

# KHR-DLC

超硬底刃付リーマ・DLCコーティング付  
Tungsten Carbide Reamer with Bottom Flute DLC Coating

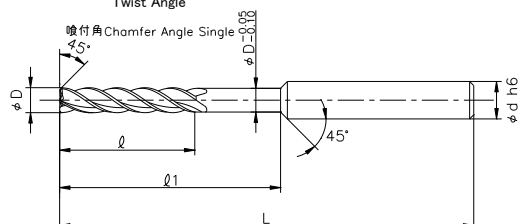
- 底刃が付いているので止まり穴の加工などに最適です  
Best for stop hole processing due to having bottom flute
- DLCコーティングを施しました  
DLCcoating is applied.



| 被削材 Workpiece       |                         |             |
|---------------------|-------------------------|-------------|
| 銅合金<br>COPPER Alloy | アルミ合金<br>Aluminum Alloy | 樹脂<br>Resin |
|                     |                         |             |

- 切削条件表はP277に記載
- Cutting conditions are recommended on page 277.

| 品番<br>Code No. | 刃径 D<br>Flute Diameter | 刃長 ℓ<br>Flute Length | 有効長 ℓ1<br>Effective Length | 全長 L<br>Total Length | 柄径 d<br>Shank Diameter |
|----------------|------------------------|----------------------|----------------------------|----------------------|------------------------|
| KHR-DLC-4095   | 0.95                   | 5                    | 12                         | 50                   | 3                      |
| KHR-DLC-4096   | 0.96                   | 5                    | 12                         | 50                   | 3                      |
| KHR-DLC-4097   | 0.97                   | 5                    | 12                         | 50                   | 3                      |
| KHR-DLC-4098   | 0.98                   | 5                    | 12                         | 50                   | 3                      |
| KHR-DLC-4099   | 0.99                   | 5                    | 12                         | 50                   | 3                      |
| KHR-DLC-4100   | 1                      | 6                    | 15                         | 60                   | 3                      |
| KHR-DLC-41005  | 1.005                  | 6                    | 15                         | 60                   | 3                      |
| KHR-DLC-4101   | 1.01                   | 6                    | 15                         | 60                   | 3                      |
| KHR-DLC-4102   | 1.02                   | 6                    | 15                         | 60                   | 3                      |
| KHR-DLC-4103   | 1.03                   | 6                    | 15                         | 60                   | 3                      |
| KHR-DLC-4104   | 1.04                   | 6                    | 15                         | 60                   | 3                      |
| KHR-DLC-4105   | 1.05                   | 6                    | 15                         | 60                   | 3                      |
| KHR-DLC-4110   | 1.1                    | 6                    | 15                         | 60                   | 3                      |
| KHR-DLC-4120   | 1.2                    | 6                    | 15                         | 60                   | 3                      |
| KHR-DLC-4130   | 1.3                    | 6                    | 15                         | 60                   | 3                      |
| KHR-DLC-4140   | 1.4                    | 6                    | 15                         | 60                   | 3                      |
| KHR-DLC-4150   | 1.5                    | 8                    | 20                         | 60                   | 3                      |
| KHR-DLC-4160   | 1.6                    | 8                    | 20                         | 60                   | 3                      |
| KHR-DLC-4170   | 1.7                    | 8                    | 20                         | 60                   | 3                      |
| KHR-DLC-4180   | 1.8                    | 8                    | 20                         | 60                   | 3                      |
| KHR-DLC-4190   | 1.9                    | 8                    | 20                         | 60                   | 3                      |
| KHR-DLC-4195   | 1.95                   | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4196   | 1.96                   | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4197   | 1.97                   | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4198   | 1.98                   | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4199   | 1.99                   | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4200   | 2                      | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-42005  | 2.005                  | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4201   | 2.01                   | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4202   | 2.02                   | 10                   | 24                         | 60                   | 3                      |



- 刃径の許容差 Flute Diameter Tolerance  
D ≤ 3.09 +0.005~0  
3.1 < D ≤ 6.05 +0.007~0
- 換付寸法 Chamfer Size  
C = 0.1 ± 0.03  
C = 0.15 ± 0.03  
C = 0.2 ± 0.03  
φ 0.95 ~ φ 1.99  
φ 2.0 ~ φ 3.09  
φ 3.1 ~ φ 6.05

