

Meet The Best Nanotechnology

# NANOLOY CUTTING TOOL

## Solid Carbide Endmill

“Beyond the cutting Tools”

The Solution Provider for Difficult to cut Materials



[www.nanoloy.co.kr](http://www.nanoloy.co.kr)



# The world's first ultrafine 0.2 $\mu$ m powder Difficult-to-cut materials cutting solution

## 全球第一0.2 $\mu$ mNANO(纳米级)复合粉末材料开发 针对加工难切削材料最佳解决方案

Nanotech Co., Ltd. Developed the world's first 0.2 $\mu$ m WC-Co composite powder and manufactures Inserts and Endmills by Nano (Ultrafine) powder. Our products (Nanoloy) are Nanoloy cutting tools specialized in machining difficult-to-cut materials in various industries. We are expanding global network by selling nanoloy cutting tools to all around of world

NANOLOY研制出世界上第一0.2 $\mu$ mWC-Co复合粉末, 并以Nano(Ultrafine)粉末制造绝缘体和端面磨坊 NANOLOY产品是专门加工各种工业中难以切割材料的 我们向全世界销售纳米合金切削工具,以扩大全球网络

N A N O T E C H



Aerospace  
航空航天



Turbocharger for automobile  
汽车涡轮增压器



Pump & Valve Oil & Gas  
泵阀石油&汽油



General Machining (SUS)  
通用加工(SUS)

## TIME LINE

### 1999

- 1999. 09 Established NANOTECH Co., LTD.  
成立NANOTECH
- 1999. 12 The 20 century Korea Top 100 technologies selected (MK).  
被选20世纪韩国百强科技评选

### 2000~2004

- 2000. 04 Established the annex research institute of NANOTECH CO.,LTD.  
成立NANOTECH
- 2000. 09 Selected as a venture enterprise (MSIT).  
被选为风险企业(Venture enterprise) (MSIT)
- 2001. 09 Manufactured Nano composite powder of tungsten carbide and cobalt.  
碳化钨钴纳米复合粉体材料的研究制造
- 2003. 03 Selected as INNO-BIZ enterprise (MSIT Chungbuk).  
被选为INNO-BIZ企业
- 2004. 07 Selected as an excellent manufacturing technology research center-Nano powder (MOCIE).  
被选为优秀纳米粉体制造技术研究中心(MOCIE)

### 2006~2009

- 2006. 05 Cemented carbide (WC-CO) material production.  
胶结及生产硬质合金材料
- 2007. 02 Selected with material part technology development business - Nano materials (MOTIE).  
被选材料技术开发部门-纳米材料(MOCIE)
- 2008. 01 ISO 9001 ISO 14001 Certification (System Korea Certification).  
ISO9001:ISO14001认证(韩国认证体系)
- 2008. 11 300 Million Dollars of Exports Award - 45th Trade Day (President).  
300万美元出口奖-第45届韩国贸易日(总统奖)
- 2009. 08 Selected with material part technology development business - Difficult-to-cut materials (MOTIE).  
被选材料技术开发部门-难切割材料(MOCIE)

### 2012~2015

- 2012. 09 Selected with material part technology development business - Cermet powder (MOCIE).  
被选材料技术开发部门-金属陶瓷粉(MOCIE)
- 2013. 02 Selection of outstanding R&D performance utilization company (KEIT).  
被选优秀研发绩效利用公司(KEIT)
- 2015. 01 NANOLOY inserts and end mills production. NANOLOY  
NANOLOY立铣刀和刀片生产

### 2016~2018

- 2016. 05 Selected with material part technology development business - (W, Ti)C powder (MOCIE).  
被选材料技术开发部门(钨、钛)钴粉末(MOCIE)
- 2016. 05 Designated as a global hidden champion (MSIT).  
被指定为全球隐形冠军(MSIT)
- 2016. 09 Established NT Vina Factory.  
建立了NT越南工厂
- 2018. 02 Selected as a promising small and medium-sized enterprise in Cheongju (Cheongju City).  
被选为清州市有发展前途的中小企业

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# CARBIDE ENDMILL SERIES

整体钨钢铣刀

# CARBIDE ENDMILL SERIES

## 整体钨钢铣刀

Excellent tool life with superior NANO ultrafine grade  
采用了NANOLOY超微粒材质确保卓越的工具寿命

**"N-SM"** CARBIDE ENDMILL SERIES FOR STAINLESS STEEL

**"N-SM"** 不锈钢专用铣刀

**"N-SH"** CARBIDE ENDMILL SERIES FOR HARDENED STEEL

**"N-SM"** 高硬度钢专用铣刀

**"N-SM"** CARBIDE ENDMILL SERIES FOR GENERAL PURPOSE

**"N-SM"** 普通钢专用铣刀

**"N-SN"** CARBIDE ENDMILL SERIES FOR ALUMINUM

**"N-SN"** 铝专用铣刀

# “N-SM” CARBIDE ENDMILL SERIES FOR STAINLESS STEEL

## “N-SM” 不锈钢专用铣刀

### N-SM Series / 系列

#### CARBIDE ENDMILL SERIES FOR STAINLESS STEEL

#### 不锈钢专用铣刀

1. Superior material, coating, geometry for stainless steel & Ni based alloy & Ti alloy machining  
采用加工不锈钢及钛合金，镍合金的最优良的材质，涂层，形状
2. Excellent performance in ISO M,S group  
对于M,S系列材料加工最合适
3. Wide range of applications with various geometries and specifications  
可广泛应用于多种形状和特征



### PRODUCT FEATURE / 产品特点

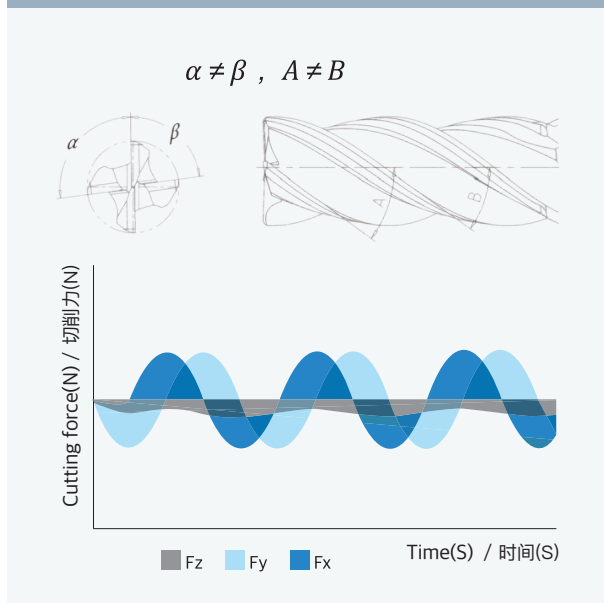
Own patented powder, special geometry, coating guarantee excellent cutting performance in stainless steel & Ni based alloy & Ti alloy machining

独特的粉末材料、特殊的几何结构、特殊涂层保证优良的切割性能  
专门用于不锈钢、镍基合金、钛合金加工

- Provide highest machining quality and tool life with excellent cutting edge in difficult to cut materials machining
- 提供最高的加工质量和刀具寿命，具有优良的切削刃适合难切削材料加工
- Longer tool life and minimization cutting force with high rake angle and enhanced edge resistance
- 提供最高的加工质量和刀具寿命，具有优良的切削刃适合难切削材料加工

### | CORE TECHNOLOGY / 核心技术

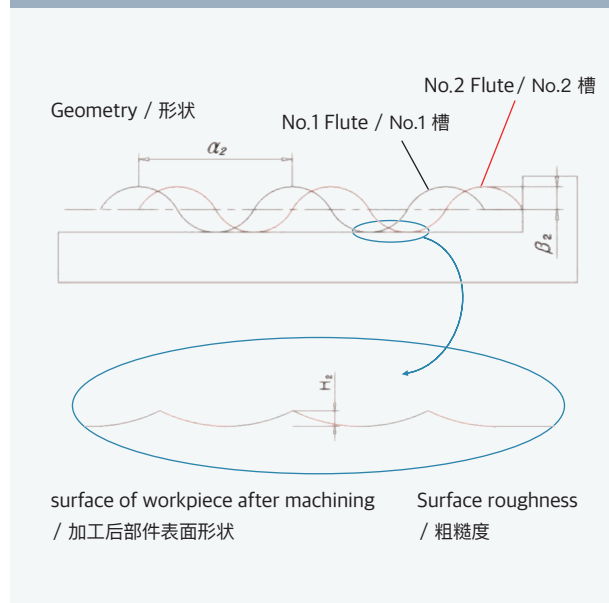
#### Unequal indexing & multiple-helix design 采用不等分槽型&不等螺旋角



Applying uneven indexing & helix preventing chattering and reduce cutting resistance.

采用不等分槽型和不等螺旋角为减少震动和减少切削阻力

#### Roughing design 粗加工专用槽型

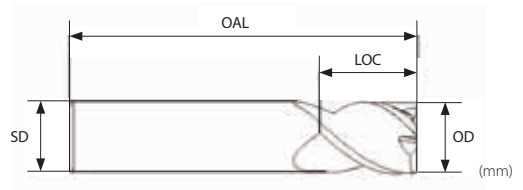


Nanology proprietary technology designed Wide pitch, low wave shape to prevent chipping, perfect surface

采用宽间距和深槽形状为扩大接触面积可防止崩刃和提高粗糙度。



**NANO SUS 4 FLUTE FLAT**  
NANO 不锈钢 4刃 平头



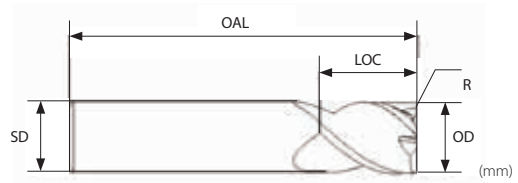
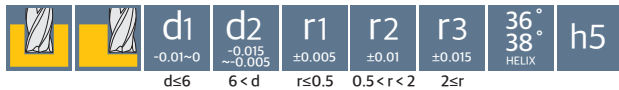
| NO<br>编号 | Item Code<br>产品型号      | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|------------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 1        | NFMS4-010-025-S06-L50  | 1X6X2.5X50      | 1        | 6        | 2.5       | 50        | 4           |
| 2        | NFMS4-012-030-S06-L50  | 1.2X6X3X50      | 1.2      | 6        | 3         | 50        | 4           |
| 3        | NFMS4-015-040-S06-L50  | 1.5X6X4X50      | 1.5      | 6        | 4         | 50        | 4           |
| 4        | NFMS4-020-060-S06-L50  | 2X6X6X50        | 2        | 6        | 6         | 50        | 4           |
| 5        | NFMS4-025-070-S06-L50  | 2.5X6X7X50      | 2.5      | 6        | 7         | 50        | 4           |
| 6        | NFMS4-030-080-S06-L55  | 3X6X8X55        | 3        | 6        | 8         | 55        | 4           |
| 7        | NFMS4-030-100-S06-L60  | 3X6X10X60       | 3        | 6        | 10        | 60        | 4           |
| 8        | NFMS4-035-100-S06-L55  | 3.5X6X10X55     | 3.5      | 6        | 10        | 55        | 4           |
| 9        | NFMS4-040-100-S06-L55  | 4X6X10X55       | 4        | 6        | 10        | 55        | 4           |
| 10       | NFMS4-040-120-S06-L60  | 4X6X12X60       | 4        | 6        | 12        | 60        | 4           |
| 11       | NFMS4-045-120-S06-L55  | 4.5X6X12X55     | 4.5      | 6        | 12        | 55        | 4           |
| 12       | NFMS4-050-150-S06-L55  | 5X6X15X55       | 5        | 6        | 15        | 55        | 4           |
| 13       | NFMS4-055-150-S06-L60  | 5.5X6X15X60     | 5.5      | 6        | 15        | 60        | 4           |
| 14       | NFMS4-060-150-S06-L60  | 6X6X15X60       | 6        | 6        | 15        | 60        | 4           |
| 15       | NFMS4-060-200-S06-L65  | 6X6X20X65       | 6        | 6        | 20        | 65        | 4           |
| 16       | NFMS4-065-150-S08-L60  | 6.5X8X15X60     | 6.5      | 8        | 15        | 60        | 4           |
| 17       | NFMS4-070-200-S08-L80  | 7X8X20X80       | 7        | 8        | 20        | 80        | 4           |
| 18       | NFMS4-080-200-S08-L70  | 8X8X20X70       | 8        | 8        | 20        | 70        | 4           |
| 19       | NFMS4-080-250-S08-L70  | 8X8X25X70       | 8        | 8        | 25        | 70        | 4           |
| 20       | NFMS4-080-300-S08-L80  | 8X8X30X80       | 8        | 8        | 30        | 80        | 4           |
| 21       | NFMS4-085-200-S10-L70  | 8.5X10X20X70    | 8.5      | 10       | 20        | 70        | 4           |
| 22       | NFMS4-090-250-S10-L80  | 9X10X25X80      | 9        | 10       | 25        | 80        | 4           |
| 23       | NFMS4-100-250-S10-L75  | 10X10X25X75     | 10       | 10       | 25        | 75        | 4           |
| 24       | NFMS4-100-350-S10-L85  | 10X10X35X85     | 10       | 10       | 35        | 85        | 4           |
| 25       | NFMS4-120-300-S12-L80  | 12X12X30X80     | 12       | 12       | 30        | 80        | 4           |
| 26       | NFMS4-120-400-S12-L90  | 12X12X40X90     | 12       | 12       | 40        | 90        | 4           |
| 27       | NFMS4-160-420-S16-L100 | 16X16X42X100    | 16       | 16       | 42        | 100       | 4           |
| 28       | NFMS4-200-480-S20-L100 | 20X20X48X100    | 20       | 20       | 48        | 100       | 4           |

# “N-SM” CARBIDE ENDMILL SERIES FOR STAINLESS STEEL

## “N-SM” 不锈钢专用铣刀

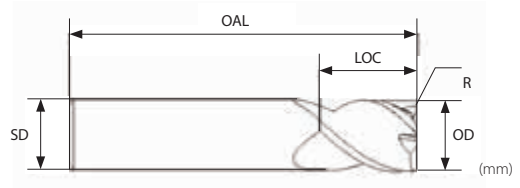
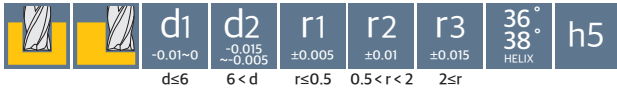
| NANO SUS 4 FLUTE CORNER RADIUS ①

NANO 不锈钢 4刃 圆鼻 ①



| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格   | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|---------------------------|-------------------|----------|----------|--------|-----------|-----------|-------------|
| 1        | NRMS4-010-001-025-S06-L50 | 1(R0.1)X6X2.5X50  | 1        | 6        | R0.1   | 2.5       | 50        | 4           |
| 2        | NRMS4-010-002-025-S06-L50 | 1(R0.2)X6X2.5X50  | 1        | 6        | R0.2   | 2.5       | 50        | 4           |
| 3        | NRMS4-012-001-030-S06-L50 | 1.2(R0.1)X6X3X50  | 1.2      | 6        | R0.1   | 3         | 50        | 4           |
| 4        | NRMS4-015-001-040-S06-L50 | 1.5(R0.1)X6X4X50  | 1.5      | 6        | R0.1   | 4         | 50        | 4           |
| 5        | NRMS4-015-002-040-S06-L50 | 1.5(R0.2)X6X4X50  | 1.5      | 6        | R0.2   | 4         | 50        | 4           |
| 6        | NRMS4-020-001-060-S06-L50 | 2(R0.1)X6X6X50    | 2        | 6        | R0.1   | 6         | 50        | 4           |
| 7        | NRMS4-020-002-060-S06-L50 | 2(R0.2)X6X6X50    | 2        | 6        | R0.2   | 6         | 50        | 4           |
| 8        | NRMS4-025-002-070-S06-L50 | 2.5(R0.2)X6X7X50  | 2.5      | 6        | R0.2   | 7         | 50        | 4           |
| 9        | NRMS4-030-002-080-S06-L55 | 3(R0.2)X6X8X55    | 3        | 6        | R0.2   | 8         | 55        | 4           |
| 10       | NRMS4-030-003-080-S06-L55 | 3(R0.3)X6X8X55    | 3        | 6        | R0.3   | 8         | 55        | 4           |
| 11       | NRMS4-030-005-080-S06-L55 | 3(R0.5)X6X8X55    | 3        | 6        | R0.5   | 8         | 55        | 4           |
| 12       | NRMS4-040-002-100-S06-L55 | 4(R0.2)X6X10X55   | 4        | 6        | R0.2   | 10        | 55        | 4           |
| 13       | NRMS4-040-003-100-S06-L55 | 4(R0.3)X6X10X55   | 4        | 6        | R0.3   | 10        | 55        | 4           |
| 14       | NRMS4-040-005-100-S06-L55 | 4(R0.5)X6X10X55   | 4        | 6        | R0.5   | 10        | 55        | 4           |
| 15       | NRMS4-050-002-150-S06-L55 | 5(R0.2)X6X15X55   | 5        | 6        | R0.2   | 15        | 55        | 4           |
| 16       | NRMS4-050-003-150-S06-L55 | 5(R0.3)X6X15X55   | 5        | 6        | R0.3   | 15        | 55        | 4           |
| 17       | NRMS4-050-005-150-S06-L55 | 5(R0.5)X6X15X55   | 5        | 6        | R0.5   | 15        | 55        | 4           |
| 18       | NRMS4-060-003-150-S06-L60 | 6(R0.3)X6X15X60   | 6        | 6        | R0.3   | 15        | 60        | 4           |
| 19       | NRMS4-060-005-150-S06-L60 | 6(R0.5)X6X15X60   | 6        | 6        | R0.5   | 15        | 60        | 4           |
| 20       | NRMS4-060-010-150-S06-L60 | 6(R1)X6X15X60     | 6        | 6        | R1     | 15        | 60        | 4           |
| 21       | NRMS4-080-003-200-S08-L70 | 8(R0.3)X8X20X70   | 8        | 8        | R0.3   | 20        | 70        | 4           |
| 22       | NRMS4-080-005-200-S08-L70 | 8(R0.5)X8X20X70   | 8        | 8        | R0.5   | 20        | 70        | 4           |
| 23       | NRMS4-080-010-200-S08-L70 | 8(R1)X8X20X70     | 8        | 8        | R1     | 20        | 70        | 4           |
| 24       | NRMS4-100-003-250-S10-L75 | 10(R0.3)X10X25X75 | 10       | 10       | R0.3   | 25        | 75        | 4           |
| 25       | NRMS4-100-005-250-S10-L75 | 10(R0.5)X10X25X75 | 10       | 10       | R0.5   | 25        | 75        | 4           |
| 26       | NRMS4-100-010-250-S10-L75 | 10(R1)X10X25X75   | 10       | 10       | R1     | 25        | 75        | 4           |
| 27       | NRMS4-100-015-250-S10-L75 | 10(R1.5)X10X25X75 | 10       | 10       | R1.5   | 25        | 75        | 4           |
| 28       | NRMS4-100-020-250-S10-L75 | 10(R2)X10X25X75   | 10       | 10       | R2     | 25        | 75        | 4           |
| 29       | NRMS4-100-030-250-S10-L75 | 10(R3)X10X25X75   | 10       | 10       | R3     | 25        | 75        | 4           |
| 30       | NRMS4-120-005-300-S12-L80 | 12(R0.5)X12X30X80 | 12       | 12       | R0.5   | 30        | 80        | 4           |

**NANO SUS 4 FLUTE CORNER RADIUS ②**  
**NANO 不锈钢 4刃 圆鼻 ②**



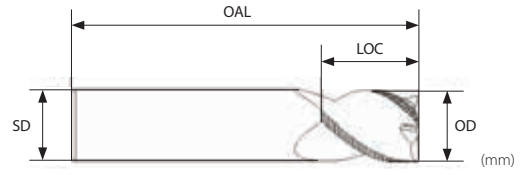
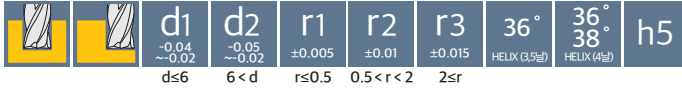
| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格    | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|----------------------------|--------------------|----------|----------|--------|-----------|-----------|-------------|
| 31       | NRMS4-120-010-300-S12-L80  | 12(R1)X12X30X80    | 12       | 12       | R1     | 30        | 80        | 4           |
| 32       | NRMS4-120-015-300-S12-L80  | 12(R1.5)X12X30X80  | 12       | 12       | R1.5   | 30        | 80        | 4           |
| 33       | NRMS4-120-020-300-S12-L80  | 12(R2)X12X30X80    | 12       | 12       | R2     | 30        | 80        | 4           |
| 34       | NRMS4-120-030-300-S12-L80  | 12(R3)X12X30X80    | 12       | 12       | R3     | 30        | 80        | 4           |
| 35       | NRMS4-120-040-300-S12-L80  | 12(R4)X12X30X80    | 12       | 12       | R4     | 30        | 80        | 4           |
| 36       | NRMS4-140-005-350-S16-L90  | 14(R0.5)X16X35X90  | 14       | 16       | R0.5   | 35        | 90        | 4           |
| 37       | NRMS4-140-010-350-S16-L90  | 14(R1)X16X35X90    | 14       | 16       | R1     | 35        | 90        | 4           |
| 38       | NRMS4-160-005-420-S16-L100 | 16(R0.5)X16X42X100 | 16       | 16       | R0.5   | 42        | 100       | 4           |
| 39       | NRMS4-160-010-420-S16-L100 | 16(R1)X16X42X100   | 16       | 16       | R1     | 42        | 100       | 4           |
| 40       | NRMS4-180-005-450-S16-L100 | 18(R0.5)X16X45X100 | 18       | 16       | R0.5   | 45        | 100       | 4           |
| 41       | NRMS4-200-005-480-S20-L100 | 20(R0.5)X20X48X100 | 20       | 20       | R0.5   | 48        | 100       | 4           |
| 42       | NRMS4-200-010-480-S20-L100 | 20(R1)X20X48X100   | 20       | 20       | R1     | 48        | 100       | 4           |

# “N-SM” CARBIDE ENDMILL SERIES FOR STAINLESS STEEL

## “N-SM” 不锈钢专用铣刀

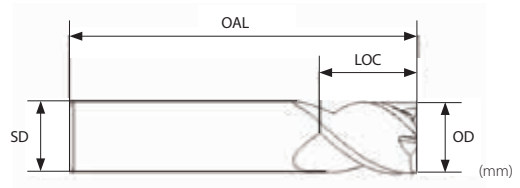
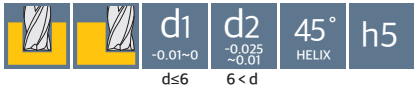
| NANO SUS 3~5 FLUTE ROUGHING

NANO 不锈钢 3~5刃 粗加工



| NO<br>编号 | Item Code<br>产品型号           | Dimension<br>规格      | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|-----------------------------|----------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 1        | NRMS3R-030-002-080-S06-L50  | 3(0.2)X6X8X50        | 3        | 6        | 0.2    | 8         | 50        |            | 3           |
| 2        | NRMS3R-040-002-100-S06-L50  | 4(0.2)X6X10X50       | 4        | 6        | 0.2    | 10        | 50        |            | 3           |
| 3        | NRMS4R-050-002-130-S06-L50  | 5(0.2)X6X13X50       | 5        | 6        | 0.2    | 13        | 50        |            | 4           |
| 4        | NRMS4R-060-002-130-S06-L60  | 6(0.2)X6X13X60       | 6        | 6        | 0.2    | 13        | 60        |            | 4           |
| 5        | NRMR4R-060-002-200-S06-L60  | 6(0.2)X6X10(20)X60   | 6        | 6        | 0.2    | 10        | 60        | 20         | 4           |
| 6        | NRMS4R-060-005-130-S06-L60  | 6(0.5)X6X13X60       | 6        | 6        | 0.5    | 13        | 60        |            | 4           |
| 7        | NRMS4R-070-002-180-S08-L70  | 7(0.2)X8X18X70       | 7        | 8        | 0.2    | 18        | 70        |            | 4           |
| 8        | NRMS4R-080-002-190-S08-L70  | 8(0.2)X8X19X70       | 8        | 8        | 0.2    | 19        | 70        |            | 4           |
| 9        | NRMR4R-080-002-250-S08-L70  | 8(0.2)X8X12(25)X70   | 8        | 8        | 0.2    | 12        | 70        | 25         | 4           |
| 10       | NRMS4R-080-005-190-S08-L70  | 8(0.5)X8X19X70       | 8        | 8        | 0.5    | 19        | 70        |            | 4           |
| 11       | NRMS4R-080-010-190-S08-L70  | 8(1)X8X19X70         | 8        | 8        | 1      | 19        | 70        |            | 4           |
| 12       | NRMS4R-090-003-200-S10-L70  | 9(0.3)X10X20X70      | 9        | 10       | 0.3    | 20        | 70        |            | 4           |
| 13       | NRMS4R-100-003-220-S10-L75  | 10(0.3)X10X22X75     | 10       | 10       | 0.3    | 22        | 75        |            | 4           |
| 14       | NRMR4R-100-003-300-S10-L75  | 10(0.3)X10X15(30)X75 | 10       | 10       | 0.3    | 15        | 75        | 30         | 4           |
| 15       | NRMS4R-100-005-220-S10-L75  | 10(0.5)X10X22X75     | 10       | 10       | 0.5    | 22        | 75        |            | 4           |
| 16       | NRMS4R-100-010-220-S10-L75  | 10(1)X10X22X75       | 10       | 10       | 1      | 22        | 75        |            | 4           |
| 17       | NRMS4R-110-003-250-S12-L80  | 11(0.3)X12X25X80     | 11       | 12       | 0.3    | 25        | 80        |            | 4           |
| 18       | NRMS4R-120-003-260-S12-L80  | 12(0.3)X12X26X80     | 12       | 12       | 0.3    | 26        | 80        |            | 4           |
| 19       | NRMS4R-120-010-260-S12-L80  | 12(1)X12X26X80       | 12       | 12       | 1      | 26        | 80        |            | 4           |
| 20       | NRMR4R-120-003-350-S12-L80  | 12(0.3)X12X20(35)X80 | 12       | 12       | 0.3    | 20        | 80        | 35         | 4           |
| 21       | NRMS5R-160-005-320-S16-L100 | 16(0.5)X16X32X100    | 16       | 16       | 0.5    | 32        | 100       |            | 5           |
| 22       | NRMS5R-160-005-420-S16-L100 | 16(0.5)X16X42X100    | 16       | 16       | 0.5    | 42        | 100       |            | 5           |
| 23       | NRMS5R-160-015-320-S16-L100 | 16(1.5)X16X32X100    | 16       | 16       | 1.5    | 32        | 100       |            | 5           |
| 24       | NRMS5R-160-015-420-S16-L100 | 16(1.5)X16X42X100    | 16       | 16       | 1.5    | 42        | 100       |            | 5           |
| 25       | NRMS5R-200-005-380-S20-L100 | 20(0.5)X20X38X100    | 20       | 20       | 0.5    | 38        | 100       |            | 5           |
| 26       | NRMS5R-200-005-450-S20-L100 | 20(0.5)X20X45X100    | 20       | 20       | 0.5    | 45        | 100       |            | 5           |
| 27       | NRMS5R-200-020-380-S20-L100 | 20(2)X20X38X100      | 20       | 20       | 2      | 38        | 100       |            | 5           |
| 28       | NRMS5R-200-020-450-S20-L100 | 20(2)X20X45X100      | 20       | 20       | 2      | 45        | 100       |            | 5           |

**NANO SUS 3 FLUTE**  
NANO 不锈钢 3刃 平头



| NO<br>编号 | Item Code<br>产品型号      | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|------------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 1        | NFMS3-010-025-S06-L50  | 1X6X2.5X50      | 1        | 6        | 2.5       | 50        | 3           |
| 2        | NFMS3-012-030-S06-L50  | 1.2X6X3X50      | 1.2      | 6        | 3         | 50        | 3           |
| 3        | NFMS3-015-040-S06-L50  | 1.5X6X4X50      | 1.5      | 6        | 4         | 50        | 3           |
| 4        | NFMS3-020-060-S06-L50  | 2X6X6X50        | 2        | 6        | 6         | 50        | 3           |
| 5        | NFMS3-025-070-S06-L50  | 2.5X6X7X50      | 2.5      | 6        | 7         | 50        | 3           |
| 6        | NFMS3-030-080-S06-L55  | 3X6X8X55        | 3        | 6        | 8         | 55        | 3           |
| 7        | NFMS3-030-100-S06-L60  | 3X6X10X60       | 3        | 6        | 10        | 60        | 3           |
| 8        | NFMS3-040-100-S06-L55  | 4X6X10X55       | 4        | 6        | 10        | 55        | 3           |
| 9        | NFMS3-040-120-S06-L60  | 4X6X12X60       | 4        | 6        | 12        | 60        | 3           |
| 10       | NFMS3-050-130-S06-L55  | 5X6X13X55       | 5        | 6        | 13        | 55        | 3           |
| 11       | NFMS3-060-150-S06-L60  | 6X6X15X60       | 6        | 6        | 15        | 60        | 3           |
| 12       | NFMS3-060-200-S06-L65  | 6X6X20X65       | 6        | 6        | 20        | 65        | 3           |
| 13       | NFMS3-080-200-S08-L70  | 8X8X20X70       | 8        | 8        | 20        | 70        | 3           |
| 14       | NFMS3-080-300-S08-L80  | 8X8X30X80       | 8        | 8        | 30        | 80        | 3           |
| 15       | NFMS3-100-250-S10-L75  | 10X10X25X75     | 10       | 10       | 25        | 75        | 3           |
| 16       | NFMS3-100-350-S10-L85  | 10X10X35X85     | 10       | 10       | 35        | 85        | 3           |
| 17       | NFMS3-120-300-S12-L80  | 12X12X30X80     | 12       | 12       | 30        | 80        | 3           |
| 18       | NFMS3-120-400-S12-L90  | 12X12X40X90     | 12       | 12       | 40        | 90        | 3           |
| 19       | NFMS3-160-420-S16-L100 | 16X16X42X100    | 16       | 16       | 42        | 100       | 3           |
| 20       | NFMS3-200-480-S20-L100 | 20X20X48X100    | 20       | 20       | 48        | 100       | 3           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

### N-SH Series / 系列

#### CARBIDE ENDMILL SERIES FOR HARDENED STEEL

##### 高硬度钢专用铣刀

1. Specially designed for machining high hardened material (HRC45~65)  
专为加工高硬度材料而设计(HRC45~65)
2. Excellent quality and performance for automotive and mold industry  
为汽车和模具行业提供卓越的质量和性能
3. Apply optimal design for cutting edge and coating improve wear resistance and toughness  
对切削刃和涂层进行优化设计, 提高耐磨性和韧性

### PRODUCT FEATURE / 产品特点

Apply for optimized material and coating guarantee excellent cutting and tool life in automobile and mold industry hardened material machining

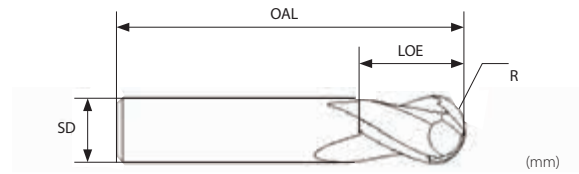
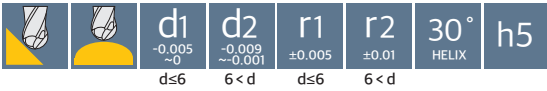
适用于优化材料和涂层, 保证优良的切削和刀具寿命在汽车和模具行业硬化材料加工

- Improve productivity and reduce cutting force at high speed machining
- 提高生产率, 降低高速加工时的切削阻力
- Improve surface quality and high precision machining with high quality of end mills
- 用高质量立铣刀提高表面质量和高精度加工
- Stable machining with optimized rake-angle and clearance angle
- 具有最佳前角和间隙角, 可实现稳定的加工
- Excellent tool life with excellent NANO ultrafine grade and coating
- 具有NANO纳米级符合材料和超细涂层, 实现延长刀具寿命



