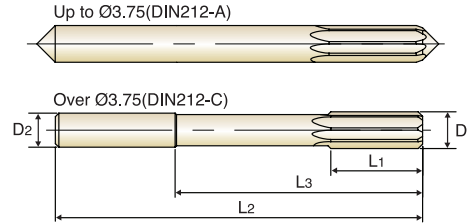


**HSS-E, STRAIGHT SHANK CHUCKING REAMERS - STRAIGHT FLUTES**

- HSS-E, MASCHINENREIBAHLE mit ZYLINDERSCHAFT - GERADEGENUTET
- ALÉSOIRS HSS-E MACHINE DROIT- ENTRÉE DROITE
- ALESATORI IN HSS-E, ATTACCO CILINDRICO - ELICA DRITTA

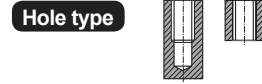
- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter Tolerances : h8
- ▶ Straight Flute / Right Hand Cut
- ▶ Chamfer Angle - Up to Ø3.75 : 15°  
- Over Ø3.75 : 45°

- ▶ Schneiden-Ø Toleranzen : DIN 1420 für H7
- ▶ Schaft-Ø Toleranzen : h8
- ▶ Geradegenutet / Rechtsschneidend
- ▶ Anschnittwinkel - bis Ø3,75 mm : 15°  
- über Ø3,75 mm : 45°



HSS-E
DIN 212
H7
15°
45°
P.428

up to Ø3.75 over Ø3.75



Unit : mm

| EDP No.    | Reamer Diameter |     | Shank Diameter |     | Cutting Length |    | Neck Length |     | Overall Length |  | No. of Flute |
|------------|-----------------|-----|----------------|-----|----------------|----|-------------|-----|----------------|--|--------------|
|            | D1              | D2  | D2             | D1  | L1             | L3 | L3          | L2  |                |  |              |
| K210100200 | 2.0             | 2   | 2              | 2   | 11             | -  | -           | 49  | 4              |  |              |
| K210100220 | 2.2             | 2.2 | 2.2            | 2.2 | 12             | -  | -           | 53  | 4              |  |              |
| K210100250 | 2.5             | 2.5 | 2.5            | 2.5 | 14             | -  | -           | 57  | 4              |  |              |
| K210100260 | 2.6             | 2.6 | 2.6            | 2.6 | 14             | -  | -           | 57  | 4              |  |              |
| K210100280 | 2.8             | 2.8 | 2.8            | 2.8 | 15             | -  | -           | 61  | 4              |  |              |
| K210100300 | 3.0             | 3   | 3              | 3   | 15             | -  | -           | 61  | 6              |  |              |
| K210100310 | 3.1             | 3.1 | 3.1            | 3.1 | 16             | -  | -           | 65  | 6              |  |              |
| K210100320 | 3.2             | 3.2 | 3.2            | 3.2 | 16             | -  | -           | 65  | 6              |  |              |
| K210100350 | 3.5             | 3.5 | 3.5            | 3.5 | 18             | -  | -           | 70  | 6              |  |              |
| K210100360 | 3.6             | 3.6 | 3.6            | 3.6 | 18             | -  | -           | 70  | 6              |  |              |
| K210100370 | 3.7             | 3.7 | 3.7            | 3.7 | 18             | -  | -           | 70  | 6              |  |              |
| K210100400 | 4.0             | 4   | 4              | 4   | 19             | 42 | 42          | 75  | 6              |  |              |
| K210100430 | 4.3             | 4.5 | 4.5            | 4.5 | 21             | 46 | 46          | 80  | 6              |  |              |
| K210100450 | 4.5             | 4.5 | 4.5            | 4.5 | 21             | 46 | 46          | 80  | 6              |  |              |
| K210100460 | 4.6             | 4.5 | 4.5            | 4.5 | 21             | 46 | 46          | 80  | 6              |  |              |
| K210100500 | 5.0             | 5   | 5              | 5   | 23             | 51 | 51          | 86  | 6              |  |              |
| K210100550 | 5.5             | 5.6 | 5.6            | 5.6 | 26             | 56 | 56          | 93  | 6              |  |              |
| K210100560 | 5.6             | 5.6 | 5.6            | 5.6 | 26             | 56 | 56          | 93  | 6              |  |              |
| K210100600 | 6.0             | 5.6 | 5.6            | 5.6 | 26             | 56 | 56          | 93  | 6              |  |              |
| K210100650 | 6.5             | 6.3 | 6.3            | 6.3 | 28             | 62 | 62          | 101 | 6              |  |              |
| K210100700 | 7.0             | 7.1 | 7.1            | 7.1 | 31             | 68 | 68          | 109 | 6              |  |              |
| K210100720 | 7.2             | 7.1 | 7.1            | 7.1 | 31             | 68 | 68          | 109 | 6              |  |              |
| K210100800 | 8.0             | 8   | 8              | 8   | 33             | 74 | 74          | 117 | 6              |  |              |
| K210100830 | 8.3             | 8   | 8              | 8   | 33             | 74 | 74          | 117 | 6              |  |              |
| K210100850 | 8.5             | 8   | 8              | 8   | 33             | 74 | 74          | 117 | 6              |  |              |
| K210100900 | 9.0             | 9   | 9              | 9   | 36             | 80 | 80          | 125 | 6              |  |              |

