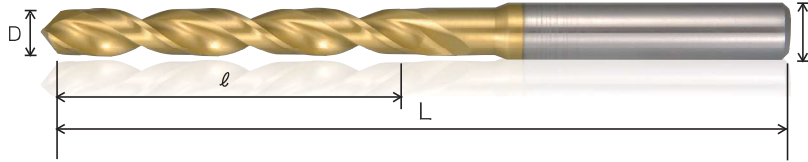




ハイス エンドミルシャンクドリル

Coated HSS Endmill Shank Drills for NC



※先端角 Point Angle

| | |
|--------------|------|
| D ≤ 1.95 | 118° |
| 2 ≤ D ≤ 13.0 | 130° |
| 13.5 ≤ D | 118° |

※ネジレ角 Helix Angle

| | |
|------------|-------------|
| φ1 ~ φ2未満 | 25° |
| φ2 ~ φ13未満 | 35° |
| φ13超 | 31.5° ~ 32° |

特長 Feature

- X形シンニングの採用により高精度の穴明け加工とエンドミルシャンクにより高剛性と加工能率の向上を実現
- X type thinning and end mill shank provide high quality boring process, rigidity and machining efficiency.

単位：mm

| 商品コード Item Code | D | ℓ | L | d |
|--------------------|------|----|----|---|
| NC-SDR-G 1.0 | 1.0 | 16 | 55 | 3 |
| NC-SDR-G 1.05 | 1.05 | 18 | 55 | 3 |
| NC-SDR-G 1.1 | 1.1 | 18 | 55 | 3 |
| NC-SDR-G 1.15 | 1.15 | 18 | 55 | 3 |
| NC-SDR-G 1.2 | 1.2 | 18 | 55 | 3 |
| NC-SDR-G 1.25 | 1.25 | 20 | 55 | 3 |
| NC-SDR-G 1.3 | 1.3 | 20 | 55 | 3 |
| NC-SDR-G 1.35 | 1.35 | 21 | 55 | 3 |
| NC-SDR-G 1.4 | 1.4 | 21 | 55 | 3 |
| NC-SDR-G 1.45 | 1.45 | 21 | 55 | 3 |
| NC-SDR-G 1.5 | 1.5 | 21 | 55 | 3 |
| NC-SDR-G 1.55 | 1.55 | 22 | 55 | 3 |
| NC-SDR-G 1.6 | 1.6 | 22 | 55 | 3 |
| NC-SDR-G 1.65 | 1.65 | 22 | 55 | 3 |
| NC-SDR-G 1.7 | 1.7 | 22 | 55 | 3 |
| NC-SDR-G 1.75 | 1.75 | 22 | 55 | 3 |
| NC-SDR-G 1.8 | 1.8 | 23 | 55 | 3 |
| NC-SDR-G 1.85 | 1.85 | 23 | 55 | 3 |
| NC-SDR-G 1.9 | 1.9 | 23 | 55 | 3 |
| NC-SDR-G 1.95 | 1.95 | 24 | 55 | 3 |
| NC-SDR-G 2.0 | 2.0 | 24 | 55 | 3 |
| NC-SDR-G 2.05 | 2.05 | 24 | 55 | 3 |
| NC-SDR-G 2.1 | 2.1 | 24 | 55 | 3 |
| NC-SDR-G 2.15 | 2.15 | 27 | 55 | 3 |
| NC-SDR-G 2.2 | 2.2 | 27 | 55 | 3 |
| NC-SDR-G 2.25 | 2.25 | 27 | 55 | 3 |
| NC-SDR-G 2.3 | 2.3 | 27 | 55 | 3 |
| NC-SDR-G 2.35 | 2.35 | 30 | 55 | 3 |
| NC-SDR-G 2.4 | 2.4 | 30 | 55 | 3 |
| NC-SDR-G 2.45 | 2.45 | 30 | 55 | 3 |
| NC-SDR-G 2.5 | 2.5 | 30 | 55 | 3 |
| NC-SDR-G 2.55 | 2.55 | 30 | 55 | 3 |
| NC-SDR-G 2.6 | 2.6 | 30 | 55 | 3 |
| NC-SDR-G 2.65 | 2.65 | 33 | 55 | 3 |
| NC-SDR-G 2.7 | 2.7 | 33 | 55 | 3 |
| NC-SDR-G 2.75 | 2.75 | 33 | 55 | 3 |
| NC-SDR-G 2.8 | 2.8 | 33 | 55 | 3 |
| NC-SDR-G 2.85 | 2.85 | 33 | 55 | 3 |
| NC-SDR-G 2.9 | 2.9 | 33 | 55 | 3 |
| NC-SDR-G 2.95 | 2.95 | 33 | 55 | 3 |
| NC-SDR-G 3.0 | 3.0 | 36 | 70 | 4 |
| NC-SDR-G 3.05 | 3.05 | 36 | 70 | 4 |
| NC-SDR-G 3.1 | 3.1 | 36 | 70 | 4 |

