

Ceramic Insert



1

Apply in high-temperature alloy milling and medium-high speed rough turning.

HL Series tools



2

Apply in high-temperature alloy with high speed and stable working conditions turning.

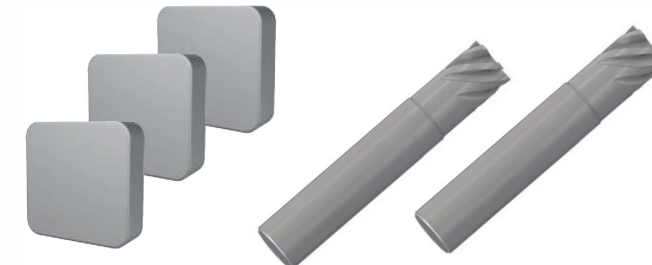
AS Series tools



3

Apply in cast iron milling and rough turning.

SN Series tools



4

Apply in finishing and semi-finishing turning of cast iron"

DA Series tools



5

Apply in finishing and semi-finishing turning of high-hardness steels.

AT Series tools



6

Apply in medium--high-speed finishing of ductile iron and semi-finishing of high-hardness steel under stable conditions.

ATQ Series tools



Apply in High-temperature alloy milling and medium-high speed rough turning.

HL series tools



Product Description

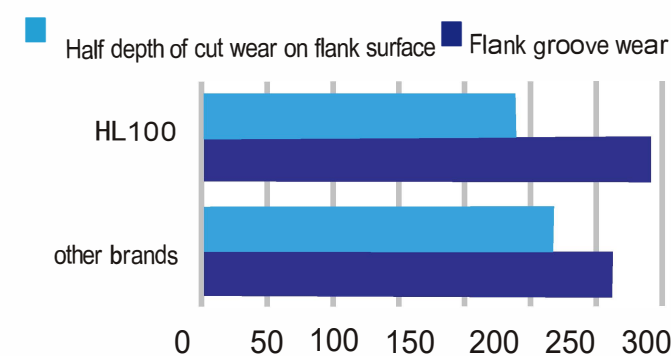
HL ceramic inserts, main component SiAlON, color:brown.

Apply in high-temperature alloy milling and medium-to-high-speed rough turning, and its efficiency is much higher than that of cemented carbide.

Application cases

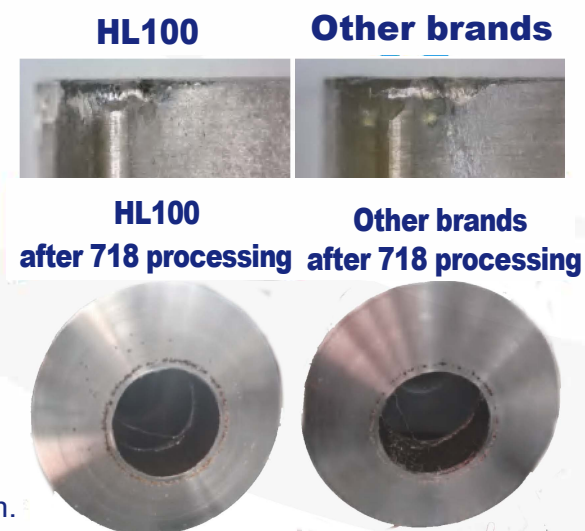
Under the same cutting conditions, the surface quality of the workpiece processed by HL100 and similar imported tools is equivalent, and the tool life is similar.

1 Tool wear condition



Processing parameters: Work piece: high temperature alloy.
Cutting status: Dry turning.
Vc: 300m/min, feed: 0.1mm/rev, Ap: 0.5mm.

2 Tool wear morphology



Application Recommendations

| Grade | Processing Materials | Processing Type | Vc (m/min) | Feed rate (mm/rev) | Ap (mm) |
|-------|----------------------|-----------------|------------|--------------------|---------|
| HL100 | Superalloy | roughing | 150~400 | 0.1~0.3 | 1.0~2.5 |
| HL200 | Inconel718 GH4169 | finishing | 200~500 | 0.05~0.15 | 0.2~1.0 |

Apply in high-temperature alloy with high speed and stable working conditions turning.

