



Carbide Drills for Non-ferrous Materials

HYP-ALD-3D / HYP-ALDO-5D

非铁金属加工用硬质合金钻头



非铁金属加工用硬质合金钻头 Carbide Drills for Non-ferrous Materials

HYP-ALD-3D / HYP-ALDO-5D

特殊月牙槽式样

Special gash geometry

实现低阻力和切屑稳定性

Unique R Gash geometry enables super low cutting resistance and exceptional chip control

独特的槽形和优良的表面平滑性

Unique flute form with exceptional surface smoothness

实现良好的排屑性

Delivers outstanding chip evacuation capability

油孔

Coolant holes

※适用于HYP-ALDO-5D

*Applicable to HYP-ALDO-5D

通过内部供油进一步提高排屑性

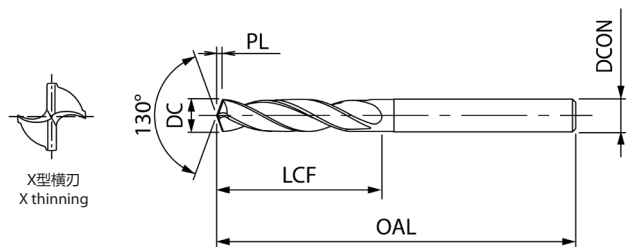
Internal coolant supply further enhances chip evacuation efficiency

采用双刃带提升稳定性

Double margin improves stability



HYP-ALD-3D



3D型 Type

单位:mm Unit:mm

商品号 EDP No.	直径 Dc	槽长 LCF	全长 OAL	柄径 DCON	库存 Stock
110301000	1	7	35	3	○
110301100	1.1	7	35	3	○
110301190	1.19 (3/64)	8	35	3	○
110301200	1.2	8	35	3	○
110301300	1.3	8	35	3	○
110301400	1.4	9	35	3	○
110301500	1.5	9	40	3	○
110301590	1.59 (1/16)	10	40	3	○
110301600	1.6	10	40	3	○
110301700	1.7	10	40	3	○
110301800	1.8	11	40	3	○
110301900	1.9	11	40	3	○
110301980	1.98 (5/64)	13	45	3	○
110302000	2	13	45	3	○
110302100	2.1	13	45	3	○
110302200	2.2	13	45	3	○
110302300	2.3	13	45	3	○
110302380	2.38 (3/32)	15	45	3	○
110302400	2.4	15	45	3	○
110302500	2.5	15	50	3	○
110302600	2.6	15	50	3	○
110302700	2.7	17	50	3	○
110302780	2.78 (7/64)	17	50	3	○
110302800	2.8	17	50	3	○
110302900	2.9	17	50	3	○
110303000	3	20	62	6	●
110303100	3.1	20	62	6	○
110303170	3.17 (1/8)	20	62	6	○
110303200	3.2	20	62	6	○
110303300	3.3	20	62	6	○

商品号 EDP No.	直径 Dc	槽长 LCF	全长 OAL	柄径 DCON	库存 Stock
110303400	3.4	20	62	6	○
110303500	3.5	20	62	6	●
110303570	3.57 (9/64)	20	62	6	○
110303600	3.6	20	62	6	○
110303700	3.7	20	62	6	○
110303800	3.8	24	66	6	○
110303900	3.9	24	66	6	○
110303970	3.97 (5/32)	24	66	6	○
110304000	4	24	66	6	●
110304090	4.09	24	66	6	○
110304100	4.1	24	66	6	●
110304200	4.2	24	66	6	●
110304300	4.3	24	66	6	○
110304370	4.37 (11/64)	24	66	6	○
110304400	4.4	24	66	6	○
110304500	4.5	24	66	6	●
110304600	4.6	24	66	6	●
110304650	4.65	24	66	6	●
110304700	4.7	24	66	6	○
110304760	4.76 (3/16)	28	66	6	○
110304800	4.8	28	66	6	○
110304900	4.9	28	66	6	○
110305000	5	28	66	6	●
110305100	5.1	28	66	6	○
110305160	5.16 (13/64)	28	66	6	○
110305200	5.2	28	66	6	○
110305300	5.3	28	66	6	○
110305400	5.4	28	66	6	○
110305410	5.41	28	66	6	○
110305500	5.5	28	66	6	●

• 标识说明请参考p.4。

• See p.4 for explanation of icons.

