

NAKANISHI POLISHING TOOLS



POLISHING TOOLS



Headquarters・Factory

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NAKANISHI INC. 2018

Specifications and design are subject to change without notice.

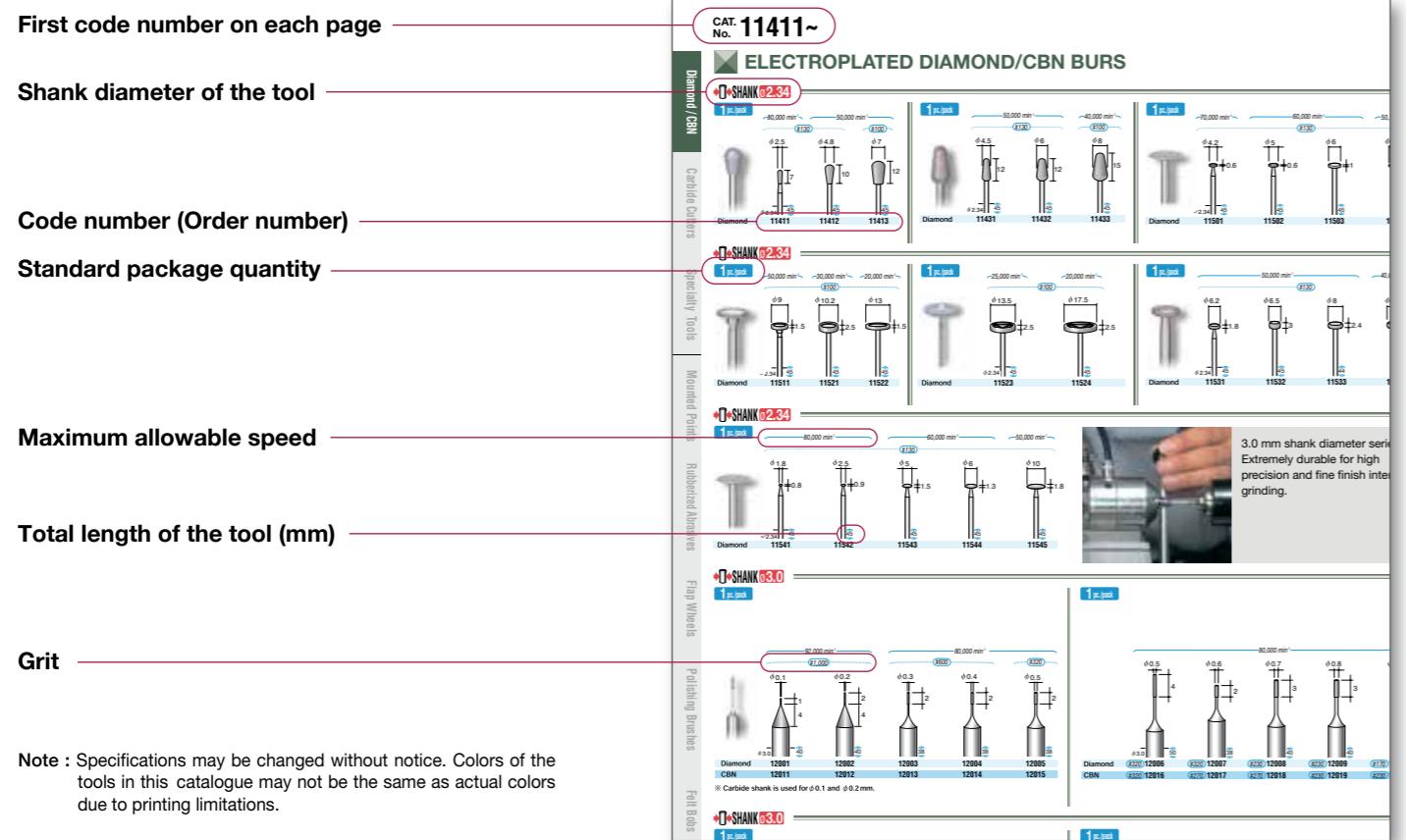


PR-K318E Ver.6 '18.11.03.⑩

Nature of Tochigi, Japan

Symbols used in NAKANISHI Tools Catalogue

SHANK Ø3.0	Shank Diameter Shows shank diameter of the tools. Nakanishi produces tools with several shank diameters. *Nakanishi micro grinders utilize a collet system, which insures maximum precision. Therefore, please use the collet that best corresponds to the tool shank diameter.
10 pcs./pack	Standard Package One package is the minimum shipping unit. This number shows the number of pieces in the standard package (bag, box and etc.). Please order the number of packages needed for the desired quantity.
30,000 min⁻¹	Maximum allowable speed Do not exceed the maximum allowable tool speed. For your safety, use the tools below the indicated allowable speed. Start at low speed and increase gradually to insure safety. The preceding is particularly important for the use of new tools and machines. *Maximum allowable speed assumes an overhang of less than 13mm. Decrease speed if the overhang is more than 13mm. Refer to "Precautions for using Nakanishi Tools" on the next page. *Check the tools and machinery for mechanical defects prior to each use.
#100	Grit This shows grain size of various grinding tools. Rough Cutting 46, 54, 60, 70, 80, 90 Medium Cutting 100, 120, 150, 180 Pre Finishing 220, 240, 280, 320, 400 Finishing 500, 600, 700, 800, 1000 Fine Finishing and Mirror Polishing 1200, 1500, 1800, 2000, 3000, 4000, 6000, 8000 ...



Precautions for using Nakanishi Tools

For safe use of the tools

- Please read operation manuals before using any tools.
- Please keep all operation manuals on hand for reference whenever necessary.



Caution

Incorrect use of the tools, or ignoring 'CAUTIONS for safety' described in the operating manuals, could cause fatal or serious bodily injury.

CAUTIONS



Always use safety glasses, mask, face guard for your safety.



Do not touch the tools when in operation.
Make sure the work area is neat and there is sufficient light.



Do not use the tool where flammable liquids or gases exist.



Do not leave operating tools.
Confirm that the tool has stopped completely after switching off.



Select proper tools and products for your application.
Select tools carefully considering the performance of the tools, work procedure and type/shape of the material.



Fix the work material firmly in a vise and/or other clamping fixture.



Do not wear loose clothing and/or accessories that may be caught in machinery.
Long hair should be secured prior to machine operation.



Check all tools carefully before use.
Clean the inside of the chuck and tool shank, chips or fine metals inside the chuck could cause tool slippage and result in damage to machinery or bodily injury.



The tools should be used by taking care of the overhang and below maximum allowable speed.
The catalogue shows the maximum allowable speed at 13 mm overhang (distance between the face of the chuck and the top of the tool shank).



Fasten the chuck firmly.

Make sure the tool is fully installed in the chuck to avoid tool slippage.



Do not use damaged or broken electric cords and air hoses.



Start at low speed and increase gradually to insure safe work.
This is particularly important for the use of new tools, large cutting tools and elastic tools such as rubber grindstone, sander and brush tools.



Keep the tools and products in a cool, dry place.



Check the tools carefully before use.
Confirm that the tools are free of chips, cracks, splits, scratches, irregular bondings, and out of round shanks, etc.



Stop grinding or polishing immediately whenever unusual sounds, vibrations, or wear are found.
Restart the work only after the problem is found and corrected.



Only use attachments, parts, consumable articles and accessories produced by NAKANISHI.



Do not apply high pressure to or pry with the tools.
This can break and/or bend the tools. Use the tools within their design limitation. Excessive pressure will decrease the efficiency of your work and cause excessive wear of the tools.

Decrease the speed as shown in the table below, if you are using a longer overhang than 13 mm.

Overhang	Maximum allowable speed (min⁻¹)
Less than 13 mm	Shown in the catalogue (A)
Less than 20 mm	(A) x 0.5
Less than 25 mm	(A) x 0.3
Less than 50 mm	(A) x 0.1

ELECTROPLATED DIAMOND/CBN BURS

Types of Abrasive Grain

Diamond

Main Applications Suitable for grinding non-ferrous metals and non-metals ; rubber, plastic, FRP, FRM, stone material, carbide alloy, ceramics, pottery, glass, ferrite, zirconia, quartz, silicon, rare earth magnet, crystal and jewelry.

Main Work Materials Effective for hard and brittle materials such as non-ferrous metal materials.
 • Carbide alloy, cermet, burned material such as alumina • Stone material, ceramic, refractory material, tile, and concrete
 • Ceramics, pottery and silicon • Glass, crystal and jewelry • Plastic, FRP, graphite and carbon fiber • General Grinding
 • Heat resistant injection metal and stellite • Magnetic material, ferrite and rare earth materials

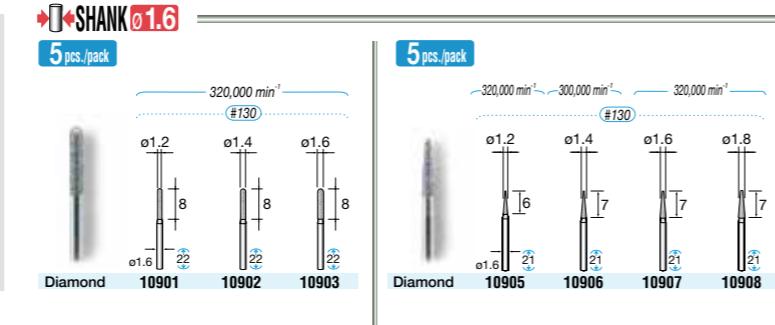
CBN

Main Applications *For grinding of hardened steels such as alloy steels and tool steels, alumite and copper
 *For internal grinding of mold or jig grinder ; parts for precision machine, automobile, bearing and sewing machine.

