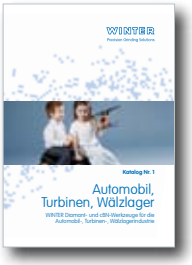
WINTER

Precision Grinding Solutions

Catalogue No. 3

Flat and Crystal Glass

WINTER Diamond Tools for Machining Flat and Crystal Glass



Catalogue No. 1: Automotive, Turbines, Bearings
WINTER Diamond and cBN Tools for the Automotive, Turbine and Bearing Industries

Catalogue No. 2: Tools
WINTER Diamond and cBN Tools for the Tools Industry

Catalogue No. 3: Flat and Crystal Glass
WINTER Diamond Tools for Machining Flat and Crystal Glass

Catalogue No. 4: Electronics, Photovoltaics , Optics, Ceramics and Composites
WINTER Diamond and cBN Tools for the Electronic and Photovoltaic Industries, for Machining Optical Glass, Ceramics & Composites

Catalogue No. 5: Dressing Tools
WINTER Diamond Tools for Dressing of Grinding Wheels

Catalogue No. 6: Standard Catalogue
WINTER Stock Programme for Diamond and cBN Tools

WINTER

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Flat and Crystal Glass

WINTER diamond tools for machining flat and crystal glass

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A good Connection

Always close to the customer and customer-focused, our diverse market presence worldwide reflects the strength of a global player. Saint-Gobain's businesses are spread over 64 countries and new locations are being added frequently. Activities are clearly structured to ensure operational leadership. In Abrasives alone, over 16,000 people are employed. The company is the only manufacturer to offer a comprehensive product range of abrasives and dressing tools for almost all fields of industry. WINTER, as the premium brand for diamond and cBN grinding products, is one of the most well established and respected names in the market. Our combination of quality products, expertise and service, together with the international network of the parent company Saint-Gobain, is the key to success; WINTER grinding tools go with you worldwide, and lead you to your goals.

Saint-Gobain…

…was established in 1665 to supply glass for the Hall of Mirrors in the Palace of Versailles.
…kits out every second car in Europe with window glass
…presently has more than 190,000 employees
…generates € 37.8 billion annual turnover

High Performance Materials
WINTER Grinding Tools No.1 Worldwide

NORTON SAINT-GOBAIN Industrial Super Abrasives

Bonded Abrasives

BAYSTATE Coated Abrasives

flexovit Thin Wheels

Construction Products

Ceramics and Plastics
No. 1 Worldwide for Thermal and Mechanical Applications

Vetrotex Reinforcement Materials No.1 Worldwide

raab karcher **Building Distribution**
No. 1 Worldwide in Tiles,
No. 1 in Europe in Construction Material and Industrial Woodworking

SAINT-GOBAIN

Flat Glass freeglass
No.1 in Europe,
No.3 Worldwide
SAINT-GOBAIN SEKURIT

Glass Packaging GLASSOLUTIONS
No.1 in Europe, No.3 Worldwide

ISOVER SAINT-GOBAIN

Construction Products
Insulating Materials
No.1 Worldwide

Plaster/Plaster Boards
No.1 Worldwide Rigips SAINT-GOBAIN

Pipes
No.1 Worldwide
in Cast Iron Pipes
PAM SAINT-GOBAIN

Industrial Mortar
No.1 Worldwide
in Tile Adhesives
weber SAINT-GOBAIN

Exterior Siding
No. 1 in USA for Exterior Siding
No. 3 in USA for Roofing

Worldwide Expertise

Saint-Gobain is in the top one hundred largest industrial groups in the world and is leading in the production of glass, high performance materials and construction products. Two major milestones stand out in the Saint-Gobain Group's long history; it was established in 1665 by Colbert under Louis XIV, then, over 300 years later, Saint-Gobain and Pont-à-Mousson merged in 1970. WINTER joined the group in 1996. Today, the group invests € 390 million per year in research and development and files around 300 patents per year, to support its reputation for innovation and discovery.

The WINTER Brand:

For over 160 years WINTER has been a worldwide synonym for high-quality diamond and cBN grinding tools for industrial production. As pioneer and trend-setter, WINTER has been actively involved in the development of the success story of grinding, as well as in the production of synthetic diamonds.

Custom-made Solutions - the key to success

Over 75% of all WINTER products are developed in close cooperation with our customers. The results are tailored grinding solutions that perfectly fit your special requirements. Our expert teams would also like to help you. Together we will meet your technical challenges.

Market Leader - in front through quality

In Superabrasives, WINTER is No. 1 in Europe with quality products and services. In Europe, over 500 employees in three production sites take care of our customers' needs. Worldwide, over 2,000 people are employed in our global business.

INNOVATIONS

To this day, the WINTER philosophy is closely connected to innovation and technical progress. We thank our customers for over 160 years of momentum, challenges and confidence. **And in the future our next generation of innovations will ensure your success.**

PRECISION

From ACCURACY to Z-AXIS - the WINTER precision alphabet spells the suitable solution for your needs. Profile accuracies below 1 µm and a surface finish in the nanometer range are achieved regularly. **You can trust WINTER.**

WINTER

PERFORMANCE

The WINTER performance package contains top quality precision grinding tools, comprehensive service and individual customer care - which ranges from best grinding tool selection through to process optimisation. **Benefit from our full service, and make use of our leading technical expertise to increase your profitability.**

QUALITY

Since the foundation of the company, WINTER has stood for quality at the highest level. It begins with the first customer contact, and covers the identification of appropriate tool specifications, manufacturing, customer support and the final optimisation of your production process. **WINTER quality: Satisfaction guaranteed!**

Quality, Environmental Protection and Safety

As a responsible manufacturer of quality grinding tools, WINTER production is eco-friendly and avoids waste of precious resources according to the latest international standards and certification requirements. WINTER is certified to ISA 9001 (Quality Management), ISO 14001 (environmental management) and OHSAS 18001 (health and safety management). All rotating WINTER tools bear the OSA safety seal (OSA: Organization for the Safety of Abrasives), granting WINTER the customers' highest safety tool in application.

GL ISO 9001 ISO 14001 OHSAS 18001
GL Systems Certification

Snapshots of a long history

WINTER was established in 1847 by Ernst Winter as a family-owned company. We still adhere to the original goal of developing ultra-hard crystal tools of the highest quality. Our claim is to be the best. In numerous fields of application for diamond and cBN grinding tools we have been pioneers, and today we still follow this way as trend-setters and the technology leader.

Ernst Winter
Goldsmith and diamantaire, started his diamond tool workshop in 1847.

WINTER in Hamburg
1872: WINTER's first company building in Hamburg.

With WINTER to Outer Space
Laser reflectors ground with WINTER diamond tools enable the most accurate astronomic and geographic measurements.

Success from the beginning

Former letterhead and contemporary advertisement of WINTER with images showing medals received at important exhibitions.

Celebrities

Even Helmut Schmidt (Federal Republic of Germany's former Chancellor) acted as a WINTER "diamond maker" in 1983.

Posters and Brochures in the course of time

Innovations: Yesterday's vision of

WINTER bridges the combination of inventive skills, creativity, identification of challenges and the ambition to meet our customers' expectations: WINTER developments of the past are found in industrial museums. Yesterday's vision of the future is today's standard. We are committed to over 160 years of company history: Today and in the future, we work hand in hand with our customers on innovations and their ecomomical implementation.

1847
WINTER produced lithography diamonds, replacing the conventional steel tips.

1969
As the first grinding tool manufacturer worldwide, WINTER presented cBN grinding tools with a special resin bond (KSS) for HSS tool grinding.

1962
WINTER UZ rotary dressers hit the market. Produced in a reverse plating process, they allow tightest tolerances.

2008
WINTER offered metal bonded tools with internal cooling for creep-feed glass edging.

1935
WINTER produced the first phenolic bond grinding wheel to replace previously used grinding wheels with loose, hammered or rolled-in grain.

2006
With Q-Flute+Dress, WINTER offered the first resin bonded grinding wheel dressable with a diamond rotary dresser.

1975
WINTER DMC diamond grinding wheels and BMC cBN grinding wheels came into the market: WINTER MC grinding wheels allow cost-effective profile grinding for difficult to machine work pieces. They also reduce thermal effects of the near-surface microstructure and assure extremely long profile lifetime. WINTER DMC and BMC grinding wheels can be profiled by crushing directly on the grinding machine.

In|no|

1548. from L. innovatus, pp. of innovare "to renew or change", from in- "into" + novus "new".

2001
WINTER introduced special cutting wheel products for slicing advanced ceramics like SiC.

1988
New super-light cutting wheels with carbon fibre bodies were patented.

1993
WINTER SG-CNC rotary dressers conquered the market. They have made dressing of vitrified cBN grinding wheels possible.

1958
WINTER was the first in Europe producing grinding tools with synthetic diamonds. In combination with WINTER special resin bonds, full performance benefits were achieved.

the Future

1971
At the European Machine Tool Exhibition WINTER showed for the first time a novel grinding wheel type that met the demand for short grinding cycle times. The structure of metallic and non-metallic bond components allows the efficient grinding of tungsten carbide and steel combinations. (M+789).

2003
WINTER developed the DDS (Diamond Dressing System), permitting the dressing of vitrified and resin bonded grinding wheels directly on the production machine. Until then, it was performed on external machines. Due to its free standing layer, outstanding profile grinding capability is achieved.

1992
New standards are set with the "34SG" series in the field of laminated safety glass and fire-resistant glass machining.

1875
Delivery of WINTER diamond particles to Zeiss Jena, enabling the engraving of 150 lines per millimeter.

1929
WINTER started producing diamond micro-grain by the sedimentation process.

va|ti|on

In general linguistic usage as a nonspecific term in the sense of new ideas and inventions and their conversion to economic use.

2006
N7 as a glass-ceramic bond system was introduced to the market. This bond can be precisely engineered to meet individual customer application requirements: Very high bond-hardness, optimised wetting of the grains and perfect development of bond bridges enable the creation of very high porosity for cool grinding and extremely long tool life.

1950-1954
WINTER developed a large variety of electroplated tools: Files, grinding pins, cutting wheels, drills…

2008
WINTER tools "Ti-Tan" and "Furioso" are a new generation of extremely wear-resistant stationary dressers.

1982
The patented dressing process "TDC" (Touch Dressing cBN) was developed by WINTER.

1977 / 78
WINTER presented the special bond "VF/VFF" for grinding and finishing polycristalline diamond and cBN materials.

2001
"Tiger" caused a stir with a new revolutionary grinding wheel geometry for narrow tooth gaps in saw manufacturing.

1996
For four generations the company, founded by Ernst WINTER in 1847, was familiy-owned. In 1996 it was taken over by the French Saint-Gobain group.

Your best solution

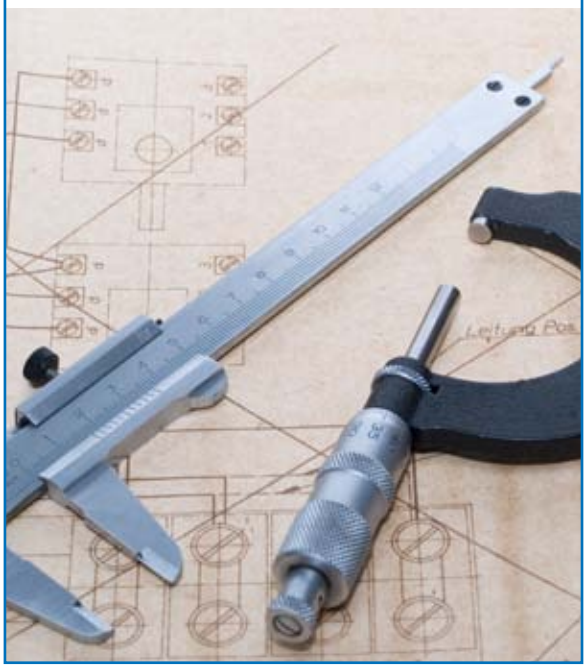
WINTER diamond tools gain great recognition in the fields of quality, performance and cost effectiveness. This is no coincidence, as WINTER is not limited to manufacturing excellent grinding tools: more than 75% of the cases are tailor-made solutions, developed in close cooperation with the customer. This successful engineering is based on a modular performance package, specifically equipped according to individual needs.

Tailor-made products

Optimised grinding solutions for your specific application provide the greatest benefit: In the end, you generate cost savings through more productivity, less down time, and better quality.

Each one of your technological challenges is an incentive for our product managers and our application engineers to achieve the best grinding results. Please contact us.

Besides the high percentage of custom-made solutions, WINTER offers a comprehensive range of stock products - and can supply these short term straight to your production line.



Focused on the goal ahead
Comprehensive technical advice in all questions about WINTER products and grinding processes. Our field sales force and our customer service are at your disposal.

Advice

Expertise
Advantage in accumulated knowledge: Seminars about current grinding issues as well as training programs matching our customers requirements.

Product Development

Solution

Trainings

Process Optimisation

The cream of the crop
In order to meet your production-oriented challenges, take advantage of our dedicated specialists: In the R&D department and the European Grinding Technology Centre about 50 scientists are at your disposal for developing grinding tools and processes.

Fine Tuning
Our application engineers and our product developers will help you. Either at your premises, or in our EGTC (European Grinding Technology Centre), where we can optimise your production process, without interfering with your workflow.

Please ask your sales advisor - contact details on the last page.

Tools for processing of flat glass

Our modern world would be inconceivable without flat glass, whether in the home for furniture or mirrors, in architecture for windows and facades or in the various fields of technology such as safety glass or photovoltaics.

Striking a balance between excellent grinding results on the one hand and the highest possible processing speed on the other becomes particularly evident in the area of glass edge finishing.

Our main objective is to offer innovative solutions to the individual challenges set down by our customers, in the form of optimized high-performance grinding tools – perfectly tailored to the customer's specific needs and requirements.

Info

Further information on applications and products can be found on our website: www.winter-superabrasives.com

General

Flat glass is glass that has been formed into sheets. It is used in many areas of everyday life:

- Architecture: in the form of windows, doors, facades and roofs for indoor and outdoor use
- Furniture: display cabinets and tables, shelves for furniture and refrigerators or for aquariums and terrariums
- Transportation: windows for cars, trains, ships and planes
- Technology: flat screens, copiers, windows and mirrors with special properties for technical equipment

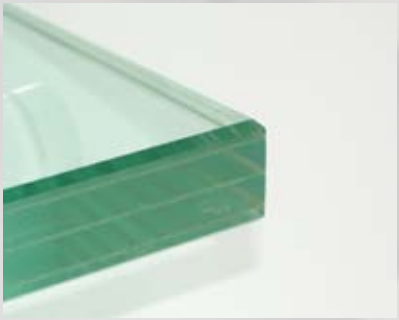
Types of flat glass

Float glass: 95% of flat glass is produced by the float glass process. The liquid glass is poured onto a molten tin bath. The glass floats on the tin and levels out evenly, producing a very flat glass with a clear, see-through, smooth surface. The thickness of the glass is controlled by the speed at which the glass is drawn off from the tin bath.

Cast glass is flat glass with a patterned surface. The desired form is obtained by subsequent pressing or rolling. In this way, decorative or functional structured glass is produced which is translucent but usually not transparent.

Single-pane safety glass has been processed by thermal or chemical treatments to increase its strength compared with normal glass. It will shatter into small fragments when broken making it less likely to cause injury.

Laminated safety glass consists of two or more layers of glass, bonded with PVB (PolyVinyl Butyral). The multi-layer structure provides better stability and ensures that the glass does not disintegrate immediately when broken, but the fragments remain attached to the resin foil instead.



Edge processing

For further processing, flat glass is cut to the appropriate sizes (in fact it is scribed and broken with controlled force or cut with diamond cut-off wheels). The resulting edge is extremely sharp and can only remain in its original state if it is framed. In all other instances, the edges are finished by grinding with diamond tools and polishing with conventional abrasives and polishing agents.

Edge quality

Seamed or arrissed edge: in order to reduce the risk of injury, only the edges of the broken glass are finished with a slightly chamfered edge.

Ground edge: if exact dimensions are required, the entire surface of the edge is ground. This will result in a matt surface.

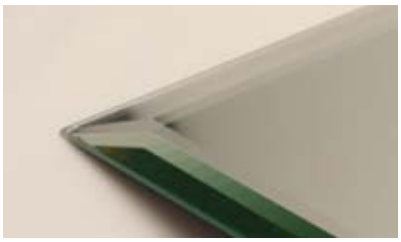
Polished edge: if the edge is visible, as in the case of mirrors or furniture glass, the ground edge is polished, resulting in a transparent edge surface.

Edge types

Straight edge: the straight edge forms a 90° angle with the glass surface. The corners are seamed.

Chamfered edge: for design or aesthetic reasons the edge forms an angle with the glass surface which deviates from 90°.

Facet cut: the glass is finished to a flat bevel for aesthetic reasons. This is typically used in mirrors and furniture glass.



Model edge: the glass edge gets a distinctive profile. The simplest forms are pencil edge and trapezoidal profile but more complex forms are also used – mainly for furniture glass.

Drilling

Besides edge treatment, drilling is another important production step. Holes of different sizes are used e.g. for fixing façade glass, attaching fittings to doors, furniture and mirrors, for decorative purposes and for producing internal contours.

Cutting off

Although glass is mostly scribed and broken, there are many applications, where cut-off wheels are used. Depending on the required edge quality, cutting can be a more efficient working method, even for glass thicknesses starting from just 8 mm. The specific structure of laminated safety glass requires cut-off wheels with segmented diamond rims. Cut-off wheels with continuous or segmented diamond rims can be used for corner and edge cut-outs.

Tools for glass edge processing on linear machines

On linear machines the glass is transported through a series of processing stations, each offering a specific edging process. Depending on volume requirements and flexibility, linear edging machines offer different processes and require a variety of different grinding tools:

Double-edge processing machines
Here the glass is processed horizontally and on opposite edges at the same time. Depending on the size of the production run and the product mix, either general purpose grinding wheels or special grinding wheels with customized performance are used:
Medium and large production runs mostly use cup wheels for seaming/arrissing, since they can grind different glass thicknesses with the same tooling.
Profiled peripheral grinding wheels are used for mass production; they offer significant time savings for each process step but require a tool set for each glass thickness.

Single edge processing machines
One side of the vertically conveyed glass is ground during each pass. The broad range of applications and trouble-free grinding behaviour of the cup wheels guarantee highest flexibility when finishing straight edges, mitres and seams.

Automatic faceting machines
These machines also process one side of the vertically conveyed glass per pass. WINTER grinding tools with specifically developed geometries and bonds master the challenges of large contact areas, high material removal rates and excellent surface quality which are required for faceting.

Allocation of cut
Due to their high resistance to wear, metal-bonded grinding tools are the preferred choice at the first station. At the following machine stations the surfaces are refined step by step – resin-bonded grinding wheels may also be used here. Polishing is the final process step; this is optional, depending on the edge quality required.

Image 1 - D151

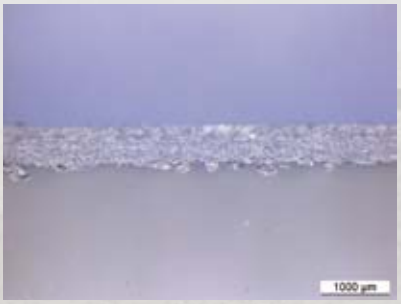


Image 2 - D107

Image 3 - D64

The images show the grinding results with different grit sizes at high feed rates (5 m/min).

The maximum infeed rate is determined by the removal rate of the grinding wheel and the extent of edge chipping that occurs during rough grinding and which has to be removed during the subsequent stations.

Recommended infeed as a percentage of total stock to be removed

Number of stations	First station	Second station	Third station
1	100%		
2	70%	30%	
3	50%	30%	20%

These typical set-up conditions are suggestions only. The actual percentages may be different, depending on the operating conditions.

WINTER is not limited to being just a grinding tool supplier: more than 75 per cent of applications involve customized solutions which have been developed in close cooperation with the end-user. This successful engineering approach is based on a modular performance package, individually adapted according to specific requirements. Please contact us – each of your technical/production challenges will give our product managers and application engineers an incentive to achieve the best grinding results.
We are happy to pass on our expertise to our customers, to help improve productivity and quality or reduce downtime by optimizing process parameters.
Apart from the machine settings for process improvement – such as the infeed rate for the individual stations (allocation of cut), feed rate and set angle of the grinding wheels – huge improvements can be achieved by optimizing the design of the grinding wheels:

Design of the grinding wheels
- geometry and design of the abrasive layer
- grit size and concentration
- type and variation of bond

Geometry and design of the abrasive layer
Segmented grinding wheels are required for processing laminated safety glass. The segmentation enables cutting of the resin-layers, which, compared to glass, is soft and tough. Cooling and chip removal for glass thicknesses >10 mm also benefit from rim segmentation.
In the case of peripheral grinding wheels, the profile of the edge to be produced is determined by the geometry of the abrasive layer. A inverse image of the edge profile is created on the profile of the grinding wheel.
By contrast, cup wheels optimally distribute the grinding stresses across the full width of the abrasive coating when forming radii and mitres. Customized tool designs allow the removal rate and the grinding result to be further optimized according to individual grinding processes.

Grit size and concentration
Removal rate and surface quality are determined by the grit size. Coarse grit enables a high removal rate, whereas fine grit creates a smoother surface. Consequently, thick glass and high infeed rates demand coarser grit during the grinding process. When processing thin glass, chipping can be avoided by choosing finer grit sizes. The table below shows recommended grit sizes. The information is for guidance only, and depending on the removal rate and the required results, slightly different sizes may be required.

When processing glass, the diamond concentration is typically between C25 and C40. With low concentrations, grinding wheels are generally freer cutting, and tools are more versatile being used in a wider range of application, while tools with a high concentration of abrasive material ensure a long service life and high removal rates.

Selecting the grit size

Type of glass Machine type	Thickness of glass	Grit size for first station	Grit size for second station	Grit size for third station
Mirror glass	3-6 mm	D76 - 200/230		
Machines with one diamond station	3 mm	D76 - 200/230		
	4-6 mm	D91 - 170/200		
	8-10 mm	D107 - 140/170*		
	12-19 mm	D126 - 120/140*		
Machines with two diamond stations	2 mm	D107 - 140/170	D54 - 270/325	
	3-6 mm	D126 - 120/140	D64 - 230/270	
	8-10 mm	D151 - 100/120	D76 - 200/230	
	12-19 mm	D181 - 80/100	D76 - 200/230	
Machines with three diamond stations	2 mm	D107 - 140/170	D91 - 170/200	D54 - 270/325
	3-4 mm	D126 - 120/140	D91 - 170/200	D64 - 230/270
	5-6 mm	D151 - 100/120	D91 - 170/200	D64 - 230/270
	8-15 mm	D181 - 80/100	D107 - 140/170	D76 - 200/230
	19-25 mm	D213 - 70/80	D126 - 120/140	D76 - 200/230

* if followed by polishing, we recommend to select the next finer grit size

Types and variations of bond

Due to their resistance to wear and excellent grit retention, metal bonds are particularly suited for grinding glass. Resin bonds are sometimes used on the final grinding stations: despite the slightly higher wear, they are characterized by a very fine and soft finish. Thin glass or extra fine surfaces can be reliably processed in this way.
Both metal and resin bonds are available in different variations. The grinding behaviour of different wheel specifications is strongly influenced by the bond properties; optimum results are obtained by selection of the most suitable bond and microstructure.

