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# AKTION VHM SCHAFTFRÄSER

75 JAHRE KLINGSEISEN
1948 - 2023

TECLINE

## Performance Serie

**Optimales Preis-Leistungs-Verhältnis**

**gültig bis 31.12.2023**

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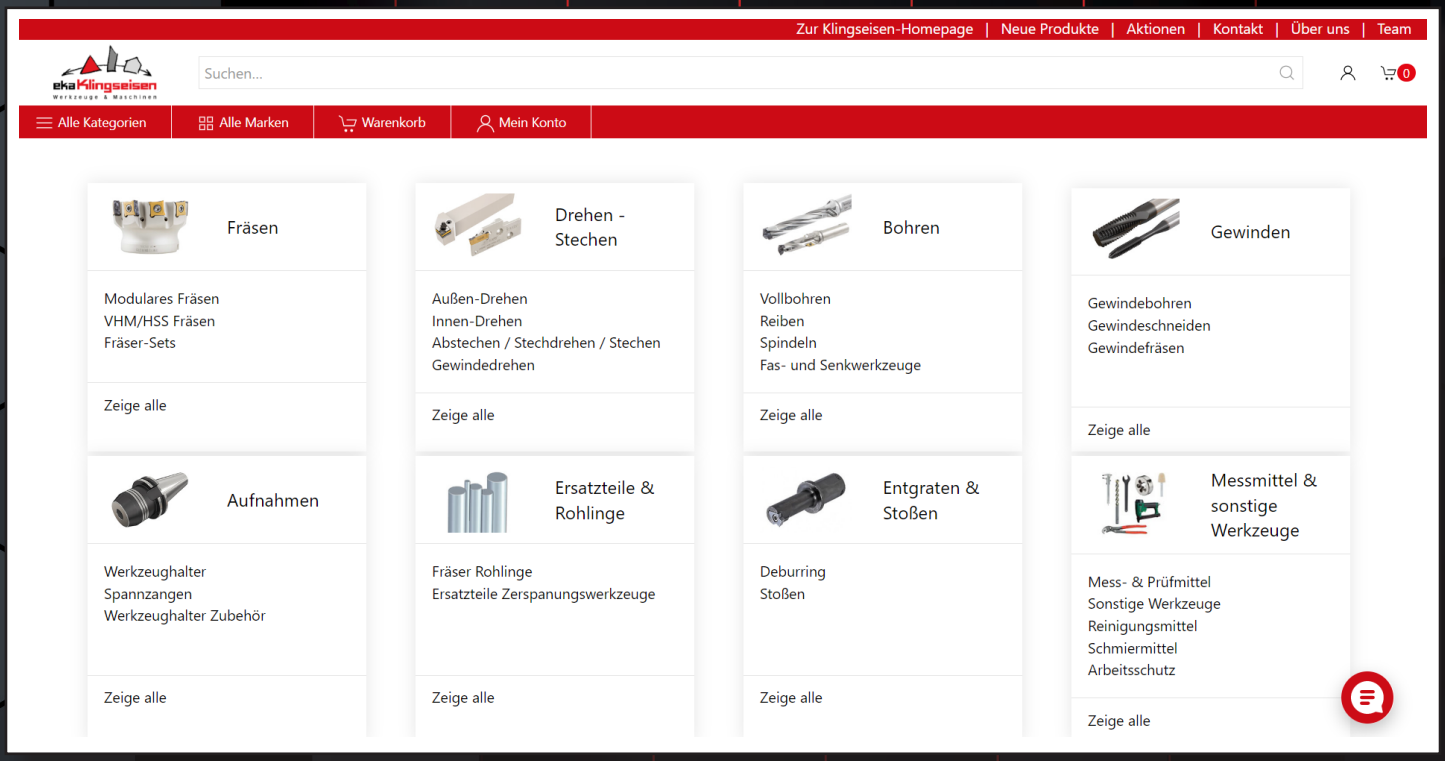


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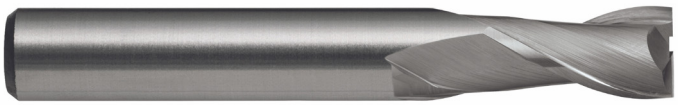
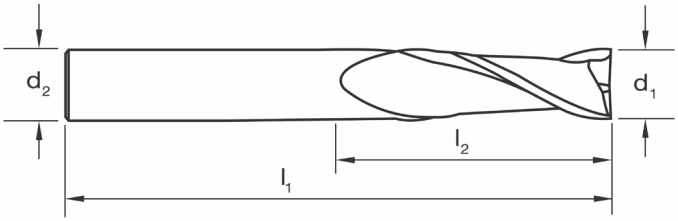
# E600

SUTTON VHM-Fräser zum Präzisionsfräsen von Nuten und Kavitäten, Beschichtung: Brt, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², 2-Zähne

**Technische Details:**
Beschichtung: Unbeschichtet
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 2
Anwendung: Nutenfräsen






P M K

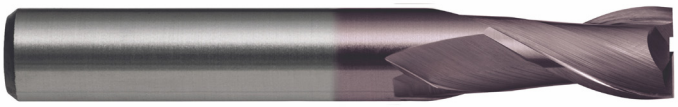
IKZ 30° HA VHM

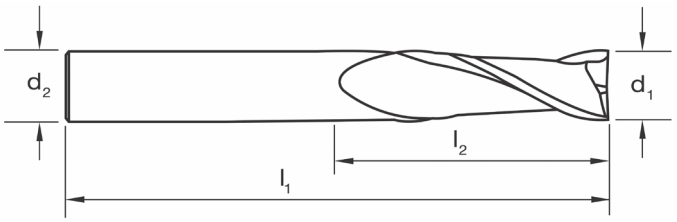
| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6000100 | E6000100 | 1 | 3 | 38 | 4 | **4,90** |
| SUTTONE6000150 | E6000150 | 1,5 | 3 | 38 | 4,5 | **4,90** |
| SUTTONE6000200 | E6000200 | 2 | 3 | 38 | 6 | **5,20** |
| SUTTONE6000250 | E6000250 | 2,5 | 3 | 38 | 9,5 | **5,20** |
| SUTTONE6000300 | E6000300 | 3 | 3 | 38 | 12 | **5,20** |
| SUTTONE6000350 | E6000350 | 3,5 | 4 | 50 | 12 | **6,10** |
| SUTTONE6000400 | E6000400 | 4 | 4 | 50 | 14 | **6,10** |
| SUTTONE6000450 | E6000450 | 4,5 | 6 | 50 | 16 | **8,80** |
| SUTTONE6000500 | E6000500 | 5 | 6 | 50 | 16 | **8,80** |
| SUTTONE6000600 | E6000600 | 6 | 6 | 50 | 19 | **8,10** |
| SUTTONE6000700 | E6000700 | 7 | 8 | 63 | 19 | **14,40** |
| SUTTONE6000800 | E6000800 | 8 | 8 | 63 | 20 | **14,40** |
| SUTTONE6000900 | E6000900 | 9 | 10 | 75 | 22 | **22,80** |
| SUTTONE6001000 | E6001000 | 10 | 10 | 75 | 22 | **21,50** |
| SUTTONE6001100 | E6001100 | 11 | 12 | 75 | 25 | **29,40** |
| SUTTONE6001200 | E6001200 | 12 | 12 | 75 | 25 | **29,40** |
| SUTTONE6001400 | E6001400 | 14 | 14 | 89 | 32 | **47,60** |
| SUTTONE6001600 | E6001600 | 16 | 16 | 89 | 32 | **56,10** |
| SUTTONE6001800 | E6001800 | 18 | 18 | 100 | 38 | **72,70** |
| SUTTONE6002000 | E6002000 | 20 | 20 | 100 | 38 | **92,40** |
| SUTTONE6002500 | E6002500 | 25 | 25 | 100 | 38 | **145,60** |

# E603

SUTTON VHM-Fräser zum Präzisionsfräsen von Nuten und Kavitäten, Beschichtung: TiAlN, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², Höhere Standzeit durch TiAlN-Beschichtung, 2-Zähne

**Technische Details:**
Beschichtung: TiAlN
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 2
Anwendung: Nutenfräsen






P M K

IKZ 30° HA VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6030100 | E6030100 | 1 | 3 | 38 | 4 | **5,90** |
| SUTTONE6030150 | E6030150 | 1,5 | 3 | 38 | 4,5 | **5,90** |
| SUTTONE6030200 | E6030200 | 2 | 3 | 38 | 6 | **6,20** |
| SUTTONE6030250 | E6030250 | 2,5 | 3 | 38 | 9,5 | **6,20** |
| SUTTONE6030300 | E6030300 | 3 | 3 | 38 | 12 | **6,20** |
| SUTTONE6030350 | E6030350 | 3,5 | 4 | 50 | 12 | **7,20** |
| SUTTONE6030400 | E6030400 | 4 | 4 | 50 | 14 | **7,20** |
| SUTTONE6030450 | E6030450 | 4,5 | 6 | 50 | 16 | **9,90** |
| SUTTONE6030500 | E6030500 | 5 | 6 | 50 | 16 | **9,90** |
| SUTTONE6030600 | E6030600 | 6 | 6 | 50 | 19 | **9,10** |
| SUTTONE6030700 | E6030700 | 7 | 8 | 63 | 19 | **16,90** |
| SUTTONE6030800 | E6030800 | 8 | 8 | 63 | 20 | **16,90** |
| SUTTONE6030900 | E6030900 | 9 | 10 | 75 | 22 | **26,40** |
| SUTTONE6031000 | E6031000 | 10 | 10 | 75 | 22 | **26,40** |
| SUTTONE6031100 | E6031100 | 11 | 12 | 75 | 25 | **32,90** |
| SUTTONE6031200 | E6031200 | 12 | 12 | 75 | 25 | **32,90** |
| SUTTONE6031400 | E6031400 | 14 | 14 | 89 | 32 | **50,80** |
| SUTTONE6031600 | E6031600 | 16 | 16 | 89 | 32 | **62,10** |
| SUTTONE6031800 | E6031800 | 18 | 18 | 100 | 38 | **83,30** |
| SUTTONE6032000 | E6032000 | 20 | 20 | 100 | 38 | **106,30** |
| SUTTONE6032500 | E6032500 | 25 | 25 | 100 | 38 | **154,60** |

