KGS
Swiss Diamond Technology®



DIAMOND TOOLS

Glass Industry

Issued November 2020

PROUD MANUFACTURERS
INNOVATORS SINCE 1952

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A HISTORY OF INNOVATION



KGS DIAMOND, with its headquarters in Switzerland, is a world leading abrasives innovation company since 1952.

KGS not only patents its newest inventions and innovations on a regular basis but also controls unique and automated, proprietary production technologies, which guarantee an attractive cost base giving us the ability to compete with any manufacturer globally.

Further advantages of these abilities are a high reliability and reproducibility of our products. All this translates into "Swiss Diamond Technology®".

Our values are our commitment to you with State of the Art Products and Services, Reliability and Accountability.

I personally stand by our commitment, so do not hesitate to contact me for comments and suggestions at office-sf@kgs.swiss

Yours sincerely,

Sandro Ferronato
President & CEO



KGS DIAMOND, a technology driven company



The history of **KGS DIAMOND** starts in **1952** when Natale Ferronato founds a company near Zürich, Switzerland, producing cold bonded quality abrasives, mainly for grinding and polishing applications: Natale Ferronato & Co. In the next years the production activities expand with the introduction of sintering production methods.

In **1970** Natale Ferronato passes the management responsibility to his wife Maryse Ferronato, who is succeeded in **1980** by Sandro Ferronato, today's President and CEO. In **1985** the company is renamed to **KGS DIAMOND.** In the next years a strong international development starts and the company opens sales offices around the world and acquires new production facilities.

KGS is a globally active company – with Swiss roots. In order to be close to our customers we have a global sales and distribution network with **20 companies** in 15 countries in Europe, North America, Middle East, and Asia providing engineered solutions for hard to grind & brittle materials in Aerospace, Glass, Porcelain, Electronics, Automotive, Construction, Stone and Floor related markets. **6 manufacturing sites** – located in Switzerland, The Netherlands, Hungary, Portugal, India and the United Arab Emirates – providing a wide range of diamond tools, flexible diamond abrasives and premium coated abrasives.

About KGS - Introduction

KGS flexible diamond tools have been specifically tailored for many industrial abrasive applications. Excellent cost / performance benefit, KGS diamond tools are long lasting and faster cutting.

This catalogue presents our best practice products for all glass seaming, beveling and polishing applications on flat and shaped glass. For tempering plants, glass fitters, glass artists we can offer proven products and made to measure solutions.

KGS has acquired a very strong position in the glass industry and developed a range of products with Swiss Diamond Technology® standards for and with this customer base. From flexible sheets and handpads to glass edging belts for automatic seaming lines, operators, handling and preparing glass in different formats, prefer our products because of its quality, performance and consistency.

Advantages of using flexible diamond tools for grinding and polishing

- Exceptional longer life
- Consistent in performance
- For deburring, arrissing, finishing
- Fast grinding rate
- High productivity
- Very low operational costs
- Precise and accurate finish

We are at your disposal for any question or advise. Please contact our local office or our international sales office at sales@kgs.swiss



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KGS large belts	Page 25



KGS Telum® - p. 14
Strong interlocking arrow pattern, specifically developed for heavy stock removal and finishing.

Large KGS Flexis® belts - p. 28
Professional industrial product, high temperature resistance, dot Muster structure, KGS joint process technology, long life

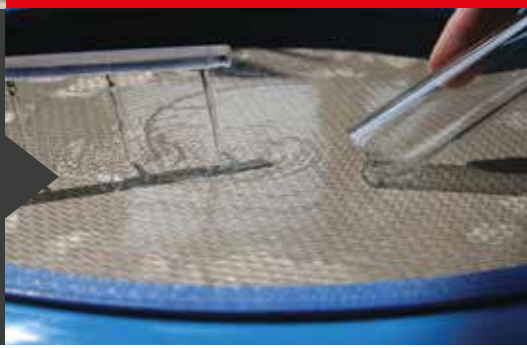


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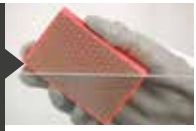
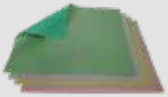
KGS K-LOC discs - p. 39
Corner dubbing, breaking edges, removing partings lines

KGS flat lapping discs - p. 61
Electroplated discs are used at the initial grinding stage for removing material from your glass piece, leaving a rough but consistent and protictable finish.



Quick reference guide

Find the right product for your application

Application		Product		Page
Automatic seaming lines		Large belts		Page 18
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Flat lap grinders		Large discs		Page 61
Manual		Handpads		Page 69
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Pictogram legend

Diameter	Adapter / connection	Speed	Use dry	Use wet

Technical Information



KGS DIAMOND tools

KGS flexible diamond tools have been specifically tailored for many industrial applications. KGS offers a full range of flexible diamond tools and CBN tools in different sizes and dimensions including belts, discs, sheets and strips. The technical superiority combined with unique products allow KGS to offer innovative solutions with high added value and in perfect harmony with market requirements. The KGS DIAMOND tool range guarantees the best choice for both performance and technical reliability.

Main market sectors

- Architectural glass, scientific and crystal glass
- Table ware manufacturers, refractory industry, tile manufacturers
- Composites industry
- Aerospace, transportation, oil and gas, paper industry

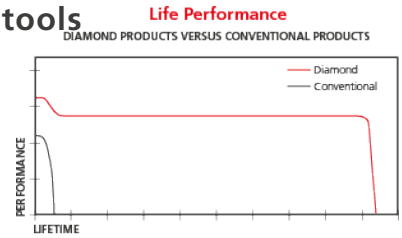
Materials

Diamond is the hardest material available which provides a predictable, consistent and repeatable finish for different materials. It is ideal for grinding and finishing applications on glass, ceramics, porcelain, composites, ultra hard steel, titanium, epoxy and thermal spray coatings and textile.

Life performance of diamond tools

Diamond outperforms every time.

- Exceptional longer life
- Consistent finish
- Continously high grinding rate



Product construction

KGS flexible diamond tools are made of 3 main elements: grit, bond and backing. Various combinations of these elements offer many possibilities to meet industrial needs with the highest efficiency.

Grits

Diamond consists of pure carbon in a crystalline structure. For grinding tools, the diamonds used are generally synthetic, produced at very high temperatures under high pressure. The grit size data for diamond is based upon the average grit diameter in µm. A coarse grit size increases stock removal and surface roughness of the workpiece. Choosing the right grit size depends on various factors: the application, the material, the tool drive, wet (water, lubricant) or dry grinding (general rule use wet).

All grits are colour coded (industry standard)

Grit size	50	60	120	200	400	500	800	1500	3000
Mesh	50	60	120	200	400	500	800	1500	3000
Fepa	P60	P80	P120	P220	P400	P500	P600	P2500	
Micron	301	250	125	74	40	30	20	9	3

Stock removal — Grinding — Finishing — Polishing

Bonds

KGS DIAMOND has flexible diamond tools available in metal and resin bond versions.

Metal bond - Metallic bond of nickel deposit by special electroplating process, mainly used for coarse and medium grits and operations, which require high material removal. This process starts as metallised fabric. The pattern is electroformed using nickel plating. Diamond is sprinkled on, and plating continued to the required specification.

Resin bond - Mainly used for finer grits and polishing. Continuous layer of resin. Diamond is all the way through the resin. Product must be "opened up" before optimum performance.

Backings

KGS flexible diamond tools are based on a proprietary fabric manufactured by KGS in Switzerland. This unique process provides strength and flexibility versus our competitors and niche applications. This fabric gives good dimensional stability, high abrasive resistance plus excellent heat dissipation and can be laminated to many different types of backings. This unique sheet can then be laminated onto many different backings depending on the application.

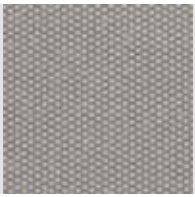
A variety of backings (from heavy duty to flexible) have been designed to have optimum diamond retention, superb edge wear and can be combined with many different patterns and grits customized to fit the application.

Backing	Description	Colour	Example
BP2	Heavy polyester stable Y-weight backing	Light green	
BYW	Strong polyester XY-backing	Brown	
QRS	Quick release system (hook and loop) for quick changing grit size	Coloured to the grit size	
CV	Canvas backing, thin	Coloured to the grit size	
S/A	Self adhesive backer	Neutral	
MAGN	Magnetic backing for quick changing grit sizes. Magnetic disc gives flat even surface with slight ''give''. Good for reducing ''first contact'' stress	Black	

Patterns



KGS Telum®



KGS Flexis®



KGS Swiflex® SDA

KGS Telum®

Strong interlocking arrow pattern, specifically developed for heavy stock removal and finishing. Ideal for grinding on the slack of the belts and for grinding surface with sharp edges.

This pattern with lines in all directions, has always contact with the work piece ensuring a high level of comfort grinding due to no soldiering. The structure of the pattern ensures good heat dissipation

- **KGS Telum® T1:** Metal bond, connected arrows, closed pattern, medium-fine grits, mainly used for discs.
- **KGS Telum® T2:** Metal bond, more open pattern, not connected arrows, giving higher flexibility and stock removal, for high performance belt grinding, glass arrissing.

