-Cu 57)



D	H	No.	EUR	%
25	30	V 91552/ 25/30	<del>9.25</del>	6.50
25	50	V 91552/ 25/50	<del>12.60</del>	8.80
30	30	V 91552/ 30/30	<del>12.00</del>	8.40
30	50	V 91552/ 30/50	<del>16.50</del>	11.60

D	H	No.	EUR	%
40	30	V 91552/ 40/30	<del>18.60</del>	13.00
40	50	V 91552/ 40/50	<del>26.70</del>	18.70
50	30	V 91552/ 50/30	<del>27.20</del>	19.10
50	50	V 91552/ 50/50	<del>39.80</del>	27.90

**i** For prices and other lengths refer to the online shop

## THREADING ELECTRODE, COPPER, FOR METRIC THREADS

V 93110

## PRODUCT DESCRIPTION

- » For metric threads
- » Planetary

## MATERIAL

- » 2.0060 (E-Cu 57)

M	l1	No.	EUR	%
M 2	50	V 93110/ 2 /50	<del>52.50</del>	37.80
M 3	50	V 93110/ 3 /50	<del>9.05</del>	6.50
M 4	50	V 93110/ 4 /50	<del>9.05</del>	6.50
M 5	80	V 93110/ 5 /80	<del>9.05</del>	6.50



M	l1	No.	EUR	%
M 6	80	V 93110/ 6 /80	<del>9.05</del>	6.50
M 8	80	V 93110/ 8 /80	<del>11.30</del>	8.10
M10	80	V 93110/10 /80	<del>14.50</del>	10.40
M12	80	V 93110/12 /80	<del>19.90</del>	14.30

## THREADING ELECTRODE, TUNGSTEN COPPER, FOR METRIC THREADS

V 93140

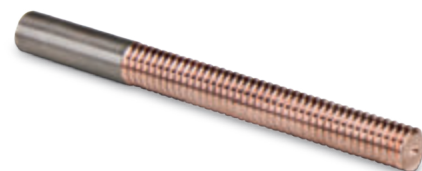
## PRODUCT DESCRIPTION

- » For metric threads
- » Planetary

## MATERIAL

- » WCu

M	l1	Type <sup>1)</sup>	No.	EUR	%
M 2	30	A	V 93140/ 2/30/A	<del>49.90</del>	36.00
M 2	30	B	V 93140/ 2/30/B	<del>75.00</del>	54.00
M 3	50	A	V 93140/ 3/50/A	<del>44.10</del>	31.70
M 3	50	B	V 93140/ 3/50/B	<del>73.50</del>	52.90
M 4	60	A	V 93140/ 4/60/A	<del>44.10</del>	31.70
M 4	60	B	V 93140/ 4/60/B	<del>73.50</del>	52.90
M 5	60	A	V 93140/ 5/60/A	<del>44.10</del>	31.70
M 5	60	B	V 93140/ 5/60/B	<del>80.00</del>	57.60



M	l1	Type <sup>1)</sup>	No.	EUR	%
M 6	60	A	V 93140/ 6/60/A	<del>48.90</del>	35.20
M 6	60	B	V 93140/ 6/60/B	<del>80.00</del>	57.60
M 8	60	A	V 93140/ 8/60/A	<del>53.00</del>	38.10
M 8	60	B	V 93140/ 8/60/B	<del>80.00</del>	63.40
M10	60	A	V 93140/10/60/A	<del>61.50</del>	44.30
M10	60	B	V 93140/10/60/B	<del>93.00</del>	67.00
M12	60	A	V 93140/12/60/A	<del>64.50</del>	46.40
M12	60	B	V 93140/12/60/B	<del>95.50</del>	68.80

1) Typ A: without rinse hole; Typ B: with rinse hole

## THREADING ELECTRODE, GRAPHITE, METRIC

V 93160

## PRODUCT DESCRIPTION

- » For metric threads
- » Planetary
- » Without rinse hole

## MATERIAL

- » Graphite EDM-3

M	l1	Type	No.	EUR	%
M3	50	A	V 93160/ 3/50/A	<del>12.00</del>	8.60
M4	50	A	V 93160/ 4/50/A	<del>12.70</del>	9.10
M5	50	A	V 93160/ 5/50/A	<del>12.80</del>	9.20
M6	50	A	V 93160/ 6/50/A	<del>13.10</del>	9.40



M	l1	Type	No.	EUR	%
M8	50	A	V 93160/ 8/50/A	<del>13.80</del>	9.90
M10	50	A	V 93160/10/50/A	<del>14.90</del>	10.70
M12	50	A	V 93160/12/50/A	<del>20.00</del>	14.40





