



## High Volume Cutting in Rough Environments

A Favorite in the Automotive Industry

# Meet the Cutting Favorite in Automotive Industry

If you visit some of the biggest automotive materialographic facilities around the world, there is a good chance that you will come across the Axitom cutting machine. One of the reasons for this is the fact that Axitom meets the very specific demands, which the automotive industry makes regarding workpiece sizes, complex shapes, and serial cuts.

A very large cutting chamber, automatic tables, and movement in X, Y, and Z directions allows for positioning, clamping, and sectioning of both large and complex, irregular workpieces.

If you are just a little curious about all the other reasons that the greatest automotive materialographic facilities around the world have made Axitom their favorite choice, then please let us invite you to a tour.

Welcome to the world of Axitom.







## 5 Grand Details

Axitom is full of details to support your sectioning of larger workpieces. Here, we have selected five of the most interesting details to spotlight. Axitom is available in two models and multiple versions, and throughout this brochure the full-featured model is displayed. Get an overview of all versions at the end of this brochure.

### **Never Again Short on Uptime**

Strong Motor, Automatic Process, and Usage Monitoring

Along with Axitom's **powerful motor**, the AxioWash **automatic cleaning**, the overload protection, and the Opti-Feed intelligent **feed control** to protect you from motor overload, the valuable information from the mileage monitoring ensures you maximum uptime of your cutting machine and extension of the total lifetime of the machine. Axitom provides you with essential monitoring functions to inform you about the status of the machine. At every power-up, the total operation time, plus the time since and until the next service, are displayed to ensure regular services.

### Irregular and Large Workpieces? Don't Worry.

You Have Plenty of Room for Extra Clamping

The cutting table in Axitom measures 591 x 492 mm (23.3 x 19.4") and on top of that, with the two **automatic tables**, a movement of 100 mm (4") in X-direction and 150 mm (5.9") in Y-direction can be added. This allows for positioning, clamping, and sectioning of very large and irregular workpieces in Axitom. In addition, a **large space underneath** the cut-off wheel allows for very high workpieces up to 200 mm (8.0") to be clamped.

This also makes it possible to place additional clamping tools in the cutting chamber for irregular workpieces and still cut the maximum size of workpiece that the cut-off wheel can handle.

### Perfectly Suited for Rough Environments

Fully Operable with Working Gloves

All functions are controlled by only two control units, the **3-axes joystick** and the **multifunction knob**, making operation extremely user-friendly. The joystick is very robust, designed for production environments. It can be moved in three different axes, controlling the cut-off wheel and both the X- and Y-table. The multifunction knob is used for setting all cutting parameters, and can be operated even with heavy-duty working gloves.





### Reduce Clamping, Sectioning, and Operator Time

With Fully Automatic Serial Cutting

With the automatic X-table on Axitom, you get as many as four Multi-Cut modes, for automatic serial cutting of parallel sections: MultiCut-1 where slices of equal thickness can be programed.

MultiCut-2 for generating slices of a certain thickness. You can program up to ten slices of different thickness.

MultiCut-3 for sectioning at a certain position in a specific distance from a zero point. You can section up to ten slices of varied thickness. MultiCut-4, the most intuitive mode, is also called the "Learning Mode."

### **Get the Perfect Cut in Every Situation**

With Advanced Cutting Modes

**ExciCut** is for those of you who work with very hard materials and want to reduce cut-off wheel costs. **AxioCut Step** is for those of you who want to section even larger workpieces (up to 40% longer) and avoid overheating and thermal damage. **Direct Cut** is the classic cutting mode for small and/or soft workpieces, which are easy to cut.



Want to know more? Go to **struers.com/axitom** 

## Everything You Need for Sectioning Large Workpieces

### Automatic X- and Y-table for Sectioning in Series and of Extra-Long Workpieces

With the automatic X-table, you are open for great possibilities. A total of four Multi-Cut modes are available on Axitom machines equipped with the automatic X-table, which allows for serial sectioning without re-positioning. The automatic Y-table is for extra-deep workpieces and extra-large specimens using the AxioCut cutting mode.