▶NEXT PAGE

◎ : Excellent ○ : Good

| ISO                  | P               |     |     |     |     |                 |     |     |     |     | M                                  |     |                 |     | K              |     |                   |     |                     |     |
|----------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
| Material Description | Non-alloy steel |     |     |     |     | Low alloy steel |     |     |     |     | High alloyed steel, and tool steel |     | Stainless steel |     | Grey cast iron |     | Nodular cast iron |     | Malleable cast iron |     |
| VDI 3323             | 1               | 2   | 3   | 4   | 5   | 6               | 7   | 8   | 9   | 10  | 11                                 | 12  | 13              | 14  | 15             | 16  | 17                | 18  | 19                  | 20  |
| HRc                  |                 | 13  | 25  | 28  | 32  | 10              | 29  | 32  | 38  | 15  | 15                                 | 23  | 10              | 10  | 10             | 26  | 3                 | 25  | 10                  | 21  |
| HB                   | 125             | 190 | 250 | 270 | 300 | 180             | 275 | 300 | 350 | 200 | 325                                | 200 | 240             | 180 | 180            | 260 | 160               | 250 | 130                 | 230 |
| Recommended          | ◎               | ◎   | ○   | ○   | ○   | ◎               | ○   | ○   | ○   | ○   | ○                                  | ○   | ○               | ○   | ○              | ○   | ○                 | ○   | ○                   | ○   |

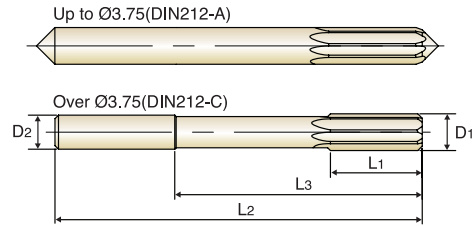
| ISO                  | N                      |     |                        |    |     | S   |    |     |                        |    |                             |     |     |     |     | H               |        |                |                   |                    |     |
|----------------------|------------------------|-----|------------------------|----|-----|---|----|-----|------------------------|----|-----------------------------|-----|-----|-----|-----|-----------------|--------|----------------|-------------------|--------------------|-----|
| Material Description | Aluminum-wrought alloy |     | Aluminum-cast, alloyed |    |     | Copper and Copper Alloys (Bronze / Brass) |    |     | Non Metallic Materials |    | Heat Resistant Super Alloys |     |     |     |     | Titanium Alloys |        | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |     |
| VDI 3323             | 21                     | 22  | 23                     | 24 | 25  | 26  | 27 | 28  | 29                     | 30 | 31                          | 32  | 33  | 34  | 35  | 36              | 37     | 38             | 39                | 40                 | 41  |
| HRc                  |                        |     |                        |    |     |   |    |     |                        |    | 15                          | 30  | 25  | 38  | 34  |                 |        | 55             | 60                | 42                 | 55  |
| HB                   | 60                     | 100 | 75                     | 90 | 130 | 110                                       | 90 | 100 |                        |    | 200                         | 280 | 250 | 350 | 320 | 400Rm           | 1050Rm | 550            | 630               | 400                | 550 |
| Recommended          | ○                      | ○   | ○                      | ○  | ○   | ○   | ○  | ○   |                        |    |                             |     |     |     |     |                 |        |                |                   |                    |     |

