

AUTOMOTIVE GLASS

2017

Premium grinding tools since 1919
www.tyrolit.com

TYROLIT

TYROLIT Group

A global company

As one of the world's leading manufacturers of bonded grinding, polishing, cutting, sawing, drilling and dressing tools and a system supplier of tools and machines for the construction industry, the family-run TYROLIT company has been synonymous with superior quality, innovative spirit and outstanding service since 1919.

Day in, day out the experts at TYROLIT are busy working on solutions that accommodate the individual requirements of customers around the world; thus contributing to their business success. Some 80,000 available products set the standard in various industrial sectors.



Business units

TYROLIT offers its customers cost-efficient and "green" solutions in four business units. Moreover, with its global sales network and a team of experienced application engineers, TYROLIT provides top-quality service.



Construction

In the Construction business unit TYROLIT is a leading system supplier of sophisticated drilling systems, wall and wire saws, floor saws and for grinding uneven surfaces such as motorways made of concrete.



Stone – Ceramics – Glass

Our customised diamond tools and grinding solutions in the Stone – Ceramics – Glass business unit cannot fail to impress through their exceptional performance and quality.



Metal / Precision

From precision machining in the engine and gear industry to the production of cut-off wheels with diameters up to 2,000 mm for the steel industry – the TYROLIT product range in the Metal & Precision business unit includes high-tech tools for a huge variety of applications.



Trade

Thanks to its global sales network, in addition to premium product solutions in the three core areas of cutting, grinding and finishing, TYROLIT's Trade business unit guarantees truly customer-focused marketing support.

Quality and Innovation

TYROLIT is one of the world's market leaders in this sector. For us, maximum precision is paramount – both in the quality of the manufactured products and where innovation is concerned. Continuous further development and improvement of products in all business units is one of our primary corporate objectives.

Expertise for our customers

TYROLIT offers its customers a first-class service in the form of ongoing advice and support. In each of our business units a team of specialists with years of experience in the industry assists and supports our customers worldwide with individual on-site expertise.

Customised products

TYROLIT has a huge and varied product range for numerous fields of application. These include both standard products for everyday use and individually adapted, made-to-order products for customer-specific processes. Together with our customers, we find the most cost-effective solution for the task with which we are entrusted.

International production and sales locations

TYROLIT is represented in 27 countries through its own production and sales companies and cooperates in a further 65 countries with local partners. Everyday our several hundred field service colleagues are working hard in the market alongside our end customers, in order to be able to provide them with advice and support whenever they need it. With our wealth of process know-how we are able to provide sustained solutions in line with our customers' demanding technical and economic expectations.

The Italian subsidiary in Thiene (Italy), TYROLIT Vincent, is the global head office of the Stone -Ceramics - Glass business unit and is one of the main production sites, with focus and investments in the manufacturing of high tech tools.

Tyrolit also offers a full factory re-profiling service to optimize tool lifetime in Italy, USA, Brazil and China.



Sales companies in Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, India, Indonesia, Italy, Netherlands, Norway, Poland, Portugal, South Africa, Spain, Sweden, Switzerland, Thailand, UK, UAE and the USA.

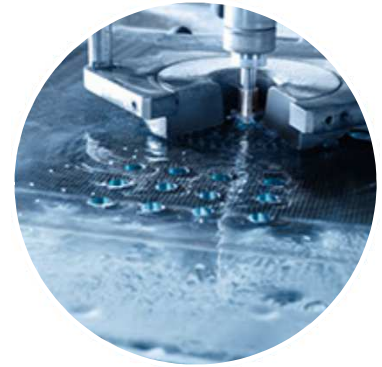
Distributors in more than 65 countries across the globe

International re-profiling centers



AUTOMOTIVE GLASS

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HALO

With the HALO product line, Tyrolit defines a new concept for edge grinding of automotive glass. As well as high process speed, low dressing frequency and a clean edge, the design of a single use wheel offers several new advantages and added value compared to a standard repeatedly reprofiled wheel.

Minimum startup time:

Specific alloys grant a perfect edge finish from the first piece and maximum speed can be reached after few pieces.

Machine set up minimized:

because only new wheels with precise geometry are used the machine setting and working parameters are always the same.

Economic advantage: Minimized investment in new wheels; significant reduction of handling/logistic efforts and reduced spindle maintenance due to a lighter wheel that reduce vibrations during work.

Easy installation in few seconds and proper positioning are granted by specifically designed cones and adaptors.