● = 标准库存品

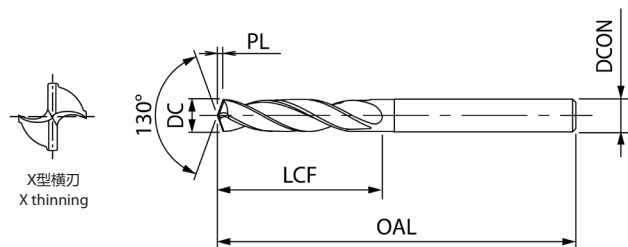
● = Standard stock item

○ = 准标准库存品 (请确认库存。)

○ = Limited standard stock item



HYP-ALD-3D



3D型 Type

商品号 EDP No.	直径 Dc	槽长 LCF	全长 OAL	柄径 DCON	库存 Stock
110305560	5.56 (7/32)	28	66	6	●
110305600	5.6	28	66	6	○
110305700	5.7	28	66	6	○
110305800	5.8	28	66	6	○
110305900	5.9	28	66	6	○
110305950	5.95 (15/64)	28	66	6	○
110306000	6	28	66	6	●
110306100	6.1	34	79	8	○
110306200	6.2	34	79	8	○
110306300	6.3	34	79	8	○
110306350	6.35 (1/4)	34	79	8	○
110306400	6.4	34	79	8	○
110306500	6.5	34	79	8	●
110306530	6.53	34	79	8	○
110306600	6.6	34	79	8	○
110306700	6.7	34	79	8	○
110306750	6.75 (17/64)	34	79	8	○
110306800	6.8	34	79	8	●
110306900	6.9	34	79	8	○
110307000	7	34	79	8	●
110307100	7.1	41	79	8	○
110307140	7.14 (9/32)	41	79	8	○
110307200	7.2	41	79	8	○
110307300	7.3	41	79	8	○
110307400	7.4	41	79	8	○
110307500	7.5	41	79	8	●
110307540	7.54 (19/64)	41	79	8	●
110307600	7.6	41	79	8	○
110307700	7.7	41	79	8	○
110307800	7.8	41	79	8	○

单位:mm Unit:mm

商品号 EDP No.	直径 Dc	槽长 LCF	全长 OAL	柄径 DCON	库存 Stock
110307900	7.9	41	79	8	○
110307940	7.94 (5/16)	41	79	8	○
110308000	8	41	79	8	●
110308100	8.1	47	89	10	○
110308200	8.2	47	89	10	○
110308300	8.3	47	89	10	○
110308330	8.33 (21/64)	47	89	10	○
110308400	8.4	47	89	10	○
110308430	8.43	47	89	10	○
110308500	8.5	47	89	10	●
110308600	8.6	47	89	10	○
110308700	8.7	47	89	10	○
110308730	8.73 (11/32)	47	89	10	○
110308800	8.8	47	89	10	○
110308900	8.9	47	89	10	○
110309000	9	47	89	10	●
110309100	9.1	47	89	10	○
110309130	9.13 (23/64)	47	89	10	○
110309200	9.2	47	89	10	○
110309250	9.25	47	89	10	○
110309300	9.3	47	89	10	○
110309400	9.4	47	89	10	○
110309500	9.5	47	89	10	●
110309520	9.52 (3/8)	47	89	10	○
110309600	9.6	47	89	10	○
110309700	9.7	47	89	10	○
110309800	9.8	47	89	10	○
110309900	9.9	47	89	10	○
110309920	9.92 (25/64)	47	89	10	○
110310000	10	47	89	10	●

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• See p.4 for explanation of icons.