## NANO HARDENED STEEL 2 FLUTE BALL ①

### NANO 高硬度钢 2刃 球头 ①



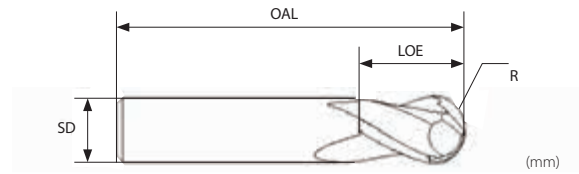
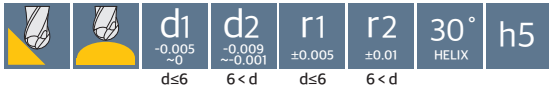
| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|----------------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 1        | NBHS2-001-0005-001-S06-L40 | 0.1X6X0.1X40    | 0.1      | 6        | 0.1       | 40        | 2           |
| 2        | NBHS2-002-001-002-S06-L40  | 0.2X6X0.2X40    | 0.2      | 6        | 0.2       | 40        | 2           |
| 3        | NBHS2-003-0015-003-S06-L40 | 0.3X6X0.3X40    | 0.3      | 6        | 0.3       | 40        | 2           |
| 4        | NBHS2-004-002-004-S06-L40  | 0.4X6X0.4X40    | 0.4      | 6        | 0.4       | 40        | 2           |
| 5        | NBHS2-005-0025-005-S06-L40 | 0.5X6X0.5X40    | 0.5      | 6        | 0.5       | 40        | 2           |
| 6        | NBHS2-006-003-006-S06-L40  | 0.6X6X0.6X40    | 0.6      | 6        | 0.6       | 40        | 2           |
| 7        | NBHS2-007-0035-007-S06-L40 | 0.7X6X0.7X40    | 0.7      | 6        | 0.7       | 40        | 2           |
| 8        | NBHS2-008-004-008-S06-L40  | 0.8X6X0.8X40    | 0.8      | 6        | 0.8       | 40        | 2           |
| 9        | NBHS2-009-0045-009-S06-L40 | 0.9X6X0.9X40    | 0.9      | 6        | 0.9       | 40        | 2           |
| 10       | NBHS2-010-005-015-S06-L40  | 1X6X1.5X40      | 1        | 6        | 1.5       | 40        | 2           |
| 11       | NBHS2-015-0075-025-S06-L40 | 1.5X6X2.5X40    | 1.5      | 6        | 2.5       | 40        | 2           |
| 12       | NBHS2-020-010-030-S06-L40  | 2X6X3X40        | 2        | 6        | 3         | 40        | 2           |
| 13       | NBHS2-030-015-045-S06-L50  | 3X6X4.5X50      | 3        | 6        | 4.5       | 50        | 2           |
| 14       | NBHS2-040-020-060-S06-L50  | 4X6X6X50        | 4        | 6        | 6         | 50        | 2           |
| 15       | NBHS2-050-025-075-S06-L50  | 5X6X7.5X50      | 5        | 6        | 7.5       | 50        | 2           |
| 16       | NBHS2-060-030-090-S06-L50  | 6X6X9X50        | 6        | 6        | 9         | 50        | 2           |
| 17       | NBHS2-080-040-120-S08-L50  | 8X8X12X50       | 8        | 8        | 12        | 50        | 2           |
| 18       | NBHS2-100-050-150-S10-L60  | 10X10X15X60     | 10       | 10       | 15        | 60        | 2           |
| 19       | NBHS2-120-060-180-S12-L60  | 12X12X18X60     | 12       | 12       | 18        | 60        | 2           |
| 20       | NBHS2-001-0005-002-S04-L40 | 0.1X4X0.2X40    | 0.1      | 4        | 0.2       | 40        | 2           |
| 21       | NBHS2-002-001-004-S04-L40  | 0.2X4X0.4X40    | 0.2      | 4        | 0.4       | 40        | 2           |
| 22       | NBHS2-003-0015-006-S04-L40 | 0.3X4X0.6X40    | 0.3      | 4        | 0.6       | 40        | 2           |
| 23       | NBHS2-004-002-008-S04-L40  | 0.4X4X0.8X40    | 0.4      | 4        | 0.8       | 40        | 2           |
| 24       | NBHS2-005-0025-010-S04-L40 | 0.5X4X1X40      | 0.5      | 4        | 1         | 40        | 2           |
| 25       | NBHS2-006-003-012-S04-L40  | 0.6X4X1.2X40    | 0.6      | 4        | 1.2       | 40        | 2           |
| 26       | NBHS2-007-0035-014-S04-L40 | 0.7X4X1.4X40    | 0.7      | 4        | 1.4       | 40        | 2           |
| 27       | NBHS2-008-004-016-S04-L40  | 0.8X4X1.6X40    | 0.8      | 4        | 1.6       | 40        | 2           |
| 28       | NBHS2-009-0045-018-S04-L40 | 0.9X4X1.8X40    | 0.9      | 4        | 1.8       | 40        | 2           |
| 29       | NBHS2-010-005-025-S06-L50  | 1X6X2.5X50      | 1        | 6        | 2.5       | 50        | 2           |
| 30       | NBHS2-010-005-025-S04-L50  | 1X4X2.5X50      | 1        | 4        | 2.5       | 50        | 2           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

### | NANO HARDENED STEEL 2 FLUTE BALL ②

#### NANO 高硬度钢 2刃 球头 ②

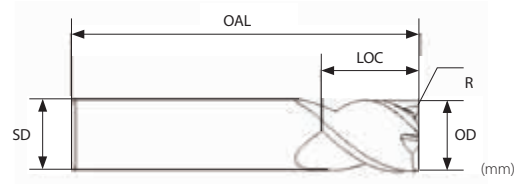
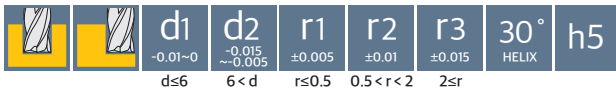


| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|----------------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 31       | NBHS2-012-006-030-S06-L50  | 1.2X6X3X50      | 1.2      | 6        | 3         | 50        | 2           |
| 32       | NBHS2-015-0075-040-S06-L50 | 1.5X6X4X50      | 1.5      | 6        | 4         | 50        | 2           |
| 33       | NBHS2-015-0075-040-S04-L50 | 1.5X4X4X50      | 1.5      | 4        | 4         | 50        | 2           |
| 34       | NBHS2-020-010-050-S06-L50  | 2X6X5X50        | 2        | 6        | 5         | 50        | 2           |
| 35       | NBHS2-020-010-050-S04-L50  | 2X4X5X50        | 2        | 4        | 5         | 50        | 2           |
| 36       | NBHS2-025-0125-070-S06-L60 | 2.5X6X7X60      | 2.5      | 6        | 7         | 60        | 2           |
| 37       | NBHS2-030-015-080-S06-L60  | 3X6X8X60        | 3        | 6        | 8         | 60        | 2           |
| 38       | NBHS2-030-015-080-S03-L70  | 3X3X8X70        | 3        | 3        | 8         | 70        | 2           |
| 39       | NBHS2-030-015-080-S04-L60  | 3X4X8X60        | 3        | 4        | 8         | 60        | 2           |
| 40       | NBHS2-035-0175-080-S06-L70 | 3.5X6X8X70      | 3.5      | 6        | 8         | 70        | 2           |
| 41       | NBHS2-040-020-080-S06-L70  | 4X6X8X70        | 4        | 6        | 8         | 70        | 2           |
| 42       | NBHS2-040-020-080-S04-L80  | 4X4X8X80        | 4        | 4        | 8         | 80        | 2           |
| 43       | NBHS2-045-0225-100-S06-L80 | 4.5X6X10X80     | 4.5      | 6        | 10        | 80        | 2           |
| 44       | NBHS2-050-025-100-S06-L80  | 5X6X10X80       | 5        | 6        | 10        | 80        | 2           |
| 45       | NBHS2-055-0275-110-S06-L90 | 5.5X6X11X90     | 5.5      | 6        | 11        | 90        | 2           |
| 46       | NBHS2-060-030-120-S06-L90  | 6X6X12X90       | 6        | 6        | 12        | 90        | 2           |
| 47       | NBHS2-070-035-140-S08-L90  | 7X8X14X90       | 7        | 8        | 14        | 90        | 2           |
| 48       | NBHS2-080-040-140-S08-L100 | 8X8X14X100      | 8        | 8        | 14        | 100       | 2           |
| 49       | NBHS2-090-045-180-S10-L100 | 9X10X18X100     | 9        | 10       | 18        | 100       | 2           |
| 50       | NBHS2-100-050-180-S10-L100 | 10X10X18X100    | 10       | 10       | 18        | 100       | 2           |
| 51       | NBHS2-120-060-220-S12-L110 | 12X12X22X110    | 12       | 12       | 22        | 110       | 2           |



## NANO HARDENED STEEL 2 FLUTE CORNER RADIUS ①

### NANO 高硬度钢 2刃 圆鼻 ①



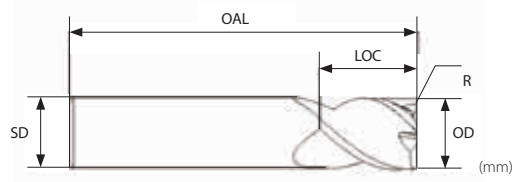
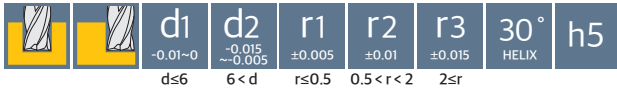
| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格     | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|----------------------------|---------------------|----------|----------|--------|-----------|-----------|-------------|
| 1        | NRHS2-004-0005-008-S04-L40 | 0.4(R0.05)X4X0.8X40 | 0.4      | 4        | R0.05  | 0.8       | 40        | 2           |
| 2        | NRHS2-004-001-008-S04-L40  | 0.4(R0.1)X4X0.8X40  | 0.4      | 4        | R0.1   | 0.8       | 40        | 2           |
| 3        | NRHS2-005-0005-010-S04-L40 | 0.5(R0.05)X4X1X40   | 0.5      | 4        | R0.05  | 1         | 40        | 2           |
| 4        | NRHS2-005-001-010-S04-L40  | 0.5(R0.1)X4X1X40    | 0.5      | 4        | R0.1   | 1         | 40        | 2           |
| 5        | NRHS2-006-0005-012-S04-L40 | 0.6(R0.05)X4X1.2X40 | 0.6      | 4        | R0.05  | 1.2       | 40        | 2           |
| 6        | NRHS2-006-001-012-S04-L40  | 0.6(R0.1)X4X1.2X40  | 0.6      | 4        | R0.1   | 1.2       | 40        | 2           |
| 7        | NRHS2-007-0005-014-S04-L40 | 0.7(R0.05)X4X1.4X40 | 0.7      | 4        | R0.05  | 1.4       | 40        | 2           |
| 8        | NRHS2-007-001-014-S04-L40  | 0.7(R0.1)X4X1.4X40  | 0.7      | 4        | R0.1   | 1.4       | 40        | 2           |
| 9        | NRHS2-008-0005-016-S04-L40 | 0.8(R0.05)X4X1.6X40 | 0.8      | 4        | R0.05  | 1.6       | 40        | 2           |
| 10       | NRHS2-008-001-016-S04-L40  | 0.8(R0.1)X4X1.6X40  | 0.8      | 4        | R0.1   | 1.6       | 40        | 2           |
| 11       | NRHS2-009-0005-018-S04-L40 | 0.9(R0.05)X4X1.8X40 | 0.9      | 4        | R0.05  | 1.8       | 40        | 2           |
| 12       | NRHS2-009-001-018-S04-L40  | 0.9(R0.1)X4X1.8X40  | 0.9      | 4        | R0.1   | 1.8       | 40        | 2           |
| 13       | NRHS2-010-0005-020-S06-L50 | 1(R0.05)X6X2X50     | 1        | 6        | R0.05  | 2         | 50        | 2           |
| 14       | NRHS2-010-001-020-S06-L50  | 1(R0.1)X6X2X50      | 1        | 6        | R0.1   | 2         | 50        | 2           |
| 15       | NRHS2-010-002-020-S06-L50  | 1(R0.2)X6X2X50      | 1        | 6        | R0.2   | 2         | 50        | 2           |
| 16       | NRHS2-010-003-020-S06-L50  | 1(R0.3)X6X2X50      | 1        | 6        | R0.3   | 2         | 50        | 2           |
| 17       | NRHS2-015-0005-030-S06-L50 | 1.5(R0.05)X6X3X50   | 1.5      | 6        | R0.05  | 3         | 50        | 2           |
| 18       | NRHS2-015-001-030-S06-L50  | 1.5(R0.1)X6X3X50    | 1.5      | 6        | R0.1   | 3         | 50        | 2           |
| 19       | NRHS2-015-002-030-S06-L50  | 1.5(R0.2)X6X3X50    | 1.5      | 6        | R0.2   | 3         | 50        | 2           |
| 20       | NRHS2-015-003-030-S06-L50  | 1.5(R0.3)X6X3X50    | 1.5      | 6        | R0.3   | 3         | 50        | 2           |
| 21       | NRHS2-015-005-030-S06-L50  | 1.5(R0.5)X6X3X50    | 1.5      | 6        | R0.5   | 3         | 50        | 2           |
| 22       | NRHS2-020-001-050-S06-L50  | 2(R0.1)X6X5X50      | 2        | 6        | R0.1   | 5         | 50        | 2           |
| 23       | NRHS2-020-002-050-S06-L50  | 2(R0.2)X6X5X50      | 2        | 6        | R0.2   | 5         | 50        | 2           |
| 24       | NRHS2-020-003-050-S06-L50  | 2(R0.3)X6X5X50      | 2        | 6        | R0.3   | 5         | 50        | 2           |
| 25       | NRHS2-020-004-050-S06-L50  | 2(R0.4)X6X5X50      | 2        | 6        | R0.4   | 5         | 50        | 2           |
| 26       | NRHS2-020-005-050-S06-L50  | 2(R0.5)X6X5X50      | 2        | 6        | R0.5   | 5         | 50        | 2           |
| 27       | NRHS2-025-001-070-S06-L60  | 2.5(R0.1)X6X7X60    | 2.5      | 6        | R0.1   | 7         | 60        | 2           |
| 28       | NRHS2-025-002-070-S06-L60  | 2.5(R0.2)X6X7X60    | 2.5      | 6        | R0.2   | 7         | 60        | 2           |
| 29       | NRHS2-025-003-070-S06-L60  | 2.5(R0.3)X6X7X60    | 2.5      | 6        | R0.3   | 7         | 60        | 2           |
| 30       | NRHS2-025-005-070-S06-L60  | 2.5(R0.5)X6X7X60    | 2.5      | 6        | R0.5   | 7         | 60        | 2           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

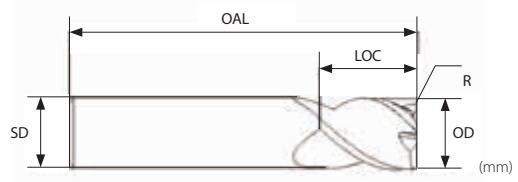
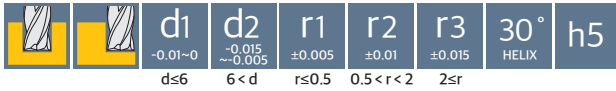
| NANO HARDENED STEEL 2 FLUTE CORNER RADIUS ②

NANO 高硬度钢 2刃 圆鼻 ②



| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格   | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|---------------------------|-------------------|----------|----------|--------|-----------|-----------|-------------|
| 31       | NRHS2-030-001-080-S06-L60 | 3(R0.1)X6X8X60    | 3        | 6        | R0.1   | 8         | 60        | 2           |
| 32       | NRHS2-030-002-080-S06-L60 | 3(R0.2)X6X8X60    | 3        | 6        | R0.2   | 8         | 60        | 2           |
| 33       | NRHS2-030-003-080-S06-L60 | 3(R0.3)X6X8X60    | 3        | 6        | R0.3   | 8         | 60        | 2           |
| 34       | NRHS2-030-005-080-S06-L60 | 3(R0.5)X6X8X60    | 3        | 6        | R0.5   | 8         | 60        | 2           |
| 35       | NRHS2-035-001-090-S06-L70 | 3.5(R0.1)X6X9X70  | 3.5      | 6        | R0.1   | 9         | 70        | 2           |
| 36       | NRHS2-035-002-090-S06-L70 | 3.5(R0.2)X6X9X70  | 3.5      | 6        | R0.2   | 9         | 70        | 2           |
| 37       | NRHS2-035-003-090-S06-L70 | 3.5(R0.3)X6X9X70  | 3.5      | 6        | R0.3   | 9         | 70        | 2           |
| 38       | NRHS2-035-005-090-S06-L70 | 3.5(R0.5)X6X9X70  | 3.5      | 6        | R0.5   | 9         | 70        | 2           |
| 39       | NRHS2-040-001-100-S06-L70 | 4(R0.1)X6X10X70   | 4        | 6        | R0.1   | 10        | 70        | 2           |
| 40       | NRHS2-040-002-100-S06-L70 | 4(R0.2)X6X10X70   | 4        | 6        | R0.2   | 10        | 70        | 2           |
| 41       | NRHS2-040-003-100-S06-L70 | 4(R0.3)X6X10X70   | 4        | 6        | R0.3   | 10        | 70        | 2           |
| 42       | NRHS2-040-005-100-S06-L70 | 4(R0.5)X6X10X70   | 4        | 6        | R0.5   | 10        | 70        | 2           |
| 43       | NRHS2-040-010-100-S06-L70 | 4(R1)X6X10X70     | 4        | 6        | R1     | 10        | 70        | 2           |
| 44       | NRHS2-045-001-120-S06-L80 | 4.5(R0.1)X6X12X80 | 4.5      | 6        | R0.1   | 12        | 80        | 2           |
| 45       | NRHS2-045-002-120-S06-L80 | 4.5(R0.2)X6X12X80 | 4.5      | 6        | R0.2   | 12        | 80        | 2           |
| 46       | NRHS2-045-003-120-S06-L80 | 4.5(R0.3)X6X12X80 | 4.5      | 6        | R0.3   | 12        | 80        | 2           |
| 47       | NRHS2-045-005-120-S06-L80 | 4.5(R0.5)X6X12X80 | 4.5      | 6        | R0.5   | 12        | 80        | 2           |
| 48       | NRHS2-050-001-130-S06-L80 | 5(R0.1)X6X13X80   | 5        | 6        | R0.1   | 13        | 80        | 2           |
| 49       | NRHS2-050-002-130-S06-L80 | 5(R0.2)X6X13X80   | 5        | 6        | R0.2   | 13        | 80        | 2           |
| 50       | NRHS2-050-003-130-S06-L80 | 5(R0.3)X6X13X80   | 5        | 6        | R0.3   | 13        | 80        | 2           |
| 51       | NRHS2-050-005-130-S06-L80 | 5(R0.5)X6X13X80   | 5        | 6        | R0.5   | 13        | 80        | 2           |
| 52       | NRHS2-050-010-130-S06-L80 | 5(R1)X6X13X80     | 5        | 6        | R1     | 13        | 80        | 2           |
| 53       | NRHS2-055-001-140-S06-L90 | 5.5(R0.1)X6X14X90 | 5.5      | 6        | R0.1   | 14        | 90        | 2           |
| 54       | NRHS2-055-002-140-S06-L90 | 5.5(R0.2)X6X14X90 | 5.5      | 6        | R0.2   | 14        | 90        | 2           |
| 55       | NRHS2-055-003-140-S06-L90 | 5.5(R0.3)X6X14X90 | 5.5      | 6        | R0.3   | 14        | 90        | 2           |
| 56       | NRHS2-055-005-140-S06-L90 | 5.5(R0.5)X6X14X90 | 5.5      | 6        | R0.5   | 14        | 90        | 2           |
| 57       | NRHS2-055-010-140-S06-L90 | 5.5(R1)X6X14X90   | 5.5      | 6        | R1     | 14        | 90        | 2           |
| 58       | NRHS2-060-001-150-S06-L90 | 6(R0.1)X6X15X90   | 6        | 6        | R0.1   | 15        | 90        | 2           |
| 59       | NRHS2-060-002-150-S06-L90 | 6(R0.2)X6X15X90   | 6        | 6        | R0.2   | 15        | 90        | 2           |
| 60       | NRHS2-060-003-150-S06-L90 | 6(R0.3)X6X15X90   | 6        | 6        | R0.3   | 15        | 90        | 2           |

NANO HARDENED STEEL 2 FLUTE CORNER RADIUS ③  
NANO 高硬度钢 2刃 圆鼻 ③





| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格    | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|----------------------------|--------------------|----------|----------|--------|-----------|-----------|-------------|
| 61       | NRHS2-060-005-150-S06-L90  | 6(R0.5)X6X15X90    | 6        | 6        | R0.5   | 15        | 90        | 2           |
| 62       | NRHS2-060-010-150-S06-L90  | 6(R1)X6X15X90      | 6        | 6        | R1     | 15        | 90        | 2           |
| 63       | NRHS2-070-001-180-S08-L90  | 7(R0.1)X8X18X90    | 7        | 8        | R0.1   | 18        | 90        | 2           |
| 64       | NRHS2-070-002-180-S08-L90  | 7(R0.2)X8X18X90    | 7        | 8        | R0.2   | 18        | 90        | 2           |
| 65       | NRHS2-070-003-180-S08-L90  | 7(R0.3)X8X18X90    | 7        | 8        | R0.3   | 18        | 90        | 2           |
| 66       | NRHS2-070-005-180-S08-L90  | 7(R0.5)X8X18X90    | 7        | 8        | R0.5   | 18        | 90        | 2           |
| 67       | NRHS2-070-010-180-S08-L90  | 7(R1)X8X18X90      | 7        | 8        | R1     | 18        | 90        | 2           |
| 68       | NRHS2-070-020-180-S08-L90  | 7(R2)X8X18X90      | 7        | 8        | R2     | 18        | 90        | 2           |
| 69       | NRHS2-080-001-200-S08-L100 | 8(R0.1)X8X20X100   | 8        | 8        | R0.1   | 20        | 100       | 2           |
| 70       | NRHS2-080-002-200-S08-L100 | 8(R0.2)X8X20X100   | 8        | 8        | R0.2   | 20        | 100       | 2           |
| 71       | NRHS2-080-003-200-S08-L100 | 8(R0.3)X8X20X100   | 8        | 8        | R0.3   | 20        | 100       | 2           |
| 72       | NRHS2-080-005-200-S08-L100 | 8(R0.5)X8X20X100   | 8        | 8        | R0.5   | 20        | 100       | 2           |
| 73       | NRHS2-080-010-200-S08-L100 | 8(R1)X8X20X100     | 8        | 8        | R1     | 20        | 100       | 2           |
| 74       | NRHS2-080-020-200-S08-L100 | 8(R2)X8X20X100     | 8        | 8        | R2     | 20        | 100       | 2           |
| 75       | NRHS2-100-002-250-S10-L100 | 10(R0.2)X10X25X100 | 10       | 10       | R0.2   | 25        | 100       | 2           |
| 76       | NRHS2-100-003-250-S10-L100 | 10(R0.3)X10X25X100 | 10       | 10       | R0.3   | 25        | 100       | 2           |
| 77       | NRHS2-100-005-250-S10-L100 | 10(R0.5)X10X25X100 | 10       | 10       | R0.5   | 25        | 100       | 2           |
| 78       | NRHS2-100-010-250-S10-L100 | 10(R1)X10X25X100   | 10       | 10       | R1     | 25        | 100       | 2           |
| 79       | NRHS2-100-020-250-S10-L100 | 10(R2)X10X25X100   | 10       | 10       | R2     | 25        | 100       | 2           |
| 80       | NRHS2-110-002-280-S12-L110 | 11(R0.2)X12X28X110 | 11       | 12       | R0.2   | 28        | 110       | 2           |
| 81       | NRHS2-110-003-280-S12-L110 | 11(R0.3)X12X28X110 | 11       | 12       | R0.3   | 28        | 110       | 2           |
| 82       | NRHS2-110-005-280-S12-L110 | 11(R0.5)X12X28X110 | 11       | 12       | R0.5   | 28        | 110       | 2           |
| 83       | NRHS2-110-010-280-S12-L110 | 11(R1)X12X28X110   | 11       | 12       | R1     | 28        | 110       | 2           |
| 84       | NRHS2-110-020-280-S12-L110 | 11(R2)X12X28X110   | 11       | 12       | R2     | 28        | 110       | 2           |
| 85       | NRHS2-120-002-300-S12-L110 | 12(R0.2)X12X30X110 | 12       | 12       | R0.2   | 30        | 110       | 2           |
| 86       | NRHS2-120-003-300-S12-L110 | 12(R0.3)X12X30X110 | 12       | 12       | R0.3   | 30        | 110       | 2           |
| 87       | NRHS2-120-005-300-S12-L110 | 12(R0.5)X12X30X110 | 12       | 12       | R0.5   | 30        | 110       | 2           |
| 88       | NRHS2-120-010-300-S12-L110 | 12(R1)X12X30X110   | 12       | 12       | R1     | 30        | 110       | 2           |
| 89       | NRHS2-120-020-300-S12-L110 | 12(R2)X12X30X110   | 12       | 12       | R2     | 30        | 110       | 2           |

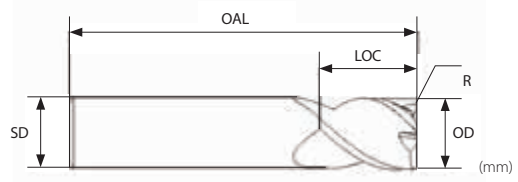
# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

### | NANO HARDENED STEEL 4 FLUTE CORNER RADIUS ①

#### NANO 高硬度钢 4刃 圆鼻 ①

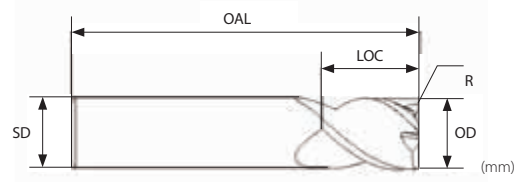
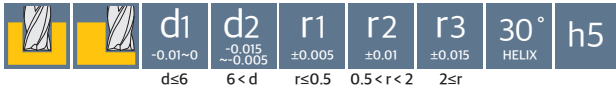
|   |   |                      |                                |                     |                    |                     |                      |           |
|---|---|----------------------|--------------------------------|---------------------|--------------------|---------------------|----------------------|-----------|
|  |  | <b>d1</b><br>-0.01~0 | <b>d2</b><br>-0.015<br>~-0.005 | <b>r1</b><br>±0.005 | <b>r2</b><br>±0.01 | <b>r3</b><br>±0.015 | <b>30°</b><br>HELIIX | <b>h5</b> |
|   |   | d≤6                  | 6<d                            | r≤0.5               | 0.5<r<2            | 2≤r                 |                      |           |



| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格  | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|---------------------------|------------------|----------|----------|--------|-----------|-----------|-------------|
| 1        | NRHS4-010-001-020-S06-L50 | 1(R0.1)X6X2X50   | 1        | 6        | R0.1   | 2         | 50        | 4           |
| 2        | NRHS4-010-002-020-S06-L50 | 1(R0.2)X6X2X50   | 1        | 6        | R0.2   | 2         | 50        | 4           |
| 3        | NRHS4-010-003-020-S06-L50 | 1(R0.3)X6X2X50   | 1        | 6        | R0.3   | 2         | 50        | 4           |
| 4        | NRHS4-015-001-030-S06-L50 | 1.5(R0.1)X6X3X50 | 1.5      | 6        | R0.1   | 3         | 50        | 4           |
| 5        | NRHS4-015-002-030-S06-L50 | 1.5(R0.2)X6X3X50 | 1.5      | 6        | R0.2   | 3         | 50        | 4           |
| 6        | NRHS4-015-003-030-S06-L50 | 1.5(R0.3)X6X3X50 | 1.5      | 6        | R0.3   | 3         | 50        | 4           |
| 7        | NRHS4-015-005-030-S06-L50 | 1.5(R0.5)X6X3X50 | 1.5      | 6        | R0.5   | 3         | 50        | 4           |
| 8        | NRHS4-020-001-050-S06-L50 | 2(R0.1)X6X5X50   | 2        | 6        | R0.1   | 5         | 50        | 4           |
| 9        | NRHS4-020-002-050-S06-L50 | 2(R0.2)X6X5X50   | 2        | 6        | R0.2   | 5         | 50        | 4           |
| 10       | NRHS4-020-003-050-S06-L50 | 2(R0.3)X6X5X50   | 2        | 6        | R0.3   | 5         | 50        | 4           |
| 11       | NRHS4-020-004-050-S06-L50 | 2(R0.4)X6X5X50   | 2        | 6        | R0.4   | 5         | 50        | 4           |
| 12       | NRHS4-020-005-050-S06-L50 | 2(R0.5)X6X5X50   | 2        | 6        | R0.5   | 5         | 50        | 4           |
| 13       | NRHS4-025-001-070-S06-L60 | 2.5(R0.1)X6X7X60 | 2.5      | 6        | R0.1   | 7         | 60        | 4           |
| 14       | NRHS4-025-002-070-S06-L60 | 2.5(R0.2)X6X7X60 | 2.5      | 6        | R0.2   | 7         | 60        | 4           |
| 15       | NRHS4-025-003-070-S06-L60 | 2.5(R0.3)X6X7X60 | 2.5      | 6        | R0.3   | 7         | 60        | 4           |
| 16       | NRHS4-025-005-070-S06-L60 | 2.5(R0.5)X6X7X60 | 2.5      | 6        | R0.5   | 7         | 60        | 4           |
| 17       | NRHS4-030-001-080-S06-L60 | 3(R0.1)X6X8X60   | 3        | 6        | R0.1   | 8         | 60        | 4           |
| 18       | NRHS4-030-002-080-S06-L60 | 3(R0.2)X6X8X60   | 3        | 6        | R0.2   | 8         | 60        | 4           |
| 19       | NRHS4-030-003-080-S06-L60 | 3(R0.3)X6X8X60   | 3        | 6        | R0.3   | 8         | 60        | 4           |
| 20       | NRHS4-030-005-080-S06-L60 | 3(R0.5)X6X8X60   | 3        | 6        | R0.5   | 8         | 60        | 4           |
| 21       | NRHS4-040-001-100-S06-L70 | 4(R0.1)X6X10X70  | 4        | 6        | R0.1   | 10        | 70        | 4           |
| 22       | NRHS4-040-002-100-S06-L70 | 4(R0.2)X6X10X70  | 4        | 6        | R0.2   | 10        | 70        | 4           |
| 23       | NRHS4-040-003-100-S06-L70 | 4(R0.3)X6X10X70  | 4        | 6        | R0.3   | 10        | 70        | 4           |
| 24       | NRHS4-040-005-100-S06-L70 | 4(R0.5)X6X10X70  | 4        | 6        | R0.5   | 10        | 70        | 4           |
| 25       | NRHS4-040-010-100-S06-L70 | 4(R1)X6X10X70    | 4        | 6        | R1     | 10        | 70        | 4           |
| 26       | NRHS4-050-001-130-S06-L80 | 5(R0.1)X6X13X80  | 5        | 6        | R0.1   | 13        | 80        | 4           |
| 27       | NRHS4-050-002-130-S06-L80 | 5(R0.2)X6X13X80  | 5        | 6        | R0.2   | 13        | 80        | 4           |
| 28       | NRHS4-050-003-130-S06-L80 | 5(R0.3)X6X13X80  | 5        | 6        | R0.3   | 13        | 80        | 4           |
| 29       | NRHS4-050-005-130-S06-L80 | 5(R0.5)X6X13X80  | 5        | 6        | R0.5   | 13        | 80        | 4           |
| 30       | NRHS4-050-010-130-S06-L80 | 5(R1)X6X13X80    | 5        | 6        | R1     | 13        | 80        | 4           |
| 31       | NRHS4-060-001-150-S06-L90 | 6(R0.1)X6X15X90  | 6        | 6        | R0.1   | 15        | 90        | 4           |

## NANO HARDENED STEEL 4 FLUTE CORNER RADIUS ②

### NANO 高硬度钢 4刃 圆鼻 ②



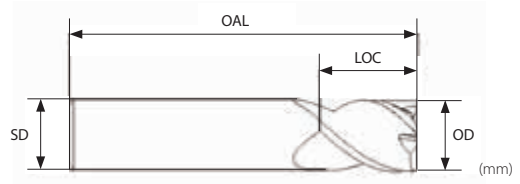
| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格    | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|----------------------------|--------------------|----------|----------|--------|-----------|-----------|-------------|
| 32       | NRHS4-060-002-150-S06-L90  | 6(R0.2)X6X15X90    | 6        | 6        | R0.2   | 15        | 90        | 4           |
| 33       | NRHS4-060-003-150-S06-L90  | 6(R0.3)X6X15X90    | 6        | 6        | R0.3   | 15        | 90        | 4           |
| 34       | NRHS4-060-005-150-S06-L90  | 6(R0.5)X6X15X90    | 6        | 6        | R0.5   | 15        | 90        | 4           |
| 35       | NRHS4-060-010-150-S06-L90  | 6(R1)X6X15X90      | 6        | 6        | R1     | 15        | 90        | 4           |
| 36       | NRHS4-070-001-180-S08-L90  | 7(R0.1)X8X18X90    | 7        | 8        | R0.1   | 18        | 90        | 4           |
| 37       | NRHS4-070-002-180-S08-L90  | 7(R0.2)X8X18X90    | 7        | 8        | R0.2   | 18        | 90        | 4           |
| 38       | NRHS4-070-003-180-S08-L90  | 7(R0.3)X8X18X90    | 7        | 8        | R0.3   | 18        | 90        | 4           |
| 39       | NRHS4-070-005-180-S08-L90  | 7(R0.5)X8X18X90    | 7        | 8        | R0.5   | 18        | 90        | 4           |
| 40       | NRHS4-070-010-180-S08-L90  | 7(R1)X8X18X90      | 7        | 8        | R1     | 18        | 90        | 4           |
| 41       | NRHS4-070-020-180-S08-L90  | 7(R2)X8X18X90      | 7        | 8        | R2     | 18        | 90        | 4           |
| 42       | NRHS4-080-001-200-S08-L100 | 8(R0.1)X8X20X100   | 8        | 8        | R0.1   | 20        | 100       | 4           |
| 43       | NRHS4-080-002-200-S08-L100 | 8(R0.2)X8X20X100   | 8        | 8        | R0.2   | 20        | 100       | 4           |
| 44       | NRHS4-080-003-200-S08-L100 | 8(R0.3)X8X20X100   | 8        | 8        | R0.3   | 20        | 100       | 4           |
| 45       | NRHS4-080-005-200-S08-L100 | 8(R0.5)X8X20X100   | 8        | 8        | R0.5   | 20        | 100       | 4           |
| 46       | NRHS4-080-010-200-S08-L100 | 8(R1)X8X20X100     | 8        | 8        | R1     | 20        | 100       | 4           |
| 47       | NRHS4-080-020-200-S08-L100 | 8(R2)X8X20X100     | 8        | 8        | R2     | 20        | 100       | 4           |
| 48       | NRHS4-100-002-250-S10-L100 | 10(R0.2)X10X25X100 | 10       | 10       | R0.2   | 25        | 100       | 4           |
| 49       | NRHS4-100-003-250-S10-L100 | 10(R0.3)X10X25X100 | 10       | 10       | R0.3   | 25        | 100       | 4           |
| 50       | NRHS4-100-005-250-S10-L100 | 10(R0.5)X10X25X100 | 10       | 10       | R0.5   | 25        | 100       | 4           |
| 51       | NRHS4-100-010-250-S10-L100 | 10(R1)X10X25X100   | 10       | 10       | R1     | 25        | 100       | 4           |
| 52       | NRHS4-100-020-250-S10-L100 | 10(R2)X10X25X100   | 10       | 10       | R2     | 25        | 100       | 4           |
| 53       | NRHS4-110-002-280-S12-L110 | 11(R0.2)X12X28X110 | 11       | 12       | R0.2   | 28        | 110       | 4           |
| 54       | NRHS4-110-003-280-S12-L110 | 11(R0.3)X12X28X110 | 11       | 12       | R0.3   | 28        | 110       | 4           |
| 55       | NRHS4-110-005-280-S12-L110 | 11(R0.5)X12X28X110 | 11       | 12       | R0.5   | 28        | 110       | 4           |
| 56       | NRHS4-110-010-280-S12-L110 | 11(R1)X12X28X110   | 11       | 12       | R1     | 28        | 110       | 4           |
| 57       | NRHS4-110-020-280-S12-L110 | 11(R2)X12X28X110   | 11       | 12       | R2     | 28        | 110       | 4           |
| 58       | NRHS4-120-002-300-S12-L110 | 12(R0.2)X12X30X110 | 12       | 12       | R0.2   | 30        | 110       | 4           |
| 59       | NRHS4-120-003-300-S12-L110 | 12(R0.3)X12X30X110 | 12       | 12       | R0.3   | 30        | 110       | 4           |
| 60       | NRHS4-120-005-300-S12-L110 | 12(R0.5)X12X30X110 | 12       | 12       | R0.5   | 30        | 110       | 4           |
| 61       | NRHS4-120-010-300-S12-L110 | 12(R1)X12X30X110   | 12       | 12       | R1     | 30        | 110       | 4           |
| 62       | NRHS4-120-020-300-S12-L110 | 12(R2)X12X30X110   | 12       | 12       | R2     | 30        | 110       | 4           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