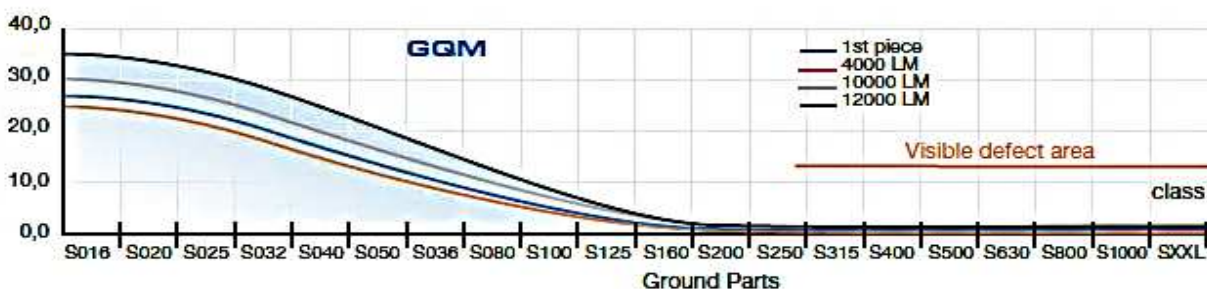


Increased productivity: Thanks to a reduced set up time and to the possibility to install more wheels on the same cone allowing to work continuously. TYROLIT also guarantees dimensional tolerances from the very first piece produced.

GQM chart analysis of a processed glass edge.

Machine parameters

Glass thickness (mm)	2,1
Grinding speed	30
Peripheral speed /m/sec	55
Dressing freq (LM)	160
GQM Medium	28,5



HALO

SINGLE USE AUTOMOTIVE GRINDING WHEEL

Ø mm	Glass mm	Material	Application
150	< 3,0	Laminated glass	Windshield and Sidelight
150	3,0 - 3,7	Tempered glass	Sidelight, backlight, sunroof
150	3,71 - 4,0	Tempered glass	Sidelight, backlight, sunroof
150	4,1 - 6,0	Tempered glass	Sidelight, backlight, sunroof
200	< 3,0	Laminated glass	Windshield and Sidelight
200	3,0 - 3,7	Tempered glass	Sidelight, backlight, sunroof
200	3,71 - 4,0	Tempered glass	Sidelight, backlight, sunroof
200	4,1 - 6,0	Tempered glass	Sidelight, backlight, sunroof

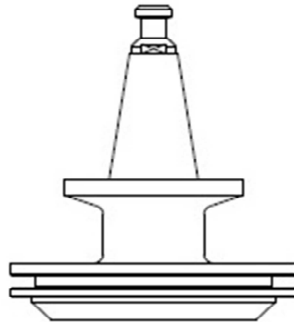
WORKING SPECIFICATIONS

Application	Spec.	Grinding speed	Dressing	Refrigeration	Radius of removal
Laminated windshield	PKD 5051	Low and high ≤ 40m/min	Automatic	Just water/Coolant	≤0,6mm
Laminated windshield, sidelight and sunroof	PKE 5051	Low and high ≤ 40m/min	Automatic	Coolant	≤0,3mm
Tempered sidelight	PKD 50C5	Low speed ≤ 16m/min	Manually/Automatic	Just water/Coolant	≤0,5mm
Tempered backlight	PKE 50C5	Low speed ≤ 16m/min	Manually/Automatic	Just water/Coolant	≤0,5mm
Tempered sidelight and backlight	PKE 6551	Low and high ≤ 30m/min	Automatic	Coolant	≤0,3mm

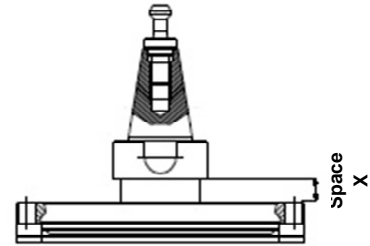
HALO

The tool holder and adaptors are specifically designed to grant easy installation in few seconds and proper positioning for the best performances

TOOL HOLDER



Bystronic



Bando

Description	Machine	Diameter of HALO	Number of HALO on the holder	Space X	Drawing	Sysnr
		mm		mm		
Tool holder	Bottero	150	1 HALO	---	EA0238	34174546
Tool holder	Bystronic	150	1 HALO	---	EA0137	34248314
Tool holder	Bystronic B-Champ	150	2-3-4 HALO	---	EA0139	34315304
Tool holder	Bando Old models	150	1 HALO	13,5	EA0138	34303922
Tool holder	Bando New models	150	1 HALO	17,0	EA0236	34170551
Tool holder	Bando New models	150	2 HALO	17,0	EA0237	34174545
Tool holder	Bando New models	150	4 HALO	17,0	EA0242	34219640