AS series tools



Product Description

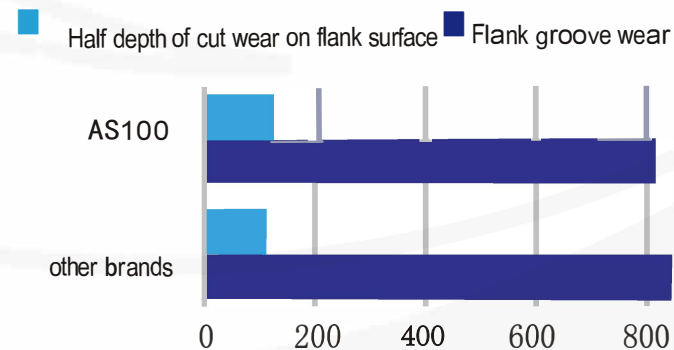
AS ceramic inserts, main component Al₂O₃, gray green.

It is suitable for high-speed and stable turning of high-temperature alloys, and its efficiency is much higher than that of cemented carbide.

Application cases

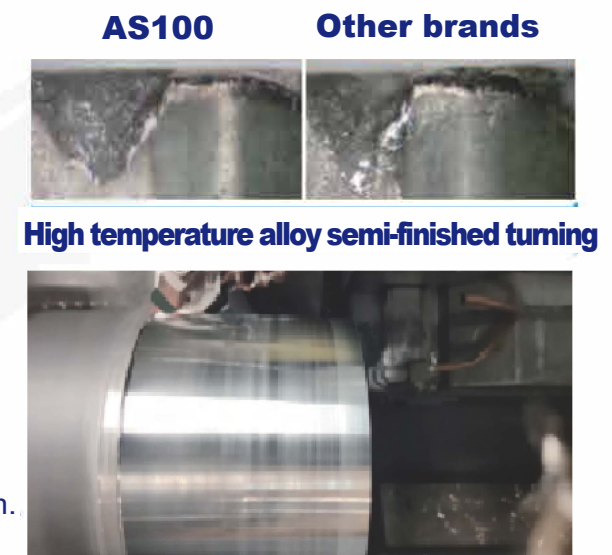
Under the same cutting conditions, the wear appearance of AS100 and similar imported tools are basically the same, and the tool life is equivalent.

1 Tool wear condition



Processing parameters: Work piece: high temperature alloy.
Cutting status: Dry turning.
Vc: 300m/min, feed: 0.1mm/rev, Ap: 0.5mm.

2 Tool wear morphology



Application Recommendations

| Grade | Processing Materials | Processing Type | Vc (m/min) | Feed rate (mm/rev) | Ap (mm) |
|-------|----------------------|-----------------|------------|--------------------|---------|
| AS100 | Superalloy | semi-finishing | 200~500 | 0.1~0.25 | 0.5~1.5 |
| AS200 | Inconel718 GH4169 | finishing | 300~700 | 0.05~0.15 | 0.1~0.8 |

Milling and rough turning of cast iron, steel and non-ferrous metals

SN series tools



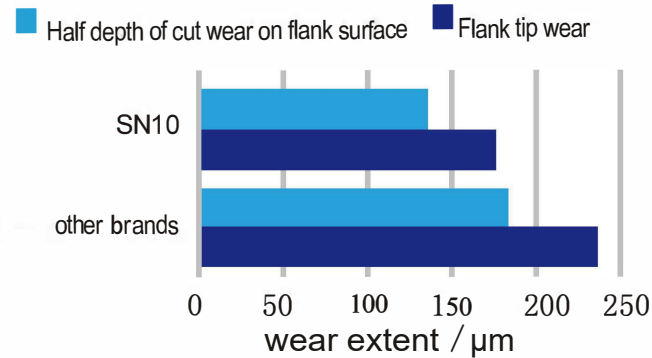
Product Description

Inserts color: white and pink. Apply in finishing and semi-finishing of cast iron parts with high efficiency.