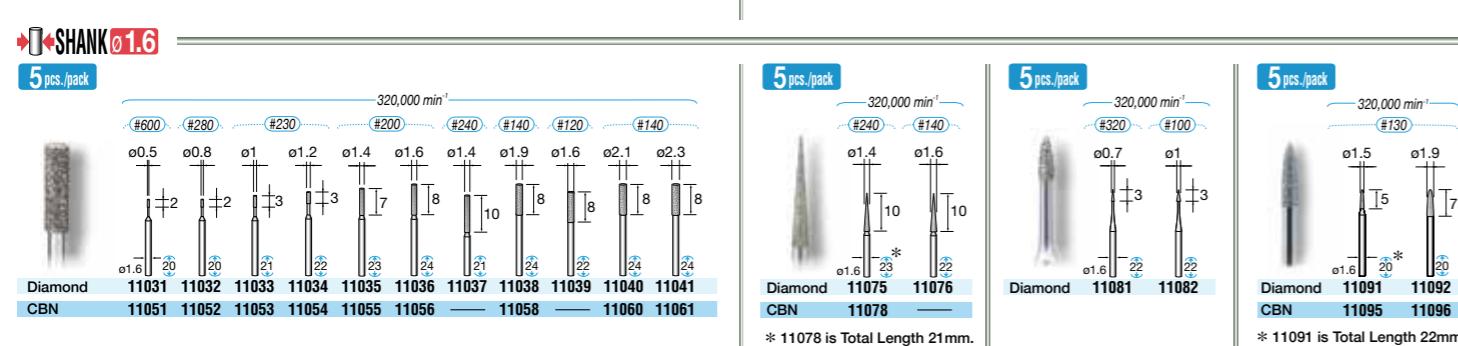
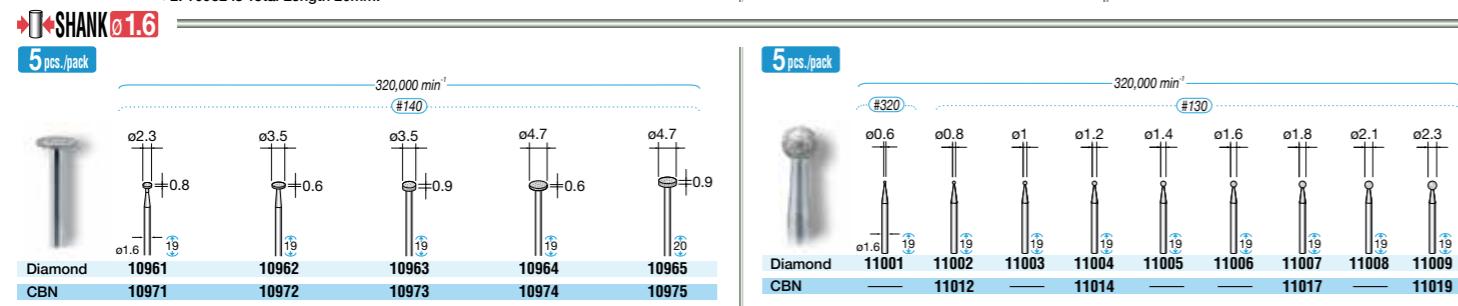
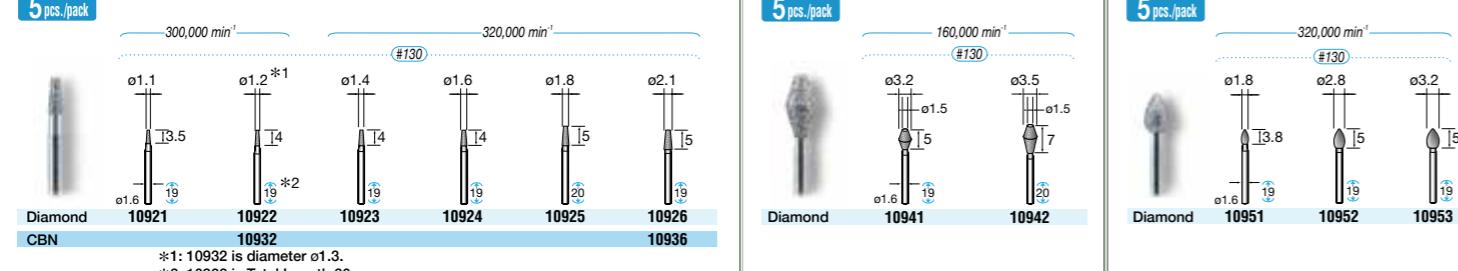
Main Work Materials Effective for iron metal materials such as burned materials with iron and steel materials (harder than HRC60)
 • Steel : carbon steel tools (SK), high speed steel (SKH), tool steel alloys (SKS, SKD), bearing steels (SUJ), structural alloy steels (SCM, SNCM, Scr and SACM), heat resistant steels (SUH) and stainless steels (SUS3 and SUS 4)
 • Alloy : Ultra heat resistant cobalt alloys (haynes alloy, stellite, airresist, walex and inconel) Ultra heat resistant nickel alloys (inconel, hastelloy, Colmoy, and waspaloy) • Cast iron : FC and FCD • Stainless steel : SUS • Injection metal • Titanium alloys
 • Magnetic materials: alnico, permalloy and sendust



1.6 mm shank diameter series.
Short type for high-speed rotation.
Best for grinding very small parts.

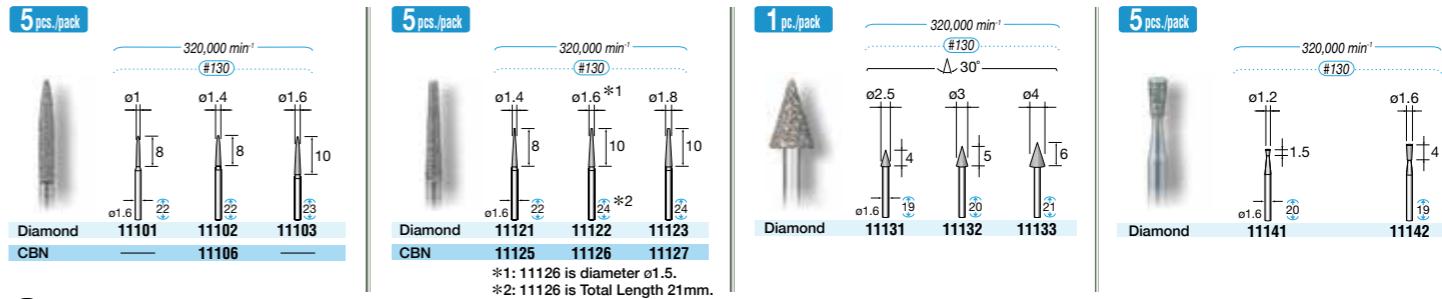


Flap Wheels

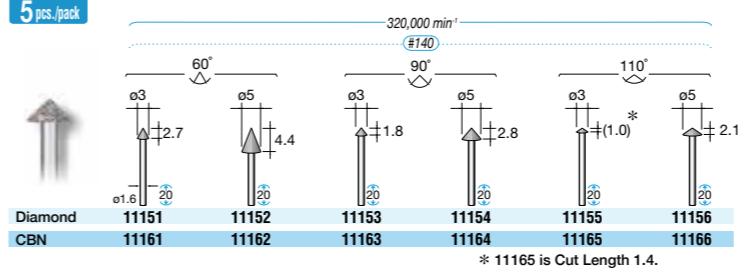


ELECTROPLATED DIAMOND/CBN BURS

SHANK Ø1.6

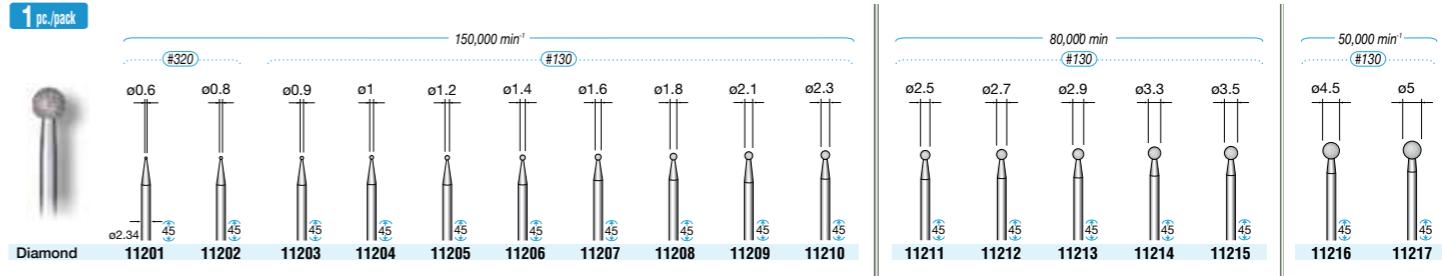


SHANK Ø1.6



2.34 mm shank diameter series.
Best for engraving, or precise burrs removal.