# E610

SUTTON VHM-Fräser zum Präzisionsfräsen von Nuten und Kavitäten, für präzise Universal-Fräs-Anwendungen, Beschichtung: Brt, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², 3-Zähne

**Technische Details:**
Beschichtung: Unbeschichtet
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 3
Anwendung: Nutenfräsen | Umsäumen

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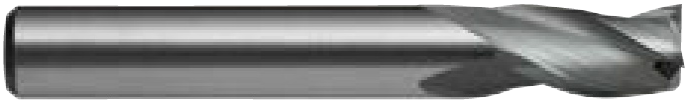
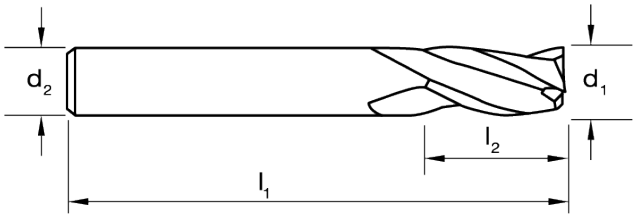





P M K

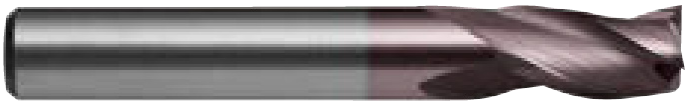
IKZ 30° HA VHM

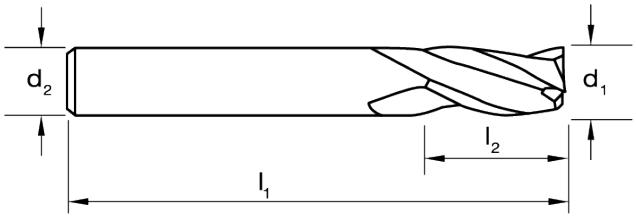
| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6100100 | E6100100 | 1 | 3 | 38 | 4 | **4,90** |
| SUTTONE6100150 | E6100150 | 1,5 | 3 | 38 | 4,5 | **4,90** |
| SUTTONE6100200 | E6100200 | 2 | 3 | 38 | 6 | **5,20** |
| SUTTONE6100250 | E6100250 | 2,5 | 3 | 38 | 9,5 | **5,20** |
| SUTTONE6100300 | E6100300 | 3 | 3 | 38 | 12 | **5,20** |
| SUTTONE6100350 | E6100350 | 3,5 | 4 | 50 | 12 | **6,10** |
| SUTTONE6100400 | E6100400 | 4 | 4 | 50 | 14 | **6,10** |
| SUTTONE6100450 | E6100450 | 4,5 | 6 | 50 | 16 | **8,80** |
| SUTTONE6100500 | E6100500 | 5 | 6 | 50 | 16 | **8,80** |
| SUTTONE6100600 | E6100600 | 6 | 6 | 50 | 19 | **8,10** |
| SUTTONE6100700 | E6100700 | 7 | 8 | 63 | 19 | **14,40** |
| SUTTONE6100800 | E6100800 | 8 | 8 | 63 | 20 | **14,40** |
| SUTTONE6100900 | E6100900 | 9 | 10 | 75 | 22 | **22,80** |
| SUTTONE6101000 | E6101000 | 10 | 10 | 75 | 22 | **21,50** |
| SUTTONE6101100 | E6101100 | 11 | 12 | 75 | 25 | **29,40** |
| SUTTONE6101200 | E6101200 | 12 | 12 | 75 | 25 | **29,40** |
| SUTTONE6101400 | E6101400 | 14 | 14 | 89 | 32 | **47,60** |
| SUTTONE6101600 | E6101600 | 16 | 16 | 89 | 32 | **56,10** |
| SUTTONE6101800 | E6101800 | 18 | 18 | 100 | 38 | **72,70** |
| SUTTONE6102000 | E6102000 | 20 | 20 | 100 | 38 | **92,40** |
| SUTTONE6102500 | E6102500 | 25 | 25 | 100 | 38 | **145,60** |

# E611

SUTTON VHM-Fräser zum Präzisionsfräsen von Nuten und Kavitäten, für präzise Universal-Fräs-Anwendungen, Beschichtung: TiAlN, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², Höhere Standzeit durch TiAlN-Beschichtung, 3-Zähne

**Technische Details:**
Beschichtung: TiAlN
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 3
Anwendung: Nutenfräsen | Umsäumen






P M K

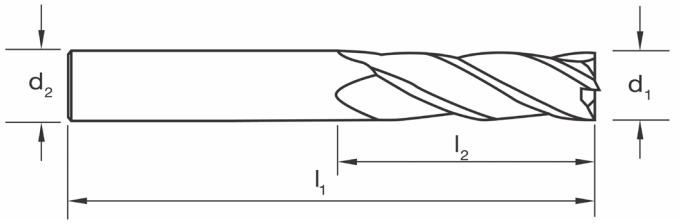
IKZ 30° HA VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6110100 | E6110100 | 1 | 3 | 38 | 4 | **5,90** |
| SUTTONE6110150 | E6110150 | 1,5 | 3 | 38 | 4,5 | **5,90** |
| SUTTONE6110200 | E6110200 | 2 | 3 | 38 | 6 | **6,20** |
| SUTTONE6110250 | E6110250 | 2,5 | 3 | 38 | 9,5 | **6,20** |
| SUTTONE6110300 | E6110300 | 3 | 3 | 38 | 12 | **6,20** |
| SUTTONE6110350 | E6110350 | 3,5 | 4 | 50 | 12 | **7,20** |
| SUTTONE6110400 | E6110400 | 4 | 4 | 50 | 14 | **7,20** |
| SUTTONE6110450 | E6110450 | 4,5 | 6 | 50 | 16 | **9,90** |
| SUTTONE6110500 | E6110500 | 5 | 6 | 50 | 16 | **9,90** |
| SUTTONE6110600 | E6110600 | 6 | 6 | 50 | 19 | **9,10** |
| SUTTONE6110700 | E6110700 | 7 | 8 | 63 | 19 | **16,90** |
| SUTTONE6110800 | E6110800 | 8 | 8 | 63 | 20 | **16,90** |
| SUTTONE6110900 | E6110900 | 9 | 10 | 75 | 22 | **26,40** |
| SUTTONE6111000 | E6111000 | 10 | 10 | 75 | 22 | **26,40** |
| SUTTONE6111100 | E6111100 | 11 | 12 | 75 | 25 | **32,90** |
| SUTTONE6111200 | E6111200 | 12 | 12 | 75 | 25 | **32,90** |
| SUTTONE6111400 | E6111400 | 14 | 14 | 89 | 32 | **50,80** |
| SUTTONE6111600 | E6111600 | 16 | 16 | 89 | 32 | **62,10** |
| SUTTONE6111800 | E6111800 | 18 | 18 | 100 | 38 | **83,30** |
| SUTTONE6112000 | E6112000 | 20 | 20 | 100 | 38 | **106,30** |
| SUTTONE6112500 | E6112500 | 25 | 25 | 100 | 38 | **154,60** |

# E601

SUTTON VHM-Fräser für präzise Schlicht-Fräs-Anwendungen, Beschichtung: Brt, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², 4-Zähne

**suttontools**




**Technische Details:**
Beschichtung: Unbeschichtet
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 4
Anwendung: Umsäumen

