

Flat Glass Grinding Tools

DIAMOND WHEELS & TOOLS • POLISHING WHEELS & COMPOUND • ABRASIVE PRODUCTS







FGTRADING PTY LTD

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Diamond Wheels

Diamond wheels are used for flat edge, arris and shaped grinding of glass with straight-line edgers, bevelling and CNC machines. The wheels have an abrasive layer or grinding surface comprising industrial diamond particles embedded in either a metal or resin bonding matrix.

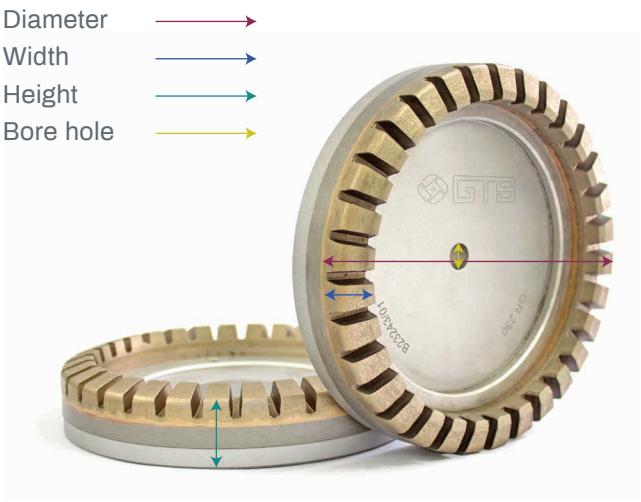
Bonding Matrix

The properties of the bonding matrix have a significant impact on the grinding behaviour of the wheel. Metal-bonded wheels are characterised by coarser grit to perform rough grinding and higher material removal, whereas resin-bonded wheels perform fine grinding to create a smoother surface.

Geometric Configuration

Diamond wheels are manufactured in different geometric configurations for various grinding applications. On cup-shaped wheels, the abrasive layer is located on the face of the wheel whereas it is on the periphery or outer diameter of peripheral-type wheels. Cup-shaped wheels expose the full width of the abrasive layer to the glass which lengthens wheel life.

Wheel Dimensions



Both geometric configurations are available with either continuous or segmented edge profiles. Continuous profiles allow for fine grinding whereas segmented profiles are designed for rough grinding. Segmented profiles are required for use with laminated safety glass (LSG) and are very effective for chip removal on glass thicknesses greater than 10 millimetres.

GTS Metal-Bonded Diamond Cup Wheels

Metal-bonded diamond cup wheels are designed for flat edge and arris grinding of glass. The wheels are typically utilised in the first or primary grinding stations on straight line edgers or bevelling machines. Their exceptional grit retention and resistance to wear ensures maximum grinding efficiency and a long service life.

Available in various sizes and grits with either continuous or segmented edge profiles.



GTS Resin-Bonded Diamond Cup Wheels

Resin-bonded diamond cup wheels are designed for secondary flat edge and arris grinding of glass to produce a polish-ready finish. The wheels are typically utilised in the final grinding station on straight line edgers or bevelling machines. Resistance to wear is lower than metal-bonded wheels but the wheels produce a fine, soft finish. They are particularly suited to thin glass to prevent edge chipping and breakage of sharp corners.

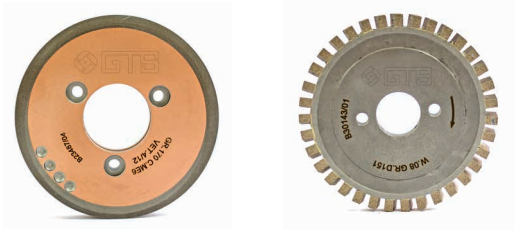
Available in various sizes and grits with either continuous or segmented edge profiles.