KGS Flexis®

Professional standard dot pattern range of highly flexible diamond abrasives for grinding and finishing. This pattern has a high temperature resistance, due to a superior heat dissipation, which makes it outstanding in performance. It is available in a variety of product shapes with different backers and patterns for numerous applications. It is available in metal & resin bond.

- **KGS Flexis® 21:** Metal bond - +/- 2 mm ø per dot, 16 dots / cm^2, coarse grits, extra flexibility, aggressive cutting action, improved coolant flow, increased swarf removal.
- **KGS Flexis® 18:** Metal bond - +/- 0,7 mm ø per dot,120 dots / cm^2, medium to fine grits, fine finishes.

KGS Swiflex® SDA

Thin structured diamond abrasive resin layer, which can be used for various applications, for both wet & dry usage. Available with different backing types – flexible and rigid – for flat or complex shapes. The feel and touch of this product is very similar to the conventional coated products.

- KGS Swiflex® SDA 1: Resin bond, coarse grits, coarse pattern structure, for stock removal applications.

Tips and hints

- Flexible diamond tools perform at best when used wet
- Use coolant, this will enhance the life of your tool
- Never use excessive pressure
- Cutting speed should be 20-40 m/s, max speed 45 m/s

Glazing

If low pressure is used, the diamond crystal can glaze, and it will lose it's sharp edge and cutting power. Resin products can be re-dressed with an abrasive stick to expose fresh diamond. Metal-bonds cannot be re-sharpened as there is only a single layer of diamond on the nickel.



Automatic seaming lines



Architectural glass

Tempering plants that produce toughened glass are one of the main markets for large belts. To achieve the high outputs required, many tempering plants now have fully automatic (wet) seaming systems from OEMs such as Ashton, Lisec or Bottero. These use diamond belts to produce the required ground edge quality (pre-tempering process).

Automatic glass arrissing machines

The edging process takes place prior to entering the glass panes into the tempering ovens. This grinding process achieves optimal and stress free delivery of glass edges within the shortest cycle times and minimizes the quantity of required abrasive material. The grinding belts automatically adjust fully to the respective sheet size and thickness. The width of the grinding edge is adjustable from 0.5 mm to 2 mm.

Water is used to cool and clean the diamond belts. Additional spray nozzles remove glass dust residue from the sheet edge and reduce the flow of these particles into downstream systems.

Even for thick window or laminated glass edges this flexible belt grinding principle yields good results in contrast to machines equipped with diamond wheels.

Automatic seaming lines are available as vertical or horizontal operating machines.

Large belts for automatic seaming machines

KGS Flexible diamond belts glass edging solutions

Specifically developed in co-partnership with OEM's and designed to equip automatic seaming machines. Flexible diamond tools do not stress the glass, adapt themselves to the edges of glass, arrissing the glass smoothly and fast, eliminating the potential for glass cracks and chips.

High quality diamond patterns supported by an extra strong tough flexible, water-proof backer. Special jointing for extended lifetime, no bumping. This allows processing of panes of glass which are out of square. Strong metal bond fixation of diamond layer avoids scratches due to loose particles of grit from standard conventional belts. Very long service life.

Choice of grit

Most common grit sizes used

120 BK-120 (Black)

200 RD-200 (Red)

Occasionally a coarse grit GN-60 (Green) or a fine grit PU-320 (Purple) is required for a special rough operation or a finer finish.

Arriss

120 BK-120 for achieving an arriss of 1,0 mm or larger on 6-10 mm thick glass panes

200 RD-200 for achieving an arriss of 0,5 mm on 3-5 mm thick glass panes

Wet or dry usage

Automatic lines always use coolant to improve belt performance and maximize life. Use flexible diamond belts wet, unless mentioned differently.

Recommended working speed

25 – 32m/s, max speed 45m/s

Tech Tips

To achieve maximum performance and optimal lifetime, it is recommend to pay attention to the following parameters in line with the machine instructions and operating conditions:

Coolant	Use clean water and additives without solvents. Keep constant flow at point of grind.
Pressure	Apply the right pressure for the belt settings, too low can cause glazing, too high leads to uneven wear of the belt. About 20mm deflection under tension.
Timing	The grinding surface of the belt should touch the glass once the pane arrives to the middle of the belt. Aim at the middle of the belt for minimum firing and longest belt life, and less unnecessary wear.
Pulleys	Use clean pulleys with even surface to ensure a smooth running belt. Depending on configuration, normal belt crowning or slight bevel on the outer edge.
Maintenance	Check regularly the set parameters of the machine, this avoids unnecessary belt wear.

Seaming width



Note: Doubling the seam width from 0.5 mm to 1.0 mm means 4 times the stock to be removed.

KGS Telum® belts
For automatic seaming machines

Pattern Telum® T2

Bond Metal

Backing BP2, strong though flexible poly cotton backer, water- and emulsion proof.

Flexibility : Medium

Stretch : Low

Speed **Rec.** 25-32 m/sec **Max.** 45 m/sec

Wet Use wet, use coolants

Availability

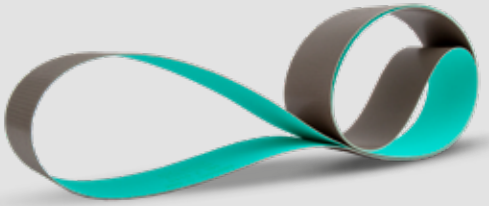
Grit size	60	120	200
1010x70 mm	12136	12137	12138
1180x80 mm	12106	12108	12113
2130x60 mm	38989	12152	12153
3350x60 mm	39024	12094	12095
3350x100 mm	12087	39042	12088

Other dimensions and grits available on request



Features and benefits of KGS Telum® belts for automatic seaming machines

Premium product	>>	Top performance, extra long lifetime
Special interlocked arrow pattern	>>	High mechanical strength
Strong though flexible backer	>>	Ideal for grinding on slack of belt
Pattern avoids soldering	>>	Comfort of grinding
High diamond content	>>	High arriss weight removal with perfect finish
KGS joint process technology	>>	Extra strong, long-lasting and smooth joint
Ideal for continuous edge processing, 24/7	>>	Giving high productivity output
Top performer	>>	Excellent price performance ratio







KGS Flexis® belts

For automatic seaming machines

Pattern	Flexis® 21+18
Bond	Metal
Backing	BP2, strong tough flexible poly cotton backer, water- and emulsion proof.
	Flexibility : Medium
	Stretch : Low
Speed	**Rec.** 25-32 m/sec
	Max. 45 m/sec
Wet	Use wet, use coolants



Features and benefits

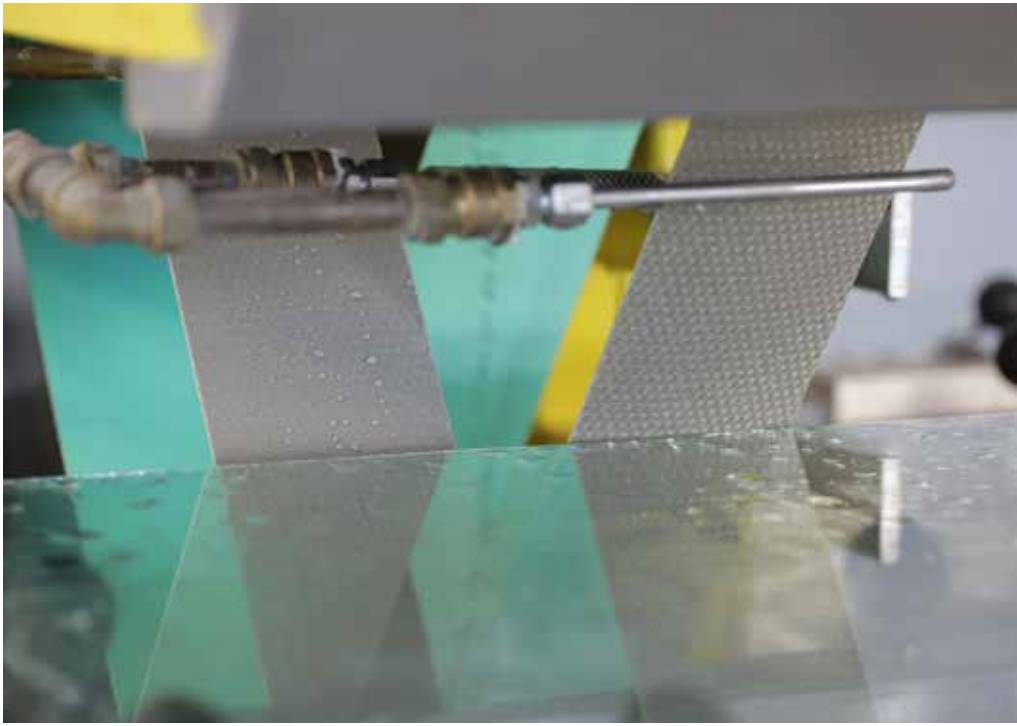
Professional industrial product	>>	Multipurpose, market standard
High temperature resistance	>>	Superior heat dissipation
Dot pattern structure	>>	Free cutting
KGS joint process technology	>>	Extra strong, long-lasting and smooth joint
Long life	>>	Good price performance ratio

Availability

Grit size	60	120	200
1010x70 mm	39043	12330	12332
1180x80 mm	12276	12277	12284
2130x60 mm	39044	11475	11476
3350x100 mm	12248	12249	12250

Other dimensions and grits available on request

Stand alone grinding machines



Large glass sheets

Large glass sheets (jumbo) are cut into the required size and manually handled from the break-out area to the arrissing table. Twin or cross belt grinding machines are used for efficient arrissing of the glass panes. They are available in a range of dry and wet grinding models and are especially suitable for multi-shift, high volume production in industrial glass processing, tough manually operated. This process takes place prior to the tempering process.