| 商品コード Item Code | D | ℓ | L | d |
|--------------------|------|----|----|---|
| NC-SDR-G 3.15 | 3.15 | 36 | 70 | 4 |
| NC-SDR-G 3.2 | 3.2 | 36 | 70 | 4 |
| NC-SDR-G 3.25 | 3.25 | 36 | 70 | 4 |
| NC-SDR-G 3.3 | 3.3 | 36 | 70 | 4 |
| NC-SDR-G 3.35 | 3.35 | 39 | 70 | 4 |
| NC-SDR-G 3.4 | 3.4 | 39 | 70 | 4 |
| NC-SDR-G 3.45 | 3.45 | 39 | 70 | 4 |
| NC-SDR-G 3.5 | 3.5 | 39 | 70 | 4 |
| NC-SDR-G 3.55 | 3.55 | 39 | 70 | 4 |
| NC-SDR-G 3.6 | 3.6 | 39 | 70 | 4 |
| NC-SDR-G 3.65 | 3.65 | 39 | 70 | 4 |
| NC-SDR-G 3.7 | 3.7 | 39 | 70 | 4 |
| NC-SDR-G 3.75 | 3.75 | 43 | 70 | 4 |
| NC-SDR-G 3.8 | 3.8 | 43 | 70 | 4 |
| NC-SDR-G 3.85 | 3.85 | 43 | 70 | 4 |
| NC-SDR-G 3.9 | 3.9 | 43 | 70 | 4 |
| NC-SDR-G 3.95 | 3.95 | 43 | 70 | 4 |
| NC-SDR-G 4.0 | 4.0 | 43 | 90 | 6 |
| NC-SDR-G 4.05 | 4.05 | 43 | 90 | 6 |
| NC-SDR-G 4.1 | 4.1 | 43 | 90 | 6 |
| NC-SDR-G 4.15 | 4.15 | 43 | 90 | 6 |
| NC-SDR-G 4.2 | 4.2 | 43 | 90 | 6 |
| NC-SDR-G 4.25 | 4.25 | 47 | 90 | 6 |
| NC-SDR-G 4.3 | 4.3 | 47 | 90 | 6 |
| NC-SDR-G 4.35 | 4.35 | 47 | 90 | 6 |
| NC-SDR-G 4.4 | 4.4 | 47 | 90 | 6 |
| NC-SDR-G 4.45 | 4.45 | 47 | 90 | 6 |
| NC-SDR-G 4.5 | 4.5 | 47 | 90 | 6 |
| NC-SDR-G 4.55 | 4.55 | 47 | 90 | 6 |
| NC-SDR-G 4.6 | 4.6 | 47 | 90 | 6 |
| NC-SDR-G 4.65 | 4.65 | 47 | 90 | 6 |
| NC-SDR-G 4.7 | 4.7 | 47 | 90 | 6 |
| NC-SDR-G 4.75 | 4.75 | 52 | 90 | 6 |
| NC-SDR-G 4.8 | 4.8 | 52 | 90 | 6 |
| NC-SDR-G 4.85 | 4.85 | 52 | 90 | 6 |
| NC-SDR-G 4.9 | 4.9 | 52 | 90 | 6 |
| NC-SDR-G 4.95 | 4.95 | 52 | 90 | 6 |
| NC-SDR-G 5.0 | 5.0 | 52 | 90 | 6 |
| NC-SDR-G 5.05 | 5.05 | 52 | 90 | 6 |
| NC-SDR-G 5.1 | 5.1 | 52 | 90 | 6 |
| NC-SDR-G 5.15 | 5.15 | 52 | 90 | 6 |
| NC-SDR-G 5.2 | 5.2 | 52 | 90 | 6 |
| NC-SDR-G 5.25 | 5.25 | 52 | 90 | 6 |