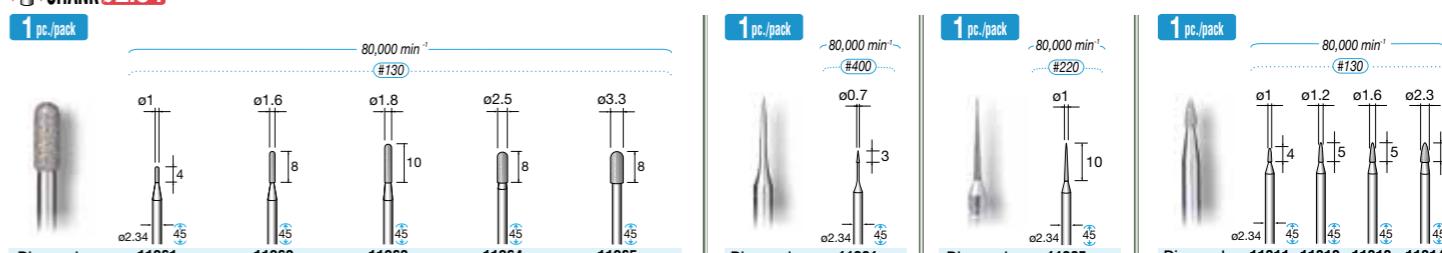
SHANK Ø2.34



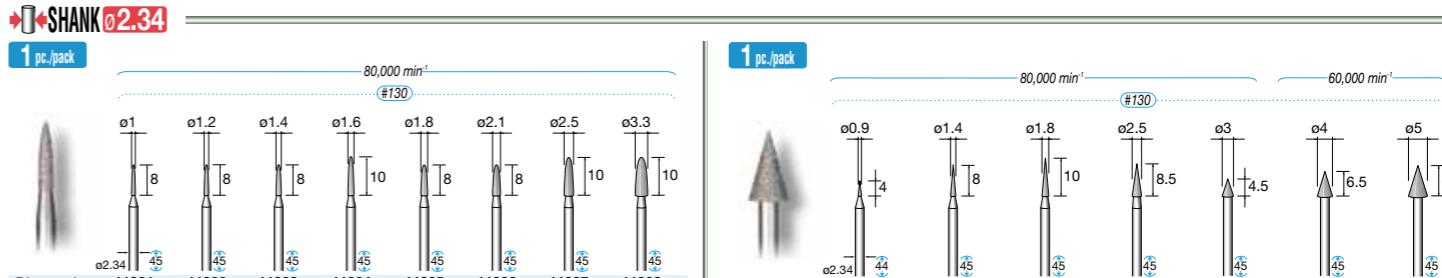
SHANK Ø2.34



SHANK Ø2.34



SHANK Ø2.34

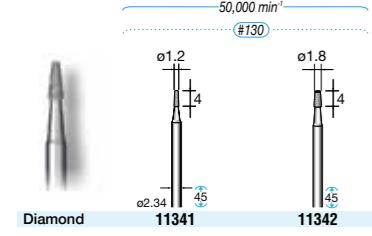


*Order in standard package quantities.