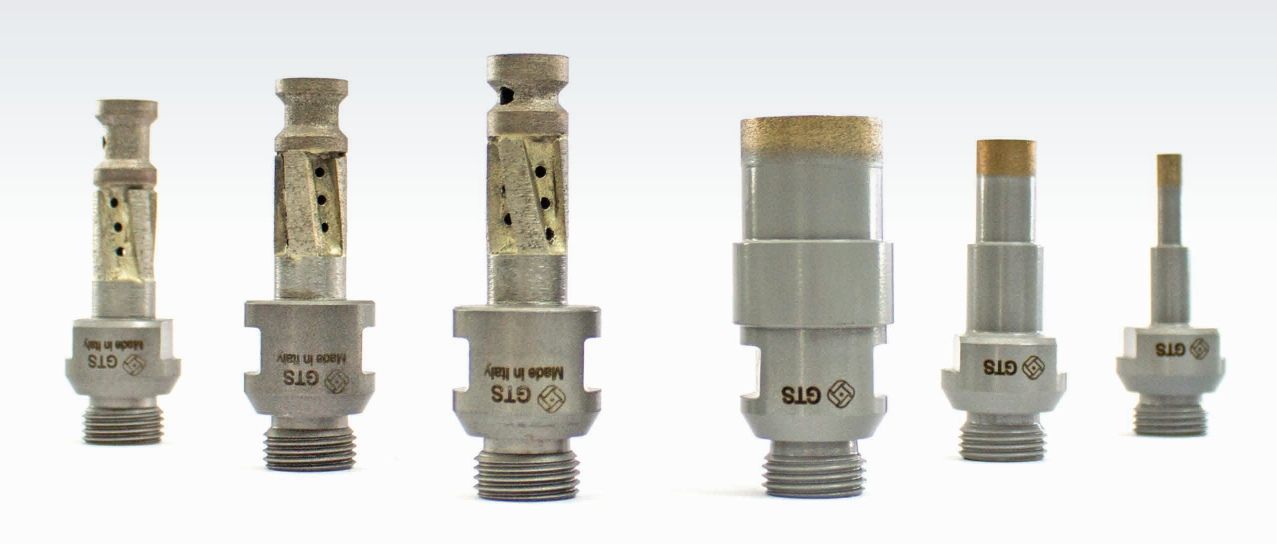


GTS Diamond Peripheral Wheels

Diamond peripheral wheels are utilised in bevelling or CNC machines for grinding pencil edges or trapezoidal profiles (flat edge and arris). The diamond abrasive layer is on the periphery or outer diameter of peripheral wheels and is a negative image of the required shape of the edge profile of the glass.

Available in various shapes, sizes and grits with either continuous or segmented edge profiles.





Diamond Tools

Holes for mounting brackets and fittings, decorative purposes or for machining internal contours are produced in glass using diamond core drills. Diamond router bits are used for cutting and grinding internal cut-outs and notches.

Tool Wear

The grinding process causes diamond particles in the abrasive layer to wear (glaze) over time. In some cases, the bonding matrix of the tool may wear more slowly than the diamond particles within it. When diamond particles become blunt or are no longer exposed, the grinding performance of the tool is reduced.

Tool Dressing

In order to extend the life and performance of diamond peripheral wheels or core drills, tool dressing is necessary at regular intervals. Tool dressing is a process whereby an abrasive aluminium oxide dressing stone is used to re-expose diamonds and re-sharpen tools. Dressing stones of 200mm x 50mm x 25mm are available.

Tool dressing is a quick, effective and consistent method to optimise glass edge quality and feed speed. The following steps can be used as a guide:

Like diamond wheels, core drills and router bits have abrasive layers or grinding surfaces comprising industrial diamond particles. The metal-bonded diamond layer offers excellent consistency of quality and long tool life.



1. Soak the dressing stone in coolant.
2. Switch off coolant supply to wheel/drill bit.
3. Switch on wheel/drill and allow to reach full-speed.
4. Switch off wheel/drill.
5. Apply dressing stone to coasting wheel or lower drill bit into dressing stone with sufficient pressure to slowly bring to a complete stop.
6. Repeat if necessary.

GTS Diamond Core Drill Bits

Diamond core drill bits are hollow cylinders designed to perform the challenging task of drilling holes in glass with ease. The premium drill bits offer reduced cycle times, chipping and downtime for tool replacement. They are used in wet grinding mode in automatic CNC machines or manually-operated stationary drilling machines. Connections vary per specific machine.

Available in various diameters with a Belgian (European) shank or a Habit shank on request.