CONSUMABLES



HIGH-PERFORMANCE CUTTING OIL, MINERAL OIL FREE VKS 20

ADVANTAGES

- » Optimally suited for minimum quantity lubrication
- » For high-quality surfaces and high dimensional accuracy
- » Machining of non-ferrous metal possible
- » Chlorine and silicone-free - no hazardous substances

Content	 Pce./PU	No.	EUR 	
250ml	1	VKS 20/ 1/ 250	<del>41.90</del>	7.10
250ml	10	VKS 20/10/ 250	<del>406.00</del>	63.90
5l	1	VKS 20/ 1/5000	<del>449.00</del>	89.40



BOTTLE WITH BRASS NOZZLE VZB 10

PRODUCT DESCRIPTION

- » Made out of robust PP
- » Length of brass pipe is adjustable





Capacity	No.	EUR 	
250 ml	VZB 10/ 250	6.35	4.50



**HIGH-TEMPERATURE THREAD SEALANT, MEDIUM STRENGTH** **VBA 5M69**

**ADVANTAGES**

- » For threads up to M36 and gaps up to 0.18 mm
- » The connection can be disassembled using manual tools
- » High resistance to chemicals
- » Vibration and impact resistant



Content	 Pce./PU	No.	EUR 	
50ml	1	VBA 5M69/ 1/ 50	<del>37.60</del>	25.80
50ml	6	VBA 5M69/ 6/ 50	<del>188.00</del>	129.10
50ml	12	VBA 5M69/12/ 50	<del>376.00</del>	257.00



**THREADLOCKER, MEDIUM STRENGTH** **VBA 2M43**

**ADVANTAGES**

- » For threads up to M36 and gaps up to 0.25 mm
- » The connection can be disassembled using manual tools
- » Vibration and impact resistant
- » Can be used on passive materials
- » No labelling required



Content	 Pce./PU	No.	EUR 	
50ml	1	VBA 2M43/ 1/ 50	<del>38.00</del>	19.40
50ml	6	VBA 2M43/ 6/ 50	<del>194.00</del>	97.00
50ml	12	VBA 2M43/12/ 50	<del>388.00</del>	194.00



**INSTANT ADHESIVE, GENERAL-PURPOSE** **VBC 4M01**

**ADVANTAGES**

- » Universal application for many materials
- » High strength and heat resistant bonding
- » Resistant against chemical influences
- » Very fast curing



Content	 Pce./PU	No.	EUR 	
20ml	1	VBC 4M01/ 1/ 20	<del>22.40</del>	10.60
20ml	6	VBC 4M01/ 6/ 20	<del>113.00</del>	53.00



**UNIVERSAL FOAM CLEANER** **VCF 15**

**ADVANTAGES**

- » Neutral to many surfaces
- » Highly concentrated foam for fast and efficient cleaning
- » Economic in consumption
- » Biodegradable with no environmentally hazardous ingredients

Content	 Pce./PU	No.	EUR 	
400ml	1	VCF 15/ 1/400	<del>7.90</del>	5.00
400ml	12	VCF 15/12/400	<del>87.00</del>	55.00





LIFTING EQUIPMENT



PLASTIC TRANSPORT LOCK E 1938

**PRODUCT DESCRIPTION**

- » Reliably locks split line face, ejector sets and moving plates
- » Easy and tool-free handling
- » Non-detachable, remains permanently on the tool
- » Operating temperature up to 90°C

**MATERIAL**

- » Glass fibre reinforced PA



d1	l	No.	EUR	
M6	50	E 1938/ 6/ 50	<del>24.20</del>	17.90
M8	63	E 1938/ 8/ 63	<del>25.30</del>	18.90
M10	80	E 1938/10/ 80	<del>26.30</del>	19.90





**ASSEMBLY EQUIPMENT**

**SET: HOSE ASSEMBLY DEVICE**
**E 21990/SET**
**PRODUCT DESCRIPTION**

- » For simplified assembly of couplers and nozzles into the E 2180 and E 2185 coolant hoses
- » Use for hose nozzles with Ø 9 and 13 mm
- » Mobile use possible by clamping in vice or via fixing holes



Set contents	No.	EUR	%
<ul style="list-style-type: none"> <li>» E 21990/200/80 Hose assembly device</li> <li>» E 21992/01 Adapter for hose assembly device</li> <li>» E 21992/03 Adapter for hose assembly device</li> <li>» E 21992/06 Adapter for hose assembly device</li> </ul>	E 21990/Set-1	495.00	371.30
<ul style="list-style-type: none"> <li>» E 21990/200/80 Hose assembly device</li> <li>» E 21992/02 Adapter for hose assembly device</li> <li>» E 21992/04 Adapter for hose assembly device</li> <li>» E 21992/06 Adapter for hose assembly device</li> </ul>	E 21990/Set-2	495.00	371.30
<ul style="list-style-type: none"> <li>» E 21990/200/80 Hose assembly device</li> <li>» E 21992/05 Adapter for hose assembly device</li> <li>» E 21992/06 Adapter for hose assembly device</li> </ul>	E 21990/Set-3	441.00	330.00