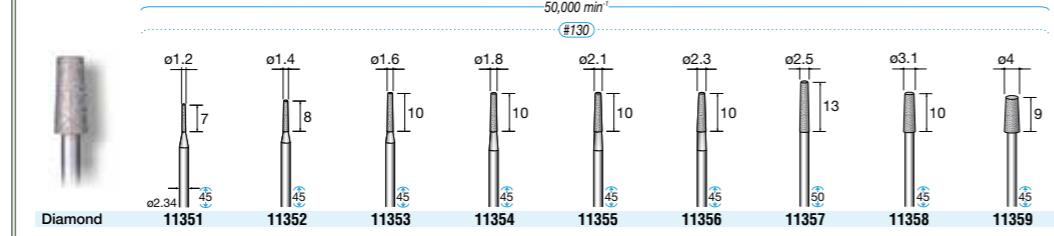
ELECTROPLATED DIAMOND/CBN BURS

SHANK Ø2.34

1 pc./pack

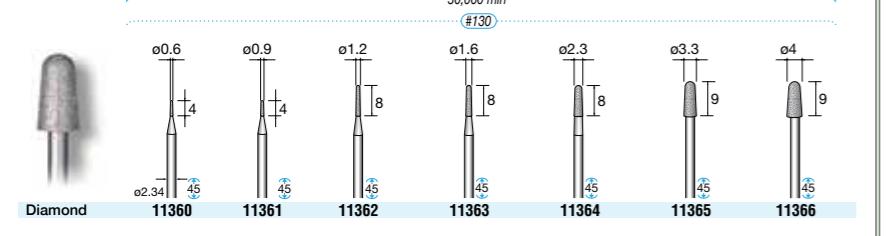


1 pc./pack

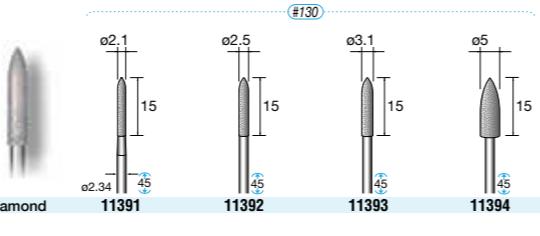


SHANK Ø2.34

1 pc./pack

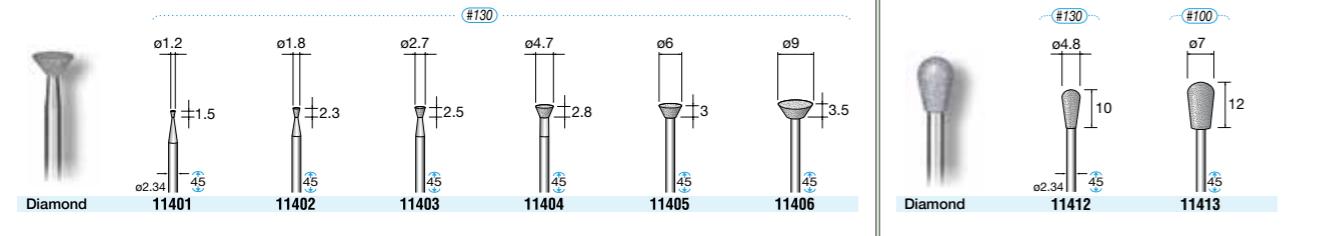


1 pc./pack

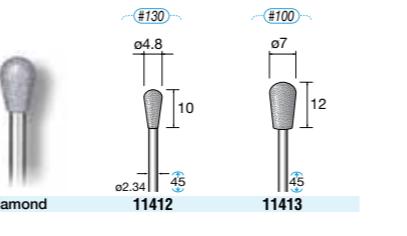


SHANK Ø2.34

1 pc./pack

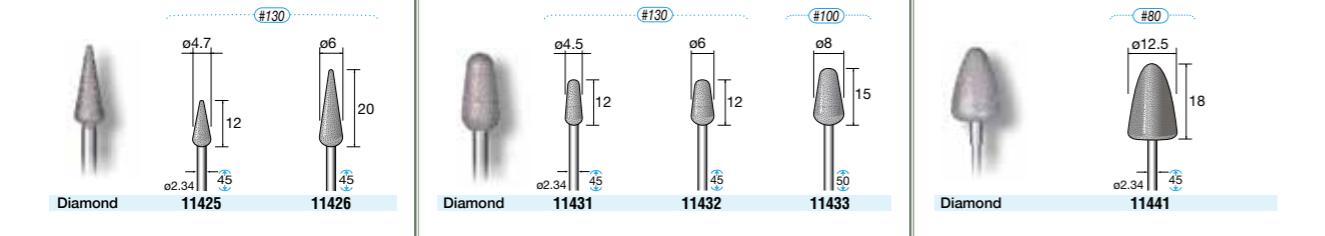


1 pc./pack

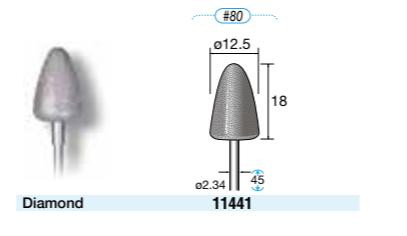


SHANK Ø2.34

1 pc./pack



1 pc./pack

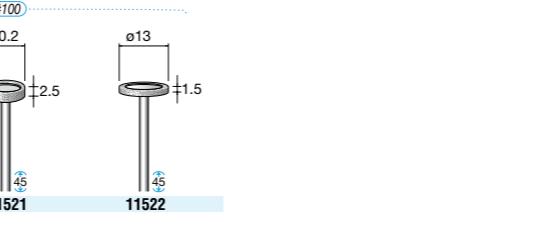


SHANK Ø2.34

1 pc./pack

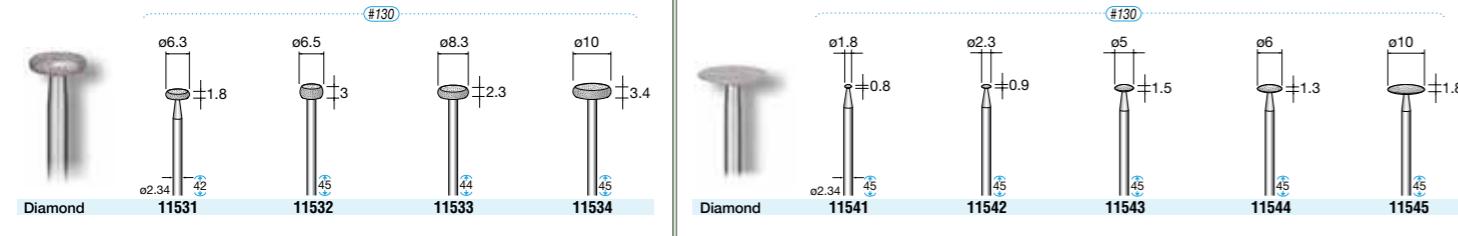


1 pc./pack

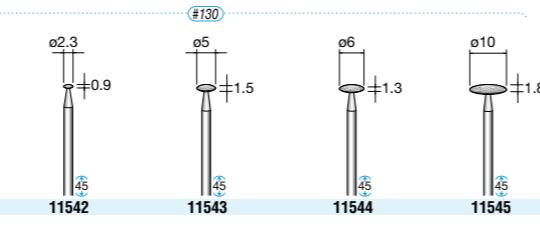


SHANK Ø2.34

1 pc./pack



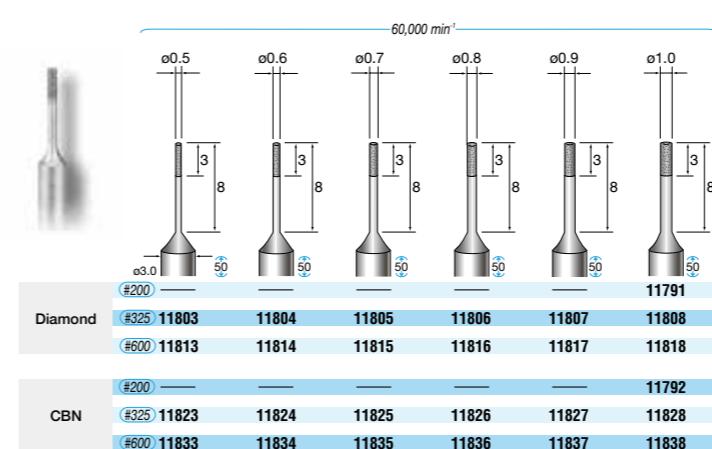
1 pc./pack



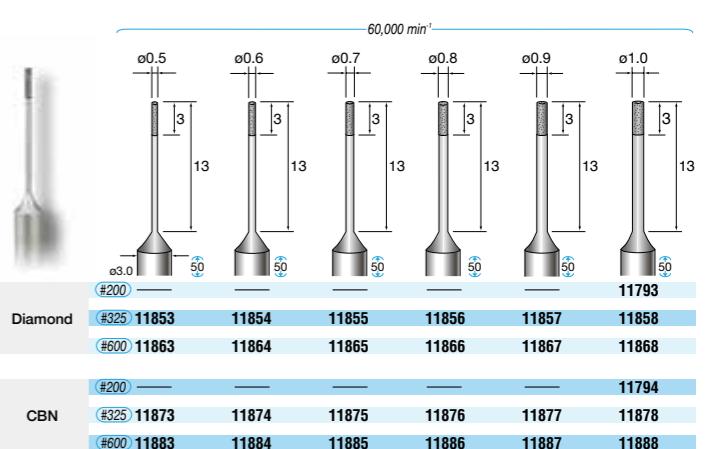
ELECTROPLATED DIAMOND/CBN BURS

SHANK Ø3.0

1 pc./pack

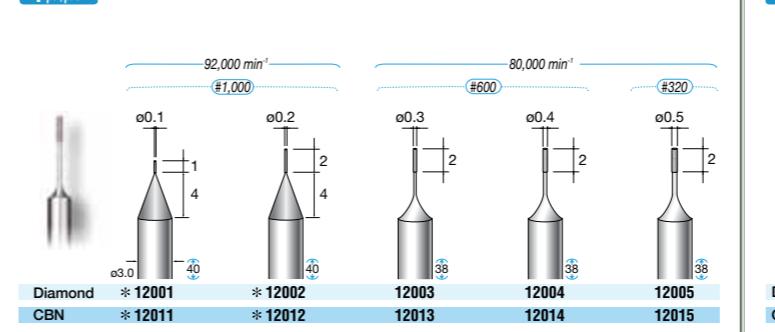


1 pc./pack

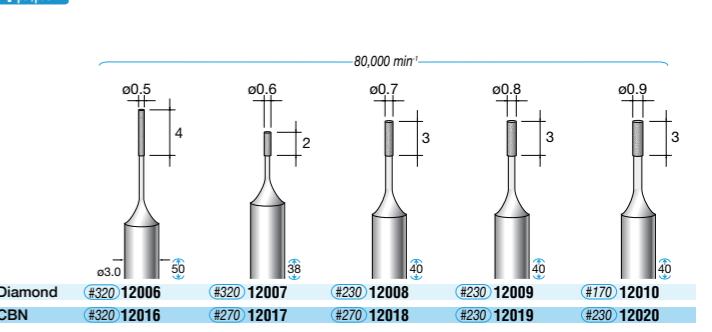


SHANK Ø3.0

1 pc./pack

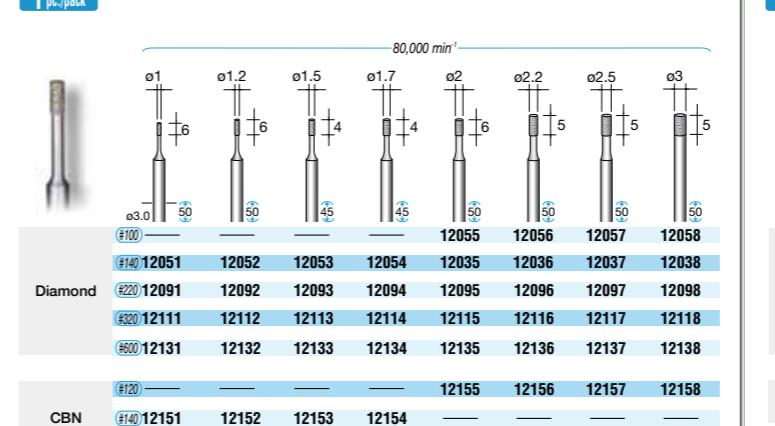


1 pc./pack

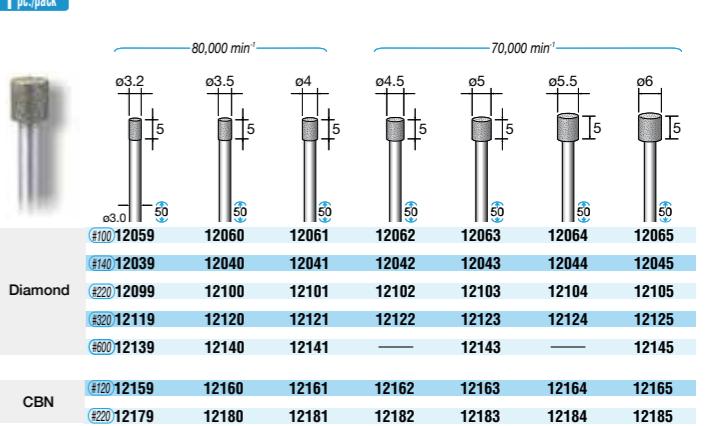


SHANK Ø3.0

1 pc./pack



1 pc./pack



*Order in standard package quantities.

ELECTROPLATED DIAMOND/CBN BURS

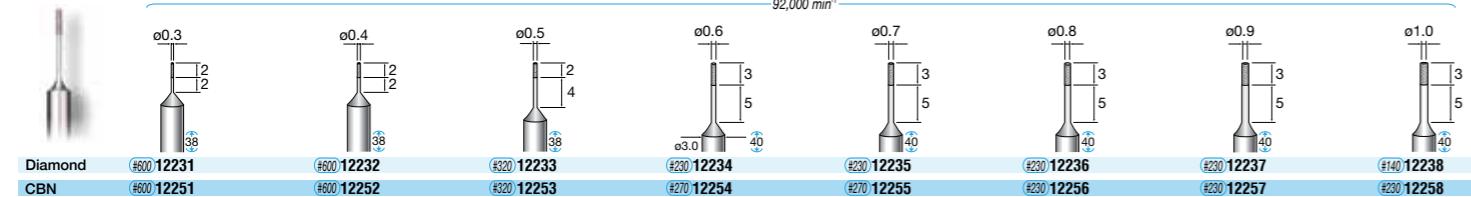


High rigidity and long clearance allow for high precision grinding of deep IDs.

The up to 3 fold increase in rigidity versus stainless steel tools allows for much more precision and efficient grinding.