Large belts for stand alone grinding machines

Twin or cross belt glass edging machines are available in wet and dry grinding versions. In combination with KGS Telum® and KGS Flexis® belts these machines provide a high performance with a perfect edge quality. The combination of the machine and the flexible diamond belts offers a high level of flexibility for adjustable glass thickness and the depth of arriss.

KGS Swiflex® SDA is an excellent alternative for stand alone machines when finishing bigger glass parts.

Choice of grit

Most common grit sizes used

120 BK-120 (Black)

200 RD-200 (Red)

Occasionally a coarse grit GN-60 (Green) or a fine grit PU-320 (Purple) is required for a special rough operation or a finer finish.

Arriss

120 BK-120 for achieving an arriss of 1,0 mm or larger on 6-10 mm thick glass panes

200 RD-200 for achieving an arriss of 0,5 mm on 3-5 mm thick glass panes

Wet or dry usage

Use flexible diamond belts always wet unless otherwise mentioned. KGS Swiflex SDA® has been developed to be used dry, but for finer grits we advise to use it wet.

Recommended working speed

20 – 40m/s, max speed 45m/s

Notes: Conventional abrasive belts run at circa 12-15 m/s. Flexible diamond tools perform optimally at circa 25-32 m/s, giving the highest productivity.

Tech tips from our application engineers can be found on page 31

KGS Telum® belts

For stand alone grinding machines

Pattern Telum® T1

Bond Metal

Backing BP2, strong though flexible poly cotton backer, water- and emulsion proof.

Flexibility : Medium.

Stretch : Low.

Speed **Rec.** 25-32 m/sec
Max. 45 m/sec

Wet Use wet, use coolants



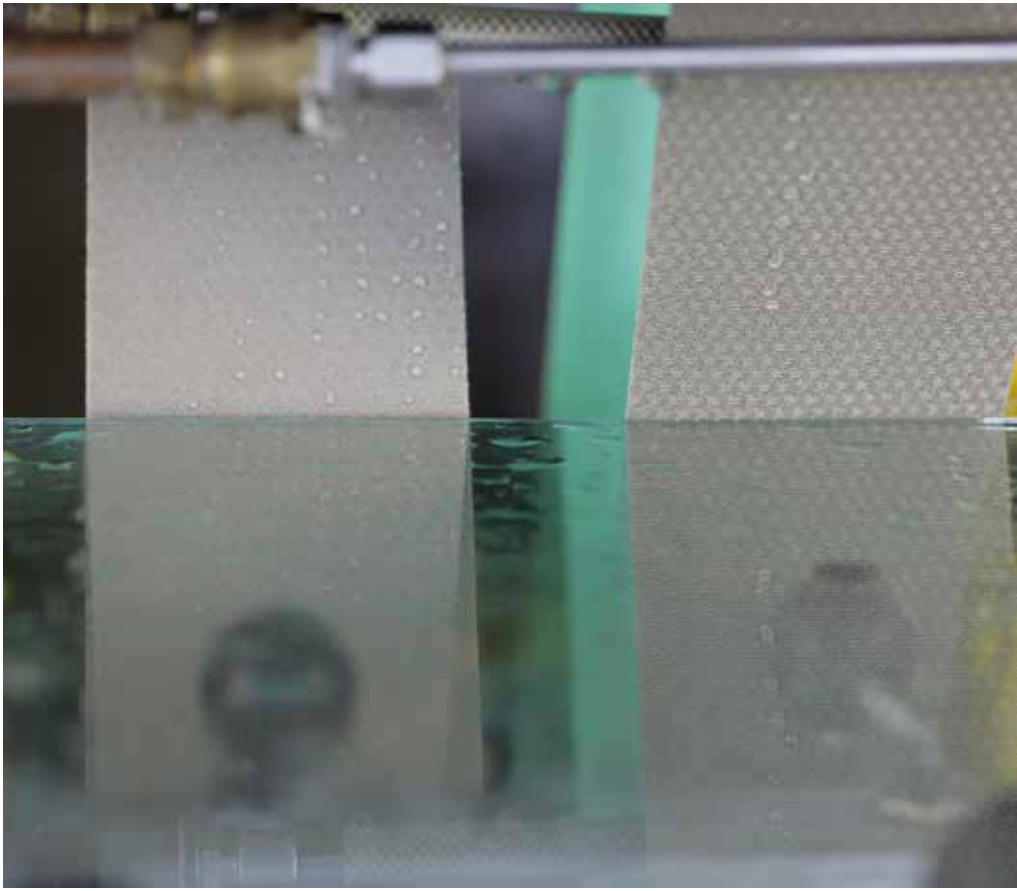
Features and benefits

Premium product	>>	Top performance, extra long lifetime
Special interlocked arrow pattern	>>	High mechanical strength
Strong tough flexible backer	>>	Ideal for grinding on slack of belt
Pattern avoids soldering	>>	Comfort of grinding
High diamond content	>>	High arriss weight removal with perfect finish
KGS joint process technology	>>	Extra strong, long-lasting and smooth joint
Ideal for continuous edge processing, 24/7	>>	Giving high productivity output
Top performer	>>	Excellent price performance ratio

Availability of KGS Telum® belts for stand alone grinding machines

Grit size	60	120	200
1800x100 mm	12090	12091	12092
1830x100 mm	39045	39046	12100
2130x60 mm	38989	12152	12153
3000x100 mm	12079	39047	39048
3350x100 mm	12087	39049	12088

Other dimensions and grits available on request



KGS Flexis® belts

For stand alone grinding machines

Pattern Flexis® 21+18

Bond Metal

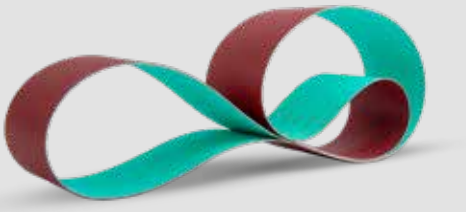
Backing BP2, strong though flexible poly cotton backer, water- and emulsion proof.

Flexibility: Medium

Stretch : Low

Speed **Rec.** 25-32 m/sec
Max. 45 m/sec

Wet Use wet, use coolants



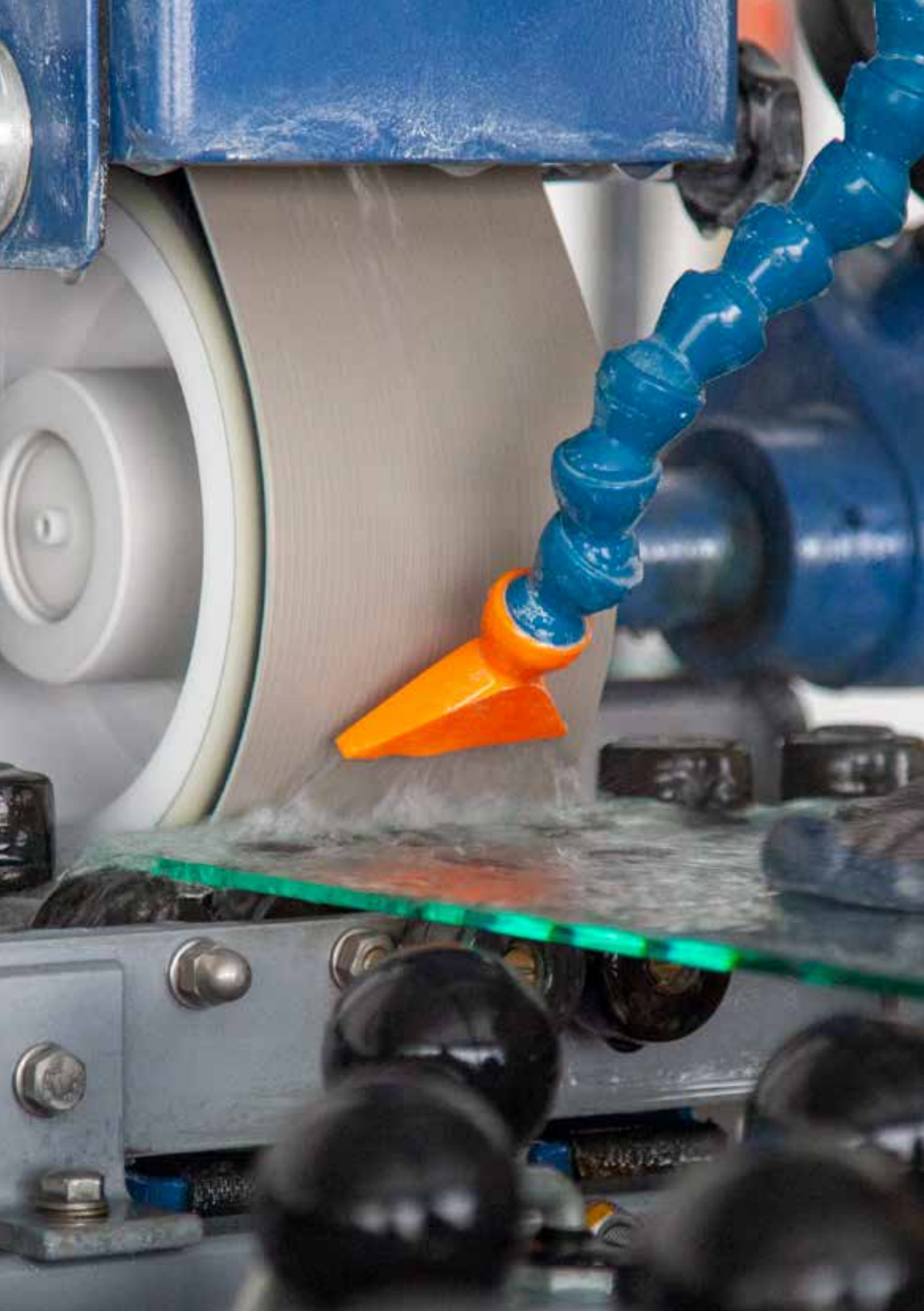
Features and benefits

Professional industrial product	>>	Multipurpose, market standard
High temperature resistance	>>	Superior heat dissipation
Dot pattern structure	>>	Free cutting
KGS joint process technology	>>	Extra strong, long-lasting and smooth joint
Long life	>>	Good price performance ratio