**ASSEMBLY TOOL SET FOR O-RINGS**
**V 28100**
**PRODUCT DESCRIPTION**

- » 5-piece set of assembly tools for easier installation and removal of O-rings

I	No.	EUR	%
131-143	V 28100	52.00	39.00







**UNIVERSAL DEBURRER WITH 2-COMPONENT HANDLE AND Ø3.2 BLADES** **V 24120**

**PRODUCT DESCRIPTION**

- » For the deburring of different materials and contours
- » 2-component handle with removable cap for storage of blades
- » Interchangeable blade



Content	l	No.	EUR
V 241201 + V 24100/3,2/01, 02, 04	145	V 24120/Set-1	<del>17.90</del> 14.30

**UNIVERSAL DEBURRER WITH TELESCOPIC SHANK AND Ø3.2 BLADES** **V 24130**

**PRODUCT DESCRIPTION**

- » For the deburring of different materials and contours
- » 2-component handle with length-adjustable telescopic shank and removable cap for storage of blades
- » Interchangeable blade



Content	l	No.	EUR
V 241301 + V 241302 + V 24100/3,2/02, 03, 05	-	V 24130/Set-1	<del>22.60</del> 18.10

**HAND COUNTERSINK WITH DEBURRING HEAD** **V 24210**

**PRODUCT DESCRIPTION**

- » Suitable for the deburring of holes, even deeply recessed holes
- » 2-component handle with length-adjustable telescopic shank
- » Interchangeable deburring head



Content	l	No.	EUR
V 241301 + V 240202 + V 240203/02	-	V 24210/Set-1	<del>43.60</del> 34.90

**MINI SCRAPER WITH TELESCOPIC SHANK AND SCRAPER BLADE** **V 24320**

**PRODUCT DESCRIPTION**

- » For deburring of holes and removal of surface impurities
- » 2-component handle with length-adjustable telescopic shank
- » Removable cap for the storage of scraper blades
- » Interchangeable scraper blades



Content	l	No.	EUR
V 241301 + V 243202 + V 24301	-	V 24320/Set-1	<del>27.50</del> 22.00

**SET: PRECISION GAUGE TAPES V 56002/SET**
**PRODUCT DESCRIPTION**

» Refillable with V 56002 individual containers

**SCOPE OF DELIVERY**

- » 15 precision gauge tapes
- » Lacquered steel wall holder with large lettering
- » Fixing material for wall holder



Content	No.	EUR	%
15 precision gauge tapes 0.01-0.25	V 56002/Set 0,01-0,25	<del>302.00</del> 226.50	
15 precision gauge tapes 0.30-1.00	V 56002/Set 0,30-1,00	<del>328.00</del> 246.00	

**SET: PRECISION GAUGE TAPES, STAINLESS V 56004/SET**
**PRODUCT DESCRIPTION**

» Refillable with V 56004 individual containers

**MATERIAL**

» 1.4310

**SCOPE OF DELIVERY**

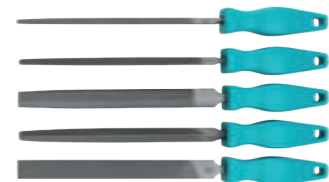
- » 15 precision gauge tapes
- » Lacquered steel wall holder with large lettering
- » Fixing material for wall holder



Content	No.	EUR	%
15 precision gauge tapes 0.01-0.25	V 56004/Set 0,01-0,25	<del>330.00</del> 247.50	

**SET OF MACHINIST'S FILES WITH PLASTIC HANDLE V 24400**
**SCOPE OF DELIVERY**

» Plastic bag



Set contents	Cut	l	No.	EUR	%
File set with flat, triangular, square, round, and half round files	2	200	V 24400/H2/200/Set-5	<del>44.10</del> 31.30	