P M K

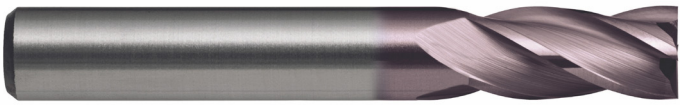
IKZ 30° HA VHM

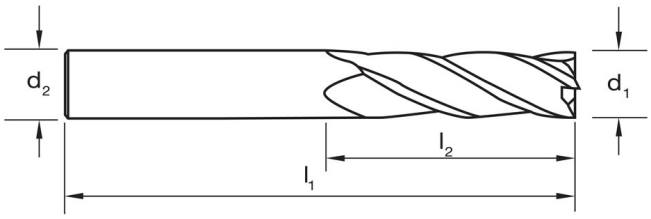
| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6010100 | E6010100 | 1 | 3 | 38 | 4 | **4,90** |
| SUTTONE6010150 | E6010150 | 1,5 | 3 | 38 | 4,5 | **4,90** |
| SUTTONE6010200 | E6010200 | 2 | 3 | 38 | 6 | **5,20** |
| SUTTONE6010250 | E6010250 | 2,5 | 3 | 38 | 9,5 | **5,20** |
| SUTTONE6010300 | E6010300 | 3 | 3 | 38 | 12 | **5,20** |
| SUTTONE6010350 | E6010350 | 3,5 | 4 | 50 | 12 | **6,10** |
| SUTTONE6010400 | E6010400 | 4 | 4 | 50 | 14 | **6,10** |
| SUTTONE6010450 | E6010450 | 4,5 | 6 | 50 | 16 | **8,80** |
| SUTTONE6010500 | E6010500 | 5 | 6 | 50 | 16 | **8,80** |
| SUTTONE6010600 | E6010600 | 6 | 6 | 50 | 19 | **8,10** |
| SUTTONE6010700 | E6010700 | 7 | 8 | 63 | 19 | **14,40** |
| SUTTONE6010800 | E6010800 | 8 | 8 | 63 | 20 | **14,40** |
| SUTTONE6010900 | E6010900 | 9 | 10 | 75 | 22 | **22,80** |
| SUTTONE6011000 | E6011000 | 10 | 10 | 75 | 22 | **21,50** |
| SUTTONE6011100 | E6011100 | 11 | 12 | 75 | 25 | **29,40** |
| SUTTONE6011200 | E6011200 | 12 | 12 | 75 | 25 | **29,40** |
| SUTTONE6011400 | E6011400 | 14 | 14 | 89 | 32 | **45,00** |
| SUTTONE6011600 | E6011600 | 16 | 16 | 89 | 32 | **56,10** |
| SUTTONE6011800 | E6011800 | 18 | 18 | 100 | 38 | **72,70** |
| SUTTONE6012000 | E6012000 | 20 | 20 | 100 | 38 | **92,40** |
| SUTTONE6012500 | E6012500 | 25 | 25 | 100 | 38 | **145,60** |

# E604

SUTTON VHM-Fräser für präzise Schlicht-Fräs-Anwendungen, Beschichtung: TiAlN, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², Höhere Standzeit durch TiAlN-Beschichtung, 4-Zähne

**Technische Details:**
Beschichtung: TiAlN
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 4
Anwendung: Umsäumen






P M K

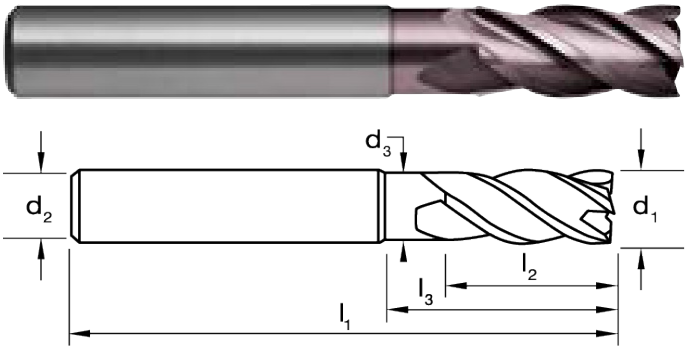
IKZ 30° HA VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6040100 | E6040100 | 1 | 3 | 38 | 4 | **5,90** |
| SUTTONE6040150 | E6040150 | 1,5 | 3 | 38 | 4,5 | **5,90** |
| SUTTONE6040200 | E6040200 | 2 | 3 | 38 | 6 | **6,20** |
| SUTTONE6040250 | E6040250 | 2,5 | 3 | 38 | 9,5 | **6,20** |
| SUTTONE6040300 | E6040300 | 3 | 3 | 38 | 12 | **6,20** |
| SUTTONE6040350 | E6040350 | 3,5 | 4 | 50 | 12 | **7,20** |
| SUTTONE6040400 | E6040400 | 4 | 4 | 50 | 14 | **7,20** |
| SUTTONE6040450 | E6040450 | 4,5 | 6 | 50 | 16 | **9,90** |
| SUTTONE6040500 | E6040500 | 5 | 6 | 50 | 16 | **9,90** |
| SUTTONE6040600 | E6040600 | 6 | 6 | 50 | 19 | **9,10** |
| SUTTONE6040700 | E6040700 | 7 | 8 | 63 | 19 | **16,90** |
| SUTTONE6040800 | E6040800 | 8 | 8 | 63 | 20 | **16,90** |
| SUTTONE6040900 | E6040900 | 9 | 10 | 75 | 22 | **26,40** |
| SUTTONE6041000 | E6041000 | 10 | 10 | 75 | 22 | **26,40** |
| SUTTONE6041100 | E6041100 | 11 | 12 | 75 | 25 | **32,90** |
| SUTTONE6041200 | E6041200 | 12 | 12 | 75 | 25 | **32,90** |
| SUTTONE6041400 | E6041400 | 14 | 14 | 89 | 32 | **50,80** |
| SUTTONE6041600 | E6041600 | 16 | 16 | 89 | 32 | **62,10** |
| SUTTONE6041800 | E6041800 | 18 | 18 | 100 | 38 | **83,30** |
| SUTTONE6042000 | E6042000 | 20 | 20 | 100 | 38 | **106,30** |
| SUTTONE6042500 | E6042500 | 25 | 25 | 100 | 38 | **154,60** |

# E635

SUTTON VHM-Fräser, VHM-ULTRA-Hartmetall-Sorte für hohe Performance, 35°/38° variabler Spiralwinkel für vibrationsarmes Fräsen, Beschichtung: TiAlN, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², 4-Zähne

**Technische Details:**
Beschichtung: TiAlN
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 4
Spiralwinkel: 35°/38°
Anwendung: Umsäumen




P K N S H

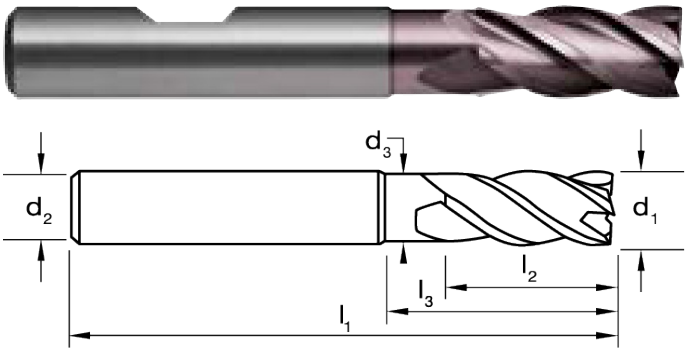
IKZ HA VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $d_3$ mm | $l_1$ mm | $l_2$ mm | $l_3$ mm | € ab 1 |
|---|---|---|---|---|---|---|---|---|
| SUTTONE6350300 | E6350300 | 3 | 6 | 2,8 | 57 | 8 | 19 | **16,20** |
| SUTTONE6350400 | E6350400 | 4 | 6 | 3,7 | 57 | 11 | 19 | **16,20** |
| SUTTONE6350500 | E6350500 | 5 | 6 | 4,6 | 57 | 13 | 20 | **16,20** |
| SUTTONE6350600 | E6350600 | 6 | 6 | 5,5 | 57 | 13 | 21 | **13,60** |
| SUTTONE6350800 | E6350800 | 8 | 8 | 7,5 | 63 | 19 | 27 | **18,90** |
| SUTTONE6351000 | E6351000 | 10 | 10 | 9,5 | 72 | 22 | 32 | **27,70** |
| SUTTONE6351200 | E6351200 | 12 | 12 | 11,2 | 83 | 26 | 38 | **35,40** |
| SUTTONE6351400 | E6351400 | 14 | 14 | 13 | 83 | 26 | 38 | **48,90** |
| SUTTONE6351600 | E6351600 | 16 | 16 | 15 | 92 | 32 | 44 | **62,00** |
| SUTTONE6352000 | E6352000 | 20 | 20 | 19 | 104 | 38 | 54 | **94,40** |

# E636

SUTTON VHM-Fräser, VHM-ULTRA-Hartmetall-Sorte für hohe Performance, 35°/38° variabler Spiralwinkel für vibrationsarmes Fräsen, Beschichtung: TiAlN, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², Höhere Standzeit durch TiAlN-Beschichtung, 4-Zähne

**Technische Details:**
Beschichtung: TiAlN
Schneidentoleranz: h10
Schafttyp: HB
Schnittrichtung: Rechts
Anzahl der Zähne: 4
Spiralwinkel: 35°/38°
Anwendung: Umsäumen




P K N S H

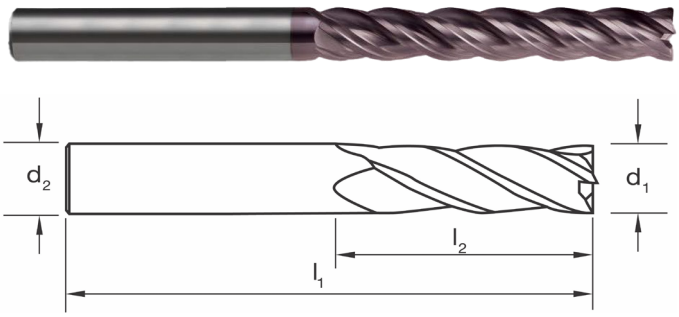
IKZ VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $d_3$ mm | $l_1$ mm | $l_2$ mm | $l_3$ mm | € ab 1 |
|---|---|---|---|---|---|---|---|---|
| SUTTONE6360300 | E6360300 | 3 | 6 | 2,8 | 57 | 8 | 19 | **16,20** |
| SUTTONE6360400 | E6360400 | 4 | 6 | 3,7 | 57 | 11 | 19 | **16,20** |
| SUTTONE6360500 | E6360500 | 5 | 6 | 4,6 | 57 | 13 | 20 | **16,20** |
| SUTTONE6360600 | E6360600 | 6 | 6 | 5,5 | 57 | 13 | 21 | **13,50** |
| SUTTONE6360800 | E6360800 | 8 | 8 | 7,5 | 63 | 19 | 27 | **18,80** |
| SUTTONE6361000 | E6361000 | 10 | 10 | 9,5 | 72 | 22 | 32 | **27,70** |
| SUTTONE6361200 | E6361200 | 12 | 12 | 11,2 | 83 | 26 | 38 | **35,30** |
| SUTTONE6361400 | E6361400 | 14 | 14 | 13 | 83 | 26 | 38 | **48,90** |
| SUTTONE6361600 | E6361600 | 16 | 16 | 15 | 92 | 32 | 44 | **62,00** |
| SUTTONE6362000 | E6362000 | 20 | 20 | 19 | 104 | 38 | 54 | **94,40** |