### MultiCut-1 for Standard Sectioning

Slices of equal thickness can be program-ed. Additionally, the thickness of the cut-off wheel is saved, so no calculations are necessary when compensating for cut-off wheel thickness in your sectioning. Simply

enter the thickness and the number of slices and press "Start." Because of the AutoStop function, Axitom-5 will continue to the next cut automatically when the previous workpiece has been cut through. The display will indicate how many slices of the pre-set number are cut.

### MultiCut-2 for Slices of Different Thickness

Multi-Cut-2 offers the same options as MultiCut-1 and, in addition, the possibility of programing slices of different thickness

### MultiCut-3 for Sectioning Fixed Positions

MultiCut-3 is for those of you who need to examine the workpiece in certain fixed positions. Instead of programming the thickness of a slice, a certain position is programed. Simply enter the positions on the workpiece from a technical drawing, starting from a common 0-point.

### **MultiCut-4 the Learning Mode**

This is the most intuitive MultiCut mode, also called the "Learning Mode." Simply clamp the workpiece and, with the joystick, position the workpiece correctly under the wheel and position the wheel in the correct distance above the workpiece. Press "Enter" to record the cutting position, and repeat for the next position. Press "Start" and all cuts are carried out in their correct succession. No need for the good old ruler - the distance from the cutoff wheel to the workpiece is recorded, and therefore, even irregular parts can be sectioned in the shortest possible time.



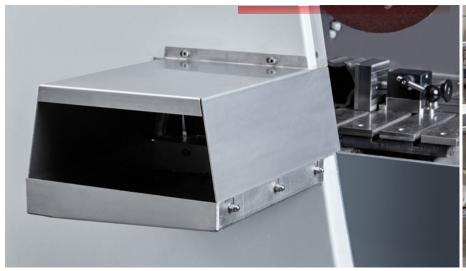
### **ExciCut for Hard Materials and Reducing Cut-Off Wheel Costs**

ExciCut mode is an oscillating movement of the cut-off wheel to reduce the contact area with the workpiece and minimize the risk of thermal damage. In this way you can section very hard materials with better results and a better lifetime of the cutting wheel.

### AxioCut Step for Fast Sectioning of Extra-Large Workpieces

AxioCut Step is a movement of both the automatic Y-table and the cut-off wheel to enhance the cutting capacity. The table has a movement of 150 mm (5.9"), and the possible sample size to be sectioned is thus increased by the same amount.

This means that Axitom-5/400 can handle workpieces up to  $125 \times 290$  mm ( $4.9" \times 11.4"$ ), and Axitom-5 can handle workpieces up to  $110 \times 245$  mm ( $4.3" \times 9.6"$ ). The cut-off wheel moves up and down the sample, minimizing the contact area, and avoiding overheating and thermal damage.





### Direct Cut for Easy to Cut, Small, and/or Soft Workpieces

The classic cutting mode is where the cutoff wheel moves straight down into the workpiece using the pre-set feed speed. This is perfect for small and/or soft materials such as aluminum and copper alloys.

### AxioWash Automatic Cleaning Program – a Minimum Effort to Keep Your Machine in Top Shape

We know that maintenance and cleaning can be some of the most time-consuming elements of the cutting process, but not with Axitom. AxioWash is Struers' patented cleaning program that automatically cleans the inside of the machine, and afterwards, you only need to clean the horizontal surfaces inside the chamber. That's it - the machine is now ready for the following day. When AxioWash is used every day, only a minimum of effort is needed to keep the machine in perfect shape.

### OptiFeed Intelligent Feed Control to Avoid Motor Overload

Struers has developed OptiFeed to eliminate the risk of damaging the workpiece,

the cut-off wheel, or the motor when sectioning materials with varying properties which requires different feed speed settings. With OptiFeed. Axitom continuously measures the load on the cutting arm. The pre-set feed and force values are maximum values, and when the machine detects force exceeding the pre-set force limit, it will automatically decrease the feed speed to protect the workpiece, cutoff wheel, and equipment. The speed is automatically adjusted up and down to aim for a force as close to the limit as possible. This way the feed is constantly optimized without sacrificing the quality of the cut or good wheel economy, and you get the fastest possible cut.