| 商品コード Item Code | D | ℓ | L | d |
|--------------------|------|----|-----|---|
| NC-SDR-G 5.3 | 5.3 | 52 | 90 | 6 |
| NC-SDR-G 5.35 | 5.35 | 57 | 90 | 6 |
| NC-SDR-G 5.4 | 5.4 | 57 | 90 | 6 |
| NC-SDR-G 5.45 | 5.45 | 57 | 90 | 6 |
| NC-SDR-G 5.5 | 5.5 | 57 | 90 | 6 |
| NC-SDR-G 5.55 | 5.55 | 57 | 90 | 6 |
| NC-SDR-G 5.6 | 5.6 | 57 | 90 | 6 |
| NC-SDR-G 5.65 | 5.65 | 57 | 90 | 6 |
| NC-SDR-G 5.7 | 5.7 | 57 | 90 | 6 |
| NC-SDR-G 5.75 | 5.75 | 57 | 90 | 6 |
| NC-SDR-G 5.8 | 5.8 | 57 | 90 | 6 |
| NC-SDR-G 5.85 | 5.85 | 57 | 90 | 6 |
| NC-SDR-G 5.9 | 5.9 | 57 | 90 | 6 |
| NC-SDR-G 5.95 | 5.95 | 57 | 90 | 6 |
| NC-SDR-G 6.0 | 6.0 | 63 | 110 | 8 |
| NC-SDR-G 6.05 | 6.05 | 63 | 110 | 8 |
| NC-SDR-G 6.1 | 6.1 | 63 | 110 | 8 |
| NC-SDR-G 6.15 | 6.15 | 63 | 110 | 8 |
| NC-SDR-G 6.2 | 6.2 | 63 | 110 | 8 |
| NC-SDR-G 6.25 | 6.25 | 63 | 110 | 8 |
| NC-SDR-G 6.3 | 6.3 | 63 | 110 | 8 |
| NC-SDR-G 6.35 | 6.35 | 63 | 110 | 8 |
| NC-SDR-G 6.4 | 6.4 | 63 | 110 | 8 |
| NC-SDR-G 6.45 | 6.45 | 63 | 110 | 8 |
| NC-SDR-G 6.5 | 6.5 | 63 | 110 | 8 |
| NC-SDR-G 6.55 | 6.55 | 63 | 110 | 8 |
| NC-SDR-G 6.6 | 6.6 | 63 | 110 | 8 |
| NC-SDR-G 6.65 | 6.65 | 63 | 110 | 8 |
| NC-SDR-G 6.7 | 6.7 | 63 | 110 | 8 |
| NC-SDR-G 6.75 | 6.75 | 69 | 110 | 8 |
| NC-SDR-G 6.8 | 6.8 | 69 | 110 | 8 |
| NC-SDR-G 6.85 | 6.85 | 69 | 110 | 8 |
| NC-SDR-G 6.9 | 6.9 | 69 | 110 | 8 |
| NC-SDR-G 6.95 | 6.95 | 69 | 110 | 8 |
| NC-SDR-G 7.0 | 7.0 | 69 | 110 | 8 |
| NC-SDR-G 7.05 | 7.05 | 69 | 110 | 8 |
| NC-SDR-G 7.1 | 7.1 | 69 | 110 | 8 |
| NC-SDR-G 7.15 | 7.15 | 69 | 110 | 8 |
| NC-SDR-G 7.2 | 7.2 | 69 | 110 | 8 |
| NC-SDR-G 7.25 | 7.25 | 69 | 110 | 8 |
| NC-SDR-G 7.3 | 7.3 | 69 | 110 | 8 |
| NC-SDR-G 7.35 | 7.35 | 69 | 110 | 8 |
| NC-SDR-G 7.4 | 7.4 | 69 | 110 | 8 |