# E637

SUTTON VHM-Fräser, VHM-ULTRA-Hartmetall-Sorte für hohe Performance, 35°/38° variabler Spiralwinkel für vibrationsarmes Fräsen, Beschichtung: TiAlN, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², Höhere Standzeit durch TiAlN-Beschichtung, 4-Zähne, lange Ausführung

**Technische Details:**
Beschichtung: TiAlN
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 4
Spiralwinkel: 35°/38°
Anwendung: Umsäumen



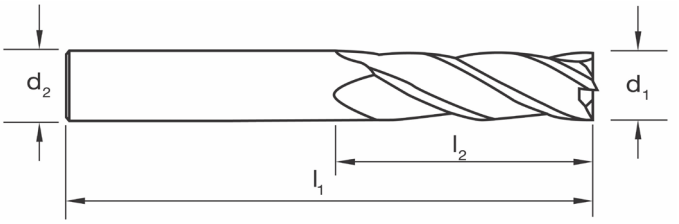

P K N S H

IKZ HA VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6370600 | E6370600 | 6 | 6 | 80 | 40 | **26,30** |
| SUTTONE6370800 | E6370800 | 8 | 8 | 100 | 50 | **34,00** |
| SUTTONE6371000 | E6371000 | 10 | 10 | 100 | 50 | **43,90** |
| SUTTONE6371200 | E6371200 | 12 | 12 | 150 | 80 | **82,00** |
| SUTTONE6371600 | E6371600 | 16 | 16 | 150 | 80 | **134,70** |
| SUTTONE6372000 | E6372000 | 20 | 20 | 150 | 80 | **216,60** |

# E638

SUTTON VHM-Fräser, VHM-ULTRA-Hartmetall-Sorte für hohe Performance, 35°/38° variabler Spiralwinkel für vibrationsarmes Fräsen, Beschichtung: TiAlN, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², Höhere Standzeit durch TiAlN-Beschichtung, 4-Zähne, lange Ausführung




**Technische Details:**
Beschichtung: TiAlN
Schneidentoleranz: h10
Schafttyp: HB
Schnittrichtung: Rechts
Anzahl der Zähne: 4
Spiralwinkel: 35°/38°
Anwendung: Umsäumen

P K N S H

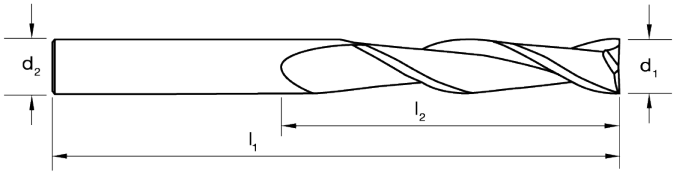
IKZ VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6380600 | E6380600 | 6 | 6 | 80 | 40 | **26,30** |
| SUTTONE6380800 | E6380800 | 8 | 8 | 100 | 50 | **34,00** |
| SUTTONE6381000 | E6381000 | 10 | 10 | 100 | 50 | **43,90** |
| SUTTONE6381200 | E6381200 | 12 | 12 | 150 | 80 | **82,00** |
| SUTTONE6381600 | E6381600 | 16 | 16 | 150 | 80 | **134,70** |
| SUTTONE6382000 | E6382000 | 20 | 20 | 150 | 80 | **216,60** |

# E608

SUTTON VHM-Fräser zum Präzisionsfräsen von Nuten und Kavitäten, Beschichtung: Brt, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², 2-Zähne

**suttontools**




**Technische Details:**
Beschichtung: Unbeschichtet
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 2
Anwendung: Nutenfräsen

P M K N

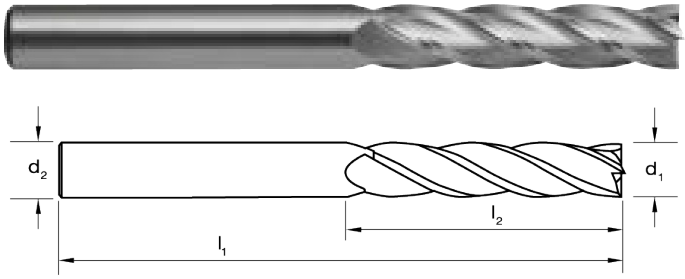
IKZ 30° HA VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6080300 | E6080300 | 3 | 3 | 100 | 40 | **14,20** |
| SUTTONE6080400 | E6080400 | 4 | 4 | 100 | 40 | **15,30** |
| SUTTONE6080500 | E6080500 | 5 | 5 | 100 | 40 | **16,70** |
| SUTTONE6080600 | E6080600 | 6 | 6 | 100 | 50 | **22,20** |
| SUTTONE6080800 | E6080800 | 8 | 8 | 100 | 50 | **28,30** |
| SUTTONE6081000 | E6081000 | 10 | 10 | 150 | 75 | **36,60** |
| SUTTONE6081200 | E6081200 | 12 | 12 | 150 | 75 | **82,60** |
| SUTTONE6081600 | E6081600 | 16 | 16 | 150 | 75 | **137,80** |
| SUTTONE6082000 | E6082000 | 20 | 20 | 150 | 75 | **171,30** |

# E609

SUTTON VHM-Fräser zum Präzisionsfräsen von Nuten und Kavitäten, Beschichtung: Brt, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², 4-Zähne

**Technische Details:**
Beschichtung: Unbeschichtet
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 4
Anwendung: Umsäumen




P K N

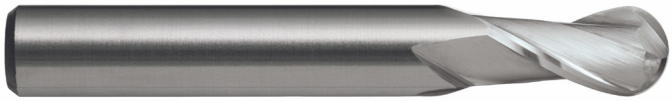
IKZ 30° HA VHM

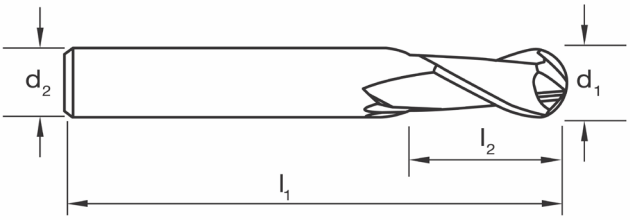
| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6090300 | E6090300 | 3 | 3 | 100 | 40 | **14,20** |
| SUTTONE6090400 | E6090400 | 4 | 4 | 100 | 40 | **15,30** |
| SUTTONE6090500 | E6090500 | 5 | 5 | 100 | 40 | **16,70** |
| SUTTONE6090600 | E6090600 | 6 | 6 | 100 | 50 | **22,20** |
| SUTTONE6090800 | E6090800 | 8 | 8 | 100 | 50 | **28,30** |
| SUTTONE6091000 | E6091000 | 10 | 10 | 150 | 75 | **36,60** |
| SUTTONE6091200 | E6091200 | 12 | 12 | 150 | 75 | **61,50** |
| SUTTONE6091600 | E6091600 | 16 | 16 | 150 | 75 | **101,30** |
| SUTTONE6092000 | E6092000 | 20 | 20 | 150 | 75 | **156,80** |

# E602

SUTTON VHM-Fräser für Profil- und Kontur-Fräs-Anwendungen, Beschichtung: Brt, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², 2-Zähne

**suttontools**






**Technische Details:**
Beschichtung: Unbeschichtet
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 2
Anwendung: Profilfräsen