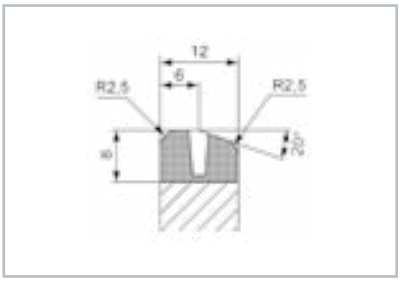
Reptila II standard edge grinding tools

Reptila II is a low-cost standard programme for glass edging for general purpose applications. These diamond cup wheels are available in both, metal and resin-bond varieties and are suitable for machines with grinding wheel diameters of 150 mm, offering an excellent price-performance ratio. They are available in grit sizes from D46 (325/400) to D252 (60/80).

Layer geometries
The images below show the available layer geometries:

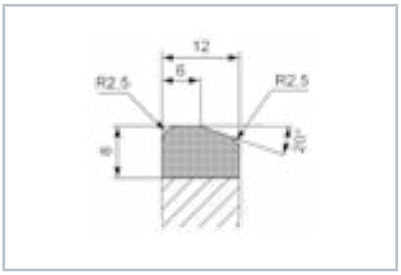
Cross-section of layer 12 mm × 8 mm, segmented

Recommended for:
- First station (rough grinding)
- Float glass, minimum thickness 10 mm or laminated safety glass (LSG)



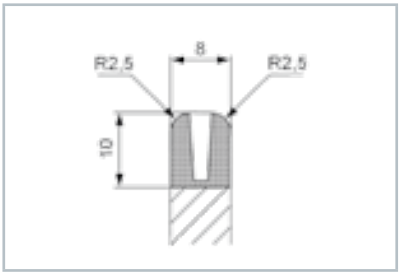
Cross section of layer 12 mm × 8 mm, continuous

Recommended for:
- First station (rough grinding)
- Float glass , maximum thickness 10 mm



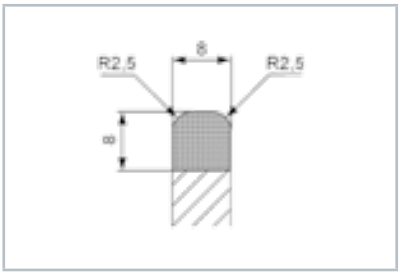
Cross-section of layer 8 mm × 10 mm, segmented

Recommended for:
- Second station (semi-finishing)
- Float glass, minimum thickness 10 mm or laminated safety glass (LSG)



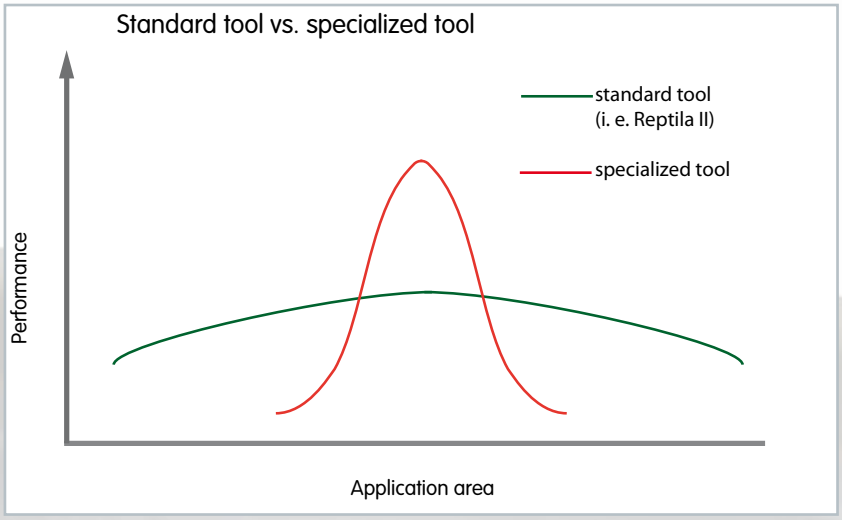
Cross section of layer 8 mm × 8 mm, continuous

Recommended for:
- Third station (fine grinding)
- Float glass in all thicknesses



Specialized tools

General purpose tools such as Reptila II are used where utmost flexibility and reliable grinding results are required. Higher performance and longest tool life are achieved in specific applications with more specialized tools.



When complex applications have to be analysed and the latest technology is required to optimize the process, WINTER is the right choice for you. We supply highly advanced grinding solutions. Our service covers more than just the supply of grinding tools. We work in partnership with our customers in order to continually improve existing grinding processes, increase productivity and reduce costs, and we seek to develop trusting relationships founded on our competence and reliability. Our main aim is to offer innovative solutions in the form of optimized high-performance grinding consumable systems to meet the individual challenges faced by our customers – exactly tailored to our customers' specific requirements.

The following pages feature tried and tested examples of machine tooling – it should be noted that these recommendations are for guidance only. Please contact us; we would be only too pleased to help you find the solution to your grinding task.

Examples of machine tooling in linear processing of glass edges

Albert

Albert 32 F3000

4–12 mm float glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D126	Metal	69014121651
2.	Edge semi-finishing	Cup wheel	continuous	150	D76	Metal	69014121549
3.	Fine edge grinding	Cup wheel	continuous	150	D54	Metal	69014121552
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014121552
5.	Seaming	Cup wheel	continuous	150	D54	Metal	69014121552
6.	Corner grinding	Peripheral wheel	continuous	90	D64	Metal	69014125950

Baudin

Baudin 581

4–12 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D91	Metal	07958755317

Baudin 681

4–15 mm float glass, straight edge with seam **and/or** mitre– single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metall	07958753880
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metall	69014138257

REPITLA II
[2] available ex stock
All dimensions in mm

Please feel free to contact our expert advisors at any time. Contact details can be found on the last page

4–19 mm laminated safety glass (LSG), straight edge with seam **and/or** mitre– single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958753880
2.	Fine mitre grinding	Cup wheel	segmented	150	D76	Metal	69014146829

Baudin 1081

4–15 mm float glass, straight edge **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958753880
2.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	07958714914
3.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014138257 [2]
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014139299 [2]
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014139299 [2]

4–15 mm float glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014136219
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	07958701055
3.	Fine edge grinding	Cup wheel	continuous	150	D91	Resin	07958701106
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014139299
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014139299

Bavelloni

Bavelloni MB4

4 mm float glass, pencil edge – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Peripheral wheel	continuous	200	D107	Metal	60157668510
2.	Fine edge grinding	Peripheral wheel	continuous	200	D54	Metal	60157668511

12 mm float glass, pencil edge – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Peripheral wheel	continuous	200	D126	Metal	60157668514
2.	Fine edge grinding	Peripheral wheel	continuous	200	D64	Metal	60157668515

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5 mm float glass, trapezoidal profile – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Peripheral wheel	continuous	200	D126	Metal	69014121528
2.	Fine edge grinding	Peripheral wheel	continuous	200	D64	Metal	69014121529

6 mm float glass, trapezoidal profile – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Peripheral wheel	continuous	200	D126	Metal	69014121530
2.	Fine edge grinding	Peripheral wheel	continuous	200	D64	Metal	69014121531

Bavelloni Gemy 6

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014133064 ℄ 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 ℄ 2)
3.	Seaming	Cup wheel	continuous	150	SC280 (SiC)	Resin	07958701838
4.	Seaming	Cup wheel	continuous	150	SC280 (SiC)	Resin	07958701838

Bavelloni Gemy 8

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014133064 ℄ 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 ℄ 2)
3.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 ℄ 2)
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 ℄ 2)

Bavelloni Gemy 9C

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014133064 ℄ 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 ℄ 2)
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 ℄ 2)
5.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 ℄ 2)

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All dimensions in mm

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Bavelloni Gemy 11

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014133064 [2]
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	69014143338 [2]
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 [2]
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]

4–15 mm float glass, straight edge with seam – single-edge, with **resin-bond wheel** on 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014133064 [2]
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	69014143338 [2]
3.	Fine edge grinding	Cup wheel	continuous	150	D91	Resin	07958715643
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]

Bavelloni Gemy V10

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958715484
2.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	69014143338 [2]
3.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014137632 [2]
7.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]
8.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]

4–15 mm float glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014133064 [2]
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	69014143338 [2]
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 [2]
7.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]
8.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]

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All dimensions in mm

Bavelloni Gemy V14

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D126	Metal	69014132740
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 2)
3.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958715484
4.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	69014143338 2)
5.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014137632 2)
9.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 2)
10.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 2)

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge with **resin-bond wheel** on 5th station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D126	Metal	69014132740
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 2)
3.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958715484
4.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	69014143338 2)
5.	Fine mitre grinding	Cup wheel	continuous	150	D91	Resin	07958715643
9.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 2)
10.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 2)

Bavelloni MAX 50

Facet cut – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough facet grinding	Cup wheel	continuous	150	D181	Metal	66260389070
2.	Rough facet grinding	Cup wheel	continuous	150	D126	Metal	66260392071
3.	Facet semi-finishing	Cup wheel	continuous	150	D91	Resin	07958737264
4.	Facet semi-finishing	Cup wheel	continuous	150	D54	Resin	07958737265
5.	Fine facet grinding	Cup wheel	continuous	150	D25	Resin	07958737266
6.	Fine facet grinding	Cup wheel	continuous	150	D20B	Resin	60157654906

Bavelloni MAX 60

Facet cut – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough facet grinding	Cup wheel	continuous	150	D181	Metal	66260389070
2.	Rough facet grinding	Cup wheel	continuous	150	D126	Metal	66260392071
3.	Facet semi-finishing	Cup wheel	continuous	150	D91	Resin	07958737264
4.	Facet semi-finishing	Cup wheel	continuous	150	D54	Resin	07958737265

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All dimensions in mm

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Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
5.	Fine facet grinding	Cup wheel	continuous	150	D25	Resin	07958737266
6.	Fine facet grinding	Cup wheel	continuous	150	D20B	Resin	60157654906

Bavelloni MAX 80

Facet cut – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough facet grinding	Cup wheel	continuous	150	D181	Metal	66260389070
2.	Rough facet grinding	Cup wheel	continuous	150	D126	Metal	66260392071
3.	Facet semi-finishing	Cup wheel	continuous	150	D91	Resin	07958737264
4.	Facet semi-finishing	Cup wheel	continuous	150	D54	Resin	07958737265
5.	Fine facet grinding	Cup wheel	continuous	150	D25	Resin	07958737266
6.	Fine facet grinding	Cup wheel	continuous	150	D20B	Resin	60157654906

Bavelloni PR 88

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014133064 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 2)
3.	Seaming	Cup wheel	continuous	100	D54	Metal	66260127038
5.	Seaming	Cup wheel	continuous	100	D54	Metal	66260127038

5–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014133064 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 2)
3.	Seaming	Cup wheel	continuous	100	D54	Metal	66260127038
5.	Seaming	Cup wheel	continuous	100	D54	Metal	66260127038

Bavelloni CR 1111

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014133064 2)
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	69014133233
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 2)
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260127038
5.	Seaming	Cup wheel	continuous	100	D54	Metal	66260127038

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All dimensions in mm

5–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014133064 [2]
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	69014143338 [2]
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 [2]
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260127038
5.	Seaming	Cup wheel	continuous	100	D54	Metal	66260127038

5–15 mm float and laminated safety glass, straight edge with seam – single-edge, with finer grit from 2nd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	07958746484
2.	Edge semi-finishing	Cup wheel	segmented	150	D91	Metal	66260131386
3.	Fine edge grinding	Cup wheel	continuous	150	D54	Metal	66260116909
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260127038
5.	Seaming	Cup wheel	continuous	100	D54	Metal	66260127038

Bavelloni PRV 99

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D126	Metal	07958755252
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014137632 [2]
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]
7.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]

4–12 mm float glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metal	69014133226
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 [2]
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]
7.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]

5–19 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958715484
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014137632 [2]
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]
7.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 [2]

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All dimensions in mm

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5–19 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014133064 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014137632 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 2)
7.	Seaming	Cup wheel	continuous	150	D54	Metal	69014133232 2)

Bavelloni VX 8

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	175	D126	Metal	07958755307
2.	Fine edge grinding	Cup wheel	continuous	175	D64	Metal	07958739631
3.	Seaming	Cup wheel	continuous	150	D54	Metal	66260390662
5.	Seaming	Cup wheel	continuous	150	D54	Metal	66260390662

Bavelloni VX 10

4–15 mm float glass, straight edge with seam – single-edge, with **segmented** wheel on 1st station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D151	Metal	07958709833
2.	Edge semi-finishing	Cup wheel	continuous	175	D107	Metal	60157693274
3.	Fine edge grinding	Cup wheel	continuous	175	D91	Resin	07958709836
4.	Seaming	Cup wheel	continuous	150	D54	Metal	66260390662
6.	Seaming	Cup wheel	continuous	150	D54	Metal	66260390662
11.	Corner grinding	Peripheral wheel	continuous	50	D64	Metal	60157697438

4–15 mm float glass, straight edge with seam – single-edge, with **continuous** wheel on 1st station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	175	D151	Metal	07958709834
2.	Edge semi-finishing	Cup wheel	continuous	175	D107	Metal	60157693274
3.	Fine edge grinding	Cup wheel	continuous	175	D91	Resin	07958709836
4.	Seaming	Cup wheel	continuous	150	D54	Metal	66260390662
6.	Seaming	Cup wheel	continuous	150	D54	Metal	66260390662
11.	Corner grinding	Peripheral wheel	continuous	50	D64	Metal	60157697438

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All dimensions in mm

Bavelloni VX 11

4–15 mm float glass, straight edge with seam – single-edge, with **segmented** wheel on 1st station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D151	Metal	07958709833
2.	Edge semi-finishing	Cup wheel	continuous	175	D107	Metal	60157693274
3.	Fine edge grinding	Cup wheel	continuous	175	D91	Resin	07958709836
4.	Seaming	Cup wheel	continuous	150	D54	Metal	66260390662
6.	Seaming	Cup wheel	continuous	150	D54	Metal	66260390662
11.	Corner grinding	Peripheral wheel	continuous	50	D64	Metal	60157697438

4–15 mm float glass, straight edge with seam – single-edge, with **continuous** wheel on 1st station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	175	D151	Metal	07958709834
2.	Edge semi-finishing	Cup wheel	continuous	175	D107	Metal	60157693274
3.	Fine edge grinding	Cup wheel	continuous	175	D91	Resin	07958709836
4.	Seaming	Cup wheel	continuous	150	D54	Metal	66260390662
6.	Seaming	Cup wheel	continuous	150	D54	Metal	66260390662
11.	Corner grinding	Peripheral wheel	continuous	50	D64	Metal	60157697438

Benteler

3–10 mm float glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D126	Metal	69014125949 [2]
2.	Edge semi-finishing	Cup wheel	continuous	175	D91	Metal	07958700062 [2]
3.	Fine edge grinding	Cup wheel	continuous	175	D64	Metal	07958702204
4.	Seaming	Cup wheel	continuous	175	D54	Metal	66260341055 [2]
6.	Seaming	Cup wheel	continuous	175	D54	Metal	66260341055 [2]
11.	Corner grinding	Peripheral wheel	continuous	50	D64	Metal	69014169090 [2]

3–10 mm float glass, straight edge with seam – double-edge, with **resin-bond wheel** on 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D126	Metal	69014125949 [2]
2.	Edge semi-finishing	Cup wheel	continuous	175	D91	Metal	07958700062 [2]
3.	Fine edge grinding	Cup wheel	continuous	175	D64	Resin	69014149094 [2]
4.	Seaming	Cup wheel	continuous	175	D54	Metal	66260341055 [2]
6.	Seaming	Cup wheel	continuous	175	D54	Metal	66260341055 [2]
11.	Corner grinding	Peripheral wheel	continuous	50	D64	Metal	69014169090 [2]

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All dimensions in mm

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4–15 mm float glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D151	Metal	69014143157 [2]
2.	Edge semi-finishing	Cup wheel	continuous	175	D91	Metal	07958700062 [2]
3.	Fine edge grinding	Cup wheel	continuous	175	D91	Resin	07958706755 [2]
4.	Seaming	Cup wheel	continuous	175	D54	Metal	66260341055 [2]
6.	Seaming	Cup wheel	continuous	175	D54	Metal	66260341055 [2]
11.	Corner grinding	Peripheral wheel	continuous	50	D64	Metal	69014169090 [2]

5–25 mm float and laminated safety glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D181	Metal	69014125948 [2]
2.	Edge semi-finishing	Cup wheel	segmented	175	D126	Metal	69014125949 [2]
3.	Fine edge grinding	Cup wheel	segmented	175	D91	Resin	07958703461 [2]
4.	Seaming	Cup wheel	continuous	175	D54	Metal	66260341055 [2]
6.	Seaming	Cup wheel	continuous	175	D54	Metal	66260341055 [2]
11.	Corner grinding	Peripheral wheel	continuous	50	D64	Metal	69014169090 [2]

Besana

Besana SQ 10 / T

4–12 mm float glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metal	69014132507
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	07958702642
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014145493
4.	Seaming	Cup wheel	continuous	125	D54	Metal	66260113731
6.	Seaming	Cup wheel	continuous	125	D54	Metal	66260113731

6–19 mm float and laminated safety glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014142195
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958715069
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014145493
4.	Seaming	Cup wheel	continuous	125	D54	Metal	66260113731
6.	Seaming	Cup wheel	continuous	125	D54	Metal	66260113731

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[2] available ex stock
All dimensions in mm

Bodo Gerhard

Bodo Gerhard K 1507

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D91	Metal	07958746661 €
4.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)
5.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)

5–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D107	Metal	69014134806 €
4.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)
5.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)

Bodo Gerhard K 300 E

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	07958708442 €
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147162 €
3.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)
4.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)

Bodo Gerhard K 300 GE

5–15 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958715581
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147162 €
3.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)
4.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)

Bodo Gerhard K 3008

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	07958708442 €
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147162 €
3.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)
4.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)

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All dimensions in mm

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Bodo Gerhard K 3010

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	07958708442
2.	Edge semi-finishing	Cup wheel	continuous	150	D91	Metal	07958714905
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147162
4.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]
5.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	07958708442
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958708447
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147162
4.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]
5.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]

Bodo Gerhard K 310 GE

4–15 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958715581
2.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	69014134806
3.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147162
7.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]
8.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]

4–15 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge, with **resin-bond wheel** on 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958715581
2.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	69014134806
3.	Fine mitre grinding	Cup wheel	continuous	150	D91	Resin	07958715714
7.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]
8.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]

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All dimensions in mm

4–15 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	07958708442 €
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	69014134806 €
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147162 €
7.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)
8.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)

Bodo Gerhard K 400 E

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	07958708442 €
2.	Edge semi-finishing	Cup wheel	continuous	150	D91	Metal	07958714905 €
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147162 €
4.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)
5.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	07958708442 €
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958708447 €
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147162 €
4.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)
5.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)

Bodo Gerhard K 414 GE

4–25 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	175	D181	Metal	69014145887
2.	Mitre semi-finishing	Cup wheel	segmented	175	D151	Metal	66260116254
3.	Mitre semi-finishing	Cup wheel	segmented	175	D91	Metal	66260117058
4.	Fine mitre grinding	Cup wheel	segmented	175	D54	Metal	66260117060
9.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)
10.	Seaming	Cup wheel	continuous	125	D54	Metall	66260343029 2)

Bodo Gerhard KG 1505

4–12 mm float glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D91	Metall	07958746661 €

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All dimensions in mm

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Bodo Gerhard KG 3008

5–15 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	69014129430
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147162 €
5.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]
6.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]

5–15 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	07958708442 €
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147162 €
5.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]
6.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]

Bodo Gerhard KG 3010

4–15 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958715581
2.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	69014134806 €
3.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147162 €
7.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]
8.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]

4–15 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge, with **resin-bond wheel** on 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958715581
2.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	69014134806 €
3.	Fine mitre grinding	Cup wheel	continuous	150	D91	Resin	07958715714 €
7.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]
8.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 [2]

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[2] available ex stock
All dimensions in mm

4–15 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	07958708442
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	69014134806
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147162
7.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)
8.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)

Bodo Gerhard KG 6014

10–25 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D181	Metal	69014145887
2.	Edge semi-finishing	Cup wheel	segmented	175	D151	Metal	66260116254
3.	Edge semi-finishing	Cup wheel	segmented	175	D91	Metal	66260117058
4.	Fine edge grinding	Cup wheel	segmented	175	D54	Metal	66260117060
9.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)
10.	Seaming	Cup wheel	continuous	125	D54	Metal	66260343029 2)

Bottero

Bottero 106 F

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metal	69014137090
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 2)

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 2)

Bottero 106 F

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metal	69014137090
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 2)
3.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176
5.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176

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All dimensions in mm

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4–15 mm float and laminated safety glass (LSG), straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 ♻ 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 ♻ 2)
3.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)
5.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)

Bottero 110 FC

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 ♻ 2)
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	69014137171 ♻
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 ♻ 2)
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)

4–12 mm float glass, straight edge with seam – single-edge, with **resin-bond wheel** on 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 ♻ 2)
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	69014137171 ♻ 2)
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	69014139902 ♻
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)

4–15 mm float and laminated safety glass, straight edge with seam – single edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 ♻ 2)
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958712583 ♻ 2)
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 ♻ 2)
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)

4–15 mm float and laminated safety glass, straight edge with seam – single-edge, with **resin-bond wheel** on 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 ♻ 2)
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958712583 ♻ 2)
3.	Fine edge grinding	Cup wheel	continuous	150	D91	Resin	07958701742 ♻

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Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)

Bottero 111 F

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 ♻ 2)
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	69014137171 ♻
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 ♻ 2)
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)

4–12 mm float glass, straight edge with seam – single-edge, with **resin-bond wheel** on 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 ♻ 2)
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	69014137171 ♻
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	69014139902 ♻
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 ♻ 2)
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958712583 ♻ 2)
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 ♻ 2)
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)

4–15 mm float and laminated safety glass, straight edge with seam – single-edge, with **resin-bond wheel** on 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 ♻ 2)
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958712583 ♻ 2)
3.	Fine edge grinding	Cup wheel	continuous	150	D91	Resin	07958701742 ♻
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 ♻ 2)

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2) available ex stock
All dimensions in mm

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Bottero Titan 220

4–12 mm float glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 € 2)
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	69014137171 €
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 € 2)
4.	Saum	Cup wheel	continuous	130	D54	Metal	66260379149
5.	Saum	Cup wheel	continuous	130	D54	Metal	66260379149