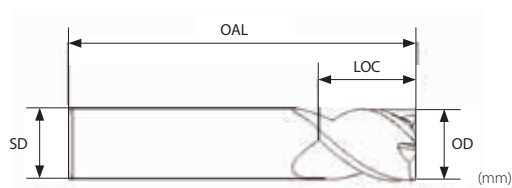
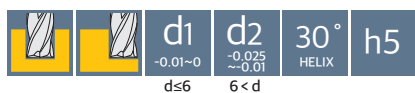
| NANO HARDENED STEEL 2 FLUTE FLAT ①

NANO 高硬度钢 2刃 平头 ①



| NO<br>编号 | Item Code<br>产品型号     | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|-----------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 1        | NFHS2-001-002-S04-L40 | 0.1X4X0.2X40    | 0.1      | 4        | 0.2       | 40        | 2           |
| 2        | NFHS2-001-001-S04-L40 | 0.1X4X0.1X40    | 0.1      | 4        | 0.1       | 40        | 2           |
| 3        | NFHS2-002-004-S04-L40 | 0.2X4X0.4X40    | 0.2      | 4        | 0.4       | 40        | 2           |
| 4        | NFHS2-002-002-S04-L40 | 0.2X4X0.2X40    | 0.2      | 4        | 0.2       | 40        | 2           |
| 5        | NFHS2-003-006-S04-L40 | 0.3X4X0.6X40    | 0.3      | 4        | 0.6       | 40        | 2           |
| 6        | NFHS2-003-003-S04-L40 | 0.3X4X0.3X40    | 0.3      | 4        | 0.3       | 40        | 2           |
| 7        | NFHS2-004-008-S04-L40 | 0.4X4X0.8X40    | 0.4      | 4        | 0.8       | 40        | 2           |
| 8        | NFHS2-004-004-S04-L40 | 0.4X4X0.4X40    | 0.4      | 4        | 0.4       | 40        | 2           |
| 9        | NFHS2-005-010-S04-L40 | 0.5X4X1X40      | 0.5      | 4        | 1         | 40        | 2           |
| 10       | NFHS2-005-005-S04-L40 | 0.5X4X0.5X40    | 0.5      | 4        | 0.5       | 40        | 2           |
| 11       | NFHS2-006-012-S04-L40 | 0.6X4X1.2X40    | 0.6      | 4        | 1.2       | 40        | 2           |
| 12       | NFHS2-006-006-S04-L40 | 0.6X4X0.6X40    | 0.6      | 4        | 0.6       | 40        | 2           |
| 13       | NFHS2-007-014-S04-L40 | 0.7X4X1.4X40    | 0.7      | 4        | 1.4       | 40        | 2           |
| 14       | NFHS2-007-007-S04-L40 | 0.7X4X0.7X40    | 0.7      | 4        | 0.7       | 40        | 2           |
| 15       | NFHS2-008-016-S04-L40 | 0.8X4X1.6X40    | 0.8      | 4        | 1.6       | 40        | 2           |
| 16       | NFHS2-008-008-S04-L40 | 0.8X4X0.8X40    | 0.8      | 4        | 0.8       | 40        | 2           |
| 17       | NFHS2-009-018-S04-L40 | 0.9X4X1.8X40    | 0.9      | 4        | 1.8       | 40        | 2           |
| 18       | NFHS2-009-009-S04-L40 | 0.9X4X0.9X40    | 0.9      | 4        | 0.9       | 40        | 2           |
| 19       | NFHS2-010-025-S06-L50 | 1X6X2.5X50      | 1        | 6        | 2.5       | 50        | 2           |
| 20       | NFHS2-010-020-S06-L50 | 1X6X2X50        | 1        | 6        | 2         | 50        | 2           |
| 21       | NFHS2-010-030-S06-L50 | 1X6X3X50        | 1        | 6        | 3         | 50        | 2           |
| 22       | NFHS2-010-040-S06-L50 | 1X6X4X50        | 1        | 6        | 4         | 50        | 2           |
| 23       | NFHS2-012-030-S06-L50 | 1.2X6X3X50      | 1.2      | 6        | 3         | 50        | 2           |
| 24       | NFHS2-015-040-S06-L50 | 1.5X6X4X50      | 1.5      | 6        | 4         | 50        | 2           |
| 25       | NFHS2-015-030-S06-L50 | 1.5X6X3X50      | 1.5      | 6        | 3         | 50        | 2           |
| 26       | NFHS2-015-060-S06-L50 | 1.5X6X6X50      | 1.5      | 6        | 6         | 50        | 2           |
| 27       | NFHS2-015-080-S06-L50 | 1.5X6X8X50      | 1.5      | 6        | 8         | 50        | 2           |
| 28       | NFHS2-020-060-S06-L50 | 2X6X6X50        | 2        | 6        | 6         | 50        | 2           |
| 29       | NFHS2-020-040-S06-L50 | 2X6X4X50        | 2        | 6        | 4         | 50        | 2           |
| 30       | NFHS2-020-080-S06-L50 | 2X6X8X50        | 2        | 6        | 8         | 50        | 2           |

**NANO HARDENED STEEL 2 FLUTE FLAT ②**  
**NANO 高硬度钢 2刃 平头 ②**

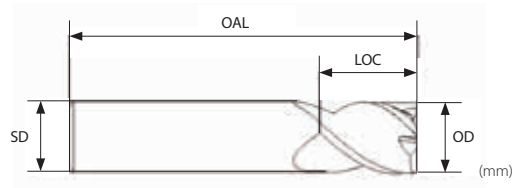


| NO<br>编号 | Item Code<br>产品型号     | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|-----------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 31       | NFHS2-020-100-S06-L50 | 2X6X10X50       | 2        | 6        | 10        | 50        | 2           |
| 32       | NFHS2-025-070-S06-L50 | 2.5X6X7X50      | 2.5      | 6        | 7         | 50        | 2           |
| 33       | NFHS2-030-080-S06-L60 | 3X6X8X60        | 3        | 6        | 8         | 60        | 2           |
| 34       | NFHS2-030-060-S03-L70 | 3X3X6X70        | 3        | 3        | 6         | 70        | 2           |
| 35       | NFHS2-030-100-S06-L60 | 3X6X10X60       | 3        | 6        | 10        | 60        | 2           |
| 36       | NFHS2-030-120-S06-L60 | 3X6X12X60       | 3        | 6        | 12        | 60        | 2           |
| 37       | NFHS2-035-090-S06-L60 | 3.5X6X9X60      | 3.5      | 6        | 9         | 60        | 2           |
| 38       | NFHS2-040-100-S06-L60 | 4X6X10X60       | 4        | 6        | 10        | 60        | 2           |
| 39       | NFHS2-040-080-S04-L80 | 4X4X8X80        | 4        | 4        | 8         | 80        | 2           |
| 40       | NFHS2-040-120-S06-L60 | 4X6X12X60       | 4        | 6        | 12        | 60        | 2           |
| 41       | NFHS2-040-160-S06-L60 | 4X6X16X60       | 4        | 6        | 16        | 60        | 2           |
| 42       | NFHS2-050-130-S06-L60 | 5X6X13X60       | 5        | 6        | 13        | 60        | 2           |
| 43       | NFHS2-060-150-S06-L60 | 6X6X15X60       | 6        | 6        | 15        | 60        | 2           |
| 44       | NFHS2-070-180-S08-L65 | 7X8X18X65       | 7        | 8        | 18        | 65        | 2           |
| 45       | NFHS2-080-190-S08-L65 | 8X8X19X65       | 8        | 8        | 19        | 65        | 2           |
| 46       | NFHS2-090-220-S10-L70 | 9X10X22X70      | 9        | 10       | 22        | 70        | 2           |
| 47       | NFHS2-100-250-S10-L70 | 10X10X25X70     | 10       | 10       | 25        | 70        | 2           |
| 48       | NFHS2-110-280-S12-L80 | 11X12X28X80     | 11       | 12       | 28        | 80        | 2           |
| 49       | NFHS2-120-300-S12-L80 | 12X12X30X80     | 12       | 12       | 30        | 80        | 2           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

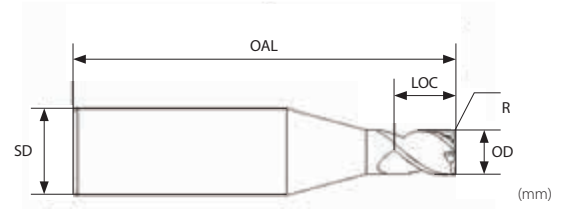
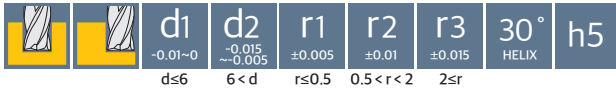
| NANO HARDENED STEEL 4 FLUTE FLAT  
NANO 高硬度钢 4刃 平头



| NO<br>编号 | Item Code<br>产品型号     | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|-----------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 1        | NFHS4-010-025-S06-L50 | 1X6X2.5X50      | 1        | 6        | 2.5       | 50        | 4           |
| 2        | NFHS4-012-030-S06-L50 | 1.2X6X3X50      | 1.2      | 6        | 3         | 50        | 4           |
| 3        | NFHS4-015-040-S06-L50 | 1.5X6X4X50      | 1.5      | 6        | 4         | 50        | 4           |
| 4        | NFHS4-020-060-S06-L50 | 2X6X6X50        | 2        | 6        | 6         | 50        | 4           |
| 5        | NFHS4-025-070-S06-L50 | 2.5X6X7X50      | 2.5      | 6        | 7         | 50        | 4           |
| 6        | NFHS4-030-080-S06-L60 | 3X6X8X60        | 3        | 6        | 8         | 60        | 4           |
| 7        | NFHS4-035-090-S06-L60 | 3.5X6X9X60      | 3.5      | 6        | 9         | 60        | 4           |
| 8        | NFHS4-040-100-S06-L60 | 4X6X10X60       | 4        | 6        | 10        | 60        | 4           |
| 9        | NFHS4-050-130-S06-L60 | 5X6X13X60       | 5        | 6        | 13        | 60        | 4           |
| 10       | NFHS4-060-150-S06-L60 | 6X6X15X60       | 6        | 6        | 15        | 60        | 4           |
| 11       | NFHS4-070-180-S08-L65 | 7X8X18X65       | 7        | 8        | 18        | 65        | 4           |
| 12       | NFHS4-080-190-S08-L65 | 8X8X19X65       | 8        | 8        | 19        | 65        | 4           |
| 13       | NFHS4-090-220-S10-L70 | 9X10X22X70      | 9        | 10       | 22        | 70        | 4           |
| 14       | NFHS4-100-250-S10-L70 | 10X10X25X70     | 10       | 10       | 25        | 70        | 4           |
| 15       | NFHS4-110-280-S12-L80 | 11X12X28X80     | 11       | 12       | 28        | 80        | 4           |
| 16       | NFHS4-120-300-S12-L80 | 12X12X30X80     | 12       | 12       | 30        | 80        | 4           |



**NANO HARDENED STEEL 2 FLUTE RIB CORNER RADIUS ①**  
**NANO 高硬度钢 2刃 长颈 圆鼻 ①**

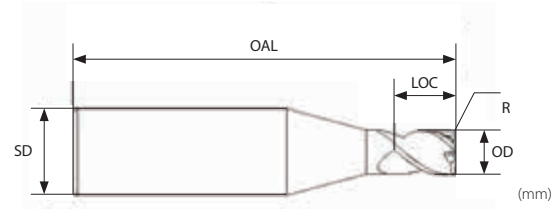
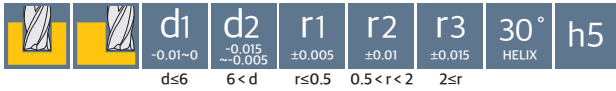


| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格          | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|----------------------------|--------------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 1        | NRHR2-004-0005-010-S04-L45 | 0.4(R0.05)X4X0.6(1)X45   | 0.4      | 4        | R0.05  | 0.6       | 45        | 1          | 2           |
| 2        | NRHR2-004-0005-015-S04-L45 | 0.4(R0.05)X4X0.6(1.5)X45 | 0.4      | 4        | R0.05  | 0.6       | 45        | 1.5        | 2           |
| 3        | NRHR2-004-0005-025-S04-L45 | 0.4(R0.05)X4X0.6(2.5)X45 | 0.4      | 4        | R0.05  | 0.6       | 45        | 2.5        | 2           |
| 4        | NRHR2-004-0005-030-S04-L45 | 0.4(R0.05)X4X0.6(3)X45   | 0.4      | 4        | R0.05  | 0.6       | 45        | 3          | 2           |
| 5        | NRHR2-004-0005-040-S04-L45 | 0.4(R0.05)X4X0.6(4)X45   | 0.4      | 4        | R0.05  | 0.6       | 45        | 4          | 2           |
| 6        | NRHR2-005-0005-010-S04-L45 | 0.5(R0.05)X4X0.7(1)X45   | 0.5      | 4        | R0.05  | 0.7       | 45        | 1          | 2           |
| 7        | NRHR2-005-0005-015-S04-L45 | 0.5(R0.05)X4X0.7(1.5)X45 | 0.5      | 4        | R0.05  | 0.7       | 45        | 1.5        | 2           |
| 8        | NRHR2-005-0005-025-S04-L45 | 0.5(R0.05)X4X0.7(2.5)X45 | 0.5      | 4        | R0.05  | 0.7       | 45        | 2.5        | 2           |
| 9        | NRHR2-005-0005-030-S04-L45 | 0.5(R0.05)X4X0.7(3)X45   | 0.5      | 4        | R0.05  | 0.7       | 45        | 3          | 2           |
| 10       | NRHR2-005-0005-040-S04-L45 | 0.5(R0.05)X4X0.7(4)X45   | 0.5      | 4        | R0.05  | 0.7       | 45        | 4          | 2           |
| 11       | NRHR2-006-0005-020-S04-L45 | 0.6(R0.05)X4X0.9(2)X45   | 0.6      | 4        | R0.05  | 0.9       | 45        | 2          | 2           |
| 12       | NRHR2-006-0005-040-S04-L45 | 0.6(R0.05)X4X0.9(4)X45   | 0.6      | 4        | R0.05  | 0.9       | 45        | 4          | 2           |
| 13       | NRHR2-006-0005-060-S04-L45 | 0.6(R0.05)X4X0.9(6)X45   | 0.6      | 4        | R0.05  | 0.9       | 45        | 6          | 2           |
| 14       | NRHR2-006-001-020-S04-L45  | 0.6(R0.1)X4X0.9(2)X45    | 0.6      | 4        | R0.1   | 0.9       | 45        | 2          | 2           |
| 15       | NRHR2-006-001-040-S04-L45  | 0.6(R0.1)X4X0.9(4)X45    | 0.6      | 4        | R0.1   | 0.9       | 45        | 4          | 2           |
| 16       | NRHR2-006-001-060-S04-L45  | 0.6(R0.1)X4X0.9(6)X45    | 0.6      | 4        | R0.1   | 0.9       | 45        | 6          | 2           |
| 17       | NRHR2-006-002-020-S04-L45  | 0.6(R0.2)X4X0.9(2)X45    | 0.6      | 4        | R0.2   | 0.9       | 45        | 2          | 2           |
| 18       | NRHR2-006-002-040-S04-L45  | 0.6(R0.2)X4X0.9(4)X45    | 0.6      | 4        | R0.2   | 0.9       | 45        | 4          | 2           |
| 19       | NRHR2-006-002-060-S04-L45  | 0.6(R0.2)X4X0.9(6)X45    | 0.6      | 4        | R0.2   | 0.9       | 45        | 6          | 2           |
| 20       | NRHR2-008-0005-020-S04-L45 | 0.8(R0.05)X4X1.2(2)X45   | 0.8      | 4        | R0.05  | 1.2       | 45        | 2          | 2           |
| 21       | NRHR2-008-0005-040-S04-L45 | 0.8(R0.05)X4X1.2(4)X45   | 0.8      | 4        | R0.05  | 1.2       | 45        | 4          | 2           |
| 22       | NRHR2-008-0005-060-S04-L45 | 0.8(R0.05)X4X1.2(6)X45   | 0.8      | 4        | R0.05  | 1.2       | 45        | 6          | 2           |
| 23       | NRHR2-008-0005-080-S04-L45 | 0.8(R0.05)X4X1.2(8)X45   | 0.8      | 4        | R0.05  | 1.2       | 45        | 8          | 2           |
| 24       | NRHR2-008-001-020-S04-L45  | 0.8(R0.1)X4X1.2(2)X45    | 0.8      | 4        | R0.1   | 1.2       | 45        | 2          | 2           |
| 25       | NRHR2-008-001-040-S04-L45  | 0.8(R0.1)X4X1.2(4)X45    | 0.8      | 4        | R0.1   | 1.2       | 45        | 4          | 2           |
| 26       | NRHR2-008-001-060-S04-L45  | 0.8(R0.1)X4X1.2(6)X45    | 0.8      | 4        | R0.1   | 1.2       | 45        | 6          | 2           |
| 27       | NRHR2-008-001-080-S04-L45  | 0.8(R0.1)X4X1.2(8)X45    | 0.8      | 4        | R0.1   | 1.2       | 45        | 8          | 2           |
| 28       | NRHR2-008-002-020-S04-L45  | 0.8(R0.2)X4X1.2(2)X45    | 0.8      | 4        | R0.2   | 1.2       | 45        | 2          | 2           |
| 29       | NRHR2-008-002-040-S04-L45  | 0.8(R0.2)X4X1.2(4)X45    | 0.8      | 4        | R0.2   | 1.2       | 45        | 4          | 2           |
| 30       | NRHR2-008-002-060-S04-L45  | 0.8(R0.2)X4X1.2(6)X45    | 0.8      | 4        | R0.2   | 1.2       | 45        | 6          | 2           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

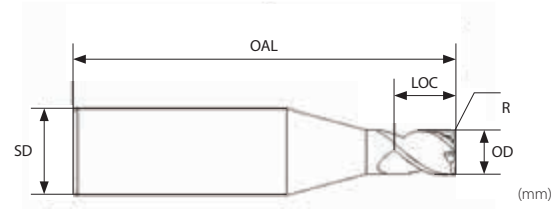
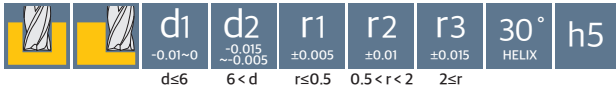
## “N-SH” 高硬度钢专用铣刀

| NANO HARDENED STEEL 2 FLUTE RIB CORNER RADIUS ②  
NANO 高硬度钢 2刃 长颈 圆鼻 ②



| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格         | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|----------------------------|-------------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 31       | NRHR2-008-002-080-S04-L45  | 0.8(R0.2)X4X1.2(8)X45   | 0.8      | 4        | R0.2   | 1.2       | 45        | 8          | 2           |
| 32       | NRHR2-010-0005-030-S04-L50 | 1(R0.05)X4X2(3)X50      | 1        | 4        | R0.05  | 2         | 50        | 3          | 2           |
| 33       | NRHR2-010-0005-040-S04-L50 | 1(R0.05)X4X2(4)X50      | 1        | 4        | R0.05  | 2         | 50        | 4          | 2           |
| 34       | NRHR2-010-0005-060-S04-L50 | 1(R0.05)X4X2(6)X50      | 1        | 4        | R0.05  | 2         | 50        | 6          | 2           |
| 35       | NRHR2-010-0005-080-S04-L50 | 1(R0.05)X4X2(8)X50      | 1        | 4        | R0.05  | 2         | 50        | 8          | 2           |
| 36       | NRHR2-010-0005-100-S04-L50 | 1(R0.05)X4X2(10)X50     | 1        | 4        | R0.05  | 2         | 50        | 10         | 2           |
| 37       | NRHR2-010-001-030-S04-L50  | 1(R0.1)X4X2(3)X50       | 1        | 4        | R0.1   | 2         | 50        | 3          | 2           |
| 38       | NRHR2-010-001-040-S04-L50  | 1(R0.1)X4X2(4)X50       | 1        | 4        | R0.1   | 2         | 50        | 4          | 2           |
| 39       | NRHR2-010-001-060-S04-L50  | 1(R0.1)X4X2(6)X50       | 1        | 4        | R0.1   | 2         | 50        | 6          | 2           |
| 40       | NRHR2-010-001-080-S04-L50  | 1(R0.1)X4X2(8)X50       | 1        | 4        | R0.1   | 2         | 50        | 8          | 2           |
| 41       | NRHR2-010-001-100-S04-L50  | 1(R0.1)X4X2(10)X50      | 1        | 4        | R0.1   | 2         | 50        | 10         | 2           |
| 42       | NRHR2-010-002-030-S04-L50  | 1(R0.2)X4X2(3)X50       | 1        | 4        | R0.2   | 2         | 50        | 3          | 2           |
| 43       | NRHR2-010-002-040-S04-L50  | 1(R0.2)X4X2(4)X50       | 1        | 4        | R0.2   | 2         | 50        | 4          | 2           |
| 44       | NRHR2-010-002-060-S04-L50  | 1(R0.2)X4X2(6)X50       | 1        | 4        | R0.2   | 2         | 50        | 6          | 2           |
| 45       | NRHR2-010-002-080-S04-L50  | 1(R0.2)X4X2(8)X50       | 1        | 4        | R0.2   | 2         | 50        | 8          | 2           |
| 46       | NRHR2-010-002-100-S04-L50  | 1(R0.2)X4X2(10)X50      | 1        | 4        | R0.2   | 2         | 50        | 10         | 2           |
| 47       | NRHR2-010-003-030-S04-L50  | 1(R0.3)X4X2(3)X50       | 1        | 4        | R0.3   | 2         | 50        | 3          | 2           |
| 48       | NRHR2-010-003-040-S04-L50  | 1(R0.3)X4X2(4)X50       | 1        | 4        | R0.3   | 2         | 50        | 4          | 2           |
| 49       | NRHR2-010-003-060-S04-L50  | 1(R0.3)X4X2(6)X50       | 1        | 4        | R0.3   | 2         | 50        | 6          | 2           |
| 50       | NRHR2-010-003-080-S04-L50  | 1(R0.3)X4X2(8)X50       | 1        | 4        | R0.3   | 2         | 50        | 8          | 2           |
| 51       | NRHR2-010-003-100-S04-L50  | 1(R0.3)X4X2(10)X50      | 1        | 4        | R0.3   | 2         | 50        | 10         | 2           |
| 52       | NRHR2-015-0005-040-S04-L50 | 1.5(R0.05)X4X2.5(4)X50  | 1.5      | 4        | R0.05  | 2.5       | 50        | 4          | 2           |
| 53       | NRHR2-015-0005-060-S04-L50 | 1.5(R0.05)X4X2.5(6)X50  | 1.5      | 4        | R0.05  | 2.5       | 50        | 6          | 2           |
| 54       | NRHR2-015-0005-080-S04-L50 | 1.5(R0.05)X4X2.5(8)X50  | 1.5      | 4        | R0.05  | 2.5       | 50        | 8          | 2           |
| 55       | NRHR2-015-0005-100-S04-L50 | 1.5(R0.05)X4X2.5(10)X50 | 1.5      | 4        | R0.05  | 2.5       | 50        | 10         | 2           |
| 56       | NRHR2-015-0005-120-S04-L50 | 1.5(R0.05)X4X2.5(12)X50 | 1.5      | 4        | R0.05  | 2.5       | 50        | 12         | 2           |
| 57       | NRHR2-015-001-040-S04-L50  | 1.5(R0.1)X4X2.5(4)X50   | 1.5      | 4        | R0.1   | 2.5       | 50        | 4          | 2           |
| 58       | NRHR2-015-001-060-S04-L50  | 1.5(R0.1)X4X2.5(6)X50   | 1.5      | 4        | R0.1   | 2.5       | 50        | 6          | 2           |
| 59       | NRHR2-015-001-080-S04-L50  | 1.5(R0.1)X4X2.5(8)X50   | 1.5      | 4        | R0.1   | 2.5       | 50        | 8          | 2           |
| 60       | NRHR2-015-001-100-S04-L50  | 1.5(R0.1)X4X2.5(10)X50  | 1.5      | 4        | R0.1   | 2.5       | 50        | 10         | 2           |

NANO HARDENED STEEL 2 FLUTE RIB CORNER RADIUS ③  
 NANO 高硬度钢 2刃 长颈 圆鼻 ③

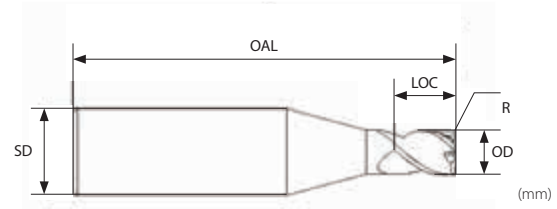
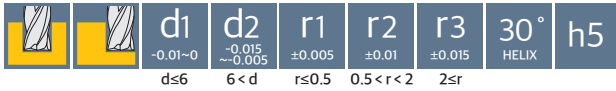


| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格        | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|---------------------------|------------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 61       | NRHR2-015-001-120-S04-L50 | 1.5(R0.1)X4X2.5(12)X50 | 1.5      | 4        | R0.1   | 2.5       | 50        | 12         | 2           |
| 62       | NRHR2-015-002-040-S04-L50 | 1.5(R0.2)X4X2.5(4)X50  | 1.5      | 4        | R0.2   | 2.5       | 50        | 4          | 2           |
| 63       | NRHR2-015-002-060-S04-L50 | 1.5(R0.2)X4X2.5(6)X50  | 1.5      | 4        | R0.2   | 2.5       | 50        | 6          | 2           |
| 64       | NRHR2-015-002-080-S04-L50 | 1.5(R0.2)X4X2.5(8)X50  | 1.5      | 4        | R0.2   | 2.5       | 50        | 8          | 2           |
| 65       | NRHR2-015-002-100-S04-L50 | 1.5(R0.2)X4X2.5(10)X50 | 1.5      | 4        | R0.2   | 2.5       | 50        | 10         | 2           |
| 66       | NRHR2-015-002-120-S04-L50 | 1.5(R0.2)X4X2.5(12)X50 | 1.5      | 4        | R0.2   | 2.5       | 50        | 12         | 2           |
| 67       | NRHR2-015-003-040-S04-L50 | 1.5(R0.3)X4X2.5(4)X50  | 1.5      | 4        | R0.3   | 2.5       | 50        | 4          | 2           |
| 68       | NRHR2-015-003-060-S04-L50 | 1.5(R0.3)X4X2.5(6)X50  | 1.5      | 4        | R0.3   | 2.5       | 50        | 6          | 2           |
| 69       | NRHR2-015-003-080-S04-L50 | 1.5(R0.3)X4X2.5(8)X50  | 1.5      | 4        | R0.3   | 2.5       | 50        | 8          | 2           |
| 70       | NRHR2-015-003-100-S04-L50 | 1.5(R0.3)X4X2.5(10)X50 | 1.5      | 4        | R0.3   | 2.5       | 50        | 10         | 2           |
| 71       | NRHR2-015-003-120-S04-L50 | 1.5(R0.3)X4X2.5(12)X50 | 1.5      | 4        | R0.3   | 2.5       | 50        | 12         | 2           |
| 72       | NRHR2-015-005-040-S04-L50 | 1.5(R0.5)X4X2.5(4)X50  | 1.5      | 4        | R0.5   | 2.5       | 50        | 4          | 2           |
| 73       | NRHR2-015-005-060-S04-L50 | 1.5(R0.5)X4X2.5(6)X50  | 1.5      | 4        | R0.5   | 2.5       | 50        | 6          | 2           |
| 74       | NRHR2-015-005-080-S04-L50 | 1.5(R0.5)X4X2.5(8)X50  | 1.5      | 4        | R0.5   | 2.5       | 50        | 8          | 2           |
| 75       | NRHR2-015-005-100-S04-L50 | 1.5(R0.5)X4X2.5(10)X50 | 1.5      | 4        | R0.5   | 2.5       | 50        | 10         | 2           |
| 76       | NRHR2-015-005-120-S04-L50 | 1.5(R0.5)X4X2.5(12)X50 | 1.5      | 4        | R0.5   | 2.5       | 50        | 12         | 2           |
| 77       | NRHR2-020-001-060-S04-L50 | 2(R0.1)X4X3(6)X50      | 2        | 4        | R0.1   | 3         | 50        | 6          | 2           |
| 78       | NRHR2-020-001-080-S04-L50 | 2(R0.1)X4X3(8)X50      | 2        | 4        | R0.1   | 3         | 50        | 8          | 2           |
| 79       | NRHR2-020-001-100-S04-L50 | 2(R0.1)X4X3(10)X50     | 2        | 4        | R0.1   | 3         | 50        | 10         | 2           |
| 80       | NRHR2-020-001-120-S04-L50 | 2(R0.1)X4X3(12)X50     | 2        | 4        | R0.1   | 3         | 50        | 12         | 2           |
| 81       | NRHR2-020-001-160-S04-L50 | 2(R0.1)X4X3(16)X50     | 2        | 4        | R0.1   | 3         | 50        | 16         | 2           |
| 82       | NRHR2-020-001-200-S04-L50 | 2(R0.1)X4X3(20)X50     | 2        | 4        | R0.1   | 3         | 50        | 20         | 2           |
| 83       | NRHR2-020-002-060-S04-L50 | 2(R0.2)X4X3(6)X50      | 2        | 4        | R0.2   | 3         | 50        | 6          | 2           |
| 84       | NRHR2-020-002-080-S04-L50 | 2(R0.2)X4X3(8)X50      | 2        | 4        | R0.2   | 3         | 50        | 8          | 2           |
| 85       | NRHR2-020-002-100-S04-L50 | 2(R0.2)X4X3(10)X50     | 2        | 4        | R0.2   | 3         | 50        | 10         | 2           |
| 86       | NRHR2-020-002-120-S04-L50 | 2(R0.2)X4X3(12)X50     | 2        | 4        | R0.2   | 3         | 50        | 12         | 2           |
| 87       | NRHR2-020-002-160-S04-L50 | 2(R0.2)X4X3(16)X50     | 2        | 4        | R0.2   | 3         | 50        | 16         | 2           |
| 88       | NRHR2-020-002-200-S04-L50 | 2(R0.2)X4X3(20)X50     | 2        | 4        | R0.2   | 3         | 50        | 20         | 2           |
| 89       | NRHR2-020-003-060-S04-L50 | 2(R0.3)X4X3(6)X50      | 2        | 4        | R0.3   | 3         | 50        | 6          | 2           |
| 90       | NRHR2-020-003-080-S04-L50 | 2(R0.3)X4X3(8)X50      | 2        | 4        | R0.3   | 3         | 50        | 8          | 2           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