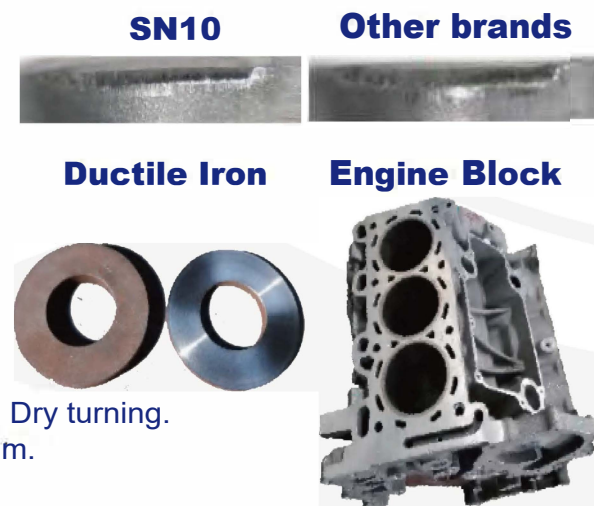
Application cases

Under the same cutting conditions, compared with similar tools, SN10's tool wear is more uniform, the wear is smaller, and the tool life is longer.

1 Tool wear condition



2 Tool wear morphology



Processing parameters: Workpiece: Gray cast iron. Cutting status: Dry turning. Vc: 500m/min, feed: 0.1mm/rev, Ap: 0.5mm.

Application Recommendations

| Grade | Processing Materials | Processing Type | Vc (m/min) | Feed rate (mm/rev) | Ap (mm) |
|-------|----------------------|-----------------|------------|--------------------|---------|
| SN10 | Grey cast iron | roughing | 150~600 | 0.2~0.4 | 1.0~3.5 |
| | | finishing | 200~1000 | 0.05~0.3 | 0.2~1.0 |
| SN20 | Special cast iron | roughing | 150~400 | 0.15~0.3 | 0.8~2.0 |
| | | finishing | 200~600 | 0.05~0.15 | 0.2~0.8 |

Apply in finishing and semi-finishing of cast iron parts.

DA series tools



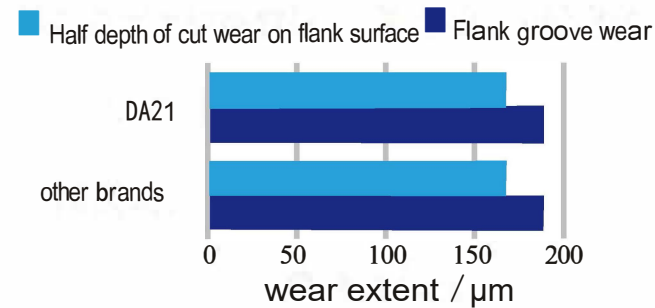
Product Description

DA ceramic inserts, main component Al₂O₃, color : white and pink. Apply in finishing and semi-finishing of cast iron parts with high efficiency.

Application cases

Apply in finishing and semi-finishing of cast iron parts with high efficiency.

1 Tool wear condition



Processing parameters: Work piece: Gray cast iron. Cutting status: Dry turning. Vc: 300m/min, feed: 0.1mm/rev, Ap: 0.5mm.

2 Tool wear morphology



Application Recommendations

| Grade | Processing Materials | Processing Type | Vc (m/min) | Feed rate (mm/rev) | Ap (mm) |
|-------|----------------------|-----------------|------------|--------------------|---------|
| DA21 | Grey cast iron | semi-finishing | 150~500 | 0.1~0.3 | 1.0~3.0 |
| | | finishing | 200~600 | 0.05~0.25 | 0.2~1.0 |
| DA31 | Ductile Iron | semi-finishing | 150~500 | 0.15~0.25 | 0.6~1.5 |
| | | finishing | 200~600 | 0.05~0.15 | 0.2~0.6 |
| DA41 | Alloy cast iron | semi-finishing | 150~400 | 0.15~0.3 | 0.6~1.3 |
| | | finishing | 200~500 | 0.05~0.15 | 0.2~0.6 |

High-speed finishing and semi-finishing of bearing steel and hardened steel.