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标识种类 Guide for Icons

1 材质 Tool Materials

CARBIDE 硬质合金
Tungsten Carbide

4 柄部 Shank

**SHRINK
FIT** 也推荐热缩刀柄
Suitable for the shrink holder system

2 直径的容许差 Tolerance for Drill Diameter

m7 表示钻头直径的容许差
Tolerance for drill diameter

5 切削条件 Cutting Conditions

**SPEED
FEED** 表示切削条件基准表所在页码
Indicates page number for cutting conditions

3 螺旋角 Helix Angle

30° 表示钻头排屑槽的螺旋角
Helix angle of flute for drills

单位:mm Unit:mm

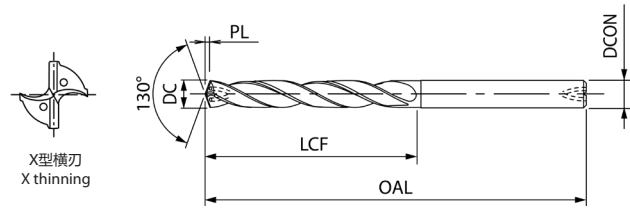
商品号 EDP No.	直径 Dc	槽长 LCF	全长 OAL	柄径 DCON	库存 Stock
110310100	10.1	55	102	12	○
110310200	10.2	55	102	12	○
110310300	10.3	55	102	12	○
110310320	10.32 (13/32)	55	102	12	○
110310400	10.4	55	102	12	○
110310500	10.5	55	102	12	○
110310600	10.6	55	102	12	○
110310700	10.7	55	102	12	○
110310720	10.72 (27/64)	55	102	12	○
110310800	10.8	55	102	12	●
110310900	10.9	55	102	12	○
110311000	11	55	102	12	○
110311100	11.1	55	102	12	○
110311110	11.11 (7/16)	55	102	12	○
110311200	11.2	55	102	12	○
110311300	11.3	55	102	12	○
110311400	11.4	55	102	12	○
110311500	11.5	55	102	12	○
110311510	11.51 (29/64)	55	102	12	○
110311600	11.6	55	102	12	○
110311700	11.7	55	102	12	○
110311800	11.8	55	102	12	○
110311900	11.9	55	102	12	○
110311910	11.91 (15/32)	55	102	12	○
110312000	12	55	102	12	●
110312100	12.1	60	107	14	○
110312200	12.2	60	107	14	○
110312300	12.30 (31/64)	60	107	14	○
110312500	12.5	60	107	14	○
110312700	12.70 (1/2)	60	107	14	○

●=标准库存品
●=Standard stock item

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○=Limited standard stock item



HYP-ALDO-5D



5D型 Type

单位:mm Unit:mm

商品号 EDP No.	直径 Dc	槽长 LCF	全长 OAL	柄径 DCON	库存 Stock
111503000	3	28	66	6	●
111503100	3.1	28	66	6	○
111503170	3.17 (1/8)	28	66	6	○
111503200	3.2	28	66	6	○
111503300	3.3	28	66	6	○
111503400	3.4	28	66	6	○
111503500	3.5	28	66	6	●
111503570	3.57 (9/64)	28	66	6	○
111503600	3.6	28	66	6	○
111503700	3.7	28	66	6	○
111503800	3.8	36	74	6	○
111503900	3.9	36	74	6	○
111503970	3.97 (5/32)	36	74	6	○
111504000	4	36	74	6	●
111504090	4.09	36	74	6	○
111504100	4.1	36	74	6	●
111504200	4.2	36	74	6	●
111504300	4.3	36	74	6	○
111504370	4.37 (11/64)	36	74	6	○
111504400	4.4	36	74	6	○
111504500	4.5	36	74	6	●
111504600	4.6	36	74	6	●
111504650	4.65	36	74	6	●
111504700	4.7	36	74	6	○
111504760	4.76 (3/16)	44	82	6	○
111504800	4.8	44	82	6	○
111504900	4.9	44	82	6	○
111505000	5	44	82	6	●
111505100	5.1	44	82	6	○
111505160	5.16 (13/64)	44	82	6	○
111505200	5.2	44	82	6	○
111505300	5.3	44	82	6	○