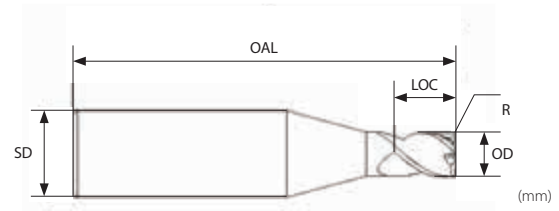
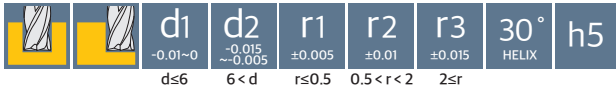
## “N-SH” 高硬度钢专用铣刀

| NANO HARDENED STEEL 2 FLUTE RIB CORNER RADIUS ④  
NANO 高硬度钢 2刃 长颈 圆鼻 ④



| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格        | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|---------------------------|------------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 91       | NRHR2-020-003-100-S04-L50 | 2(R0.3)X4X3(10)X50     | 2        | 4        | R0.3   | 3         | 50        | 10         | 2           |
| 92       | NRHR2-020-003-120-S04-L50 | 2(R0.3)X4X3(12)X50     | 2        | 4        | R0.3   | 3         | 50        | 12         | 2           |
| 93       | NRHR2-020-003-160-S04-L50 | 2(R0.3)X4X3(16)X50     | 2        | 4        | R0.3   | 3         | 50        | 16         | 2           |
| 94       | NRHR2-020-003-200-S04-L50 | 2(R0.3)X4X3(20)X50     | 2        | 4        | R0.3   | 3         | 50        | 20         | 2           |
| 95       | NRHR2-020-005-060-S04-L50 | 2(R0.5)X4X3(6)X50      | 2        | 4        | R0.5   | 3         | 50        | 6          | 2           |
| 96       | NRHR2-020-005-080-S04-L50 | 2(R0.5)X4X3(8)X50      | 2        | 4        | R0.5   | 3         | 50        | 8          | 2           |
| 97       | NRHR2-020-005-100-S04-L50 | 2(R0.5)X4X3(10)X50     | 2        | 4        | R0.5   | 3         | 50        | 10         | 2           |
| 98       | NRHR2-020-005-120-S04-L50 | 2(R0.5)X4X3(12)X50     | 2        | 4        | R0.5   | 3         | 50        | 12         | 2           |
| 99       | NRHR2-020-005-160-S04-L50 | 2(R0.5)X4X3(16)X50     | 2        | 4        | R0.5   | 3         | 50        | 16         | 2           |
| 100      | NRHR2-020-005-200-S04-L50 | 2(R0.5)X4X3(20)X50     | 2        | 4        | R0.5   | 3         | 50        | 20         | 2           |
| 101      | NRHR2-025-002-080-S04-L55 | 2.5(R0.2)X4X3.5(8)X55  | 2.5      | 4        | R0.2   | 3.5       | 55        | 8          | 2           |
| 102      | NRHR2-025-002-100-S04-L55 | 2.5(R0.2)X4X3.5(10)X55 | 2.5      | 4        | R0.2   | 3.5       | 55        | 10         | 2           |
| 103      | NRHR2-025-002-120-S04-L55 | 2.5(R0.2)X4X3.5(12)X55 | 2.5      | 4        | R0.2   | 3.5       | 55        | 12         | 2           |
| 104      | NRHR2-025-002-160-S04-L55 | 2.5(R0.2)X4X3.5(16)X55 | 2.5      | 4        | R0.2   | 3.5       | 55        | 16         | 2           |
| 105      | NRHR2-025-003-080-S04-L55 | 2.5(R0.3)X4X3.5(8)X55  | 2.5      | 4        | R0.3   | 3.5       | 55        | 8          | 2           |
| 106      | NRHR2-025-003-100-S04-L55 | 2.5(R0.3)X4X3.5(10)X55 | 2.5      | 4        | R0.3   | 3.5       | 55        | 10         | 2           |
| 107      | NRHR2-025-003-120-S04-L55 | 2.5(R0.3)X4X3.5(12)X55 | 2.5      | 4        | R0.3   | 3.5       | 55        | 12         | 2           |
| 108      | NRHR2-025-003-160-S04-L55 | 2.5(R0.3)X4X3.5(16)X55 | 2.5      | 4        | R0.3   | 3.5       | 55        | 16         | 2           |
| 109      | NRHR2-025-005-080-S04-L55 | 2.5(R0.5)X4X3.5(8)X55  | 2.5      | 4        | R0.5   | 3.5       | 55        | 8          | 2           |
| 110      | NRHR2-025-005-100-S04-L55 | 2.5(R0.5)X4X3.5(10)X55 | 2.5      | 4        | R0.5   | 3.5       | 55        | 10         | 2           |
| 111      | NRHR2-025-005-120-S04-L55 | 2.5(R0.5)X4X3.5(12)X55 | 2.5      | 4        | R0.5   | 3.5       | 55        | 12         | 2           |
| 112      | NRHR2-025-005-160-S04-L55 | 2.5(R0.5)X4X3.5(16)X55 | 2.5      | 4        | R0.5   | 3.5       | 55        | 16         | 2           |
| 113      | NRHR2-030-001-080-S06-L55 | 3(R0.1)X6X4.5(8)X55    | 3        | 6        | R0.1   | 4.5       | 55        | 8          | 2           |
| 114      | NRHR2-030-001-100-S06-L55 | 3(R0.1)X6X4.5(10)X55   | 3        | 6        | R0.1   | 4.5       | 55        | 10         | 2           |
| 115      | NRHR2-030-001-120-S06-L55 | 3(R0.1)X6X4.5(12)X55   | 3        | 6        | R0.1   | 4.5       | 55        | 12         | 2           |
| 116      | NRHR2-030-001-160-S06-L55 | 3(R0.1)X6X4.5(16)X55   | 3        | 6        | R0.1   | 4.5       | 55        | 16         | 2           |
| 117      | NRHR2-030-001-200-S06-L60 | 3(R0.1)X6X4.5(20)X60   | 3        | 6        | R0.1   | 4.5       | 60        | 20         | 2           |
| 118      | NRHR2-030-002-080-S06-L55 | 3(R0.2)X6X4.5(8)X55    | 3        | 6        | R0.2   | 4.5       | 55        | 8          | 2           |
| 119      | NRHR2-030-002-100-S06-L55 | 3(R0.2)X6X4.5(10)X55   | 3        | 6        | R0.2   | 4.5       | 55        | 10         | 2           |
| 120      | NRHR2-030-002-120-S06-L55 | 3(R0.2)X6X4.5(12)X55   | 3        | 6        | R0.2   | 4.5       | 55        | 12         | 2           |

**NANO HARDENED STEEL 2 FLUTE RIB CORNER RADIUS ⑤**  
**NANO 高硬度钢 2刃 长颈 圆鼻 ⑤**

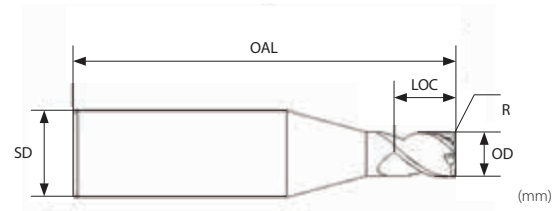
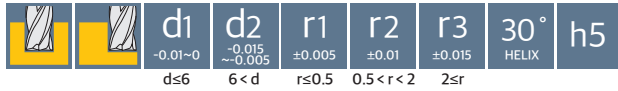


| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格      | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|---------------------------|----------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 121      | NRHR2-030-002-160-S06-L55 | 3(R0.2)X6X4.5(16)X55 | 3        | 6        | R0.2   | 4.5       | 55        | 16         | 2           |
| 122      | NRHR2-030-002-200-S06-L60 | 3(R0.2)X6X4.5(20)X60 | 3        | 6        | R0.2   | 4.5       | 60        | 20         | 2           |
| 123      | NRHR2-030-003-080-S06-L55 | 3(R0.3)X6X4.5(8)X55  | 3        | 6        | R0.3   | 4.5       | 55        | 8          | 2           |
| 124      | NRHR2-030-003-100-S06-L55 | 3(R0.3)X6X4.5(10)X55 | 3        | 6        | R0.3   | 4.5       | 55        | 10         | 2           |
| 125      | NRHR2-030-003-120-S06-L55 | 3(R0.3)X6X4.5(12)X55 | 3        | 6        | R0.3   | 4.5       | 55        | 12         | 2           |
| 126      | NRHR2-030-003-160-S06-L55 | 3(R0.3)X6X4.5(16)X55 | 3        | 6        | R0.3   | 4.5       | 55        | 16         | 2           |
| 127      | NRHR2-030-003-200-S06-L60 | 3(R0.3)X6X4.5(20)X60 | 3        | 6        | R0.3   | 4.5       | 60        | 20         | 2           |
| 128      | NRHR2-030-005-080-S06-L55 | 3(R0.5)X6X4.5(8)X55  | 3        | 6        | R0.5   | 4.5       | 55        | 8          | 2           |
| 129      | NRHR2-030-005-100-S06-L55 | 3(R0.5)X6X4.5(10)X55 | 3        | 6        | R0.5   | 4.5       | 55        | 10         | 2           |
| 130      | NRHR2-030-005-120-S06-L55 | 3(R0.5)X6X4.5(12)X55 | 3        | 6        | R0.5   | 4.5       | 55        | 12         | 2           |
| 131      | NRHR2-030-005-160-S06-L55 | 3(R0.5)X6X4.5(16)X55 | 3        | 6        | R0.5   | 4.5       | 55        | 16         | 2           |
| 132      | NRHR2-030-005-200-S06-L60 | 3(R0.5)X6X4.5(20)X60 | 3        | 6        | R0.5   | 4.5       | 60        | 20         | 2           |
| 133      | NRHR2-030-010-080-S06-L55 | 3(R1)X6X4.5(8)X55    | 3        | 6        | R1     | 4.5       | 55        | 8          | 2           |
| 134      | NRHR2-030-010-100-S06-L55 | 3(R1)X6X4.5(10)X55   | 3        | 6        | R1     | 4.5       | 55        | 10         | 2           |
| 135      | NRHR2-030-010-120-S06-L55 | 3(R1)X6X4.5(12)X55   | 3        | 6        | R1     | 4.5       | 55        | 12         | 2           |
| 136      | NRHR2-030-010-160-S06-L55 | 3(R1)X6X4.5(16)X55   | 3        | 6        | R1     | 4.5       | 55        | 16         | 2           |
| 137      | NRHR2-030-010-200-S06-L60 | 3(R1)X6X4.5(20)X60   | 3        | 6        | R1     | 4.5       | 60        | 20         | 2           |
| 138      | NRHR2-040-001-100-S06-L55 | 4(R0.1)X6X6(10)X55   | 4        | 6        | R0.1   | 6         | 55        | 10         | 2           |
| 139      | NRHR2-040-001-120-S06-L55 | 4(R0.1)X6X6(12)X55   | 4        | 6        | R0.1   | 6         | 55        | 12         | 2           |
| 140      | NRHR2-040-001-160-S06-L55 | 4(R0.1)X6X6(16)X55   | 4        | 6        | R0.1   | 6         | 55        | 16         | 2           |
| 141      | NRHR2-040-001-200-S06-L60 | 4(R0.1)X6X6(20)X60   | 4        | 6        | R0.1   | 6         | 60        | 20         | 2           |
| 142      | NRHR2-040-001-250-S06-L60 | 4(R0.1)X6X6(25)X60   | 4        | 6        | R0.1   | 6         | 60        | 25         | 2           |
| 143      | NRHR2-040-002-100-S06-L55 | 4(R0.2)X6X6(10)X55   | 4        | 6        | R0.2   | 6         | 55        | 10         | 2           |
| 144      | NRHR2-040-002-120-S06-L55 | 4(R0.2)X6X6(12)X55   | 4        | 6        | R0.2   | 6         | 55        | 12         | 2           |
| 145      | NRHR2-040-002-160-S06-L55 | 4(R0.2)X6X6(16)X55   | 4        | 6        | R0.2   | 6         | 55        | 16         | 2           |
| 146      | NRHR2-040-002-200-S06-L60 | 4(R0.2)X6X6(20)X60   | 4        | 6        | R0.2   | 6         | 60        | 20         | 2           |
| 147      | NRHR2-040-002-250-S06-L60 | 4(R0.2)X6X6(25)X60   | 4        | 6        | R0.2   | 6         | 60        | 25         | 2           |
| 148      | NRHR2-040-003-100-S06-L55 | 4(R0.3)X6X6(10)X55   | 4        | 6        | R0.3   | 6         | 55        | 10         | 2           |
| 149      | NRHR2-040-003-120-S06-L55 | 4(R0.3)X6X6(12)X55   | 4        | 6        | R0.3   | 6         | 55        | 12         | 2           |
| 150      | NRHR2-040-003-160-S06-L55 | 4(R0.3)X6X6(16)X55   | 4        | 6        | R0.3   | 6         | 55        | 16         | 2           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL



## “N-SH” 高硬度钢专用铣刀

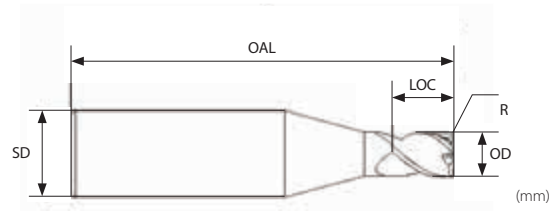
| NANO HARDENED STEEL 2 FLUTE RIB CORNER RADIUS ⑥  
NANO 高硬度钢 2刃 长颈 圆鼻 ⑥



| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格       | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|---------------------------|-----------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 151      | NRHR2-040-003-200-S06-L60 | 4(R0.3)X6X6(20)X60    | 4        | 6        | R0.3   | 6         | 60        | 20         | 2           |
| 152      | NRHR2-040-003-250-S06-L60 | 4(R0.3)X6X6(25)X60    | 4        | 6        | R0.3   | 6         | 60        | 25         | 2           |
| 153      | NRHR2-040-005-100-S06-L55 | 4(R0.5)X6X6(10)X55    | 4        | 6        | R0.5   | 6         | 55        | 10         | 2           |
| 154      | NRHR2-040-005-120-S06-L55 | 4(R0.5)X6X6(12)X55    | 4        | 6        | R0.5   | 6         | 55        | 12         | 2           |
| 155      | NRHR2-040-005-160-S06-L55 | 4(R0.5)X6X6(16)X55    | 4        | 6        | R0.5   | 6         | 55        | 16         | 2           |
| 156      | NRHR2-040-005-200-S06-L60 | 4(R0.5)X6X6(20)X60    | 4        | 6        | R0.5   | 6         | 60        | 20         | 2           |
| 157      | NRHR2-040-005-250-S06-L60 | 4(R0.5)X6X6(25)X60    | 4        | 6        | R0.5   | 6         | 60        | 25         | 2           |
| 158      | NRHR2-040-010-100-S06-L55 | 4(R1)X6X6(10)X55      | 4        | 6        | R1     | 6         | 55        | 10         | 2           |
| 159      | NRHR2-040-010-120-S06-L55 | 4(R1)X6X6(12)X55      | 4        | 6        | R1     | 6         | 55        | 12         | 2           |
| 160      | NRHR2-040-010-160-S06-L55 | 4(R1)X6X6(16)X55      | 4        | 6        | R1     | 6         | 55        | 16         | 2           |
| 161      | NRHR2-040-010-200-S06-L60 | 4(R1)X6X6(20)X60      | 4        | 6        | R1     | 6         | 60        | 20         | 2           |
| 162      | NRHR2-040-010-250-S06-L60 | 4(R1)X6X6(25)X60      | 4        | 6        | R1     | 6         | 60        | 25         | 2           |
| 163      | NRHR2-060-002-150-S06-L60 | 6(R0.2)X6X9(15)X60    | 6        | 6        | R0.2   | 9         | 60        | 15         | 2           |
| 164      | NRHR2-060-003-150-S06-L60 | 6(R0.3)X6X9(15)X60    | 6        | 6        | R0.3   | 9         | 60        | 15         | 2           |
| 165      | NRHR2-060-003-200-S06-L60 | 6(R0.3)X6X9(20)X60    | 6        | 6        | R0.3   | 9         | 60        | 20         | 2           |
| 166      | NRHR2-060-005-150-S06-L60 | 6(R0.5)X6X9(15)X60    | 6        | 6        | R0.5   | 9         | 60        | 15         | 2           |
| 167      | NRHR2-060-005-200-S06-L60 | 6(R0.5)X6X9(20)X60    | 6        | 6        | R0.5   | 9         | 60        | 20         | 2           |
| 168      | NRHR2-060-010-150-S06-L60 | 6(R1)X6X9(15)X60      | 6        | 6        | R1     | 9         | 60        | 15         | 2           |
| 169      | NRHR2-060-010-200-S06-L60 | 6(R1)X6X9(20)X60      | 6        | 6        | R1     | 9         | 60        | 20         | 2           |
| 170      | NRHR2-060-015-150-S06-L60 | 6(R1.5)X6X9(15)X60    | 6        | 6        | R1.5   | 9         | 60        | 15         | 2           |
| 171      | NRHR2-060-020-150-S06-L60 | 6(R2)X6X9(15)X60      | 6        | 6        | R2     | 9         | 60        | 15         | 2           |
| 172      | NRHR2-080-002-200-S08-L65 | 8(R0.2)X8X12(20)X65   | 8        | 8        | R0.2   | 12        | 65        | 20         | 2           |
| 173      | NRHR2-080-003-200-S08-L65 | 8(R0.3)X8X12(20)X65   | 8        | 8        | R0.3   | 12        | 65        | 20         | 2           |
| 174      | NRHR2-080-005-200-S08-L65 | 8(R0.5)X8X12(20)X65   | 8        | 8        | R0.5   | 12        | 65        | 20         | 2           |
| 175      | NRHR2-080-010-200-S08-L65 | 8(R1)X8X12(20)X65     | 8        | 8        | R1     | 12        | 65        | 20         | 2           |
| 176      | NRHR2-080-015-200-S08-L65 | 8(R1.5)X8X12(20)X65   | 8        | 8        | R1.5   | 12        | 65        | 20         | 2           |
| 177      | NRHR2-100-002-250-S10-L70 | 10(R0.2)X10X15(25)X70 | 10       | 10       | R0.2   | 15        | 70        | 25         | 2           |
| 178      | NRHR2-100-003-250-S10-L70 | 10(R0.3)X10X15(25)X70 | 10       | 10       | R0.3   | 15        | 70        | 25         | 2           |
| 179      | NRHR2-100-005-250-S10-L70 | 10(R0.5)X10X15(25)X70 | 10       | 10       | R0.5   | 15        | 70        | 25         | 2           |
| 180      | NRHR2-100-010-250-S10-L70 | 10(R1)X10X15(25)X70   | 10       | 10       | R1     | 15        | 70        | 25         | 2           |

**NANO HARDENED STEEL 2 FLUTE RIB CORNER RADIUS ⑦**  
**NANO 高硬度钢 2刃 长颈 圆鼻 ⑦**

|   |   |                             |                                       |                              |                               |                            |                     |           |
|---|---|-----------------------------|---------------------------------------|------------------------------|-------------------------------|----------------------------|---------------------|-----------|
|  |  | <b>d1</b><br>-0.01~0<br>d≤6 | <b>d2</b><br>-0.015<br>~-0.005<br>6<d | <b>r1</b><br>±0.005<br>r≤0.5 | <b>r2</b><br>±0.01<br>0.5<r<2 | <b>r3</b><br>±0.015<br>2≤r | <b>30°</b><br>HELIX | <b>h5</b> |
|---|---|-----------------------------|---------------------------------------|------------------------------|-------------------------------|----------------------------|---------------------|-----------|

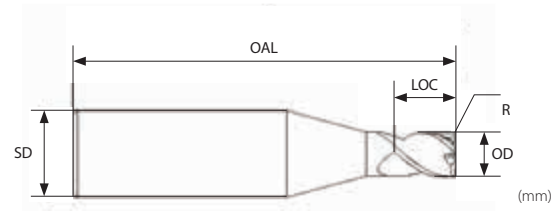
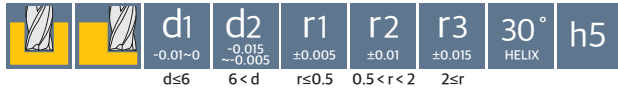


| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格       | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|---------------------------|-----------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 181      | NRHR2-100-015-250-S10-L70 | 10(R1.5)X10X15(25)X70 | 10       | 10       | R1.5   | 15        | 70        | 25         | 2           |
| 182      | NRHR2-100-020-250-S10-L70 | 10(R2)X10X15(25)X70   | 10       | 10       | R2     | 15        | 70        | 25         | 2           |
| 183      | NRHR2-120-003-300-S12-L80 | 12(R0.3)X12X18(30)X80 | 12       | 12       | R0.3   | 18        | 80        | 30         | 2           |
| 184      | NRHR2-120-005-300-S12-L80 | 12(R0.5)X12X18(30)X80 | 12       | 12       | R0.5   | 18        | 80        | 30         | 2           |
| 185      | NRHR2-120-010-300-S12-L80 | 12(R1)X12X18(30)X80   | 12       | 12       | R1     | 18        | 80        | 30         | 2           |
| 186      | NRHR2-120-015-300-S12-L80 | 12(R1.5)X12X18(30)X80 | 12       | 12       | R1.5   | 18        | 80        | 30         | 2           |
| 187      | NRHR2-120-020-300-S12-L80 | 12(R2)X12X18(30)X80   | 12       | 12       | R2     | 18        | 80        | 30         | 2           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

| NANO HARDENED STEEL 4 FLUTE RIB CORNER RADIUS ①  
NANO 高硬度钢 4刃 长颈 圆鼻 ①

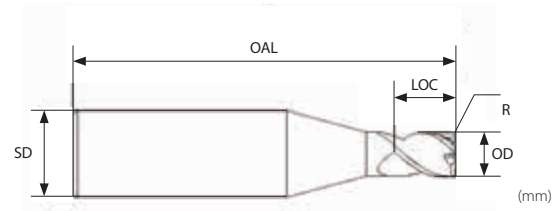
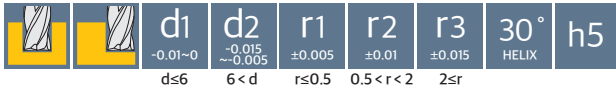


| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格       | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|---------------------------|-----------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 1        | NRHR4-010-001-030-S04-L50 | 1(R0.1)X4X2(3)X50     | 1        | 4        | R0.1   | 2         | 50        | 3          | 4           |
| 2        | NRHR4-010-001-040-S04-L50 | 1(R0.1)X4X2(4)X50     | 1        | 4        | R0.1   | 2         | 50        | 4          | 4           |
| 3        | NRHR4-010-001-060-S04-L50 | 1(R0.1)X4X2(6)X50     | 1        | 4        | R0.1   | 2         | 50        | 6          | 4           |
| 4        | NRHR4-010-002-030-S04-L50 | 1(R0.2)X4X2(3)X50     | 1        | 4        | R0.2   | 2         | 50        | 3          | 4           |
| 5        | NRHR4-010-002-040-S04-L50 | 1(R0.2)X4X2(4)X50     | 1        | 4        | R0.2   | 2         | 50        | 4          | 4           |
| 6        | NRHR4-010-002-060-S04-L50 | 1(R0.2)X4X2(6)X50     | 1        | 4        | R0.2   | 2         | 50        | 6          | 4           |
| 7        | NRHR4-010-003-030-S04-L50 | 1(R0.3)X4X2(3)X50     | 1        | 4        | R0.3   | 2         | 50        | 3          | 4           |
| 8        | NRHR4-010-003-040-S04-L50 | 1(R0.3)X4X2(4)X50     | 1        | 4        | R0.3   | 2         | 50        | 4          | 4           |
| 9        | NRHR4-010-003-060-S04-L50 | 1(R0.3)X4X2(6)X50     | 1        | 4        | R0.3   | 2         | 50        | 6          | 4           |
| 10       | NRHR4-015-001-040-S04-L50 | 1.5(R0.1)X4X2.5(4)X50 | 1.5      | 4        | R0.1   | 2.5       | 50        | 4          | 4           |
| 11       | NRHR4-015-001-060-S04-L50 | 1.5(R0.1)X4X2.5(6)X50 | 1.5      | 4        | R0.1   | 2.5       | 50        | 6          | 4           |
| 12       | NRHR4-015-002-040-S04-L50 | 1.5(R0.2)X4X2.5(4)X50 | 1.5      | 4        | R0.2   | 2.5       | 50        | 4          | 4           |
| 13       | NRHR4-015-002-060-S04-L50 | 1.5(R0.2)X4X2.5(6)X50 | 1.5      | 4        | R0.2   | 2.5       | 50        | 6          | 4           |
| 14       | NRHR4-015-003-040-S04-L50 | 1.5(R0.3)X4X2.5(4)X50 | 1.5      | 4        | R0.3   | 2.5       | 50        | 4          | 4           |
| 15       | NRHR4-015-003-060-S04-L50 | 1.5(R0.3)X4X2.5(6)X50 | 1.5      | 4        | R0.3   | 2.5       | 50        | 6          | 4           |
| 16       | NRHR4-020-001-060-S04-L50 | 2(R0.1)X4X3(6)X50     | 2        | 4        | R0.1   | 3         | 50        | 6          | 4           |
| 17       | NRHR4-020-001-080-S04-L50 | 2(R0.1)X4X3(8)X50     | 2        | 4        | R0.1   | 3         | 50        | 8          | 4           |
| 18       | NRHR4-020-002-060-S04-L50 | 2(R0.2)X4X3(6)X50     | 2        | 4        | R0.2   | 3         | 50        | 6          | 4           |
| 19       | NRHR4-020-002-080-S04-L50 | 2(R0.2)X4X3(8)X50     | 2        | 4        | R0.2   | 3         | 50        | 8          | 4           |
| 20       | NRHR4-020-003-060-S04-L50 | 2(R0.3)X4X3(6)X50     | 2        | 4        | R0.3   | 3         | 50        | 6          | 4           |
| 21       | NRHR4-020-003-080-S04-L50 | 2(R0.3)X4X3(8)X50     | 2        | 4        | R0.3   | 3         | 50        | 8          | 4           |
| 22       | NRHR4-020-005-060-S04-L50 | 2(R0.5)X4X3(6)X50     | 2        | 4        | R0.5   | 3         | 50        | 6          | 4           |
| 23       | NRHR4-020-005-080-S04-L50 | 2(R0.5)X4X3(8)X50     | 2        | 4        | R0.5   | 3         | 50        | 8          | 4           |
| 24       | NRHR4-030-001-080-S06-L55 | 3(R0.1)X6X4(8)X55     | 3        | 6        | R0.1   | 4         | 55        | 8          | 4           |
| 25       | NRHR4-030-001-100-S06-L55 | 3(R0.1)X6X4(10)X55    | 3        | 6        | R0.1   | 4         | 55        | 10         | 4           |
| 26       | NRHR4-030-001-120-S06-L55 | 3(R0.1)X6X4(12)X55    | 3        | 6        | R0.1   | 4         | 55        | 12         | 4           |
| 27       | NRHR4-030-001-160-S06-L55 | 3(R0.1)X6X4(16)X55    | 3        | 6        | R0.1   | 4         | 55        | 16         | 4           |
| 28       | NRHR4-030-001-200-S06-L60 | 3(R0.1)X6X4(20)X60    | 3        | 6        | R0.1   | 4         | 60        | 20         | 4           |
| 29       | NRHR4-030-002-080-S06-L55 | 3(R0.2)X6X4(8)X55     | 3        | 6        | R0.2   | 4         | 55        | 8          | 4           |
| 30       | NRHR4-030-002-100-S06-L55 | 3(R0.2)X6X4(10)X55    | 3        | 6        | R0.2   | 4         | 55        | 10         | 4           |



## NANO HARDENED STEEL 4 FLUTE RIB CORNER RADIUS ②

### NANO 高硬度钢 4刃 长颈 圆鼻 ②

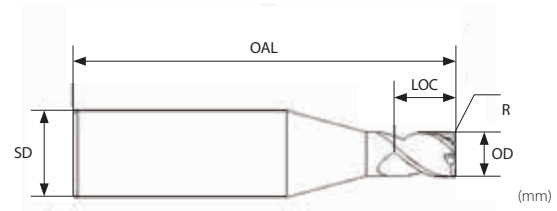


| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格    | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|---------------------------|--------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 31       | NRHR4-030-002-120-S06-L55 | 3(R0.2)X6X4(12)X55 | 3        | 6        | R0.2   | 4         | 55        | 12         | 4           |
| 32       | NRHR4-030-002-160-S06-L55 | 3(R0.2)X6X4(16)X55 | 3        | 6        | R0.2   | 4         | 55        | 16         | 4           |
| 33       | NRHR4-030-002-200-S06-L60 | 3(R0.2)X6X4(20)X60 | 3        | 6        | R0.2   | 4         | 60        | 20         | 4           |
| 34       | NRHR4-030-003-080-S06-L55 | 3(R0.3)X6X4(8)X55  | 3        | 6        | R0.3   | 4         | 55        | 8          | 4           |
| 35       | NRHR4-030-003-100-S06-L55 | 3(R0.3)X6X4(10)X55 | 3        | 6        | R0.3   | 4         | 55        | 10         | 4           |
| 36       | NRHR4-030-003-120-S06-L55 | 3(R0.3)X6X4(12)X55 | 3        | 6        | R0.3   | 4         | 55        | 12         | 4           |
| 37       | NRHR4-030-003-160-S06-L55 | 3(R0.3)X6X4(16)X55 | 3        | 6        | R0.3   | 4         | 55        | 16         | 4           |
| 38       | NRHR4-030-003-200-S06-L60 | 3(R0.3)X6X4(20)X60 | 3        | 6        | R0.3   | 4         | 60        | 20         | 4           |
| 39       | NRHR4-030-005-080-S06-L55 | 3(R0.5)X6X4(8)X55  | 3        | 6        | R0.5   | 4         | 55        | 8          | 4           |
| 40       | NRHR4-030-005-100-S06-L55 | 3(R0.5)X6X4(10)X55 | 3        | 6        | R0.5   | 4         | 55        | 10         | 4           |
| 41       | NRHR4-030-005-120-S06-L55 | 3(R0.5)X6X4(12)X55 | 3        | 6        | R0.5   | 4         | 55        | 12         | 4           |
| 42       | NRHR4-030-005-160-S06-L55 | 3(R0.5)X6X4(16)X55 | 3        | 6        | R0.5   | 4         | 55        | 16         | 4           |
| 43       | NRHR4-030-005-200-S06-L60 | 3(R0.5)X6X4(20)X60 | 3        | 6        | R0.5   | 4         | 60        | 20         | 4           |
| 44       | NRHR4-030-010-080-S06-L55 | 3(R1)X6X4(8)X55    | 3        | 6        | R1     | 4         | 55        | 8          | 4           |
| 45       | NRHR4-030-010-100-S06-L55 | 3(R1)X6X4(10)X55   | 3        | 6        | R1     | 4         | 55        | 10         | 4           |
| 46       | NRHR4-030-010-120-S06-L55 | 3(R1)X6X4(12)X55   | 3        | 6        | R1     | 4         | 55        | 12         | 4           |
| 47       | NRHR4-030-010-160-S06-L55 | 3(R1)X6X4(16)X55   | 3        | 6        | R1     | 4         | 55        | 16         | 4           |
| 48       | NRHR4-030-010-200-S06-L60 | 3(R1)X6X4(20)X60   | 3        | 6        | R1     | 4         | 60        | 20         | 4           |
| 49       | NRHR4-040-001-100-S06-L55 | 4(R0.1)X6X6(10)X55 | 4        | 6        | R0.1   | 6         | 55        | 10         | 4           |
| 50       | NRHR4-040-001-120-S06-L55 | 4(R0.1)X6X6(12)X55 | 4        | 6        | R0.1   | 6         | 55        | 12         | 4           |
| 51       | NRHR4-040-001-160-S06-L55 | 4(R0.1)X6X6(16)X55 | 4        | 6        | R0.1   | 6         | 55        | 16         | 4           |
| 52       | NRHR4-040-001-200-S06-L60 | 4(R0.1)X6X6(20)X60 | 4        | 6        | R0.1   | 6         | 60        | 20         | 4           |
| 53       | NRHR4-040-001-250-S06-L60 | 4(R0.1)X6X6(25)X60 | 4        | 6        | R0.1   | 6         | 60        | 25         | 4           |
| 54       | NRHR4-040-002-100-S06-L55 | 4(R0.2)X6X6(10)X55 | 4        | 6        | R0.2   | 6         | 55        | 10         | 4           |
| 55       | NRHR4-040-002-120-S06-L55 | 4(R0.2)X6X6(12)X55 | 4        | 6        | R0.2   | 6         | 55        | 12         | 4           |
| 56       | NRHR4-040-002-160-S06-L55 | 4(R0.2)X6X6(16)X55 | 4        | 6        | R0.2   | 6         | 55        | 16         | 4           |
| 57       | NRHR4-040-002-200-S06-L60 | 4(R0.2)X6X6(20)X60 | 4        | 6        | R0.2   | 6         | 60        | 20         | 4           |
| 58       | NRHR4-040-002-250-S06-L60 | 4(R0.2)X6X6(25)X60 | 4        | 6        | R0.2   | 6         | 60        | 25         | 4           |
| 59       | NRHR4-040-003-100-S06-L55 | 4(R0.3)X6X6(10)X55 | 4        | 6        | R0.3   | 6         | 55        | 10         | 4           |
| 60       | NRHR4-040-003-120-S06-L55 | 4(R0.3)X6X6(12)X55 | 4        | 6        | R0.3   | 6         | 55        | 12         | 4           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