Bottero Titan 222

4–15 mm float and laminated safety glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 € 2)
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958712583 € 2)
3.	Edge semi-finishing	Cup wheel	continuous	150	D76	Metal	69014139437 € 2)
4.	Fine edge grinding	Cup wheel	continuous	150	D64	Resin	07958712585 €
5.	Seaming	Cup wheel	continuous	130	D54	Metal	66260379149
6.	Seaming	Cup wheel	continuous	130	D54	Metal	66260379149

Bottero 810 BC-BCS

4–15 mm float glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 € 2)
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	69014137171 €
3.	Fine edge grinding	Cup wheel	continuous	150	D91	Resin	07958701742 €
7.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 € 2)
9.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 € 2)

Bottero 810 BR-BRS

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958717257
2.	Rough mitre grinding	Cup wheel	continuous	150	D107	Metal	69014137171 €
3.	Mitre semi-finishing	Cup wheel	continuous	150	D91	Resin	07958701742 €
4.	Mitre semi-finishing	Cup wheel	continuous	150	D64	Resin	07958712585 €
5.	Fine mitre grinding	Cup wheel	continuous	150	D54	Resin	07958715478 €
7.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 € 2)
9.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 € 2)

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2) available ex stock
All dimensions in mm

Bottero 814 BC/BCS

6–22 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D181	Metal	07958715417
2.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	69014145140
3.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014139437 2)
7.	Rough edge grinding	Cup wheel	continuous	150	D91	Metal	69014147208
8.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 2)
10.	Seaming	Cup wheel	continuous	150	D54	Metal	69014137176 2)

Bovone

Bovone ELB 10

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138051 2)
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	07958701057
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014140598 2)
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014138054 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014138054 2)

4–15 mm float glass, straight edge with seam – single-edge, with **resin-bond wheel** at 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138051 2)
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	07958701057
3.	Fine edge grinding	Cup wheel	continuous	150	D91	Resin	07958701039
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014138054 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014138054 2)

6–19 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D181	Metal	69014140596
2.	Edge semi-finishing	Cup wheel	segmented	150	D126	Metal	69014140597
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014140598 2)
4.	Seaming	Cup wheel	continuous	150	D54	Metal	69014138054 2)
6.	Seaming	Cup wheel	continuous	150	D54	Metal	69014138054 2)

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All dimensions in mm

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Bovone ELB 10/45

6–22 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D181	Metal	07958701045
2.	Mitre semi-finishing	Cup wheel	segmented	150	D126	Metal	69014140597
3.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	69014138053 2)
4.	Fine mitre grinding	Cup wheel	continuous	150	D76	Resin	07958736896 2)
5.	Fine mitre grinding	Cup wheel	continuous	150	Resin	Resin	07958736897 2)
7.	Seaming	Cup wheel	continuous	150	D54	Metal	69014138054 2)
9.	Seaming	Cup wheel	continuous	150	D54	Metal	69014138054 2)

6–22 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D181	Metal	69014140596
2.	Edge semi-finishing	Cup wheel	segmented	150	D126	Metal	69014140597
3.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	69014138053 2)
4.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	07958736896 2)
5.	Fine edge grinding	Cup wheel	continuous	150	D46	Resin	07958736897 2)
7.	Seaming	Cup wheel	continuous	150	D54	Metal	69014138054 2)
9.	Seaming	Cup wheel	continuous	150	D54	Metal	69014138054 2)

Bovone ELB 14

6–19 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D181	Metal	69014140596
2.	Rough edge grinding	Cup wheel	segmented	150	D126	Metal	69014140597
3.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	69014138053 2)
4.	Edge semi-finishing	Cup wheel	segmented	150	D91	Resin	07958701820
5.	Rough seam grinding	Cup wheel	continuous	130	D76	Metal	07958731103
6.	Rough seam grinding	Cup wheel	continuous	130	D76	Metal	07958731103
7.	Fine edge grinding	Cup wheel	segmented	150	D76	Resin	07958736896 2)
8.	Fine edge grinding	Cup wheel	continuous	150	D46	Resin	07958736897 2)
9.	Fine seam grinding	Cup wheel	continuous	130	D46	Resin	07958737131
10.	Fine seam grinding	Cup wheel	continuous	130	D46	Resin	07958737131

Bovone ELB 14/45

6–22 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edgeg

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D213	Metal	66260127993

REPITLA II
2) available ex stock
All dimensions in mm

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
2.	Mitre semi-finishing	Cup wheel	segmented	150	D151	Metal	69014138051 € 2)
3.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	69014138053 € 2)
4.	Fine mitre grinding	Cup wheel	segmented	150	D76	Resin	07958736896 2)
5.	Fine mitre grinding	Cup wheel	segmented	150	D46	Resin	07958736897 2)
7.	Rough edge grinding	Cup wheel	segmented	150	D107	Metal	69014138050 €
8.	Rough seam grinding	Cup wheel	continuous	150	D64	Metal	07958701059 €
9.	Fine seam grinding	Cup wheel	continuous	150	D46	Resin	07958737133 €
10.	Rough seam grinding	Cup wheel	continuous	150	D64	Metal	07958701059 €
11.	Fine seam grinding	Cup wheel	continuous	150	D46	Resin	07958737133 €
12.	Edge semi-finishing	Cup wheel	continuous	150	D76	Resin	07958736896 2)
13.	Fine edge grinding	Cup wheel	continuous	150	D46	Resin	07958736897 2)

Bovone ELB 17/45 CNC

6–22 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D213	Metal	66260127993
2.	Mitre semi-finishing	Cup wheel	segmented	150	D151	Metal	69014138051 € 2)
3.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	69014138053 € 2)
4.	Fine mitre grinding	Cup wheel	segmented	150	D76	Resin	07958736896 2)
5.	Fine mitre grinding	Cup wheel	segmented	150	D46	Resin	07958736897 2)
7.	Rough edge grinding	Cup wheel	segmented	150	D107	Metal	69014138050 €
8.	Rough seam grinding	Cup wheel	continuous	150	D64	Metal	07958701059 €
9.	Rough seam grinding	Cup wheel	continuous	150	D64	Metal	07958701059 €
10.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	07958736896 2)
11.	Fine edge grinding	Cup wheel	continuous	150	D46	Resin	07958736897 2)
12.	Fine seam grinding	Cup wheel	continuous	150	D46	Resin	07958737133 €
13.	Fine seam grinding	Cup wheel	continuous	150	D46	Resin	07958737133 €

Bovone MINI MAXI 371

Facet cut – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough facet grinding	Cup wheel	closed	150	D181	Metal	07958755253
2.	Rough facet grinding	Cup wheel	closed	150	D126	Metal	07958755254
3.	Facet semi-finishing	Cup wheel	closed	148	D107	Resin	07958755269
4.	Edging	Peripheral wheel	Pencil edge	150	D54	Metal	69014148777
5.	Fine facet grinding	Cup wheel	continuous	148	D76	Resin	69014185976
6.	Fine facet grinding	Cup wheel	continuous	148	D46	Resin	69014185975
7.	Fine facet grinding	Cup wheel	continuous	148	D25	Resin	69014194089
8.	Fine facet grinding	Cup wheel	continuous	148	D20B	Resin	69014194087

€ REPITLA II
2) available ex stock
All dimensions in mm

Please feel free to contact our expert advisors at any time. Contact details can be found on the last page

Busetti

Busetti F8

3–10 mm float glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	175	D107	Metal	66260389770
2.	Fine edge grinding	Cup wheel	continuous	175	D64	Metal	07958715481
3.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845
5.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845

3–10 mm float glass, straight edge with seam – double-edge, with **resin-bond wheel** on 2nd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	175	D107	Metal	66260389770
2.	Fine edge grinding	Cup wheel	continuous	175	D76	Resin	07958715477
3.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845
5.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D151	Metal	60157677371
2.	Fine edge grinding	Cup wheel	continuous	175	D76	Metal	07958715480
3.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845
5.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845

Busetti F10-C

4–15 mm float glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D151	Metal	60157677371
2.	Edge semi-finishing	Cup wheel	continuous	175	D91	Metal	60157669092
3.	Fine edge grinding	Cup wheel	continuous	175	D64	Metal	07958715481
4.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845
6.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845

4–15 mm float glass, straight edge with seam – double-edge, with **resin-bond wheel** on 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D151	Metal	69014142973
2.	Edge semi-finishing	Cup wheel	continuous	175	D91	Metal	60157669092
3.	Fine edge grinding	Cup wheel	continuous	175	D91	Resin	69014182793

REPITLA II
[2] available ex stock
All dimensions in mm

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
4.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845
6.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845

Busetti F10-P

5–19 mm float and laminated safety glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Peripheral wheel	segmented	200	D181	Metal	07958746094
2.	Edge semi-finishing	Cup wheel	segmented	175	D107	Metal	60157694288
3.	Fine edge grinding	Cup wheel	segmented	175	D91	Resin	07958715485
4.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845
6.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845

Busetti F12-C

4–15 mm float glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D151	Metal	69014142973
2.	Edge semi-finishing	Cup wheel	segmented	175	D107	Metal	60157694288
3.	Edge semi-finishing	Cup wheel	continuous	175	D76	Metal	07958715480
4.	Fine edge grinding	Cup wheel	continuous	175	D64	Resin	60157677396
5.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845
7.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845

5–25 mm float and laminated safety glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	175	D181	Metal	07958715136
2.	Edge semi-finishing	Cup wheel	segmented	175	D126	Metal	07958715141
3.	Edge semi-finishing	Cup wheel	continuous	175	D91	Metal	60157675804
4.	Fine edge grinding	Cup wheel	continuous	175	D91	Resin	69014182793
5.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845
7.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845

Busetti F12-P

4–15 mm float glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Peripheral wheel	segmented	200	D181	Metal	07958746094
2.	Edge semi-finishing	Cup wheel	segmented	175	D107	Metal	60157694288
3.	Edge semi-finishing	Cup wheel	continuous	175	D76	Metal	07958715480

REPITLA II
[2] available ex stock
All dimensions in mm

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
4.	Fine edge grinding	Cup wheel	continuous	175	D64	Resin	60157677396
5.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845
7.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845

5–25 mm float and laminated safety glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Peripheral wheel	segmented	200	D181	Metal	07958746094
2.	Edge semi-finishing	Cup wheel	segmented	175	D126	Metal	07958715141
3.	Edge semi-finishing	Cup wheel	continuous	175	D91	Metal	60157675804
4.	Fine edge grinding	Cup wheel	continuous	175	D91	Resin	69014182793
5.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845
7.	Seaming	Cup wheel	continuous	150	D54	Metal	66260378845

Lattuada

Lattuada AL 10 M

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metal	69014145501 €
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	07958710299 €
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	07958715182 €
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049 €
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958715062 €
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522 €
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

Lattuada AL 4 E

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D91	Metal	07958714909 €

€ REPITLA II
[2] available ex stock
All dimensions in mm

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D107	Metal	07958714912

Lattuada AL 5 AV

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D107	Metal	07958715137

4–15 mm float glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D91	Metal	07958714909

4–19 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D126	Metal	07958715135

4–19 mm float and laminated safety glass, **only** straight edge with seam – single-edgeg

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D107	Metal	07958714912

Lattuada AL 5 E

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D91	Metal	07958714909

4–15 mm float and laminated safety glas, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D107	Metal	07958714912

Lattuada AL 6 AV

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D126	Metal	07958715135
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147522

REPITLA II
[2] available ex stock
All dimensions in mm

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	690141147522

4–19 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958710300
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147522

4–19 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522

Lattuada AL 6 E

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522

Lattuada AL 7 AV

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D126	Metal	07958715135
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147522

4–15 mm float glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522

4–19 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958710300
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147522

REPITLA II
[2] available ex stock
All dimensions in mm

4–19 mm float and laminated safety glass, straight edge **only** with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522

Lattuada AL 7 EC

4–15 mm float and laminated safety glas, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522

Lattuada AL 8 E

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522
3.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
5.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

Lattuada AL 9 E

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522
3.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
5.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

Lattuada AL 9 M AV

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D126	Metal	07958715135
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147522
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

REPITLA II
[2] available ex stock
All dimensions in mm

4–15 mm float glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

4–19 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958710300
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147522
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

4–19 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

Lattuada AL 9 M C

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

Lattuada TL 10 AV C

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D126	Metal	07958715135
2.	Mitre semi-finishing	Cup wheel	continuous	150	D107	Metal	07958710299
3.	Fine mitre grinding	Cup wheel	continuous	150	D76	Resin	07958715182
7.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
9.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

REPITLA II
[2] available ex stock
All dimensions in mm

4–15 mm float glass, s**only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	07958710299
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	07958715182
7.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
9.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

4–19 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958710300
2.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	07958714912
3.	Fine mitre grinding	Cup wheel	continuous	150	D91	Resin	07958715181
7.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
9.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

4–19 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958714912
3.	Fine edge grinding	Cup wheel	continuous	150	D91	Resin	07958715181
7.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
9.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

Lattuada TL 10 C

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metal	69014138049
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	07958710299
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	07958715182
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

5–19 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958715062
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522

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Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

5–19 mm float and laminated safety glass, straight edge with seam – single-edge, with **resin-bond wheel** at 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958715062
3.	Fine edge grinding	Cup wheel	continuous	150	D91	Resin	07958715181
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

Lattuada TL 11

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	07958710229
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Fine edge grinding	Cup wheel	continuous	150	D64	Resin	69014145598

5–25 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D181	Metal	69014147518
2.	Edge semi-finishing	Cup wheel	segmented	150	D126	Metal	07958715063
3.	Fine edge grinding	Cup wheel	segmented	150	D91	Metal	07958713732
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	07958715182

Lattuada TL 12 C

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	07958710299
3.	Fine edge grinding	Cup wheel	continuous	150	D91	Metal	69014138046
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Fine edge grinding	Cup wheel	continuous	150	D64	Resin	69014145598

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All dimensions in mm

5–25 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D181	Metal	69014147518
2.	Edge semi-finishing	Cup wheel	segmented	150	D126	Metal	07958715063
3.	Fine edge grinding	Cup wheel	segmented	150	D91	Metal	07958713732
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	07958715182

Lattuada TL 13

5–25 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D181	Metal	69014147518
2.	Edge semi-finishing	Cup wheel	segmented	150	D126	Metal	07958715063
3.	Fine edge grinding	Cup wheel	continuous	150	D91	Metal	69014138046
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	07958715182

Lattuada TL 9 AV

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D126	Metal	07958715135
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147522
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

4–15 mm float glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

4–19 mm float and laminated safety glass, straight edge with seam **and/or mitre** – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958710300
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	69014147522
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

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4–19 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014147522
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

Lattuada TLR 11 AV C

5–25 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D181	Metal	07958715261
2.	Mitre semi-finishing	Cup wheel	segmented	150	D126	Metal	07958714913
3.	Mitre semi-finishing	Cup wheel	continuous	150	D91	Metal	69014138046
4.	Fine mitre grinding	Cup wheel	continuous	150	D76	Resin	07958715182
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
10.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

5–25 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D181	Metal	69014147518
2.	Edge semi-finishing	Cup wheel	segmented	150	D126	Metal	07958714913
3.	Edge semi-finishing	Cup wheel	continuous	150	D91	Metal	69014138046
4.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	07958715182
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
10.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

Lattuada TLR 13 AV C

5–25 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D181	Metal	07958715261
2.	Mitre semi-finishing	Cup wheel	segmented	150	D126	Metal	07958714913
3.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	07958715062
4.	Fine mitre grinding	Cup wheel	continuous	150	D91	Resin	07958707729
5.	Fine mitre grinding	Cup wheel	continuous	150	D64	Resin	69014145598
10.	Seaming	Cup wheel	continuous	130	D54	Metal	07958710406
12.	Seaming	Cup wheel	continuous	130	D54	Metal	07958710406

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Lattuada TLR 13 C

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049 €
2.	Edge semi-finishing	Cup wheel	continuous	150	D126	Metal	69014147520 €
3.	Edge semi-finishing	Cup wheel	continuous	150	D91	Metal	69014138046 €
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	07958715182 €
9.	Fine edge grinding	Cup wheel	continuous	150	D64	Resin	69014145598 €

5–25 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D181	Metal	69014147518 €
2.	Edge semi-finishing	Cup wheel	segmented	150	D151	Metal	69014138049 €
3.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958715062 €
4.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Fine edge grinding	Cup wheel	continuous	150	D91	Resin	07958715181 €
9.	Fine edge grinding	Cup wheel	continuous	150	D76	Resin	07958715182 €

Lattuada TLR 14

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049 €
2.	Rough edge grinding	Cup wheel	continuous	150	D126	Metal	07958715063 €
3.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	07958710299 €
4.	Edge semi-finishing	Cup wheel	continuous	150	D91	Resin	07958715181 €
5.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
7.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
9.	Fine edge grinding	Cup wheel	continuous	150	D64	Resin	69014145598 €
10.	Fine edge grinding	Cup wheel	continuous	150	D54	Resin	07958717461 €

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5–25 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D181	Metal	69014147518
2.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
3.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958715062
4.	Edge semi-finishing	Cup wheel	continuous	150	D91	Resin	07958715181
5.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
7.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
9.	Fine edge grinding	Cup wheel	continuous	150	D64	Resin	69014145598
10.	Fine edge grinding	Cup wheel	continuous	150	D54	Resin	07958717461

10–35 mm laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D213	Metal	07958714900
2.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
3.	Edge semi-finishing	Cup wheel	segmented	150	D126	Metal	69014147520
4.	Edge semi-finishing	Cup wheel	segmented	150	D91	Resin	07958717462
5.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
7.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
9.	Fine edge grinding	Cup wheel	segmented	150	D76	Resin	07958717463
10.	Fine edge grinding	Cup wheel	continuous	150	D64	Resin	69014145598

Lattuada TLR 14 AV C

5–25 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D181	Metal	07958715261
2.	Mitre semi-finishing	Cup wheel	segmented	150	D126	Metal	07958714913
3.	Mitre semi-finishing	Cup wheel	continuous	150	D107	Metal	07958710299
4.	Fine mitre grinding	Cup wheel	continuous	150	D76	Resin	07958715182
8.	Rough edge grinding	Cup wheel	continuous	150	D91	Metal	07958714909
9.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
11.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

Lattuada TLR 15 C

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014138049
2.	Edge semi-finishing	Cup wheel	continuous	150	D126	Metal	69014147520

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Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
3.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	07958710299
4.	Fine edge grinding	Cup wheel	continuous	150	D91	Resin	07958715181
5.	Fine edge grinding	Cup wheel	continuous	150	D64	Resin	69014145598
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

5–25 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D181	Metal	69014147518
2.	Edge semi-finishing	Cup wheel	segmented	150	D151	Metal	69014138049
3.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958715062
4.	Fine edge grinding	Cup wheel	continuous	150	D91	Resin	07958715181
5.	Fine edge grinding	Cup wheel	continuous	150	D64	Resin	69014145598
6.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373
8.	Seaming	Cup wheel	continuous	100	D54	Metal	66260364373

Lattuada TLR 16 AV C

5–25 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D181	Metal	07958715261
2.	Mitre semi-finishing	Cup wheel	segmented	150	D151	Metal	69014138049
3.	Mitre semi-finishing	Cup wheel	segmented	150	D107	Metal	07958715062
4.	Fine mitre grinding	Cup wheel	continuous	150	D91	Resin	07958715181
5.	Fine mitre grinding	Cup wheel	continuous	150	D64	Resin	69014145598
10.	Rough edge grinding	Cup wheel	continuous	150	D91	Metal	07958714909
11.	Seaming	Cup wheel	continuous	130	D54	Metal	07958710406
13.	Seaming	Cup wheel	continuous	130	D54	Metal	07958710406

Rohmer & Stimpfig

Rohmer & Stimpfig

2 mm float glass, pencil edge – CNC

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Edging	Peripheral wheel	continuous	200	D54	Metal	07958755255
2.	Edging	Peripheral wheel	continuous	200	D54	Metal	07958755255

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All dimensions in mm

3 mm float glass, pencil edge – CNC

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Edging	Peripheral wheel	continuous	200	D76	Metal	07958755256
2.	Edging	Peripheral wheel	continuous	200	D76	Metal	07958755256

4 mm float glass, pencil edge – CNC

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Edging	Peripheral wheel	continuous	200	D107	Metal	07958755258
2.	Edging	Peripheral wheel	continuous	200	D107	Metal	07958755258

4 mm float glass, trapezoidal profile – CNC

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Edging	Peripheral wheel	continuous	200	D107	Metal	07958755259
2.	Edging	Peripheral wheel	continuous	200	D107	Metal	07958755259

5 mm float glass, trapezoidal profile – CNC

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Edging	Peripheral wheel	continuous	200	D107	Metal	07958755260
2.	Edging	Peripheral wheel	continuous	200	D107	Metal	07958755260

6 mm float glass, pencil edge – CNC

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Edging	Peripheral wheel	continuous	200	D126	Metal	66260156119
2.	Edging	Peripheral wheel	continuous	200	D126	Metal	66260156119

6 mm float glass, trapezoidal profile – CNC

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Edging	Peripheral wheel	continuous	200	D126	Metal	07958755263
2.	Edging	Peripheral wheel	continuous	200	D126	Metal	07958755263

8 mm float glass, trapezoidal profile – CNC

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Edging	Peripheral wheel	continuous	200	D126	Metal	07958755264
2.	Edging	Peripheral wheel	continuous	200	D126	Metal	07958755264

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All dimensions in mm

10 mm float glass, trapezoidal profile – CNC

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Edging	Peripheral wheel	continuous	200	D151	Metal	07958755265
2.	Edging	Peripheral wheel	continuous	200	D151	Metal	07958755265

12 mm float glass, trapezoidal profile – CNC

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Edging	Peripheral wheel	continuous	200	D151	Metal	07958755266
2.	Edging	Peripheral wheel	continuous	200	D151	Metal	07958755266

SAL

4–15 mm float glass, straight edge with seam – double-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	200	D151	Metal	07958700950
2.	Edge semi-finishing	Cup wheel	continuous	200	D107	Metal	07958700951
3.	Fine edge grinding	Cup wheel	continuous	200	D91	Resin	07958700947
4.	Seaming	Cup wheel	continuous	200	D64	Resin	69014133512
6.	Seaming	Cup wheel	continuous	200	D64	Resin	69014133512

Schiatti

Schiatti FPS 10

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D107	Metal	07958715064
2.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
3.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

4–12 mm float glass, straight edge with seam – single-edge, with **resin-bond wheel** on 2nd and 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D107	Metal	07958715064
2.	Seaming	Cup wheel	continuous	130	D64	Resin	07958701807
3.	Seaming	Cup wheel	continuous	130	D64	Resin	07958701807

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All dimensions in mm

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4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D126	Metal	69014137637
2.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
3.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