P M K

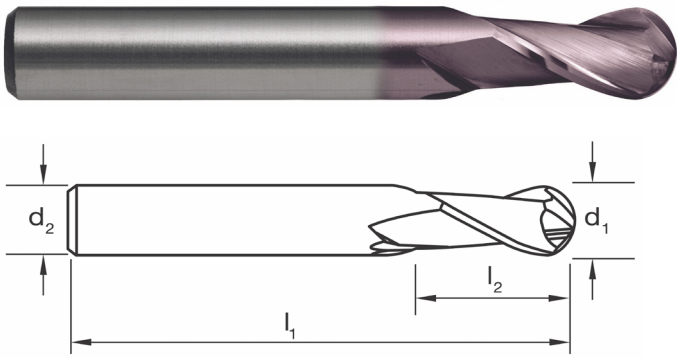
IKZ 30° HA VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6020100 | E6020100 | 1 | 3 | 38 | 4 | **5,60** |
| SUTTONE6020150 | E6020150 | 1,5 | 3 | 38 | 4,5 | **5,60** |
| SUTTONE6020200 | E6020200 | 2 | 3 | 38 | 6 | **5,90** |
| SUTTONE6020250 | E6020250 | 2,5 | 3 | 38 | 9,5 | **5,90** |
| SUTTONE6020300 | E6020300 | 3 | 3 | 38 | 12 | **5,90** |
| SUTTONE6020400 | E6020400 | 4 | 4 | 50 | 14 | **6,90** |
| SUTTONE6020500 | E6020500 | 5 | 6 | 50 | 16 | **9,80** |
| SUTTONE6020600 | E6020600 | 6 | 6 | 50 | 19 | **9,70** |
| SUTTONE6020700 | E6020700 | 7 | 8 | 63 | 19 | **17,70** |
| SUTTONE6020800 | E6020800 | 8 | 8 | 63 | 20 | **16,00** |
| SUTTONE6020900 | E6020900 | 9 | 10 | 75 | 20 | **25,70** |
| SUTTONE6021000 | E6021000 | 10 | 10 | 75 | 22 | **24,70** |
| SUTTONE6021100 | E6021100 | 11 | 12 | 75 | 25 | **35,00** |
| SUTTONE6021200 | E6021200 | 12 | 12 | 75 | 25 | **33,80** |
| SUTTONE6021400 | E6021400 | 14 | 14 | 89 | 32 | **58,20** |
| SUTTONE6021600 | E6021600 | 16 | 16 | 89 | 32 | **64,50** |
| SUTTONE6022000 | E6022000 | 20 | 20 | 100 | 38 | **106,30** |
| SUTTONE6022500 | E6022500 | 25 | 25 | 100 | 38 | **178,60** |

# E605

SUTTON VHM-Fräser für Profil- und Kontur-Fräs-Anwendungen, Beschichtung: TiAlN, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², Höhere Standzeit durch TiAlN-Beschichtung, 2-Zähne

**Technische Details:**
Beschichtung: TiAlN
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 2
Anwendung: Profilfräsen




P M K

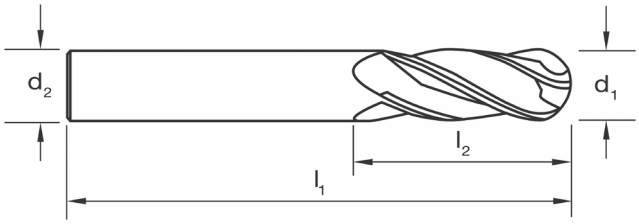
IKZ 30° HA VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6050100 | E6050100 | 1 | 3 | 38 | 4 | **6,70** |
| SUTTONE6050150 | E6050150 | 1,5 | 3 | 38 | 4,5 | **6,70** |
| SUTTONE6050200 | E6050200 | 2 | 3 | 38 | 6 | **7,00** |
| SUTTONE6050250 | E6050250 | 2,5 | 3 | 38 | 9,5 | **7,00** |
| SUTTONE6050300 | E6050300 | 3 | 3 | 38 | 12 | **7,00** |
| SUTTONE6050350 | E6050350 | 3,5 | 4 | 50 | 12 | **7,90** |
| SUTTONE6050400 | E6050400 | 4 | 4 | 50 | 14 | **7,90** |
| SUTTONE6050500 | E6050500 | 5 | 6 | 50 | 16 | **10,70** |
| SUTTONE6050600 | E6050600 | 6 | 6 | 50 | 19 | **11,10** |
| SUTTONE6050700 | E6050700 | 7 | 8 | 63 | 19 | **20,10** |
| SUTTONE6050800 | E6050800 | 8 | 8 | 63 | 20 | **18,00** |
| SUTTONE6050900 | E6050900 | 9 | 10 | 75 | 20 | **28,80** |
| SUTTONE6051000 | E6051000 | 10 | 10 | 75 | 22 | **27,60** |
| SUTTONE6051100 | E6051100 | 11 | 12 | 75 | 25 | **41,90** |
| SUTTONE6051200 | E6051200 | 12 | 12 | 75 | 25 | **37,80** |
| SUTTONE6051400 | E6051400 | 14 | 14 | 89 | 32 | **70,30** |
| SUTTONE6051600 | E6051600 | 16 | 16 | 89 | 32 | **72,20** |
| SUTTONE6051800 | E6051800 | 18 | 18 | 100 | 38 | **126,10** |
| SUTTONE6052000 | E6052000 | 20 | 20 | 100 | 38 | **119,00** |
| SUTTONE6052500 | E6052500 | 25 | 25 | 100 | 38 | **223,60** |

# E606

SUTTON VHM-Fräser für Profil- und Kontur-Fräs-Anwendungen, Beschichtung: Brt, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², 4-Zähne

**Technische Details:**
Beschichtung: Unbeschichtet
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 4
Anwendung: Profilfräsen




P M K

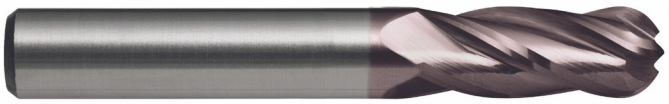
IKZ 30° HA VHM

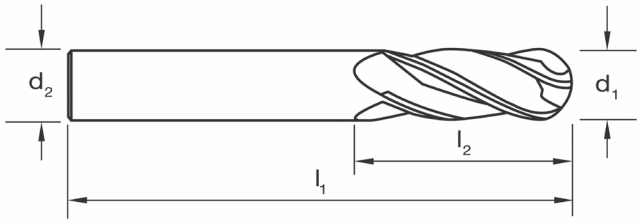
| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6060100 | E6060100 | 1 | 3 | 38 | 4 | **5,70** |
| SUTTONE6060150 | E6060150 | 1,5 | 3 | 38 | 4,5 | **5,70** |
| SUTTONE6060200 | E6060200 | 2 | 3 | 38 | 6 | **5,90** |
| SUTTONE6060250 | E6060250 | 2,5 | 3 | 38 | 9,5 | **5,90** |
| SUTTONE6060300 | E6060300 | 3 | 3 | 38 | 12 | **5,90** |
| SUTTONE6060400 | E6060400 | 4 | 4 | 50 | 14 | **6,70** |
| SUTTONE6060500 | E6060500 | 5 | 6 | 50 | 16 | **9,10** |
| SUTTONE6060600 | E6060600 | 6 | 6 | 50 | 19 | **8,30** |
| SUTTONE6060800 | E6060800 | 8 | 8 | 63 | 20 | **16,30** |
| SUTTONE6061000 | E6061000 | 10 | 10 | 75 | 22 | **27,80** |
| SUTTONE6061200 | E6061200 | 12 | 12 | 75 | 25 | **31,60** |
| SUTTONE6061600 | E6061600 | 16 | 16 | 89 | 32 | **59,60** |
| SUTTONE6062000 | E6062000 | 20 | 20 | 100 | 38 | **96,50** |

# E607

SUTTON VHM-Fräser für Profil- und Kontur-Fräs-Anwendungen, Beschichtung: TiAlN, ohne IKZ, geeignet für Materialien bis zu 1600 N/mm², Höhere Standzeit durch TiAlN-Beschichtung, 4-Zähne

**Technische Details:**
Beschichtung: TiAlN
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 4
Anwendung: Profilfräsen






P M K N

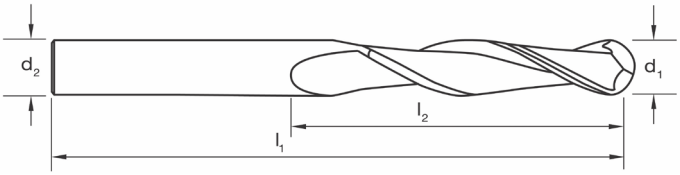
IKZ 30° HA VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE6070100 | E6070100 | 1 | 3 | 38 | 4 | **6,70** |
| SUTTONE6070150 | E6070150 | 1,5 | 3 | 38 | 4,5 | **6,70** |
| SUTTONE6070200 | E6070200 | 2 | 3 | 38 | 6 | **7,00** |
| SUTTONE6070250 | E6070250 | 2,5 | 3 | 38 | 9,5 | **7,00** |
| SUTTONE6070300 | E6070300 | 3 | 3 | 38 | 12 | **7,00** |
| SUTTONE6070350 | E6070350 | 3,5 | 4 | 50 | 12 | **7,90** |
| SUTTONE6070400 | E6070400 | 4 | 4 | 50 | 14 | **7,90** |
| SUTTONE6070450 | E6070450 | 4,5 | 6 | 50 | 16 | **10,70** |
| SUTTONE6070500 | E6070500 | 5 | 6 | 50 | 16 | **10,70** |
| SUTTONE6070600 | E6070600 | 6 | 6 | 50 | 19 | **9,80** |
| SUTTONE6070700 | E6070700 | 7 | 8 | 63 | 19 | **18,00** |
| SUTTONE6070800 | E6070800 | 8 | 8 | 63 | 20 | **18,00** |
| SUTTONE6071000 | E6071000 | 10 | 10 | 75 | 22 | **30,30** |
| SUTTONE6071100 | E6071100 | 11 | 12 | 75 | 25 | **34,40** |
| SUTTONE6071200 | E6071200 | 12 | 12 | 75 | 25 | **34,40** |
| SUTTONE6071400 | E6071400 | 14 | 14 | 89 | 32 | **52,60** |
| SUTTONE6071600 | E6071600 | 16 | 16 | 89 | 32 | **64,10** |
| SUTTONE6071800 | E6071800 | 18 | 18 | 100 | 38 | **85,80** |
| SUTTONE6072000 | E6072000 | 20 | 20 | 100 | 38 | **102,70** |
| SUTTONE6072500 | E6072500 | 25 | 25 | 100 | 38 | **158,20** |