単位 [寸法: mm]  
Unit [size: mm]

| 品番<br>Code No. | 刃径 D<br>Flute Diameter | 刃長 ℓ<br>Flute Length | 有効長 ℓ1<br>Effective Length | 全長 L<br>Total Length | 柄径 d<br>Shank Diameter |
|----------------|------------------------|----------------------|----------------------------|----------------------|------------------------|
| KHR-DLC-4203   | 2.03                   | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4204   | 2.04                   | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4205   | 2.05                   | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4210   | 2.1                    | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4220   | 2.2                    | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4230   | 2.3                    | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4240   | 2.4                    | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4250   | 2.5                    | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4260   | 2.6                    | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4270   | 2.7                    | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4280   | 2.8                    | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4290   | 2.9                    | 10                   | 24                         | 60                   | 3                      |
| KHR-DLC-4295   | 2.95                   | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-4296   | 2.96                   | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-4297   | 2.97                   | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-4298   | 2.98                   | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-4299   | 2.99                   | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-4300   | 3                      | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-43005  | 3.005                  | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-4301   | 3.01                   | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-4302   | 3.02                   | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-4303   | 3.03                   | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-4304   | 3.04                   | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-4305   | 3.05                   | 15                   | 30                         | 60                   | 3                      |
| KHR-DLC-4310   | 3.1                    | 15                   | 30                         | 70                   | 4                      |
| KHR-DLC-4320   | 3.2                    | 15                   | 30                         | 70                   | 4                      |
| KHR-DLC-4330   | 3.3                    | 15                   | 30                         | 70                   | 4                      |
| KHR-DLC-4340   | 3.4                    | 15                   | 30                         | 70                   | 4                      |
| KHR-DLC-4350   | 3.5                    | 15                   | 30                         | 70                   | 4                      |
| KHR-DLC-4360   | 3.6                    | 15                   | 30                         | 70                   | 4                      |

超硬リーマ

Carbide Reamer

## KHR-DLC

| 品番<br>Code No. | 刃径 D<br>Flute Diameter | 刃長 ℓ<br>Flute Length | 有効長 ℓ1<br>Effective Length | 全長 L<br>Total Length | 柄径 d<br>Shank Diameter |
|----------------|------------------------|----------------------|----------------------------|----------------------|------------------------|
| KHR-DLC-4370   | 3.7                    | 15                   | 30                         | 70                   | 4                      |
| KHR-DLC-4380   | 3.8                    | 15                   | 30                         | 70                   | 4                      |
| KHR-DLC-4390   | 3.9                    | 15                   | 30                         | 70                   | 4                      |
| KHR-DLC-4395   | 3.95                   | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-4396   | 3.96                   | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-4397   | 3.97                   | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-4398   | 3.98                   | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-4399   | 3.99                   | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-4400   | 4                      | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-44005  | 4.005                  | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-4401   | 4.01                   | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-4402   | 4.02                   | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-4403   | 4.03                   | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-4404   | 4.04                   | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-4405   | 4.05                   | 20                   | 35                         | 70                   | 4                      |
| KHR-DLC-4410   | 4.1                    | 20                   | 35                         | 80                   | 6                      |
| KHR-DLC-4420   | 4.2                    | 20                   | 35                         | 80                   | 6                      |
| KHR-DLC-4430   | 4.3                    | 20                   | 35                         | 80                   | 6                      |
| KHR-DLC-4440   | 4.4                    | 20                   | 35                         | 80                   | 6                      |
| KHR-DLC-4450   | 4.5                    | 20                   | 35                         | 80                   | 6                      |
| KHR-DLC-4460   | 4.6                    | 20                   | 35                         | 80                   | 6                      |
| KHR-DLC-4470   | 4.7                    | 20                   | 35                         | 80                   | 6                      |
| KHR-DLC-4480   | 4.8                    | 20                   | 35                         | 80                   | 6                      |
| KHR-DLC-4490   | 4.9                    | 20                   | 35                         | 80                   | 6                      |
| KHR-DLC-4495   | 4.95                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4496   | 4.96                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4497   | 4.97                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4498   | 4.98                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4499   | 4.99                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4500   | 5                      | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-45005  | 5.005                  | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4501   | 5.01                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4502   | 5.02                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4503   | 5.03                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4504   | 5.04                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4505   | 5.05                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4510   | 5.1                    | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4520   | 5.2                    | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4530   | 5.3                    | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4540   | 5.4                    | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4550   | 5.5                    | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4560   | 5.6                    | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4570   | 5.7                    | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4580   | 5.8                    | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4590   | 5.9                    | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4595   | 5.95                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4596   | 5.96                   | 24                   | 40                         | 80                   | 6                      |
| KHR-DLC-4597   | 5.97                   | 24                   | 40                         | 80                   | 6                      |