4–15 mm float and laminated safety glass, straight edge with seam – single-edge, with **resin-bond wheel** on 2nd and 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D126	Metal	69014137637
2.	Seaming	Cup wheel	continuous	130	D64	Resin	07958701807
3.	Seaming	Cup wheel	continuous	130	D64	Resin	07958701807

Schiatti FPS 10 S

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D107	Metal	07958715064
2.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
3.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

4–12 mm float glass, straight edge with seam – single-edge, with **resin-bond wheel** on 2nd and 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D107	Metal	07958715064
2.	Seaming	Cup wheel	continuous	130	D64	Resin	07958701807
3.	Seaming	Cup wheel	continuous	130	D64	Resin	07958701807

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D126	Metal	69014137637
2.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
3.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

4–15 mm float and laminated safety glass, straight edge with seam – single-edge, with **resin-bond wheel** on 2nd and 3rd station

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D126	Metal	69014137637
2.	Seaming	Cup wheel	continuous	130	D64	Resin	07958701807
3.	Seaming	Cup wheel	continuous	130	D64	Resin	07958701807

REPITLA II
[2] available ex stock
All dimensions in mm

Schiatti FPS 15

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014132536
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	07958717241
3.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
4.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

Schiatti FPS 15 S

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014132536
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	07958717241
3.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
4.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

Schiatti FPS 15 M 60

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D126	Metal	07958715642
2.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	07958717241
3.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
4.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

4–15 mm float glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014132536
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	07958717241
3.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
4.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

Schiatti FPS 15 RS

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014132536
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	07958717241
3.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
4.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

REPITLA II
[2] available ex stock
All dimensions in mm

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Schiatti FPS 20 R

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014132536
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	69014142548
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	07958717241
4.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
5.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

Schiatti FPS 20 RS

4–15 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014132536
2.	Edge semi-finishing	Cup wheel	continuous	150	D107	Metal	69014142548
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	07958717241
4.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
5.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

Schiatti FPS 50 RMB

4–15 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958715641
2.	Mitre semi-finishing	Cup wheel	segmented	150	D126	Metal	69014137637
3.	Mitre semi-finishing	Cup wheel	segmented	150	D91	Resin	07958717167
4.	Fine mitre grinding	Cup wheel	segmented	150	D64	Resin	07958755308
5.	Fine mitre grinding	Cup wheel	continuous	150	D46	Resin	07958738995
7.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
8.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

4–15 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014132536
2.	Edge semi-finishing	Cup wheel	segmented	150	D126	Metal	69014137637
3.	Edge semi-finishing	Cup wheel	segmented	150	D91	Resin	07958717167
4.	Fine edge grinding	Cup wheel	segmented	150	D64	Resin	07958755308
5.	Fine edge grinding	Cup wheel	continuous	150	D46	Resin	07958738995
7.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
8.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

REPITLA II
[2] available ex stock
All dimensions in mm

Schiatti SME 10

4–15 mm float glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D151	Metal	07958715641
2.	Mitre semi-finishing	Cup wheel	segmented	150	D126	Metal	69014137637
3.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	07958717241
7.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
8.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

4–15 mm float glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014132536
2.	Edge semi-finishing	Cup wheel	segmented	150	D126	Metal	69014137637
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	07958717241
7.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
8.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

5–19 mm float and laminated safety glass, straight edge with seam **and/or** mitre – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough mitre grinding	Cup wheel	segmented	150	D181	Metal	07958715640
2.	Mitre semi-finishing	Cup wheel	segmented	150	D126	Metal	69014137637
3.	Fine mitre grinding	Cup wheel	continuous	150	D76	Metal	07958717241
7.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259
8.	Seaming	Cup wheel	continuous	130	D54	Metal	69014129259

Zafferani

Zafferani 4 FPE

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D91	Metal	07958714896

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D107	Metal	69014145140

REPITLA II
[2] available ex stock
All dimensions in mm

Zafferani 5 FPE

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D91	Metal	07958714896

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D107	Metal	69014145140

Zafferani 6 FPE

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metal	69014137090
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 [2]

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 [2]
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 [2]

Zafferani Flat 10 FPE

4–19 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 [2]
2.	Edge semi-finishing	Cup wheel	segmented	150	D107	Metal	07958712583 [2]
3.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 [2]

Zafferani Flat 5 BS

4–15 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D91	Metal	69014147208

6–22 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D107	Metal	69014145140

REPITLA II
[2] available ex stock
All dimensions in mm

Zafferani Flat 630

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metal	69014137090
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 2)

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 2)

Zafferani Flat 7 BS

4–15 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D91	Metal	69014147208

6–22 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D107	Metal	69014145140

Zafferani Flat 8 BS

4–15 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 2)

6–22 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 2)
2.	Fine edge grinding	Cup wheel	segmented	150	D91	Metal	07958714906

Zafferani Flat 8 BS30

4–15 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metal	69014139437 2)

REPITLA II
2) available ex stock
All dimensions in mm

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6–25 mm float and laminated safety glass, **only** straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metal	69014137178 ♻ 2)
2.	Fine edge grinding	Cup wheel	segmented	150	D91	Metal	07958714906 ♻

Zafferani Flat 8 FPE

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metall	69014137090 ♻
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metall	69014139437 ♻ 2)

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metall	69014137178 ♻ 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metall	69014139437 ♻ 2)

Zafferani Flat 830

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metall	69014137090 ♻
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metall	69014139437 ♻ 2)

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metall	69014137178 ♻ 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metall	69014139437 ♻ 2)

Zafferani Flat 9 FPE

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metall	69014137090 ♻
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metall	69014139437 ♻ 2)

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metall	69014137178 ♻ 2)
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metall	69014139437 ♻ 2)

♻ REPITLA II
2) available ex stock
All dimensions in mm

Zafferani Flat 930

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D151	Metall	69014137090
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metall	69014139437 [2]

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D151	Metall	69014137178 [2]
2.	Fine edge grinding	Cup wheel	continuous	150	D76	Metall	69014139437 [2]

Zafferani Pony

4–12 mm float glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	continuous	150	D91	Metall	07958714896

4–15 mm float and laminated safety glass, straight edge with seam – single-edge

Station	Task	Grinding wheel geometry	Design	Diameter [mm]	Grit size	Bond	Order number
1.	Rough edge grinding	Cup wheel	segmented	150	D107	Metall	69014145140

Checklist

Checklist of the necessary information required for selecting a suitable specification for linear edging of flat glass

1. Improvement desire: higher productivity, better quality
2. Machine (manufacturer and model)
3. Glass thickness (predominantly)
4. Glass type: float glass or laminated glass
5. Quality requirements
6. Stock to remove: total; if possible per station
7. Glass feed rate

REPITLA II
[2] available ex stock
All dimensions in mm

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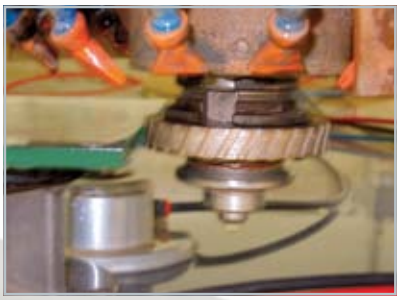
Grinding tools for CNC glass edging machines



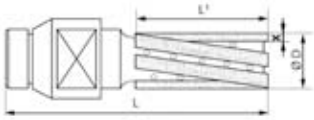
The WINTER grinding wheel programme for CNC glass edging machines offers suitable solutions for every specific requirement.

CNC edge processing must deliver highest glass edge quality. Even the smallest blemish diminishes the quality of the workpiece and therefore its value, or increases production cost due to expensive reworking. The WINTER grinding wheel programme for CNC glass edging has been specifically designed to combine high removal rates and excellent tool life with superb edge quality.

The following pages feature our stock programme for CNC edge processing. It includes grinding wheels with 100 mm diameter for machines such as Intermac, and grinding wheels with 120 mm diameter for Bavelloni or similar machines. We would of course be pleased to manufacture to your specific requirements: our main objective is to offer innovative solutions to the individual challenges set down by our customers, in the form of optimized high-performance diamond grinding tools – perfectly tailored to the customer's specific needs and requirements.

Both shank tools and grinding wheels are used as grinding tools in CNC edge processing. The tools are described as follows:

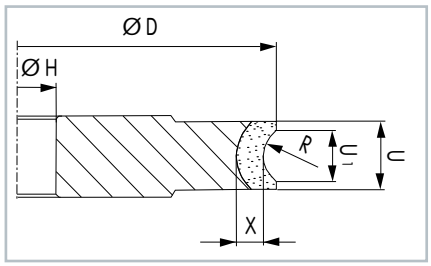
Terminology

Workpiece	Abbreviation	Designation	Drawing
Shank tool	D	Diameter	
	L	Total length	
	L_1	Length of abrasive layer	
	X	Usable abrasive layer thickness	
		1/2" thread for machine connection	

Workpiece	Abbreviation	Designation	Drawing
Grinding wheel	D	Diameter	
	T	Grinding wheel width	
	X	Usable abrasive layer thickness	
	H	Bore	

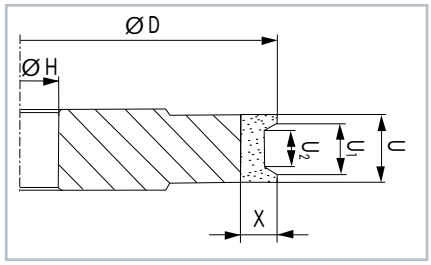
All dimensions in mm

Profile geometries



Profile geometries for pencil edging

Glass thickness	D	U	U_1	R	X
2	Optional: 100 - 125 - 150 - 175 -200	5	3	1.8	Optional: 3 - 5 - 10
3		5	4	2.5	
4		6	5	2.8	
5		7	6	3.5	
6		8	7	4.7	
8		10	9	7	
10		12	11	10	
12		14	13	14	
15		17	16	16	



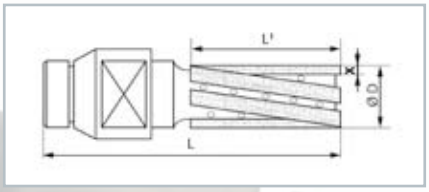
Profile geometries for trapezoidal edging

Glass thickness	D	U	U_1	U_2	X	Seam
4	Optional: 100 - 125 - 150 - 175 -200	6.5	5	2.5	Optional: 5 or 10	0.75 x 45°
5		8	6.5	3.5		0.75 x 45°
6		10	7.5	4		1.00 x 45°
8		12	9.5	6		1.00 x 45°
10		14	12	7.5		1.25 x 45°
12		16	14	9		1.50 x 45°
15		19	17	12		1.50 x 45°
19		23	21	16		1.50 x 45°

All dimensions in mm

Shank tools

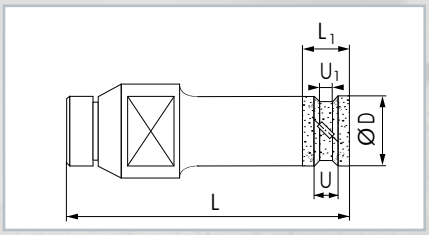
WINTER shank tools are used to grind grooves and entire contours. The fine and excellent edge quality are particularly impressive. For rough grinding, the geometry of the diamond shank tools allows oscillation across the entire length of the abrasive layer. The individual design and outstanding workmanship of the roughing and fine grinding tools ensure optimum coolant supply, utmost reliability and process safety.



Stock programme of shank tools for rough grinding

Glass thickness	Application	D	L	L_1	X	Connection	Order number
up to 20 mm	Rough grinding with router	10	72	28	1.5	G1/2	69014143249 [1]
	Rough grinding with router	12	76	30	2	G1/2	69014143248 [1]
up to 30 mm	Rough grinding with router	16	84	40	3	G1/2	69014143247 [1]
	Rough grinding with router	20	84	40	3	G1/2	69014136396 [1]
up to 12 mm	Rough grinding with router and seam grinding	22	89	34	3	G1/2	69014160906 [1]

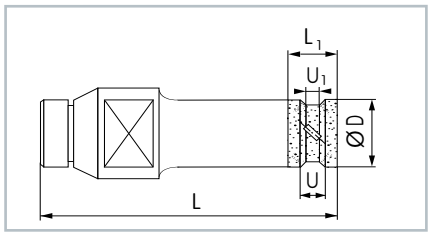
[1] available ex stock



Shank tools for fine grinding Ø 13 mm and 14 mm

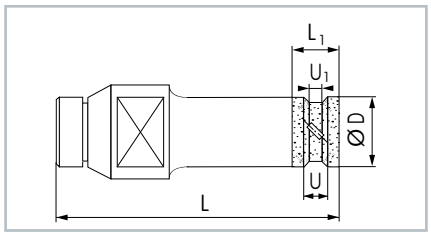
Glass thickness	Application	D	L	L_1	U	U_1	Connection	Additional information	Order number
4	Fine seaming 0.75 mm	13	75	12	5.5	2.5	G1/2	Internal tool trapezoidal profile (FA)	07958717403
5	Fine seaming 0.75 mm	13	75	12	6.5	3.5	G1/2	Internal tool trapezoidal profile (FA)	07958753034
6	Fine seaming 1.0 mm	14	75	16	8	4	G1/2	Internal tool trapezoidal profile (FA)	69014138659
8	Fine seaming 1.0 mm	14	75	16	10	6	G1/2	Internal tool trapezoidal profile (FA)	66260115894
10	Fine seaming 1.5 mm	14	75	16	12	7.5	G1/2	Internal tool trapezoidal profile (FA)	66260116250
12	Fine seaming 1.5 mm	14	75	16	14	9	G1/2	Internal tool trapezoidal profile (FA)	66260116249

All dimensions in mm



Shank tools for fine grinding Ø 18 mm

Glass thickness	Application	D	L	L_1	U	U_1	Connection	Additional information	Order number
4	Fine seaming 0.75 mm	18	75	12	5.5	2.5	G1/2	Internal tool trapezoidal profile (FA)	69014122674
5	Fine seaming 0.75 mm	18	75	12	6.5	3.5	G1/2	Internal tool trapezoidal profile (FA)	69014122677
6	Fine seaming 1.0 mm	18	75	16	8	4	G1/2	Internal tool trapezoidal profile (FA)	60157684093
8	Fine seaming 1.0 mm	18	75	16	10	6	G1/2	Internal tool trapezoidal profile (FA)	60157684091
10	Fine seaming 1.5 mm	18	75	16	12	7.5	G1/2	Internal tool trapezoidal profile (FA)	60157684092
12	Fine seaming 1.5 mm	18	75	16	14	9	G1/2	Internal tool trapezoidal profile (FA)	60157684094



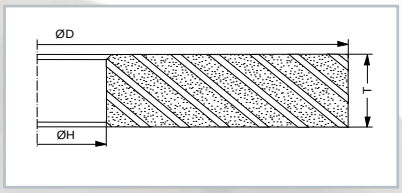
Shank tools for fine grinding Ø 25 mm

Glass thickness	Application	D	L	L_1	U	U_1	Connection	Additional information	Order number
4	Fine seaming 0.75 mm	25	75	12	5.5	2.5	G1/2	Internal tool trapezoidal profile (FA)	60157698673
5	Fine seaming 0.75 mm	25	75	12	6.5	3.5	G1/2	Internal tool trapezoidal profile (FA)	60157698670
6	Fine seaming 1.0 mm	25	75	16	8	4	G1/2	Internal tool trapezoidal profile (FA)	60157689845
8	Fine seaming 1.0 mm	25	75	16	10	6	G1/2	Internal tool trapezoidal profile (FA)	60157673809
10	Fine seaming 1.5 mm	25	75	16	12	7.5	G1/2	Internal tool trapezoidal profile (FA)	60157688723
12	Fine seaming 1.5 mm	25	75	16	14	9	G1/2	Internal tool trapezoidal profile (FA)	60157689844

All dimensions in mm

Grinding wheels

WINTER diamond grinding wheels for rough grinding are designed with complex geometries to ensure excellent cooling performance in application. The segmented abrasive layer also ensures efficient chip removal. Grinding wheels for fine grinding are available with or without internal cooling. Apart from the standard tools listed below, we are able to manufacture a variety of profiles to individual customer specifications. Tools with a diameter of 100 mm (for Intermac or similar machines) can be found at the beginning of this section, followed by tools with 120 mm diameter (for Bavelloni or similar machines). We will of course manufacture other sizes and geometries according to your wishes and specifications.



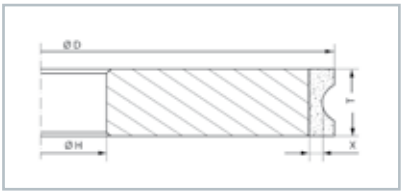
Ø 100 mm grinding wheels for rough grinding

Glass thickness	Application	D	T	X	H	Design	Order number
up to 6 mm	Rough grinding	100	8	5	22	segmented	66260365298 [1]
up to 8 mm	Rough grinding	100	10	5	22	segmented	60157670323 [1]
up to 10 mm	Rough grinding	100	12	5	22	segmented	66260389836 [1]
up to 12 mm	Rough grinding	100	15	5	22	segmented	66260390562 [1]
up to 15 mm	Rough grinding	100	18	5	22	segmented	66260137445 [1]
up to 19 mm	Rough grinding	100	22	5	22	segmented	66260386237 [1]

Ø 100 mm grinding wheels for fine grinding with straight profile

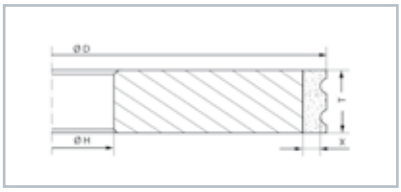
Glass thickness	Application	D	T	X	H	Design	Order number
up to 8 mm	Fine grinding	100	10	6	22	Straight profile fine	66260369295 [1]
up to 10 mm	Fine grinding	100	13	6	22	Straight profile fine	66260363296 [1]
up to 15 mm	Fine grinding	100	16	6	22	Straight profile fine	66260385097 [1]
up to 19 mm	Fine grinding	100	20	6	22	Straight profile fine	66260388216 [1]
up to 19 mm	Semifinishing	100	20	6	22	Straight profile medium	66260129179 [1]

All dimensions in mm
[1] Stock, [2] short-term, [3] custom-made



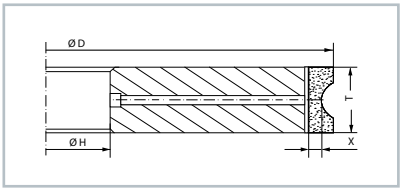
Ø 100 mm single-groove grinding wheels for fine pencil edge grinding

Glass thickness	Application	D	T	X	H	Design	Order number
4	Fine grinding	100	10	6	22	Pencil edge, single-groove	66260378599 [2]
5	Fine grinding	100	10	6	22	Pencil edge, single-groove	69014121983 [2]
6	Fine grinding	100	10	6	22	Pencil edge, single-groove	66260384201 [2]
8	Fine grinding	100	13	6	22	Pencil edge, single-groove	69014160903 [2]



Ø 100 mm double-groove grinding wheels for fine pencil edge grinding

Glass thickness	Application	D	T	X	H	Design	Order number
4	Fine grinding	100	20	6	22	Pencil edge, double-groove	60157660971 [2]
5	Fine grinding	100	20	6	22	Pencil edge, double-groove	69014121984 [2]
6	Fine grinding	100	20	6	22	Pencil edge, double-groove	66260346980 [2]



Ø 100 mm single-groove grinding wheels for fine pencil edge grinding, with internal cooling

Glass thickness	Application	D	T	X	H	Design	Order number
4	Fine grinding	100	10	4	22	Pencil edge, single-groove with internal cooling	60157675983 [1]
5	Fine grinding	100	10	4	22	Pencil edge, single-groove with internal cooling	60157675986 [1]
6	Fine grinding	100	10	4	22	Pencil edge, single-groove with internal cooling	60157675987 [1]
8	Fine grinding	100	13	4	22	Pencil edge, single-groove with internal cooling	60157694284 [1]
10	Fine grinding	100	16	4	22	Pencil edge, single-groove with internal cooling	66260119006 [1]
12	Fine grinding	100	16	4	22	Pencil edge, single-groove with internal cooling	66260137253 [3]
15	Fine grinding	100	19	5	22	Pencil edge, single-groove with internal cooling	66260137366 [3]
19	Fine grinding	100	23	5	22	Pencil edge, single-groove with internal cooling	66260137257 [3]

All dimensions in mm
[1] Stock, [2] short-term, [3] custom-made

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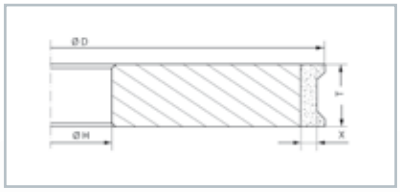
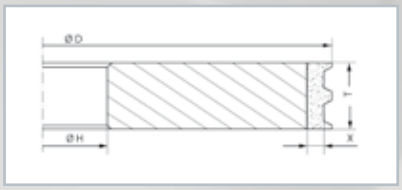


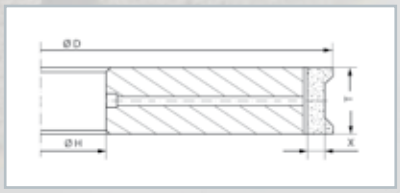
Ø 100 mm single-groove grinding wheels for fine trapezoidal profile grinding

Glass thickness	Application	D	T	X	H	Design	Order number
4 mm	Fine grinding of seam 0.75 mm	100	10	6	22	Trapezoidal profile, single-groove	66260394201 [2]
5 mm	Fine grinding of seam 0.75 mm	100	10	6	22	Trapezoidal profile, single-groove	66260117131 [2]
6 mm	Fine grinding of seam 1.0 mm	100	10	6	22	Trapezoidal profile, single-groove	66260393902 [2]
8 mm	Fine grinding of seam 1.0 mm	100	13	6	22	Trapezoidal profile, single-groove	66260368804 [2]
10 mm	Fine grinding of seam 1.5 mm	100	16	6	22	Trapezoidal profile, single-groove	69014182299 [2]
12 mm	Fine grinding of seam 1.5 mm	100	16	6	22	Trapezoidal profile, single-groove	66260371907 [2]
15 mm	Fine grinding of seam 1.5 mm	100	20	6	22	Trapezoidal profile, single-groove	66260135785 [2]



Ø 100 mm double-groove grinding wheels for fine trapezoidal profile grinding

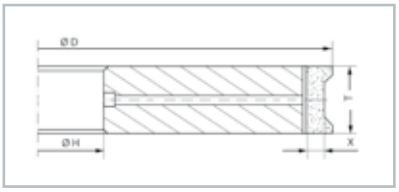
Glass thickness	Application	D	T	X	H	Design	Order number
4 mm	Fine seaming 0.75 mm	100	20	6	22	Trapezoidal profile, double-groove	66260128861 [2]
5 mm	Fine seaming 0.75 mm	100	20	6	22	Trapezoidal profile, double-groove	66260135740 [2]
6 mm	Fine seaming 1.0 mm	100	20	6	22	Trapezoidal profile, double-groove	66260128666 [2]