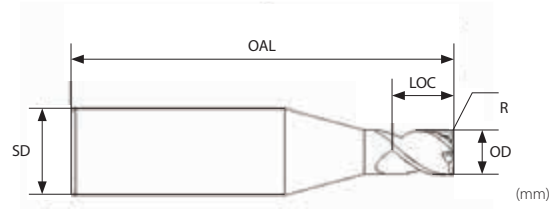
| NANO HARDENED STEEL 4 FLUTE RIB CORNER RADIUS ③  
NANO 高硬度钢 4刃 长颈 圆鼻 ③



| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格       | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|---------------------------|-----------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 61       | NRHR4-040-003-160-S06-L55 | 4(R0.3)X6X6(16)X55    | 4        | 6        | R0.3   | 6         | 55        | 16         | 4           |
| 62       | NRHR4-040-003-200-S06-L60 | 4(R0.3)X6X6(20)X60    | 4        | 6        | R0.3   | 6         | 60        | 20         | 4           |
| 63       | NRHR4-040-003-250-S06-L60 | 4(R0.3)X6X6(25)X60    | 4        | 6        | R0.3   | 6         | 60        | 25         | 4           |
| 64       | NRHR4-040-005-100-S06-L55 | 4(R0.5)X6X6(10)X55    | 4        | 6        | R0.5   | 6         | 55        | 10         | 4           |
| 65       | NRHR4-040-005-120-S06-L55 | 4(R0.5)X6X6(12)X55    | 4        | 6        | R0.5   | 6         | 55        | 12         | 4           |
| 66       | NRHR4-040-005-160-S06-L55 | 4(R0.5)X6X6(16)X55    | 4        | 6        | R0.5   | 6         | 55        | 16         | 4           |
| 67       | NRHR4-040-005-200-S06-L60 | 4(R0.5)X6X6(20)X60    | 4        | 6        | R0.5   | 6         | 60        | 20         | 4           |
| 68       | NRHR4-040-005-250-S06-L60 | 4(R0.5)X6X6(25)X60    | 4        | 6        | R0.5   | 6         | 60        | 25         | 4           |
| 69       | NRHR4-040-010-100-S06-L55 | 4(R1)X6X6(10)X55      | 4        | 6        | R1     | 6         | 55        | 10         | 4           |
| 70       | NRHR4-040-010-120-S06-L55 | 4(R1)X6X6(12)X55      | 4        | 6        | R1     | 6         | 55        | 12         | 4           |
| 71       | NRHR4-040-010-160-S06-L55 | 4(R1)X6X6(16)X55      | 4        | 6        | R1     | 6         | 55        | 16         | 4           |
| 72       | NRHR4-040-010-200-S06-L60 | 4(R1)X6X6(20)X60      | 4        | 6        | R1     | 6         | 60        | 20         | 4           |
| 73       | NRHR4-040-010-250-S06-L60 | 4(R1)X6X6(25)X60      | 4        | 6        | R1     | 6         | 60        | 25         | 4           |
| 74       | NRHR4-060-002-150-S06-L60 | 6(R0.2)X6X9(15)X60    | 6        | 6        | R0.2   | 9         | 60        | 15         | 4           |
| 75       | NRHR4-060-003-150-S06-L60 | 6(R0.3)X6X9(15)X60    | 6        | 6        | R0.3   | 9         | 60        | 15         | 4           |
| 76       | NRHR4-060-005-150-S06-L60 | 6(R0.5)X6X9(15)X60    | 6        | 6        | R0.5   | 9         | 60        | 15         | 4           |
| 77       | NRHR4-060-010-150-S06-L60 | 6(R1)X6X9(15)X60      | 6        | 6        | R1     | 9         | 60        | 15         | 4           |
| 78       | NRHR4-060-015-150-S06-L60 | 6(R1.5)X6X9(15)X60    | 6        | 6        | R1.5   | 9         | 60        | 15         | 4           |
| 79       | NRHR4-060-020-150-S06-L60 | 6(R2)X6X9(15)X60      | 6        | 6        | R2     | 9         | 60        | 15         | 4           |
| 80       | NRHR4-080-002-200-S08-L70 | 8(R0.2)X8X12(20)X70   | 8        | 8        | R0.2   | 12        | 70        | 20         | 4           |
| 81       | NRHR4-080-003-200-S08-L70 | 8(R0.3)X8X12(20)X70   | 8        | 8        | R0.3   | 12        | 70        | 20         | 4           |
| 82       | NRHR4-080-005-200-S08-L70 | 8(R0.5)X8X12(20)X70   | 8        | 8        | R0.5   | 12        | 70        | 20         | 4           |
| 83       | NRHR4-080-010-200-S08-L70 | 8(R1)X8X12(20)X70     | 8        | 8        | R1     | 12        | 70        | 20         | 4           |
| 84       | NRHR4-080-015-200-S08-L70 | 8(R1.5)X8X12(20)X70   | 8        | 8        | R1.5   | 12        | 70        | 20         | 4           |
| 85       | NRHR4-080-020-200-S08-L70 | 8(R2)X8X12(20)X70     | 8        | 8        | R2     | 12        | 70        | 20         | 4           |
| 86       | NRHR4-100-002-250-S10-L70 | 10(R0.2)X10X15(25)X70 | 10       | 10       | R0.2   | 15        | 70        | 25         | 4           |
| 87       | NRHR4-100-003-250-S10-L70 | 10(R0.3)X10X15(25)X70 | 10       | 10       | R0.3   | 15        | 70        | 25         | 4           |
| 88       | NRHR4-100-005-250-S10-L70 | 10(R0.5)X10X15(25)X70 | 10       | 10       | R0.5   | 15        | 70        | 25         | 4           |
| 89       | NRHR4-100-010-250-S10-L70 | 10(R1)X10X15(25)X70   | 10       | 10       | R1     | 15        | 70        | 25         | 4           |
| 90       | NRHR4-100-015-250-S10-L70 | 10(R1.5)X10X15(25)X70 | 10       | 10       | R1.5   | 15        | 70        | 25         | 4           |

**NANO HARDENED STEEL 4 FLUTE RIB CORNER RADIUS ④**  
**NANO 高硬度钢 4刃 长颈 圆鼻 ④**

|  |  |                             |   |                              |                                   |                            |                     |           |
|--|--|-----------------------------|---|------------------------------|-----------------------------------|----------------------------|---------------------|-----------|
|  |  | <b>d1</b><br>-0.01~0<br>d≤6 | <b>d2</b><br>-0.015<br>~-0.005<br>6 < d | <b>r1</b><br>±0.005<br>r≤0.5 | <b>r2</b><br>±0.01<br>0.5 < r < 2 | <b>r3</b><br>±0.015<br>2≤r | <b>30°</b><br>HELIX | <b>h5</b> |
|--|--|-----------------------------|---|------------------------------|-----------------------------------|----------------------------|---------------------|-----------|



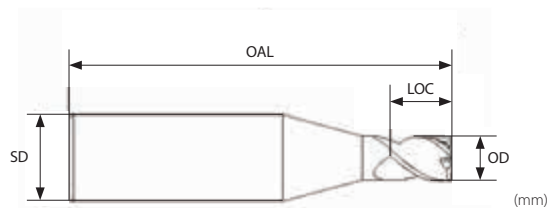
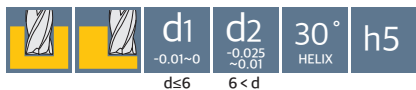
| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格       | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|---------------------------|-----------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 91       | NRHR4-100-020-250-S10-L70 | 10(R2)X10X15(25)X70   | 10       | 10       | R2     | 15        | 70        | 25         | 4           |
| 92       | NRHR4-120-003-300-S12-L80 | 12(R0.3)X12X18(30)X80 | 12       | 12       | R0.3   | 18        | 80        | 30         | 4           |
| 93       | NRHR4-120-005-300-S12-L80 | 12(R0.5)X12X18(30)X80 | 12       | 12       | R0.5   | 18        | 80        | 30         | 4           |
| 94       | NRHR4-120-010-300-S12-L80 | 12(R1)X12X18(30)X80   | 12       | 12       | R1     | 18        | 80        | 30         | 4           |
| 95       | NRHR4-120-015-300-S12-L80 | 12(R1.5)X12X18(30)X80 | 12       | 12       | R1.5   | 18        | 80        | 30         | 4           |
| 96       | NRHR4-120-020-300-S12-L80 | 12(R2)X12X18(30)X80   | 12       | 12       | R2     | 18        | 80        | 30         | 4           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

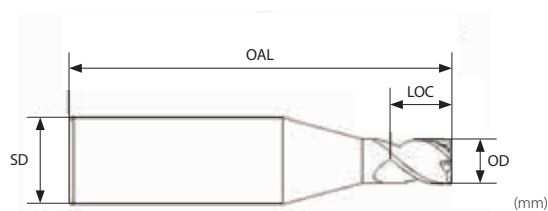
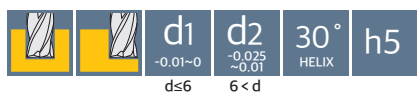
| NANO HARDENED STEEL 2 FLUTE RIB FLAT ①

NANO 高硬度钢 2刃 长颈 平头 ①



| NO<br>编号 | Item Code<br>产品型号     | Dimension<br>规格    | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|-----------------------|--------------------|----------|----------|-----------|-----------|------------|-------------|
| 1        | NFHR2-001-003-S04-L45 | 0.1X4X0.15(0.3)X45 | 0.1      | 4        | 0.15      | 45        | 0.3        | 2           |
| 2        | NFHR2-001-005-S04-L45 | 0.1X4X0.15(0.5)X45 | 0.1      | 4        | 0.15      | 45        | 0.5        | 2           |
| 3        | NFHR2-002-005-S04-L45 | 0.2X4X0.3(0.5)X45  | 0.2      | 4        | 0.3       | 45        | 0.5        | 2           |
| 4        | NFHR2-002-006-S04-L45 | 0.2X4X0.3(0.6)X45  | 0.2      | 4        | 0.3       | 45        | 0.6        | 2           |
| 5        | NFHR2-002-010-S04-L45 | 0.2X4X0.3(1)X45    | 0.2      | 4        | 0.3       | 45        | 1          | 2           |
| 6        | NFHR2-002-015-S04-L45 | 0.2X4X0.3(1.5)X45  | 0.2      | 4        | 0.3       | 45        | 1.5        | 2           |
| 7        | NFHR2-003-010-S04-L45 | 0.3X4X0.45(1)X45   | 0.3      | 4        | 0.45      | 45        | 1          | 2           |
| 8        | NFHR2-003-015-S04-L45 | 0.3X4X0.45(1.5)X45 | 0.3      | 4        | 0.45      | 45        | 1.5        | 2           |
| 9        | NFHR2-003-020-S04-L45 | 0.3X4X0.45(2)X45   | 0.3      | 4        | 0.45      | 45        | 2          | 2           |
| 10       | NFHR2-003-025-S04-L45 | 0.3X4X0.45(2.5)X45 | 0.3      | 4        | 0.45      | 45        | 2.5        | 2           |
| 11       | NFHR2-003-030-S04-L45 | 0.3X4X0.45(3)X45   | 0.3      | 4        | 0.45      | 45        | 3          | 2           |
| 12       | NFHR2-003-040-S04-L45 | 0.3X4X0.45(4)X45   | 0.3      | 4        | 0.45      | 45        | 4          | 2           |
| 13       | NFHR2-003-050-S04-L45 | 0.3X4X0.45(5)X45   | 0.3      | 4        | 0.45      | 45        | 5          | 2           |
| 14       | NFHR2-004-010-S04-L45 | 0.4X4X0.6(1)X45    | 0.4      | 4        | 0.6       | 45        | 1          | 2           |
| 15       | NFHR2-004-015-S04-L45 | 0.4X4X0.6(1.5)X45  | 0.4      | 4        | 0.6       | 45        | 1.5        | 2           |
| 16       | NFHR2-004-020-S04-L45 | 0.4X4X0.6(2)X45    | 0.4      | 4        | 0.6       | 45        | 2          | 2           |
| 17       | NFHR2-004-025-S04-L45 | 0.4X4X0.6(2.5)X45  | 0.4      | 4        | 0.6       | 45        | 2.5        | 2           |
| 18       | NFHR2-004-030-S04-L45 | 0.4X4X0.6(3)X45    | 0.4      | 4        | 0.6       | 45        | 3          | 2           |
| 19       | NFHR2-004-040-S04-L45 | 0.4X4X0.6(4)X45    | 0.4      | 4        | 0.6       | 45        | 4          | 2           |
| 20       | NFHR2-004-050-S04-L45 | 0.4X4X0.6(5)X45    | 0.4      | 4        | 0.6       | 45        | 5          | 2           |
| 21       | NFHR2-004-060-S04-L45 | 0.4X4X0.6(6)X45    | 0.4      | 4        | 0.6       | 45        | 6          | 2           |
| 22       | NFHR2-005-010-S04-L45 | 0.5X4X0.7(1)X45    | 0.5      | 4        | 0.7       | 45        | 1          | 2           |
| 23       | NFHR2-005-015-S04-L45 | 0.5X4X0.7(1.5)X45  | 0.5      | 4        | 0.7       | 45        | 1.5        | 2           |
| 24       | NFHR2-005-020-S04-L45 | 0.5X4X0.7(2)X45    | 0.5      | 4        | 0.7       | 45        | 2          | 2           |
| 25       | NFHR2-005-025-S04-L45 | 0.5X4X0.7(2.5)X45  | 0.5      | 4        | 0.7       | 45        | 2.5        | 2           |
| 26       | NFHR2-005-030-S04-L45 | 0.5X4X0.7(3)X45    | 0.5      | 4        | 0.7       | 45        | 3          | 2           |
| 27       | NFHR2-005-040-S04-L45 | 0.5X4X0.7(4)X45    | 0.5      | 4        | 0.7       | 45        | 4          | 2           |
| 28       | NFHR2-005-050-S04-L45 | 0.5X4X0.7(5)X45    | 0.5      | 4        | 0.7       | 45        | 5          | 2           |
| 29       | NFHR2-005-060-S04-L45 | 0.5X4X0.7(6)X45    | 0.5      | 4        | 0.7       | 45        | 6          | 2           |
| 30       | NFHR2-005-080-S04-L45 | 0.5X4X0.7(8)X45    | 0.5      | 4        | 0.7       | 45        | 8          | 2           |

**NANO HARDENED STEEL 2 FLUTE RIB FLAT ②**  
**NANO 高硬度钢 2刃 长颈 平头 ②**



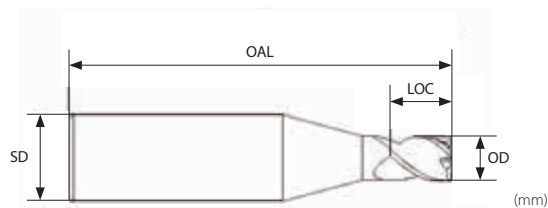
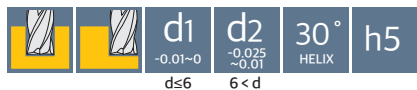
| NO<br>编号 | Item Code<br>产品型号     | Dimension<br>规格  | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|-----------------------|------------------|----------|----------|-----------|-----------|------------|-------------|
| 31       | NFHR2-006-020-S04-L45 | 0.6X4X0.9(2)X45  | 0.6      | 4        | 0.9       | 45        | 2          | 2           |
| 32       | NFHR2-006-030-S04-L45 | 0.6X4X0.9(3)X45  | 0.6      | 4        | 0.9       | 45        | 3          | 2           |
| 33       | NFHR2-006-040-S04-L45 | 0.6X4X0.9(4)X45  | 0.6      | 4        | 0.9       | 45        | 4          | 2           |
| 34       | NFHR2-006-050-S04-L45 | 0.6X4X0.9(5)X45  | 0.6      | 4        | 0.9       | 45        | 5          | 2           |
| 35       | NFHR2-006-060-S04-L45 | 0.6X4X0.9(6)X45  | 0.6      | 4        | 0.9       | 45        | 6          | 2           |
| 36       | NFHR2-006-080-S04-L45 | 0.6X4X0.9(8)X45  | 0.6      | 4        | 0.9       | 45        | 8          | 2           |
| 37       | NFHR2-006-100-S04-L45 | 0.6X4X0.9(10)X45 | 0.6      | 4        | 0.9       | 45        | 10         | 2           |
| 38       | NFHR2-007-020-S04-L45 | 0.7X4X1.2(2)X45  | 0.7      | 4        | 1.2       | 45        | 2          | 2           |
| 39       | NFHR2-007-040-S04-L45 | 0.7X4X1.2(4)X45  | 0.7      | 4        | 1.2       | 45        | 4          | 2           |
| 40       | NFHR2-007-060-S04-L45 | 0.7X4X1.2(6)X45  | 0.7      | 4        | 1.2       | 45        | 6          | 2           |
| 41       | NFHR2-007-080-S04-L45 | 0.7X4X1.2(8)X45  | 0.7      | 4        | 1.2       | 45        | 8          | 2           |
| 42       | NFHR2-007-100-S04-L45 | 0.7X4X1.2(10)X45 | 0.7      | 4        | 1.2       | 45        | 10         | 2           |
| 43       | NFHR2-007-120-S04-L45 | 0.7X4X1.2(12)X45 | 0.7      | 4        | 1.2       | 45        | 12         | 2           |
| 44       | NFHR2-008-020-S04-L45 | 0.8X4X1.2(2)X45  | 0.8      | 4        | 1.2       | 45        | 2          | 2           |
| 45       | NFHR2-008-030-S04-L45 | 0.8X4X1.2(3)X45  | 0.8      | 4        | 1.2       | 45        | 3          | 2           |
| 46       | NFHR2-008-040-S04-L45 | 0.8X4X1.2(4)X45  | 0.8      | 4        | 1.2       | 45        | 4          | 2           |
| 47       | NFHR2-008-050-S04-L45 | 0.8X4X1.2(5)X45  | 0.8      | 4        | 1.2       | 45        | 5          | 2           |
| 48       | NFHR2-008-060-S04-L45 | 0.8X4X1.2(6)X45  | 0.8      | 4        | 1.2       | 45        | 6          | 2           |
| 49       | NFHR2-008-080-S04-L45 | 0.8X4X1.2(8)X45  | 0.8      | 4        | 1.2       | 45        | 8          | 2           |
| 50       | NFHR2-008-100-S04-L45 | 0.8X4X1.2(10)X45 | 0.8      | 4        | 1.2       | 45        | 10         | 2           |
| 51       | NFHR2-008-120-S04-L45 | 0.8X4X1.2(12)X45 | 0.8      | 4        | 1.2       | 45        | 12         | 2           |
| 52       | NFHR2-010-030-S04-L50 | 1X4X1.5(3)X50    | 1        | 4        | 1.5       | 50        | 3          | 2           |
| 53       | NFHR2-010-040-S04-L50 | 1X4X1.5(4)X50    | 1        | 4        | 1.5       | 50        | 4          | 2           |
| 54       | NFHR2-010-050-S04-L50 | 1X4X1.5(5)X50    | 1        | 4        | 1.5       | 50        | 5          | 2           |
| 55       | NFHR2-010-060-S04-L50 | 1X4X1.5(6)X50    | 1        | 4        | 1.5       | 50        | 6          | 2           |
| 56       | NFHR2-010-070-S04-L50 | 1X4X1.5(7)X50    | 1        | 4        | 1.5       | 50        | 7          | 2           |
| 57       | NFHR2-010-080-S04-L50 | 1X4X1.5(8)X50    | 1        | 4        | 1.5       | 50        | 8          | 2           |
| 58       | NFHR2-010-100-S04-L50 | 1X4X1.5(10)X50   | 1        | 4        | 1.5       | 50        | 10         | 2           |
| 59       | NFHR2-010-120-S04-L50 | 1X4X1.5(12)X50   | 1        | 4        | 1.5       | 50        | 12         | 2           |
| 60       | NFHR2-010-140-S04-L50 | 1X4X1.5(14)X50   | 1        | 4        | 1.5       | 50        | 14         | 2           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

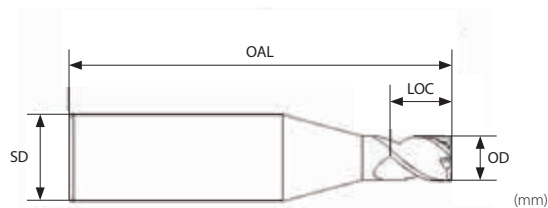
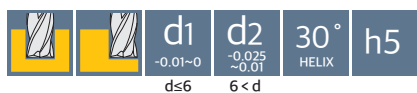
| NANO HARDENED STEEL 2 FLUTE RIB FLAT ③

NANO 高硬度钢 2刃 长颈 平头 ③



| NO<br>编号 | Item Code<br>产品型号     | Dimension<br>规格  | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|-----------------------|------------------|----------|----------|-----------|-----------|------------|-------------|
| 61       | NFHR2-010-160-S04-L50 | 1X4X1.5(16)X50   | 1        | 4        | 1.5       | 50        | 16         | 2           |
| 62       | NFHR2-010-180-S04-L55 | 1X4X1.5(18)X55   | 1        | 4        | 1.5       | 55        | 18         | 2           |
| 63       | NFHR2-010-200-S04-L55 | 1X4X1.5(20)X55   | 1        | 4        | 1.5       | 55        | 20         | 2           |
| 64       | NFHR2-012-040-S04-L50 | 1.2X4X1.8(4)X50  | 1.2      | 4        | 1.8       | 50        | 4          | 2           |
| 65       | NFHR2-012-060-S04-L50 | 1.2X4X1.8(6)X50  | 1.2      | 4        | 1.8       | 50        | 6          | 2           |
| 66       | NFHR2-012-080-S04-L50 | 1.2X4X1.8(8)X50  | 1.2      | 4        | 1.8       | 50        | 8          | 2           |
| 67       | NFHR2-012-100-S04-L50 | 1.2X4X1.8(10)X50 | 1.2      | 4        | 1.8       | 50        | 10         | 2           |
| 68       | NFHR2-012-120-S04-L50 | 1.2X4X1.8(12)X50 | 1.2      | 4        | 1.8       | 50        | 12         | 2           |
| 69       | NFHR2-012-160-S04-L50 | 1.2X4X1.8(16)X50 | 1.2      | 4        | 1.8       | 50        | 16         | 2           |
| 70       | NFHR2-015-040-S04-L50 | 1.5X4X2.3(4)X50  | 1.5      | 4        | 2.3       | 50        | 4          | 2           |
| 71       | NFHR2-015-060-S04-L50 | 1.5X4X2.3(6)X50  | 1.5      | 4        | 2.3       | 50        | 6          | 2           |
| 72       | NFHR2-015-080-S04-L50 | 1.5X4X2.3(8)X50  | 1.5      | 4        | 2.3       | 50        | 8          | 2           |
| 73       | NFHR2-015-100-S04-L50 | 1.5X4X2.3(10)X50 | 1.5      | 4        | 2.3       | 50        | 10         | 2           |
| 74       | NFHR2-015-120-S04-L50 | 1.5X4X2.3(12)X50 | 1.5      | 4        | 2.3       | 50        | 12         | 2           |
| 75       | NFHR2-015-140-S04-L50 | 1.5X4X2.3(14)X50 | 1.5      | 4        | 2.3       | 50        | 14         | 2           |
| 76       | NFHR2-015-160-S04-L50 | 1.5X4X2.3(16)X50 | 1.5      | 4        | 2.3       | 50        | 16         | 2           |
| 77       | NFHR2-015-180-S04-L55 | 1.5X4X2.3(18)X55 | 1.5      | 4        | 2.3       | 55        | 18         | 2           |
| 78       | NFHR2-015-200-S04-L55 | 1.5X4X2.3(20)X55 | 1.5      | 4        | 2.3       | 55        | 20         | 2           |
| 79       | NFHR2-020-060-S04-L50 | 2X4X3(6)X50      | 2        | 4        | 3         | 50        | 6          | 2           |
| 80       | NFHR2-020-080-S04-L50 | 2X4X3(8)X50      | 2        | 4        | 3         | 50        | 8          | 2           |
| 81       | NFHR2-020-100-S04-L50 | 2X4X3(10)X50     | 2        | 4        | 3         | 50        | 10         | 2           |
| 82       | NFHR2-020-120-S04-L50 | 2X4X3(12)X50     | 2        | 4        | 3         | 50        | 12         | 2           |
| 83       | NFHR2-020-140-S04-L50 | 2X4X3(14)X50     | 2        | 4        | 3         | 50        | 14         | 2           |
| 84       | NFHR2-020-160-S04-L50 | 2X4X3(16)X50     | 2        | 4        | 3         | 50        | 16         | 2           |
| 85       | NFHR2-020-180-S04-L55 | 2X4X3(18)X55     | 2        | 4        | 3         | 55        | 18         | 2           |
| 86       | NFHR2-020-200-S04-L55 | 2X4X3(20)X55     | 2        | 4        | 3         | 55        | 20         | 2           |
| 87       | NFHR2-020-250-S04-L60 | 2X4X3(25)X60     | 2        | 4        | 3         | 60        | 25         | 2           |
| 88       | NFHR2-020-300-S04-L70 | 2X4X3(30)X70     | 2        | 4        | 3         | 70        | 30         | 2           |
| 89       | NFHR2-025-080-S04-L50 | 2.5X4X4(8)X50    | 2.5      | 4        | 4         | 50        | 8          | 2           |
| 90       | NFHR2-025-100-S04-L50 | 2.5X4X4(10)X50   | 2.5      | 4        | 4         | 50        | 10         | 2           |

**NANO HARDENED STEEL 2 FLUTE RIB FLAT ④**  
**NANO 高硬度钢 2刃 长颈 平头 ④**



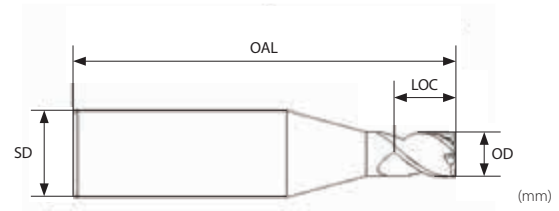
| NO<br>编号 | Item Code<br>产品型号      | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|------------------------|-----------------|----------|----------|-----------|-----------|------------|-------------|
| 91       | NFHR2-025-120-S04-L50  | 2.5X4X4(12)X50  | 2.5      | 4        | 4         | 50        | 12         | 2           |
| 92       | NFHR2-025-160-S04-L50  | 2.5X4X4(16)X50  | 2.5      | 4        | 4         | 50        | 16         | 2           |
| 93       | NFHR2-025-200-S04-L55  | 2.5X4X4(20)X55  | 2.5      | 4        | 4         | 55        | 20         | 2           |
| 94       | NFHR2-030-080-S06-L55  | 3X6X4.5(8)X55   | 3        | 6        | 4.5       | 55        | 8          | 2           |
| 95       | NFHR2-030-100-S06-L55  | 3X6X4.5(10)X55  | 3        | 6        | 4.5       | 55        | 10         | 2           |
| 96       | NFHR2-030-120-S06-L55  | 3X6X4.5(12)X55  | 3        | 6        | 4.5       | 55        | 12         | 2           |
| 97       | NFHR2-030-140-S06-L55  | 3X6X4.5(14)X55  | 3        | 6        | 4.5       | 55        | 14         | 2           |
| 98       | NFHR2-030-160-S06-L55  | 3X6X4.5(16)X55  | 3        | 6        | 4.5       | 55        | 16         | 2           |
| 99       | NFHR2-030-180-S06-L60  | 3X6X4.5(18)X60  | 3        | 6        | 4.5       | 60        | 18         | 2           |
| 100      | NFHR2-030-200-S06-L60  | 3X6X4.5(20)X60  | 3        | 6        | 4.5       | 60        | 20         | 2           |
| 101      | NFHR2-030-250-S06-L60  | 3X6X4.5(25)X60  | 3        | 6        | 4.5       | 60        | 25         | 2           |
| 102      | NFHR2-030-300-S06-L70  | 3X6X4.5(30)X70  | 3        | 6        | 4.5       | 70        | 30         | 2           |
| 103      | NFHR2-030-350-S06-L75  | 3X6X4.5(35)X75  | 3        | 6        | 4.5       | 75        | 35         | 2           |
| 104      | NFHR2-030-400-S06-L80  | 3X6X4.5(40)X80  | 3        | 6        | 4.5       | 80        | 40         | 2           |
| 105      | NFHR2-040-100-S06-L55  | 4X6X6(10)X55    | 4        | 6        | 6         | 55        | 10         | 2           |
| 106      | NFHR2-040-120-S06-L55  | 4X6X6(12)X55    | 4        | 6        | 6         | 55        | 12         | 2           |
| 107      | NFHR2-040-160-S06-L55  | 4X6X6(16)X55    | 4        | 6        | 6         | 55        | 16         | 2           |
| 108      | NFHR2-040-200-S06-L60  | 4X6X6(20)X60    | 4        | 6        | 6         | 60        | 20         | 2           |
| 109      | NFHR2-040-250-S06-L60  | 4X6X6(25)X60    | 4        | 6        | 6         | 60        | 25         | 2           |
| 110      | NFHR2-040-300-S06-L70  | 4X6X6(30)X70    | 4        | 6        | 6         | 70        | 30         | 2           |
| 111      | NFHR2-040-350-S06-L75  | 4X6X6(35)X75    | 4        | 6        | 6         | 75        | 35         | 2           |
| 112      | NFHR2-040-400-S06-L80  | 4X6X6(40)X80    | 4        | 6        | 6         | 80        | 40         | 2           |
| 113      | NFHR2-050-130-S06-L60  | 5X6X8(13)X60    | 5        | 6        | 8         | 60        | 13         | 2           |
| 114      | NFHR2-050-300-S06-L90  | 5X6X8(30)X90    | 5        | 6        | 8         | 90        | 30         | 2           |
| 115      | NFHR2-060-150-S06-L60  | 6X6X9(15)X60    | 6        | 6        | 9         | 60        | 15         | 2           |
| 116      | NFHR2-060-200-S06-L80  | 6X6X9(20)X80    | 6        | 6        | 9         | 80        | 20         | 2           |
| 117      | NFHR2-060-300-S06-L100 | 6X6X9(30)X100   | 6        | 6        | 9         | 100       | 30         | 2           |
| 118      | NFHR2-080-200-S08-L65  | 8X8X12(20)X65   | 8        | 8        | 12        | 65        | 20         | 2           |
| 119      | NFHR2-080-300-S08-L80  | 8X8X12(30)X80   | 8        | 8        | 12        | 80        | 30         | 2           |
| 120      | NFHR2-080-400-S08-L100 | 8X8X12(40)X100  | 8        | 8        | 12        | 100       | 40         | 2           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

| NANO HARDENED STEEL 2 FLUTE RIB FLAT ⑤

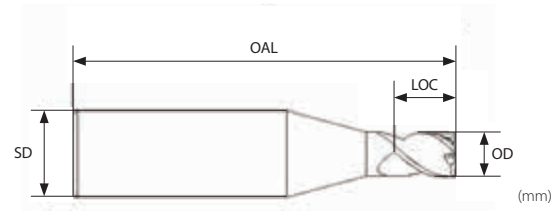
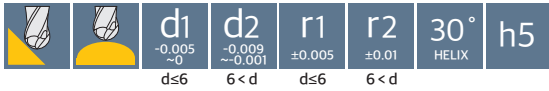
NANO 高硬度钢 2刃 长颈 平头 ⑤



| NO<br>编号 | Item Code<br>产品型号      | Dimension<br>规格  | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|------------------------|------------------|----------|----------|-----------|-----------|------------|-------------|
| 121      | NFHR2-100-250-S10-L70  | 10X10X15(25)X70  | 10       | 10       | 15        | 70        | 25         | 2           |
| 122      | NFHR2-100-350-S10-L80  | 10X10X15(35)X80  | 10       | 10       | 15        | 80        | 35         | 2           |
| 123      | NFHR2-100-450-S10-L100 | 10X10X15(45)X100 | 10       | 10       | 15        | 100       | 45         | 2           |
| 124      | NFHR2-120-300-S12-L80  | 12X12X18(30)X80  | 12       | 12       | 18        | 80        | 30         | 2           |
| 125      | NFHR2-120-400-S12-L100 | 12X12X18(40)X100 | 12       | 12       | 18        | 100       | 40         | 2           |
| 126      | NFHR2-120-500-S12-L120 | 12X12X18(50)X120 | 12       | 12       | 18        | 120       | 50         | 2           |



**NANO HARDENED STEEL 2 FLUTE RIB BALL ①**  
**NANO 高硬度钢 2刃 长颈 球头 ①**



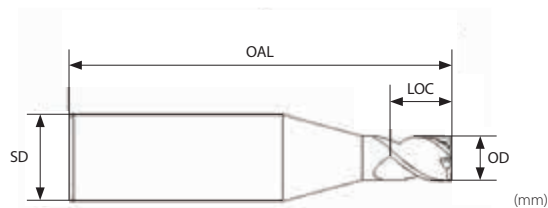
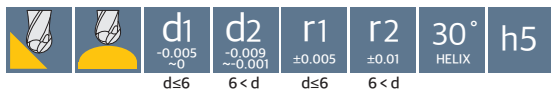
| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格   | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|----------------------------|-------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 1        | NBHR2-001-0005-002-S04-L45 | 0.1X4X0.1(0.2)X45 | 0.1      | 4        | 0.05   | 0.1       | 45        | 0.2        | 2           |
| 2        | NBHR2-001-0005-003-S04-L45 | 0.1X4X0.1(0.3)X45 | 0.1      | 4        | 0.05   | 0.1       | 45        | 0.3        | 2           |
| 3        | NBHR2-001-0005-005-S04-L45 | 0.1X4X0.1(0.5)X45 | 0.1      | 4        | 0.05   | 0.1       | 45        | 0.5        | 2           |
| 4        | NBHR2-002-001-006-S04-L45  | 0.2X4X0.2(0.6)X45 | 0.2      | 4        | 0.1    | 0.2       | 45        | 0.6        | 2           |
| 5        | NBHR2-002-001-010-S04-L45  | 0.2X4X0.2(1)X45   | 0.2      | 4        | 0.1    | 0.2       | 45        | 1          | 2           |
| 6        | NBHR2-002-001-015-S04-L45  | 0.2X4X0.2(1.5)X45 | 0.2      | 4        | 0.1    | 0.2       | 45        | 1.5        | 2           |
| 7        | NBHR2-003-0015-010-S04-L45 | 0.3X4X0.3(1)X45   | 0.3      | 4        | 0.15   | 0.3       | 45        | 1          | 2           |
| 8        | NBHR2-003-0015-015-S04-L45 | 0.3X4X0.3(1.5)X45 | 0.3      | 4        | 0.15   | 0.3       | 45        | 1.5        | 2           |
| 9        | NBHR2-003-0015-020-S04-L45 | 0.3X4X0.3(2)X45   | 0.3      | 4        | 0.15   | 0.3       | 45        | 2          | 2           |
| 10       | NBHR2-003-0015-025-S04-L45 | 0.3X4X0.3(2.5)X45 | 0.3      | 4        | 0.15   | 0.3       | 45        | 2.5        | 2           |
| 11       | NBHR2-003-0015-030-S04-L45 | 0.3X4X0.3(3)X45   | 0.3      | 4        | 0.15   | 0.3       | 45        | 3          | 2           |
| 12       | NBHR2-004-002-010-S04-L45  | 0.4X4X0.4(1)X45   | 0.4      | 4        | 0.2    | 0.4       | 45        | 1          | 2           |
| 13       | NBHR2-004-002-015-S04-L45  | 0.4X4X0.4(1.5)X45 | 0.4      | 4        | 0.2    | 0.4       | 45        | 1.5        | 2           |
| 14       | NBHR2-004-002-020-S04-L45  | 0.4X4X0.4(2)X45   | 0.4      | 4        | 0.2    | 0.4       | 45        | 2          | 2           |
| 15       | NBHR2-004-002-025-S04-L45  | 0.4X4X0.4(2.5)X45 | 0.4      | 4        | 0.2    | 0.4       | 45        | 2.5        | 2           |
| 16       | NBHR2-004-002-030-S04-L45  | 0.4X4X0.4(3)X45   | 0.4      | 4        | 0.2    | 0.4       | 45        | 3          | 2           |
| 17       | NBHR2-004-002-040-S04-L45  | 0.4X4X0.4(4)X45   | 0.4      | 4        | 0.2    | 0.4       | 45        | 4          | 2           |
| 18       | NBHR2-004-002-050-S04-L45  | 0.4X4X0.4(5)X45   | 0.4      | 4        | 0.2    | 0.4       | 45        | 5          | 2           |
| 19       | NBHR2-005-0025-010-S04-L45 | 0.5X4X0.5(1)X45   | 0.5      | 4        | 0.25   | 0.5       | 45        | 1          | 2           |
| 20       | NBHR2-005-0025-015-S04-L45 | 0.5X4X0.5(1.5)X45 | 0.5      | 4        | 0.25   | 0.5       | 45        | 1.5        | 2           |
| 21       | NBHR2-005-0025-020-S04-L45 | 0.5X4X0.5(2)X45   | 0.5      | 4        | 0.25   | 0.5       | 45        | 2          | 2           |
| 22       | NBHR2-005-0025-025-S04-L45 | 0.5X4X0.5(2.5)X45 | 0.5      | 4        | 0.25   | 0.5       | 45        | 2.5        | 2           |
| 23       | NBHR2-005-0025-030-S04-L45 | 0.5X4X0.5(3)X45   | 0.5      | 4        | 0.25   | 0.5       | 45        | 3          | 2           |
| 24       | NBHR2-005-0025-040-S04-L45 | 0.5X4X0.5(4)X45   | 0.5      | 4        | 0.25   | 0.5       | 45        | 4          | 2           |
| 25       | NBHR2-005-0025-050-S04-L45 | 0.5X4X0.5(5)X45   | 0.5      | 4        | 0.25   | 0.5       | 45        | 5          | 2           |
| 26       | NBHR2-005-0025-060-S04-L45 | 0.5X4X0.5(6)X45   | 0.5      | 4        | 0.25   | 0.5       | 45        | 6          | 2           |
| 27       | NBHR2-005-0025-080-S04-L45 | 0.5X4X0.5(8)X45   | 0.5      | 4        | 0.25   | 0.5       | 45        | 8          | 2           |
| 28       | NBHR2-006-003-020-S04-L45  | 0.6X4X0.6(2)X45   | 0.6      | 4        | 0.3    | 0.6       | 45        | 2          | 2           |
| 29       | NBHR2-006-003-030-S04-L45  | 0.6X4X0.6(3)X45   | 0.6      | 4        | 0.3    | 0.6       | 45        | 3          | 2           |
| 30       | NBHR2-006-003-040-S04-L45  | 0.6X4X0.6(4)X45   | 0.6      | 4        | 0.3    | 0.6       | 45        | 4          | 2           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