# HSS-E, STRAIGHT SHANK CHUCKING REAMERS - STRAIGHT FLUTES

🇩🇪 HSS-E, MASCHINENREIBAHLE mit ZYLINDERSCHAFT - GERADEGENUTET  
🇫🇷 ALÉSOIRS HSS-E MACHINE DROIT- ENTRÉE DROITE  
🇮🇹 ALESATORI IN HSS-E, ATTACCO CILINDRICO - ELICA DRITTA

- ▶ O.D. Tolerances : DIN 1420 for H7
- ▶ Shank Diameter Tolerances : h8
- ▶ Straight Flute / Right Hand Cut
- ▶ Chamfer Angle - Up to Ø3.75 : 15°  
- Over Ø3.75 : 45°

- ▶ Schneiden-Ø Toleranzen : DIN 1420 für H7
- ▶ Schaft-Ø Toleranzen : h8
- ▶ Geradegenutet / Rechtsschneidend
- ▶ Anschnittwinkel - bis Ø3,75 mm : 15°  
- über Ø3,75 mm : 45°



HSS-E DIN 212 H7 15° 45° P.428  
 up to Ø3.75 over Ø3.75



Unit : mm

| EDP No.    | Reamer Diameter | Shank Diameter | Cutting Length | Neck Length | Overall Length | No. of Flute |
|------------|-----------------|----------------|----------------|-------------|----------------|--------------|
|            | D1              | D2             | L1             | L3          | L2             |              |
| K210100950 | 9.5             | 9              | 36             | 80          | 125            | 6            |
| K210101000 | 10.0            | 10             | 38             | 86          | 133            | 6            |
| K210101050 | 10.5            | 10             | 38             | 86          | 133            | 6            |
| K210101100 | 11.0            | 10             | 41             | 95          | 142            | 6            |
| K210101200 | 12.0            | 10             | 44             | 104         | 151            | 6            |
| K210101300 | 13.0            | 10             | 44             | 104         | 151            | 6            |
| K210101400 | 14.0            | 12.5           | 47             | 108         | 160            | 8            |
| K210101500 | 15.0            | 12.5           | 50             | 110         | 162            | 8            |
| K210101600 | 16.0            | 12.5           | 52             | 118         | 170            | 8            |
| K210101700 | 17.0            | 14             | 54             | 121         | 175            | 8            |
| K210101800 | 18.0            | 14             | 56             | 128         | 182            | 8            |
| K210101900 | 19.0            | 16             | 58             | 129         | 189            | 8            |
| K210102000 | 20.0            | 16             | 60             | 135         | 195            | 8            |

◎ : Excellent ○ : Good

| ISO         | P               |     |     |     |     |                 |     |     |     |     | M                                  |     |                 |     | K              |     |                   |     |                     |     |
|-------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
|             | Non-alloy steel |     |     |     |     | Low alloy steel |     |     |     |     | High alloyed steel, and tool steel |     | Stainless steel |     | Grey cast iron |     | Nodular cast iron |     | Malleable cast iron |     |
| VDI 3323    | 1               | 2   | 3   | 4   | 5   | 6               | 7   | 8   | 9   | 10  | 11                                 | 12  | 13              | 14  | 15             | 16  | 17                | 18  | 19                  | 20  |
| HRc         | 13              | 25  | 28  | 32  | 30  | 10              | 29  | 32  | 38  | 15  | 35                                 | 15  | 23              | 10  | 10             | 26  | 3                 | 25  |                     | 21  |
| HB          | 125             | 190 | 250 | 270 | 300 | 180             | 275 | 300 | 350 | 200 | 325                                | 200 | 240             | 180 | 180            | 260 | 160               | 250 | 130                 | 230 |
| Recommended | ◎               | ◎   | ○   | ○   | ○   | ◎               | ○   | ○   | ○   | ○   | ○                                  | ○   | ○               | ○   | ○              | ○   | ○                 | ○   | ○                   | ○   |