| 商品コード Item Code | D | ℓ | L | d |
|--------------------|------|----|-----|----|
| NC-SDR-G 7.45 | 7.45 | 69 | 110 | 8 |
| NC-SDR-G 7.5 | 7.5 | 69 | 110 | 8 |
| NC-SDR-G 7.6 | 7.6 | 75 | 110 | 8 |
| NC-SDR-G 7.7 | 7.7 | 75 | 110 | 8 |
| NC-SDR-G 7.8 | 7.8 | 75 | 110 | 8 |
| NC-SDR-G 7.9 | 7.9 | 75 | 110 | 8 |
| NC-SDR-G 8.0 | 8.0 | 75 | 130 | 10 |
| NC-SDR-G 8.1 | 8.1 | 75 | 130 | 10 |
| NC-SDR-G 8.2 | 8.2 | 75 | 130 | 10 |
| NC-SDR-G 8.3 | 8.3 | 75 | 130 | 10 |
| NC-SDR-G 8.4 | 8.4 | 75 | 130 | 10 |
| NC-SDR-G 8.5 | 8.5 | 75 | 130 | 10 |
| NC-SDR-G 8.6 | 8.6 | 81 | 130 | 10 |
| NC-SDR-G 8.7 | 8.7 | 81 | 130 | 10 |
| NC-SDR-G 8.8 | 8.8 | 81 | 130 | 10 |
| NC-SDR-G 8.9 | 8.9 | 81 | 130 | 10 |
| NC-SDR-G 9.0 | 9.0 | 81 | 130 | 10 |
| NC-SDR-G 9.1 | 9.1 | 81 | 130 | 10 |
| NC-SDR-G 9.2 | 9.2 | 81 | 130 | 10 |
| NC-SDR-G 9.3 | 9.3 | 81 | 130 | 10 |
| NC-SDR-G 9.4 | 9.4 | 81 | 130 | 10 |
| NC-SDR-G 9.5 | 9.5 | 81 | 130 | 10 |
| NC-SDR-G 9.6 | 9.6 | 87 | 130 | 10 |
| NC-SDR-G 9.7 | 9.7 | 87 | 130 | 10 |
| NC-SDR-G 9.8 | 9.8 | 87 | 130 | 10 |
| NC-SDR-G 9.9 | 9.9 | 87 | 130 | 10 |
| NC-SDR-G 10.0 | 10.0 | 87 | 150 | 12 |
| NC-SDR-G 10.1 | 10.1 | 87 | 150 | 12 |
| NC-SDR-G 10.2 | 10.2 | 87 | 150 | 12 |
| NC-SDR-G 10.3 | 10.3 | 87 | 150 | 12 |
| NC-SDR-G 10.4 | 10.4 | 87 | 150 | 12 |
| NC-SDR-G 10.5 | 10.5 | 87 | 150 | 12 |

