

## Einsatzwerte Stufenbohrer (Art.-Nr. 1010840 101-106)



| Materialgruppen für<br>Schnittwerte | Festigkeit<br>[N/mm <sup>2</sup> ]     | Bezeichnung<br>nach DIN | Vc<br>[m/min]         | f [mm/U] bei Durchmesser |           |           |          |           |          |
|-------------------------------------|--|-------------------------|-----------------------|--------------------------|-----------|-----------|----------|-----------|----------|
|                                     |  |                         |                       | 0-3                      | 3-8       | 8-16      | 16-25    | 25-60     |          |
| <b>1. Stähle</b>                    |  |                         |                       |                          |           |           |          |           |          |
| 1.1                                 | Automatenstahl                         | < 900                   | 9 S 20                | 20-40                    | 0.02-0.06 | 0.06-0.2  | 0.2-0.28 | 0.28-0.35 | 0.35-0.5 |
| 1.2                                 | Baustahl                               | <500                    | ST 37-2               | 25-40                    | 0.02-0.06 | 0.06-0.2  | 0.2-0.28 | 0.28-0.35 | 0.35-0.5 |
| 1.3                                 | Baustahl                               | > 500                   | ST 60-2               | 20-35                    | 0.02-0.04 | 0.04-0.15 | 0.15-0.2 | 0.2-0.25  | 0.25-0.4 |
| 1.4                                 | Vergütungsstahl                        | <1000                   | 42 CrMo 4             | 15-20                    | 0.02-0.04 | 0.04-0.15 | 0.15-0.2 | 0.2-0.25  | 0.25-0.4 |
| 1.5                                 | Stahlguss                              | <1000                   | GS-45                 | 15-20                    | 0.02-0.04 | 0.04-0.15 | 0.15-0.2 | 0.2-0.25  | 0.25-0.4 |
| 1.6                                 | Einsatzstahl                           | <1200                   | 16 MnCr 5             | 6-20                     | 0.02-0.04 | 0.04-0.1  | 0.1-0.18 | 0.18-0.2  | 0.2-0.3  |
| 1.7                                 | Edelstahl ferritisch/<br>martensitisch | <1100                   | X 10 Cr 13            | 6-12                     | 0.02-0.04 | 0.04-0.1  | 0.1-0.18 | 0.18-0.2  | 0.2-0.3  |
| 1.8                                 | Vergütungsstahl                        | >1000                   | 43 CrMo 4             | 8-10                     | 0.02-0.04 | 0.04-0.1  | 0.1-0.18 | 0.18-0.2  | 0.2-0.3  |
| 1.9                                 | Nitrierstahl                           | <1300                   | 31 CrMoV 9            | 8-12                     | 0.02-0.04 | 0.04-0.1  | 0.1-0.18 | 0.18-0.2  | 0.2-0.3  |
| 1.10                                | Werkzeugstahl                          | <1300                   | X 38 CrMoV 5 1        | 6-8                      | 0.02-0.04 | 0.04-0.1  | 0.1-0.18 | 0.18-0.2  | 0.2-0.3  |
| <b>2. Rostfreie Stähle</b>          |  |                         |                       |                          |           |           |          |           |          |
| 2.1                                 | Edelstahl, austenitisch                | <1100                   | G-X 2 CrNiMo<br>18 15 | 6-10                     | 0.02-0.04 | 0.04-0.1  | 0.1-0.18 | 0.18-0.2  | 0.2-0.3  |
| <b>3. NE-Metalle</b>                |  |                         |                       |                          |           |           |          |           |          |
| 3.1                                 | Aluminium,<br>langspanend              | <500                    | Al99.9                | 40-80                    | 0.02-0.06 | 0.06-0.2  | 0.2-0.28 | 0.28-0.35 | 0.35-0.5 |