**PLIERS SET WITH E 2078 SEALING PLUGS** **E 2077**

**PRODUCT DESCRIPTION**

» With E 2078 Sealing plugs

d1	No.	EUR	
6-12	E 2077	<del>778.00</del>	583.50



**MOUNTING ROD FOR SEALING PLUG** **E 20772**

**PRODUCT DESCRIPTION**

» For sealing plugs E 2078 ≤ 12 mm

d1	l1	No.	EUR	
6	270	E 20772/ 6 x 270	<del>130.00</del>	97.50
6	440	E 20772/ 6 x 440	<del>182.00</del>	136.50
6	600	E 20772/ 6 x 600	<del>196.00</del>	147.00
8	270	E 20772/ 8 x 270	<del>132.00</del>	99.00
8	440	E 20772/ 8 x 440	<del>183.00</del>	137.30
8	600	E 20772/ 8 x 600	<del>204.00</del>	153.00
9	440	E 20772/ 9 x 440	<del>188.00</del>	141.00
10	270	E 20772/10 x 270	<del>135.00</del>	101.30
10	440	E 20772/10 x 440	<del>188.00</del>	141.00
10	970	E 20772/10 x 970	<del>287.00</del>	216.00
12	270	E 20772/12 x 270	<del>143.00</del>	110.00
12	440	E 20772/12 x 440	<del>194.00</del>	145.50
12	970	E 20772/12 x 970	<del>292.00</del>	219.00



**SET: BOX SPANNERS** **V 34010/SET**

**PRODUCT DESCRIPTION**

- » For fastening the E 2000, E 20009, E 2300 and E 21194 fittings
- » With transverse hole for tommy bar
- » Thin-walled, quenched and tempered steel spanner for narrow installation spaces



Content	No.	EUR	
<ul style="list-style-type: none"> <li>» V 34010 Box spanner SW 6/ 7, 8/ 9, 10/11, 12/13, 14/15, 16/17, 20/22, 24/27</li> <li>» Tommy bar V 340101/6-12/180, V 340101/ 14/320</li> </ul>	V 34010/Set-8	<del>68.50</del>	51.40

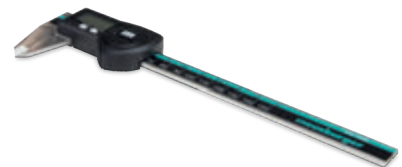


**MEASURING EQUIPMENT**

**DIGITAL CALLIPER MSD 10000**

**PRODUCT DESCRIPTION**

- » With quick start push function
- » Key lock prevents unwanted zeroing
- » Rapid switching from mm to inches and vice versa, in any position


**SCOPE OF DELIVERY**

- » Certificate of calibration, a battery (CR2032) and a plastic case

MB <sup>1)</sup>	TM <sup>2)</sup>	No.	EUR	%
0-150	flat	MSD 10000/150/F	440.00	98.90
0-150	Ø 1.5 mm	MSD 10000/150/R	440.00	98.90

1) MB: measuring range

2) TM: depth bar

**DIGITAL WORKSHOP CALLIPER IP65 MSD 22300**

**PRODUCT DESCRIPTION**

- » Hardened and stainless slide and rail
- » With rounded measuring tips, ideal for internal measurement
- » IP 65: protected against ingress of water and dust
- » Rapid switching from mm to inches and vice versa, in any position


**SCOPE OF DELIVERY**

- » Certificate of calibration, a battery (CR2032) and a wooden case

MB <sup>1)</sup>	No.	EUR	%
0-300	MSD 22300/300	542.00	351.00

1) MB: measuring range



**MEASURING EQUIPMENT KIT, PLUS**  
MSET 1000

**PRODUCT DESCRIPTION**

- » Comprehensive kit for apprentices
- » Either analogue or digital callipers
- » Empty field on cover for name entry
- » With USB flash drive and writing materials



Version	No.	EUR	
<b>Analogue</b>	MSET 1000/10/Analog	<del>299.00</del>	200.00
<b>Digital</b>	MSET 1000/10/Digital	<del>402.00</del>	272.60
<b>Digital IP67</b>	MSET 1000/10/Digital-IP67	<del>453.00</del>	311.80

**MEASURING EQUIPMENT KIT, BASIC**  
MSET 1100

**PRODUCT DESCRIPTION**

- » Classic kit for apprentices
- » Either analogue or digital callipers
- » Empty field on cover for name entry
- » With USB flash drive and writing materials
- » Empty space for MSZ 5015 Depth base



Version	No.	EUR	
<b>Analogue</b>	MSET 1100/3/Analog	<del>194.00</del>	132.00
<b>Digital</b>	MSET 1100/3/Digital	<del>289.00</del>	196.90
<b>Digital IP67</b>	MSET 1100/3/Digital-IP67	<del>329.00</del>	225.40

**ANALOGUE VERNIER CALLIPER** MSA 12000



**PRODUCT DESCRIPTION**

- » mm / inch scaling
- » Lapped and hardened guide rail
- » Main scale and vernier scale with satin chrome finish
- » With locking screw



**SCOPE OF DELIVERY**

- » A synthetic leather case

MB <sup>1)</sup>	TM <sup>2)</sup>	No.	EUR	
<b>0-150</b>	<b>flat</b>	MSA 12000/150/F	<del>39.40</del>	25.30