GTS Brass Countersink Bits

Brass countersink bits are fitted onto core drill bits of the same diameter for drilling and countersinking in a single operation. Countersink bits produce chamfered edges for aesthetically pleasing holes for screws or bolts and improved furnace yield when tempering glass.

Available in various diameters.



GTS Variable Countersink Bits

Variable countersink bits are designed to chamfer the edges of existing drilled holes in glass. The versatile tools fit onto a glass drilling machine or pneumatic tool. They can be used on any size drilled hole between 3 and 40 millimetres in diameter.



GTS Milling & Edging Bits

Milling and edging bits are combined milling and trapezoidal routers for machining internal cut-outs and notches in glass. The multi-functional bits perform cutting as well as flat edge and arris grinding with a single tool. They are suitable for use in various CNC machining centres.

Available in various sizes for different glass thicknesses.





Polishing Wheels

Polishing wheels are used for flat edge, arris and cerium polishing of glass with straight-line edgers, bevelling and CNC machines. Various polishing wheels are available comprising aluminium oxide, silicone carbide or cerium oxide embedded in a resilient rubber bonding matrix.

Geometric Configuration

Polishing wheels are manufactured in two different geometric configurations. Cup-shaped wheels are used for flat edge polishing whereas peripheral-type wheels are used on shaped edges. Peripheral polishing wheels quickly adapt to the edge profile produced by the diamond wheel but can be pre-profiled if necessary.

GTS Ceripol Polishing Compound

Cerium oxide powder is mixed with water to form a paste or slurry that is used as a polishing agent for glass. The slurry temperature should be maintained at ±35°C for optimum performance. Cerium oxide is suited for use with manual, handheld polishing tools as well as powered machinery for automatic glass polishing.

Glass edge polishing is performed in various phases. S40, S60, R40, R60 or SNBD wheels are designed for primary polishing followed by either X3000 or X5000 wheels. Depending on the required surface gloss, felt wheels with cerium oxide may be used in the final phase.

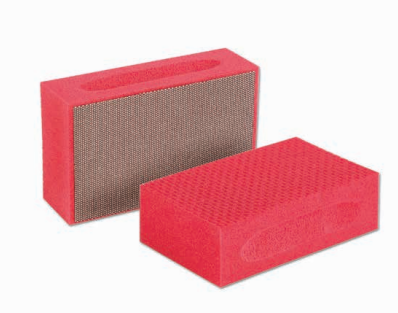


FG Trading supplies premium-grade GTS Ceripol which has a high concentration of rare earth oxides and uniform particle size. Ceripol provides optimal material removal rates and a bright polish finish for successful use in most polishing applications. It is available in either 1kg or 5kg bags/pails.

Diamond Hand Pads

Diamond hand pads comprise a long-lasting diamond abrasive attached to a rigid, foam support block. The pads are designed for easily removing minor flaws and irregularities from glass by hand. They can be used wet or dry and are available in black, red or yellow versions which are 120, 220 and 360 grit respectively.

Available size: 90mm x 55mm x 27mm (l x w x h).



GTS Edge Deletion Wheels

In insulated glass (IG) fabrication, soft-coated low-emissivity (Low-E) glass must be stripped around its perimeter. The process, known as edge deletion, prevents corrosion of the sensitive coated surface and ensures adequate adhesion of IG sealants. It is performed using a grinding wheel which is suited for use on metal oxide, silver, silver protector and durability layer coatings.

Available size: 200mm x 10mm x 76.2mm.



Silicone Carbide/Cork Abrasive Belts

Abrasive belts are primarily for seaming or arrissing glass to produce a slightly chamfered edge. Silicone carbide, cork and hybrid belts in a wide range of grits are used depending on material removal and surface finish required. All GTS belts have a premium synthetic backing with a single joint, which will not shred, stretch, curl or crack. They offer smooth, even grinding and high tear-resistance when used in wet grinding mode.

Various sizes available for use with portable belt sanders and cross-belt arrissing machines.





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Monday: 07h30 - 16h30
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Wednesday: 07h30 - 16h30
Thursday: 07h30 - 16h30
Friday: 07h30 - 15h00
Weekends: Closed

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