AT series tools

Product Description

AT ceramic inserts, main component Al_2O_3 , color:black.

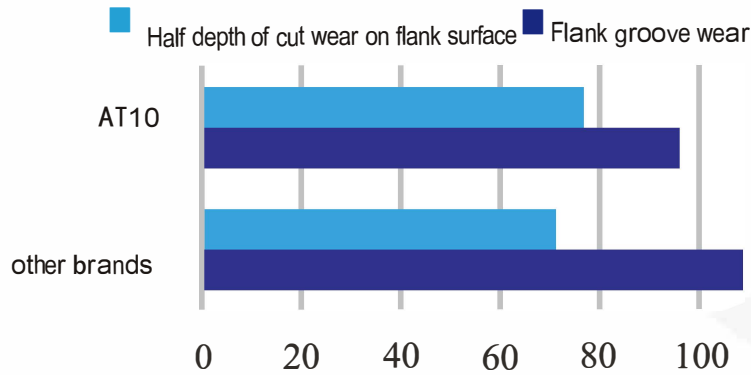
Apply in high-speed finishing and semi-finishing of bearing steel, hardened steel and other materials.

Application cases

Under the same cutting conditions, the surface quality of the workpiece processed by AT10 and similar imported tools is equivalent, and the tool life is similar.



1 Tool wear condition



2 Tool wear morphology



Bearing steel



Processing parameters: Workpiece: Bearing steel.
Cutting status: Dry turning.
Vc: 150m/min, feed: 0.1mm/rev, Ap: 0.2mm.

Application Recommendations

| Grade | Processing Materials | Processing Type | Vc (m/min) | Feed rate (mm/rev) | Ap (mm) |
|-------|----------------------|-----------------|------------|--------------------|---------|
| AT10 | Haggard steel | semi-finishing | 70~150 | 0.1~0.2 | 0.3~0.6 |
| AT20 | ≥HRC45 | finishing | 100~200 | 0.05~0.15 | 0.1~0.3 |

Medium and high speed finishing and semi-finishing of ductile iron.
Stable finishing of high hardness steel (longer life!)

ATQ series tools

Product Description

ATQ ceramic knives, mainly composed of Al_2O_3 and TiC, color : black.

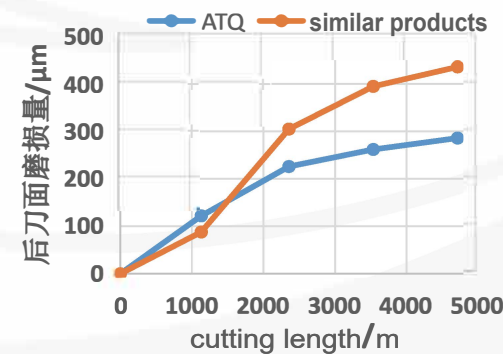
Based on the AT series, the wear resistance of the material is further improved, it can used for finishing high-hardness steel and finishing and semi-finishing ductile iron, with longer tool life!

Application cases

Stable working condition finishing of high hardness steel, significantly improved tool wear resistance and tool life.

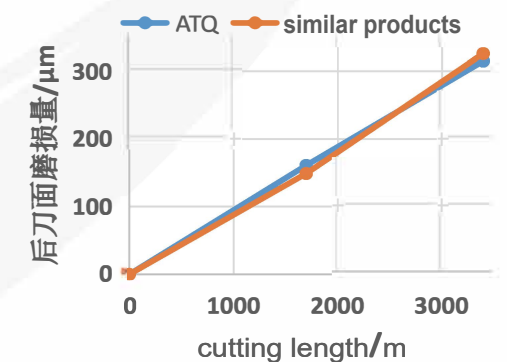


1 Precision turning bearing steel tool wear



Processing parameters: Workpiece: Bearing steel.
Cutting status: Dry turning.
Vc: 150m/min, feed: 0.1mm/rev, Ap: 0.2mm.