SHANK Ø3.0 Carbide

1 pc./pack



SHANK Ø3.0 Carbide

1 pc./pack



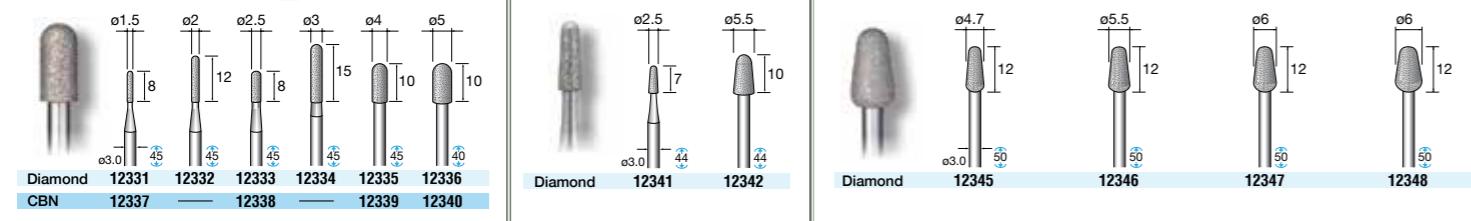
SHANK Ø3.0 Carbide

1 pc./pack



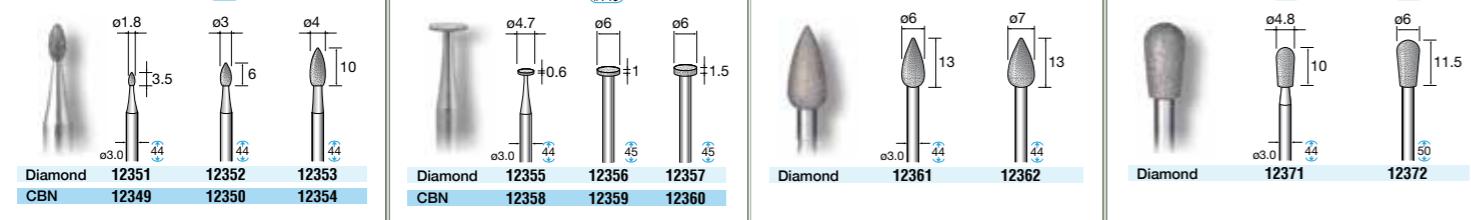
SHANK Ø3.0

1 pc./pack



SHANK Ø3.0

1 pc./pack



ELECTROPLATED DIAMOND/CBN BURS

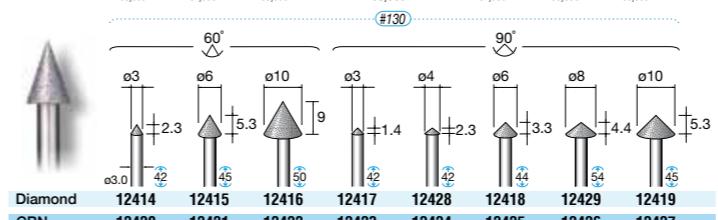
SHANK Ø3.0

1 pc./pack



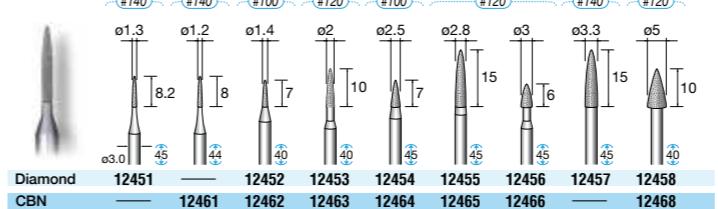
SHANK Ø3.0

1 pc./pack



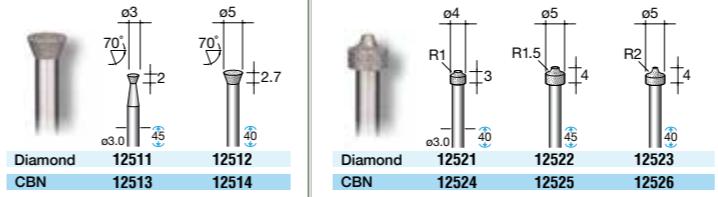
SHANK Ø3.0

1 pc./pack



SHANK Ø3.0

1 pc./pack

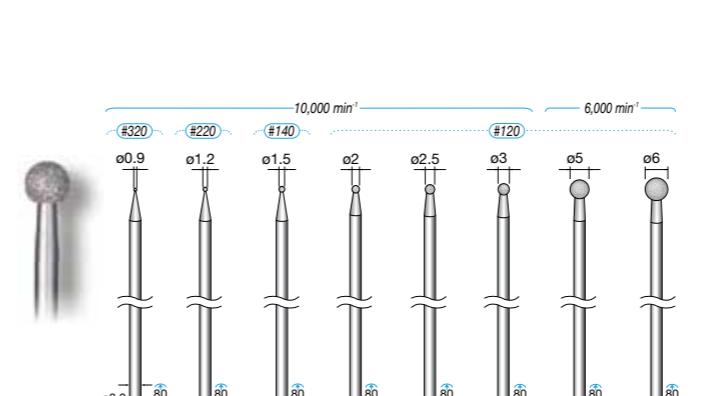


SHANK Ø3.0

1 pc./pack

SHANK Ø3.0

1 pc./pack



Diamond / CBN

CARBIDE CUTTERS

SPECIALTY TOOLS

MOUNTED POINTS

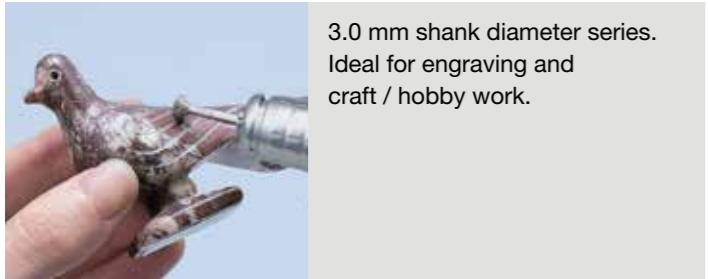
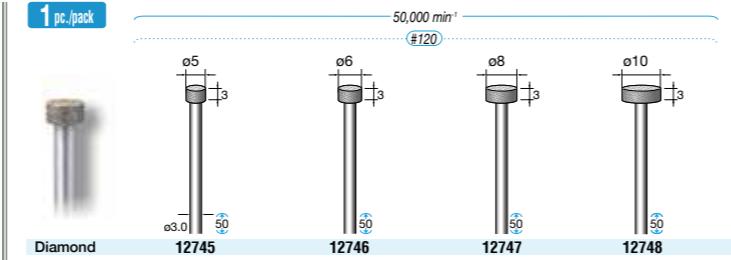
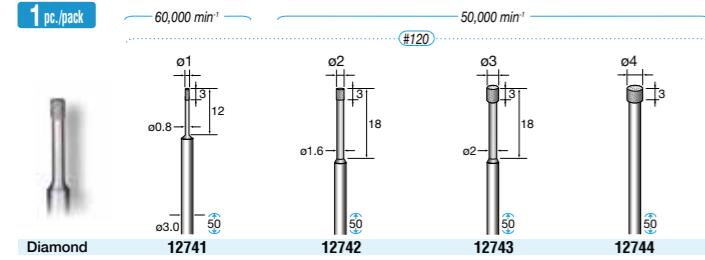
FLAP WHEELS

POLESING BRUSHES

ABRASIVE COMPOUNDS & POLISHING TOOLS

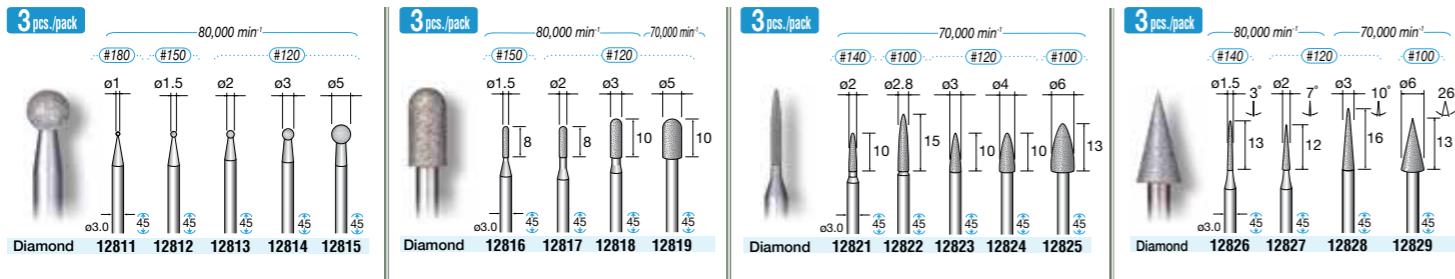
ELECTROPLATED DIAMOND/CBN BURS

SHANK Ø3.0

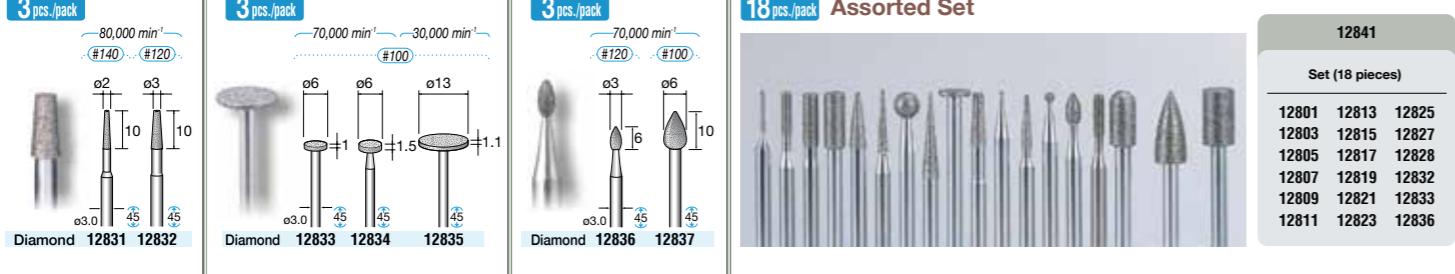


3 mm shank diameter series.
Ideal for engraving and
craft / hobby work.

SHANK Ø3.0

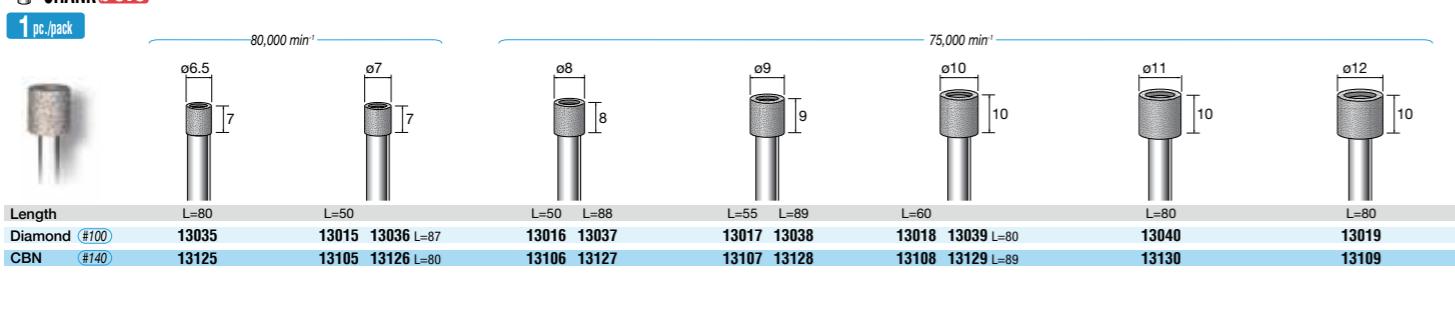


SHANK Ø3.0



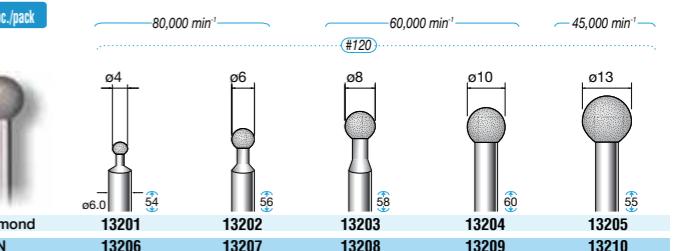
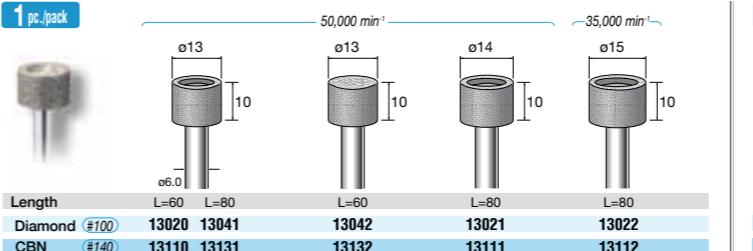
6.0 mm shank diameter series.
Medium grit tools for highly
efficient ID and jig grinding or burr
removal.