Availability

Grit size	60	120	200
1800x100 mm	12253	12254	39422
1830x100 mm	39390	39391	12229
1860x60 mm	39124	11478	39125
3000x100 mm	39392	39419	39421
3350x100 mm	12248	12249	12250

Other dimensions and grits available on request



KGS Swiflex® SDA belts

For stand alone grinding machines

Pattern Swiflex® SDA 1

Bond Resin

Backing BP3: extra heavy Y polyester, waterproof.

Flexibility: Medium

Stretch : Low

Speed **Rec.** 25-32 m/sec
Max. 45 m/sec

Use dry or wet



Features and benefits

Standard flexible diamond coated product	>>	Good performance
Coarse pattern	>>	Good stock removal
Thin structured diamond abrasive resin layer	>>	Low pressure required, easy to use
A "coated abrasive" diamond product	>>	Grinds faster and longer vs. conventional abrasives
Economical diamond abrasive solution	>>	Excellent value for money

Availability

Grit size	60	120	200
1800x100 mm	39240	39241	39242
1830x100 mm	39127	11904	11906
2500x100 mm	11181	11183	11185
3000x100 mm	11927	11928	39146

Other dimensions and grits available on request

Tech tips

For large belts for stand alone grinding machines

Adapt parameters for optimal performance to substantially increase productivity

- Feed rate increase
- At higher belt speed
- Using flexible diamond belts

Important parameters to achieve optimal performance

- Pulley size, crowning & alignment
- Water, pressure, position, filtration
- Back rollers
- Maintenance

To achieve maximum performance and optimal lifetime, it is recommended to pay attention to the following parameters in line with the machine instructions and operating conditions

Important parameters

Coolant: Use clean water and additives without solvents. Keep constant flow at point of grind

Pressure: Apply the right pressure for the belt settings, too low can cause glazing, too high leads to uneven wear of the belt. About 20mm deflection under tension.

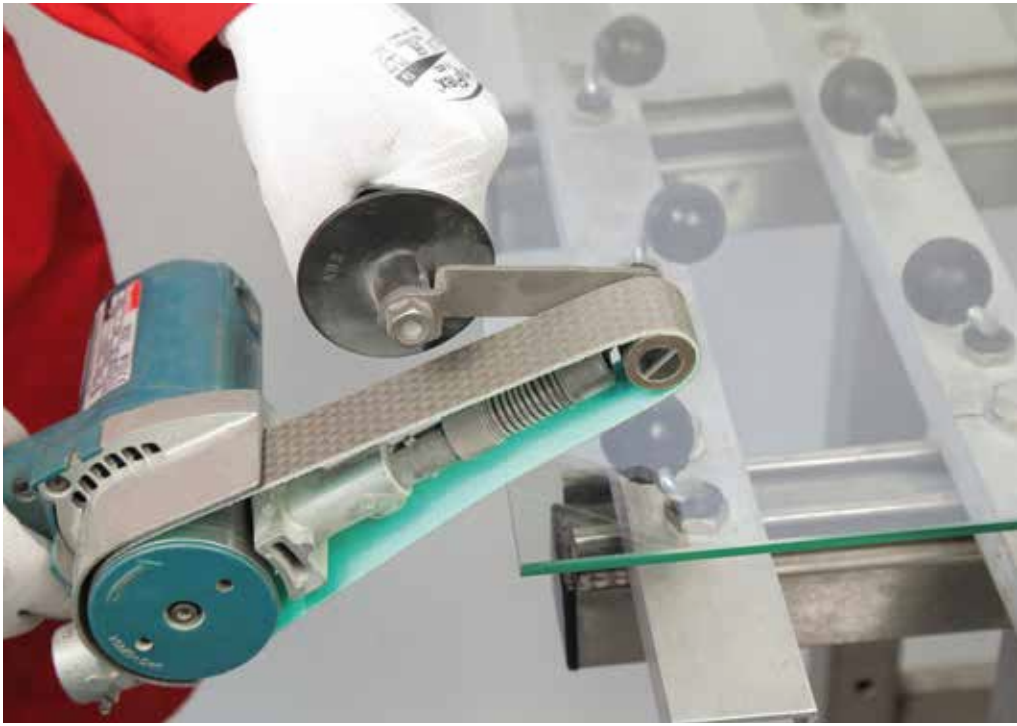
Position: Glass should be put into the cross belt machine in the middle. Aim at the middle of the belt for minimum firing for longest belt life, and less unnecessary wear.

Pulleys: Use clean pulleys with even surface to ensure a smooth running belt. Depending on configuration, normal belt crowning or slight bevel on the outer edge.

Traversing: Traverse the belt one way, then place the belt in again and traverse the other way. Check the machine instructions or contact your supplier.

Maintenance: Check regularly the set parameters of the machine, this avoids unnecessary belt wear.

Hand-held Machines



“Grinding on the edge”

KGS offers a full range of small belts, K-LOC discs, spiral bands and discs, compatible with almost every machine, including a wide range of accessories.

Small belts

Diamond tools for hand-held machines (electric or pneumatic)

Small belts, including file belts, are ideal for edging and cleaning non-standard shapes, awkward cut-outs and door hinge returns can easily be finished.

Choice of grit

Most common grits used for these applications

120 BK-120 (Black)

200 RD-200 (Red)

The available grit range runs from GN-60 (green) to YE-400 (yellow). Finer grits on request.

Wet or dry usage

- It is recommended to use these products wet to achieve best performance.
- KGS Swiflex SDA® has been developed to be used dry.

Recommended working speed

- Follow and respect the instructions of the power tool supplier

Tech Tips

For longer life, try to grind on the free running belt, not the platen, and if possible not on the pulley. This will enhance the lifetime of the diamond belt.

Pulley

Since these small belts – used for difficult corners or small cut-outs run over a small pulley, it is important to pay attention to the flexibility of the belt specification.

KGS Flexis® belts have a more open pattern which give it the right flexibility to run smoothly over the pulley. Especially on very small pulleys the KGS Telum® pattern can be too stiff.

KGS Telum® small belts

For hand-held machines

Pattern Telum® T2

Bond Metal

Backing BP2, strong though flexible poly cotton backer, water- and emulsion proof.

Flexibility: Medium

Stretch : Low



Speed **Rec.** 25-32 m/sec
Max. 45 m/sec

Wet Use wet, use coolants

Features and benefits

Premium product	>>	High stock removal and extra long lifetime
Interlocked arrow design*	>>	Ideal for grinding on slack of belt
Pattern avoids bumping	>>	Comfort of grinding
KGS joint process technology	>>	Extra strong, long-lasting and smooth joint
High performing	>>	Excellent price performance ratio

* The connecting pattern is less suited for use on very small pulleys, we recommended to use Flexis® for such applications.

Availability

Grit size	60	120	200	400
533x30 mm	12063	12064	12065	12066
520x20 mm	39271	12147	12148	12149
457x18 mm	39243	12082	30304	39244
762x25 mm	39386	39387	39388	39389

Other dimensions and grits available on request

KGS Flexis® small belts

For hand-held machines

Pattern Flexis® 21 + 18

Bond Metal

Backing BP2, strong though flexible poly cotton backer, water- and emulsion proof.

Flexibility: Medium

Stretch : Low

Speed **Rec.** 25-32 m/sec
Max. 45 m/sec

Wet Use wet, use coolants



Features and benefits

Professional industrial product	>>	Multipurpose, market standard
Flexible dot pattern structure	>>	Free cutting, ideal for running on small pulleys
KGS joint process technology	>>	Extra strong, long-lasting and smooth joint
Long life	>>	Good price performance ratio

Availability

Grit size	60	120	200	400
533x30 mm	12205	12206	12207	12209
520x20 mm	10853	10854	10855	10856
457x18 mm	39103	10858	39104	39105
762x25 mm	39100	39101	10803	39102

Other dimensions and grits available on request

KGS Swiflex® SDA belts

For hand-held machines

Pattern Swiflex® SDA 1

Bond Resin

Backing BYW: strong heavy Y polyester, waterproof.