# E315

SUTTON VHM-Fäser für Profil- und Kontur-Fräs-Anwendungen mit langer Auskraglänge, Beschichtung: Brt, ohne IKZ, geeignet für Materialien bis zu 1300 N/mm², 2-Zähne

**Technische Details:**
Beschichtung: Unbeschichtet
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 2
Anwendung: Profilfräsen | Konturfräsen




P M K N

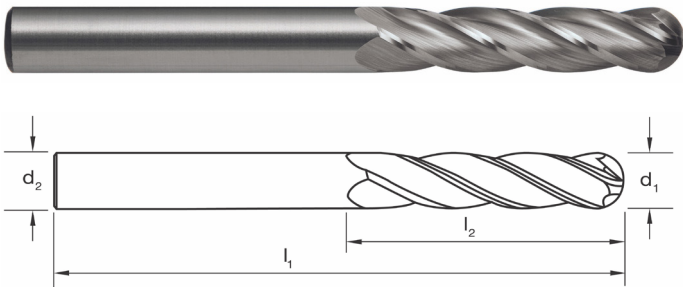
IKZ 30° HA VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE3150300 | E3150300 | 3 | 3 | 76 | 25 | **25,80** |
| SUTTONE3150400 | E3150400 | 4 | 4 | 76 | 28 | **27,90** |
| SUTTONE3150500 | E3150500 | 5 | 5 | 76 | 32 | **25,90** |
| SUTTONE3150600 | E3150600 | 6 | 6 | 102 | 38 | **40,50** |
| SUTTONE3150800 | E3150800 | 8 | 8 | 102 | 42 | **51,50** |
| SUTTONE3151000 | E3151000 | 10 | 10 | 102 | 45 | **66,70** |
| SUTTONE3151200 | E3151200 | 12 | 12 | 153 | 76 | **150,50** |
| SUTTONE3151400 | E3151400 | 14 | 14 | 153 | 76 | **195,00** |
| SUTTONE3151600 | E3151600 | 16 | 16 | 153 | 76 | **238,50** |
| SUTTONE3151800 | E3151800 | 18 | 18 | 153 | 76 | **335,80** |
| SUTTONE3152000 | E3152000 | 20 | 20 | 153 | 76 | **375,80** |

# E320

SUTTON VHM-Fräser für Profil- und Kontur-Fräs-Anwendungen mit langer Auskraglänge, Beschichtung: Brt, ohne IKZ, geeignet für Materialien bis zu 1300 N/mm², 4-Zähne: Minimale Auslenkung durch starken/großen Kern

**Technische Details:**
Beschichtung: Unbeschichtet
Schneidentoleranz: h10
Schnittrichtung: Rechts
Anzahl der Zähne: 4
Anwendung: Profilfräsen | Konturfräsen




P M K N

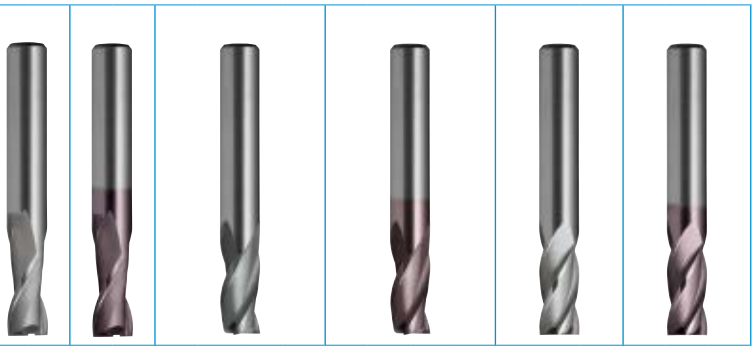
IKZ 30° HA VHM

| Artikelcode | Lief.Nr. | $d_1$ mm | $d_2$ mm | $l_1$ mm | $l_2$ mm | € ab 1 |
|---|---|---|---|---|---|---|
| SUTTONE3200300 | E3200300 | 3 | 3 | 76 | 25 | **25,80** |
| SUTTONE3200400 | E3200400 | 4 | 4 | 76 | 28 | **27,90** |
| SUTTONE3200500 | E3200500 | 5 | 5 | 76 | 32 | **30,40** |
| SUTTONE3200600 | E3200600 | 6 | 6 | 102 | 38 | **40,50** |
| SUTTONE3200800 | E3200800 | 8 | 8 | 102 | 42 | **51,50** |
| SUTTONE3201000 | E3201000 | 10 | 10 | 102 | 45 | **66,70** |
| SUTTONE3201200 | E3201200 | 12 | 12 | 153 | 76 | **150,50** |
| SUTTONE3201400 | E3201400 | 14 | 14 | 153 | 76 | **205,20** |
| SUTTONE3201600 | E3201600 | 16 | 16 | 153 | 76 | **251,00** |
| SUTTONE3201800 | E3201800 | 18 | 18 | 153 | 76 | **353,40** |
| SUTTONE3202000 | E3202000 | 20 | 20 | 153 | 76 | **395,50** |

**suttontools**

| ISO | VDI | Material Group | Sutton | |
|---|---|---|---|---|
| P | A | Steel | N | UNI |
| M | R | Stainless Steel | VA | UNI |
| K | F | Cast Iron | GG | UNI |
| N | N | Non-Ferrous Metals, Aluminiums & Coppers | Al | W |
| S | S | Titaniums & Super Alloys | Ti | Ni |
| H | H | Hard Materials (≥ 45 HRC) | H | |

^ VDI 3323 material groups can also be determined by referring to the workpiece material cross reference listing. Refer to main index of this section.



| Catalogue Code | E600 | E603 | E610 | E611 | E601 | E604 |
|---|---|---|---|---|---|---|
| Material | VHM | | VHM | | VHM | |
| Surface Finish Sutton | Brt | TiAlN | Brt | TiAlN | Brt | TiAlN |
| Designation Type of Cut: | N | | N | | N | |
| Slotting | ● | ● | ● | ● | | |
| Finishing Universal | | | | | | |
| Roughing Profiling | | | ● | ● | ● | ● |
| ap × Ø | | | ● | ● | ● | ● |
| ae × Ø | 0.75 / 1.0 | 0.75 / 1.0 | 0.5 / 1.0 | 1.5 / 0.2 | 0.5 / 1.0 | 1.5 / 0.2 |
| | | | 1.5 / 0.2 | 1.5 / 0.2 | 1.75 / 0.2 | 1.75 / 0.2 |
| | | | | | 1.75 / 0.2 | 1.75 / 0.2 |