| 商品コード Item Code | D | ℓ | L | d |
|--------------------|------|-----|-----|----|
| NC-SDR-G 10.6 | 10.6 | 87 | 150 | 12 |
| NC-SDR-G 10.7 | 10.7 | 94 | 150 | 12 |
| NC-SDR-G 10.8 | 10.8 | 94 | 150 | 12 |
| NC-SDR-G 10.9 | 10.9 | 94 | 150 | 12 |
| NC-SDR-G 11.0 | 11.0 | 94 | 150 | 12 |
| NC-SDR-G 11.1 | 11.1 | 94 | 150 | 12 |
| NC-SDR-G 11.2 | 11.2 | 94 | 150 | 12 |
| NC-SDR-G 11.3 | 11.3 | 94 | 150 | 12 |
| NC-SDR-G 11.4 | 11.4 | 94 | 150 | 12 |
| NC-SDR-G 11.5 | 11.5 | 94 | 150 | 12 |
| NC-SDR-G 11.6 | 11.6 | 94 | 150 | 12 |
| NC-SDR-G 11.7 | 11.7 | 94 | 150 | 12 |
| NC-SDR-G 11.8 | 11.8 | 94 | 150 | 12 |
| NC-SDR-G 11.9 | 11.9 | 100 | 150 | 12 |
| NC-SDR-G 12.0 | 12.0 | 100 | 150 | 12 |
| NC-SDR-G 12.1 | 12.1 | 100 | 150 | 12 |
| NC-SDR-G 12.2 | 12.2 | 100 | 150 | 12 |
| NC-SDR-G 12.3 | 12.3 | 100 | 150 | 12 |
| NC-SDR-G 12.4 | 12.4 | 100 | 150 | 12 |
| NC-SDR-G 12.5 | 12.5 | 100 | 150 | 12 |
| NC-SDR-G 12.6 | 12.6 | 100 | 150 | 12 |
| NC-SDR-G 12.7 | 12.7 | 100 | 150 | 12 |
| NC-SDR-G 12.8 | 12.8 | 100 | 150 | 12 |
| NC-SDR-G 12.9 | 12.9 | 100 | 150 | 12 |
| NC-SDR-G 13.0 | 13.0 | 100 | 150 | 12 |
| NC-SDR-G 13.5 | 13.5 | 100 | 170 | 16 |
| NC-SDR-G 14.0 | 14.0 | 100 | 170 | 16 |
| NC-SDR-G 14.5 | 14.5 | 100 | 170 | 16 |
| NC-SDR-G 15.0 | 15.0 | 100 | 170 | 16 |
| NC-SDR-G 15.5 | 15.5 | 100 | 170 | 16 |
| NC-SDR-G 16.0 | 16.0 | 100 | 170 | 16 |
| NC-SDR-G 16.5 | 16.5 | 115 | 190 | 20 |

| 商品コード Item Code | D | ℓ | L | d |
|--------------------|------|-----|-----|----|
| NC-SDR-G 17.0 | 17.0 | 115 | 190 | 20 |
| NC-SDR-G 17.5 | 17.5 | 115 | 190 | 20 |
| NC-SDR-G 18.0 | 18.0 | 115 | 190 | 20 |
| NC-SDR-G 18.5 | 18.5 | 115 | 190 | 20 |
| NC-SDR-G 19.0 | 19.0 | 115 | 190 | 20 |
| NC-SDR-G 19.5 | 19.5 | 115 | 190 | 20 |
| NC-SDR-G 20.0 | 20.0 | 115 | 190 | 20 |
| NC-SDR-G 20.5 | 20.5 | 135 | 210 | 25 |
| NC-SDR-G 21.0 | 21.0 | 135 | 210 | 25 |
| NC-SDR-G 21.5 | 21.5 | 135 | 210 | 25 |
| NC-SDR-G 22.0 | 22.0 | 135 | 210 | 25 |
| NC-SDR-G 22.5 | 22.5 | 135 | 210 | 25 |
| NC-SDR-G 23.0 | 23.0 | 135 | 210 | 25 |
| NC-SDR-G 23.5 | 23.5 | 135 | 210 | 25 |
| NC-SDR-G 24.0 | 24.0 | 135 | 210 | 25 |
| NC-SDR-G 24.5 | 24.5 | 135 | 210 | 25 |
| NC-SDR-G 25.0 | 25.0 | 135 | 210 | 25 |
| NC-SDR-G 25.5 | 25.5 | 145 | 220 | 32 |
| NC-SDR-G 26.0 | 26.0 | 145 | 220 | 32 |
| NC-SDR-G 26.5 | 26.5 | 145 | 220 | 32 |
| NC-SDR-G 27.0 | 27.0 | 150 | 225 | 32 |
| NC-SDR-G 27.5 | 27.5 | 150 | 225 | 32 |
| NC-SDR-G 28.0 | 28.0 | 150 | 225 | 32 |
| NC-SDR-G 28.5 | 28.5 | 150 | 225 | 32 |
| NC-SDR-G 29.0 | 29.0 | 155 | 230 | 32 |
| NC-SDR-G 29.5 | 29.5 | 155 | 230 | 32 |
| NC-SDR-G 30.0 | 30.0 | 155 | 230 | 32 |
| NC-SDR-G 30.5 | 30.5 | 160 | 235 | 32 |
| NC-SDR-G 31.0 | 31.0 | 160 | 235 | 32 |
| NC-SDR-G 31.5 | 31.5 | 165 | 240 | 32 |
| NC-SDR-G 32.0 | 32.0 | 165 | 240 | 32 |

| ドリル刃径(直径)許容差 | | | | | |
|---------------|-----------|------------|-------------|-------------|--------|
| 1.0 ≤ D ≤ 3.0 | 3 < D ≤ 6 | 6 < D ≤ 10 | 10 < D ≤ 18 | 18 < D ≤ 30 | 30 < D |
| 0 | 0 | 0 | 0 | 0 | 0 |
| -0.014 | -0.018 | -0.022 | -0.027 | -0.033 | -0.039 |