商品号 EDP No.	直径 Dc	槽长 LCF	全长 OAL	柄径 DCON	库存 Stock
111505400	5.4	44	82	6	○
111505410	5.41	44	82	6	○
111505500	5.5	44	82	6	●
111505560	5.56 (7/32)	44	82	6	●
111505600	5.6	44	82	6	○
111505700	5.7	44	82	6	○
111505800	5.8	44	82	6	○
111505900	5.9	44	82	6	○
111505950	5.95 (15/64)	44	82	6	○
111506000	6	44	82	6	●
111506100	6.1	53	91	8	○
111506200	6.2	53	91	8	○
111506300	6.3	53	91	8	○
111506350	6.35 (1/4)	53	91	8	○
111506400	6.4	53	91	8	○
111506500	6.5	53	91	8	●
111506530	6.53	53	91	8	○
111506600	6.6	53	91	8	○
111506700	6.7	53	91	8	○
111506750	6.75 (17/64)	53	91	8	○
111506800	6.8	53	91	8	●
111506900	6.9	53	91	8	○
111507000	7	53	91	8	●
111507100	7.1	53	91	8	○
111507140	7.14 (9/32)	53	91	8	○
111507200	7.2	53	91	8	○
111507300	7.3	53	91	8	○
111507400	7.4	53	91	8	○
111507500	7.5	53	91	8	●
111507540	7.54 (19/64)	53	91	8	●
111507600	7.6	53	91	8	○
111507700	7.7	53	91	8	○

标识说明请参考p.4.
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商品号 EDP No.	直径 Dc	槽长 LCF	全长 OAL	柄径 DCON	库存 Stock
111507800	7.8	53	91	8	○
111507900	7.9	53	91	8	○
111507940	7.94 (5/16)	53	91	8	○
111508000	8	53	91	8	●
111508100	8.1	61	103	10	○
111508200	8.2	61	103	10	○
111508300	8.3	61	103	10	○
111508330	8.33 (21/64)	61	103	10	○
111508400	8.4	61	103	10	○
111508430	8.43	61	103	10	○
111508500	8.5	61	103	10	●
111508600	8.6	61	103	10	○
111508700	8.7	61	103	10	○
111508730	8.73 (11/32)	61	103	10	○
111508800	8.8	61	103	10	○
111508900	8.9	61	103	10	○
111509000	9	61	103	10	●
111509100	9.1	61	103	10	○
111509130	9.13 (23/64)	61	103	10	○
111509200	9.2	61	103	10	○
111509250	9.25	61	103	10	○
111509300	9.3	61	103	10	○
111509400	9.4	61	103	10	○
111509500	9.5	61	103	10	●
111509520	9.52 (3/8)	61	103	10	○
111509600	9.6	61	103	10	○
111509700	9.7	61	103	10	○
111509800	9.8	61	103	10	○
111509900	9.9	61	103	10	○
111509920	9.92 (25/64)	61	103	10	○
111510000	10	61	103	10	●
111510100	10.1	71	118	12	○