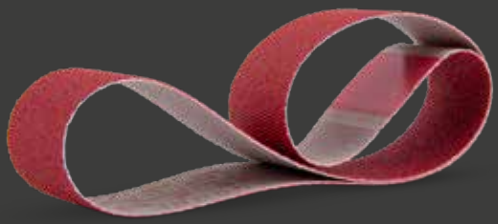
Flexibility: Medium

Stretch : Low

Speed **Rec.** 25-32 m/sec

Max. 45 m/sec

Use dry or wet





Features and benefits of KGS Swiflex® SDA belts

Standard flexible diamond coated product	>>	Good performance
Coarse pattern	>>	Good stock removal
Thin structured diamond abrasive resin layer	>>	Low pressure required, easy to use
Flexible "coated abrasive" diamond product	>>	Ideal for small belt application
Economical solution	>>	Excellent value for money

Availability

Grit size	60	120	200	400
533x30 mm	33253	11169	11171	11173
520x20 mm	41039	41040	41041	41042

Other dimensions and grits available on request







KGS K-LOC discs

Corner dubbing, breaking edges, removing partings lines

K-LOC discs are flexible diamond quick change discs (Ø25, 50 and 75 mm). The diamond discs "screw" into the mandrel for a tight hold. This does make the disc stiffer so they will work best on flat surfaces and straight edges of glass panels. Corner dubbing is a very common application within the glass business. Most effective when used with pneumatic tools.

Choice of grit

Most common grits used for these applications

120 BK-120 (Black)

200 RD-200 (Red)

The available grit range runs from GN-60 (green) to YE-400 (yellow). Finer grits on request.

Wet or dry usage

Flexible diamond tools perform best when used wet. Sometimes the circumstances or equipment does not allow operators to grind wet. For optimal dry grinding results KGS Swiflex® SDA has been developed. A resin bond product which can be used wet and dry.

Alternatively, with best practices, the KGS Telum® patterns performs well dry using a minimum of coolant.

Recommended working speed

Maximum 45 m/s

KGS Telum® K-LOC discs

For hand-held machines

Pattern	Telum® T1
Bond	Metal
Backing	BP: strong, durable & thick Y-weight poly-cotton, water- and emulsion proof.
	Flexibility: Medium
	Stretch : Low
Speed	**Max.** 45 m/sec
	Use wet, with a minimum of coolants
	Twist & K-LOC system for use on mandrel with 6 mm shaft





Features and benefits of KGS Telum® K-LOC discs

Premium product	>>	Excellent price performance ratio
Quick change K-LOC system	>>	Easy to change, for electrical & air tools
Special interlocked arrow pattern	>>	Comfort of grinding
High diamond content	>>	High stock removal, long lifetime
Strong backing	>>	Strong and resistant

Availability

Grit size	60	120	200	400
Ø25 mm	12633	12634	12635	12636
Ø50 mm	12638	12639	12640	12641
Ø75 mm	12647	12649	12650	12651

Other grits available on request



KGS Swiflex® SDA K-LOC discs

For hand-held machines

Pattern	Swiflex® SDA 1
Bond	Resin
Backing	BYW4: strong heavy Y polyester, waterproof.
	Flexibility: Medium
	Stretch : Low
Speed	**Max.** 45 m/sec
	Use dry or wet
	Twist & K-LOC system for use on mandrel with 6 mm shaft



Features and benefits

Standard flexible diamond coated product	>>	Good performance
Coarse pattern	>>	Good stock removal
Quick change K-LOC system	>>	Easy to change
Thin structured diamond abrasive resin layer. Strong flexible "coated abrasive" diamond product	>>	Low pressure required
Economical solution	>>	Easy to use Value for money

Availability

Grit size	60	120	200	400
Ø25 mm	12808	12809	12810	12811
Ø50 mm	12815	12816	12817	12818
Ø75 mm	12822	12823	12824	12825

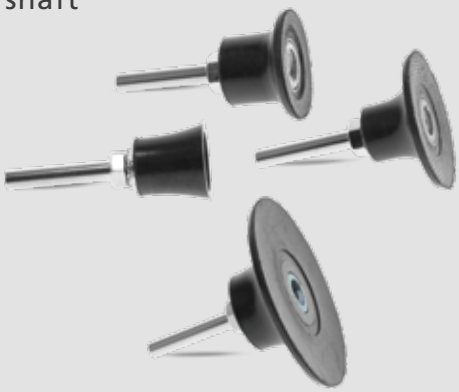
Other grits available on request



Accessories for KGS K-LOC discs

K-LOC back-up pad - 6 mm shaft

Ø25 mm	21929
Ø35 mm	21486
Ø45 mm	21928
Ø70 mm	21927







KGS spiral belts

Specialist glass companies, like glass fencing firms (swimming pools) utilize KGS spiral bands and K-LOC discs for shaping, cleaning the edges of drilled holes (for locking systems) in glass doors.

Artisan companies use them for shaping sculptures. Spiral belts can also be used for corner dubbing applications, available up to Ø150 mm for expanding rubber drums. These products are often used in the cyrstal glass industry, lapidary and technical quartz.

Choice of grit

Main grits used are

- 120 BK-120 (black)
- 200 RD-200 (red)
- 400 YE-400 (yellow)

Wet or dry usage

- KGS Telum® pattern is generally best for corner dubbing machines, provided a smooth grinding action, no soldering. KGS Flexis® is the industry dot pattern standard. Both patterns can run with a minimum of coolant. KGS Swiflex® SDA spirals are a good alternative for dry running applications.

Recommended working speed

- Maximum 45 m/s

KGS Telum® spiral belts

For hand-held machines

Pattern Telum® T1

Bond Metal

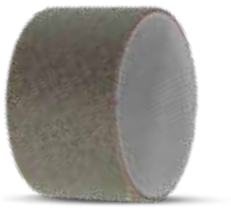
Backing BPR: Thin flexible polyester, XF-weight, water proof

Flexibility: Medium

Speed Max. 45 m/sec

Use wet, with a minimum of coolants

Drum with 6 mm shaft, range



Features and benefits

Premium product	>>	Top performance
Innovative design, patented technology, interlocked arrow, snowflake pattern	>>	Unique and recognizable, high mechanical strength
High diamond content	>>	Very long life, consistent
Pattern avoids soldering	>>	Less orange peel

Availability

Grit size	60	120	200	400
Ø15x30 mm	10002	10003	10004	10005
Ø22x20 mm	10011	10012	10013	10014
Ø25x25 mm	10019	10020	10021	10022
Ø30x30 mm	10028	10030	10032	10034
Ø45x30 mm	10044	10045	10046	10047
Ø50x42 mm	10064	10066	10068	10070

Other dimensions and grits available on request

KGS Flexis® spiral belts

For hand-held machines

Pattern Flexis® 21 + 18

Bond Metal

Backing BPR: Thin flexible polyester, XF-weight, water proof.

Flexibility: Medium

Speed Max. 45 m/sec

Use wet, with a minimum of coolants

Drum with 6 mm shaft, range



Features and benefits

Professional industrial product, standard dot pattern	>>	Good performance, multipurpose, market standard
High temperature resistance	>>	Superior heat dissipation
Diamond exposed above pellets	>>	Free cutting
Open pattern	>>	Increased swarf removal in coarse grits

Availability

Grit size	60	120	200	400
Ø15x30 mm	10118	10121	10123	10125
Ø22x20 mm	10138	10139	10140	10141
Ø25x25 mm	10146	10147	10148	10150
Ø30x30 mm	10158	10160	10161	10162
Ø45x30 mm	10170	10172	10174	10176
Ø50x42 mm	10194	10196	10198	10200

Other dimensions and grits available on request

KGS Swiflex® spiral belts

For hand-held machines

Pattern Swiflex® SDA 1

Bond Resin

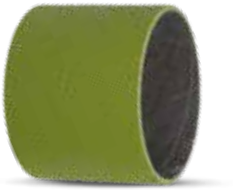
Backing BYW3: Strong and stable, XY-weight polyester, water proof.

Flexibility: Medium

Speed Max. 45 m/sec

Use dry or wet

Drum with 6 mm shaft, range



Features and benefits

Standard flexible diamond coated product	>>	Good performance
Coarse pattern	>>	Good stock removal
Thin structured diamond abrasive resin layer	>>	Low pressure required and easy to use
Cool cutting	>>	Smooth grinding action
A "coated abrasive diamond product"	>>	Grinds faster and longer vs. silicon carbide belts
Economical solution	>>	Good price/performance ratio

Availability

Grit size	60	120	200	400
Ø15x30 mm	10355	10356	10357	10358
Ø25x25 mm	10362	10363	10364	10365
Ø30x30 mm	10348	10349	10350	10351
Ø45x30 mm	10384	10385	10386	10387
Ø50x42 mm	10369	10370	10371	10372

Other dimensions and grits available on request

Accessories for KGS spiral belts

Rubber wheels on Ø6x40 mm shaft

Ø15x30 mm	22035
Ø22x20 mm	22034
Ø25x25 mm	22033
Ø30x30 mm	22032
Ø45x30 mm	22031





Expansion rubber wheels - M14

Ø50x42 mm	22037



KGS discs

Varying the application and type of glass, KGS offers a range for wet and dry grinding discs. Useful for large awkward sheets that do not easily transfer with existing machines, or other special glass panes. Including laminated and decorative glass or even with mesh inclusions.