Ø 100 mm single-groove grinding wheels for fine trapezoidal profile grinding, with internal cooling

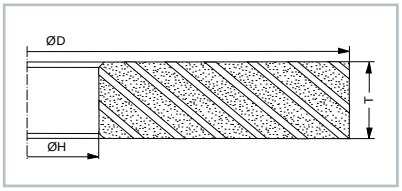
Glass thickness	Application	D	T	X	H	Design	Order number
4 mm	Fine seaming 0.75 mm	100	10	4	22	Trapezoidal profile, single-groove with internal cooling	66260137256 [1]
5 mm	Fine seaming 0.75 mm	100	10	4	22	Trapezoidal profile, single-groove with internal cooling	60157675992 [1]
6 mm	Fine seaming 1.0 mm	100	10	4	22	Trapezoidal profile, single-groove with internal cooling	60157675995 [1]
8 mm	Fine seaming 1.0 mm	100	13	4	22	Trapezoidal profile, single-groove with internal cooling	60157675997 [1]
10 mm	Fine seaming 1.5 mm	100	16	4	22	Trapezoidal profile, single-groove with internal cooling	60157694283 [1]

All dimensions in mm
[1] Stock, [2] short-term, [3] custom-made



Ø 100 mm single-groove grinding wheels for fine trapezoidal profile grinding, with internal cooling

Glass thickness	Application	D	T	X	H	Design	Order number
12 mm	Fine seaming 1.5 mm	100	16	4	22	Trapezoidal profile, single-groove with internal cooling	60157675999 [1]
15 mm	Fine seaming 1.5 mm	100	19	4	22	Trapezoidal profile, single-groove with internal cooling	60157685552 [1]
19 mm	Fine seaming 1.5 mm	100	23	5	22	Trapezoidal profile, single-groove with internal cooling	66260127034 [1]

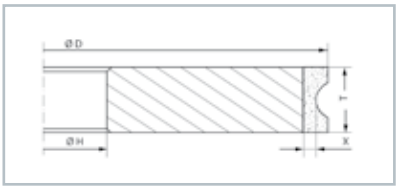


Ø 120 mm grinding wheels for rough grinding

Glass thickness	Application	D	T	X	H	Design	Order number
up to 10 mm	Rough grinding	120	12	5	22	segmented	66260388625 [1]
up to 12 mm	Rough grinding	120	15	5	22	segmented	66260390326 [1]
up to 15 mm	Rough grinding	120	18	5	22	segmented	66260387427 [1]
up to 19 mm	Rough grinding	120	22	5	22	segmented	66260387728 [1]

Ø 120 mm grinding wheels for fine grinding with straight profile

Glass thickness	Application	D	T	X	H	Design	Order number
up to 19 mm	Fine grinding	120	20	6	22	Straight profile fine	66260389642 [1]
up to 19 mm	Semifinishing	120	20	6	22	Straight profile medium	66260391041 [1]



Ø 120 mm single-groove grinding wheels for fine pencil edge grinding

Glass thickness	Application	D	T	X	H	Design	Order number
4 mm	Fine grinding	120	10	6	22	Pencil edge, single-groove	66260384672 [3]
5 mm	Fine grinding	120	10	6	22	Pencil edge, single-groove	69014122678 [3]
6 mm	Fine grinding	120	10	6	22	Pencil edge, single-groove	66260383476 [3]
8 mm	Fine grinding	120	13	6	22	Pencil edge, single-groove	66260381178 [3]

All dimensions in mm
[1] Stock, [2] short-term, [3] custom-made

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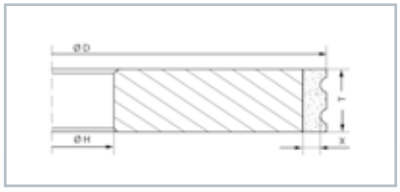
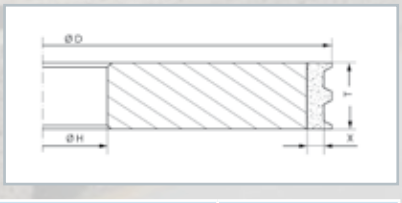


Ø 120 mm double-groove grinding wheels for fine pencil edge grinding

Glass thickness	Application	D	T	X	H	Design	Order number
4 mm	Fine grinding	120	20	6	22	Pencil edge, double-groove	66260383586 [2]
5 mm	Fine grinding	120	20	6	22	Pencil edge, double-groove	60157667214 [2]
6 mm	Fine grinding	120	20	6	22	Pencil edge, double-groove	66260355640 [2]

Ø 120 mm single-groove grinding wheels for fine grinding with trapezoidal profile

Glass thickness	Application	D	T	X	H	Design	Order number
4 mm	Fine seaming 0.75 mm	120	10	6	22	Trapezoidal profile, single-groove	66260384568 [3]
5 mm	Fine seaming 0.75 mm	120	10	6	22	Trapezoidal profile, single-groove	69014122679 [3]
6 mm	Fine seaming 1.0 mm	120	10	6	22	Trapezoidal profile, single-groove	66260387674 [3]
8 mm	Fine seaming 1.25 mm	120	13	6	22	Trapezoidal profile, single-groove	66260327009 [3]
10 mm	Fine seaming 1.5 mm	120	16	6	22	Trapezoidal profile, single-groove	66260384182 [3]
12 mm	Fine seaming 1.5 mm	120	16	6	22	Trapezoidal profile, single-groove	66260382584 [3]
15 mm	Fine seaming 1.5 mm	120	20	6	22	Trapezoidal profile, single-groove	66260355973 [2]



Ø 120 mm double-groove grinding wheels for fine grinding with trapezoidal profile

Glass thickness	Application	D	T	X	H	Design	Order number
4 mm	Fine seaming 0.75 mm	120	20	6	22	Trapezoidal profile, double-groove	66260346556 [2]
5 mm	Fine seaming 0.75 mm	120	20	6	22	Trapezoidal profile, double-groove	07958755318 [2]
6 mm	Fine seaming 1.0 mm	120	20	6	22	Trapezoidal profile, double-groove	66260381887 [2]

All dimensions in mm
[1] Stock, [2] short-term, [3] custom-made

Technical notes

Application recommendations for CNC grinding wheels

Thickness of glass [mm]	Rough grinding			Semi-finishing			Fine grinding		
	Grinding wheel speed n_s [1/min]	Infeed a_e [mm]	Feed rate v_f [m/min]	Grinding wheel speed n_s [1/min]	Infeed a_e [mm]	Feed rate v_f [m/min]	Grinding wheel speed n_s [1/min]	Infeed a_e [mm]	Feed rate v_f [m/min]
4	-	-	-	5500	1	7.0	5500	1.0	< 8.5
6	-	-	-	5500	1	5.0	5500	1.0	7.0
8	5500	2	2.5	5500	1	4.0	5500	0.5	6.0
10	5500	2	2.0	5500	1	3.0	5500	0.5	5.0
12	5500	2	2.0	5500	1	2.0	5500	0.5	3.5
15	5500	2	2.0	5500	1	1.5	5500	0.5	2.5
19	5500	2	2.0	5500	1	1.3	5500	0.5	2. 0

Application recommendations for CNC shank tools for rough grinding

Diameter	Application data	Thickness of glass					
		6 mm	8 mm	10 mm	12 mm	15 mm	19 mm
10mm	Speed (1/min)	15000	15000	15000	15000	15000	15000
	v_f (mm/min)	250	250	200	150	100	100
12mm	Speed (1/min)	15000	15000	15000	15000	15000	15000
	v_f (mm/min)	300	300	250	200	150	100
16mm	Speed (1/min)	14000	14000	14000	14000	14000	14000
	v_f (mm/min)	750	750	700	700	500	400
20mm	Speed (1/min)	12500	12500	12500	12500	12500	12500
	v_f (mm/min)	1000	1000	1000	900	700	600

Troubleshooting guide

The following is a list of the most common problems arising, and possible solutions. When addressing these problems, we recommend that you keep to the suggested order. If you have any further questions, please contact us by phone or email: Metal@Saint-Gobain.com.

Problems	Possible cause	Suggested remedy
Burn marks	1. coolant supply 2. feed rate 3. infeed 4. spindle speed	adjust nozzles reduce reduce reduce
Chipping	1. feed rate 2. infeed 3. spindle speed 4. grinding wheel position 5. coolant supply	reduce reduce increase adjust adjust nozzles
Chatter marks	1. feed rate 2. infeed 3. spindle speed	reduce reduce reduce
Profile errors	Grinding wheel position	adjust
Dimensional errors	1. suction cups 2. feed rate 3. infeed 4. spindle speed	clean and check reduce reduce increase

Cut-off wheels

Diamond cut-off wheels are used for efficient cutting of hard, short-chipping and wear-resistant materials, qualities which apply to flat glass in particular. The tools consist of a pretensioned steel core with a cutting layer on the periphery. The cutting layer is made of sintered metal, impregnated with diamond particles. The combination of bond type, grit size and concentration results in a variety of tool features that can easily be adapted to individual production tasks, based on experience and trials.

Cut-off wheels with continuous rim

Cut-off wheels with continuous rims are used to cut float glass e.g. for producing special shapes such as corner cut-outs and edge cut-outs. WINTER cut-off wheels are available in a variety of specifications and guarantee a smooth and clean operation and long tool life. The carefully pretensioned directional core ensures straight and accurate cuts.

Sample specification

Shape	External diameter	Cutting width	Layer thickness	Core thickness	Bore	Specification
1A1R	250	1.8	5	1.4	20	D126 BZ335 C19

Order reference for continuous rim version in metal bond							
Shape	**Diameter**	**Cutting width**	**Layer thickness**	**Core thickness**	**Bore diameter H**	**Grit size**	**Bond**
1A1R	150	1.5	5	1.2	Standard bore diameter 20 mm, other bore diameters on request	Depending on the glass thickness, we recommend the following diamond grit sizes: ≤ 8 mm = D107 8 mm–20 mm = D126, > 20 mm = D151	BZ335 in C19 concentration
		1.5	10	1.3			
	200	1.8	5	1.4			
		1.8	10	1.5			
	250	1.8	5	1.4			
		1.8	10	1.4			
	300	1.8	5	1.4			
		1.8	10	1.4			
	400	1.8	5	1.4			
		1.8	10	1.4			
	500	2.6	5	2.0			

All dimensions in mm

Cut-off wheels with segmented rim

Since breaking laminated safety glass and fire-retardant glass of more than 12 mm thickness can lead to complications, segmented rim cut-off wheels are used for this purpose. Segmentation ensures that the interlayer is cut cleanly and the active diamond surface of the cut-off wheel does not clog. Cut-off wheels with smooth surface segments create a better finish; grooved segments offer better chip removal and cooler grinding.

Segmented cut-off wheels with smooth surface segments

Diameter	Cutting width	Layer thickness	Bore diameter	Type of connection	Order number
300	2.8	6	60	RBB	60157698468
350	3.2	6	60	RBB	60157698470
400	3.2	6	60	RBB	60157698472

Segmented cut-off wheels with grooved surface segments

Diameter	Cutting width	Layer thickness	Bore diameter	Type of connection	Order number
310	2.8	10	60	RBB	60157698463
360	3.2	10	60	RBB	69014143645
410	3.2	10	60	RBB	60157695704

Note:
The standard machine connector is RBB (bore diameter 60 mm, four tappet holes Ø 11 mm on a pitch circle diameter 130 mm). If required, we will supply reducer rings with bore diameters of 50, 30 and 25.4 mm free of charge, please specify when ordering your cut-off wheel.

Other versions are available on request.

The external diameters and bores of the cut-off wheels are specified by the dimensions designed by the machine manufacturer. Float glass, laminated safety glass and fire-retardant glass is always cut under wet conditions, as the grinding diamonds could otherwise get damaged.
The smaller the contact area between grinding wheel and workpiece, the freer the cut and the longer the cut-off wheel remains sharp. Resharpening the cut-off wheel can be done with a WINTER sharpening stone – for more information, see the chapter on 'Accessories'.

All dimensions in mm

Drills

Diamond core drills master the challenge of drilling into glass perfectly, whether creating bores for mounting brackets and fittings, or as a starting point for machining inner contours. WINTER diamond core drills can be used in automatic CNC drilling machines or with hand-operated stationary drills. In glass working operations they are exclusively used in wet grinding mode and offer outstanding consistency of quality. The metal-bonded diamond layer guarantees excellent tool life, while internal cooling ensures cool drilling conditions and reliable chip removal. If you do not specify a machine connection, we will supply a standard ½-inch thread connector. If you require special designs in terms of machine connection, layer geometry and body shape, we would be glad to supply them on request.

Core Drills BLACK

Diameter [mm]	Total Length	Order number
5	75	07958749584
5.1	75	07958742576
5.2	75	07958742579
6	75	07958752564
7	75	07958749585
8	75	07958749586
8.5	75	07958749497
9	75	07958749587
10	75	07958741194
11	75	07958749588
12	75	07958741195
12.5	75	07958749498
13	75	07958752566
14	75	07958749589
15	75	07958749590
16	75	07958749591
17	75	07958749592
18	75	07958752567
19	75	07958752568
20	75	07958743925
21	75	07958749593
22	75	07958749594
23	75	07958749595
24	75	07958749596

Diameter [mm]	Total Length	Order number
25	75	07958749597
26	75	07958749598
26.2	75	07958753397
27	75	07958749599
28	75	07958749600
29	75	07958749601
30	75	07958749602
31	75	07958752569
32	75	07958749603
33	75	07958752570
34	75	07958749604
34.6	75	07958752039
35	75	07958749605
36	75	07958749606
36.5	75	07958749435
37	75	07958752571
38	75	07958749607
39	75	07958752572
40	75	07958749608
41	75	07958752573
42	75	07958749609
43	75	07958752574
44	75	07958752575
45	75	0958749610

All dimensions in mm

Diameter [mm]	Total Length	Order number
46	75	07958749611
47	75	07958752577
48	75	07958752578
49	75	07958752579
50	75	07958749612
51	75	07958752580
52	75	07958752581
53	75	07958752588
54	75	07958752589
55	75	07958752589
56	75	07958752591
57	75	07958752592
58	75	07958752593
59	75	07958752594
60	75	07958749613
61	75	07958752595
62	75	07958752596
63	75	07958752597
64	75	07958752598
65	75	07958752600
66	75	07958752601
67	75	07958752602
68	75	07958749614
69	75	07958752603
70	75	07958743827
71	75	07958752604
72	75	07958752605
73	75	07958752606

Diameter [mm]	Total Length	Order number
74	75	07958752607
75	75	07958752608
76	75	07958752609
77	75	07958752610
78	75	07958752611
79	75	07958752612
80	75	07958749615
81	75	07958752613
82	75	07958752614
83	75	07958752615
84	75	07958752616
85	75	07958749616
86	75	07958752617
87	75	07958752618
88	75	07958752619
89	75	07958752620
90	75	07958752621
91	75	07958752622
92	75	07958752623
93	75	07958752624
94	75	07958752626
95	75	07958752628
96	75	07958752629
97	75	07958752630
98	75	07958752631
99	75	07958752632
100	75	07958752634

All dimensions in mm

Please feel free to contact our expert advisors at any time. Contact details can be found on the last page

Drill-Countersink-Combination BLACK

Diameter [mm]	Total Length	Order number
5	75	07958752749
6	75	07958752752
7	75	07958749618
7.2	75	07958741187
8	75	07958752753
9	75	07958749619
10	75	07958752754
11	75	07958752755
12	75	07958740319
13	75	07958752757
14	75	07958752758
15	75	07958752759
16	75	07958752760
17	75	07958752761
18	75	07958749822
19	75	07958752764
20	75	07958749620
21	75	07958749621
22	75	07958752765
23	75	07958749622
24	75	07958752766
25	75	07958752768
26	75	07958752770
26.2	75	07958753398
27	75	07958752772
28	75	07958752774
29	75	07958749623
30	75	07958752231
31	75	07958752775

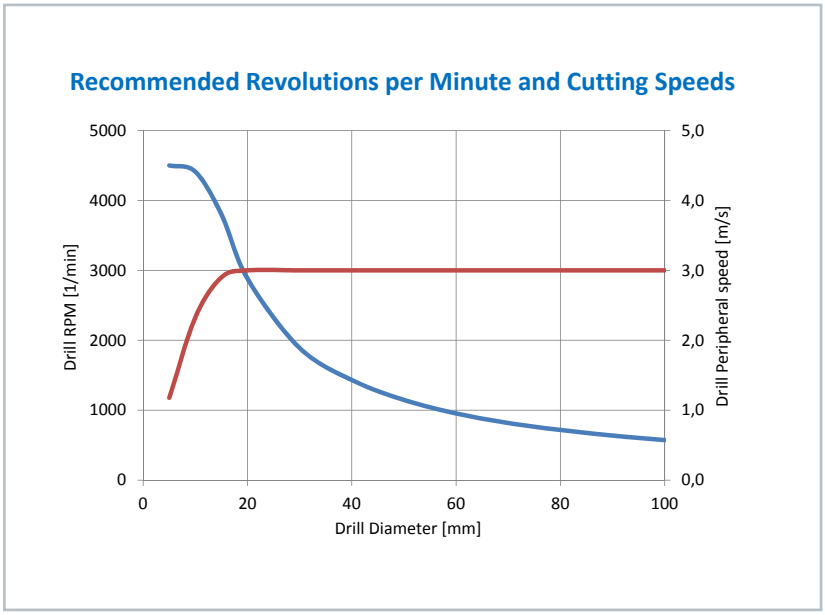
Diameter [mm]	Total Length	Order number
32	75	07958749624
33	75	07958752776
34	75	07958749625
35	75	07958752777
36	75	07958749626
37	75	07958752778
38	75	07958749627
39	75	07958752779
40	75	07958752780
41	75	07958752781
42	75	07958749628
43	75	07958752783
44	75	07958752784
45	75	07958752786
46	75	07958749629
47	75	07958752790
48	75	07958752791
49	75	07958752792
50	75	07958752793
51	75	07958752798
52	75	07958752799
53	75	07958752800
54	75	07958752802
55	75	07958752795
56	75	07958752803
57	75	07958752805
58	75	07958752806
59	75	07958752807
60	75	07958752797

All dimensions in mm

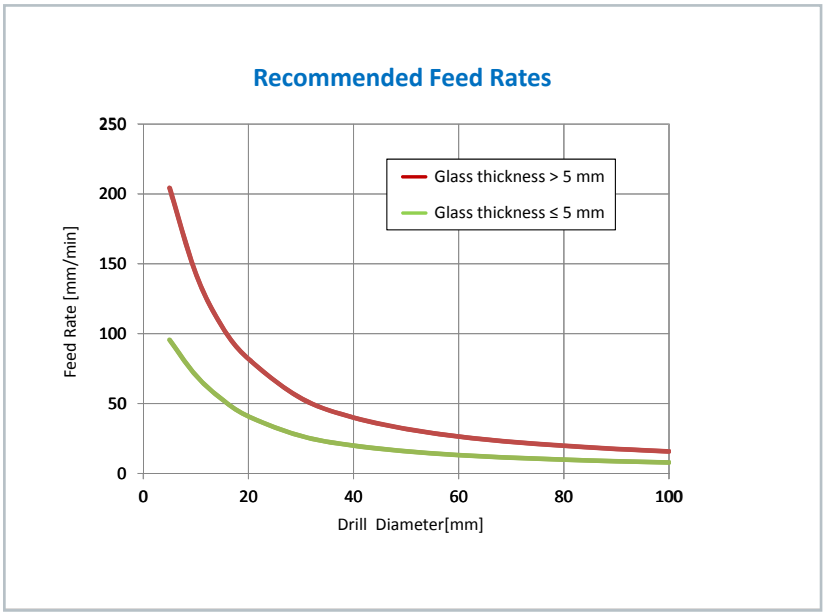
Technical Notes

Diamond core drills must always be used with internal cooling, so that water can pass through the grinding area to act as both a coolant and also to take care of chip removal. Core drills must be sharpened before use. For this we recommend the use of WINTER sharpening stones No. 2 or No. 5 – please consult the 'Accessories' chapter of this catalogue. The sharpening process should be repeated as soon as the cutting performance of the drills decreases.

The rotational speed must be adapted to the diameter of the core drill. The diagram to the right serves as a guideline.



The recommended infeed rate depends on the glass thickness. The drilling force increases in line with the infeed rate, which is why it is kept to a minimum for thinner glass. We recommend that you do not apply the full infeed rate until after the initial contact.



Polishing wheels FiveP

Visual finishing, i.e. polishing is the last step in the processing of glass edges. Whether industrial finish or high gloss, polishing is becoming increasingly important in mass production. The wide range of polishing tools available caters for a wide range of demands on surface quality.

Polishing wheels for linear edge processing

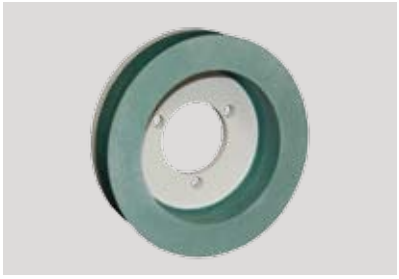
Cup wheels and peripheral grinding wheels are used in linear edge processing. Depending on the required surface gloss, tools in different bond types and grit sizes are put to use. If you state your machine specification and the relevant station, we would be happy to help you choose the right polishing tools for your application – just contact us.

Polishing wheels for CNC edging

CNC glass edge processing focuses on profile stability, required surface gloss and tool life. Peripheral grinding wheels – with or without profile – are available in different versions. Please feel free to contact us with your polishing tasks – we will be glad to assist you.