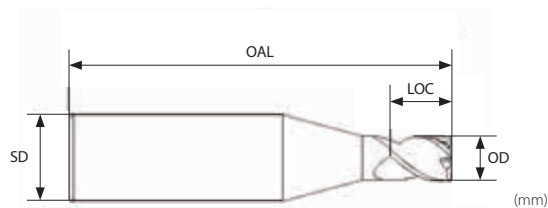
| NANO HARDENED STEEL 2 FLUTE RIB BALL ②

NANO 高硬度钢 2刃 长颈 球头 ②



| NO<br>编号 | Item Code<br>产品型号         | Dimension<br>规格  | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|---------------------------|------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 31       | NBHR2-006-003-050-S04-L45 | 0.6X4X0.6(5)X45  | 0.6      | 4        | 0.3    | 0.6       | 45        | 5          | 2           |
| 32       | NBHR2-006-003-060-S04-L45 | 0.6X4X0.6(6)X45  | 0.6      | 4        | 0.3    | 0.6       | 45        | 6          | 2           |
| 33       | NBHR2-006-003-080-S04-L45 | 0.6X4X0.6(8)X45  | 0.6      | 4        | 0.3    | 0.6       | 45        | 8          | 2           |
| 34       | NBHR2-006-003-100-S04-L45 | 0.6X4X0.6(10)X45 | 0.6      | 4        | 0.3    | 0.6       | 45        | 10         | 2           |
| 35       | NBHR2-008-004-020-S04-L45 | 0.8X4X0.8(2)X45  | 0.8      | 4        | 0.4    | 0.8       | 45        | 2          | 2           |
| 36       | NBHR2-008-004-030-S04-L45 | 0.8X4X0.8(3)X45  | 0.8      | 4        | 0.4    | 0.8       | 45        | 3          | 2           |
| 37       | NBHR2-008-004-040-S04-L45 | 0.8X4X0.8(4)X45  | 0.8      | 4        | 0.4    | 0.8       | 45        | 4          | 2           |
| 38       | NBHR2-008-004-050-S04-L45 | 0.8X4X0.8(5)X45  | 0.8      | 4        | 0.4    | 0.8       | 45        | 5          | 2           |
| 39       | NBHR2-008-004-060-S04-L45 | 0.8X4X0.8(6)X45  | 0.8      | 4        | 0.4    | 0.8       | 45        | 6          | 2           |
| 40       | NBHR2-008-004-080-S04-L45 | 0.8X4X0.8(8)X45  | 0.8      | 4        | 0.4    | 0.8       | 45        | 8          | 2           |
| 41       | NBHR2-008-004-100-S04-L45 | 0.8X4X0.8(10)X45 | 0.8      | 4        | 0.4    | 0.8       | 45        | 10         | 2           |
| 42       | NBHR2-008-004-120-S04-L45 | 0.8X4X0.8(12)X45 | 0.8      | 4        | 0.4    | 0.8       | 45        | 12         | 2           |
| 43       | NBHR2-010-005-030-S04-L50 | 1X4X1(3)X50      | 1        | 4        | 0.5    | 1         | 50        | 3          | 2           |
| 44       | NBHR2-010-005-040-S04-L50 | 1X4X1(4)X50      | 1        | 4        | 0.5    | 1         | 50        | 4          | 2           |
| 45       | NBHR2-010-005-050-S04-L50 | 1X4X1(5)X50      | 1        | 4        | 0.5    | 1         | 50        | 5          | 2           |
| 46       | NBHR2-010-005-060-S04-L50 | 1X4X1(6)X50      | 1        | 4        | 0.5    | 1         | 50        | 6          | 2           |
| 47       | NBHR2-010-005-070-S04-L50 | 1X4X1(7)X50      | 1        | 4        | 0.5    | 1         | 50        | 7          | 2           |
| 48       | NBHR2-010-005-080-S04-L50 | 1X4X1(8)X50      | 1        | 4        | 0.5    | 1         | 50        | 8          | 2           |
| 49       | NBHR2-010-005-090-S04-L50 | 1X4X1(9)X50      | 1        | 4        | 0.5    | 1         | 50        | 9          | 2           |
| 50       | NBHR2-010-005-100-S04-L50 | 1X4X1(10)X50     | 1        | 4        | 0.5    | 1         | 50        | 10         | 2           |
| 51       | NBHR2-010-005-120-S04-L50 | 1X4X1(12)X50     | 1        | 4        | 0.5    | 1         | 50        | 12         | 2           |
| 52       | NBHR2-010-005-140-S04-L50 | 1X4X1(14)X50     | 1        | 4        | 0.5    | 1         | 50        | 14         | 2           |
| 53       | NBHR2-010-005-160-S04-L50 | 1X4X1(16)X50     | 1        | 4        | 0.5    | 1         | 50        | 16         | 2           |
| 54       | NBHR2-010-005-180-S04-L55 | 1X4X1(18)X55     | 1        | 4        | 0.5    | 1         | 55        | 18         | 2           |
| 55       | NBHR2-010-005-200-S04-L55 | 1X4X1(20)X55     | 1        | 4        | 0.5    | 1         | 55        | 20         | 2           |
| 56       | NBHR2-012-006-040-S04-L50 | 1.2X4X1.2(4)X50  | 1.2      | 4        | 0.6    | 1.2       | 50        | 4          | 2           |
| 57       | NBHR2-012-006-060-S04-L50 | 1.2X4X1.2(6)X50  | 1.2      | 4        | 0.6    | 1.2       | 50        | 6          | 2           |
| 58       | NBHR2-012-006-080-S04-L50 | 1.2X4X1.2(8)X50  | 1.2      | 4        | 0.6    | 1.2       | 50        | 8          | 2           |
| 59       | NBHR2-012-006-100-S04-L50 | 1.2X4X1.2(10)X50 | 1.2      | 4        | 0.6    | 1.2       | 50        | 10         | 2           |
| 60       | NBHR2-012-006-120-S04-L50 | 1.2X4X1.2(12)X50 | 1.2      | 4        | 0.6    | 1.2       | 50        | 12         | 2           |

**NANO HARDENED STEEL 2 FLUTE RIB BALL ③**  
**NANO 高硬度钢 2刃 长颈 球头 ③**



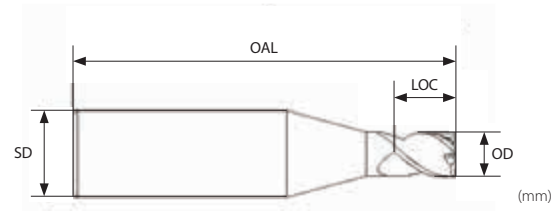
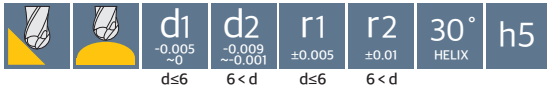
| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格  | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|----------------------------|------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 61       | NBHR2-015-0075-040-S04-L50 | 1.5X4X1.5(4)X50  | 1.5      | 4        | 0.75   | 1.5       | 50        | 4          | 2           |
| 62       | NBHR2-015-0075-060-S04-L50 | 1.5X4X1.5(6)X50  | 1.5      | 4        | 0.75   | 1.5       | 50        | 6          | 2           |
| 63       | NBHR2-015-0075-080-S04-L50 | 1.5X4X1.5(8)X50  | 1.5      | 4        | 0.75   | 1.5       | 50        | 8          | 2           |
| 64       | NBHR2-015-0075-100-S04-L50 | 1.5X4X1.5(10)X50 | 1.5      | 4        | 0.75   | 1.5       | 50        | 10         | 2           |
| 65       | NBHR2-015-0075-120-S04-L50 | 1.5X4X1.5(12)X50 | 1.5      | 4        | 0.75   | 1.5       | 50        | 12         | 2           |
| 66       | NBHR2-015-0075-140-S04-L50 | 1.5X4X1.5(14)X50 | 1.5      | 4        | 0.75   | 1.5       | 50        | 14         | 2           |
| 67       | NBHR2-015-0075-160-S04-L50 | 1.5X4X1.5(16)X50 | 1.5      | 4        | 0.75   | 1.5       | 50        | 16         | 2           |
| 68       | NBHR2-015-0075-180-S04-L55 | 1.5X4X1.5(18)X55 | 1.5      | 4        | 0.75   | 1.5       | 55        | 18         | 2           |
| 69       | NBHR2-015-0075-200-S04-L55 | 1.5X4X1.5(20)X55 | 1.5      | 4        | 0.75   | 1.5       | 55        | 20         | 2           |
| 70       | NBHR2-020-010-060-S04-L50  | 2X4X3(6)X50      | 2        | 4        | 1      | 3         | 50        | 6          | 2           |
| 71       | NBHR2-020-010-080-S04-L50  | 2X4X3(8)X50      | 2        | 4        | 1      | 3         | 50        | 8          | 2           |
| 72       | NBHR2-020-010-100-S04-L50  | 2X4X3(10)X50     | 2        | 4        | 1      | 3         | 50        | 10         | 2           |
| 73       | NBHR2-020-010-120-S04-L50  | 2X4X3(12)X50     | 2        | 4        | 1      | 3         | 50        | 12         | 2           |
| 74       | NBHR2-020-010-140-S04-L50  | 2X4X3(14)X50     | 2        | 4        | 1      | 3         | 50        | 14         | 2           |
| 75       | NBHR2-020-010-160-S04-L50  | 2X4X3(16)X50     | 2        | 4        | 1      | 3         | 50        | 16         | 2           |
| 76       | NBHR2-020-010-180-S04-L55  | 2X4X3(18)X55     | 2        | 4        | 1      | 3         | 55        | 18         | 2           |
| 77       | NBHR2-020-010-200-S04-L55  | 2X4X3(20)X55     | 2        | 4        | 1      | 3         | 55        | 20         | 2           |
| 78       | NBHR2-020-010-250-S04-L60  | 2X4X3(25)X60     | 2        | 4        | 1      | 3         | 60        | 25         | 2           |
| 79       | NBHR2-020-010-300-S04-L70  | 2X4X3(30)X70     | 2        | 4        | 1      | 3         | 70        | 30         | 2           |
| 80       | NBHR2-025-0125-080-S04-L55 | 2.5X4X3.5(8)X55  | 2.5      | 4        | 1.25   | 3.5       | 55        | 8          | 2           |
| 81       | NBHR2-025-0125-100-S04-L55 | 2.5X4X3.5(10)X55 | 2.5      | 4        | 1.25   | 3.5       | 55        | 10         | 2           |
| 82       | NBHR2-025-0125-120-S04-L55 | 2.5X4X3.5(12)X55 | 2.5      | 4        | 1.25   | 3.5       | 55        | 12         | 2           |
| 83       | NBHR2-025-0125-160-S04-L55 | 2.5X4X3.5(16)X55 | 2.5      | 4        | 1.25   | 3.5       | 55        | 16         | 2           |
| 84       | NBHR2-025-0125-200-S04-L55 | 2.5X4X3.5(20)X55 | 2.5      | 4        | 1.25   | 3.5       | 55        | 20         | 2           |
| 85       | NBHR2-030-015-080-S06-L55  | 3X6X4(8)X55      | 3        | 6        | 1.5    | 4         | 55        | 8          | 2           |
| 86       | NBHR2-030-015-100-S06-L55  | 3X6X4(10)X55     | 3        | 6        | 1.5    | 4         | 55        | 10         | 2           |
| 87       | NBHR2-030-015-120-S06-L55  | 3X6X4(12)X55     | 3        | 6        | 1.5    | 4         | 55        | 12         | 2           |
| 88       | NBHR2-030-015-140-S06-L55  | 3X6X4(14)X55     | 3        | 6        | 1.5    | 4         | 55        | 14         | 2           |
| 89       | NBHR2-030-015-160-S06-L55  | 3X6X4(16)X55     | 3        | 6        | 1.5    | 4         | 55        | 16         | 2           |
| 90       | NBHR2-030-015-180-S06-L60  | 3X6X4(18)X60     | 3        | 6        | 1.5    | 4         | 60        | 18         | 2           |

# “N-SH” CARBIDE ENDMILL SERIES FOR HARDENED STEEL

## “N-SH” 高硬度钢专用铣刀

| NANO HARDENED STEEL 2 FLUTE RIB BALL ④

NANO 高硬度钢 2刃 长颈 球头 ④



| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格  | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | LOE<br>有效长 | FL.No<br>刃数 |
|----------|----------------------------|------------------|----------|----------|--------|-----------|-----------|------------|-------------|
| 91       | NBHR2-030-015-200-S06-L60  | 3X6X4(20)X60     | 3        | 6        | 1.5    | 4         | 60        | 20         | 2           |
| 92       | NBHR2-030-015-250-S06-L60  | 3X6X4(25)X60     | 3        | 6        | 1.5    | 4         | 60        | 25         | 2           |
| 93       | NBHR2-030-015-300-S06-L70  | 3X6X4(30)X70     | 3        | 6        | 1.5    | 4         | 70        | 30         | 2           |
| 94       | NBHR2-030-015-350-S06-L75  | 3X6X4(35)X75     | 3        | 6        | 1.5    | 4         | 75        | 35         | 2           |
| 95       | NBHR2-040-020-100-S06-L55  | 4X6X5(10)X55     | 4        | 6        | 2      | 5         | 55        | 10         | 2           |
| 96       | NBHR2-040-020-120-S06-L55  | 4X6X5(12)X55     | 4        | 6        | 2      | 5         | 55        | 12         | 2           |
| 97       | NBHR2-040-020-160-S06-L55  | 4X6X5(16)X55     | 4        | 6        | 2      | 5         | 55        | 16         | 2           |
| 98       | NBHR2-040-020-200-S06-L60  | 4X6X5(20)X60     | 4        | 6        | 2      | 5         | 60        | 20         | 2           |
| 99       | NBHR2-040-020-250-S06-L60  | 4X6X5(25)X60     | 4        | 6        | 2      | 5         | 60        | 25         | 2           |
| 100      | NBHR2-040-020-300-S06-L70  | 4X6X5(30)X70     | 4        | 6        | 2      | 5         | 70        | 30         | 2           |
| 101      | NBHR2-040-020-350-S06-L75  | 4X6X5(35)X75     | 4        | 6        | 2      | 5         | 75        | 35         | 2           |
| 102      | NBHR2-040-020-400-S06-L80  | 4X6X5(40)X80     | 4        | 6        | 2      | 5         | 80        | 40         | 2           |
| 103      | NBHR2-050-025-120-S06-L60  | 5X6X6(12)X60     | 5        | 6        | 2.5    | 6         | 60        | 12         | 2           |
| 104      | NBHR2-050-025-300-S06-L60  | 5X6X6(30)X60     | 5        | 6        | 2.5    | 6         | 60        | 30         | 2           |
| 105      | NBHR2-060-030-150-S06-L60  | 6X6X8(15)X60     | 6        | 6        | 3      | 8         | 60        | 15         | 2           |
| 106      | NBHR2-060-030-200-S06-L60  | 6X6X8(20)X60     | 6        | 6        | 3      | 8         | 60        | 20         | 2           |
| 107      | NBHR2-060-030-300-S06-L60  | 6X6X8(30)X60     | 6        | 6        | 3      | 8         | 60        | 30         | 2           |
| 108      | NBHR2-060-030-320-S06-L90  | 6X6X8(32)X90     | 6        | 6        | 3      | 8         | 90        | 32         | 2           |
| 109      | NBHR2-080-040-200-S08-L80  | 8X8X10(20)X80    | 8        | 8        | 4      | 10        | 80        | 20         | 2           |
| 110      | NBHR2-080-040-150-S08-L65  | 8X8X10(15)X65    | 8        | 8        | 4      | 10        | 65        | 15         | 2           |
| 111      | NBHR2-080-040-300-S08-L100 | 8X8X10(30)X100   | 8        | 8        | 4      | 10        | 100       | 30         | 2           |
| 112      | NBHR2-100-050-250-S10-L80  | 10X10X12(25)X80  | 10       | 10       | 5      | 12        | 80        | 25         | 2           |
| 113      | NBHR2-100-050-200-S10-L60  | 10X10X12(20)X60  | 10       | 10       | 5      | 12        | 60        | 20         | 2           |
| 114      | NBHR2-100-050-350-S10-L100 | 10X10X12(35)X100 | 10       | 10       | 5      | 12        | 100       | 35         | 2           |
| 115      | NBHR2-120-060-250-S12-L80  | 12X12X14(25)X80  | 12       | 12       | 6      | 14        | 80        | 25         | 2           |
| 116      | NBHR2-120-060-400-S12-L110 | 12X12X14(40)X110 | 12       | 12       | 6      | 14        | 110       | 40         | 2           |

# “N-SG” CARBIDE ENDMILL SERIES FOR GENERAL PURPOSE

“N-SG” 普通钢专用铣刀

“END MILL” series | **NANOLOY**

## N-SH Series / 系列

### CARBIDE ENDMILL SERIES FOR HARDENED STEEL 高硬度钢专用铣刀

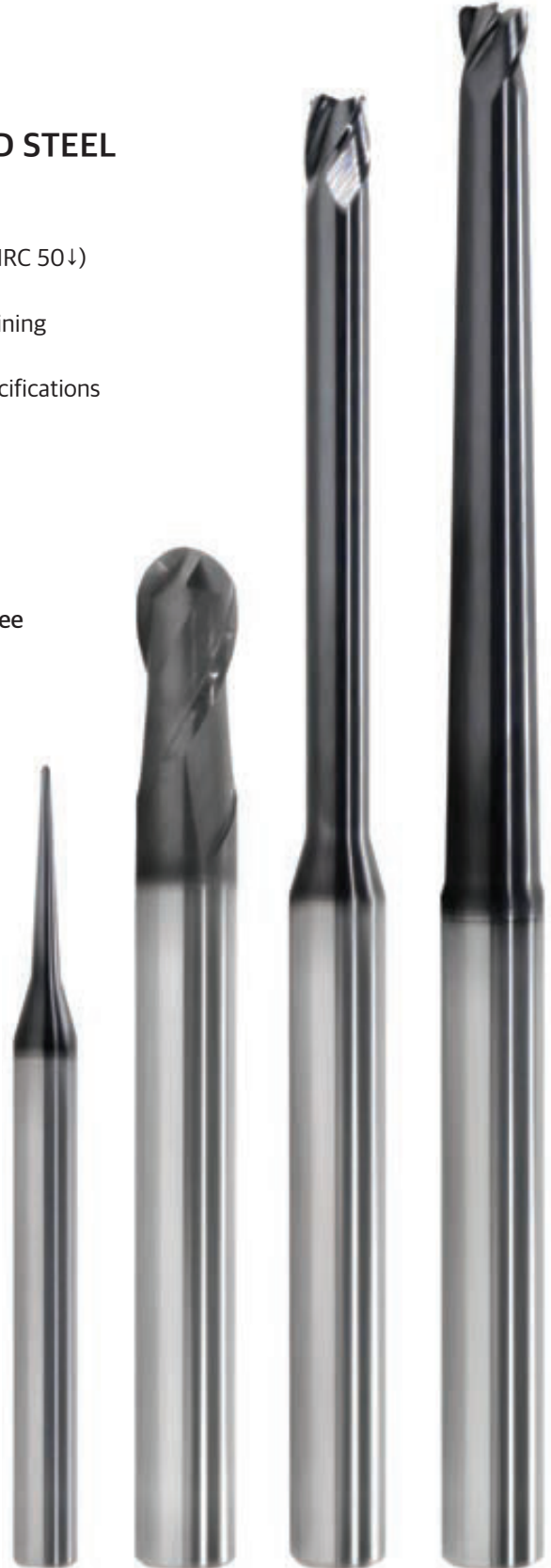
1. Superior material, coating, geometry for general materials (HRC 50↓)  
适合 HRc50以下通用材料使用的涂层、形状。
2. Excellent quality and performance for mold and parts machining  
在模具加工及配件加工产业中拥有卓越的品质及性能
3. Wide range of applications with various geometries and specifications  
多种形态和产品可适用于大范围的加工

## PRODUCT FEATURE

Optimized coating and made by high quality material guarantee excellent cutting and tool life in mold and parts for general material machining.

采用最优化的涂层及再加工，  
拥有模具加工等一般性效果卓越的工具寿命

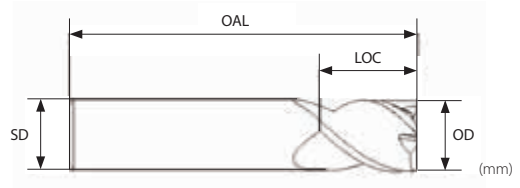
- Improve wear resistance with NANO ultrafine grade
- 采用了NANOLOY超微粒材料提高耐磨性
- Improve surface quality, high precision machining with high quality of end mills
- 拥有卓越的品质，加工物的表面照度及精密度优秀
- Stable machining with optimized rake-angle and clearance
- 采用最佳余角和湖边角，可实现稳定的加工



# “N-SG” CARBIDE ENDMILL SERIES FOR GENERAL PURPOSE

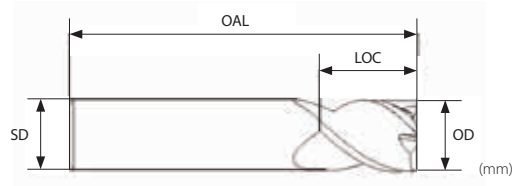
## “N-SG” 普通钢专用铣刀

| NANO GENERAL PURPOSE 2 FLUTE FLAT  
NANO 普通刚钢 2刃 平头



| NO<br>编号 | Item Code<br>产品型号     | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|-----------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 1        | NFGS2-010-025-S04-L40 | 1X4X2.5X40      | 1        | 4        | 2.5       | 40        | 2           |
| 2        | NFGS2-010-060-S06-L50 | 1X6X6X50        | 1        | 6        | 6         | 50        | 2           |
| 3        | NFGS2-010-040-S06-L60 | 1X6X4X60        | 1        | 6        | 4         | 60        | 2           |
| 4        | NFGS2-012-030-S04-L40 | 1.2X4X3X40      | 1.2      | 4        | 3         | 40        | 2           |
| 5        | NFGS2-014-035-S04-L40 | 1.4X4X3.5X40    | 1.4      | 4        | 3.5       | 40        | 2           |
| 6        | NFGS2-016-040-S04-L40 | 1.6X4X4X40      | 1.6      | 4        | 4         | 40        | 2           |
| 7        | NFGS2-018-045-S04-L40 | 1.8X4X4.5X40    | 1.8      | 4        | 4.5       | 40        | 2           |
| 8        | NFGS2-020-060-S04-L40 | 2X4X6X40        | 2        | 4        | 6         | 40        | 2           |
| 9        | NFGS2-020-100-S06-L60 | 2X0X10X60       | 2        | 0        | 10        | 60        | 2           |
| 10       | NFGS2-025-080-S04-L45 | 2.5X4X8X45      | 2.5      | 4        | 8         | 45        | 2           |
| 11       | NFGS2-030-080-S06-L45 | 3X6X8X45        | 3        | 6        | 8         | 45        | 2           |
| 12       | NFGS2-030-120-S06-L70 | 3X6X12X70       | 3        | 6        | 12        | 70        | 2           |
| 13       | NFGS2-040-110-S06-L45 | 4X6X11X45       | 4        | 6        | 11        | 45        | 2           |
| 14       | NFGS2-050-130-S06-L50 | 5X6X13X50       | 5        | 6        | 13        | 50        | 2           |
| 15       | NFGS2-060-130-S06-L50 | 6X6X13X50       | 6        | 6        | 13        | 50        | 2           |
| 16       | NFGS2-080-190-S08-L60 | 8X8X19X60       | 8        | 8        | 19        | 60        | 2           |
| 17       | NFGS2-100-220-S10-L70 | 10X10X22X70     | 10       | 10       | 22        | 70        | 2           |
| 18       | NFGS2-120-260-S12-L75 | 12X12X26X75     | 12       | 12       | 26        | 75        | 2           |

**NANO GENERAL PURPOSE 4 FLUTE FLAT ①**  
**NANO 普通刚钢 4刃 平头 ①**



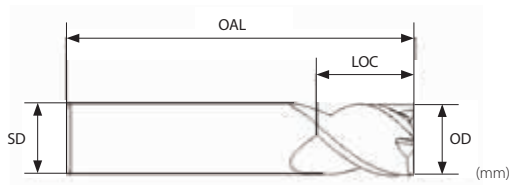
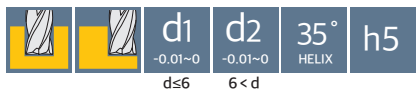
| NO<br>编号 | Item Code<br>产品型号      | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|------------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 1        | NFGS4-010-025-S04-L40  | 1X4X2.5X40      | 1        | 4        | 2.5       | 40        | 4           |
| 2        | NFGS4-012-030-S04-L40  | 1.2X4X3X40      | 1.2      | 4        | 3         | 40        | 4           |
| 3        | NFGS4-015-040-S04-L40  | 1.5X4X4X40      | 1.5      | 4        | 4         | 40        | 4           |
| 4        | NFGS4-020-060-S04-L40  | 2X4X6X40        | 2        | 4        | 6         | 40        | 4           |
| 5        | NFGS4-025-080-S04-L45  | 2.5X4X8X45      | 2.5      | 4        | 8         | 45        | 4           |
| 6        | NFGS4-030-080-S06-L45  | 3X6X8X45        | 3        | 6        | 8         | 45        | 4           |
| 7        | NFGS4-040-110-S06-L45  | 4X6X11X45       | 4        | 6        | 11        | 45        | 4           |
| 8        | NFGS4-050-130-S06-L50  | 5X6X13X50       | 5        | 6        | 13        | 50        | 4           |
| 9        | NFGS4-060-130-S06-L50  | 6X6X13X50       | 6        | 6        | 13        | 50        | 4           |
| 10       | NFGS4-060-150-S06-L50  | 6X6X15X50       | 6        | 6        | 15        | 50        | 4           |
| 11       | NFGS4-060-150-S06-L60  | 6X6X15X60       | 6        | 6        | 15        | 60        | 4           |
| 12       | NFGS4-080-190-S08-L60  | 8X8X19X60       | 8        | 8        | 19        | 60        | 4           |
| 13       | NFGS4-080-200-S08-L60  | 8X8X20X60       | 8        | 8        | 20        | 60        | 4           |
| 14       | NFGS4-080-200-S08-L70  | 8X8X20X70       | 8        | 8        | 20        | 70        | 4           |
| 15       | NFGS4-100-220-S10-L70  | 10X10X22X70     | 10       | 10       | 22        | 70        | 4           |
| 16       | NFGS4-100-350-S10-L75  | 10X10X35X75     | 10       | 10       | 35        | 75        | 4           |
| 17       | NFGS4-100-300-S10-L75  | 10X10X30X75     | 10       | 10       | 30        | 75        | 4           |
| 18       | NFGS4-120-260-S12-L75  | 12X12X26X75     | 12       | 12       | 26        | 75        | 4           |
| 19       | NFGS4-010-025-S06-L40  | 1X6X2.5X40      | 1        | 6        | 2.5       | 40        | 4           |
| 20       | NFGS4-010-025-S06-L60  | 1X6X2.5X60      | 1        | 6        | 2.5       | 60        | 4           |
| 21       | NFGS4-010-025-S06-L80  | 1X6X2.5X80      | 1        | 6        | 2.5       | 80        | 4           |
| 22       | NFGS4-010-040-S06-L50  | 1X6X4X50        | 1        | 6        | 4         | 50        | 4           |
| 23       | NFGS4-020-060-S06-L40  | 2X6X6X40        | 2        | 6        | 6         | 40        | 4           |
| 24       | NFGS4-020-060-S06-L60  | 2X6X6X60        | 2        | 6        | 6         | 60        | 4           |
| 25       | NFGS4-020-060-S06-L100 | 2X6X6X100       | 2        | 6        | 6         | 100       | 4           |
| 26       | NFGS4-030-080-S04-L45  | 3X4X8X45        | 3        | 4        | 8         | 45        | 4           |
| 27       | NFGS4-030-080-S06-L70  | 3X6X8X70        | 3        | 6        | 8         | 70        | 4           |
| 28       | NFGS4-030-080-S06-L100 | 3X6X8X100       | 3        | 6        | 8         | 100       | 4           |
| 29       | NFGS4-035-100-S06-L45  | 3.5X6X10X45     | 3.5      | 6        | 10        | 45        | 4           |
| 30       | NFGS4-040-110-S04-L45  | 4X4X11X45       | 4        | 4        | 11        | 45        | 4           |

# “N-SG” CARBIDE ENDMILL SERIES FOR GENERAL PURPOSE

## “N-SG” 普通钢专用铣刀

### | NANO GENERAL PURPOSE 4 FLUTE FLAT ②

#### NANO 普通刚钢 4刃 平头 ②

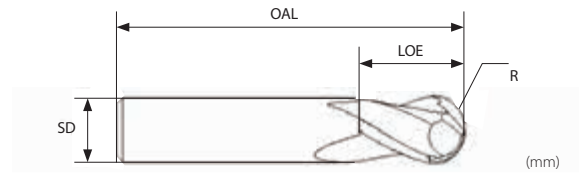


| NO<br>编号 | Item Code<br>产品型号      | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|------------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 31       | NFGS4-040-110-S06-L70  | 4X6X11X70       | 4        | 6        | 11        | 70        | 4           |
| 32       | NFGS4-040-110-S06-L100 | 4X6X11X100      | 4        | 6        | 11        | 100       | 4           |
| 33       | NFGS4-045-110-S06-L45  | 4.5X6X11X45     | 4.5      | 6        | 11        | 45        | 4           |
| 34       | NFGS4-050-130-S06-L80  | 5X6X13X80       | 5        | 6        | 13        | 80        | 4           |
| 35       | NFGS4-050-130-S06-L100 | 5X6X13X100      | 5        | 6        | 13        | 100       | 4           |
| 36       | NFGS4-055-130-S06-L50  | 5.5X6X13X50     | 5.5      | 6        | 13        | 50        | 4           |
| 37       | NFGS4-060-130-S06-L80  | 6X6X13X80       | 6        | 6        | 13        | 80        | 4           |
| 38       | NFGS4-060-130-S06-L100 | 6X6X13X100      | 6        | 6        | 13        | 100       | 4           |
| 39       | NFGS4-065-160-S08-L60  | 6.5X8X16X60     | 6.5      | 8        | 16        | 60        | 4           |
| 40       | NFGS4-070-160-S08-L60  | 7X8X16X60       | 7        | 8        | 16        | 60        | 4           |
| 41       | NFGS4-075-160-S08-L60  | 7.5X8X16X60     | 7.5      | 8        | 16        | 60        | 4           |
| 42       | NFGS4-085-190-S10-L70  | 8.5X10X19X70    | 8.5      | 10       | 19        | 70        | 4           |
| 43       | NFGS4-090-190-S10-L70  | 9X10X19X70      | 9        | 10       | 19        | 70        | 4           |
| 44       | NFGS4-095-190-S10-L70  | 9.5X10X19X70    | 9.5      | 10       | 19        | 70        | 4           |
| 45       | NFGS4-100-250-S10-L70  | 10X10X25X70     | 10       | 10       | 25        | 70        | 4           |
| 46       | NFGS4-100-250-S10-L75  | 10X10X25X75     | 10       | 10       | 25        | 75        | 4           |
| 47       | NFGS4-105-220-S12-L75  | 10.5X12X22X75   | 10.5     | 12       | 22        | 75        | 4           |
| 48       | NFGS4-110-220-S12-L75  | 11X12X22X75     | 11       | 12       | 22        | 75        | 4           |
| 49       | NFGS4-120-300-S12-L75  | 12X12X30X75     | 12       | 12       | 30        | 75        | 4           |
| 50       | NFGS4-120-300-S12-L80  | 12X12X30X80     | 12       | 12       | 30        | 80        | 4           |
| 51       | NFGS4-140-260-S14-L80  | 14X14X26X80     | 14       | 14       | 26        | 80        | 4           |
| 52       | NFGS4-140-260-S16-L85  | 14X16X26X85     | 14       | 16       | 26        | 85        | 4           |
| 53       | NFGS4-160-350-S16-L100 | 16X16X35X100    | 16       | 16       | 35        | 100       | 4           |
| 54       | NFGS4-160-400-S16-L100 | 16X16X40X100    | 16       | 16       | 40        | 100       | 4           |
| 55       | NFGS4-180-350-S18-L100 | 18X18X35X100    | 18       | 18       | 35        | 100       | 4           |
| 56       | NFGS4-200-400-S20-L100 | 20X20X40X100    | 20       | 20       | 40        | 100       | 4           |
| 57       | NFGS4-200-450-S20-L100 | 20X20X45X100    | 20       | 20       | 45        | 100       | 4           |