### Store Cutting Sequences and Save Valuable Time When Setting up

You can save up to ten different cutting methods with all the individual cutting parameters. These methods can be recalled at any time, and especially with MultiCut-4, this provides many advantages, since all cutting positions, with both X- and Z-values, are saved. That allows for rapid changing between methods of differently shaped workpieces without having to reprogram all parameters and

positions again. While the automatic X-table moves the workpiece into the correct X-position, the cut-off wheel is moving into the correct starting height before each cut, saving a lot of precious cutting time.

### Three-Axis Joystick and Multi-Function Knob for Fast and Easy Positioning

Two well-proven controls are used on the Axitom-5: **the joystick** is very robust, designed for production environments. It can be moved in three different axes, controlling the cut-off wheel and both the X- and Y-table. **The Multifunction** knob is used for setting all cutting parameters, and can be operated even with working gloves.

### Intuitive User Interface for Ultra-Easy Operation

All information is provided with a single glace. Get an easy overview of relevant cutting parameters and easy navigation in control menus using the rotate knob multifunction button.

### Optional 350/400 mm Cut-Off Wheel

Choose between a 350 and 400 mm cutoff wheel, depending on your capacity need.

### Extension Tunnel for Extra-Long Workpieces

Cut long workpieces, such as tubes and rods, which are otherwise too long to fit inside the cutting chamber.

### Cooling Unit for Best Possible Synergy

To get the best cutting result with minimum damage to the workpiece, cooling is important. Pair your Axitom with a Struers cooling system for the best possible synergy. This can be ordered separately.

### 12 mm T-slots and Clamping Tools for Virtually Anything!

Struers offers a wide range of standard clamping tools for 12 mm T-slots to ensure that you can clamp virtually anything that you can cut. We also make specialized solutions when you need it.

### AutoStop So You Can Leave the Machine Unattended

Predefine the cutting length or have Axitom stop when the workpiece is cut through.

### Direct Connection to External Exhaust System

There is a direct connection to the external exhaust system for a healthier environment.







### AxioWash automatic cleaning program

Cleans the inside of the machine.

### Largest cutting chamber in its class

591 x 492 mm (23.3 x 19.4") For best possible access.



### **Extension tunnel**

For sample too long to fit inside the cutting chamber.

### **Automatic X-table**

Version with X-table allows for serial sectioning without repositioning.

### **Automatic Y-table**

For extra-deep workpieces.

### **Cooling unit**

Choose static filter systems for periodical use and band filter for continuous heavy-duty work.



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### **ExciCut mode for hard materials**

An oscillating movement of the cut-off wheel to reduce contact area with workpiece and minimize risk of thermal damage.

### AxioCut Step for extra-large workpieces

An extra-fast sectioning of large workpieces with a cut-off wheel movement that minimizes the risk of thermal damage.

### Intuitive user interface

All information at a single glace.

### Direct Cut for small and/or soft workpieces

which are easy to cut.

### **AutoStop**

Predefine the cutting length or have Axitom stop when the workpiece is cut through.

### **OptiFeed intelligent feed control**

To avoid motor overload.

### **MultiCut automatic serial cutting**

4 MultiCut modes for automatic serial cutting of parallel sections.

### Save up to 10 cutting sequences

To simplify –sectioning of different workpieces on the same machine.

### Three-axis joystick and multifunction knob

For fast and easy positioning and setup.

### 350 or 400 mm cut-off wheel

Get the cut-off wheel size to fit your exact sectioning needs.

### 12 mm T-slots

Provides maximum clamping flexibility with broad range of standard clamping accessories.

## The 3 Most Costly Mistakes When Cutting Large Workpieces

And How to Avoid Them

Sectioning large workpieces does not have to be time-consuming. Avoid these three mistakes to vastly improve the efficiency of your cutting process.

### **Learn how to:**

- Save time with more efficient clamping
- Optimize speed and reduce costs with the right cut-off wheel
- Improve speed, quality, and reproducibility with automatic cutting

## Discover the Full Range of Struers Cutting Machines

What size is your workpiece?