All dimensions in mm

FiveP-EL for polishing on linear machines



Our FiveP-EL polishing wheels for glass edge polishing on linear single and double sided machines consist of a homogeneous and very wear resistant polyurethane bond. They were specially developed for polishing straight edges following the diamond stations. FiveP-EL wheels allow you to generate a very good surface finish of the glass edge. For achieving highest gloss and brilliance we suggest to use in addition our cerium oxide products FiveP-PR and FiveP-PE.
Suitable to every machine type, FiveP-EL wheels are available as cup or peripheral wheels with the required diameters and connections and can be delivered in following grit sizes:

- GR 46 very coarse
- GR 60 coarse
- GR 80 medium coarse
- GR 120 medium fine
- GR 180 fine
- GR 220 very fine

Application parameters:

Maximum wheel RPM:	3.400 1/min
Operating Temperature:	30 to 60°C
Operating Pressure:	0.5 to 3.0 bar
Coolant:	Water

Cup wheels

Outer diameter	Height	Bore	Inner diameter
90	50	22-25	50
100	30	22-30-35-50	74
100	35	22	65
100	45	50	60
125	35	22	80
125	35	22	90
125	35	22	105
130	30	60	90
130	35	50	90
130	35	60	90
150	30	70	105
150	35	22	105
150	40	22	110
150	40	50-68-70	105
150	40	50-68-70	110
150	25	100	125
170	40	60-68	125

All dimensions in mm

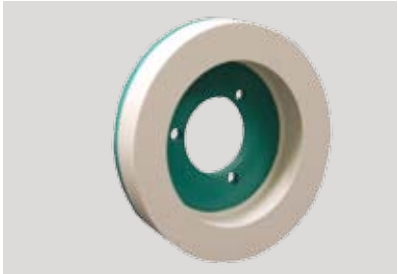
Peripheral wheels

Outer diameter	Width	Bore
100	15	22-25-30
100	20	22-25-50
100	25	22-25-30-50-60-70-80
100	30	22-25-30-35-40-50-60
100	35	22-25-50-60-70
100	40	22
100	45	22
100	50	22
120	15	22-35
120	20	22
120	25	22-35-50-80
120	30	22-35
125	15	25
125	25	22-80-90
125	30	22
150	15	22-25-50-70-90
150	20	22-25-30-40-50
150	25	22-25-30
150	30	22-25-40-50
150	35	22
200	15	60
200	20	60
200	25	60
200	15	90
200	20	90
200	25	90
200	15	130
200	20	130
200	25	130
250	30	50

All dimensions in mm

FiveP-PR Cerium for high gloss finishing on linear machines

Our FiveP-PR cerium polishing wheels for the perfect high gloss finish on linear single and double sided machines have a high performance bond made of synthetic rubber. When used with water as coolant these wheels achieve a high gloss finish edge for high value premium glass.
FiveP-PR cerium oxide wheels are available as cup and circumferential wheels in all prevalent dimensions.



Attention:
Use these wheels with a maximum RPM of 1700 1/min.

Application parameters:

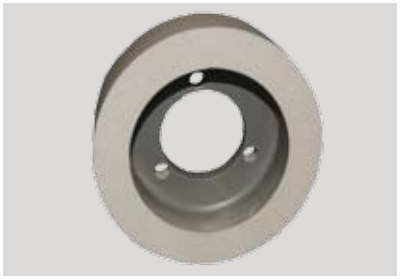
Maximum wheel RPM:	1.700 1/min
Operating Temperature:	30 to 60°C
Operating Pressure:	0.5 to 2.8 bar
Coolant:	Water

Cup wheels

Outer diameter	Height	Bore	Inner Diameter
100	35	50	60-70
100	35	60	60-70
130	35	50	90
130	35	60	90
150	25	100	125
150	30	22	110
150	40	22	110
150	30	50-68-70	110
150	40	50-68-70	110
170	40	68	125

All dimensions in mm

FiveP-BL for arris grinding and polishing on linear machines



These wheels were developed specially for arrissing. They consist of a high quality resin which exhibits a very good cutting ability, yet at the same time show a very good wear resistance. For this reason, these wheels allow to generate a high quality industrial edge even on machines without a diamond arris grinding station. FiveP-BL cup wheels are available in all prevalent dimensions.

The FiveP-BL wheels can be delivered in following grit sizes:

- 280 GR medium fine, for use on machines without diamond arrissing wheels
- 400 GR fine, for the use following a diamond arrissing wheel
- 600 GR extra fine, for the use following a diamond arrissing wheel

Application Parameters:

Maximum wheel RPM:	3.400 1/min
Operating Temperature:	30 to 60°C
Operating Pressure:	0.5 to 2.8 bar
Coolant:	Water

Cup wheels

Outer diameter	Height	Bore	Inner diameter
100	30	60	60-70
100	35	22-30-35-50	60-70
100	35	11-40	60
125	35	22	80
125	35	22	90
125	35	22	105
130	30	60	90
130	35	50	90
130	35	60	90
150	40	22	110
150	30	50-68-70	110
150	40	50-68-70	110
150	30	Ring	110

All dimensions in mm

FiveP-PE felt wheels for polishing with cerium oxide

FiveP-PE felt wheels for polishing with cerium oxide subsequent to pre-polish consist of a polyester felt reinforced with adapted resins. This mixture guarantees a very high lifetime of the felt wheels and the efficient use of the used cerium oxide or alternative polishing product. The FiveP-PE felt wheels complete the polishing process for the production of the perfect high-gloss edge finish.
FiveP-PE felt wheels are available in all prevalent geometries.

Application Parameters:

Maximum wheel RPM:	1.700 1/min
Operating Temperature:	30 to 50°C
Operating Pressure:	0.5 to 3.0 bar
CeO_2-Concentration:	100 to 150 g/1

Felt wheels

Outer diameter	Height	Inner diameter
100	25	25
100	25	40
125	25	40
125	35	70
130	25	70
130	30	70
130	35	70
130	40	70
140	25	70
150	25	25
150	30	25
150	40	25
150	25	40
150	30	40
150	40	40
150	25	70
150	30	70
150	35	70
150	40	70
150	25	90
150	35	90
150	25	105
150	35	105

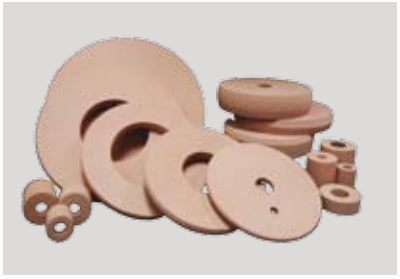
Outer diameter	Height	Inner diameter
150	40	105
150	25	110
150	35	110
150	25	115
160	50	70
170	25	70
170	40	70
170	25	90
175	40	70
175	35	105
185	25	115
185	30	115
185	35	115
185	30	150
190	25	120
190	30	120
190	35	120
190	40	120
195	30	115
200	25	90
200	30	90
200	40	110

All dimensions in mm

Please feel free to contact our expert advisors at any time. Contact details can be found on the last page

FiveP-PU for polishing on CNC-machines

FiveP-PU polishing wheels are made of a special mix of resins and are available in several grit sizes and with cerium oxide. The perfectly adapted bond hardness ensures on one side an excellent tool life, on the other side best gloss finish on all manual, semi- and fully automated (CNC) machines. A large range of different geometries ensures the availability of a suitable wheel for your application.



Application Parameters:

Maximum wheel RPM:	3.400 1/min
Operating Temperature:	30 to 60°C
Operation Pressure:	0.5 to 3.0 bar
Coolant:	Water

Peripheral wheels

Outer diamter	Widht	Bore
34	15	12
35	20	12
35	25	12
35	30	12
35	35	12
35	40	12
100	10	22-25-30
100	15	22-25-30
100	20	22-25-30
100	25	22-25-30
100	30	22-25-30
100	35	22-25-30
100	40	22-25-30
100	45	22-25-30
100	50	22-25-30
100	55	22-25-30
100	60	22-25-30
120	15	22-25-30
120	20	22-25-30
120	25	22-25-30
120	30	22-25-30
120	35	22-25-30
120	40	22-25-30

Outer diamter	Widht	Bore
120	45	22-25-30
120	50	22-25-30
125	15	22
125	20	22
125	25	22
125	30	22
125	35	22
125	40	22
125	45	22
130	20	50
130	30	50
150	15	22-25-30-38-50-60
150	20	22-25-30-38-50-60
150	25	22-25-30-38-50-60
150	30	22-25-30-38-50-60
150	35	22-25-30-38-50-60
150	40	22-25-30-38-50-60
150	45	22-25-30-38-50-60
150	50	22-25-30-38-50-60
200	15	22-25
200	20	22-25
200	25	22-25
200	30	22-25

All dimensions in mm

Outer diamter	Widht	Bore
200	35	22-25
200	40	22-25
200	45	22-25
200	50	22-25
200	15	50-60-90
200	20	50-60-90
200	25	50-60-90
200	30	50-60-90
200	35	50-60-90

Outer diamter	Widht	Bore
200	40	50-60-90
200	45	50-60-90
200	50	50-60-90
250	15	20-50-90
250	20	20-50-90
250	25	20-50-90
250	30	20-50-90
250	35	20-50-90
250	40	20-50-90

Grooving wheels

Outer diamter	Widht	Bore
140	3 to 12	22
140	13 to 16	22
140	17 to 20	22
140	21 to 25	22
140	26 to 30	22
140	31 to 35	22
150	3 to 12	22-40-60
150	13 to 16	22-40-60
150	17 to 20	22-40-60
150	21 to 25	22-40-60
150	26 to 30	22-40-60
150	31 to 35	22-40-60
160	3 to 12	50-60-90
160	13 to 16	50-60-90
160	17 to 20	50-60-90
160	21 to 25	50-60-90
160	26 to 30	50-60-90

Outer diamter	Widht	Bore
160	31 to 35	50-60-90
160	3 to 12	22
160	13 to 16	22
160	17 to 20	22
160	21 to 25	22
160	26 to 30	22
160	31 to 35	22
170	3 to 12	22
170	13 to 16	22
170	17 to 20	22
170	21 to 25	22
170	26 to 30	22
170	31 to 35	22
180	3 to 12	22
180	13 to 16	22
180	17 to 20	22
180	21 to 25	22

All dimensions in mm

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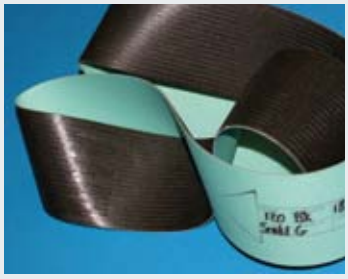
Outer diamter	Widht	Bore
180	26 to 30	22
180	31 to 35	22
200	3 to 12	22
200	13 to 16	22
200	17 to 20	22
200	21 to 25	22
200	26 to 30	22
200	31 to 35	22
200	3 to 12	60-90
200	13 to 16	60-90
200	17 to 20	60-90
200	21 to 25	60-90
200	26 to 30	60-90

Outer diamter	Widht	Bore
200	31 to 35	60-90
220	3 to 12	60
220	13 to 16	60
220	17 to 20	60
220	21 to 25	60
220	26 to 30	60
220	31 to 35	60
230	3 to 12	60
230	13 to 16	60
230	17 to 20	60
230	21 to 25	60
230	26 to 30	60
230	31 to 35	60

All dimensions in mm

Abrasive belts

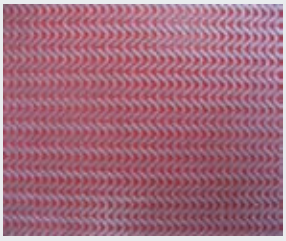
In glass processing, abrasive belts are primarily used for seaming. Different belt types are available for specific applications depending on the surface quality and material removal. We offer diamond abrasive belts, SiC grinding belts and cork belts for polishing.

Type	Abrasives	typical application
	Diamond	Seaming of glass edges
	NORaX® structured silicon carbide	Seaming of glass edges
	Silicon carbide	Seaming of glass edges with different grit sizes, depending on the material removal and the desired surface quality
	Cork	Polishing glass edges

All dimensions in mm

Please feel free to contact our expert advisors at any time. Contact details can be found on the last page

Diamond abrasive belts

Dimensions		Specification	
Length	**Width**	**Grit size**	**Pattern of coating**
533	30	Available in grit sizes 60, 120, 200, 300, 400	 Snake
830	70		
1100	100		
1180	80		
1800	50		
	75		
1830	100		
2000	100		
2400	100		
2642	100		
2690	100		
3350	50		
	60		
	100		 Electroflex

NORaX® abrasive belts

NORaX® is an engineered three-dimensional abrasive product with a special backing. It uses an innovative structure to achieve superb results for material removal, grinding pattern and tool life. Due to the unique grid technology, the product easily adapts to different requirements and increases productivity, quality and reproducibility while reducing costs, waste and material usage.
Compared with conventional SiC belts, NORaX® lasts up to three times longer or requires one-third less grinding time. As a result, grinding costs per workpiece can be reduced by up to 20%.

Dimensions				Order number
Length	**Width**	**Specification**	**Grit size**	
457	25	U466	X70	66261191800
457	25	U466	X110	66261191801
762	50	U466	X30	66261191802
762	50	U466	X70	66261191803
762	50	U466	X110	66261191804

Other dimensions on request

NORaX® grit sizes and their equivalent FEPA grit size:				
FEPA	P80	P150	P180	P220
NORaX®	X210	X110	X90	X70

All dimensions in mm

Silicon carbide abrasive belts

Sizes for silicon carbide abrasive belts		Specification		Order number
Length	Width	Bond	Grit size	
330	10	R445	P80	66261190873
455	13	R445	P220	66261190888
475	15	R445	P100	63642547788
			P120	69957382115
			P150	66261190889
			P220	66261190891
			P240	66261190893
			P320	66261190894
			P80	69957382114
520	20	R445	P120	63642547790
			P220	63642524658
			P80	63642567304
530	30	R445	P120	69957382119
			P150	69957371883
			P60	66261190899
			P80	69957382118
533	12	R445	P120	66261190885
			P400	66261190886
			P80	66261190884
533	19	R445	P180	69957382117
			P80	69957382116
533	20	R445	P80	63642513590
533	25	R445	P180	66254401734
			P400	63642525280
			P60	66261190895
533	28	R445	P100	66261190902
			P80	66261190900
533	30	R445	P100	69957384484
			P120	69957371884
			P180	66261188727
			P220	66261190906
			P240	66261190907
			P320	66261188731
			P400	66261188736
			P60	66261190905

All dimensions in mm

Sizes for silicon carbide abrasive belts		Specification		Order number
Length	Width	Bond	Grit size	
533	30	R445	P80	69957379493
550	30	R445	P320	66261190909
604	100	R445	P120	63642509078
610	25	R445	P80	66261190896
610	100	R445	P120	63642511650
			P240	63642515267
			P60	63642523985
			P80	69957378516
820	60	R445	P80	66261190913
830	70	R445	P120	63642567280
			P150	66261190921
			P220	66261190923
			P60	66261190918
			P80	69957379492
1000	55	R445	P80	69957382099
1000	60	R445	P80	66254400058
1100	100	R445	P150	66261191103
			P220	66261191104
			P60	66261191402
			P80	66261191102
1160	100	R445	P180	66254437615
1620	100	R445	P150	66261191114
			P60	66261191397
			P80	66261191112
1700	100	R445	P120	66261191117
			P180	66261191119
			P220	63642546590
			P320	66261191121
1750	140	R445	P320	66261191186
1750	160	R445	P320	66261191192
			P400	66261191195
1800	50	R445	P120	69957371898
			P220	66261190912
1800	100	R445	P100	69957377321
			P120	69957375909
			P150	69957374301
			P180	66261021473
			P60	66261191960

All dimensions in mm

Sizes for silicon carbide abrasive belts		Specification		Order number
Length	Width	Bond	Grit size	
1800	100	R445	P80	69957375908
1803	38	R445	P180	69957382120
1830	100	R445	P80	69957375905
1835	100	R445	P180	66261191122
2000	100	R445	P120	69957382100
			P80	63642559833
2000	300	R445	P400	66261191314
2350	100	R445	P180	66261191129
2400	90	R445	P60	66261191414
			P80	66261191415
2400	100	R445	P100	69957351687
			P120	66261020136
			P150	69957382102
			P180	66261191131
			P220	66261191134
			P400	63642561307
			P60	66261191408
			P80	69957382101
2400	150	R445	P180	66261191188
2500	100	R445	P150	63642508918
			P240	63642511075
			P80	66261177715
2500	150	R445	P400	63642551696
2600	100	R445	P150	66261191140
2640	150	R445	P120	63642509015
2650	100	R445	P100	66261191143
			P120	66261180674
			P80	66261191142
2690	100	R445	P100	69957382103
			P150	69957382104
			P180	66261191147
			P220	66261191149
			P400	66261191150
			P80	69957379098
2850	100	R445	P150	66261191151
2900	60	R445	P150	66261190915
			P80	66261190914
3000	100	R445	P100	69957375915

All dimensions in mm

Sizes for silicon carbide abrasive belts		Specification		Order number
Length	Width	Bond	Grit size	
3000	100	R445	P120	63642536495
			P240	69957380030
			P320	63642546843
			P80	69957375914
3200	90	R445	P150	66261191962
3300	100	R445	P120	63642591483
			P150	69957382105
			P400	66254421513
			P80	66254436702
3300	180	R445	P100	66261191198
3300	200	R445	P150	66261191200
			P180	66261191203
3330	100	R445	P150	66261191162
			P80	66261191160
3330	200	R445	P150	63642551353
			P240	63642547791
			P400	63642508142
			P60	66261191413
3350	30	R445	P150	66261190910
3350	90	R445	P120	66261191967
			P150	66261191964
			P220	66261191968
			P400	66261191969
3350	100	R445	P100	69957380284
			P120	69957375918
			P150	69957382107
			P180	69957380167
			P220	69957382108
			P240	66261191166
			P320	66261191167
			P400	69957380169
			P60	69957375917
			P80	69957380283
3350	120	R445	P120	66254437775
			P20	63642571034
			P240	66254437776
			P80	66254437774
3350	130	R445	P80	66261191182

All dimensions in mm

Sizes for silicon carbide abrasive belts		Specification		Order number
Length	Width	Bond	Grit size	
3350	150	R445	P80	69957382109
3350	200	R445	P120	63642546608
			P180	63642546611
			P220	63642546612
			P240	63642546614
			P320	63642546615
			P80	63642546606
3500	180	R445	P60	66261191412
3550	100	R445	P240	66261191168
			P80	69957375921
3700	100	R445	P120	66261191170
			P150	66261191172
			P180	66261191176
			P80	66261191169
3970	100	R445	P80	66261191179
7000	60	R445	P150	63642590610

All dimensions in mm

Cork polishing belts

Cork belts for polishing glass edges are available in two specifications: W445 and W441. W445 is made of pure cork for a high-gloss finish. W441 has P800-grade silicon carbide added, which can also achieve slight material removal in order to overcome minor flaws during polishing.

Sizes for cork polishing belts		Specification	Order number
Length	Width		
475	15	W445	66261191177
530	30	W445	66261191171
533	30	W445	66261189249
533	19	W445	66261191173
533	12	W445	66261191178
550	30	W445	66261191181
604	75	W445	66261190980
762	50	W445	69957383553
830	70	W445	69957382111
1100	100	W445	66261191132
1300	100	W445	66261191130
1620	100	W445	66261191127
1700	100	W445	66261191126
1800	100	W445	66261191110
1830	100	W445	69957376908
2000	300	W445	66261087943
2000	75	W445	66261191183
2000	150	W445	69957378939
2000	350	W445	69957379542
2400	100	W445	69957351686
2690	100	W445	66261191124
2700	100	W445	66261191123
3000	100	W445	69957375925
3350	200	W441	66261089427
3350	200	W445	66261191135
3350	100	W445	69957375926
3680	100	W445	66261191125

Other sizes are available on request

All dimensions in mm

Accessories

Cleaning and sharpening stones

Stock programme of cleaning and sharpening stones

Description	Application	Order number
WINTER stone No. 2 (100×24×13)	White aluminium oxide, ceramic bond, 180 mesh, for sharpening resin and metal bonded grinding wheels and cut-off wheels with grit size ≥ D46	66260195816
WINTER stone No. 4 (90×70×20)	Pink aluminium oxide, ceramic bond, 60 mesh, for sharpening metal bonded grinding wheels with grit size ≥ D251	60157642665
WINTER stone No. 5 (100×50×25)	See WINTER stone No. 2	66260389054
Stone WA150GV (25×25×150)	Cleaning and sharpening resin and metal bonded grinding wheels with grit size ≥ D107	69936621643
Stone WA220GV (25×25×150)	Cleaning and sharpening resin and metal bonded grinding wheels with grit size between D46 and D107	69014165446
Stone WA320GV (25×25×150)	Cleaning and sharpening resin and metal bonded grinding wheels with grit size ≤ D46	69936651380
Stone for core drill 8A100-G8 (8×50×200)	Cleaning and sharpening all types of core drills	60157651338
Slab for core drill 8A120-I8 (10×155×285)	Cleaning and sharpening all types of core drills	66253270933

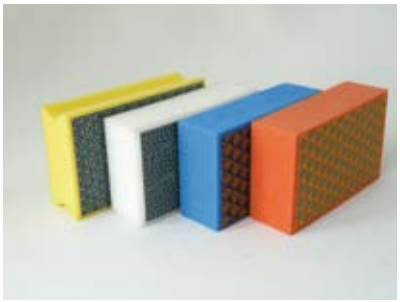
Cleaning and sharpening stones for profiled peripheral grinding wheels

Dimensions			Grinding wheel grit size		
B	**H**	**L**	**≥D107 (140/170)**	**Thickness of glass**	**Order number**
3	50	200	150-G10	PE/FA 3 mm	60157651361
4	50	200	150-G10	PE/FA 4 mm	60157651374
5	50	200	150-G10	PE/FA 5 mm	60157651356
6	50	200	150-G10	PE/FA 6 mm	60157651114
8	50	200	150-G10	PE/FA 8 mm	60157651116
B	**H**	**L**	**D91 (170/200) to D76 (200/230)**	**Thickness of glass**	**Order number**
3	50	180	180A-F8	PE/FA 3 mm	60157665606
4	50	230	180-H10	PE/FA 4 mm	60157651131
5	50	200	180A-F8	PE/FA 5 mm	60157665598
B	**H**	**L**	**≤D64 (230/270)**	**Thickness of glass**	**Order number**
3	50	200	220-J10	PE/FA 3 mm	60157651355
4	50	200	220-J10	PE/FA 4 mm	60157651381
5	50	200	220-J10	PE/FA 5 mm	60157651107
6	50	200	220-J10	PE/FA 6 mm	60157651108

All dimensions in mm

Hand pads

These handy abrasive blocks are ideal for removing minor flaws and irregularities by hand. The grit size is indicated by the colour of the hand pad. 'Snake' hand pads have a high diamond content and a very long product life, 'Electroflex' hand pads, our standard product, are a low-cost alternative.



Type	Dimensions	Colour	Grit size	Order number
Snake	90 × 55	Green	60	66260376326
Snake	90 × 55	Black	120	66260322698
Snake	90 × 55	Red	200	66260329702
Snake	90 × 55	Yellow	400	66260329704
Snake	90 × 55	White	800	66260329706
Snake	90 × 55	Blue	1800	66260329708
Type	**Dimensions**	**Colour**	**Grit size**	**Order number**
Electroflex	90 x 55	Green	60	69014135833
Electroflex	90 x 55	Black	120	69014137298
Electroflex	90 x 55	Red	200	69014137295
Electroflex	90 x 55	Yellow	400	69014137292

All dimensions in mm

Edge deletion grinding wheels

BearTex® edge deletion grinding wheels are the ideal tool for removing coatings safely and reliably. Long product life and excellent material removal rates guarantee high profitability.