## NANO GENERAL PURPOSE 2 FLUTE BALL ①

### NANO 普通刚钢 2刃 球头 ①



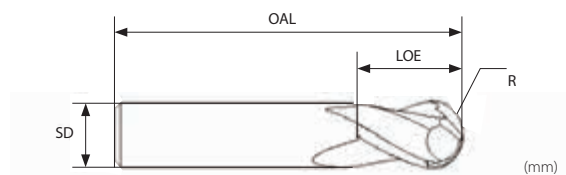
| NO<br>编号 | Item Code<br>产品型号           | Dimension<br>规格    | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|-----------------------------|--------------------|----------|----------|--------|-----------|-----------|-------------|
| 1        | NBGS2-010-005-025-S04-L50   | 1(R0.5)X4X2.5X50   | 1        | 4        | 0.5    | 2.5       | 50        | 2           |
| 2        | NBGS2-020-010-050-S04-L50   | 2(R1)X4X5X50       | 2        | 4        | 1      | 5         | 50        | 2           |
| 3        | NBGS2-040-020-080-S04-L60   | 4(R2)X4X8X60       | 4        | 4        | 2      | 8         | 60        | 2           |
| 4        | NBGS2-060-030-120-S06-L80   | 6(R3)X6X12X80      | 6        | 6        | 3      | 12        | 80        | 2           |
| 5        | NBGS2-060-030-120-S06-L90   | 6(R3)X6X12X90      | 6        | 6        | 3      | 12        | 90        | 2           |
| 6        | NBGS2-080-040-120-S08-L60   | 8(R4)X8X12X60      | 8        | 8        | 4      | 12        | 60        | 2           |
| 7        | NBGS2-080-040-140-S08-L90   | 8(R4)X8X14X90      | 8        | 8        | 4      | 14        | 90        | 2           |
| 8        | NBGS2-080-040-140-S08-L100  | 8(R4)X8X14X100     | 8        | 8        | 4      | 14        | 100       | 2           |
| 9        | NBGS2-100-050-180-S10-L100  | 10(R5)X10X18X100   | 10       | 10       | 5      | 18        | 100       | 2           |
| 10       | NBGS2-120-060-220-S12-L110  | 12(R6)X12X22X110   | 12       | 12       | 6      | 22        | 110       | 2           |
| 11       | NBGS2-010-005-025-S06-L50   | 1(R0.5)X6X2.5X50   | 1        | 6        | 0.5    | 2.5       | 50        | 2           |
| 12       | NBGS2-010-005-025-S06-L70   | 1(R0.5)X6X2.5X70   | 1        | 6        | 0.5    | 2.5       | 70        | 2           |
| 13       | NBGS2-010-005-025-S06-L100  | 1(R0.5)X6X2.5X100  | 1        | 6        | 0.5    | 2.5       | 100       | 2           |
| 14       | NBGS2-012-006-030-S04-L50   | 1.2(R0.6)X4X3X50   | 1.2      | 4        | 0.6    | 3         | 50        | 2           |
| 15       | NBGS2-015-0075-040-S04-L50  | 1.5(R0.75)X4X4X50  | 1.5      | 4        | 0.75   | 4         | 50        | 2           |
| 16       | NBGS2-015-0075-040-S06-L50  | 1.5(R0.75)X6X4X50  | 1.5      | 6        | 0.75   | 4         | 50        | 2           |
| 17       | NBGS2-015-0075-040-S06-L70  | 1.5(R0.75)X6X4X70  | 1.5      | 6        | 0.75   | 4         | 70        | 2           |
| 18       | NBGS2-015-0075-040-S06-L100 | 1.5(R0.75)X6X4X100 | 1.5      | 6        | 0.75   | 4         | 100       | 2           |
| 19       | NBGS2-020-010-050-S06-L50   | 2(R1)X6X5X50       | 2        | 6        | 1      | 5         | 50        | 2           |
| 20       | NBGS2-020-010-050-S06-L75   | 2(R1)X6X5X75       | 2        | 6        | 1      | 5         | 75        | 2           |
| 21       | NBGS2-020-010-050-S06-L100  | 2(R1)X6X5X100      | 2        | 6        | 1      | 5         | 100       | 2           |
| 22       | NBGS2-025-0125-060-S04-L50  | 2.5(R1.25)X4X6X50  | 2.5      | 4        | 1.25   | 6         | 50        | 2           |
| 23       | NBGS2-025-0125-060-S06-L60  | 2.5(R1.25)X6X6X60  | 2.5      | 6        | 1.25   | 6         | 60        | 2           |
| 24       | NBGS2-025-0125-060-S06-L75  | 2.5(R1.25)X6X6X75  | 2.5      | 6        | 1.25   | 6         | 75        | 2           |
| 25       | NBGS2-025-0125-060-S06-L100 | 2.5(R1.25)X6X6X100 | 2.5      | 6        | 1.25   | 6         | 100       | 2           |
| 26       | NBGS2-030-015-080-S04-L50   | 3(R1.5)X4X8X50     | 3        | 4        | 1.5    | 8         | 50        | 2           |
| 27       | NBGS2-030-015-080-S06-L60   | 3(R1.5)X6X8X60     | 3        | 6        | 1.5    | 8         | 60        | 2           |
| 28       | NBGS2-030-015-080-S06-L80   | 3(R1.5)X6X8X80     | 3        | 6        | 1.5    | 8         | 80        | 2           |
| 29       | NBGS2-030-015-080-S06-L100  | 3(R1.5)X6X8X100    | 3        | 6        | 1.5    | 8         | 100       | 2           |
| 30       | NBGS2-035-0175-080-S06-L60  | 3.5(R1.75)X6X8X60  | 3.5      | 6        | 1.75   | 8         | 60        | 2           |

# “N-SG” CARBIDE ENDMILL SERIES FOR GENERAL PURPOSE

## “N-SG” 普通钢专用铣刀

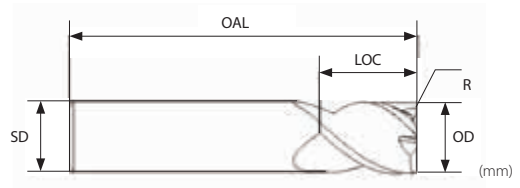
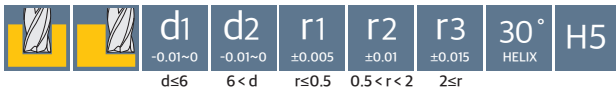
### | NANO GENERAL PURPOSE 2 FLUTE BALL ②

#### NANO 普通刚钢 2刃 球头 ②



| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格    | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|----------------------------|--------------------|----------|----------|--------|-----------|-----------|-------------|
| 31       | NBGS2-040-020-080-S04-L80  | 4(R2)X4X8X80       | 4        | 4        | 2      | 8         | 80        | 2           |
| 32       | NBGS2-040-020-080-S06-L70  | 4(R2)X6X8X70       | 4        | 6        | 2      | 8         | 70        | 2           |
| 33       | NBGS2-040-020-080-S06-L90  | 4(R2)X6X8X90       | 4        | 6        | 2      | 8         | 90        | 2           |
| 34       | NBGS2-040-020-080-S06-L120 | 4(R2)X6X8X120      | 4        | 6        | 2      | 8         | 120       | 2           |
| 35       | NBGS2-045-0225-080-S06-L70 | 4.5(R2.25)X6X8X70  | 4.5      | 6        | 2.25   | 8         | 70        | 2           |
| 36       | NBGS2-050-025-100-S06-L75  | 5(R2.5)X6X10X75    | 5        | 6        | 2.5    | 10        | 75        | 2           |
| 37       | NBGS2-055-0275-100-S06-L75 | 5.5(R2.75)X6X10X75 | 5.5      | 6        | 2.75   | 10        | 75        | 2           |
| 38       | NBGS2-060-030-100-S06-L60  | 6(R3)X6X10X60      | 6        | 6        | 3      | 10        | 60        | 2           |
| 39       | NBGS2-060-030-120-S06-L100 | 6(R3)X6X12X100     | 6        | 6        | 3      | 12        | 100       | 2           |
| 40       | NBGS2-060-030-120-S06-L120 | 6(R3)X6X12X120     | 6        | 6        | 3      | 12        | 120       | 2           |
| 41       | NBGS2-070-035-140-S08-L80  | 7(R3.5)X8X14X80    | 7        | 8        | 3.5    | 14        | 80        | 2           |
| 42       | NBGS2-080-040-140-S08-L110 | 8(R4)X8X14X110     | 8        | 8        | 4      | 14        | 110       | 2           |
| 43       | NBGS2-080-040-140-S08-L150 | 8(R4)X8X14X150     | 8        | 8        | 4      | 14        | 150       | 2           |
| 44       | NBGS2-090-045-160-S10-L100 | 9(R4.5)X10X16X100  | 9        | 10       | 4.5    | 16        | 100       | 2           |
| 45       | NBGS2-100-050-150-S10-L70  | 10(R5)X10X15X70    | 10       | 10       | 5      | 15        | 70        | 2           |
| 46       | NBGS2-100-050-180-S10-L120 | 10(R5)X10X18X120   | 10       | 10       | 5      | 18        | 120       | 2           |
| 47       | NBGS2-100-050-180-S10-L150 | 10(R5)X10X18X150   | 10       | 10       | 5      | 18        | 150       | 2           |
| 48       | NBGS2-100-050-180-S10-L180 | 10(R5)X10X18X180   | 10       | 10       | 5      | 18        | 180       | 2           |
| 49       | NBGS2-110-055-200-S12-L110 | 11(R5.5)X12X20X110 | 11       | 12       | 5.5    | 20        | 110       | 2           |
| 50       | NBGS2-120-060-180-S12-L70  | 12(R6)X12X18X70    | 12       | 12       | 6      | 18        | 70        | 2           |
| 51       | NBGS2-120-060-220-S12-L130 | 12(R6)X12X22X130   | 12       | 12       | 6      | 22        | 130       | 2           |
| 52       | NBGS2-120-060-220-S12-L150 | 12(R6)X12X22X150   | 12       | 12       | 6      | 22        | 150       | 2           |
| 53       | NBGS2-120-060-220-S12-L200 | 12(R6)X12X22X200   | 12       | 12       | 6      | 22        | 200       | 2           |
| 54       | NBGS2-130-065-240-S14-L110 | 13(R6.5)X14X24X110 | 13       | 14       | 6.5    | 24        | 110       | 2           |
| 55       | NBGS2-140-070-240-S14-L110 | 14(R7)X14X24X110   | 14       | 14       | 7      | 24        | 110       | 2           |
| 56       | NBGS2-160-080-300-S16-L130 | 16(R8)X16X30X130   | 16       | 16       | 8      | 30        | 130       | 2           |
| 57       | NBGS2-160-080-300-S16-L160 | 16(R8)X16X30X160   | 16       | 16       | 8      | 30        | 160       | 2           |
| 58       | NBGS2-160-080-300-S16-L200 | 16(R8)X16X30X200   | 16       | 16       | 8      | 30        | 200       | 2           |
| 59       | NBGS2-200-100-380-S20-L160 | 20(R10)X20X38X160  | 20       | 20       | 10     | 38        | 160       | 2           |
| 60       | NBGS2-200-100-380-S20-L200 | 20(R10)X20X38X200  | 20       | 20       | 10     | 38        | 200       | 2           |

**NANO GENERAL PURPOSE 2 FLUTE CORNER RADIUS**  
**NANO 普通刚钢 2刃 圆鼻**





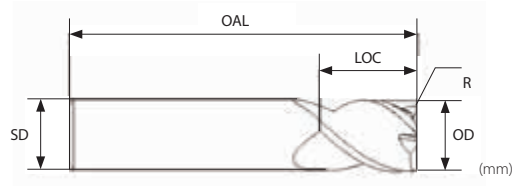
| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格    | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|----------------------------|--------------------|----------|----------|--------|-----------|-----------|-------------|
| 1        | NRGS2-010-001-025-S04-L45  | 1(R0.1)X4X2.5X45   | 1        | 4        | 0.1    | 2.5       | 45        | 2           |
| 2        | NRGS2-020-002-060-S04-L45  | 2(R0.2)X4X6X45     | 2        | 4        | 0.2    | 6         | 45        | 2           |
| 3        | NRGS2-030-002-080-S06-L60  | 3(R0.2)X6X8X60     | 3        | 6        | 0.2    | 8         | 60        | 2           |
| 4        | NRGS2-040-002-090-S04-L60  | 4(R0.2)X4X9X60     | 4        | 4        | 0.2    | 9         | 60        | 2           |
| 5        | NRGS2-040-002-100-S06-L70  | 4(R0.2)X6X10X70    | 4        | 6        | 0.2    | 10        | 70        | 2           |
| 6        | NRGS2-040-003-090-S04-L80  | 4(R0.3)X4X9X80     | 4        | 4        | 0.3    | 9         | 80        | 2           |
| 7        | NRGS2-050-002-130-S06-L75  | 5(R0.2)X6X13X75    | 5        | 6        | 0.2    | 13        | 75        | 2           |
| 8        | NRGS2-060-003-130-S06-L90  | 6(R0.3)X6X13X90    | 6        | 6        | 0.3    | 13        | 90        | 2           |
| 9        | NRGS2-060-010-130-S06-L90  | 6(R1)X6X13X90      | 6        | 6        | 1      | 13        | 90        | 2           |
| 10       | NRGS2-080-005-190-S08-L100 | 8(R0.5)X8X19X100   | 8        | 8        | 0.5    | 19        | 100       | 2           |
| 11       | NRGS2-080-010-190-S08-L120 | 8(R1)X8X19X120     | 8        | 8        | 1      | 19        | 120       | 2           |
| 12       | NRGS2-100-005-220-S10-L100 | 10(R0.5)X10X22X100 | 10       | 10       | 0.5    | 22        | 100       | 2           |
| 13       | NRGS2-100-010-220-S10-L130 | 10(R1)X10X22X130   | 10       | 10       | 1      | 22        | 130       | 2           |
| 14       | NRGS2-120-005-260-S12-L110 | 12(R0.5)X12X26X110 | 12       | 12       | 0.5    | 26        | 110       | 2           |

# “N-SG” CARBIDE ENDMILL SERIES FOR GENERAL PURPOSE

## “N-SG” 普通钢专用铣刀

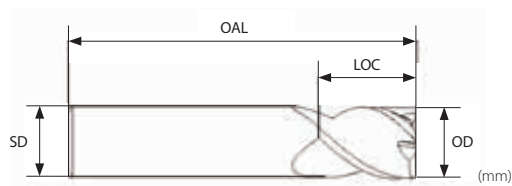
| NANO GENERAL PURPOSE 4 FLUTE CORNER RADIUS  
NANO 普通刚钢 4刃 圆鼻

|   |   |                             |                             |                              |                               |                            |                     |           |
|---|---|-----------------------------|-----------------------------|------------------------------|-------------------------------|----------------------------|---------------------|-----------|
|  |  | <b>d1</b><br>-0.01~0<br>d≤6 | <b>d2</b><br>-0.01~0<br>6<d | <b>r1</b><br>±0.005<br>r≤0.5 | <b>r2</b><br>±0.01<br>0.5<r<2 | <b>r3</b><br>±0.015<br>2≤r | <b>30°</b><br>HELIX | <b>h5</b> |
|---|---|-----------------------------|-----------------------------|------------------------------|-------------------------------|----------------------------|---------------------|-----------|



| NO<br>编号 | Item Code<br>产品型号          | Dimension<br>规格    | OD<br>直径 | SD<br>柄径 | R<br>角 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|----------------------------|--------------------|----------|----------|--------|-----------|-----------|-------------|
| 1        | NRGS4-010-001-025-S04-L45  | 1(R0.1)X4X2.5X45   | 1        | 4        | 0.1    | 2.5       | 45        | 4           |
| 2        | NRGS4-015-001-040-S04-L45  | 1.5(R0.1)X4X4X45   | 1.5      | 4        | 0.1    | 4         | 45        | 4           |
| 3        | NRGS4-020-002-060-S04-L45  | 2(R0.2)X4X6X45     | 2        | 4        | 0.2    | 6         | 45        | 4           |
| 4        | NRGS4-030-002-080-S06-L60  | 3(R0.2)X6X8X60     | 3        | 6        | 0.2    | 8         | 60        | 4           |
| 5        | NRGS4-040-002-090-S04-L60  | 4(R0.2)X4X9X60     | 4        | 4        | 0.2    | 9         | 60        | 4           |
| 6        | NRGS4-040-002-100-S06-L70  | 4(R0.2)X6X10X70    | 4        | 6        | 0.2    | 10        | 70        | 4           |
| 7        | NRGS4-040-003-090-S04-L80  | 4(R0.3)X4X9X80     | 4        | 4        | 0.3    | 9         | 80        | 4           |
| 8        | NRGS4-040-005-100-S06-L70  | 4(R0.5)X6X10X70    | 4        | 6        | 0.5    | 10        | 70        | 4           |
| 9        | NRGS4-050-002-130-S06-L75  | 5(R0.2)X6X13X75    | 5        | 6        | 0.2    | 13        | 75        | 4           |
| 10       | NRGS4-060-002-110-S06-L60  | 6(R0.2)X6X11X60    | 6        | 6        | 0.2    | 11        | 60        | 4           |
| 11       | NRGS4-060-003-130-S06-L80  | 6(R0.3)X6X13X80    | 6        | 6        | 0.3    | 13        | 80        | 4           |
| 12       | NRGS4-060-005-130-S06-L80  | 6(R0.5)X6X13X80    | 6        | 6        | 0.5    | 13        | 80        | 4           |
| 13       | NRGS4-060-010-130-S06-L80  | 6(R1)X6X13X80      | 6        | 6        | 1      | 13        | 80        | 4           |
| 14       | NRGS4-080-002-160-S08-L70  | 8(R0.2)X8X16X70    | 8        | 8        | 0.2    | 16        | 70        | 4           |
| 15       | NRGS4-080-005-190-S08-L90  | 8(R0.5)X8X19X90    | 8        | 8        | 0.5    | 19        | 90        | 4           |
| 16       | NRGS4-080-010-190-S08-L110 | 8(R1)X8X19X110     | 8        | 8        | 1      | 19        | 110       | 4           |
| 17       | NRGS4-100-002-190-S10-L75  | 10(R0.2)X10X19X75  | 10       | 10       | 0.2    | 19        | 75        | 4           |
| 18       | NRGS4-100-005-220-S10-L100 | 10(R0.5)X10X22X100 | 10       | 10       | 0.5    | 22        | 100       | 4           |
| 19       | NRGS4-100-010-220-S10-L70  | 10(R1)X10X22X70    | 10       | 10       | 1      | 22        | 70        | 4           |
| 20       | NRGS4-100-010-220-S10-L120 | 10(R1)X10X22X120   | 10       | 10       | 1      | 22        | 120       | 4           |
| 21       | NRGS4-120-003-220-S12-L80  | 12(R0.3)X12X22X80  | 12       | 12       | 0.3    | 22        | 80        | 4           |
| 22       | NRGS4-120-010-260-S12-L75  | 12(R1)X12X26X75    | 12       | 12       | 1      | 26        | 75        | 4           |
| 23       | NRGS4-120-010-260-S12-L110 | 12(R1)X12X26X110   | 12       | 12       | 1      | 26        | 110       | 4           |
| 24       | NRGS4-120-020-260-S12-L130 | 12(R2)X12X26X130   | 12       | 12       | 2      | 26        | 130       | 4           |

**NANO GENERAL PURPOSE 4 FLUTE LONG FLAT ①**  
**NANO 普通刚钢 4刃 长刃 平头 ①**

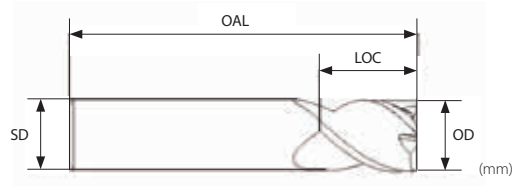


| NO<br>编号 | Item Code<br>产品型号      | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|------------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 1        | NFGL4-010-030-S06-L60  | 1X6X3X60        | 1        | 6        | 3         | 60        | 4           |
| 2        | NFGL4-010-050-S06-L60  | 1X6X5X60        | 1        | 6        | 5         | 60        | 4           |
| 3        | NFGL4-015-060-S06-L60  | 1.5X6X6X60      | 1.5      | 6        | 6         | 60        | 4           |
| 4        | NFGL4-015-080-S06-L60  | 1.5X6X8X60      | 1.5      | 6        | 8         | 60        | 4           |
| 5        | NFGL4-020-080-S06-L60  | 2X6X8X60        | 2        | 6        | 8         | 60        | 4           |
| 6        | NFGL4-020-100-S06-L60  | 2X6X10X60       | 2        | 6        | 10        | 60        | 4           |
| 7        | NFGL4-030-100-S06-L70  | 3X6X10X70       | 3        | 6        | 10        | 70        | 4           |
| 8        | NFGL4-030-150-S06-L70  | 3X6X15X70       | 3        | 6        | 15        | 70        | 4           |
| 9        | NFGL4-030-200-S06-L70  | 3X6X20X70       | 3        | 6        | 20        | 70        | 4           |
| 10       | NFGL4-030-250-S06-L70  | 3X6X25X70       | 3        | 6        | 25        | 70        | 4           |
| 11       | NFGL4-040-120-S06-L70  | 4X6X12X70       | 4        | 6        | 12        | 70        | 4           |
| 12       | NFGL4-040-150-S06-L70  | 4X6X15X70       | 4        | 6        | 15        | 70        | 4           |
| 13       | NFGL4-040-200-S06-L70  | 4X6X20X70       | 4        | 6        | 20        | 70        | 4           |
| 14       | NFGL4-040-250-S06-L70  | 4X6X25X70       | 4        | 6        | 25        | 70        | 4           |
| 15       | NFGL4-040-300-S06-L75  | 4X6X30X75       | 4        | 6        | 30        | 75        | 4           |
| 16       | NFGL4-050-200-S06-L70  | 5X6X20X70       | 5        | 6        | 20        | 70        | 4           |
| 17       | NFGL4-050-250-S06-L75  | 5X6X25X75       | 5        | 6        | 25        | 75        | 4           |
| 18       | NFGL4-050-300-S06-L80  | 5X6X30X80       | 5        | 6        | 30        | 80        | 4           |
| 19       | NFGL4-060-200-S06-L75  | 6X6X20X75       | 6        | 6        | 20        | 75        | 4           |
| 20       | NFGL4-060-200-S06-L100 | 6X6X20X100      | 6        | 6        | 20        | 100       | 4           |
| 21       | NFGL4-060-250-S06-L75  | 6X6X25X75       | 6        | 6        | 25        | 75        | 4           |
| 22       | NFGL4-060-300-S06-L80  | 6X6X30X80       | 6        | 6        | 30        | 80        | 4           |
| 23       | NFGL4-060-350-S06-L80  | 6X6X35X80       | 6        | 6        | 35        | 80        | 4           |
| 24       | NFGL4-080-250-S08-L75  | 8X8X25X75       | 8        | 8        | 25        | 75        | 4           |
| 25       | NFGL4-080-250-S08-L100 | 8X8X25X100      | 8        | 8        | 25        | 100       | 4           |
| 26       | NFGL4-080-300-S08-L80  | 8X8X30X80       | 8        | 8        | 30        | 80        | 4           |
| 27       | NFGL4-080-350-S08-L90  | 8X8X35X90       | 8        | 8        | 35        | 90        | 4           |
| 28       | NFGL4-080-400-S08-L90  | 8X8X40X90       | 8        | 8        | 40        | 90        | 4           |
| 29       | NFGL4-080-450-S08-L100 | 8X8X45X100      | 8        | 8        | 45        | 100       | 4           |
| 30       | NFGL4-100-300-S10-L80  | 10X10X30X80     | 10       | 10       | 30        | 80        | 4           |

# “N-SG” CARBIDE ENDMILL SERIES FOR GENERAL PURPOSE

## “N-SG” 普通钢专用铣刀

| NANO GENERAL PURPOSE 4 FLUTE LONG FLAT ②  
NANO 普通刚钢 4刃 长刃 平头 ②



| NO<br>编号 | Item Code<br>产品型号       | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|-------------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 31       | NFGL4-100-300-S10-L110  | 10X10X30X110    | 10       | 10       | 30        | 110       | 4           |
| 32       | NFGL4-100-350-S10-L90   | 10X10X35X90     | 10       | 10       | 35        | 90        | 4           |
| 33       | NFGL4-100-400-S10-L90   | 10X10X40X90     | 10       | 10       | 40        | 90        | 4           |
| 34       | NFGL4-100-500-S10-L100  | 10X10X50X100    | 10       | 10       | 50        | 100       | 4           |
| 35       | NFGL4-100-600-S10-L110  | 10X10X60X110    | 10       | 10       | 60        | 110       | 4           |
| 36       | NFGL4-120-300-S12-L90   | 12X12X30X90     | 12       | 12       | 30        | 90        | 4           |
| 37       | NFGL4-120-350-S12-L110  | 12X12X35X110    | 12       | 12       | 35        | 110       | 4           |
| 38       | NFGL4-120-400-S12-L100  | 12X12X40X100    | 12       | 12       | 40        | 100       | 4           |
| 39       | NFGL4-120-500-S12-L100  | 12X12X50X100    | 12       | 12       | 50        | 100       | 4           |
| 40       | NFGL4-120-600-S12-L110  | 12X12X60X110    | 12       | 12       | 60        | 110       | 4           |
| 41       | NFGL4-120-700-S12-L130  | 12X12X70X130    | 12       | 12       | 70        | 130       | 4           |
| 42       | NFGL4-140-500-S14-L110  | 14X14X50X110    | 14       | 14       | 50        | 110       | 4           |
| 43       | NFGL4-160-550-S16-L120  | 16X16X55X120    | 16       | 16       | 55        | 120       | 4           |
| 44       | NFGL4-160-700-S16-L130  | 16X16X70X130    | 16       | 16       | 70        | 130       | 4           |
| 45       | NFGL4-180-800-S18-L160  | 18X18X80X160    | 18       | 18       | 80        | 160       | 4           |
| 46       | NFGL4-200-500-S20-L160  | 20X20X50X160    | 20       | 20       | 50        | 160       | 4           |
| 47       | NFGL4-200-600-S20-L130  | 20X20X60X130    | 20       | 20       | 60        | 130       | 4           |
| 48       | NFGL4-200-1000-S20-L200 | 20X20X100X200   | 20       | 20       | 100       | 200       | 4           |

# “N-SN” CARBIDE ENDMILL SERIES FOR ALUMINUM

“END MILL” series | **NANOLOY**

END MILL SERIES

INDEXABLE END MILL

RESULTS OF USER TEST

## “N-SN” 铝专用铣刀

### N-SN Series 系列

#### CARBIDE ENDMILL SERIES FOR ALUMINUM 铝专用铣刀

1. Solution for machining “Aluminium alloy” and “Nonferrous metal”  
最佳方案为铝合金及有色金属
2. Applying proper geometry for preventing B.U.E and high surface roughness  
采用合适的形状为防止沾屑
3. Using NANOLOY powder technology for reducing sudden break and increasing wearness  
为了提升耐磨性和防止破损，应用NANOLOY独自原料技术

### PRODUCT FEATURE

- Optimal design for reducing cutting resistance and increasing surface roughness
- 应用优秀的形状为减少切削阻力和提高粗糙度
- Using NANOLOY powder technology for improving tool life
- 为提升铣刀寿命应用NANOLOY独自原料技术
- Suitable geometry for preventing B.U.E. and breaking
- 防止沾屑和突然性破损，采用最佳的形状
- Solution for machining Aluminium and Aluminium alloy, Non-ferrous metal.
- 适合加工铝，铝，铝合金，有色金属

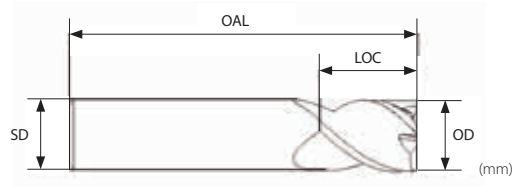
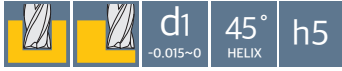


# “N-SN” CARBIDE ENDMILL SERIES FOR ALUMINUM

## “N-SN” 铝专用铣刀

### | NANO ALU 3 FLUTE FLAT

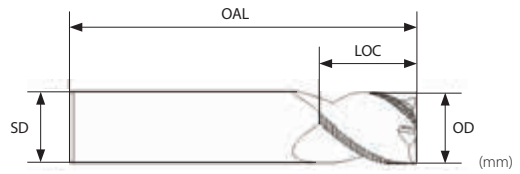
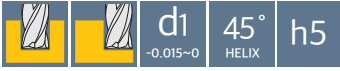
“N-SN” 铝专用铣刀



| NO<br>编号 | Item Code<br>产品型号      | Dimension<br>规格 | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|------------------------|-----------------|----------|----------|-----------|-----------|-------------|
| 1        | NFNS3-010-030-S06-L50  | 1X6X3X50        | 1        | 6        | 3         | 50        | 3           |
| 2        | NFNS3-010-060-S06-L60  | 1X6X6X60        | 1        | 6        | 6         | 60        | 3           |
| 3        | NFNS3-015-050-S06-L50  | 1.5X6X5X50      | 1.5      | 6        | 5         | 50        | 3           |
| 4        | NFNS3-015-060-S06-L60  | 1.5X6X6X60      | 1.5      | 6        | 6         | 60        | 3           |
| 5        | NFNS3-020-060-S06-L50  | 2X6X6X50        | 2        | 6        | 6         | 50        | 3           |
| 6        | NFNS3-020-080-S06-L60  | 2X6X8X60        | 2        | 6        | 8         | 60        | 3           |
| 7        | NFNS3-020-100-S06-L60  | 2X6X10X60       | 2        | 6        | 10        | 60        | 3           |
| 8        | NFNS3-020-120-S06-L60  | 2X6X12X60       | 2        | 6        | 12        | 60        | 3           |
| 9        | NFNS3-025-100-S06-L55  | 2.5X6X10X55     | 2.5      | 6        | 10        | 55        | 3           |
| 10       | NFNS3-030-110-S06-L55  | 3X6X11X55       | 3        | 6        | 11        | 55        | 3           |
| 11       | NFNS3-030-150-S06-L65  | 3X6X15X65       | 3        | 6        | 15        | 65        | 3           |
| 12       | NFNS3-030-200-S06-L70  | 3X6X20X70       | 3        | 6        | 20        | 70        | 3           |
| 13       | NFNS3-040-130-S06-L55  | 4X6X13X55       | 4        | 6        | 13        | 55        | 3           |
| 14       | NFNS3-040-160-S06-L65  | 4X6X16X65       | 4        | 6        | 16        | 65        | 3           |
| 15       | NFNS3-040-200-S06-L70  | 4X6X20X70       | 4        | 6        | 20        | 70        | 3           |
| 16       | NFNS3-050-170-S06-L55  | 5X6X17X55       | 5        | 6        | 17        | 55        | 3           |
| 17       | NFNS3-060-170-S06-L60  | 6X6X17X60       | 6        | 6        | 17        | 60        | 3           |
| 18       | NFNS3-060-220-S06-L60  | 6X6X22X60       | 6        | 6        | 22        | 60        | 3           |
| 19       | NFNS3-060-250-S06-L70  | 6X6X25X70       | 6        | 6        | 25        | 70        | 3           |
| 20       | NFNS3-060-300-S06-L75  | 6X6X30X75       | 6        | 6        | 30        | 75        | 3           |
| 21       | NFNS3-080-220-S08-L70  | 8X8X22X70       | 8        | 8        | 22        | 70        | 3           |
| 22       | NFNS3-080-300-S08-L80  | 8X8X30X80       | 8        | 8        | 30        | 80        | 3           |
| 23       | NFNS3-100-270-S10-L75  | 10X10X27X75     | 10       | 10       | 27        | 75        | 3           |
| 24       | NFNS3-100-320-S10-L90  | 10X10X32X90     | 10       | 10       | 32        | 90        | 3           |
| 25       | NFNS3-100-350-S10-L90  | 10X10X35X90     | 10       | 10       | 35        | 90        | 3           |
| 26       | NFNS3-100-400-S10-L90  | 10X10X40X90     | 10       | 10       | 40        | 90        | 3           |
| 27       | NFNS3-120-320-S12-L80  | 12X12X32X80     | 12       | 12       | 32        | 80        | 3           |
| 28       | NFNS3-120-400-S12-L95  | 12X12X40X95     | 12       | 12       | 40        | 95        | 3           |
| 29       | NFNS3-120-450-S12-L100 | 12X12X45X100    | 12       | 12       | 45        | 100       | 3           |