[illegible]

# KHR-4、KHRA-4、KLHR-OH

## 切削条件参考

Referential Cutting Conditions

| 被削材<br>Workpiece                 | 切削速度<br>Cutting Speed<br>m/min                                                                                        | 送り速度<br>Feed<br>mm/rev | リーマ代<br>Reamer Stock Removal<br>mm | 推奨切削油<br>Recommendable<br>Cutting Oil |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------|---------------------------------------|
| 炭素工具鋼<br>Carbon Tool Steel       | 10～15                                                                                                                 | 0.1 ～0.15              | 0.1                                | 不水溶性<br>Non-Water Soluable            |
| 鋳鉄<br>Cast Iron                  | 15～25                                                                                                                 | 0.1 ～0.15              | 0.1 ～0.2                           | 不水溶性<br>Non-Water Soluable            |
| 合金鋼<br>Alloy Steel               | 10～20                                                                                                                 | 0.1 ～0.15              | 0.1                                | 不水溶性<br>Non-Water Soluable            |
| プリハードン鋼<br>Pre-Harden Steel      | 6～10                                                                                                                  | 0.05以下                 | 0.05～0.1                           | 不水溶性<br>Non-Water Soluable            |
| ステンレス<br>Stainless Steel         | 10～15                                                                                                                 | 0.05～0.1               | 0.05～0.1                           | 不水溶性<br>Non-Water Soluable            |
| 銅・銅合金<br>Copper and Copper Alloy | 25～30                                                                                                                 | 0.05～0.1               | 0.1                                | 不水溶性<br>Non-Water Soluable            |
| チタン合金<br>Titanium Alloy          | 5～10                                                                                                                  | 0.05以下                 | 0.05～0.1                           | 水溶性<br>Water Soluable                 |
| アルミ合金<br>Aluminum Alloy          | 20～40                                                                                                                 | 0.05                   | 0.1 ～0.2                           | 不水溶性<br>Non-Water Soluable            |
| 樹脂<br>Resin                      | 15～20                                                                                                                 | 0.1 ～0.15              | 0.1 ～0.2                           | 不水溶性<br>Non-Water Soluable            |
| 備考<br>Remarks                    | ・使用する機械により切削速度、送り、仕上代を調整して下さい。<br>・ Adjust Cutting Speed, Feed and Finishing Stock Removal according to Using Machine |                        |                                    |                                       |

# KHR-DLC

## 切削条件参考

Referential Cutting Conditions

| 被削材<br>Workpiece                 | 切削速度<br>Cutting Speed<br>m/min                                                                                        | 送り速度<br>Feed<br>mm/rev | リーマ代<br>Reamer Stock Removal<br>mm | 推奨切削油<br>Recommendable<br>Cutting Oil |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------|------------------------------------|---------------------------------------|
| 銅・銅合金<br>Copper and Copper Alloy | 32～39                                                                                                                 | 0.07～0.13              | 0.1                                | 不水溶性<br>Non-Water Soluable            |
| アルミ合金<br>Aluminum Alloy          | 26～52                                                                                                                 | 0.07                   | 0.1～0.2                            | 不水溶性<br>Non-Water Soluable            |
| 樹脂<br>Resin                      | 19～26                                                                                                                 | 0.13～0.2               | 0.1～0.2                            | 不水溶性<br>Non-Water Soluable            |
| 備考<br>Remarks                    | ・使用する機械により切削速度、送り、仕上代を調整して下さい。<br>・ Adjust Cutting Speed, Feed and Finishing Stock Removal according to Using Machine |                        |                                    |                                       |