2 Precision turning ductile iron tool wear



Processing parameters: Workpiece: Ductile Iron.
Cutting status: Dry turning.
Vc: 150m/min, feed: 0.1mm/rev, Ap: 0.2mm.

Application Recommendations

| Grade | Processing Materials | Processing Type | Vc (m/min) | Feed rate (mm/rev) | Ap (mm) |
|-------|-------------------------|-----------------|------------|--------------------|---------|
| ATQ | Haggard steel ≥HRC45 | finishing | 120~250 | 0.05~0.12 | 0.1~0.3 |
| | | semi-finishing | 200~400 | 0.2~0.4 | 1.0~2.0 |
| | Ductile Iron | finishing | 300~600 | 0.1~0.2 | 0.2~1.0 |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| CNGA090304 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA090308 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA090312 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA120304 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA120308 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA120312 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA120404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA120408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA120412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA120416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA120704 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA120708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA120712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA120716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA160608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA160612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA160616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA160708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA160712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA160716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA160720 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA190612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA190616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA190712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA190716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGA190720 | o | o | o | o | o | o | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| ENGA130404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGA130408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGA130412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGA130704 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGA130708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGA130712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGA130716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| CNGN090304 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN090308 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN090312 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN120304 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN120308 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN120312 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN120404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN120408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN120412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN120416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN120704 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN120708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN120712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN120716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN160608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN160612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN160616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN160708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN160712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN160716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN160720 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN190612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN190616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN190712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN190716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| CNGN190720 | o | o | o | o | o | o | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| ENGN130404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGN130408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGN130412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGN130704 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGN130708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGN130712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| ENGN130716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| CPGN090304 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN090308 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN090312 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN120304 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN120308 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN120312 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN120404 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN120408 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN120412 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN120416 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN120704 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN120708 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN120712 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN120716 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN160608 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN160612 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN160616 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN160708 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN160712 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN160716 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN160720 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN190612 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN190616 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN190712 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN190716 | o | o | o | | | | o | o | o | o | o | o | o | |
| CPGN190720 | o | o | o | | | | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| EPGN130404 | o | o | o | | | | o | o | o | o | o | o | o | |
| EPGN130408 | o | o | o | | | | o | o | o | o | o | o | o | |
| EPGN130412 | o | o | o | | | | o | o | o | o | o | o | o | |
| EPGN130704 | o | o | o | | | | o | o | o | o | o | o | o | |
| EPGN130708 | o | o | o | | | | o | o | o | o | o | o | o | |
| EPGN130712 | o | o | o | | | | o | o | o | o | o | o | o | |
| EPGN130716 | o | o | o | | | | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| CCGN090304 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN090308 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN090312 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN120304 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN120308 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN120312 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN120404 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN120408 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN120412 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN120416 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN120704 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN120708 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN120712 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN120716 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN160608 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN160612 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN160616 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN160708 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN160712 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN160716 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN160720 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN190612 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN190616 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN190712 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN190716 | o | o | o | | | | o | o | o | o | o | o | o | |
| CCGN190720 | o | o | o | | | | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| ECGN130404 | o | o | o | | | | o | o | o | o | o | o | o | |
| ECGN130408 | o | o | o | | | | o | o | o | o | o | o | o | |
| ECGN130412 | o | o | o | | | | o | o | o | o | o | o | o | |
| ECGN130704 | o | o | o | | | | o | o | o | o | o | o | o | |
| ECGN130708 | o | o | o | | | | o | o | o | o | o | o | o | |
| ECGN130712 | o | o | o | | | | o | o | o | o | o | o | o | |
| ECGN130716 | o | o | o | | | | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| CBGN090304 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN090308 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN090312 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN120304 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN120308 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN120312 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN120404 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN120408 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN120412 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN120416 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN120704 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN120708 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN120712 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN120716 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN160608 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN160612 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN160616 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN160708 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN160712 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN160716 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN160720 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN190612 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN190616 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN190712 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN190716 | o | o | o | | | | o | o | o | o | o | o | o | |
| CBGN190720 | o | o | o | | | | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | D A21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|-------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| EBGN130404 | o | o | o | | | | o | o | o | o | o | o | o | |
| EBGN130408 | o | o | o | | | | o | o | o | o | o | o | o | |
| EBGN130412 | o | o | o | | | | o | o | o | o | o | o | o | |
| EBGN130704 | o | o | o | | | | o | o | o | o | o | o | o | |
| EBGN130708 | o | o | o | | | | o | o | o | o | o | o | o | |
| EBGN130712 | o | o | o | | | | o | o | o | o | o | o | o | |
| EBGN130716 | o | o | o | | | | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| DNGA150404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA150408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA150412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA150416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA150604 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA150608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA150612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA150616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA150704 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA150708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA150712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA150716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA190608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA190612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGA190616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | ATI0 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| TNGA110304 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA110308 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA160304 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA160308 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA160312 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA160404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA160408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA160412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA160416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA220404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA220408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA220412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA220416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA220708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA220712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA270608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA270612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGA330924 | o | o | o | o | o | o | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZIL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| DNGN150404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN150408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN150412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN150416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN150604 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN150608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN150612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN150616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN150704 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN150708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN150712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN150716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN190608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN190612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DNGN190616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZIL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| TNGN110304 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN110308 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN160304 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN160308 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN160312 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN160404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN160408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN160412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN160416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN220404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN220408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN220412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN220416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN220708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN220712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN270608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN270612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TNGN330924 | o | o | o | o | o | o | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZIL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| DPGN150404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN150408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN150412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN150416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN150604 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN150608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN150612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN150616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN150704 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN150708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN150712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN150716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN190608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN190612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| DPGN190616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZIL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| TPGN110304 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN110308 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN160304 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN160308 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN160312 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN160404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN160408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN160412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN160416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN220404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN220408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN220412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN220416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN220708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN220712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN270608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN270612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| TPGN330924 | o | o | o | o | o | o | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZIL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| DCGN150404 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN150408 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN150412 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN150416 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN150604 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN150608 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN150612 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN150616 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN150704 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN150708 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN150712 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN150716 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN190608 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN190612 | o | o | o | | | | o | o | o | o | o | o | o | |