ADAPTOR FOR STANDARD CONES

Description	Machine	Diameter of HALO	Diameters	Drawing	Sysnr
		mm	mm		
Adaptor	Bando/Bystronic	150	63,5/116	E03037	34155377
Adaptor	Bando	150	30/116	E03185	34190039
Adaptor	R&S	150	25/116	E03195	34191353

EXTRACTOR

Description	Tool holder	Drawing	Sysnr
Extractor	Bando	E03038	34155376
Extractor	Bystronic	E03112	34180098

HIGH SPEED GRINDING WHEEL

By using its extensive experience, TYROLIT has become a worldwide trusted partner in the grinding of glass for automotive. Thanks to continuous technological developments and the wealth of process know-how, Tyrolit is able to provide sustained solutions in line with the customers' demanding, technical and economic expectations. The special bonds guarantee an excellent lifetime working at very high speed and allow to re-profile the wheels several times.

High working speed: Tyrolit grinding wheels excel in high-speed applications (up to 40m/minute in laminated applications & up to 30m / minute tempered) ensuring the highest standards of quality and lifetime in the market.

Immediate start-up time: bonds properly well researched and perfect preparation of the diamond surface guarantee an excellent edge finish from the first piece, reaching the maximum processing speed just after a few pieces from start up.

Wide range of achievable profiles: tools are prepared by standard or customized profiles, designed to improve production cycles. The wide assortment includes special and asymmetric profiles for processing sunroofs, windshields, backlights, laminated sidelights and thin glass.

Excellent lifetime: the grinding wheels, provided with high diamond thickness and specifications designed for different processes / applications / operating parameters, allow to obtain the best performance and ensure the repeatability for all subsequent use.



Light weight: the grinding wheel bodies mostly made of bronze and aluminum / bronze inhibit rust formation on the tool holder cones. The bodies produced in this way lighten the weight of the tool that makes less critical the work on the electro-spindle bearings.



HIGH SPEED GRINDING WHEEL

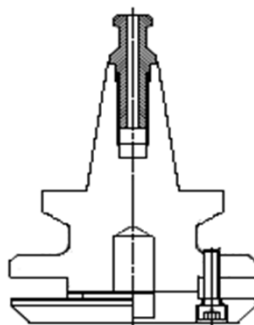
Ø	Glass thickness	Material	Application
mm	mm		
150	< 3,0	Laminated glass	Windshield
150	3,0 - 3,7	Tempered glass	Sidelight, backlight, sunroof
150	3,71 - 4,0	Tempered glass	Sidelight, backlight, sunroof
150	4,1 - 6,0	Tempered glass	Sidelight, backlight, sunroof
178	< 3,0	Laminated glass	Windshield
178	3,0 - 3,7	Tempered glass	Sidelight, backlight, sunroof
178	3,71 - 4,0	Tempered glass	Sidelight, backlight, sunroof
178	4,1 - 6,0	Tempered glass	Sidelight, backlight, sunroof
200	< 3,0	Laminated glass	Windshield
200	3,0 - 3,7	Tempered glass	Sidelight, backlight, sunroof
200	3,71 - 4,0	Tempered glass	Sidelight, backlight, sunroof
200	4,1 - 6,0	Tempered glass	Sidelight, backlight, sunroof
250	< 3,0	Laminated glass	Windshield
250	3,0 - 3,7	Tempered glass	Sidelight, backlight, sunroof
250	3,71 - 4,0	Tempered glass	Sidelight, backlight, sunroof
250	4,1 - 6,0	Tempered glass	Sidelight, backlight, sunroof

WORKING SPECIFICATIONS

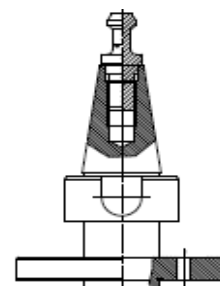
Application	Spec.	Grinding speed	Dressing	Refrigeration	Radius of removal
Laminated windshield, sidelight	E50SNP5	Low and high ≤ 40m/min	Manually/Automatic	Coolant	≤ 0,3mm
Tempered sidelight and backlight	D50KP52	Low and high ≤ 30m/min	Manually/Automatic	Just water/Coolant	≤ 0,5mm
Tempered sidelight, backlight and sunroof	E65KP52	Low and high ≤ 30m/min	Manually/Automatic	Coolant	≤ 0,3mm