Read the full article at struers.com/cuttinglarge



## More Than 140 Years of Fine-Tuned Service

### Don't hesitate to use it.



When you choose any equipment from Struers, you also choose some of the top specialists in the world along with a wide range of support at your fingertips. This includes:

- Access to our global support hotline
- Specialist counseling on how to optimize your individual processes
- · All critical spare parts available for immediate shipping
- An annual service review
- · Online manuals

### Specialist counseling

You can always, and at no expense, contact Struers' experienced application specialists with any questions you might have regarding your Struers equipment, best practice testing, or your specific testing situation. That is a natural part of your Struers equipment purchase. Just go to **struers.com/contact** or contact your local specialist.

### **Extra Services**





### **ServiceGuard**

Which service is right for you?

Struers ServiceGuard covers a comprehensive range of technical services and training, including service plans, service packages, single services, and spare parts. Our global network of technical service engineers will work with you to determine the service level best suited for your requirements.

See more at struers.com/service



### **Application assessment**

Let's discover your optimization opportunites

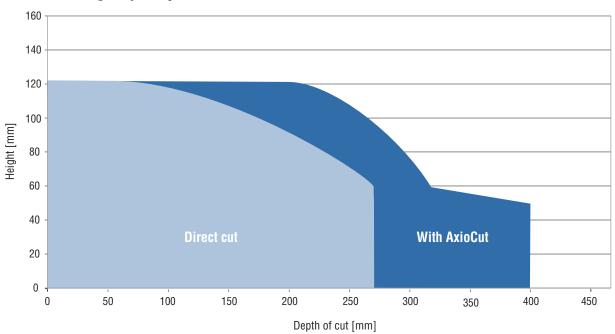
A Struers Application Specialist visits your facility to perform an in-depth assessment of your use of Struers equipment, materialographic processes, and workflows. The specialist identifies quality and optimization opportunities and provides you with practical tips.