| DCGN190616 | o | o | o | | | | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZIL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| TCGN110304 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN110308 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN160304 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN160308 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN160312 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN160404 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN160408 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN160412 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN160416 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN220404 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN220408 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN220412 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN220416 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN220708 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN220712 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN270608 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN270612 | o | o | o | | | | o | o | o | o | o | o | o | |
| TCGN330924 | o | o | o | | | | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | D A21 | DA41 | SN10 | ZIL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|-------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| DBGN150404 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN150408 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN150412 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN150416 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN150604 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN150608 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN150612 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN150616 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN150704 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN150708 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN150712 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN150716 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN190608 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN190612 | o | o | o | | | | o | o | o | o | o | o | o | |
| DBGN190616 | o | o | o | | | | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZIL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| TBGN110304 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN110308 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN160304 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN160308 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN160312 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN160404 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN160408 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN160412 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN160416 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN220404 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN220408 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN220412 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN220416 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN220708 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN220712 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN270608 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN270612 | o | o | o | | | | o | o | o | o | o | o | o | |
| TBGN330924 | o | o | o | | | | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| SPGN090304 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN090308 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN090312 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN090404 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN090408 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN090412 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120404 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120408 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120412 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120416 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120420 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120604 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120608 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120612 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120616 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120704 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120708 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120712 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120716 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN120720 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN150404 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN150408 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN150412 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN150416 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN150708 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN150712 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN150716 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN190608 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN190612 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN190616 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN190712 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN190716 | o | o | o | | | | o | o | o | o | o | o | o | |
| SPGN190720 | o | o | o | | | | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| SCGN090304 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN090308 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN090312 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN090404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN090408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN090412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120420 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120604 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120704 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN120720 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN150404 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN150408 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN150412 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN150416 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN150708 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN150712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN150716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN190608 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN190612 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN190616 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN190712 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN190716 | o | o | o | o | o | o | o | o | o | o | o | o | o | |
| SCGN190720 | o | o | o | o | o | o | o | o | o | o | o | o | o | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| SBGN090304 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN090308 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN090312 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN090404 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN090408 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN090412 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120404 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120408 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120412 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120416 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120420 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120604 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120608 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120612 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120616 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120704 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120708 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120712 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120716 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN120720 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN150404 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN150408 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN150412 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN150416 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN150708 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN150712 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN150716 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN190608 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN190612 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN190616 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN190712 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN190716 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| SBGN190720 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| RNGN090400 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RNGN090700 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RNGN120300 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RNGN120400 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RNGN120600 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RNGN120700 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RNGN150700 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RNGN190700 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| RPGN090400 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RPGN090700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RPGN120300 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RPGN120400 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RPGN120600 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RPGN120700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RPGN150700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RPGN190700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| WNGA080404 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| WNGA080408 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| WNGA080412 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| RCGN090400 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RCGN090700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RCGN120300 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RCGN120400 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RCGN120600 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RCGN120700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RCGN150700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RCGN190700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| RBGN090400 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RBGN090700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RBGN120300 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RBGN120400 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RBGN120600 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RBGN120700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RBGN150700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| RBGN190700 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| WNGN080404 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| WNGN080408 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| WNGN080412 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| VNGA160404 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGA160408 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGA160412 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGA160604 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGA160608 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGA160612 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGA220404 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGA220408 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGA220412 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGA220424 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T01020 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| VNGN160404 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGN160408 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGN160412 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGN160604 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGN160608 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGN160612 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGN220404 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGN220408 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGN220412 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VNGN220424 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T0102 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| VPGN160404 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VPGN160408 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VPGN160412 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VPGN160604 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VPGN160608 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VPGN160612 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VPGN220404 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VPGN220408 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VPGN220412 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VPGN220424 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T0102 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| VBGN160404 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VBGN160408 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VBGN160412 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VBGN160604 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VBGN160608 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VBGN160612 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VBGN220404 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VBGN220408 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VBGN220412 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VBGN220424 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