1) MB: measuring range

2) TM: depth bar

**ANALOGUE EXTERNAL MICROMETRE** MBA 12000



**PRODUCT DESCRIPTION**

- » Ratchet on the fast drive mechanism
- » Hard lacquered steel handle
- » Lapped measuring surfaces from carbide



**SCOPE OF DELIVERY**

- » Setting gauge (from 25-50 mm) and a plastic case

MB <sup>1)</sup>	No.	EUR	
<b>0- 25</b>	MBA 12000/ 0- 25	<del>69.00</del>	44.60
<b>50- 75</b>	MBA 12000/50- 75	<del>132.00</del>	83.00
<b>75-100</b>	MBA 12000/75-100	<del>152.00</del>	99.00

1) MB: measuring range

**DIGITAL DIAL INDICATOR, 0.01 MM**
**MUD 32000**

**PRODUCT DESCRIPTION**

- » Rapid switching from mm to inches and vice versa, in any position
- » With practical preset function
- » With key lock and reversal of counting direction

**SCOPE OF DELIVERY**

- » A battery (CR2032)



MB <sup>1)</sup>	No.	EUR	
12,5	MUD 32000/12,5	<del>186.00</del>	119.30

1) MB: measuring range

**ANALOGUE DIAL INDICATOR  
MUA 10200**

**PRODUCT DESCRIPTION**

- » Perfect for adjustment or inspection
- » Lapped measuring spindle, stainless steel clamping shank
- » With adjustable tolerance markers


**SCOPE OF DELIVERY**

- » A plastic case

MB <sup>1)</sup>	No.	EUR	
10	MUA 10200/10	<del>51.00</del>	35.80

1) MB: measuring range

**SMALL DIAL INDICATOR  
MUA 10220**

**PRODUCT DESCRIPTION**

- » Compact dial indicator, ideal for jigs
- » Adjustable tolerance markers
- » Lapped measuring spindle, stainless steel clamping shank
- » Ideal for MAU 5002



MB <sup>1)</sup>	No.	EUR	
5	MUA 10220/5	<del>80.00</del>	56.10

1) MB: measuring range

**MECHANICAL MEASURING STAND  
MAU 4513**
**PRODUCT DESCRIPTION**

- » Optimal for MFH Lever dial indicators and MUA Dial indicators
- » Fixed and centred through a locking screw
- » Fine adjustment at the fixture
- » Magnet with prismatic base, can be switched on and off



AR <sup>1)</sup>	No.	EUR	
280	MAU 4513/280	<del>239.00</del>	177.70
350	MAU 4513/350	<del>297.00</del>	224.00
220	MAU 4513/220	<del>228.00</del>	171.00

1) AR: working radius

**HYDRAULIC MINI MEASURING STAND  
MAU 4453**
**PRODUCT DESCRIPTION**

- » Optimal for MFH Lever dial indicators and MUA Dial indicators
- » Fixed and centred through a locking screw
- » Fine adjustment at the magnetic base
- » Magnetic force is shielded in order to ensure only downward effect



AR <sup>1)</sup>	No.	EUR	
150	MAU 4453/150	<del>163.00</del>	137.00

1) AR: working radius



**ANALOGUE DIAL DEPTH GAUGE**  
MUTA 10200



**PRODUCT DESCRIPTION**

- » Optimal for depth and groove measurement
- » Dial indicator with reverse measuring direction
- » Suitable for numerous applications when combined with the appropriate extension piece

**SCOPE OF DELIVERY**

- » A plastic case

b1	MB <sup>1)</sup>	No.	EUR	
80	30	MUTA 10200/80/30	<del>261.00</del>	181.00

1) MB: measuring range

**ANALOGUE LEVER DIAL INDICATOR, 0.01 MM**  
MFH 10200



**PRODUCT DESCRIPTION**

- » For high-precision adjustment or inspection of workpieces
- » Optimal fixing through dovetail guide
- » Resistant to shocks
- » Rotatable bezel

**SCOPE OF DELIVERY**

- » Clamping shank, wrench and a plastic case

MB <sup>1)</sup>	l1	No.	EUR	
0,5	38.1	MFH 10200/0,5/38,1	<del>171.00</del>	119.00
0,8	15.2	MFH 10200/0,8/15,2	<del>124.00</del>	86.50

1) MB: measuring range

**ZERO SETTER, MECHANICAL** MKT 10006



**PRODUCT DESCRIPTION**

- » For precise determination of the position of workpiece surfaces in the Z-direction
- » For the referencing of cutting tools
- » Ideal for even the smallest milling cutters (down to Ø 0.1 mm)
- » Safety spring travel enables 2 mm overrun

h	Version	No.	EUR	
100	Standard	MKT 10006/100	<del>372.00</del>	255.90
100	Magnet	MKT 10006/100-M	<del>399.00</del>	277.50