### **Technical Data**

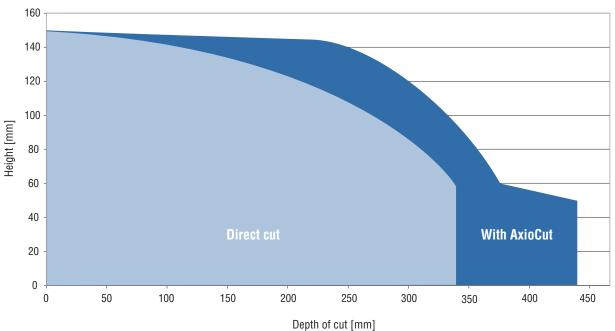
### Models

Minnels		
	Axitom-5	Axitom-5/400
Cutting speifications		
Feed speed	0.05-5 mm/s / 0.002 -0.2 "/s	0.05-5 mm/s / 0.002 -0.2 "/s
Cutting length	0-400 mm / 0 -15.7 "	0-440 mm / 0 -17.3 "
Cutting table		
Width	591 mm / 23.3"	591 mm / 23.3"
Length	492 mm / 19.4"	492 mm / 19.4"
T-slots	12 mmT-slot with exchangeable T-slot plates	12 mmT-slot with exchangeable T-slot plates
Optional		
Table	Choose between: Fixed X-table XY-table	XY-table
Cut-off wheel		
Size	350 mm / 14"	400 mm / 16"
Arbor size	32 mm / 1.26"	32 mm / 1.26"
Rotational speed	1950 rpm	1950 rpm
Cutting capacity	Dia. 125 mm / 4.9", 110 x 245 mm / 4.3" x 9.6"	Dia. 150 mm / 6", 125 x 290 mm / 4.9" x 11.4"
Height adjustment	0-200 mm / 7.9"	0-175 mm / 6.9"
Features		
OptiFeed	Yes	
Cutting mode	ExciCut, Direct, AxioCut	ExciCut, AxioCut
Methods	10	
Database	Yes	
Laser (Class 2)	No	Optional
Motor power	5.5-6.5 kW S1 7.7-9.2 kW S3 11-13 kW Max	7.5-9 kW S1 10.5-12.6 kW S3 12.8-15 kW Max
Controls	Rotary Knob	
Recirculation cooling tank	Accessory Coolimat-2000 or Cooli System 4	Accessory Coolimat-2000 or Cooli System 4
Exhaust	80 mm / 3.15" dia.	
Noise level	$L_{PA} = 75.2 \text{ dB}(A)$	LpA = 75.2 dB(A)
Surrounding temperature	5-40 °C / 41-104 °F	5-40 °C / 41-104 °F
Humidity	35-85% RH	35-85% RH
Supply		
Voltage / frequency / Power S1, S3 / Current, max.	Choose between:  3 × 200 V / 50 Hz / 5.5 kW, 7.7 kW / 59 A  3 × 200-210 V / 60 Hz / 5.5 kW, 7.7 kW / 56.5 A  3 × 220-240 V / 60 Hz / 5.5 kW, 7.7 kW / 45.8 A  3 × 380-415 V / 50 Hz / 5.5 kW, 7.7 kW / 28.6 A  3 × 380-415 V / 60 Hz / 5.5 kW, 7.7 kW / 26.0 A  3 × 460-480 V / 60 Hz / 6.5 kW, 9.2 kW / 26.6 A	Choose between: 3 x 380-415 V / 50 Hz / 7.5 kW, 10,5 kW / 32 A 3 x 380-415 V / 60 Hz / 7.5 kW, 10,5 kW / 32 A 3 x 460-480 V / 60 Hz / 9.0 kW, 10,5 kW / 32 A 3 x 200 V / 50 Hz / 7.5 kW, 10,5 kW / 64 A 3 x 200-210 V / 60 Hz / 7.5 kW, 10,5 kW / 66 A
Safety	In compliance with all relevant EU directives	
Dimensions and weight		
Width	1155 mm / 45.5"	1155 mm / 45.5"
Depth	1305 mm / 51.4"	1305 mm / 51.4"
Height	1745 mm/ 68.7"	1745 mm/ 68.7"
Weight	758 kg / 1670 lbs	758 kg / 1670 lbs

### **Cutting Capacity Axitom-5, 350 mm Disc**



### **Cutting Capacity Axitom-5/400, 400mm Disc**



### **Accessories and Cut-Off Wheels**

For your tailored sectioning solution, please choose from a wide range of accessories and cut-off wheels.



Cat. no.: 06316914

### Quick clamping tool for 12 mm T-slots, left.

For securing the workpiece on the left side of the cut-off wheel. Suitable for all machines with 12 mm T-slots. Complete with backstop. Jaw movement: 60 mm. Jaw height: 83 mm.



**Cat. no.:** 06316916

### Quick clamping tool for 12 mm T-slots, right

For securing the workpiece on the right side of the cut-off wheel. Suitable for all machines with 12 mm T-slots. Complete with backstop. Jaw movement: 60 mm. Jaw height: 83 mm.



Cat. no.: 05876928

### XL Quick clamping tool for 12 mm T-slots, left

For securing regular workpieces on left side of cut-off wheel. Complete with backstop and spanner. Jaw movement: 60 mm. Jaw height: 116 mm.



Cat. no.: 05876929

### XL Quick clamping tool for 12 mm T-slots, right

For securing regular workpieces on right side of cut-off wheel. Complete with backstop and spanner. Jaw movement: 60 mm. Jaw height: 116 mm.



Cat. no.: 06316908

### Base plate clamping tool, 12mm, left.

Jaw movement: 250 mm. Max. diameter of round workpieces: 62 mm. Complete with tools for installation in T-slots and grooved jaws.



**Cat. no.:** 06316909

### Base plate clamping tool 12 mm, right.

Jaw movement: 250 mm. Max. diameter of round workpieces: 62 mm. Complete with tools for installation in T-slots and grooved jaws.



**Cat. no.:** 06316903

### Pinch-reduction clamping tool 12 mm

Tool that reduces pinching of the cut-off wheel when cutting workpieces with internal stress. Complete set with two jaw blocks (left+right), back stops, and spanners.