| Item | chamfer size | | | | | | DA21 | DA41 | SN10 | ZTL100 | ATQ | AT10 | AS100 | HL100 |
|------------|--------------|--------|--------|--------|--------|--------|------|------|------|--------|-----|------|-------|-------|
| | T0102 | T01520 | T02020 | S01020 | S01520 | S02020 | | | | | | | | |
| VCGN160404 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VCGN160408 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VCGN160412 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VCGN160604 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VCGN160608 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VCGN160612 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VCGN220404 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VCGN220408 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VCGN220412 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| VCGN220424 | ○ | ○ | ○ | | | | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |

Ceramic milling for cast iron



43° face milling



45° face milling



75° face milling



88° face milling



90° face milling

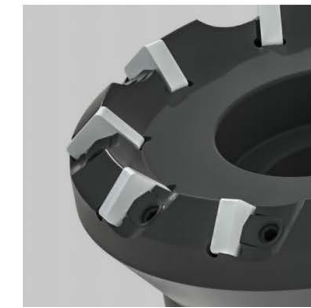


face milling RNGN1207N

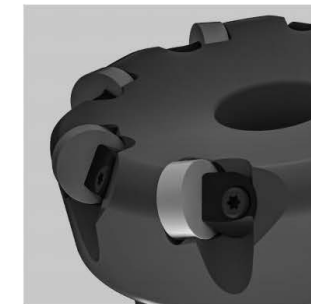
Ceramic milling for high-temperature alloys and Inconel



RNGN1207N
SiAlON



45° face milling
SiAlON



RNGN1204N
SiAlON