| ISO | VDI^ 3323 | Material | | Condition | HB | N/mm² | Vc | Feed # | Vc | Feed # | Vc | Feed # | | | Vc | Feed # | | | Vc | Feed # | | Vc | Feed # | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | 1 | Steel - Non-alloy, cast & free cutting | ~ 0.15 %C | A | 125 | 440 | **100** | **7** | **144** | **8** | **125** | **7** | **7** | **13** | **180** | **8** | **8** | **14** | **100** | **7** | **10** | **144** | **8** | **11** |
| | 2 | | ~ 0.45 %C | A | 190 | 640 | **100** | **7** | **144** | **8** | **125** | **7** | **7** | **13** | **180** | **8** | **8** | **14** | **100** | **7** | **10** | **144** | **8** | **11** |
| | 3 | | | QT | 250 | 840 | **56** | **7** | **80** | **8** | **70** | **7** | **7** | **13** | **100** | **8** | **8** | **14** | **56** | **7** | **10** | **80** | **8** | **11** |
| | 4 | | ~ 0.75 %C | A | 270 | 910 | **56** | **7** | **80** | **8** | **70** | **7** | **7** | **13** | **100** | **8** | **8** | **14** | **56** | **7** | **10** | **80** | **8** | **11** |
| | 5 | | | QT | 300 | 1010 | - | - | 80 | 8 | 70 | 7 | 7 | 13 | **100** | **8** | **8** | **14** | - | - | - | 80 | 8 | 11 |
| | 6 | Steel - Low alloy & cast < 5% of alloying elements | | A | 180 | 610 | 100 | 7 | **144** | **8** | **125** | **7** | **7** | **13** | **180** | **8** | **8** | **14** | **100** | **7** | **10** | **144** | **8** | **11** |
| | 7 | | | QT | 275 | 930 | 56 | 7 | **80** | **8** | **70** | **7** | **7** | **13** | **100** | **8** | **8** | **14** | 56 | 7 | 10 | **80** | **8** | **11** |
| | 8 | | | QT | 300 | 1010 | - | - | 80 | 8 | 70 | 7 | 7 | 13 | **100** | **8** | **8** | **14** | - | - | - | 80 | 8 | 11 |
| | 9 | | | QT | 350 | 1180 | - | - | 64 | 8 | - | - | - | - | 80 | 8 | 8 | 14 | - | - | - | 64 | 8 | 11 |
| | 10 | Steel - High alloy, cast & tool | | A | 200 | 680 | 56 | 7 | **80** | **8** | 70 | 7 | 7 | 13 | **100** | **8** | **8** | **14** | 56 | 7 | 10 | **80** | **8** | **11** |
| | 11 | | | HT | 325 | 1100 | - | - | 64 | 8 | - | - | - | - | 80 | 8 | 8 | 14 | - | - | - | 64 | 8 | 11 |
| | 12 | Steel - Corrosion resistant & cast | Ferritic / Martensitic | A | 200 | 680 | - | - | - | - | 65 | 7 | 7 | 13 | **90** | **8** | **8** | **14** | - | - | - | - | - | - |
| | 13 | | Martensitic | QT | 240 | 810 | - | - | - | - | 55 | 7 | 7 | 13 | **80** | **8** | **8** | **14** | - | - | - | - | - | - |
| M | 14.1 | Stainless Steel | Austenitic | AH | 180 | 610 | 52 | 7 | 72 | 8 | 65 | 7 | 7 | 13 | **90** | **8** | **8** | **14** | 52 | 7 | 10 | 72 | 8 | 11 |
| | 14.2 | | Duplex | | 250 | 840 | 52 | 7 | - | - | 65 | 7 | 7 | 13 | 90 | 8 | 8 | 14 | 52 | 7 | 10 | 72 | 8 | 11 |
| | 14.3 | | Precipitation Hardening | | 250 | 840 | - | - | - | - | 55 | 7 | 7 | 13 | 80 | 8 | 8 | 14 | - | - | - | - | - | - |
| K | 15 | Cast Iron - Grey (GG) | Ferritic / Pearlitic | | 180 | 610 | 80 | 7 | 112 | 8 | **100** | **7** | **7** | **13** | **140** | **8** | **8** | **14** | 80 | 7 | 10 | 112 | 8 | 11 |
| | 16 | | Pearlitic | | 260 | 880 | 80 | 7 | 112 | 8 | 100 | 7 | 7 | 13 | **140** | **8** | **8** | **14** | 80 | 7 | 10 | 112 | 8 | 11 |
| | 17 | Cast Iron - Nodular (GGG) | Ferritic | | 160 | 570 | 80 | 7 | 112 | 8 | **100** | **7** | **7** | **13** | **140** | **8** | **8** | **14** | 80 | 7 | 10 | 112 | 8 | 11 |
| | 18 | | Pearlitic | | 250 | 840 | 80 | 7 | 112 | 8 | 100 | 7 | 7 | 13 | **140** | **8** | **8** | **14** | 80 | 7 | 10 | 112 | 8 | 11 |
| | 19 | Cast Iron - Malleable | Ferritic | | 130 | 460 | 56 | 7 | 80 | 8 | 70 | 7 | 7 | 13 | **100** | **8** | **8** | **14** | 56 | 7 | 10 | 80 | 8 | 11 |
| | 20 | | Pearlitic | | 230 | 780 | 56 | 7 | 80 | 8 | 70 | 7 | 7 | 13 | **100** | **8** | **8** | **14** | 56 | 7 | 10 | 80 | 8 | 11 |
| N | 21 | Aluminum & Magnesium - wrought alloy | Non Heat Treatable | | 60 | 210 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 22 | | Heat Treatable | AH | 100 | 360 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 23 | Aluminum & Magnesium - cast alloy ≤12% Si | Non Heat Treatable | | 75 | 270 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 24 | | Heat Treatable | AH | 90 | 320 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 25 | Al & Mg - cast alloy >12% Si | Non Heat Treatable | | 130 | 460 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 26 | Copper & Cu alloys (Brass/Bronze) | Free cutting, Pb > 1% | | 110 | 390 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 27 | | Brass (CuZn, CuSnZn) | | 90 | 320 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 28 | | Bronze (CuSn) | | 100 | 360 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 29 | Non-metallic - Thermosetting & fiber-reinforced plastics | | | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 30 | Non-metallic - Hard rubber, wood etc. | | | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| S | 31 | High temp. alloys | Fe based | A | 200 | 680 | - | - | - | - | 35 | 7 | 7 | 13 | 50 | 8 | 8 | 14 | - | - | - | - | - | - |
| | 32 | | | AH | 280 | 950 | - | - | - | - | 35 | 7 | 7 | 13 | 50 | 8 | 8 | 14 | - | - | - | - | - | - |
| | 33 | | Ni / Co based | A | 250 | 840 | - | - | - | - | 35 | 7 | 7 | 13 | 50 | 8 | 8 | 14 | - | - | - | - | - | - |
| | 34 | | | AH | 350 | 1180 | - | - | - | - | 35 | 7 | 7 | 13 | 50 | 8 | 8 | 14 | - | - | - | - | - | - |
| | 35 | | | C | 320 | 1080 | - | - | - | - | 35 | 7 | 7 | 13 | 50 | 8 | 8 | 14 | - | - | - | - | - | - |
| | 36 | Titanium & Ti alloys | CP Titanium | | 400 MPa | | - | - | - | - | 50 | 7 | 7 | 13 | 70 | 8 | 8 | 14 | - | - | - | - | - | - |
| | 37.1 | | Alpha alloys | | 860 MPa | | - | - | - | - | 50 | 7 | 7 | 13 | 70 | 8 | 8 | 14 | - | - | - | - | - | - |
| | 37.2 | | Alpha / Beta alloys | A | 960 MPa | | - | - | - | - | 50 | 7 | 7 | 13 | 70 | 8 | 8 | 14 | - | - | - | - | - | - |
| | 37.3 | | | AH | 1170 MPa | | - | - | - | - | 50 | 7 | 7 | 13 | 70 | 8 | 8 | 14 | - | - | - | - | - | - |
| | 37.4 | | Beta alloys | A | 830 MPa | | - | - | - | - | 50 | 7 | 7 | 13 | 70 | 8 | 8 | 14 | - | - | - | - | - | - |
| | 37.5 | | | AH | 1400 MPa | | - | - | - | - | - | - | - | - | 70 | 8 | 8 | 14 | - | - | - | - | - | - |
| H | 38.1 | Hardened steel | | HT | 45 HRC | | - | - | - | - | - | - | - | - | 80 | 8 | 8 | 14 | - | - | - | - | - | - |
| | 38.2 | | | HT | 55 HRC | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 39.1 | | | HT | 58 HRC | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 39.2 | | | HT | 62 HRC | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 40 | Cast Iron | Chilled | C | 400 | 1350 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| | 41 | | | HT | 55 HRC | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Condition:** **A** (Annealed), **AH** (Age Hardened), **C** (Cast), **HT** (Hardened & Tempered), **QT** (Quenched & Tempered)

**Bold =** Optimal | Regular = Effective

| Feed Table (fz) (mm/tooth) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ø | Feed # | | | | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | **20** |
| **2** | 0.001 | 0.002 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.007 | 0.008 | 0.010 | 0.011 | 0.013 | 0.014 | 0.016 | 0.018 | 0.020 | 0.022 | 0.024 | 0.026 | 0.030 |
| **3** | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.008 | 0.009 | 0.010 | 0.012 | 0.014 | 0.016 | 0.018 | 0.020 | 0.023 | 0.025 | 0.028 | 0.032 | 0.034 | 0.038 | 0.042 |
| **4** | 0.004 | 0.005 | 0.006 | 0.007 | 0.009 | 0.010 | 0.012 | 0.014 | 0.016 | 0.018 | 0.021 | 0.023 | 0.026 | 0.030 | 0.032 | 0.036 | 0.040 | 0.044 | 0.045 | 0.050 |
| **5** | 0.005 | 0.006 | 0.008 | 0.009 | 0.011 | 0.013 | 0.015 | 0.017 | 0.020 | 0.023 | 0.025 | 0.030 | 0.032 | 0.036 | 0.040 | 0.044 | 0.050 | 0.055 | 0.060 | 0.065 |
| **6** | 0.006 | 0.008 | 0.009 | 0.011 | 0.013 | 0.016 | 0.018 | 0.021 | 0.024 | 0.028 | 0.030 | 0.034 | 0.038 | 0.042 | 0.045 | 0.050 | 0.055 | 0.060 | 0.070 | 0.075 |
| **8** | 0.010 | 0.012 | 0.014 | 0.017 | 0.019 | 0.022 | 0.025 | 0.028 | 0.032 | 0.036 | 0.040 | 0.045 | 0.050 | 0.055 | 0.060 | 0.065 | 0.075 | 0.080 | 0.085 | 0.095 |
| **10** | 0.013 | 0.015 | 0.018 | 0.021 | 0.024 | 0.028 | 0.032 | 0.036 | 0.040 | 0.045 | 0.050 | 0.055 | 0.060 | 0.070 | 0.075 | 0.085 | 0.090 | 0.100 | 0.11 | 0.12 |
| **12** | 0.016 | 0.019 | 0.022 | 0.026 | 0.030 | 0.034 | 0.038 | 0.044 | 0.050 | 0.055 | 0.060 | 0.065 | 0.075 | 0.080 | 0.090 | 0.100 | 0.11 | 0.12 | 0.13 | 0.14 |
| **16** | 0.020 | 0.024 | 0.028 | 0.034 | 0.038 | 0.044 | 0.050 | 0.055 | 0.060 | 0.070 | 0.080 | 0.085 | 0.095 | 0.11 | 0.12 | 0.13 | 0.14 | 0.16 | 0.17 | 0.18 |
| **20** | 0.022 | 0.028 | 0.032 | 0.038 | 0.044 | 0.050 | 0.060 | 0.065 | 0.075 | 0.085 | 0.095 | 0.11 | 0.12 | 0.13 | 0.15 | 0.16 | 0.18 | 0.19 | 0.21 | 0.23 |
| **25** | 0.025 | 0.032 | 0.038 | 0.045 | 0.055 | 0.060 | 0.070 | 0.080 | 0.090 | 0.10 | 0.12 | 0.13 | 0.15 | 0.16 | 0.18 | 0.20 | 0.22 | 0.24 | 0.26 | 0.29 |