Wet usage

For wet grinding and polishing on glass our QRS disc range, with hole for central water feeding, is available both the KGS Telum® and KGS Flexis® version. The fixation on a QRS back-up pad ensure a flat and stable surface for controlled edging application. Both products are also available without central waterfeed hole.

Dry usage

For dry running discs we recommend our KGS Swiflex® K1-M disc range. This is a premium product with an inverted design of KGS Telum®, providing fast aggressive grinding and high stock removal. To ensure a strong and steady fixation a special QRS back-up pad has been developed with central button for easy fixation and centering. We recommend to use a new back-up pad for each new QRS disc for safety reasons. This product provides exceptional performance and long lifetime. KGS Swiflex® K1-M is also available with a central starbore hole for easy fixation on a back-up pad.

Flap discs for glass edging

Our diamond flap disc range, KGS Hybrid® T, is ideal for grinding the edges of thick laminated glas, pro- viding a high stock removal at low pressure. Ideal for use after the tempering process to remove large amounts of glass easily and clean the edges. The multi-layers of cloth resharpen continuously, giving fast cut and long lifetime, and a very nice and clean finish. This product is suited for both wet and dry usage.

Choice of grit

Most recommended product for glass seaming is BK-120 (black) for stock-removal or RD-200 (red) for light arrissing.

120 BK-120 (Black) 200 RD-200 (Red)



KGS Telum® QRS discs

For hand-held machines

Pattern Telum® T1

Bond Metal

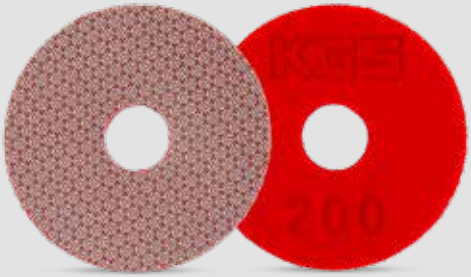
Backing QRS, water- and emulsion proof

Flexibility: Medium

Speed **Max.** 45 m/sec

Rec. Recommended 3000-4000 rpm

Use wet, with a minimum of coolants





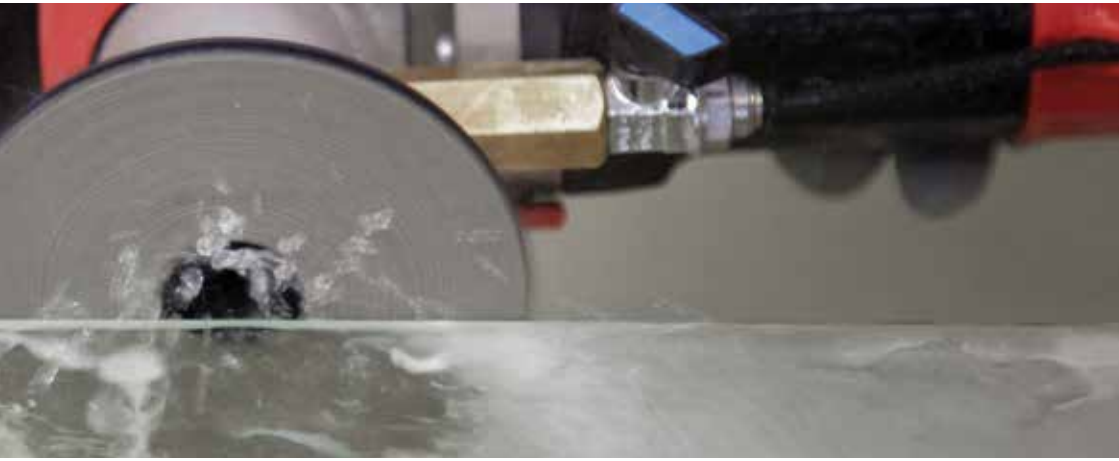
Features and benefits of KGS Telum® QRS discs

Premium product	>>	High performance
Strong, high quality QRS system	>>	Easy to change, for electrical and air tools
Special interlocked arrow pattern	>>	Comfort of grinding
High diamond content	>>	High stock removal
Top quality	>>	Excellent price performance ratio

Availability

Grit size	60	120	200	400
Ø75x25 mm	12845	12846	12847	12848
Ø100x25 mm	13092	13093	13094	13095
Ø115x25 mm	13102	13103	13104	13105
Ø125x25 mm	13118	13119	13120	13121

Other dimensions and grits available on request



KGS Flexis® QRS discs

For hand-held machines

Pattern Flexis® 21 + 18

Bond Metal

Backing QRS, water- and emulsion proof

Flexibility: Medium

Speed **Max.** 45 m/sec

Rec. Recommended 3000-4000 rpm

Use wet, with a minimum of coolants



Features and benefits

Professional industrial product	>>	Multipurpose, market standard
Dot pattern structure	>>	Free cutting
Heat resistant	>>	Perfect heat dissipation

Availability

Grit size	60	120	200	400
Ø75x25 mm	12906	12907	12908	12909
Ø100x25 mm	13249	13253	13257	13261
Ø115x25 mm	13276	13280	13284	13288
Ø125x25 mm	13343	13346	13349	13352

Other dimensions and grits available on request

Accessories for KGS QRS discs

KGS back-up pads - QRS M14 strong

Ø (mm)	75	100	115	125
Art. no.	21925	21923	27138	21455

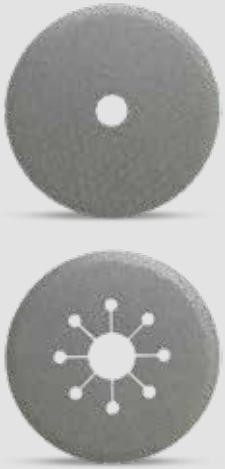




KGS Swiflex® K1-M discs

For hand-held machines

Pattern	Swiflex® K1-M
Bond	Metal
Backing	QRS or Starbore hole
	Flexibility: Low
Speed	Max. 45 m/sec Rec. Recommended 3000-4000 rpm
	Use dry



Features and benefits

Professional industrial product	>>	Top performance
KGS Swiflex® K1-M is an inverted design of KGS Telum®	>>	High stock removal
Strong tough product	>>	High mechanical strength
High diamond content	>>	Very long life, consistent
Pattern avoids soldering	>>	Comfort of grinding, less orange peel

Availability of KGS Swiflex® K1-M discs

QRS backing

Grit size	50	60	120	200	400
Ø100x15 mm	13841	13842	13843	13844	13845
Ø115x15 mm	13847	13848	13849	13850	13851
Ø125x15 mm	13853	13854	13855	13856	13857

Starbore hole

Grit size	50	60	120	200	400
Ø100 mm	13865	13866	13867	29695	29068
Ø125 mm	13868	13869	13871	13873	13874
Ø178 mm	13875	13876	13877	13878	28437

Other dimensions and grits available on request

KGS Swiflex® back-up pad

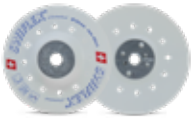
Button QRS/M14 back-up pad

Diameter	Art. no.
Ø100 mm	21460
Ø115 mm	21461
Ø125 mm	21898



Starbore M14 White back-up pad

Diameter	Art. no.
Ø100 mm	21908
Ø125 mm	21907
Ø178 mm	21905



Note: We recommend to use a new back-up pad for each new QRS disc for safety reasons





KGS Hybrid® T diamond flap discs

For hand-held machines

Pattern	Hybrid® T
Bond	Metal
Backing	Plastic
Speed	**Max.** 63 m/s **Rec.** 3000-4000 rpm
	Use wet or dry

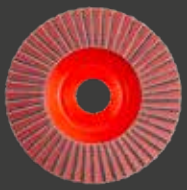
Availability

Grit size	60	120	200	400
Ø115 mm	18914	18915	18916	18917

Other dimensions and grits available on request

Features and benefits

Premium product, patent pending	>>	High performance
Aggressive dry running disc	>>	Fast cut, long lifetime
Multi-layer grinding tool	>>	Resharpening continuously
High stock removal	>>	Fast grinding process
Very nice and clean finish, easy to use	>>	Very smooth grinding compared to cupwheels