SHANK Ø6.0

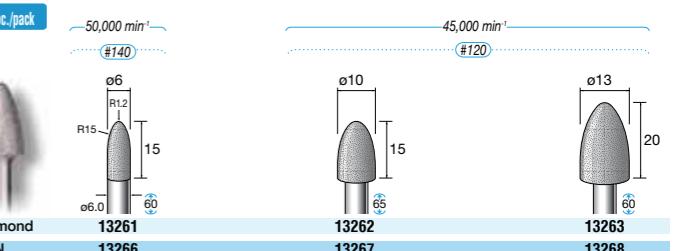
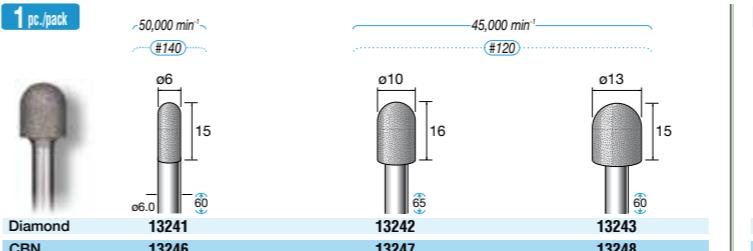


ELECTROPLATED DIAMOND/CBN BURS

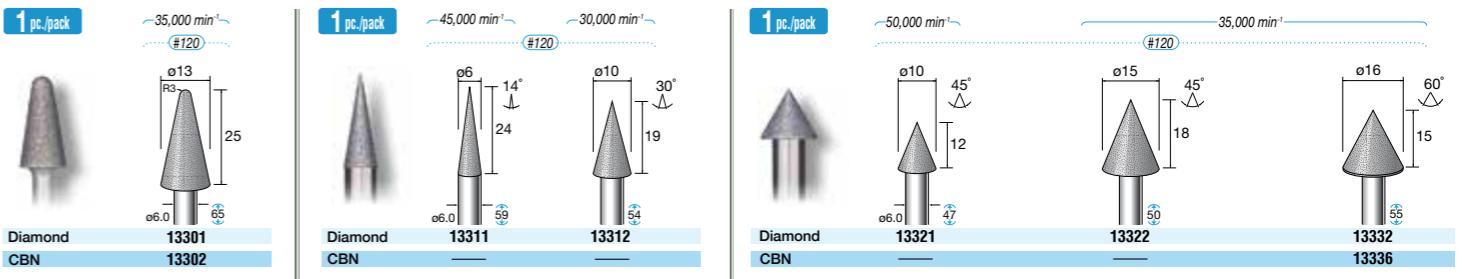
SHANK Ø6.0



SHANK Ø6.0



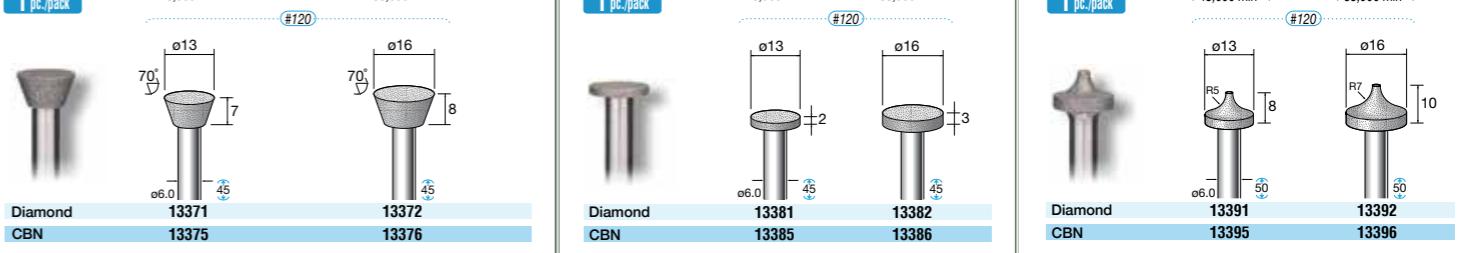
SHANK Ø6.0



SHANK Ø6.0



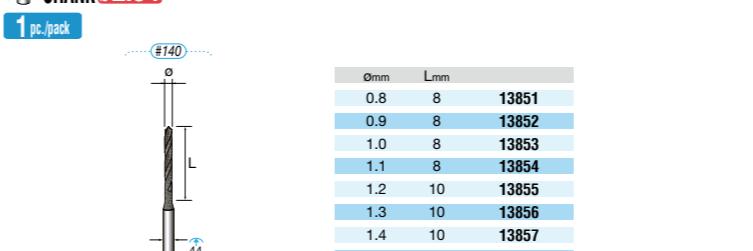
SHANK Ø6.0



SHANK Ø6.0



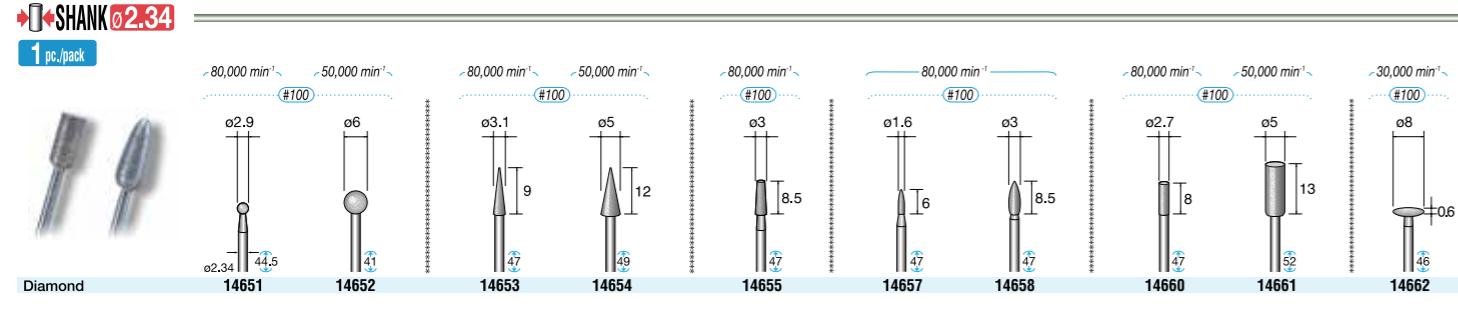
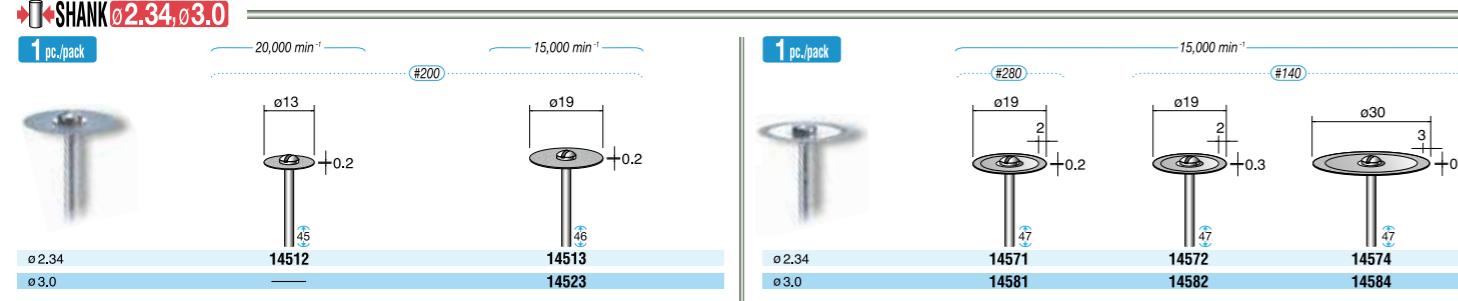
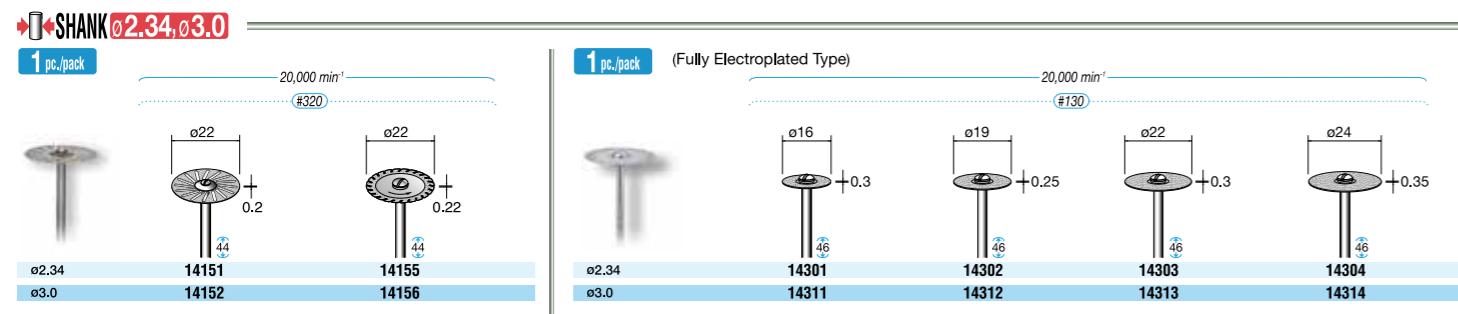
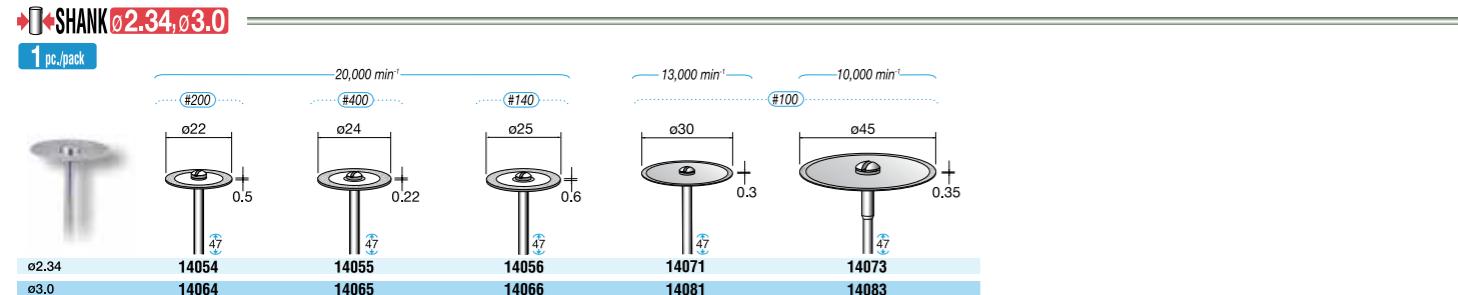
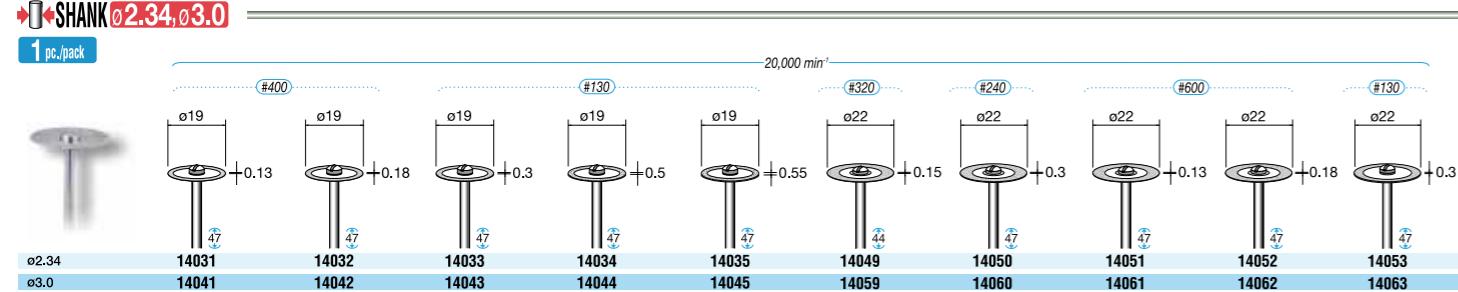