NORTON
SAINT-GOBAIN

Edge deletion grinding wheels

Diameter	Width	Bore	Specification	Order number
125	10	76.2	D18S.F	66254403793
150	10	25.4	D17S.F	66254403086
150	10	25.4	D19S.M	66254476456
200	10	76.2	D18S.F	66261092884
200	10	76.2	D19S.M	66254473469
200	20	76.2	D18S.F	66261095228
200	20	76.2	D19S.M	66261023567
200	28	76.2	D19S.M	66254477146
200	30	76.2	D19S.M	66254479315

All dimensions in mm

Please feel free to contact our expert advisors at any time. Contact details can be found on the last page

Tools for grinding crystal glass

Decanters, drinking glasses, goblets, and also gemstones, figurines and chandeliers only get their elegant appearance after the decorative grinding process:
Besides the refractive index which is defined by the material composition, the characteristic appearance of crystal is mainly due to the variety of cuts. Many small surfaces, profiles and facets refract light, make the spectral colours sparkle and add beauty to everyday life.

The vast range of applications call for many specifically designed grinding tools. A small selection is featured on the following pages – please contact us; we would be pleased to advise you on the specification of appropriate tools.

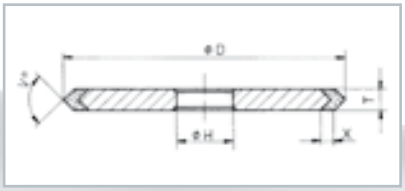
Info

Further information on applications and products can be found on our website:
www.winter-superabrasives.com

Grinding tools for manufacturing crystal glass

The manufacture of crystal glass combines technology and creativity to create products of sparkling beauty. Apart from the facet cutting, the traditional applications in decorative cutting are round or olive grinding and surface grinding. Functional grinding operations are cutting, rim grinding and flat grinding. Whether automated or hand-operated, the demands made on grinding tools are complex: profile accuracy and tool life are the most important criteria in automatic cutting. Hand cutting values grinding behaviour that is tailored to the individual cutter due to the lack of predefined feed rates and infeeds. WINTER offers individual specifications for every area of application.

Grinding wheels for facet cutting



1EE1 grinding wheels

Sample specification

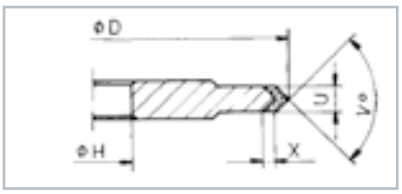
Shape	Diameter D	Abrasive width T	Abrasive thickness X	Angle V	Bore H	Diamond grit size	Bond	Concentration
1EE1	200	20	10	90°	51	D151	BZ387	C50

Order reference for 1EE1 diamond grinding wheels for facet cutting

Shape	D	T	X	V	H	Orientation guide for specification finding
1EE1	50	8, 12.5, 15, 20	5 or 10	from 90° to 130° in 5° steps	Diameter according to customer specification / standard fit H6	
	75					
	100					
	150	8, 12.5,15, 20, 30	5 or 10			
	200					
	250					
	300	12.5, 15, 20, 30	5 or 10			

Diamond layer		
Rough grinding	D151	C50
Fine grinding	D25–D46	C30
Bond		
BZ387	free-grinding	
BZ488	more wear-resistant	
BZ427-V1	edge stability	

All dimensions in mm



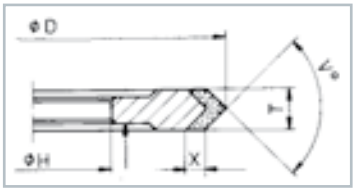
14EE1 grinding wheels

Sample specification

Shape	Diameter D	Abrasive width U	Abrasive thickness X	Angle V	Bore H	Diamond grit size	Bond	Concentration
14EE1	200	12.5	10	90°	51	D151	BZ387	C50

Order reference for 14EE1 diamond grinding wheels for facet cutting

Shape	D	T	U	X	V	H	Orientation guide for specification finding
14EE1	50 75 100 150 200 250 300	To customer specification	8, 12.5, 15, 20 8, 12.5, 15, 20, 30 12.5, 15, 20, 30	5 or 10	from 90° to 130° in 5° steps	Diameter according to customer specification / Standard fit H6	**Diamond layer** Rough grinding: D151, C50 Fine grinding: D25–D46, C30 **Bond** BZ387: free-grinding BZ488: more wear-resistant BZ427-V1: edge stability



9EE1 grinding wheels

Sample specification

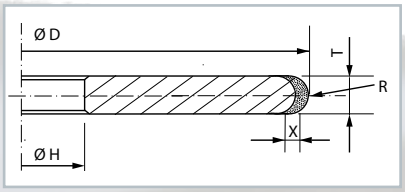
Shape	Diameter D	Abrasive width T	Abrasive thickness X	Angle V	Bore H	Diamond grit size	Bond	Concentration
9EE1	150	20	10	90°	32	D151	BZ387	C50

All dimensions in mm

Order reference for 9EE1 diamond grinding wheels for facet cutting						
Shape	**D**	**T**	**X**	**V**	**H**	**Orientation guide for specification finding**
9EE1	50	8, 12.5, 15, 20	5 or 10	from 90° to 130° in 5° steps	Diameter according to customer specification Standard fit H6	**Diamond layer** Rough grinding: D151, C50 Fine grinding: D25–D46, C30 **Bond** BZ387: free-grinding BZ488: more wear-resistant BZ427-V1: very firm edges
	75					
	100					
	150					
	200	8, 12.5, 15, 20, 30				
	250					
	300	12.5, 15, 20, 30				

Other dimensions on request

Grinding wheels for round profile grinding



1FF1 grinding wheels

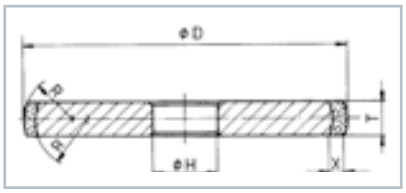
Sample specification

Shape	Diameter D	Abrasive width T	Abrasive thickness X	Bore H	Diamond grit size	Bond	Concentration
1FF1	125	12	3	52	D126	BZ335	C50

Order reference for 1FF1 diamond grinding wheels for round profile grinding						
Shape	**D**	**T**	**X**	**R**	**H**	**Orientation guide for specification finding**
1FF1	40	6	3	R = 1/2 T	Diameter according to customer specification / Standard fit H6	**Diamond layer** Rough grinding: D126, C50 Fine grinding: D25–D46, C30 **Bond** BZ335: free-grinding BZ366: more wear-resistant
	50	6, 8				
	75	6, 8, 10				
	100	6, 8, 10, 12				
	125	6, 8, 10, 12, 16				
	150	6, 8, 10, 12, 16, 20				

All dimensions in mm

712 grinding wheels



Sample specification

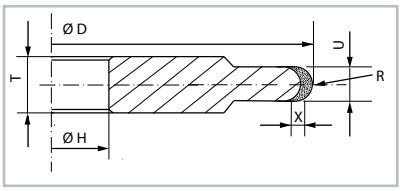
Shape	Diameter D	Grinding wheel width T	Abrasive thickness X	Radius R	Bore H	Diamond grit size	Bond	Concentration
712	300	20	5	30	100	D126	BZ335	C50

Order reference for 712 diamond grinding wheels for round profile grinding

Shape	D	T	X	R	H	Orientation guide for specification finding
712	40	7, 10, 15, 20	5	To customer specification	Diameter according to customer specification Standard fit H6	
	50					
	75					
	100					
	120					
	150	7, 10, 15, 20, 25, 30, 35, 40, 45, 50				
	200					
	250					
	300	15, 20, 25, 30, 35, 40, 45, 50, 55, 60				

Diamond layer		
Rough grinding	D126	C50
Fine grinding	D25–D46	C30
Bond		
BZ335	free-grinding	
BZ366	more wear-resistant	

14FF1 grinding wheels



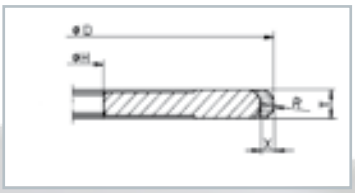
Sample specification

Shape	Diameter D	Abrasive width U	Abrasive thickness X	Bore H	Diamond grit size	Bond	Concentration
14FF1	100	10	3	50,8	D126	BZ335	C50

All dimensions in mm

Order reference for 14FF1 diamond grinding wheels for round profile grinding						
Shape	**D**	**U**	**X**	**R**	**H**	**Orientation guide for specification finding**
14FF1	40	6	3	R = 1/2 U	Diameter according to customer specification / Standard fit H6	
	50	6, 8				
	75	6, 8, 10				
	100	6, 8, 10, 12				
	125	6, 8, 10, 12, 16				
	150	6, 8, 10, 12, 16, 20				

Diamond layer		
Rough grinding	D126	C50
Fine grinding	D25–D46	C30
Bond		
BZ335	free-grinding	
BZ366	more wear-resistant	



9FF1 grinding wheels

Sample specification

Shape	Diameter D	Abrasive width T	Abrasive thickness X	Bore H	Diamond grit size	Bond	Concentration
9FF1	125	10	3	25,4	D46	BZ335	C30

Order reference for 9FF1 diamond grinding wheels for round profile grinding						
Shape	**D**	**T**	**X**	**R**	**H**	**Orientation guide for specification finding**
9FF1	40	6	3	R = 1/2 T	Diameter according to customer specification / Standard fit H6	
	50	6, 8				
	75	6, 8, 10				
	100	6, 8, 10, 12				
	125	6, 8, 10, 12, 16				
	150	6, 8, 10, 12, 16, 20				

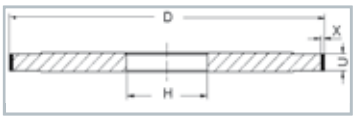
Diamond layer		
Rough grinding	D126	C50
Fine grinding	D25–D46	C30
Bond		
BZ335	free-grinding	
BZ366	more wear-resistant	

Other dimensions on request

All dimensions in mm

Grinding wheels for surface grinding

1A1 grinding wheels



Sample specification

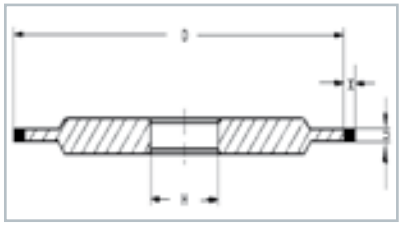
Shape	Diameter D	Abrasive width U	Abrasive thickness X	Bore H	Diamond grit size	Bond	Concentration
1A1	200	20	10	52	D126	BZ366	C50

Order reference for 1A1 diamond grinding wheels for surface grinding

Shape	D	U	X	H	Orientation guide for specification finding
1A1	50	8, 12.5, 15, 20	5 or 10	Diameter according to customer specification / Standard fit H6	
	75				
	100				
	150	8, 12.5, 15, 20, 30			
	200				
	250				
	300	12.5, 15, 20, 30			

Diamond layer		
Rough grinding	D126	C50
Fine grinding	D25–D46	C30
Bond		
BZ335	free-grinding	
BZ366	more wear-resistant	

Other dimensions on request



14A1 grinding wheels

Sample specification

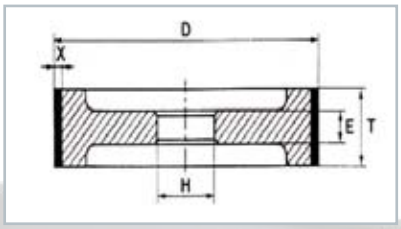
Shape	Diameter D	Abrasive width U	Abrasive thickness X	Bore H	Diamond grit size	Bond	Concentration
14A1	100	8	5	25	D25	BZ335	C30

All dimensions in mm

Please feel free to contact our expert advisors at any time. Contact details can be found on the last page

Order reference for 14A1 diamond grinding wheels for surface grinding					
Shape	**D**	**U**	**X**	**H**	**Orientation guide for specification finding**
14A1	50	8, 12.5, 15, 20	5 or 10	Diameter according to customer specification / Standard fit H6	**Diamond layer** Rough grinding: D126, C50 Fine grinding: D25–D46, C30 **Bond** BZ335: free-grinding BZ366: more wear-resistant
	75				
	100				
	150	8, 12.5, 15, 20, 30			
	200				
	250				
	300	12.5, 15, 20, 30			

Other dimensions on request



9A1 grinding wheels

Sample specification

Shape	Diameter D	Abrasive width T	Abrasive thickness X	Bore H	Diamond grit size	Bond	Concentration
9A1	300	30	5	127	D126	BZ335	C50

Order reference for 9A1 diamond grinding wheels for surface grinding					
Shape	**D**	**T**	**X**	**H**	**Orientation guide for specification finding**
9A1	50	8, 12.5, 15, 20	5 or 10	Diameter according to customer specification / Standard fit H6	**Diamond layer** Rough grinding: D126, C50 Fine grinding: D25–D46, C30 **Bond** BZ335: free-grinding BZ366: more wear-resistant
	75				
	100				
	150	8, 12.5, 15, 20, 30			
	200				
	250				
	300	12.5, 15, 20, 30			

Other dimensions on request

All dimensions in mm

Grinding wheels for flat grinding

Shape	D	W	X	H	Grit size	Bond	Concentration
1K222	450	200	5 or 10	35 or to specification (H6 fit)	D46	K+888RYA	C40
	500	180	3 or 5				
	600	250	3	20	D30W	B42	C25

Cut-off wheels

Cut-off wheels with continuous rim are used for cutting crystal glass. WINTER cut-off wheels are available in a variety of specifications and guarantee a smooth and clean operation and long tool life. The carefully pretensioned core ensures straight and accurate cuts.

Sample specification

Manufacturing process/ shape	External diameter	Cutting width	Coating thickness	Core thickness	Bore	Specification
BZ 1A1R	200	1.8	5	1.4	20	D107 BZ335 C19

Order reference for continuous rim version in metal bond

Shape	Diameter	Cutting width	Coating thickness	Core thickness	Bore diameter H	Grit size	Bond
1A1R	150	1.5	5	1.2	Standard bore diameter 20 mm, other bore diameters on application	Depending on the glass thickness, we recommend the following diamond grit sizes: ≤ 8 mm = D107 > 8 mm–20 mm = D126, > 20 mm = D151	BZ335 in C19 concentration
		1.5	10	1.3			
	200	1.8	5	1.4			
		1.8	10	1.5			
	250	1.8	5	1.4			
		1.8	10	1.4			
	300	1.8	5	1.4			
		1.8	10	1.4			
	400	1.8	5	1.4			
		1.8	10	1.4			
	500	2.6	5	2			

All dimensions in mm

Please feel free to contact our expert advisors at any time. Contact details can be found on the last page

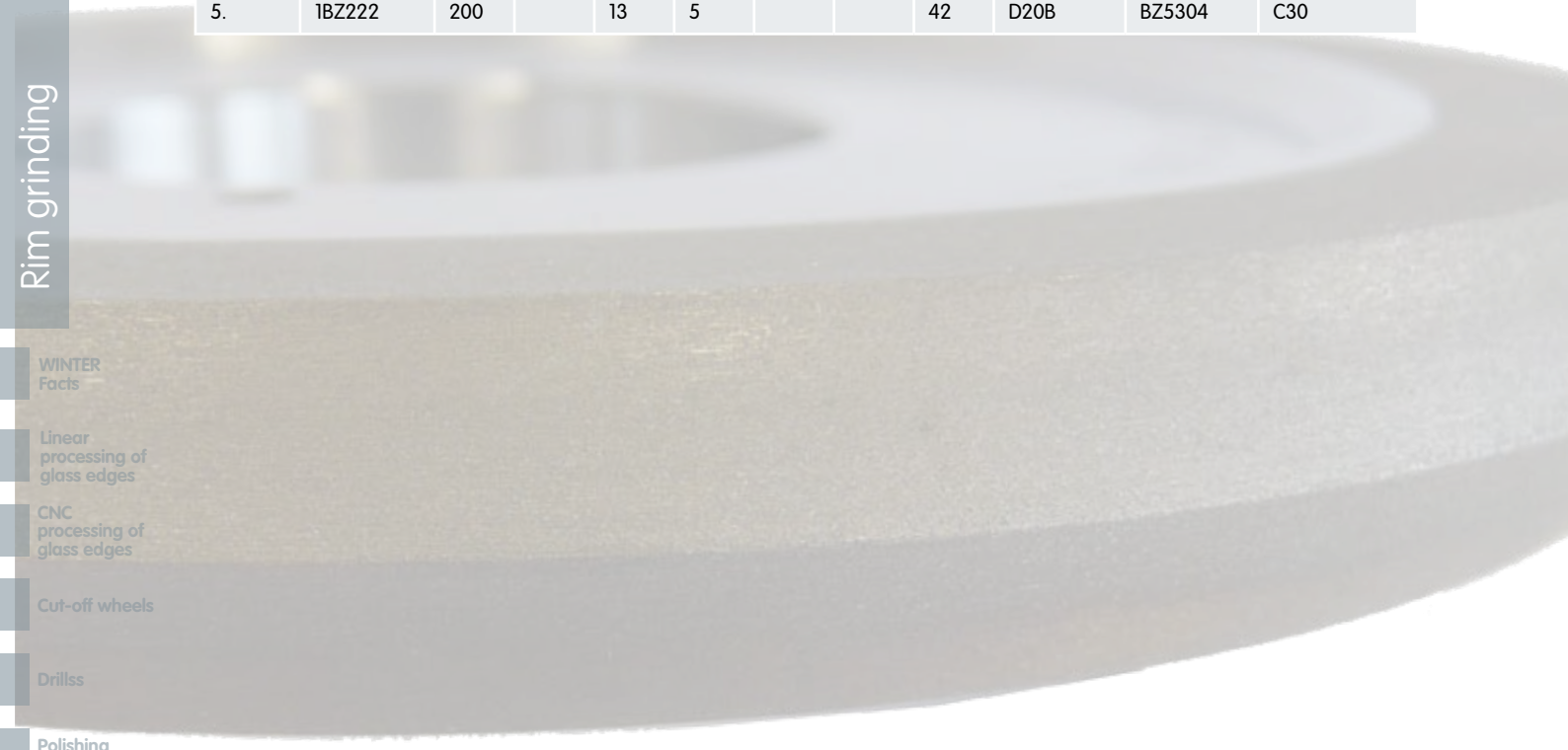
Grinding wheels for rim grinding

For Biebuyck machines

Station	Shape	D	W	X	H	Grit size	Bond	Concentration
1.	1BZ222	200	30	1	24	D107	BZ308	C40
2.	1BZ222					D91	BZ308	C40
3.	1BZ222					D76	BZ308	C40
4.	1BZ700	40	6	2	8	D64	BZ315	C75
5.	1BZ222	200	30	1	24	D46	BZ308	C40

For Lindner machines

Station	Shape	D	T	W	X	E	R	H	Grit size	Bond	Concentration
1.	1A1R	200	2.3		10	2		42	D107	BZ335	C19
2.	1BZ222	200		13	5			42	D91	BZ5304	C30
3.	1BZ714	60		10	5		30	20	D20B	BZ315	C30
4.	BZ6A2	100		10	4			42	D20B	BZ5304	C30
5.	1BZ222	200		13	5			42	D20B	BZ5304	C30



All dimensions in mm

Compendium

The WINTER brand represents over 160 years of heritage and grinding experience. Many companies worldwide involved in industrial production benefit from this expertise.

We know our customers' requirements and help you with our technological expertise and competence. This way, your grinding process becomes more effective and profitable.

Service

Competition is keen, and cost pressures are acute. To improve productivity and technical capability, you need a supplier who co-operates efficiently. WINTER not only provides high performance grinding tools but can also assist in analysing your processes, to identify the best solution, and then to implement it together with you.

Advice

Our field service engineers and customer service team are here to help, and can offer advice on all WINTER products and grinding processes. Together with product management and our application engineering team, customised solutions will be found which meet your needs.

Product Development

WINTER, as the grinding industry's technology leader, invests heavily in Research and Development. Basic research supports new customer-specific product and application developments at our global Technology Centres. Our EGTC (European Grinding Technology Centre) with the R&D Department in Norderstedt, closely co-operate with our Research and Technology Centres in the USA, France and China.

Process Optimisation

At our EGTC (European Grinding Technology Centre), we can evaluate your grinding processes using sophisticated sensing and measurement systems which you may not have access to. So we can demonstrate improvements to your process without interrupting your production. On your factory floor, our application and development engineers continue to support you. Our dedicated specialists are expert in the field of complex grinding systems, and can advise on new production strategies with the help of innovative process diagnostic technology. The result for customers is a fine-tuned production process, and optimised day-to-day operations.

Training and Continuing Education

We offer regular seminars on current issues and developments at our European Grinding Technology Centre (EGTC) in Norderstedt. Economic and advanced production processes are reviewed with top-class experts from different parts of the industry. We invite internal and external consultants on specific subjects to comment on the technological state-of-the-art and development trends.

Ask your field salesman for the latest calendar of scheduled seminars and get yourself registered.
Specific training programmes can also be arranged according to your individual requirements.
Just contact us - we will gladly make an offer that meets your needs.

WINTER offers seminars on topics such as:

- Tool Grinding Technology Forum (expert panel discussion)
- Grinding (basic training)
- Grinding fluids (focused technology review)
- Dressing technology (focused review)

Field Instrumentation System (FIS)

Optimise your production process

Have us make a FIS process analysis and optimise your production process: field instrumentation system is a portable system to monitor and measure your grinding process. Exact and comparable data is obtained and can contribute to increase your performance:

– Process optimisation, reduction of cycle time
– Prolongation of tool life time
– Machine and process studies
– Analytical determination and benchmarking

Give it a try!

MDress - Mobile Dressing Unit

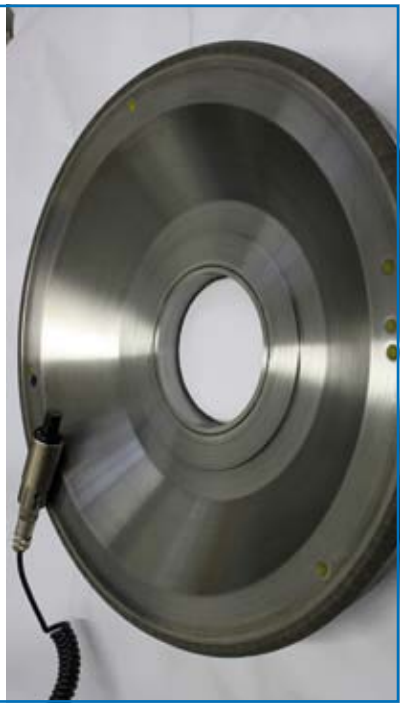
For better grinding results

Almost every CNC grinding machine can be upgraded by MDress, the mobile rotary diamond dressing unit. Using MDress ensures highly precise reconditioning of grinding wheel profiles. The grinding wheel achieves its ultimate axial and radial running truth directly on the main spindle. Our customers are enabled to test, for example, vitrified bonded grinding wheels, on the CNC grinding machine and obtain a more economic grinding result.

Our application engineers will give you support, to demonstrate an optimised dressing process with the MDress dressing system on your machine at your premises.

Just contact us.