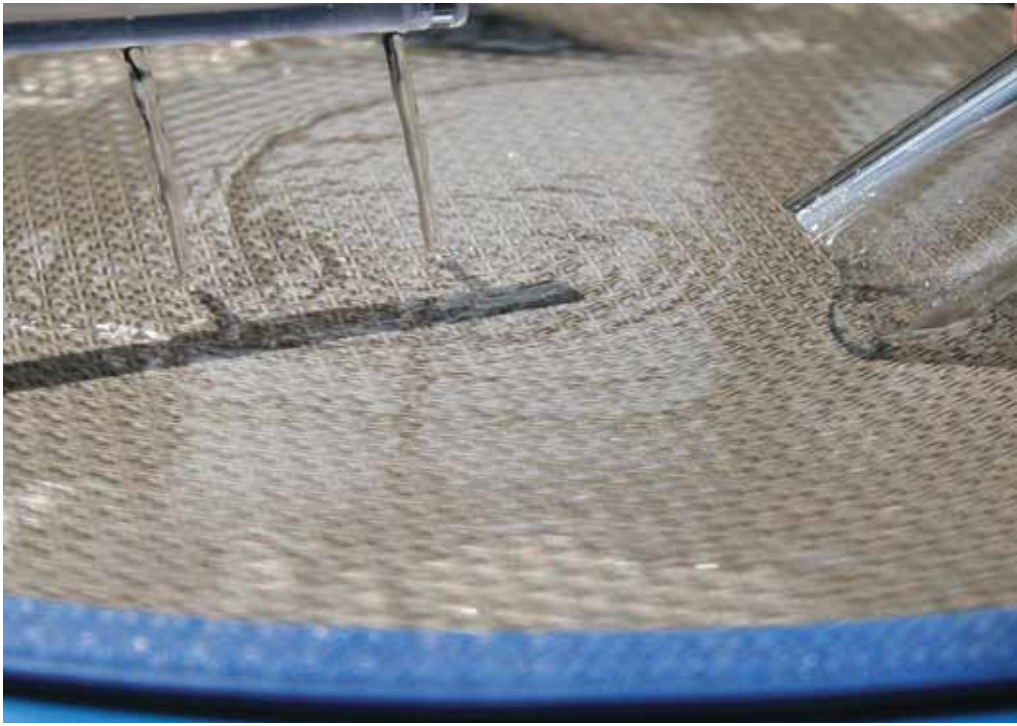


Grit 200 (red)



Grit 400 (yellow)

Flat lap grinders



Flat lap grinders are used with flexible diamond discs for rough grinding through final polish. KGS offers a wide range of large discs for all glass applications. Flexible diamond discs grind and polish much faster than a diamond slurry system. Both electroplated and resin discs are available - from diameter 200mm for artistic glass to 600mm and above for robotic polishing of crystal glass.

KGS large discs for “vertical glass applications”

The electroplated discs, with a very abrasive surface, are used at the initial grinding stage for removing material from your glass piece, leaving a rough but consistent and predictable finish. Having used the metal bond discs, it is not possible to polish the surface. First you utilise the resin bond discs which will give a smooth and very fine finish on your surface after which you can polish. Discs can be supplied with various quick change options, including QRS, different adhesives, magnetic or rigid combinations.

Metal bond range

KGS Quadroflex™
The open structure of this pattern increases the grinding pressure per diamond, ideal for flattening larger pieces.

KGS Telum®
The connected pattern is ideal for smooth grinding and flattering of smaller pieces.

Resin bond range

KGS Swiflex® SDA
This resin product is a Structured Diamond Abrasive, it can deliver rapid polishing of glass at an economical cost. This product is more suitable for small part grinding & polishing.

Wet or dry usage

KGS Quadroflex™ and KGS Telum® are used wet. KGS Swiflex® SDA can be used both wet and dry.

KGS Telum® large discs

For flat lap grinders



Pattern	Telum® T1	
Bond	Metal	
Backing	Quick Release System	(QRS)
	Self-Adhesive	(SA)
	Magnetic	(MAGN)
	All backings are water- and emulsion proof.	
Speed	Max. 45 m/sec	
	Rec. follow the instructions of the machine supplier	
	Use wet, with a minimum of coolants	



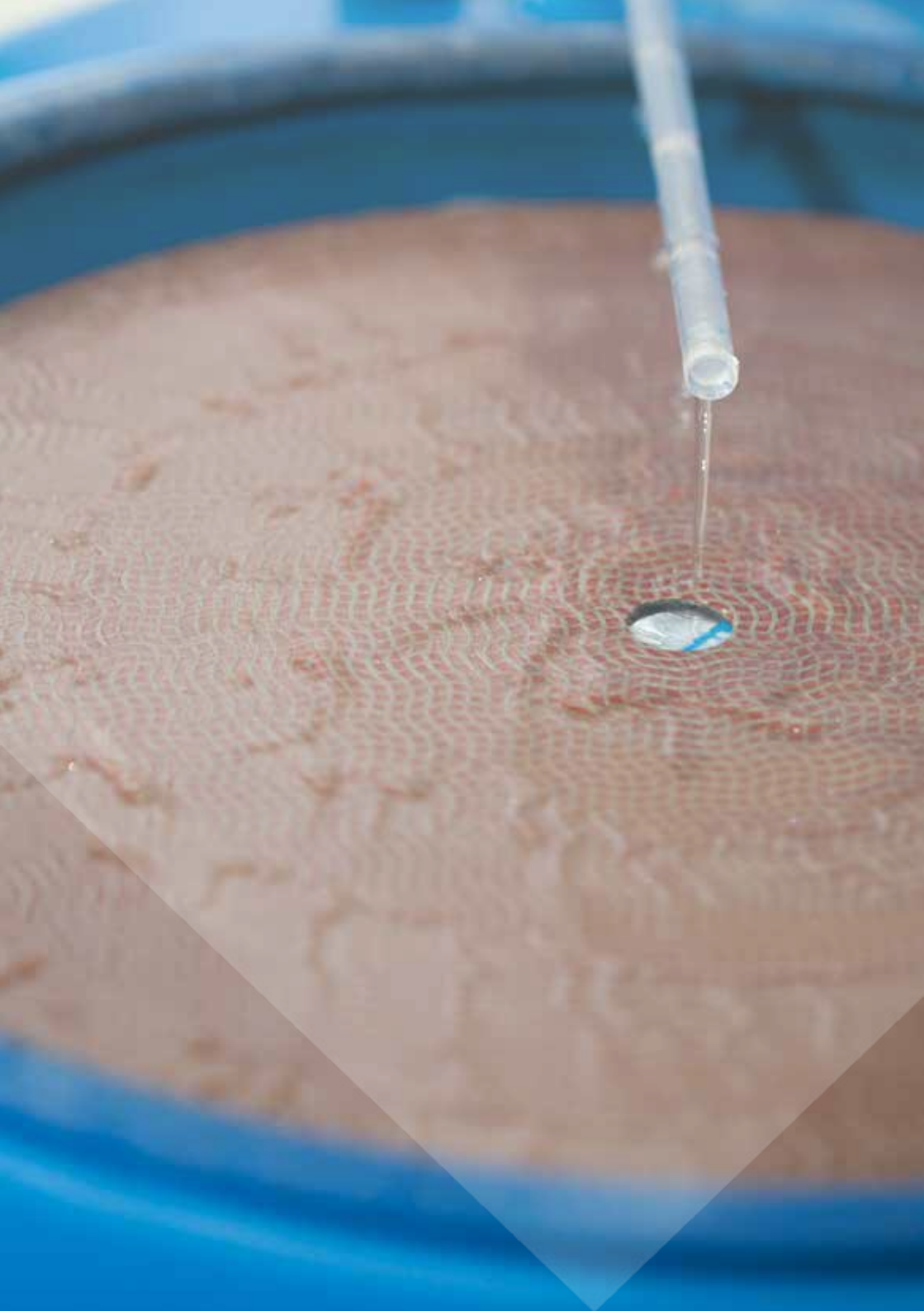
Features and benefits of KGS Telum® large discs

Premium product	>>	High performance
Interlocked and connected pattern	>>	Smooth grinding surface, ideal for small glass shapes
High diamond content	>>	Extra long life time

Availability

Grit size	60	120	200	400	800
	QRS backing				
Ø200 mm	39469	14096	14097	39470	39623
	SA backing				
Ø250 mm	14019	14138	14139	14140	14141
Ø300 mm	14008	14009	14010	14011	14012
Ø450 mm	30553	14045	14046	39436	39437
	MAGN backing				
Ø300 mm	14089	14090	14091	14092	39438
Ø600 mm	28237	39439	39466	39467	39468

Other dimensions and grits available on request



KGS Quadroflex™ large discs

For flat lap grinders



Pattern KGS Quadroflex™ Q1 + Q2

Bond Metal

Backing

Quick Release System	(QRS)
Self-Adhesive	(SA)
Magnetic	(MAGN)

All backings are water- and emulsion proof.

Speed Max. 45 m/sec

Rec. follow the instructions of the machine supplier

Use wet

Features and benefits

Premium product, continuous connected wave pattern	>>	Very strong, no clogging, for high stock removal on coarse grits
Open structure	>>	Higher pressure per grit

Availability

Grit size	60	120	200	400
	QRS backing			
Ø200 mm	28986	39862	39863	39867
	SA backing			
Ø250 mm	39931	39941	39943	39944
Ø300 mm	14474	14432	14433	14434
Ø450 mm	39824	39825	39826	39827
	MAGN backing			
Ø300 mm	39859	39861	14437	14438
Ø600 mm	39871	39872	39873	39892

Other dimensions and grits available on request

KGS Swiflex® SDA large discs

For flat lap grinders



Pattern	KGS Swiflex® SDA 1 + 2	
Bond	Resin	
Backing	Quick Release System	(QRS)
	Self-Adhesive	(SA)
	Magnetic	(MAGN)
	All backings are water- and emulsion proof.	
Speed	Max. 45 m/sec	
	Rec. follow the instructions of the machine supplier	
	Use wet or dry	

Features and benefits

Standard flexible diamond coated product	>>	Good performance
Thin structured diamond abrasive resin layer	>>	Low pressure required and easy to use
Cool cutting	>>	Smooth grinding action
A "coated abrasive diamond product"	>>	Grinds faster and longer vs. conventional abrasives
Economical solution	>>	Good price/performance ratio

Availability of KGS Swiflex® SDA large discs

	QRS backing	SA backing		MAGN backing
	Ø200 mm	Ø250 mm	Ø300 mm	Ø300 mm
60	40429	39945	14640	14626
120	40430	39946	14641	14627
200	40431	14635	14642	14628
400	40432	14636	14643	14629
800	40434	14637	14644	14630
1500	40436	14638	14646	14631
3000	40437	14639	14648	14632

Other dimensions and grits available on request







Tech Tips

Important to follow the right sequence, even with a coarse grit in a resin bond disc you will not achieve the required stock removal and with a fine grit in metal bond discs you will not achieve the right finish.