**ANALOGUE 3D EDGE FINDER, IP67** MKT 20206



**PRODUCT DESCRIPTION**

- » For determining the zero point of a workpiece
- » Equally suitable for determining hole centres and reference edges
- » Dustproof and watertight
- » Predetermined ceramic breaking point on the probe to prevent damage

**SCOPE OF DELIVERY**

- » Certificate of calibration

d3	d	No.	EUR	
12	35	MKT 20206/12/35	<del>374.00</del>	256.90
12	50	MKT 20206/12/50	<del>401.00</del>	274.00



**EDGE FINDER**
**MKT 40006**
**PRODUCT DESCRIPTION**

- » Hardened and ground
- » For easy probing of the workpiece edges

**SCOPE OF DELIVERY**

- » A wooden box



d1	d2	d3	No.	EUR	
6	6	-	MKT 40006/ 6/ 6	<del>76.50</del>	45.90
10	10	-	MKT 40006/10/10	<del>62.50</del>	42.70
10	10	4	MKT 40006/10/10/4	<del>62.50</del>	42.70

**FEELER GAUGE  
MGL 1240**

**PRODUCT DESCRIPTION**

- » With locking screw
- » Stainless
- » Tapered blades, each of them labelled



Blades	MB <sup>1)</sup>	No.	EUR	
13	0,05-1	MGL 1240/13/0,05-1	<del>11.10</del>	8.10
20	0,05-1	MGL 1240/20/0,05-1	<del>15.90</del>	11.20

1) MB: measuring range

**RADIUS GAUGE  
MGL 3440**

**PRODUCT DESCRIPTION**

- » With locking screw
- » Convex and concave blades
- » Stainless



Blades	MB <sup>1)</sup>	No.	EUR	
17	1 - 7	MGL 3440/ 1 / 7	<del>16.10</del>	11.20
16	7,5-15	MGL 3440/ 7,5/15	<del>20.20</del>	14.30
15	15,5-25	MGL 3440/15,5/25	<del>20.20</del>	14.30

1) MB: measuring range

**THREAD GAUGE  
MGL 4420**
**PRODUCT DESCRIPTION**

- » For measuring thread pitches
- » Milled and labelled blades
- » With locking screw



Blades	MB <sup>1)</sup>	No.	EUR	
24	0,25-6	MGL 4420/0,25-6	<del>4.28</del>	3.00
28	4-62	MGL 4420/4-62	<del>3.91</del>	2.50
52	0,25-6/4-62	MGL 4420/0,25-6,0/4-62	<del>6.65</del>	4.60

1) MB: measuring range

**KNIFE-EDGE SET SQUARE, ACCURACY: 00  
MWL 4260**

**PRODUCT DESCRIPTION**

- » For precise working
- » For air-gap checking
- » Stainless, hardened steel


**SCOPE OF DELIVERY**

- » A wooden box

I	I1	No.	EUR	
75	50	MWL 4260/ 75 x 50	<del>53.50</del>	36.70
100	70	MWL 4260/100 x 70	<del>69.00</del>	47.70
150	100	MWL 4260/150 x 100	<del>82.00</del>	56.70

**PRECISION SCALE** **MWK 1207**

**PRODUCT DESCRIPTION**

- » Sturdy plastic housing
- » Percentage determination based on a preset value
- » Battery operation possible with 4 x 1.5 V AA
- » Selectable reference quantity



max. g	No.	EUR	
200	MWK 1207/ 200	<del>340.00</del>	253.50
360	MWK 1207/ 360	<del>360.00</del>	265.00
1200	MWK 1207/1200	<del>330.00</del>	247.30
3600	MWK 1207/3600	<del>350.00</del>	262.50

**SET: POCKET SIZED MAGNIFYING GLASSES WITH LED** **MOP 1120/SET**

**PRODUCT DESCRIPTION**

- » Optimal illumination through LED
- » Pivoted head



**SCOPE OF DELIVERY**

- » Battery (AA)

Set contents	No.	EUR	
<ul style="list-style-type: none"> <li>» Insert magnifying glass MOP 1122/ 2/4</li> <li>» Insertable magnifying glass MOP 1122/10</li> <li>» Insertable magnifying glass MOP 1122/15</li> <li>» Handle for pocket-sized magnifying glass with LED MOP 1125/4000</li> </ul>	MOP 1120/SET-3	<del>240.00</del>	150.70
<ul style="list-style-type: none"> <li>» Insert magnifying glass MOP 1122/ 2/4</li> <li>» Insertable magnifying glass MOP 1122/4</li> <li>» Insertable magnifying glass MOP 1120/ 8</li> <li>» Insertable magnifying glass MOP 1122/10</li> <li>» Insertable magnifying glass MOP 1122/15</li> <li>» Handle for pocket-sized magnifying glass with LED MOP 1125/4000</li> <li>» Handle for pocket-sized magnifying glass with LED MOP 1125/6500</li> </ul>	MOP 1120/SET-5	<del>374.00</del>	227.50