### Notes on Milling

1. Above values are guidelines for the size and type of cut nominated.
2. For long series tools, reduce speed by 40% and feed by 20%.

| E635 / E636 | | | E602 | | E605 | | E606 | | E607 | | E315 | | E320 | | E608 | | E609 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VHM-ULTRA | | | VHM | | | | VHM | | | | VHM | | | | VHM | | VHM | | | |
| TiAlN | | | Brt | | TiAlN | | Brt | | TiAlN | | Brt | | | | Brt | | Brt | | | |
| N | | | N | | | | N | | | | N | | | | N | | N | | | |
| | | | | | | | | | | | | | | | | ● | | | | |
| | ● | | | | | | | | | | | | | | | | | | | |
| | | ● | | | | | | | | | | | | | | | | ● | | |
| | | | | ● | | ● | | ● | | ● | | ● | | ● | | | | | ● | |
| 1.0 | 1.5 | 1.5 | | 0.025 | | 0.025 | | 0.025 | | 0.025 | | 0.025 | | 0.025 | | 0.75 | | 1.75 | 1.75 | |
| 0.4 | 0.1 | 0.25 | | 0.05 | | 0.05 | | 0.05 | | 0.05 | | 0.05 | | 0.05 | | 1.0 | | 0.2 | 0.2 | |
| Vc | Feed # | | Vc | Feed # | Vc | Feed # | Vc | Feed # | Vc | Feed # | Vc | Feed # | Vc | Feed # | Vc | Feed # | Vc | Feed # | | VDI^ 3323 | ISO |
| **210** | **11** | **8** | **80-140** | **19** | **110-200** | **20** | **100-175** | **15** | **140-250** | **16** | 100 | 13 | 100 | 13 | **100** | **6** | **100** | **7** | **10** | 1 | |
| **210** | **11** | **8** | **80-140** | **19** | **110-200** | **20** | **100-175** | **15** | **140-250** | **16** | 100 | 13 | 100 | 13 | **100** | **6** | **100** | **7** | **10** | 2 | |
| **175** | **11** | **8** | **45-100** | **19** | **60-145** | **20** | **55-125** | **15** | **75-180** | **16** | 60 | 13 | 60 | 13 | **60** | **6** | **60** | **7** | **10** | 3 | |
| **175** | **11** | **8** | **45-100** | **19** | **60-145** | **20** | **55-125** | **15** | **75-180** | **16** | 60 | 13 | 60 | 13 | **60** | **6** | **60** | **7** | **10** | 4 | |
| 175 | 11 | 8 | - | - | 60-145 | 20 | 55-125 | 15 | 75-180 | 16 | - | - | - | - | - | - | - | - | - | 5 | |
| **210** | **11** | **8** | **80-140** | **19** | **110-200** | **20** | **100-175** | **15** | **140-250** | **16** | 100 | 13 | 100 | 13 | 100 | 6 | **100** | **7** | **10** | 6 | |
| 175 | 11 | 8 | 45-100 | 19 | **60-145** | **20** | 55-125 | 15 | **75-180** | **16** | 60 | 13 | 60 | 13 | 60 | 5 | 60 | 7 | 10 | 7 | P |
| 175 | 11 | 8 | - | - | 60-145 | 20 | 55-125 | 15 | 75-180 | 16 | - | - | - | - | - | - | - | - | - | 8 | |
| 120 | 11 | 8 | - | - | 45-95 | 20 | 40-85 | 15 | 60-120 | 16 | - | - | - | - | - | - | - | - | - | 9 | |
| 175 | 11 | 8 | 45-100 | 19 | **60-145** | **20** | 55-125 | 15 | **75-180** | **16** | 60 | 13 | 60 | 13 | 60 | 5 | 60 | 7 | 10 | 10 | |
| 120 | 11 | 8 | - | - | 45-95 | 20 | 40-85 | 15 | 60-120 | 16 | - | - | - | - | - | - | - | - | - | 11 | |
| 90 | 11 | 8 | - | - | - | - | 50-75 | 15 | - | - | - | - | - | - | - | - | - | - | - | 12 | |
| 80 | 11 | 8 | - | - | - | - | 40-70 | 15 | - | - | - | - | - | - | - | - | - | - | - | 13 | |
| - | - | - | 40-60 | 19 | 55-90 | 20 | **50-75** | **15** | **70-110** | **16** | 50 | 13 | 50 | 13 | 50 | 5 | 50 | 7 | 10 | 14.1 | |
| - | - | - | 40-60 | 19 | 55-90 | 20 | 50-75 | 15 | 70-110 | 16 | 50 | 13 | 50 | 13 | 50 | 5 | 50 | 7 | 10 | 14.2 | M |
| - | - | - | - | - | - | - | 40-70 | 15 | - | - | - | - | - | - | - | - | - | - | - | 14.3 | |
| 150 | 11 | 8 | 70-100 | 19 | 95-145 | 20 | 85-125 | 15 | 120-180 | 16 | 80 | 13 | 80 | 13 | 80 | 6 | 80 | 7 | 10 | 15 | |
| 150 | 11 | 8 | 70-100 | 19 | 95-145 | 20 | 85-125 | 15 | 120-180 | 16 | 80 | 13 | 80 | 13 | 80 | 6 | 80 | 7 | 10 | 16 | |
| 150 | 11 | 8 | 70-100 | 19 | 95-145 | 20 | 85-125 | 15 | 120-180 | 16 | 80 | 13 | 80 | 13 | 80 | 6 | 80 | 7 | 10 | 17 | |
| 150 | 11 | 8 | 70-100 | 19 | 95-145 | 20 | 85-125 | 15 | 120-180 | 16 | 80 | 13 | 80 | 13 | 80 | 6 | 80 | 7 | 10 | 18 | K |
| 110 | 11 | 8 | 55-80 | 19 | 80-110 | 20 | 70-100 | 15 | 100-140 | 16 | 60 | 13 | 60 | 13 | 50 | 6 | 60 | 7 | 10 | 19 | |
| 110 | 11 | 8 | 55-80 | 19 | 80-110 | 20 | 70-100 | 15 | 100-140 | 16 | 60 | 13 | 60 | 13 | 50 | 6 | 60 | 7 | 10 | 20 | |
| 200 | 11 | 8 | 80-250 | 19 | 120-350 | 20 | 100-300 | 15 | 150-450 | 16 | 80 | 13 | 80 | 13 | - | - | - | - | - | 21 | |
| 200 | 11 | 8 | 80-250 | 19 | 120-350 | 20 | 100-300 | 15 | 150-450 | 16 | 80 | 13 | 80 | 13 | - | - | - | - | - | 22 | |
| 200 | 11 | 8 | 80-250 | 19 | 120-350 | 20 | 100-300 | 15 | 150-450 | 16 | 80 | 13 | 80 | 13 | - | - | - | - | - | 23 | |
| 200 | 11 | 8 | 80-250 | 19 | 120-350 | 20 | 100-300 | 15 | 150-450 | 16 | 80 | 13 | 80 | 13 | - | - | - | - | - | 24 | |
| 200 | 11 | 8 | 80-250 | 19 | 120-350 | 20 | 100-300 | 15 | 150-450 | 16 | 80 | 13 | 80 | 13 | - | - | - | - | - | 25 | |
| - | - | - | 70-200 | 19 | 100-250 | 20 | 80-200 | 15 | 120-350 | 16 | 70 | 13 | 70 | 13 | - | - | - | - | - | 26 | N |
| 200 | 11 | 8 | 70-200 | 19 | 100-250 | 20 | 80-200 | 15 | 120-350 | 16 | 70 | 13 | 70 | 13 | - | - | - | - | - | 27 | |
| - | - | - | 70-200 | 19 | 100-250 | 20 | 80-200 | 15 | 120-350 | 16 | 70 | 13 | 70 | 13 | - | - | - | - | - | 28 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 29 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 30 | |
| 50 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 31 | |
| 50 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 32 | |
| 50 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 33 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 34 | |
| 50 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 35 | |
| 70 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 36 | S |
| 70 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 37.1 | |
| 70 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 37.2 | |
| 70 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 37.3 | |
| 70 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 37.4 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 37.5 | |
| 120 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 38.1 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 38.2 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 39.1 | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 39.2 | H |
| 120 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 40 | |
| 100 | 11 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 41 | |

## METRIC ENDMILLS (mm size)

Ø = nominal tool diameter (mm)
n = Spindel speed (RPM)
$v_c$ = Cutting speed (m/min)
$f_z$ = Feed rate per tooth (mm/tooth)
$v_f$ = Feed rate (mm/min)
z = No. cutting edges
Q = Metal removal rate ($cm^3$/min)
$a_p$ = Cutting depth (mm)
$a_e$ = Cutting width (mm)

$$n = \frac{v_c \times 1000}{Ø \times \pi} \simeq \frac{v_c}{Ø} \times 318$$

$$v_c = \frac{n \times Ø \times \pi}{1000} \simeq \frac{n \times Ø}{318}$$

$$f_z = \frac{V_f}{z \times n} \qquad v_f = f_z \times z \times n$$

$$Q = \frac{a_p \times a_e \times v_f}{1000}$$

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