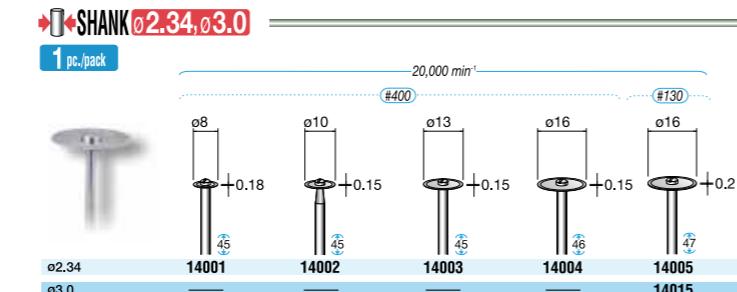
SHANK Ø2.34



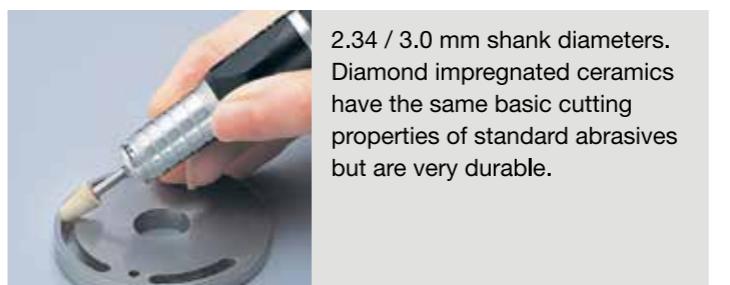
ELECTROPLATED DIAMOND/CBN BURS



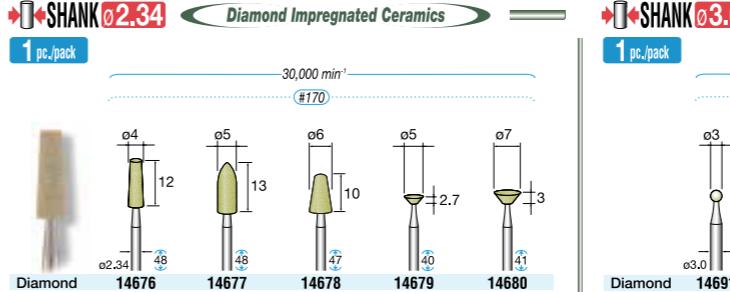
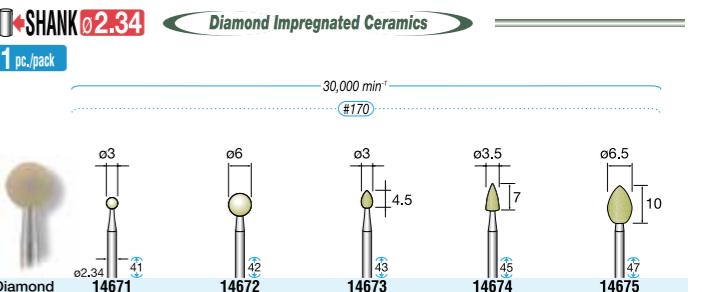
2.34 / 3.0 mm shank diameters.
Diamond grinding discs, ideal for
ceramics, FRP, glass, ferrites,
various stones, and super hard
alloys.



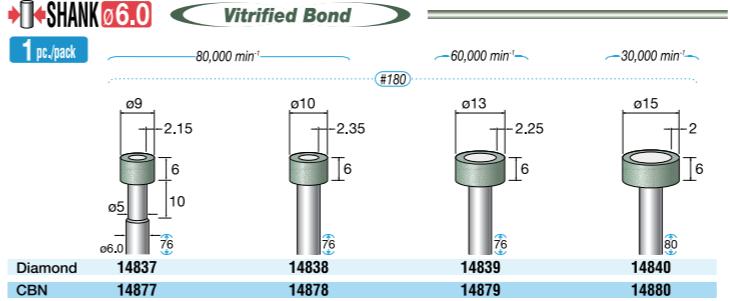
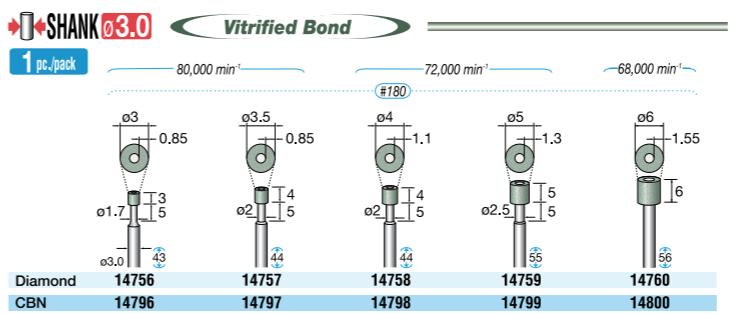
VITRIFIED / RESIN BONDED DIAMOND / CBN AND DIAMOND IMPREGNATED CERAMIC BARS