**PROTECTIVE EQUIPMENT**

**EARPLUGS DISPENSER ASG 1090**
**PRODUCT DESCRIPTION**

- » Robust wall-mounted dispenser
- » Easy-to-use
- » Suitable for all loose disposable uvex earplugs

**uvex**


Capacity	No.	EUR	
600	ASG 1090/600	<del>74.00</del>	51.80

**EARPLUGS, X-FIT, SNR 37DB ASG 1060**
**PRODUCT DESCRIPTION**

- » Suitable for use in extremely loud environments
- » Ergonomically pre-shaped disposable earplugs
- » x-grip technology reduces pressure in the ear canal

**uvex**


Version	SNR / Attenuation	Pair / PU	No.	EUR	
bagged in pairs	37 dB	200	ASG 1060/200P	<del>50.50</del>	37.90
with cord	37 dB	100	ASG 1060/100K	<del>53.50</del>	40.10
loose in the box	37 dB	300	ASG 1060/300L	<del>67.50</del>	50.60

**SAFETY GLASSES, UVEX SKYGUARD NT** **ASA 5000**

**PRODUCT DESCRIPTION**

- » Spectacles with all-round protection
- » Full eye protection against dust particles
- » Frame with soft TPU
- » Side arm length adjustment ensures optimum fit

**uvex**



Version	Lens	No.	EUR	
Standard	PC farblos UV400	ASA 5000/01	<del>21.00</del>	15.80

**PREFORMED DUST MASK FFP2, WITH VALVE** **ASM 2430**

**PRODUCT DESCRIPTION**

- » FFP2 preformed mask with exhalation valve
- » Maximum comfort and adjustability
- » For harmful and slightly toxic dust and smoke
- » Up to 10 times the threshold limit value

**uvex**



Version	No.	EUR	
FFP2	ASM 2430/15	<del>42.60</del>	32.00

**PREFORMED DUST MASK FFP3** **ASM 3430**

**PRODUCT DESCRIPTION**

- » FFP3 preformed mask with exhalation valve
- » Maximum comfort and adjustability
- » For toxic dust, mist and smoke
- » Up to 30 times the threshold limit value

**uvex**



Version	For	No.	EUR	
FFP3	For normal faces	ASM 3430/15	<del>92.50</del>	69.40
	For small faces	ASM 3430/15/E	<del>92.50</del>	69.40

**NITRILE DISPOSABLE GLOVES  
ASH 7220**

**PRODUCT DESCRIPTION**

- » Highly resistant to oil and grease
- » Good grip
- » Exceptional fit
- » Accelerator-free
- » Silicone-free

Size	Pair / PU	No.	EUR	
7	-	ASH 7220/100/ 7	<del>23.50</del>	16.50
8	-	ASH 7220/100/ 8	<del>23.50</del>	16.40
9	-	ASH 7220/100/ 9	<del>23.50</del>	16.40

**PRECISION GLOVE, UNIPUR CARBON FT  
ASH 1110**

**PRODUCT DESCRIPTION**

- » Optimal for fine work
- » Handling of polished parts
- » Exceptional dexterity
- » Perfect freedom of movement

Size	Pair / PU	No.	EUR	
7	10	ASH 1110/10/ 7	<del>40.60</del>	30.50
8	10	ASH 1110/10/ 8	<del>40.60</del>	30.50
9	10	ASH 1110/10/ 9	<del>40.60</del>	30.50
10	10	ASH 1110/10/10	<del>40.60</del>	30.50

**ASSEMBLY GLOVE, PHYNOMIC PRO  
ASH 3420**

**PRODUCT DESCRIPTION**

- » Good dry / wet grip
- » Excellent dexterity
- » Dirt and moisture-repellent coating
- » High breathability
- » Fine assembly/assembly in damp areas

Size	Pair / PU	No.	EUR	
8	10	ASH 3420/10/ 8	<del>71.50</del>	50.10
9	10	ASH 3420/10/ 9	<del>71.50</del>	50.10
10	10	ASH 3420/10/10	<del>71.50</del>	50.10
11	10	ASH 3420/10/11	<del>71.50</del>	50.10