RFID – Radio Frequency Identification



This technology makes it possible to transfer stored data from the grinding wheel to the grinding machine. The advantages are

The increased level of transparency

- Integrated tool-life monitoring
- Automated scanning and storage of tool use

Shorter set-up times

- Direct access to grinding wheel data by the machine control system
- Elimination of operator error in manual recording and entry of data

Improved profitability

- Reduced machine downtime by automatic data transfer between machine and grinding wheel

Glossary

For your reference: a short explanation of grinding terms

Bonds

To meet the challenges of the wide diversity of grinding applications, it is inevitable that a wide range of bond systems is required. Bonds are categorised according to the fundamental material type used, and many variations exist within each type.

Resin Bond Systems

These are based on either phenolic or polyimide resins, usually together with added fillers, as well as the abrasive grains. Resin bonds are at the lower end of the hardness scale, and are used in a wide range of applications due to their fast and cool grinding behaviour.

Sintered Metal Bonds

Most metal bonds are based on bronze, although harder systems may be based on steel or even hardmetal. Sintered bronze bonds are relatively soft and at their softest can overlap the hardest resin bonds. Steel and hardmetal bonds are more wear resistant, so therefore act harder and grip the abrasive grains more strongly, leading to longer tool life, although the abrasive can sometimes appear blunt.

Metal bonded grinding wheels generally grind more slowly, in most applications acting harder, and more grinding heat is developed than in resin bonded wheels. However, metal bonds can also readily dissipate heat, which also impacts the grinding process. Metal bonds are ideal for grinding wheels with sharp edge profiles, and for machining abrasive materials that would otherwise wear the bond. Furthermore, metal bonds are shock-resistant, and are suitable for very aggressive operating conditions. Metal bonds are mostly used in wet grinding. Special variants are crushable, brittle metal bonds that can be dressed on the machine in a special crushing process. These bonds are especially useful in creep feed grinding.

Electroplated Bonds

In this bond system, the metal bond is deposited electrolytically onto a bronze or steel body. The grit is tenaciously achored by the bond, and grain tips can protrude from the bond layer by 30 - 50 % of the grain diameter. This leads to a grinding layer with a very high material-removal-rate capability. However, only the outermost grain layer acts in this way, which is why these tools are mainly designed in single-layer versions. Such single layer bond systems are suitable for profiled wheel bodies of all kinds; profile accuracy is dependent on the grit size specified.

Vitrified Bonds

Vitrified bonds are based on fusible glasses combined with fillers and the abrasive grains. While resin and metal bonds are generally fully dense, vitrified bonds are usually produced with a defined porosity, and are available in different hardness levels. This variation in porosity and hardness is analogous to the vitrified bonds of conventional grinding wheels. The main features of vitrified bonds are:

- Good dressability and profileability
- Free-cutting due to the porosity and self sharpening behaviour
- Fluid availability, due to porosity, in the grinding zone allows cool grinding at low grinding forces
- High cutting speeds and material removal rates are possible.

Concentration

According to the WINTER system, the concentration value defines the volume fraction of diamond or cBN in the abrasive layer as follows:

Diamond		
Concentration	**Carat / cm³**	**Volume %**
C50	2,2	12,5
C75	3,3	18,75
C100	4,4	25
C125	5,5	31,25

cBN		
Concentration	**Carat / cm³**	**Volume %**
V120	2,09	12
V180	3,13	18
V240	4,18	24
V300	5,22	30

These definitions are not applicable for single layer electroplated tools.

Conditioning

Conditioning of a grinding wheel consists of dressing and cleaning:

Dressing		Cleaning
Profiling	**Sharpening**	
Influences macrostructure	Influences microstructure	Influences microstructure
Produces concentricity and grinding wheel profile	Generates topography and grain exposure by eroding the bond	Removes chips from chip space
Need: Shape or re-shape the wheel surface	Need: Create grit protrusion	Need: No change in the surface

Cubic Boron Nitride (cBN)

Boron nitride is found in two structural modifications: Cubic boron nitride (cBN) has the zinc-blende crystal structure equivalent to diamond, and has a hardness just a little below that of diamond. The graphite-like hexagonal modification of boron nitride (hBN) is soft and is used as a lubricant.

Compared to diamond, cBN has technological and economic advantages when grinding materials having a chemical affinity to carbon, such as steels and ferrous alloys. Applications for cBN are becoming increasingly economic, and cBN grinding of workpieces with hardness as low as 50 HRC have been demonstrated.

Diamond

Diamond is one of the three carbon modifications (the others are graphite and the fullerenes) and, with a Moh's hardness of 10, diamond is the hardest material known. The grinding (Rosiwal) hardness is 140 times higher than that of alumina. Because of its hardness and wear resistance, diamond is used for grinding hard, brittle and short-chipping materials. Examples are tungsten carbide, glass, ceramics, quarz, semiconductor materials, graphite and wear-resistant thermal spray alloys as well as hard-facing alloys, plastics with glass fiber reinforcement, and other difficult to machine materials. Both natural and synthetic diamonds are used in industrial applications.

- **Natural diamond:** these diamonds were created in the earth's mantle under high pressure and temperature (1200 - 1400°C). Both single crystals (octahedrons, triangles…) and crushed grit (boart) are used in industrial diamond tools
- **Synthetic diamond:** synthetic diamond grits are formed in presses in a very high pressure/high temperature (HP/HT) process, at up to 60000 bar and 1500°C, using a variety of solvent/catalyst materials which help to convert graphite into diamond.
- **MCD:** large synthetic diamonds that are produced in a HP/HT process similar to synthetic diamond grit.
- **PCD:** polycrystalline diamond pieces formed by sintering micronized diamond particles together with a binder under HP/HT conditions.
- **CVD:** these diamonds are manufactured by gas phase deposition (methane, hydrogen) at low pressure using a vacuum system.

Direction of Rotation Indicator

Resin and metal bond diamond and cBN grinding wheels always show an indicator for the direction of rotation. At the end of the production chain of a multilayer grinding wheel is the profiling and sharpening process. In the sharpening process, a bond tail is formed behind each of the active abrasive grains. This bond tail supports the grain and prevents the grain from untimely fracture. If the wheel is mounted the wrong way round, this bond tail would precede the grains during cutting, which would lead to lower chip-space, increased grinding pressure, and early grain fracture. Therefore, it is important to adhere to the rotational direction shown by the indication arrow or to re-sharpen the grinding wheel before use, if you chose to change the direction of rotation.

Dressing = Truing + Sharpening

It is necessary to distuinguish between the key wheel preparation steps of truing, sharpening and cleaning of the grinding wheel surface.

Dressing describes the processes of truing and sharpening a grinding wheel. When grinding with conventional alumina or silicon carbide wheels, "dressing" is the combined process of truing and sharpening. However, for superabrasive grinding wheels containing either diamond or cBN abrasives in a resin or metal bond, after truing, a separate sharpening step is usually required to remove some of the bond material and expose the grains. In addition, the grinding wheel surface must be cleaned (Dressing + Cleaning = Reconditioning) periodically. The dressing interval depends upon the grinding process parameters being used, and the type of workpiece material being ground.

Grinding wheel truing generates the correct geometric shape, develops the necessary concentricity, and also removes any surface contamination. In so doing, worn blunted grains are either removed or resharpened, and fresh grains are exposed. To achieve optimum results, dressing tools, dressing parameters and dressing strategy must be finely tuned to the grinding wheel and grinding process. Therefore, different tools and methods are used, such as either alumina-based or SiC sharpening stones, SiC grinding wheels, the WINTER brake-dressing device, CNC rotary dressers, diamond dressing sticks, rotary profile dressers, etc.

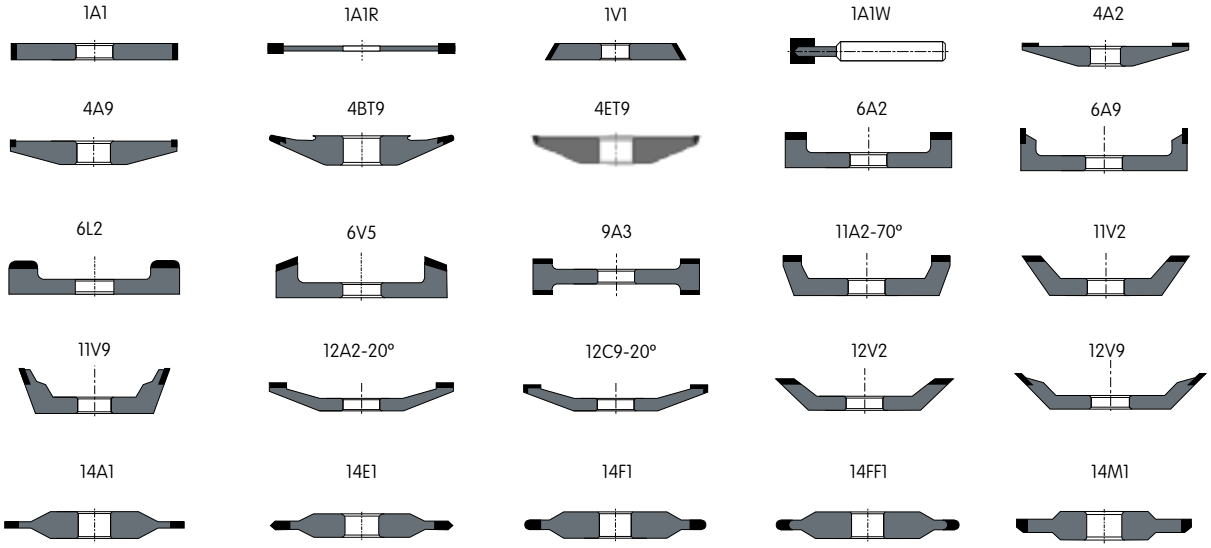
Our engineers can offer advice to help you chose the best method for your application.

FEPA

The Federation of European Producers of Abrasives (FEPA) is a non-profit European organisation which publishes safety guidelines and standards for conventional and superabrasive (diamond and cBN) grinding tools as well as loose abrasive grain (see grit sizes). It also provides standards for the most common grinding wheel shapes and dimensions.

FEPA-Shapes

These drawings show the most important grinding wheel geometries:



Grinding

According to DIN 8589, grinding is defined as material removal using geometrically undefined cutting edges. All grinding wheels with either diamond or cubic boron nitride (cBN) are grinding tools according DIN 8589. The "cutting edges" are composed of the diamond or cBN grit.

Grinding Ratio (G-Ratio)

The grinding-ratio is calculated as a ratio of the ground workpiece volume V_w to the wheel wear volume V_s.

Grinding Wheel Bodies

The body of a grinding wheel provides the static and dynamic stiffness to the tool. Dependent on the kind of grinding layer, it may consist of aluminium, filled resin, brass, steel or ceramics. The body significantly influences the vibration behaviour and the thermal conductivity of the grinding wheel; the following table shows examples for superabrasive grinding wheel bodies.

Body material type	Label	Vibration Absorbtion	Heat Transmission	Mechanical Stiffness
Resin with metal fillers	H	medium	sufficient	good
Resin with non-metallic fillers	B or D	good	bad	satisfactory (not sufficient with thin-walled bodies)
Aluminium	A	bad	good	very good
Steel	E	bad	satisfactory	very good
Copper	C	bad	very good	very good
Composite material	CFK	good	bad	good

Grit Sizes

The seive-sizes for diamond and cBN range according to FEPA standards (also ISO 6106) and are shown in the following table. As abrasives always contain a range of grit sizes, the values given for average grit sizes and particles per carat are approximations. D-prefix indicates diamond, while B-prefix refers to cBN.

FEPA grit size D or B	Standard [Mesh]	Average Grit Size [µm]	Particles per ct
1181	16/18	1100	60
1001	18/20	930	100
851	20/25	780	160
711	25/30	660	270
601	30/35	555	450
501	35/40	465	760
426	40/45	395	1200
356	45/50	330	2100
301	50/60	280	3500
251	60/70	233	6000
213	70/80	197	10000
181	80/100	167	16000
151	100/120	140	28000
126	120/140	118	46000
107	140/170	99	80000
91	170/200	83	135000
76	200/230	72	200000
64	230/270	63	300000
54	270/325	55	460000
46	325/400	47	750000
39	400/500	38	1400000
33	500/600	33	2100000

WINTER has its own classification for fine and microgrit sizes. FEPA standards are similar (M 63…M1.0).

WINTER diamond classification	Grit size [µm]
D 25	40 - 60
D 20 C	34 - 45
D 20 B	25 - 37
D 20 A	20 - 30
D 15	8 - 25
D 15 C	15 - 25

WINTER diamond classification	Grit size [µm]
D 15 B	10 - 20
D 15 A	8 - 15
D 10	6 - 10
D 7	5 - 10
D 5	3 - 7
D 3	2 - 5
D 1	0,5 - 2
D 0,7	0 - 1
D 0,25	0 - 0,5

Hardness of Abrasives

The hardness value of a material is generally influenced by the method of measurement. Different measuring methods and equipment result in different scales and units which cannot easily be compared. Thus several scales exist, for example:

Moh's hardness: abrasion behaviour (measure of scratch resistance)
Rosiwal hardness: stock removal behaviour (measure of resistance to stock removal)
Vicker's Microhardness: indentation behaviour (resistance to penetration)

In the following table, different hardness values for abrasives are given and compared to some reference materials:

Material	Moh's Hardness	Rosiwal Hardness	Vickers Microhardness (HV)
Diamond	10	140,000	10,000
cBN	9,9		9,000
Silicon carbide	9,6		2,600
Corundum	9	1.000	2,060
Quarz	7	120	1,120
Manganese	5	6.5	540
Gypsum	2	1.25	36
Talc	1	0.03	2.6

Diamond's stock removal resistance (Rosiwal hardness) is 140 times higher than corundum (alumina), even though its penetration hardness (Vickers) is only 5 times higher.

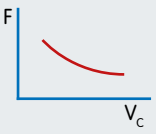
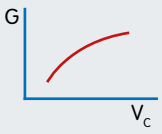
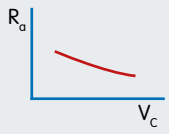
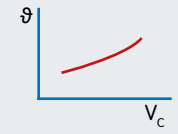
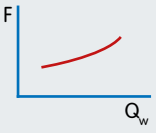
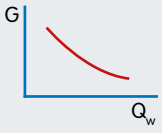
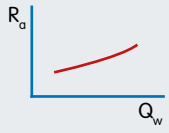
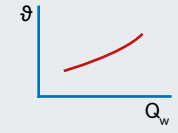
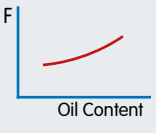
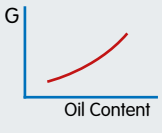
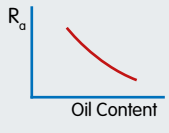
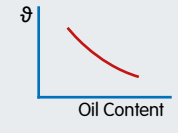
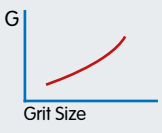
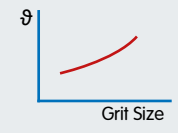
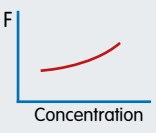
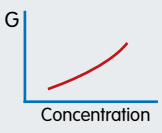
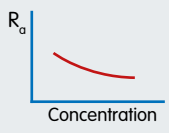
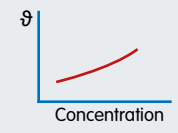
Material Removal Rate

The material removal rate, MRR or Q_w, is expressed in mm^3/s and defines the volume of workpiece material ground per unit time (second).

The specific material removal rate, MRR' or Q'_w, refers to the removal rate per millimetre of wheel contact width and is expressed in units of $[mm^3/(s \cdot mm)]$.

Parameters influencing Grinding Results

The table shows some correlations between process variables and the grinding results.

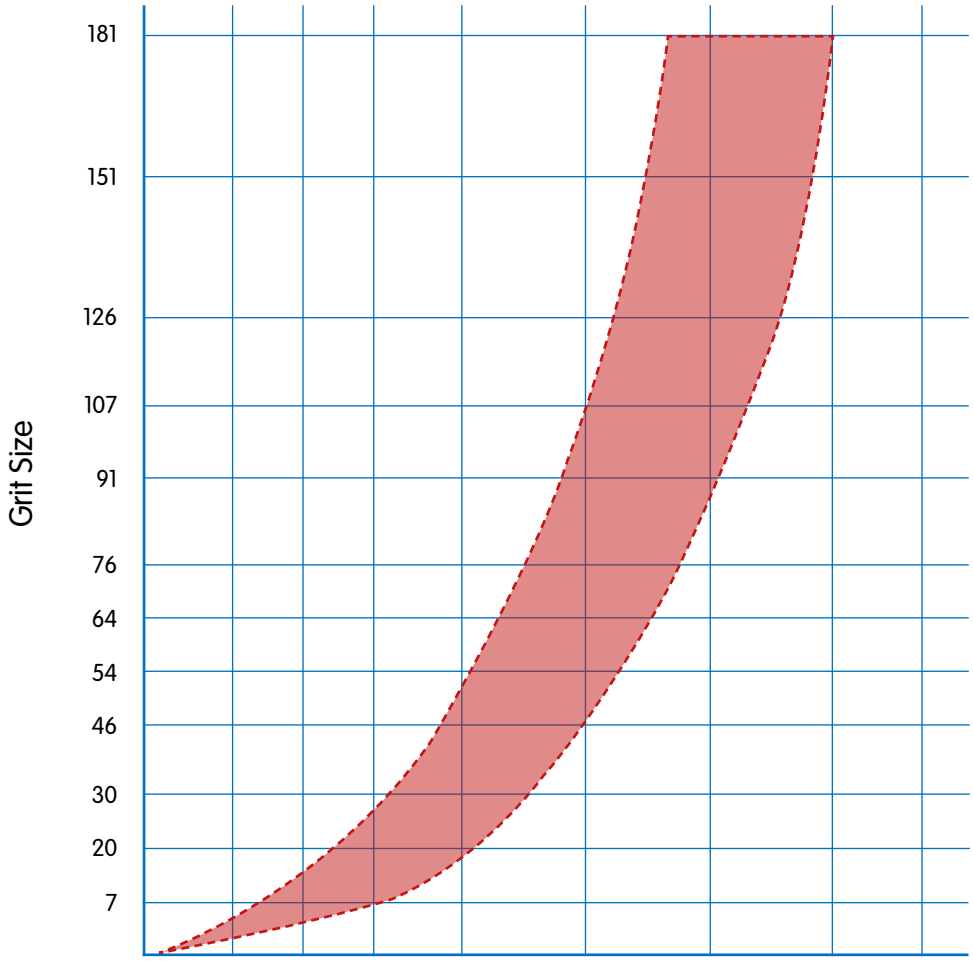
Influencing Paramters / Appraisal criterion		Cutting Force F F= f(...)	Grinding Ratio G G= f(...)	Roughness R_a R_a= f(...)	Temperature ϑ ϑ = f(...)
Machine- and Operation Paramters	Cutting Speed v_c (m/s)				
	Material Removal Rate Q_w (mm^3/s)				
	Coolant (Oil Content)				
Grinding Wheel	Grit Size (µm)				
	Concentration (Carat/cm^3)				

Roughness

The surface roughness of a ground workpiece is influenced by many diverse parameters:

- Grit size of abrasive grain
- Concentration of abrasive grain
- Specification of bond system
- Type and hardness of work piece
- Grinding process
- Grinding parameters
- Dressing parameters

A general and qualitative correlation between grit size and surface roughness is shown below:



R_a [µm]	0.012	0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2
R_t [µm]	0.100	0.200	0.40	1.0	1.6	2.5	6.3	10	20
R_z [µm]	0.050	0.100	0.20	0.6	1.0	1.6	3.8	6	15

Specification

The specification is the general description of the grinding tool and contains all relevant information concerning the product's features. In general, the specification always contains the following details:

Example:

11V9	100-2-10-20	D126	K+888R	C75	A
Shape	Dimension	Grit Size	Bond	Concentration	Body Material

Furthermore, the specification can contain additional information regarding drawing index, production method, structure, and other details.

Superabrasives

Diamond and cubic boron nitride are the hardest materials existing in industry today, according to the current state of knowledge. The levels of hardness of diamond and cBN are significantly higher than those of conventional abrasives like alumina (corundum) and silicon carbide (see hardness).

Wear effects on diamond and cBN

The hardness of an abrasive grit type alone is not sufficient to determine the grinding tool's grinding behaviour. Diamond and cBN grains can wear in many ways, causing different effects.

Primarily, there are two main types of wear.

Mechanical wear:
Abrasion, micro-chipping of cutting edges, grit macrofracture, and breakout of grain from the bond.

Chemical and thermal wear
Carbon diffusion, graphitization, oxidation, and reaction with grinding fluids.

Diamond not only reacts with iron (above a certain threshold temperature), but also with chromium, vanadium and tungsten. cBN does not show chemical reaction with iron or other metals.
Therefore, cBN has proven to give better tool performance when machining, for example, high speed steel, although it is not as hard as diamond.
An outward sign of the occurance of thermo-chemical wear is the rapid appearance of wear flats on the grains, when no grain chipping from mechanical wear is present.

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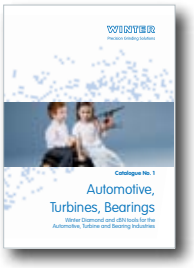
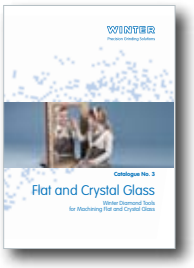
Notes

Catalogue No. 1: Automotive, Turbines, Bearings
WINTER Diamond and cBN Tools for the Automotive, Turbine and Bearing Industries

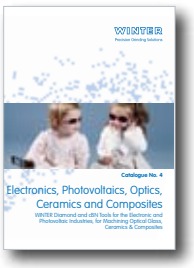


Catalogue No. 2: Tools
WINTER Diamond and cBN Tools for the Tools Industry

Catalogue No. 3: Flat and Crystal Glass
WINTER Diamond Tools for Machining Flat and Crystal Glass

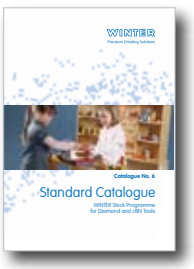


Catalogue No. 4: Electronics, Photovoltaics , Optics, Ceramics and Composites
WINTER Diamond and cBN Tools for the Electronic and Photovoltaic Industries, for Machining Optical Glass, Ceramics & Composites



Catalogue No. 5: Dressing Tools
WINTER Diamond Tools for Dressing of Grinding Tools

Catalogue No. 6: Standard Catalogue
WINTER Stock Programme for Diamond and cBN Tools



Please feel free to contact our expert advisors at any time. Contact details can be found on the last page

Thank you to Leonie and Lynn, who had their photo taken for our front cover.
Their father works in our product management.

Contact

Whom to ask first? Who is my nearest contact person? Where can I get quick and easy help on grinding tools and grinding processes?

For your inquiries please ask your sales engineer:

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