| ISO         | N                      |     |                        |    |     |   |    |                        |    |    | S                           |     |     |     |     |                 |        | H              |                   |                    |     |
|-------------|------------------------|-----|------------------------|----|-----|---|----|------------------------|----|----|-----------------------------|-----|-----|-----|-----|-----------------|--------|----------------|-------------------|--------------------|-----|
|             | Aluminum-wrought alloy |     | Aluminum-cast, alloyed |    |     | Copper and Copper Alloys (Bronze / Brass) |    | Non Metallic Materials |    |    | Heat Resistant Super Alloys |     |     |     |     | Titanium Alloys |        | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |     |
| VDI 3323    | 21                     | 22  | 23                     | 24 | 25  | 26  | 27 | 28                     | 29 | 30 | 31                          | 32  | 33  | 34  | 35  | 36              | 37     | 38             | 39                | 40                 | 41  |
| HRc         |                        |     |                        |    |     |   |    |                        |    |    | 15                          | 30  | 25  | 38  | 34  |                 |        | 55             | 60                | 42                 | 55  |
| HB          | 60                     | 100 | 75                     | 90 | 130 | 110                                       | 90 | 100                    |    |    | 200                         | 280 | 250 | 350 | 320 | 400Rm           | 1050Rm | 550            | 630               | 400                | 550 |
| Recommended | ○                      | ○   | ○                      | ○  | ○   | ○   | ○  | ○                      |    |    |                             |     |     |     |     |                 |        |                |                   |                    |     |



SELECTION GUIDE

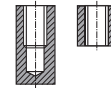


SERIES

K4101

K4111

HOLETYPE



FLUTETYPE

Straight

LH Spiral

SIZE MIN

D2.0

D2.0

SIZE MAX

D20.0

D20.0

PAGE

406

407

SURFACE TREATMENT

Bright

# CARBIDE, HSS & HSS-E REAMERS

Carbide NC Machine Reamers  
HSS Hand Reamers  
HSS-E Chucking Reamers



Please visit [globalyg1.com/mat](http://globalyg1.com/mat) for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.427