单位:mm Unit:mm

商品号 EDP No.	直径 Dc	槽长 LCF	全长 OAL	柄径 DCON	库存 Stock
111510200	10.2	71	118	12	○
111510300	10.3	71	118	12	○
111510320	10.32 (13/32)	71	118	12	○
111510400	10.4	71	118	12	○
111510500	10.5	71	118	12	○
111510600	10.6	71	118	12	○
111510700	10.7	71	118	12	○
111510720	10.72 (27/64)	71	118	12	○
111510800	10.8	71	118	12	●
111510900	10.9	71	118	12	○
111511000	11	71	118	12	○
111511100	11.1	71	118	12	○
111511110	11.11 (7/16)	71	118	12	○
111511200	11.2	71	118	12	○
111511300	11.3	71	118	12	○
111511400	11.4	71	118	12	○
111511500	11.5	71	118	12	○
111511510	11.51 (29/64)	71	118	12	○
111511600	11.6	71	118	12	○
111511700	11.7	71	118	12	○
111511800	11.8	71	118	12	○
111511900	11.9	71	118	12	○
111511910	11.91 (15/32)	71	118	12	○
111512000	12	71	118	12	●
111512100	12.1	77	124	14	○
111512200	12.2	77	124	14	○
111512300	12.30 (31/64)	77	124	14	○
111512500	12.5	77	124	14	○
111512700	12.70 (1/2)	77	124	14	○

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 ●=Standard stock item ○=Limited standard stock item



HYP-ALD-3D/HYP-ALDO-5D 切削条件基准表 Cutting Condition

HYP-ALD-3D

加工材料 Work Material	铝合金铸件 Aluminum Alloy Casting ~13wt%Si·AC1 ~8·ADC		变形铝 Aluminum A7075·A2024·A5052		铜合金 Copper Alloy C1020·C6140		镁合金 Magnesium Alloy AZ91D·AZ80A	
切削速度 Cutting Speed (m/min)	80 ~ 200		80 ~ 150		40 ~ 100		60 ~ 100	
直径 Drill Dia. (mm)	转速 Speed (min ⁻¹)	进给量 Feed Rate (mm/rev)	转速 Speed (min ⁻¹)	进给量 Feed Rate (mm/rev)	转速 Speed (min ⁻¹)	进给量 Feed Rate (mm/rev)	转速 Speed (min ⁻¹)	进给量 Feed Rate (mm/rev)
1	25,000	0.02 ~ 0.08	25,000	0.02 ~ 0.05	22,300	0.008 ~ 0.02	25,000	0.02 ~ 0.05
2	22,300	0.04 ~ 0.16	18,300	0.04 ~ 0.10	11,100	0.016 ~ 0.04	12,700	0.04 ~ 0.10
3	14,900	0.06 ~ 0.24	12,200	0.06 ~ 0.15	7,400	0.024 ~ 0.06	8,500	0.06 ~ 0.15
4	11,100	0.08 ~ 0.32	9,200	0.08 ~ 0.20	5,600	0.032 ~ 0.08	6,400	0.08 ~ 0.20
6	7,400	0.12 ~ 0.48	6,100	0.12 ~ 0.30	3,700	0.048 ~ 0.12	4,200	0.12 ~ 0.30
8	5,600	0.16 ~ 0.64	4,600	0.16 ~ 0.40	2,800	0.064 ~ 0.16	3,200	0.16 ~ 0.40
10	4,500	0.20 ~ 0.80	3,700	0.20 ~ 0.50	2,200	0.08 ~ 0.20	2,500	0.20 ~ 0.50
12	3,700	0.24 ~ 0.96	3,100	0.24 ~ 0.60	1,900	0.096 ~ 0.24	2,100	0.24 ~ 0.60

※ 此切削条件基准表适用于使用**水溶性切削油剂**的情况。
 ※ 此切削条件基准表适用于孔深3D以下的情况。
 ※ 如果加工材料的切屑分断性不佳时，请适当进行阶梯式加工。

* The indicated speeds and feeds are for drilling with **water-soluble coolant**.
 * These conditions are for drilling depth under 3 times the drill diameter.
 * Operate the drill in steps as necessary when working on a material that disintegrates chips poorly.