HIGH SPEED GRINDING WHEEL

TOOL HOLDER



Bystronic



Bando

Description	Machine		Diameter of the wheel	Diameter of tool holder	Number of wheels on the holder	Drawing	Sysnr
			mm	mm			
Tool holder	Bystronic		150	63,5	1 wheel	EA0120	
Tool holder	Bando	Low speed	150	63,5	1 wheel	EA0232	34031526
Tool holder	Bando	High speed	150	63,5	1 wheel	EA0127	34049351
Tool holder	Bando	High speed	150	63,5	2 wheels	EA0231	34028976
Tool holder	Bando	Low speed - High speed	150	45	1 wheel	EA0240	
Tool holder	Bando	High speed	150	45	2 wheels	EA0233	
Tool holder	Bando	Low speed - High speed	150	30	1 wheel	EA0235	34012021

Diamond Drills For The Automotive Industry

TYROLIT provides a wide range of monobloc drills and drills with mobile countersinks for the Automotive Glass Industry. They are specially designed and manufactured to guarantee the best quality of the hole at high feed rates.

Excellent start up: from the first hole you get an excellent edge quality. To speed up the start, TYROLIT provides the drills with properly dressed diamond surface.



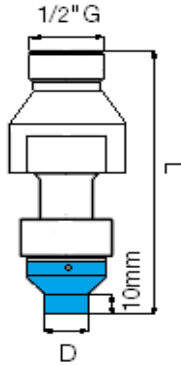
Excellent edge finishing: the diamond drills allow you to achieve excellent quality standards, ensuring a perfect finish both on inside and countersunk parts.

High feed speed: the diamond drills have been designed for a consistent performance throughout their lifetime: the high edge quality is guaranteed up to 120 mm/min working.

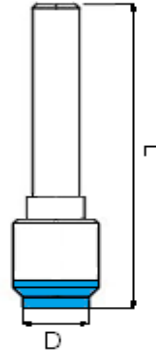
Long lifetime: the sintered diamond drills are manufactured using specific bonds to grant an excellent lifetime, that satisfy the highest standards in the market.

CORE DRILLS

Drills with mobile countersink



Monobloc core drills

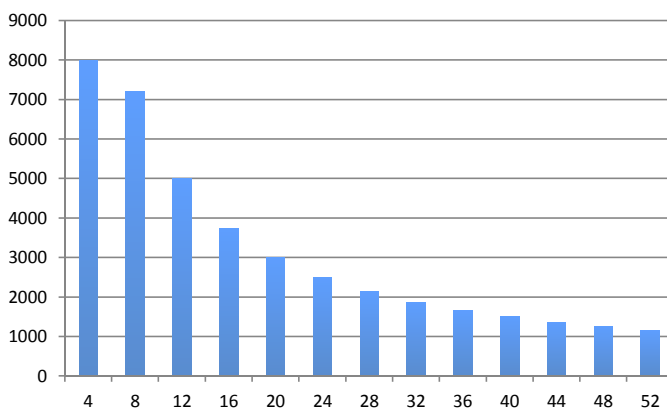


Range of products

Fittings available	1/2" gas, Ø 9,5, Ø 10, Ø 12, Ø 16
Total length (L)	from 75 mm up to 95 mm
Diameter	4 to 50 mm
Rim thickness	from 0,7 mm to 1 mm
Body	Stainless steel

Working parameters

DRESSING STICKS FOR	Drill's diameter	Recommended peripheral speed	Drilling rate with water	Drilling rate with coolant	Countersink speed
3 - 6 mm	from 4 to 25 mm	3 m/s	up to 1,5 mm/s	up to 2 mm/s	up to 0,5 mm/s
3 - 6 mm	from 26 to 50 mm	3 m/s	up to 1 mm/s	up to 1,5 mm/s	up to 0,5 mm/s



dm	rpm
4	8000
8	7200
12	5000
16	3750
20	3000
24	2500
28	2146
32	1875
36	1667
40	1500
44	1364
48	1250
52	1155