| ISO | VDI 3323            | Material Description                      | Composition / Structure / Heat Treatment       | HB   | HRc    | K4101 | K4111 |
|-----|---------------------|---|--|--|--------|-------|-------|
| P   | 1                   | Non-alloy steel                           | About 0.15% C Annealed                         | 125  |        | ◎     | ◎     |
|     | 2                   |   | About 0.45% C Annealed                         | 190  | 13     | ◎     | ◎     |
|     | 3                   |   | About 0.45% C Quenched & Tempered              | 250  | 25     | ◎     | ◎     |
|     | 4                   |   | About 0.75% C Annealed                         | 270  | 28     | ○     | ○     |
|     | 5                   |   | About 0.75% C Quenched & Tempered              | 300  | 32     | ○     | ○     |
|     | 6                   | Low alloy steel                           | Annealed                                       | 180  | 10     | ◎     | ◎     |
|     | 7                   |   | Quenched & Tempered                            | 275  | 29     | ◎     | ◎     |
|     | 8                   |   | Quenched & Tempered                            | 300  | 32     | ○     | ○     |
|     | 9                   |   | Quenched & Tempered                            | 350  | 38     |       |       |
|     | 10                  |   | High alloyed steel, and tool steel             | Annealed   | 200    | 15    | ○     |
|     | 11                  | Quenched & Tempered                       |  | 325  | 35     |       |       |
| M   | 12                  | Stainless steel                           | Ferritic / Martensitic Annealed                | 200  | 15     | ○     | ○     |
|     | 13                  |   | Martensitic Quenched & Tempered                | 240  | 23     | ○     | ○     |
|     | 14                  |   | Austenitic                                     | 180  | 10     | ○     | ○     |
| K   | 15                  | Grey cast iron                            | Pearlitic / ferritic                           | 180  | 10     | ◎     | ◎     |
|     | 16                  |   | Pearlitic (Martensitic)                        | 260  | 26     | ○     | ○     |
|     | 17                  | Nodular cast iron                         | Ferritic                                       | 160  | 3      | ◎     | ◎     |
|     | 18                  |   | Pearlitic                                      | 250  | 25     | ○     | ○     |
|     | 19                  |   | Ferritic                                       | 130  |        | ◎     | ◎     |
| 20  | Malleable cast iron | Pearlitic                                 | 230  | 21   | ○      | ○     |       |
| N   | 21                  | Aluminum-wrought alloy                    | Not Curable                                    | 60   |        | ○     | ○     |
|     | 22                  |   | Curable Hardened                               | 100  |        | ○     | ○     |
|     | 23                  | Aluminum-cast, alloyed                    | ≤ 12% Si, Not Curable                          | 75   |        | ○     | ○     |
|     | 24                  |   | ≤ 12% Si, Curable Hardened                     | 90   |        | ○     | ○     |
|     | 25                  |   | > 12% Si, Not Curable                          | 130  |        |       |       |
|     | 26                  | Copper and Copper Alloys (Bronze / Brass) | Cutting Alloys, PB>1%                          | 110  |        | ○     | ○     |
|     | 27                  |   | CuZn, CuSnZn (Brass)                           | 90   |        | ○     | ○     |
|     | 28                  |   | CuSn, lead-free copper and electrolytic copper | 100  |        | ○     | ○     |
|     | 29                  |   | Non Metallic Materials                         | Duroplastic, Fiber Reinforced Plastic Rubber, Wood, etc. |        |       |       |
| S   | 31                  | Heat Resistant Super Alloys               | Fe Based Annealed                              | 200  | 15     |       |       |
|     | 32                  |   | Cured  | 280  | 30     |       |       |
|     | 33                  |   | Annealed                                       | 250  | 25     |       |       |
|     | 34                  |   | Ni or Co Based Cured                           | 350  | 38     |       |       |
|     | 35                  |   | Cast   | 320  | 34     |       |       |
|     | 36                  |   | Titanium Alloys                                | Pure Titanium  | 400 Rm |       |       |
| H   | 37                  | Alpha + Beta Alloys                       | Hardened                                       | 1050 Rm  |        |       |       |
|     | 38                  | Hardened steel                            | Hardened                                       | 550  | 55     |       |       |
|     | 39                  |   | Hardened                                       | 630  | 60     |       |       |
|     | 40                  | Chilled Cast Iron                         | Cast   | 400  | 42     |       |       |
|     | 41                  | Hardened Cast Iron                        | Hardened                                       | 550  | 55     |       |       |

| K1143           | K1153            | K2101           | K2111            | K2121                           | K2102           | K2112            | K21B1            |
|-----------------|------------------|-----------------|------------------|---------------------------------|-----------------|------------------|------------------|
|                 |                  |                 |                  |                                 |                 |                  |                  |
| <b>Straight</b> | <b>LH Spiral</b> | <b>Straight</b> | <b>LH Spiral</b> | <b>LH Spiral (Quick Spiral)</b> | <b>Straight</b> | <b>LH Spiral</b> | <b>LH Spiral</b> |
| D2.0            | D2.0             | D2.0            | D2.0             | D4.0                            | D10.0           | D10.0            | D2.0             |
| D60.0           | D60.0            | D20.0           | D20.0            | D20.0                           | D50.0           | D50.0            | D20.0            |
| <b>408</b>      | <b>410</b>       | <b>412</b>      | <b>414</b>       | <b>416</b>                      | <b>417</b>      | <b>419</b>       | <b>421</b>       |

Bright



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|  |  |  |  |  |  |  |  | 34 S |
|  |  |  |  |  |  |  |  | 35   |
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|  |  |  |  |  |  |  |  | 37   |
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|  |  |  |  |  |  |  |  | 39 H |
|  |  |  |  |  |  |  |  | 40   |
|  |  |  |  |  |  |  |  | 41   |