標準切削条件表 Recommended cutting conditions

| 被削材 Work | 一般鋼/鑄鉄 SS400/S45C/FC (~HRC25) | | 合金鋼 SCM/SK (25~35HRC) | | 合金鋼 SCM/SK (35~40HRC) | | ステンレス SUS420,440,316 (30~40HRC) | |
|-------------|----------------------------------|------------------|------------------------------|------------------|------------------------------|------------------|------------------------------------|------------------|
| | 回転数 n(min ⁻¹) | 送り量 F(mm/rev) | 回転数 n(min ⁻¹) | 送り量 F(mm/rev) | 回転数 n(min ⁻¹) | 送り量 F(mm/rev) | 回転数 n(min ⁻¹) | 送り量 F(mm/rev) |
| 1.0 | 10,000 | 0.05 | 8,500 | 0.04 | 6,300 | 0.03 | 5,400 | 0.04 |
| 2.0 | 5,500 | 0.09 | 4,500 | 0.06 | 3,200 | 0.04 | 2,700 | 0.06 |
| 3.0 | 3,700 | 0.13 | 2,800 | 0.08 | 2,100 | 0.06 | 1,800 | 0.08 |
| 4.0 | 2,800 | 0.15 | 2,200 | 0.10 | 1,600 | 0.08 | 1,350 | 0.10 |
| 5.0 | 2,200 | 0.18 | 1,800 | 0.12 | 1,270 | 0.10 | 1,080 | 0.12 |
| 6.0 | 1,800 | 0.19 | 1,400 | 0.15 | 1,060 | 0.13 | 900 | 0.15 |
| 8.0 | 1,400 | 0.20 | 1,100 | 0.19 | 800 | 0.16 | 680 | 0.19 |
| 10.0 | 1,100 | 0.22 | 900 | 0.21 | 640 | 0.18 | 540 | 0.21 |
| 12.0 | 930 | 0.25 | 710 | 0.26 | 530 | 0.22 | 450 | 0.23 |
| 13.0 | 860 | 0.26 | 660 | 0.25 | 490 | 0.23 | 420 | 0.25 |
| 14.0 | 680 | 0.26 | 510 | 0.23 | 380 | 0.21 | 290 | 0.20 |
| 16.0 | 600 | 0.28 | 450 | 0.24 | 330 | 0.22 | 250 | 0.20 |
| 18.0 | 530 | 0.30 | 400 | 0.25 | 290 | 0.23 | 220 | 0.22 |
| 20.0 | 480 | 0.33 | 360 | 0.26 | 260 | 0.24 | 200 | 0.23 |
| 22.0 | 430 | 0.35 | 330 | 0.27 | 240 | 0.25 | 180 | 0.24 |
| 25.0 | 380 | 0.36 | 290 | 0.28 | 210 | 0.26 | 160 | 0.24 |

※切削条件はあくまでも目安です。使用される機械、チャックの剛性や切削油等の状況によって変動致します。

These conditions are for general guidance. Therefor they are subject to change to the situation of the machine used, the tool hold rigidity, cutting oil, etc.

| 構造用鋼/炭素鋼 (SS41,S45C) | 工具鋼/プリハードン鋼 (SKD,NAK101) | 合金鋼/ステンレス鋼 (SCM,SUS304) | 熱処理鋼等 Hardened Steels | 硬質材 Hard material | アルミ・銅合金 Aluminum alloy Copper alloy |
|-------------------------|-----------------------------|----------------------------|--------------------------|----------------------|---|
| HRC30以下 | HRC30~35 | HRC35~40 | HRC40~45 | HRC45~55 | |
| ◎ | ○ | ○ | △ | × | × |