| 3.2                                 | Aluminium,<br>kurzspanend              | <500                    | G-AlSi12              | 30-50                    | 0.02-0.06 | 0.06-0.2  | 0.2-0.28 | 0.28-0.35 | 0.35-0.5 |
| 3.3                                 | Kupferleg. Bronze<br>langspanend       | <1200                   | CuSn4                 | 15-25                    | 0.02-0.04 | 0.04-0.15 | 0.15-0.2 | 0.2-0.25  | 0.25-0.4 |
| 3.4                                 | Kupferleg. Bronze<br>kurzspanend       | <850                    | CuNi12Zn24            | 25-35                    | 0.02-0.04 | 0.04-0.15 | 0.15-0.2 | 0.2-0.25  | 0.25-0.4 |
| 3.5                                 | Kupferleg. Messing<br>langspanend      | <600                    | Cu Zn 20              | 35-50                    | 0.02-0.06 | 0.06-0.2  | 0.2-0.28 | 0.28-0.35 | 0.35-0.5 |
| 3.6                                 | Kupferleg. Messing<br>kurzspanend      | <600                    | Cu Zn 39 Pb 3         | 60-90                    | 0.02-0.06 | 0.06-0.2  | 0.2-0.28 | 0.28-0.35 | 0.35-0.5 |
| 3.7                                 | Thermoplastic                          | <100                    | PVC, Acrylglas        | 20-30                    | 0.02-0.06 | 0.06-0.2  | 0.2-0.28 | 0.28-0.35 | 0.35-0.5 |
| 3.8                                 | Duroplast                              | <150                    | Bakelit,<br>Melamin   | 10-20                    | 0.02-0.06 | 0.06-0.2  | 0.2-0.28 | 0.28-0.35 | 0.35-0.5 |
| 3.9                                 | Faserverstärkte<br>Kunststoffe         | <1500                   | CFK, GFK              | 10-20                    | 0.02-0.04 | 0.04-0.1  | 0.1-0.18 | 0.18-0.2  | 0.2-0.3  |
| 3.10                                | Graphite                               | <60                     | C8000                 | 8-12                     | 0.02-0.04 | 0.04-0.1  | 0.1-0.18 | 0.18-0.2  | 0.2-0.3  |
| 3.11                                | Verbundwerkstoffe                      |                         |                       |                          |           |           |          |           |          |
| <b>4. Guss</b>                      |  |                         |                       |                          |           |           |          |           |          |
| 4.1                                 | Grauguss                               | <260 HB                 | GG10                  | 20-25                    | 0.02-0.06 | 0.06-0.2  | 0.2-0.28 | 0.28-0.35 | 0.35-0.5 |
| 4.2                                 | Sphäroguss                             | <310 HB                 | GGG 40                | 20-25                    | 0.02-0.06 | 0.06-0.2  | 0.2-0.28 | 0.28-0.35 | 0.35-0.5 |
| 4.3                                 | Gusseisen mit<br>Kugelgraphit          | <280 HB                 | GTW-55                | 20-25                    | 0.02-0.06 | 0.06-0.2  | 0.2-0.28 | 0.28-0.35 | 0.35-0.5 |
| <b>5. Sonderlegierungen</b>         |  |                         |                       |                          |           |           |          |           |          |
| 5.1                                 | Titanlegierung                         | <1200                   | TiAl5Sn2,5            | 3-6                      | 0.02-0.04 | 0.04-0.1  | 0.1-0.18 | 0.18-0.2  | 0.2-0.3  |
| 5.2                                 | Nickelbasislegierung                   | <1400                   | NiCr21Mo              | 3-6                      | 0.02-0.04 | 0.04-0.1  | 0.1-0.18 | 0.18-0.2  | 0.2-0.3  |
| 5.3                                 | Superlegierungen                       | <1400                   | X45CrSi 9 3           | 3-6                      | 0.02-0.04 | 0.04-0.1  | 0.1-0.18 | 0.18-0.2  | 0.2-0.3  |