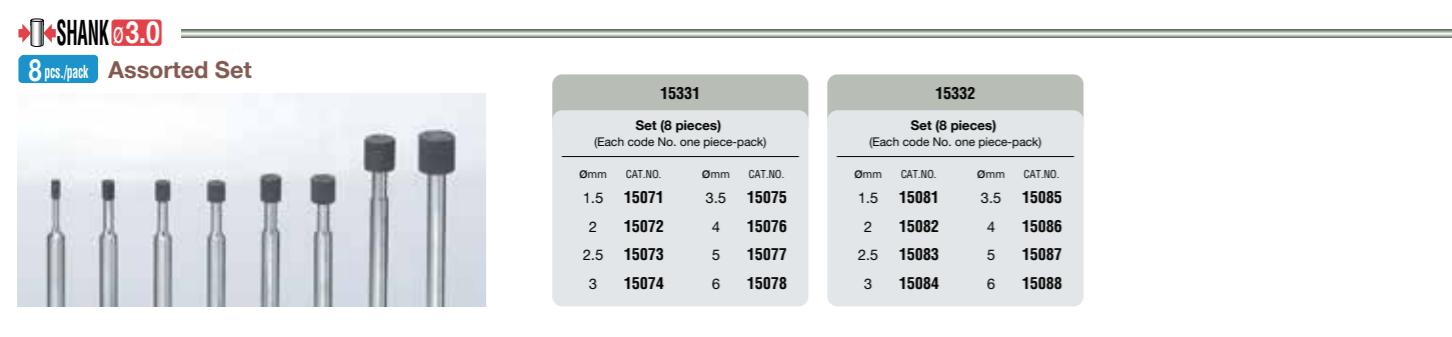
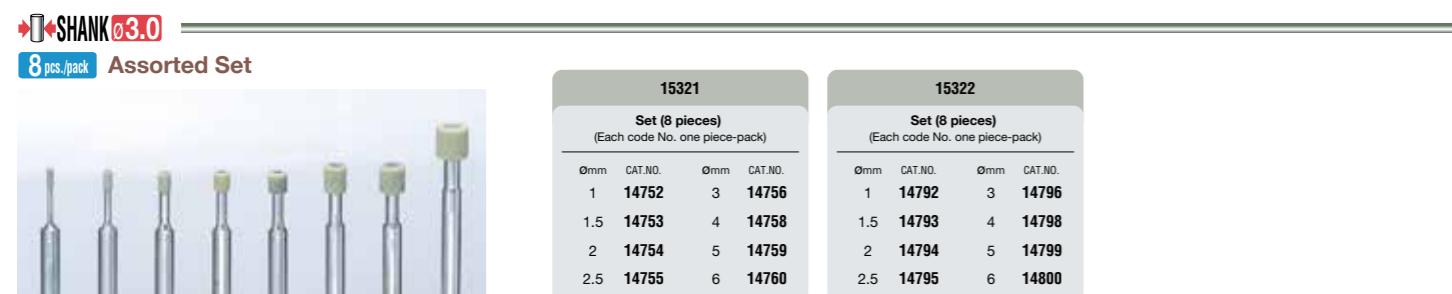
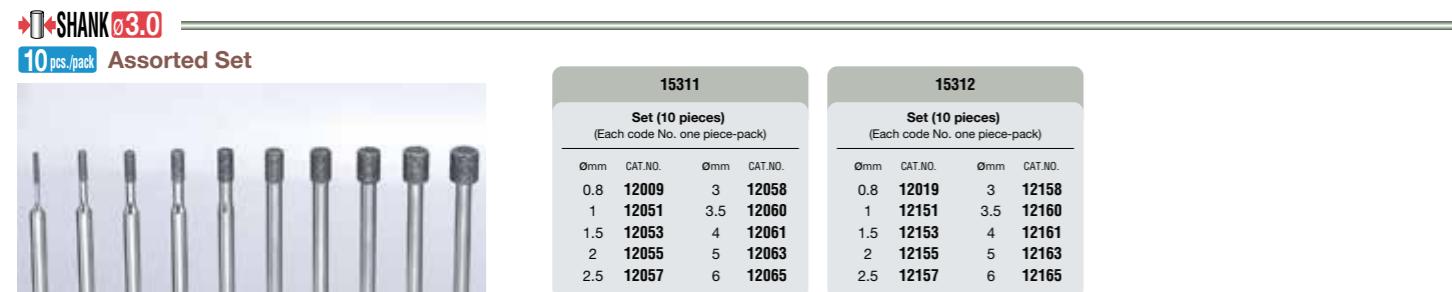
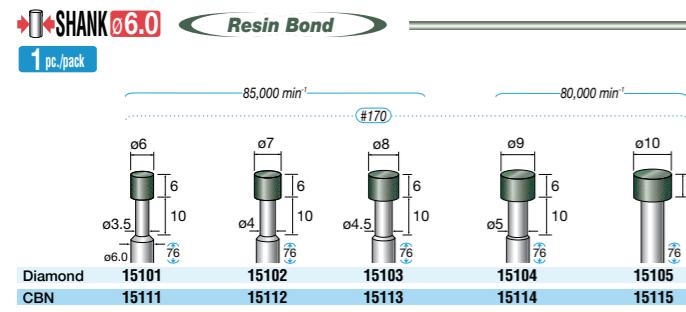
2.34 / 3.0 mm shank diameters.
Diamond impregnated ceramics have the same basic cutting properties of standard abrasives but are very durable.



Vitrified, Diamond & CBN grindstones. Highly durable bonding and high abrasive concentration make these tools ideal for mass production applications.



VITRIFIED / RESIN BONDED DIAMOND / CBN AND DIAMOND IMPREGNATED CERAMIC BARS



CARBIDE CUTTERS

Tool / Cut types and features (* Shows available shank sizes for each cut type)

Single Cut (1)



Single cut produces superior surface finishes.
* Ø1.6, Ø2.34, Ø3.0, Ø6.0

Single Cut Coarse (2)



Single Cut Coarse has similar cutting characteristics to Single cut, but is better for gummy materials due to deep helix design. Ideal for rubbers, resins, and plasters.
* Ø2.34, Ø3.0

Chip Breaker (3)



Chip Breaker is the single cut with a chip breaker. The chip breaker clears chips easily making aggressive cutting very efficient. Surface finish is rougher than single cut.
* Ø1.6, Ø2.34

Alumina Cut (4)



Alumina Cut has very sharp edge with a deep helix. The deep helix design prevents tool loading. Ideal for aluminum, magnesium alloys, plastics and hard rubbers.
* Ø6.0

Double Cut (5)



Smooth Cut with small tooth design minimizes chatter. This tool also helps enhance safety as it produces very small chips.
* Ø2.34, Ø3.0, Ø6.0

Double Cut Coarse (6)



Deep helix design prevents tool loading. Ideal for grinding hard rubbers, resins and plaster.
* Ø2.34

Diamond Cut Fine (7)



Diamond Cut Fine (7) has similar characteristics as Double Cut (5). Specifically designed for very hard materials. Produces fine surface finish.
* Ø2.34, Ø3.0

Diamond Cut Coarse (8)

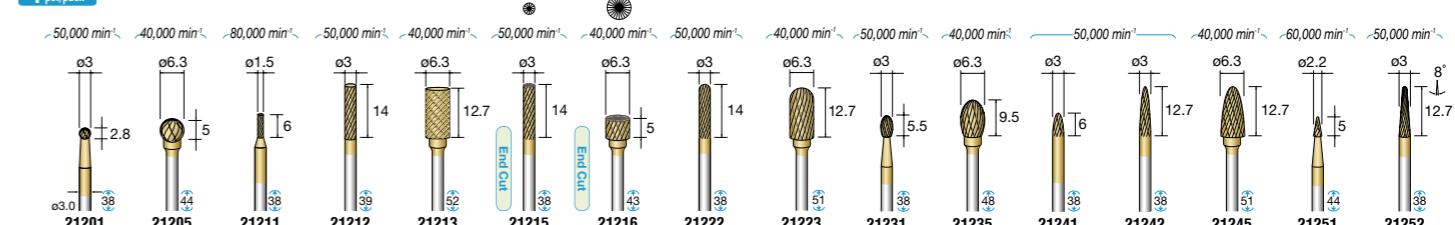


Specially designed for very hard materials. Produces fine surface finish.
* Ø3.0, Ø6.0



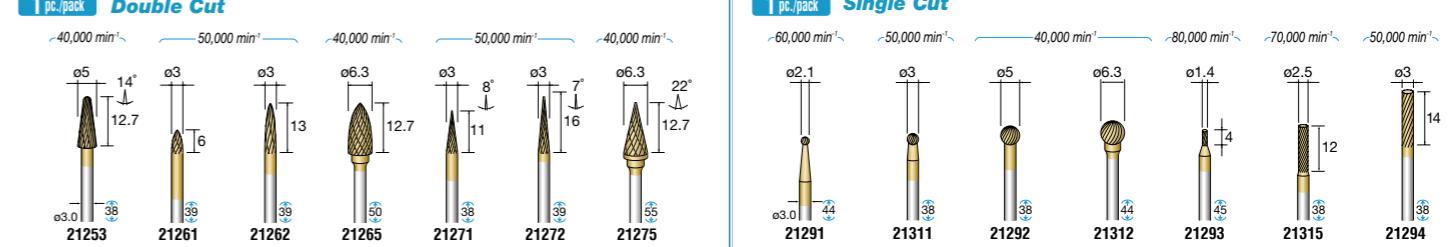
SHANK Ø3.0

1 pc./pack Double Cut



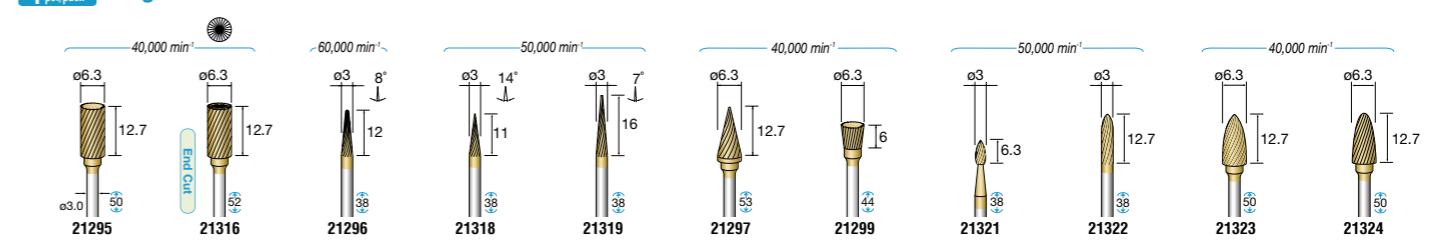
SHANK Ø3.0

1 pc./pack Single Cut



SHANK Ø3.0

1 pc./pack Single Cut



*Order in standard package quantities.