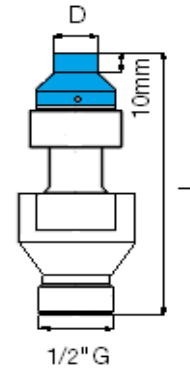
CORE DRILLS

DRILLS WITH MOBILE COUNTERSINK

\varnothing (D)	Specification
mm	
3,00 - 4,99	COUC FLH2
5,00 - 10,00	COUC FLH2
10,01 - 15,00	COUC FLH2
15,01 - 20,00	COUC FLH2
20,01 - 25,00	COUC FLH2
25,01 - 30,00	COUC FLH2
30,01 - 35,00	COUC FLH2
35,01 - 40,00	COUC FLH2
40,01 - 45,00	COUC FLH2
45,01 - 50,00	COUC FLH2



Total length (L) from 75 mm up to 95 mm
 Fittings available 1/2" GAS
 Body Stainless steel



COUNTERSINK

\varnothing (D)	Specification
mm	
3,00 - 4,99	FRC FLH2
5,00 - 10,00	FRC FLH2
10,01 - 15,00	FRC FLH2
15,01 - 20,00	FRC FLH2
20,01 - 25,00	FRC FLH2
25,01 - 30,00	FRC FLH2
30,01 - 35,00	FRC FLH2
35,01 - 40,00	FRC FLH2
40,01 - 45,00	FRC FLH2
45,01 - 50,00	FRC FLH2

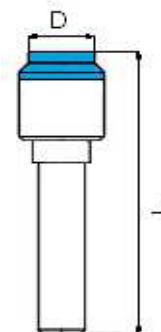


MONOBLOC CORE DRILL

\varnothing	Specification
mm	
4,00 - 10,00	CDAC FVDN
10,01 - 15,00	CDAC FVDN
15,01 - 20,00	CDAC FVDN
20,01 - 25,00	CDAC FVDN
25,01 - 30,00	CDAC FVDN
30,01 - 35,00	CDAC FVDN
35,01 - 40,00	CDAC FVDN
40,01 - 45,00	CDAC FVDN
45,01 - 50,00	CDAC FVDN



Total length (L) from 75 mm up to 95 mm
 Fittings available 1/2" gas
 \varnothing 9,5 mm \varnothing 10mm
 \varnothing 12mm



*Higher diameters on request

Dressing sticks for grinding wheels

The range of Tyrolit abrasive sticks, used for dressing diamond tools of last generation, has been designed to improve the performance in various grinding and drilling applications of the Auto Glass Industry.

Minimal impact on the quality of finishing: regardless of the frequency of use, the Tyrolit stick allows you to quickly restore an excellent removal rate of tools without affecting the quality of edge finishing.

Reduction of use frequency: the perfect balance between the granularity and the stick hardness, combined with the generation of new bonds, allows to reduce the frequency of dressing, increasing the number of pieces processed per cycle. This benefit is particularly evident by using Tyrolit wheels and drills .



Wide range of solutions: Tyrolit offers a wide range of products to meet different production requirements and working conditions, by various grits and hardnesses.

Increasing of productivity: the quality of the TYROLIT stick, allows a reduction of dressing frequency, with consequent increase of the production yield.

DRESSING STICKS FOR GRINDING WHEELS

Dimension	Grit	Application	Refrigeration	Sysnr
mm				
200 x 50 x 3	180	Windshield	Coolant	34217106
200 x 50 x 4	180	Sidelight, backlight, sunroof	Coolant	34217112
200 x 50 x 5,5	180	Sidelight, backlight, sunroof	Coolant	34318584
200 x 50 x 3	150	Windshield	Just water/Coolant	34318575
200 x 50 x 4	150	Sidelight, backlight, sunroof	Just water/Coolant	34318581
200 x 50 x 5,5	150	Sidelight, backlight, sunroof	Just water/Coolant	34318583
180 x 50 x 3	180	Windshield	Coolant	34217108
180 x 50 x 4	180	Sidelight, backlight, sunroof	Coolant	34217110
180 x 50 x 5,5	180	Sidelight, backlight, sunroof	Coolant	34318665
180 x 50 x 3	150	Windshield	Just water/Coolant	34318661
180 x 50 x 4	150	Sidelight, backlight, sunroof	Just water/Coolant	34318663
180 x 50 x 5,5	150	Sidelight, backlight, sunroof	Just water/Coolant	34318664

DRESSING STICKS FOR DRILLING STATION

Dimension	Grit	Application	Refrigeration	Sysnr
200 x 50 x 8	120	Drilling station Bando-Bystronic	Just water/Coolant	34217105

CATALOGUE

General information

The tools shown in this catalogue, the information regarding delivery, appearance, performance and dimensions shall comply with the according status at the time of printing. We develop our products continuously. We reserve the right to change without prior notice.

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