Keep your used discs clean! During the grinding process ground glass will build up on your diamond surface. It is recommended to wash the discs after each session, otherwise it will influence the life of the product.

Manual



Grind or polish by hand

For manual applications, handpads and sheets are ideal tools for grinding, finishing and polishing glass edges, and shaped pieces or forms.

KGS handpads

Application

Handpads are versatile, general purpose tools for manual edging and shaping of glass panes and shapes. Handpads are used for beveling edges manually, removing small faults, and corner dubbing. Excellent for de-burring and finishing applications.

Wet or dry usage

They are often used dry. To obtain a more polished finish with resin pads, they must be used wet, - plain water is usually perfectly ok.

The 75x75 mm handpads have only 10 mm foam, this extra flexibility means they are very suitable for grinding and polishing on profiled surfaces.

Availability

The tables show standard grit sizes, with grits up to 400 being nickel bond, and 500 and above resin bond. Products are available in 2 sizes, 75x75 mm and 90x55 mm.

KGS Telum® handpads



Pattern	Telum® T1 + CP1
Bond	Metal (≤ grit 400), resin (≥ grit 500)
Backing	Flexible foam backing
	Use wet or dry

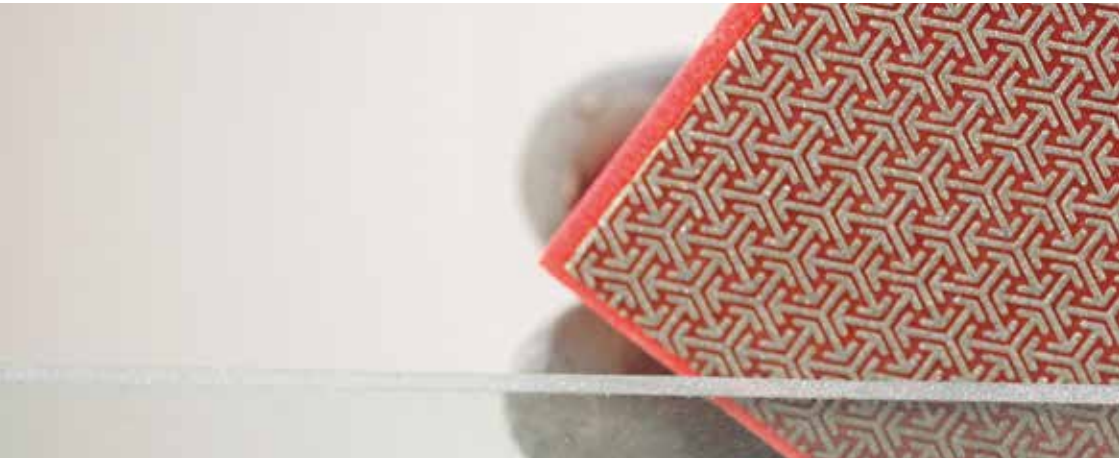
Features and benefits

- Premium product for handpad application
- Comfort of manual grinding, finishing and polishing
- Extra long lifetime, consistent performance and finish
- Strong and resistant backing
- Optimal performance and lifetime

Availability

Grit size	60	120	200	400	500	1500	3000
75x75 mm	14753	14754	14755	14756	14758	14759	14760
90x55 mm	14733	14735	14738	14742	14749	14750	14751

Other dimensions available on request



KGS Flexis® handpads



Pattern	Flexis® 21 + 18 + CP1
Bond	Metal (≤ grit 400), resin (≥ grit 500)
Backing	Flexible foam backing
	Use wet or dry

Features and benefits

- Professional standard dot pattern
- High temperature resistance due to superior heat dissipation
- Free cutting
- Long-lasting
- Strong though flexible backing
- Good price/performance ratio

Availability

Grit size	60	120	200	400	500	1500	3000
75x75 mm	14850	14852	14854	14857	14861	14863	14865
90x55 mm	14801	14807	14815	14822	14837	14842	14846

Other dimensions available on request



KGS sheets

Very flexible hand sheets for wet grinding and polishing by hand with water available in canvas backing for plain sheets. Also available with QRS or SA backing.

KGS Telum® products are more durable than the KGS Flexis® dot pattern. The dot pattern has a more open structure which gives more Flexibility.





KGS Telum® sheets

Pattern	Telum® T1 + CP1	
Bond	Metal (≤ grit 400), resin	(≥ grit 500)
Backing	Quick Release system	(QRS)
	Self adhesive	(SA)
	Colour coded canvas	(CV)
	for plain, full sized sheets	
	Use wet or dry	



Features and benefits

- Premium product
- Extra long lifetime
- Comfort of manual grinding, finishing and polishing
- Consistent performance and finish
- Strong resistant, though flexible backing
- Easy to change grit size
- Best choice in terms of performance and lifetime

Availability

	Grit size	60	120	200	400	500	1500	3000
QRS	130x55 mm	15202	15203	15204	15205	15207	15208	15209
QRS	280x230 mm	15323	15324	15325	15326	40438	15327	40439
CV	280x230 mm	15210	15211	15212	15213	15216	15217	15218
SA	280x230 mm	15229	15230	15231	15232	15236	15237	15238

Other dimensions available on request

KGS wooden block

Dimension	Art. no.
130x55 mm	17158



KGS Flexis® sheets

Pattern Flexis® 21 + 18 + CP1

Bond Metal (≤ grit 400), resin (≥ grit 500)

Backing
- Quick Release system (QRS)
- Self adhesive (SA)
- Colour coded canvas (CV)

for plain, full sized sheets



Use wet or dry

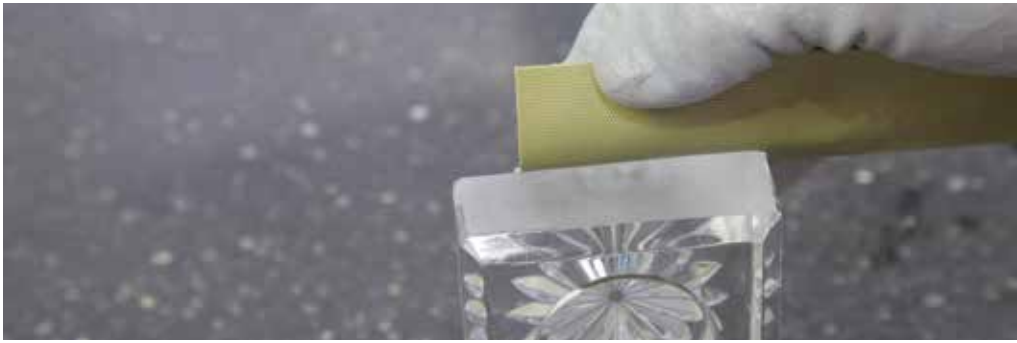
Features and benefits

- Professional standard dot pattern
- High temperature resistance due to superior heat dissipation
- Free cutting
- Long-lasting
- Strong though flexible backing
- Good price-performance ratio

Availability

	Grit size	60	120	200	400	500	1500	3000
QRS	130x55 mm	15467	15470	15473	15476	15482	15485	15488
QRS	280x230 mm	15695	15697	15700	15703	15814	15815	34140
CV	280x230 mm	15492	15494	15496	15498	15503	15505	15508
SA	280x230 mm	15527	15529	15532	15534	15537	15539	40440

Other dimensions available on request



Safety

Always read the safety instructions

Abrasive products improperly used can be very dangerous.

- Always follow the instructions provided on the product and by the machine supplier.
- Ensure that the abrasive product is suitable for its intended use. Always examine all products for damage when re-using or defects upon first use.
- Follow the correct procedures for handling and storage of the products.

Be aware of the hazards likely during the use of abrasive products and observe the recommended precautions to be taken

- Bodily contact with the abrasive product at operating speed
- Injury resulting from product breakage during use
- Grinding debris, sparks, fumes and dust generated by the grinding process
- Noise / vibration

Please refer to the relevant EN standard for detailled information.

- EN12413 for Bonded Abrasives.
- EN13236 for Superabrasives.
- EN13743 for Specific Coated Abrasives

Never use a machine that is not in good working condition or one with defective parts. Employers should carry out a risk assessment on all individual abrasive processes to determine the necessary protective measures. They should ensure that their employees are suitably trained to carry out their duties.

Work safe!


Wear eye protection (ISO 7010)


Wear a mask (ISO 7010)


Wear hearing protection (ISO 7010)


Wear gloves and necessary protective clothing.


Always take into consideration the correct provided working indications as wet, dry or hybrid tools.



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