**NANO ALU 3 FLUTE ROUGHING**  
**NANO 铝 3刃 粗加工**



| NO<br>编号 | Item Code<br>产品型号           | Dimension<br>规格  | OD<br>直径 | SD<br>柄径 | LOC<br>刃长 | OAL<br>全长 | FL.No<br>刃数 |
|----------|-----------------------------|------------------|----------|----------|-----------|-----------|-------------|
| 1        | NFNS3R-040-100-S06-L55      | 4X6X10X55        | 4        | 6        | 10        | 55        | 3           |
| 2        | NFNS3R-050-150-S06-L55      | 5X6X15X55        | 5        | 6        | 15        | 55        | 3           |
| 3        | NFNS3R-060-150-S06-L60      | 6X6X15X60        | 6        | 6        | 15        | 60        | 3           |
| 4        | NFNS3R-060-200(8)-S06-L70   | 6X6X8(20)X70     | 6        | 6        | 8(20)     | 70        | 3           |
| 5        | NFNS3R-060-250-S06-L80      | 6X6X25X80        | 6        | 6        | 25        | 80        | 3           |
| 6        | NFNS3R-080-200-S08-L65      | 8X8X20X65        | 8        | 8        | 20        | 65        | 3           |
| 7        | NFNS3R-080-260(10)-S08-L80  | 8X8X10(26)X80    | 8        | 8        | 10(26)    | 80        | 3           |
| 8        | NFNS3R-080-300-S08-L90      | 8X8X30X90        | 8        | 8        | 30        | 90        | 3           |
| 9        | NFNS3R-100-250-S10-L70      | 10X10X25X70      | 10       | 10       | 25        | 70        | 3           |
| 10       | NFNS3R-100-320(12)-S10-L90  | 10X10X12(32)X90  | 10       | 10       | 12(32)    | 90        | 3           |
| 11       | NFNS3R-100-400-S10-L100     | 10X10X40X100     | 10       | 10       | 40        | 100       | 3           |
| 12       | NFNS3R-120-300-S12-L80      | 12X12X30X80      | 12       | 12       | 30        | 80        | 3           |
| 13       | NFNS3R-120-360(14)-S12-L100 | 12X12X14(36)X100 | 12       | 12       | 14(36)    | 100       | 3           |
| 14       | NFNS3R-120-500-S12-L110     | 12X12X50X110     | 12       | 12       | 50        | 110       | 3           |



# INDEXABLE ENDMILL INSERTS

高硬度模具钢专用可转位铣刀片

# "N-IB/IR" INDEXABLE ENDMILL INSERTS

## "N-IB/IR" 高硬度模具 钢专用可转位铣刀片

Indexable end mill series for hardened materials  
of mold steel machining

高硬度模具钢材料加工可转位铣刀片系列

1. New coating layer with nano grade  
: specially designed for mold steel machining
1. 采用NANOLOY超微符合粉末材料以及新  
型纳米级涂层适合加工高硬度钢材料
2. Excellent performance with optimal geometry  
2. 具有最佳几何结构的卓越性能
3. Wide range of machining application  
: various geometries and specifications
3. 拥有多种形状, 可适用于宽阔的加工领域

# “N-IB/IR” INDEXABLE ENDMILL INSERTS

## “N-IB/IR” 高硬度模具钢专用可转位铣刀片

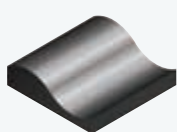
### | Features / 特点

Excellent tool life for high hardened materials machining with superior NANO ultrafine grade

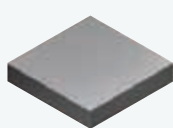
采用了NANOLOY超微粒材料提高耐磨性适合加工高硬度材料

1. High precision in R (ball type :  $\pm 0.01$  / corner R type :  $\pm 0.015$ ) / 高精密度,刀片安装R精度
2. Wide range of applications with various geometries and specifications / 拥有多种形状,可适用于宽阔的加工领域
3. Excellent quality and performance for mold and parts machining / 确保模具及配件加工的卓越性能和质量

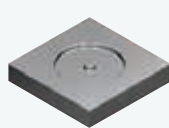
### APPLICATION / 应用



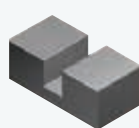
Profiling  
仿形铣



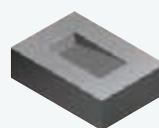
Face milling  
面铣



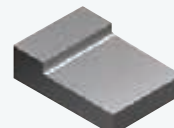
Helical milling  
螺旋铣



Slotting  
开槽



Ramping  
线性坡走铣



Shouldering  
侧铣

### CLAMPING PROCEDURE / 装配顺序


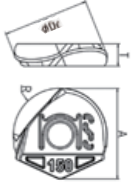


- ① Cleaning the clamping area. (Use air blow)  
清扫刀片座, 通过气冷等方法清扫刀片座面
- ② Inserts the engraving side of indexable endmills insert to be forward into the holder and tighten the screw.  
将刀片的数字面标记对准刀具本体的螺钉紧固侧, 插入刀片
- ③ Tighten the screw using the torque wrench at a given torque. Don't push the insert during tightening.  
用专用扳手紧固高精度螺钉, 此时请无按压刀片
- ④ Clamping complete  
紧固结束

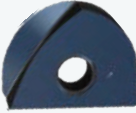
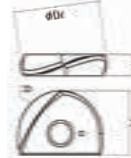
※ Follow this procedure for optimal precision / 请根据如下夹紧为最佳精度

| ITEM CODE / 型号 |                          | CLAMPING TORQUE / 夹紧扭矩<br>(N·M) |
|----------------|--------------------------|---------------------------------|
| BALL TYPE / 球形 | CORNER RADIUS TYPE / 圆鼻型 |                                 |
| NBGT-XX-5R     | JRGT-HS-100(110)-Rx.x    | 1.8                             |
| NBGT-XX-6R     | JRGT-HS-120(130)-Rx.x    | 3.7                             |
| NBGT-XX-8R     | JRGT-HS-160(170)-Rx.x    | 3.7                             |
| NBGT-XX-10R    | JRGT-HS-200(210)-Rx.x    | 3.8                             |
| NBGT-XX-12.5R  | JRGT-HS-250(260)-Rx.x    | 5.2                             |
| NBGT-XX-15R    | JRGT-HS-300-Rx.x         | 5.7                             |

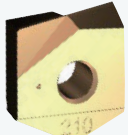
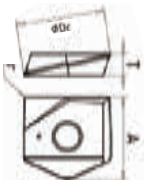
N-IB SERIES (BALL TYPE)  
N-IB 系列 (球头刀片)

| SHAPE<br>形状   | ITEM CODE<br>型号    | SPECIFICATION / 规格 |           |           |     | Configuration<br>主要尺寸   |
|---|--------------------|--------------------|-----------|-----------|-----|---|
|   |                    | R                  | ØDc       | A         | T   |   |
|  | NBGT-NHS-5R/5.5R   | 5.0/5.5            | 10.0/11.0 | 12.2/12.0 | 2.7 |  |
|   | NBGT-NHS-6R/6.5R   | 6.0/6.5            | 12.0/13.0 | 14.6      | 3.2 |   |
|   | NBGT-NHS-8R/8.5R   | 8.0/8.5            | 16.0/17   | 16.6/17.1 | 4.2 |   |
|   | NBGT-NHS-10R/10.5R | 10.0/10.5          | 20.0/21.0 | 20.3/20.8 | 5.2 |   |
|   | NBGT-NHS-12.5R     | 12.5               | 25.0      | 24.1      | 6.2 |   |
|   | NBGT-NHS-13R       | 13.0               | 26.0      | 24.6      | 6.2 |   |
|   | NBGT-NHS-15R       | 15.0               | 30.0      | 29.2      | 7.2 |   |
|   | NBGT-NHS-16R       | 16.0               | 32.0      | 30.2      | 7.2 |   |

N-IB SERIES (BALL TYPE)  
N-IB 系列 (球头刀片)

| SHAPE<br>形状   | ITEM CODE<br>型号 | SPECIFICATION / 规格 |      |      |     | Configuration<br>主要尺寸   |
|---|-----------------|--------------------|------|------|-----|---|
|   |                 | R                  | ØDc  | A    | T   |   |
|  | HBGT-HS-5R      | 5.0                | 10.0 | 8.5  | 2.3 |  |
|   | HBGT-HS-6R      | 6.0                | 12.0 | 10.0 | 3.0 |   |
|   | HBGT-HS-8R      | 8.0                | 16.0 | 12.0 | 4.0 |   |
|   | HBGT-HS-10R     | 10.0               | 20.0 | 15.0 | 5.0 |   |
|   | HBGT-HS-12.5R   | 12.5               | 25.0 | 18.5 | 6.0 |   |
|   | HBGT-HS-15R     | 15.0               | 30.0 | 22.5 | 7.0 |   |

N-IR SERIES (CORNER RADIUS TYPE)  
N-IR 系列 (圆鼻刀片)

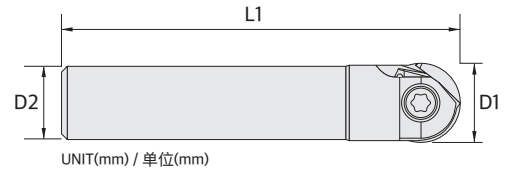
| SHAPE<br>形状   | ITEM CODE<br>型号  | SPECIFICATION / 规格 |      |      |     | Configuration<br>主要尺寸   |
|---|------------------|--------------------|------|------|-----|---|
|   |                  | R                  | ØDc  | A    | T   |   |
|  | JRGT-HS-100-R0.5 | 0.5                | 10.0 | 12.0 | 2.7 |  |
|   | JRGT-HS-100-R1.0 | 1.0                | 10.0 | 12.0 | 2.7 |   |
|   | JRGT-HS-110-R0.5 | 0.5                | 11   | 12.1 | 2.7 |   |
|   | JRGT-HS-110-R1.0 | 1.0                | 11   | 12.1 | 2.7 |   |
|   | JRGT-HS-120-R0.5 | 0.5                | 12   | 14.6 | 3.2 |   |
|   | JRGT-HS-120-R1.0 | 1.0                | 12   | 14.6 | 3.2 |   |
|   | JRGT-HS-130-R0.5 | 0.5                | 13   | 14.6 | 3.2 |   |
|   | JRGT-HS-130-R1.0 | 1.0                | 13   | 14.6 | 3.2 |   |
|   | JRGT-HS-160-R0.5 | 0.5                | 16   | 16.6 | 4.2 |   |
|   | JRGT-HS-160-R1.0 | 1.0                | 16   | 16.6 | 4.2 |   |
|   | JRGT-HS-170-R0.5 | 0.5                | 17   | 16.4 | 4.2 |   |
|   | JRGT-HS-170-R1.0 | 1.0                | 17   | 16.4 | 4.2 |   |
|   | JRGT-HS-200-R0.5 | 0.5                | 20   | 19.8 | 5.2 |   |
|   | JRGT-HS-200-R1.0 | 1.0                | 20   | 19.8 | 5.2 |   |
|   | JRGT-HS-210-R0.5 | 0.5                | 21   | 19.8 | 5.2 |   |
|   | JRGT-HS-210-R1.0 | 1.0                | 21   | 19.8 | 5.2 |   |
|   | JRGT-HS-260-R0.5 | 0.5                | 26   | 22.6 | 6.2 |   |
|   | JRGT-HS-260-R1.0 | 1.0                | 26   | 22.6 | 6.2 |   |
|   | JRGT-HS-300-R0.5 | 0.5                | 30   | 27.2 | 7.2 |   |
|   | JRGT-HS-300-R1.0 | 1.0                | 30   | 27.2 | 7.2 |   |

# “N-IB/IR” HOLDER

## “N-IB/IR” 刀杆

| Steel type and cemented carbide type / 钢种类和钨钢种类的刀杆

| Both ball and corner R inserts are available / 球刀片和圆弧刀片都能受用



| ITEM CODE           |            | OD | SD | OAL | SCREW    | WRENCH |
|---------------------|------------|----|----|-----|----------|--------|
| 型号                  |            | 直径 | 柄径 | 全长  | 螺钉       | 扳手     |
| NMC<br>(CARBIDE/钨钢) | 100 10 145 | 10 | 10 | 2.5 | TPM35082 | T10-T  |
|                     | 100 10 200 | 10 | 10 | 2.5 |          |        |
|                     | 120 12 155 | 12 | 12 | 2.5 | TPM50098 | T20-T  |
|                     | 120 12 200 | 12 | 12 | 3   |          |        |
|                     | 160 16 200 | 16 | 16 | 3   | TPM50136 |        |
|                     | 160 16 250 | 16 | 16 | 3   |          |        |
|                     | 200 20 220 | 20 | 20 | 3   | TPM60168 | T25-T  |
|                     | 200 20 250 | 20 | 20 | 3   |          |        |
|                     | 200 20 300 | 20 | 20 | 3   | TPM60219 | T30-T  |
|                     | 250 25 250 | 25 | 25 | 3   |          |        |
|                     | 250 25 300 | 25 | 25 | 3   | TPM80251 |        |
|                     | 300 30 300 | 30 | 30 | 3   |          |        |
| 300 30 350          | 30         | 30 | 3  |     |          |        |
| NMS<br>(STEEL/钢)    | 160 16 220 | 16 | 16 | 3   | TPM50136 | T20-T  |
|                     | 160 16 250 | 16 | 16 | 4   |          |        |
|                     | 200 20 220 | 20 | 20 | 4   | TPM60168 | T25-T  |
|                     | 200 20 250 | 20 | 20 | 4   |          |        |
|                     | 250 25 220 | 25 | 25 | 4   | TPM60219 | T30-T  |
|                     | 250 25 250 | 25 | 25 | 4   |          |        |
|                     | 250 25 300 | 25 | 25 | 4   | TPM80251 |        |
|                     | 300 32 220 | 30 | 30 | 4   |          |        |
|                     | 300 32 250 | 30 | 30 | 4   | TPM80251 |        |
|                     | 300 32 300 | 30 | 30 | 5   |          |        |
|                     | 300 32 350 | 30 | 30 | 5   |          |        |
|                     | 300 32 400 | 30 | 30 | 6   |          |        |

# RECOMMENDED CUTTING CONDITION

## 推荐加工参数

"INDEXABLE END MILL" series | **NANOLOY**

END MILL SERIES

INDEXABLE END MILL

RESULTS OF USER TEST

### | N-IB SERIES (BALL TYPE) / N-IB 系列 (球头刀片)

[HARDED STEEL (HRC 45~63) / 高硬度钢 (HRC 45~63)]

| H            | Hardness<br>硬度 | Cutting condition<br>TEST<br>参数条件 | 5R                     |                  | 6R                     |                  | 8R                     |                  | 10R                    |                  | 12.5R                  |                  | 15R                    |                  |
|--------------|----------------|-----------------------------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|
|              |                |                                   | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 |
| HRC<br>45~55 | vc (m/min)     |                                   | 100~210                | 260              | 100~200                | 290              | 100~150                | 350              | 100~150                | 400              | 100~150                | 450              | 100~150                | 500              |
|              | fz (mm/t)      |                                   | 0.10~0.20              | 0.2              | 0.10~0.20              | 0.2              | 0.12~0.24              | 0.3              | 0.12~0.24              | 0.4              | 0.12~0.24              | 0.5              | 0.12~0.24              | 0.6              |
|              | ap (mm)        |                                   | 0.15~0.25              | 0.1              | 0.20~0.30              | 0.1              | 0.60~0.80              | 0.1              | 0.70~1.00              | 0.1              | 0.90~1.25              | 0.1              | 1.10~1.60              | 0.1              |
|              | ae (mm)        |                                   | 0.80~1.00              | 0.25             | 0.90~1.20              | 0.3              | 1.10~1.60              | 0.3              | 1.50~2.00              | 0.4              | 1.80~2.50              | 0.5              | 2.40~3.20              | 0.6              |
| HRC<br>55~63 | vc (m/min)     |                                   | 80~170                 | 200              | 80~160                 | 230              | 80~200                 | 280              | 80~120                 | 320              | 80~120                 | 360              | 80~120                 | 400              |
|              | fz (mm/t)      |                                   | 0.10~0.20              | 0.2              | 0.10~0.20              | 0.2              | 0.12~0.24              | 0.3              | 0.12~0.24              | 0.4              | 0.12~0.24              | 0.5              | 0.12~0.24              | 0.6              |
|              | ap (mm)        |                                   | 0.15~0.25              | 0.1              | 0.20~0.30              | 0.1              | 0.60~0.80              | 0.1              | 0.70~1.00              | 0.1              | 0.90~1.25              | 0.1              | 1.10~1.60              | 0.1              |
|              | ae (mm)        |                                   | 0.80~1.00              | 0.25             | 0.90~1.20              | 0.3              | 1.10~1.60              | 0.3              | 1.50~2.00              | 0.4              | 1.80~2.50              | 0.5              | 2.40~3.20              | 0.6              |

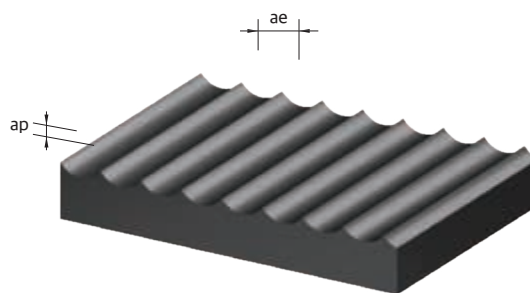
### ※Caution / 备注

- Using suitable coolant for the cutting materials and machining types  
按照被加工材料和加工条件, 请使用适当的冷却液
- Conditions shown in above table are general guidance.  
Adjust the parameters by the user's processing conditions.  
表上推荐的加工条件是参考用, 请按照贵司的条件来调整参数
- Tools are possible to damaged during machining  
Please follow the safety caution (safety glasses, cover, shoes, etc)  
加工时工具可能会受伤, 为了安全请戴保护装备 (安全眼镜, 鞋子等等)

| Overhang | vc<br>(m/min) | fz<br>(mm/t) |
|----------|---------------|--------------|
| 0~3D     | 100%          | 100%         |
| 3D~5D    | 70%           | 70%          |
| 5D~8D    | 60%           | 60%          |
| 8D~10D   | 50%           | 50%          |

※ If overhang length is 3 times over than diameter,  
Please adjust the speed and feed condition lower  
to use shown in right table

※ 如果悬伸比外径大于3倍的话, 请减速和减进给率, 如图所示



# RECOMMENDED CUTTING CONDITION

## 推荐加工参数

### | N-IR SERIES (CORNER RADIUS TYPE) / N-IR 系列 (圆鼻刀片)

[HARDED STEEL (HRC 45~63) / 高硬度钢 (HRC 45~63)]

| H                | Hardness<br>硬度 | Cutting condition<br>TEST<br>参数条件 | Φ10                    |                  | Φ11                    |                  | Φ12                    |                  | Φ13                    |                  | Φ16                    |                  | Φ17                    |                  |
|------------------|----------------|-----------------------------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|
|                  |                |                                   | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 |
|                  |                |                                   | <b>HRC 45~55</b>       | vc (m/min)       | 100~280                | 280              | 110~310                | 310              | 100~280                | 280              | 110~300                | 300              | 100~280                | 280              |
|                  | fz (mm/t)      | 0.05~0.10                         | 0.05                   | 0.05~0.10        | 0.05                   | 0.05~0.10        | 0.05                   | 0.05~0.10        | 0.05                   | 0.06~0.12        | 0.06                   | 0.06~0.12        | 0.06                   |                  |
|                  | ap (mm)        | 0.25                              | 0.1                    | 0.25             | 0.1                    | 0.3              | 0.1                    | 0.3              | 0.1                    | 0.8              | 0.2                    | 0.8              | 0.2                    |                  |
|                  | ae (mm)        | 0.25~1.00                         | 0.2                    | 0.25~1.00        | 0.2                    | 0.30~1.20        | 0.2                    | 0.30~1.20        | 0.2                    | 0.80~1.60        | 0.2                    | 0.80~1.60        | 0.2                    |                  |
| <b>HRC 55~63</b> | vc (m/min)     | 80~220                            | 220                    | 90~240           | 240                    | 80~220           | 220                    | 90~240           | 240                    | 80~220           | 220                    | 80~230           | 230                    |                  |
|                  | fz (mm/t)      | 0.05~0.10                         | 0.05                   | 0.05~0.10        | 0.05                   | 0.05~0.10        | 0.05                   | 0.05~0.10        | 0.05                   | 0.06~0.12        | 0.06                   | 0.06~0.13        | 0.06                   |                  |
|                  | ap (mm)        | 0.25                              | 0.1                    | 0.25             | 0.1                    | 0.3              | 0.1                    | 0.3              | 0.1                    | 0.8              | 0.2                    | 0.8              | 0.2                    |                  |
|                  | ae (mm)        | 0.25~1.00                         | 0.2                    | 0.25~1.00        | 0.2                    | 0.30~1.20        | 0.2                    | 0.30~1.20        | 0.2                    | 0.80~1.60        | 0.2                    | 0.80~1.60        | 0.2                    |                  |

| H                | Hardness<br>硬度 | Cutting condition<br>TEST<br>参数条件 | Φ20                    |                  | Φ21                    |                  | Φ25                    |                  | Φ26                    |                  | Φ30                    |                  |
|------------------|----------------|-----------------------------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|------------------------|------------------|
|                  |                |                                   | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 | Semi Finishing<br>半精加工 | Finishing<br>精加工 |
|                  |                |                                   | <b>HRC 45~55</b>       | vc (m/min)       | 100~280                | 280              | 100~290                | 290              | 100~280                | 280              | 100~290                | 290              |
|                  | fz (mm/t)      | 0.06~0.12                         | 0.06                   | 0.06~0.13        | 0.06                   | 0.06~0.12        | 0.06                   | 0.06~0.12        | 0.06                   | 0.06~0.12        | 0.06                   |                  |
|                  | ap (mm)        | 1.0                               | 0.2                    | 1.0              | 0.2                    | 1.25             | 0.2                    | 1.25             | 0.2                    | 1.6              | 0.2                    |                  |
|                  | ae (mm)        | 1.00~2.00                         | 0.2                    | 1.00~2.00        | 0.2                    | 1.25~2.50        | 0.2                    | 1.25~2.50        | 0.2                    | 1.60~3.20        | 0.2                    |                  |
| <b>HRC 55~63</b> | vc (m/min)     | 80~220                            | 220                    | 80~230           | 230                    | 80~220           | 220                    | 80~230           | 230                    | 80~220           | 220                    |                  |
|                  | fz (mm/t)      | 0.06~0.12                         | 0.06                   | 0.06~0.12        | 0.06                   | 0.06~0.12        | 0.06                   | 0.06~0.12        | 0.06                   | 0.06~0.12        | 0.06                   |                  |
|                  | ap (mm)        | 1.0                               | 0.2                    | 1.0              | 0.2                    | 1.25             | 0.2                    | 1.25             | 0.2                    | 1.6              | 0.2                    |                  |
|                  | ae (mm)        | 1.00~2.00                         | 0.2                    | 1.00~2.00        | 0.2                    | 1.25~2.50        | 0.2                    | 1.25~2.50        | 0.2                    | 1.60~3.20        | 0.2                    |                  |

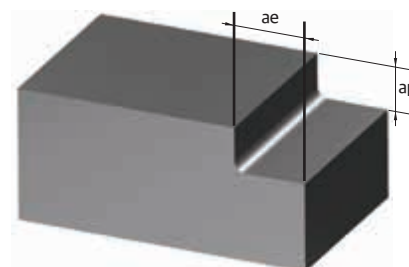
### ※Caution / 备注

- Using suitable coolant for the cutting materials and machining types  
按照被加工材料和加工条件, 请使用适当的冷却液
- Conditions shown in above table are general guidance.  
Adjust the parameters by the user's processing conditions.  
表上推荐的加工条件是参考用, 请按照贵司的条件来调整参数
- Tools are possible to damaged during machining  
Please follow the safety caution (safety glasses, cover, shoes, etc)  
加工时工具可能会受伤, 为了安全请戴保护装备 (安全眼镜, 鞋子等等)

※ If overhang length is 3 times over than diameter,  
Please adjust the speed and feed condition lower  
to use shown in right table

※ 如果悬伸比外径大于3倍的话, 请减速和减进给率, 如图所示

| Overhang | vc      | fz     |
|----------|---------|--------|
|          | (m/min) | (mm/t) |
| 0~3D     | 100%    | 100%   |
| 3D~5D    | 70%     | 70%    |
| 5D~8D    | 60%     | 60%    |
| 8D~10D   | 50%     | 50%    |





终端客户实地测试结果

## RESULTS OF USER TEST

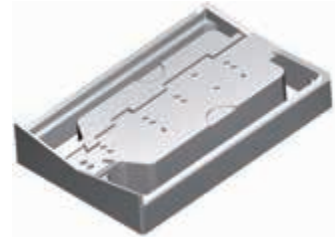
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# RESULTS OF USER TEST

## 终端客户实地测试结果

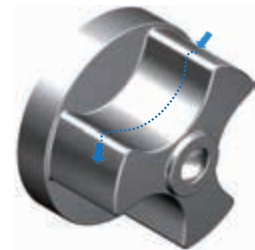
N-SM TEST REPORT 1 / N-SM 测试报告 1    FOR HARDENED STEEL / 高硬度钢    ISO H GRADE / ISO H系列



|                  |   |
|------------------|---|
| ITEM CODE / 产品型号 | NRHR2-080-002-200-S08-L65                               |
| WOEKPICE / 被加工材料 | SKD11(HRC60)  |
| CONDITION / 参数   | $V_c$ 100m/min $f_z$ 0.037mm/tooth $ap$ 8mm $ae$ 0.24mm |
| APPLICATION / 应用 | SHOULDERING   |

| Division / 区分               | NANOLOY   | COMPETITOR / 竞争对手 |         |               |         |  |
|-----------------------------|---|-------------------|---------|---------------|---------|--|
| WEAR IMAGE<br>磨损对比          |   |                   |         |               |         |  |
| TOOL LIFE (PATH)<br>寿命 (路径) | <table border="1"> <tr> <td>Nanoloy</td> <td>360 min</td> </tr> <tr> <td>Competitor 对手</td> <td>240 min</td> </tr> </table> | Nanoloy           | 360 min | Competitor 对手 | 240 min |  |
| Nanoloy                     | 360 min   |                   |         |               |         |  |
| Competitor 对手               | 240 min   |                   |         |               |         |  |
| RESULT / 结果                 | NANOLOY比竞争对手产品寿命高于50%   |                   |         |               |         |  |

N-SH TEST REPORT 2 / N-SM 测试报告 2    FOR HARDENED STEEL / 高硬度钢    ISO H GRADE / ISO H系列

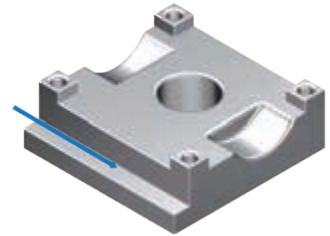


|                  |   |
|------------------|---|
| ITEM CODE / 产品型号 | NBHS2-040-020-060-S06-L70                                 |
| WOEKPICE / 被加工材料 | SKD11(HRC60)  |
| CONDITION / 参数   | $V_c$ 120m/min $f_z$ 0.075mm/tooth $ap$ 0.1mm $ae$ 0.08mm |
| APPLICATION / 应用 | SHOULDERING   |

| Division / 区分               | NANOLOY   | COMPETITOR / 竞争对手 |        |               |        |  |
|-----------------------------|---|-------------------|--------|---------------|--------|--|
| WEAR IMAGE<br>磨损对比          |   |                   |        |               |        |  |
| TOOL LIFE (PATH)<br>寿命 (路径) | <table border="1"> <tr> <td>Nanoloy</td> <td>76 min</td> </tr> <tr> <td>Competitor 对手</td> <td>51 min</td> </tr> </table> | Nanoloy           | 76 min | Competitor 对手 | 51 min |  |
| Nanoloy                     | 76 min  |                   |        |               |        |  |
| Competitor 对手               | 51 min  |                   |        |               |        |  |
| RESULT / 结果                 | NANOLOY比竞争对手产品寿命高于50%   |                   |        |               |        |  |

N-SM TEST REPORT 1 / N-SM 测试报告 1    **FOR STAINLESS STEE / 不锈钢**    ISO M GRADE / ISO M系列

|                   |  |
|-------------------|--|
| ITEM CODE / 产品型号  | NFMS-120-300-S12-L80   |
| WOEKPIECE / 被加工材料 | INCONEL 718  |
| CONDITION / 参数    | $V_c 110\text{m/min}$ $f_z 0.085\text{mm/tooth}$ $ap 12\text{mm}$ $ae 0.48\text{mm}$ |
| APPLICATION / 应用  | SIDE CUTTING   |



| Division / 区分               | NANOLOY   | COMPETITOR / 竞争对手 |      |               |      |  |
|-----------------------------|---|-------------------|------|---------------|------|--|
| WEAR IMAGE<br>磨损对比          |   |                   |      |               |      |  |
| TOOL LIFE (PATH)<br>寿命 (路径) | <table border="1"> <tr> <td>Nanoloy</td> <td>180%</td> </tr> <tr> <td>Competitor 对手</td> <td>100%</td> </tr> </table> | Nanoloy           | 180% | Competitor 对手 | 100% |  |
| Nanoloy                     | 180%  |                   |      |               |      |  |
| Competitor 对手               | 100%  |                   |      |               |      |  |
| RESULT / 结果                 | NANOLOY品牌稳定的加工和优秀的耐磨性   |                   |      |               |      |  |

N-SH TEST REPORT 2 / N-SM 测试报告 2    **FOR STAINLESS STEEL / 不锈钢**    ISO M GRADE / ISO M系列

|                   |   |
|-------------------|---|
| ITEM CODE / 产品型号  | NRMR4R-120-003-350-S12-L80  |
| WOEKPIECE / 被加工材料 | SUS36   |
| CONDITION / 参数    | $V_c 60\text{m/min}$ $f_z 0.15\text{mm/tooth}$ $ap 12\text{mm}$ $ae 6\text{mm}$ |
| APPLICATION / 应用  | SLOTING   |



| Division / 区分               | NANOLOY   | COMPETITOR / 竞争对手 |      |               |      |  |
|-----------------------------|---|-------------------|------|---------------|------|--|
| WEAR IMAGE<br>磨损对比          |   |                   |      |               |      |  |
| TOOL LIFE (PATH)<br>寿命 (路径) | <table border="1"> <tr> <td>Nanoloy</td> <td>220%</td> </tr> <tr> <td>Competitor 对手</td> <td>100%</td> </tr> </table> | Nanoloy           | 220% | Competitor 对手 | 100% |  |
| Nanoloy                     | 220%  |                   |      |               |      |  |
| Competitor 对手               | 100%  |                   |      |               |      |  |
| RESULT / 结果                 | NANOLOY品牌优秀的耐磨性及排屑  |                   |      |               |      |  |

# RESULTS OF USER TEST

## 终端客户实地测试结果

|   |   |                           |                                     |
|---|---|---------------------------|-------------------------------------|
| User test (automobile) / NANOLOY测试成功案例 (汽车行业) |   | Indexable endmill / 球刀片   | H grade (high hardness) / H系列(高硬度钢) |
| Workpiece name / 被加工材料名称                      | Automobile mold parts / 汽车模具加工  | Workpiece material/ 被加工材料 | SKD11 (HRC55~62)                    |
| Machining type / TEST摘要                       | Face milling / Finishing / Dry 面加工/ 精加工 / Dry Cut                               |                           |                                     |
| Cutting condition / TEST参数条件                  | vc 330m/min fr 0.42mm/tooth ap 0.15mm 速度 330m/min 单刃进给 0.42mm/tooth 切削深度 0.15mm |                           |                                     |
| Item / 产品型号                                   | NBGT-HS-15R TS114NBGT-HS-15R TS1145   |                           |                                     |



| Division / 区分   | NANOLOY   | COMPETITOR / 竞争对手  |
|---|---|--|
| Tool life / Wear image (8 hours)<br>寿命 / 磨损对比 (8小时加工) |   |  |
| Status comparison 现象对比                                | After 9 hours machining (normal wear) 最终加工9个小时加工完成 (正常磨损)   | After 8 hours machining (side edge chipping) 最终加工8个小时加工(侧面崩刃发生_刀片交换) |
| Result 判断标准/结果  | Wear and damage comparison → 1.5 times better wear resistance performance than competitor<br>同等时间加工后磨损量对比 → NANOLOY产品比竞争对手耐磨性优秀 (比竞争对手高10%) |  |

|   |   |                           |                                     |
|---|---|---------------------------|-------------------------------------|
| User test (automobile) / NANOLOY测试成功案例 (汽车行业) |   | Indexable endmill / 球刀片   | H grade (high hardness) / H系列(高硬度钢) |
| Workpiece name / 被加工材料名称                      | Automobile door mold / 汽车模具加工   | Workpiece material/ 被加工材料 | SKD11 (HRC55)                       |
| Machining type / TEST摘要                       | Face milling / Finishing / Dry 面加工/ 精加工 / Dry Cut                               |                           |                                     |
| Cutting condition / TEST参数条件                  | vc 500m/min fr 0.47mm/tooth ap 0.15mm 速度 500m/min 单刃进给 0.47mm/tooth 切削深度 0.15mm |                           |                                     |
| Item / 产品型号                                   | NBGT-HS-15R TS1145  |                           |                                     |



| Division / 区分   | NANOLOY   | COMPETITOR / 竞争对手                      |
|---|---|--|
| Tool life / Wear image (16 hours)<br>寿命 / 磨损对比 (16小时加工) |   |  |
| Status comparison 现象对比                                  | After 24 hours machining 最终 24个小时 加工完成  | After 16 hours machining 最终 16个小时 加工完成 |
| Result 判断标准/结果  | Wear and damage comparison → 1.5 times better wear resistance performance than competitor<br>同等时间加工后磨损量对比 → NANOLOY产品比竞争对手耐磨性优秀 (比竞争对手高50%) |  |



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**总公司 NANOTECH**

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