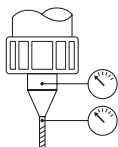
HYP-ALDO-5D

加工材料 Work Material	铝合金铸件 Aluminum Alloy Casting ~13wt%Si·AC1 ~8·ADC		变形铝 Aluminum A7075·A2024·A5052		铜合金 Copper Alloy C1020·C6140		镁合金 Magnesium Alloy AZ91D·AZ80A	
切削速度 Cutting Speed (m/min)	120 ~ 250		80 ~ 200		40 ~ 120		60 ~ 130	
直径 Drill Dia. (mm)	转速 Speed (min ⁻¹)	进给量 Feed Rate (mm/rev)	转速 Speed (min ⁻¹)	进给量 Feed Rate (mm/rev)	转速 Speed (min ⁻¹)	进给量 Feed Rate (mm/rev)	转速 Speed (min ⁻¹)	进给量 Feed Rate (mm/rev)
1	25,000	0.02 ~ 0.08	25,000	0.02 ~ 0.05	25,000	0.008 ~ 0.02	25,000	0.02 ~ 0.05
2	29,500	0.04 ~ 0.16	22,300	0.04 ~ 0.10	12,700	0.016 ~ 0.04	15,100	0.04 ~ 0.10
3	19,600	0.06 ~ 0.24	14,900	0.06 ~ 0.15	8,500	0.024 ~ 0.06	10,100	0.06 ~ 0.15
4	14,700	0.08 ~ 0.32	11,100	0.08 ~ 0.20	6,400	0.032 ~ 0.08	7,600	0.08 ~ 0.20
6	9,800	0.12 ~ 0.48	7,400	0.12 ~ 0.30	4,200	0.048 ~ 0.12	5,000	0.12 ~ 0.30
8	7,400	0.16 ~ 0.64	5,600	0.16 ~ 0.40	3,200	0.064 ~ 0.16	3,800	0.16 ~ 0.40
10	5,900	0.20 ~ 0.80	4,500	0.20 ~ 0.50	2,500	0.08 ~ 0.20	3,000	0.20 ~ 0.50
12	4,900	0.24 ~ 0.96	3,700	0.24 ~ 0.60	2,100	0.096 ~ 0.24	2,500	0.24 ~ 0.60

※ 此切削条件基准表适用于使用**水溶性切削油剂及内部供油**的情况。
 ※ 此切削条件基准表适用于孔深5D以下的情况。
 ※ 油孔堵塞是导致折损的重要因素。请务必安装供油装置的过滤器。

* This cutting condition chart is for when **water-soluble coolant and internal coolant are used**.
 * These conditions are for drilling depth under 5 times the drill diameter.
 * Clogged oil holes may cause breakage. Be sure to attach a filter to the oil supply system.

- 请使用稀释倍率20~30倍的优质水溶性切削油剂。
- 安装钻头时，请使用无划痕无污垢的夹头，钻头跳动控制在**0.02mm**以下。
- 不推荐加工高硬度的铍铜。
- 切削条件的范围设定得非常宽，这是因为受设备、切削油剂、工件夹持状态等各种周边环境的影响，可加工的条件会发生变化。
- 加工镁合金时，请务必使用切削油剂厂家推荐的切削油剂。另外，请注意切屑的处理。可能会引起火灾。



- Use a high-quality water-soluble coolant with a dilution ratio of 20 to 30 times.
- When installing a drill, use a collet that is free of scratches and dirt, and keep the drill runout to **0.02 mm or less**.
- Not recommended for machining high-hardness beryllium copper.
- The range of cutting conditions is set very broadly, because the machining conditions change depending on various surrounding environments such as the equipment, cutting oil, and workpiece holding condition.
- Please always use the appropriate cutting uid recommended by the cutting uid manufacturer in the machining of magnesium alloys. Be cautious with the cutting chips as they are highly ammal and may pose a serious re risk if not properly handled.





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