**ANTI-VIBRATION GLOVES  
ASH 9110**

**PRODUCT DESCRIPTION**

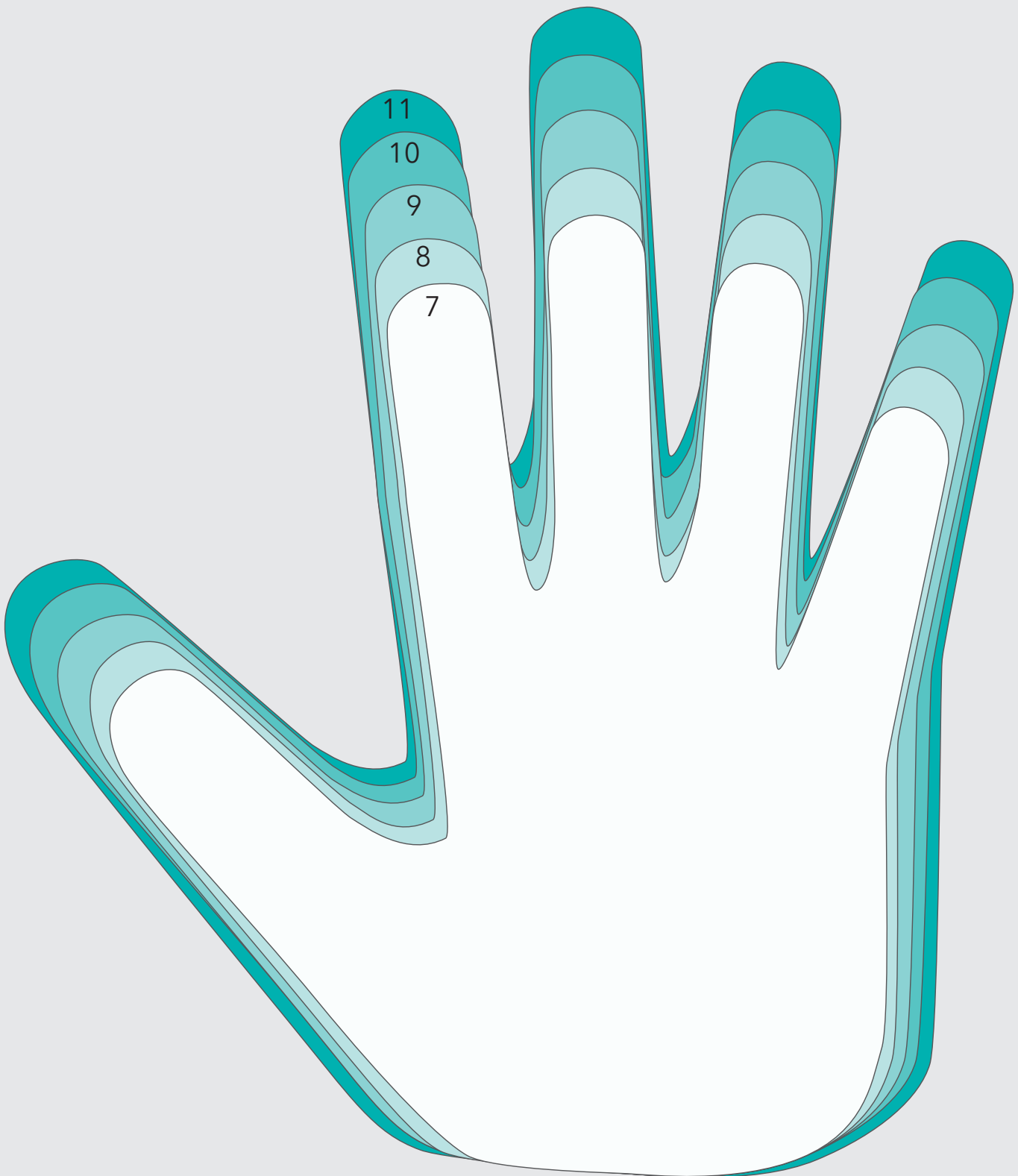
- » For working with air files such as GDSF 2030
- » Palm padded with vibrothane
- » Velcro fastener for optimal fit

Size	Pair / PU	No.	EUR	
9	1	ASH 9110/ 1/ 9	<del>62.00</del>	45.10
10	1	ASH 9110/ 1/10	<del>62.00</del>	45.10
11	1	ASH 9110/ 1/11	<del>62.00</del>	45.10
12	1	ASH 9110/ 1/12	<del>62.00</del>	45.10



## GLOVE SIZES - SIZE SELECTION MADE EASY

You do not have to measure the circumference of your hand. Simply place your hand on the template and read the appropriate size.



For very small or big hands, a smaller or larger size should be chosen for optimum wearing comfort.



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