**Cat. no.:** 05046904

Cat. no.: 05876936

### Vertical clamping tool for 12 mm T-slots

For clamping irregularly shaped workpieces on the cutting table.
Clamping height is adjustable up to 105 mm.
Complete with operating key and one flat clamping shoe.

### XL Vertical, T-slot 12mm

Vertical clamping tool with extended arm for use on large floor cut-off machines where maximum reach is required. Alternative to 12 mm vertical clamping tool with an extension arm for users who need reach on a regular basis.



Cat. no.: 05046912

### Chain spanner for 12 mm T-slots

For clamping irregularly shaped workpieces. Complete with anchor block and operating key. With 0.5 m chain.



Cat. no.: 05876916

### Rubber-coated jaw blocks for 12 mm T-slots

Set of two jaw blocks for optimum clamping of sensitive specimens, e.g. thin-walled tubes. For use with Quick clamping tools for 12 mm T-slots, left (06316914) and right (06316916).



Cat. no.: 06316910

### Rubber-coated jaws for base plate tools 10-12 mm

Set of two jaw blocks for optimum clamping of sensitive specimens. For use with Base Plate clamping tools for 10 mm and 12 mm T-slots, left (06316905, 06316908) and right (06316906, 06316909).



Cat. no.: 06316930

### Prism type jaws for base plate tools 10-12 mm

Set of two angled jaw blocks for optimum clamping of round and oval workpieces. For use with Base Plate clamping tools for 10 mm and 12 mm T-slots, left (06316905, 06316908) and right (06316906, 06316909).



Cat. no.: 05876931

### XL Grooved jaw blocks for 12 mm T-slots

Gives optimum grip when clamping samples with smooth surfaces. Clamping on both sides of the cut-off wheel is recommended. For use with XL Quick clamping tool (058769XX).



Cat. no.: 05876914

### Prism type jaw blocks for 12 mm T-slots

Set of two jaw blocks for optimum clamping of round and oval workpieces. For use with Quick clamping tool for 12 mm T-slots, left (06316914) and right (06316916).



Cat. no.: 05876918

### Grooved jaw blocks for 12 mm T-slots

Set of two jaw blocks for optimum clamping of regular workpieces. For use with Quick clamping tool for 12 mm T-slots, left (06316914) and right (06316916).



Cat. no.: 06316928

### Extended jaws for base plate tools 10-12 mm

Set of two jaw blocks for optimum clamping of small, regular specimens. For use with Base Plate clamping tools for 10 mm and 12 mm T-slots, left (06316905, 06316908) and right (06316906, 06316909).



Cat. no.: 05876930

### XL Prism type jaw blocks for 12 mm T-slots

For clamping of round/oval samples. Prism shape forces sample towards table, and so offers excellent grip. For use with XL Quick clamping tool (058769XX).



**Cat. no.:** 05876922

### Sliding rail kit incl. 12 mm vertical clamping device

12 mm vertical clamping device (05046904) on sliding rail for extended range (145 mm) and height (40 mm). Ideal for use with support blocks (05876901, 05876924). Complete with operating key, stop and one exchangeable flat swivel shoe. Max clamping height: 145 mm.



**Cat. no.:** 05046905

### Riser block for 12 mm T-slots

For elevating vertical clamping tool (05046904) when clamping high workpieces. To increase the clamping height by 74 mm.



Cat. no.: 05046924

### 0.5 m Extension chain

For use with Chain spanner (05046912). Including chain assembly set.



### Support block with base plate, for 12 mm T-slots

Turnable, horizontally and vertically adjustable support blocks. Height adjustment range: 20 mm. Used with Crowns for Support block.

Cat. no.: 05876901

### Extra Support block for 12 mm T-slots

Additional, adjustable support block for use with Support block with base plate.

Cat. no.: 05876923

### Support block for 12 mm T-slots

Turnable and vertically adjustable support block with 12 mm T-nut. Height adjustment range: 20 mm. Used with Crowns for Support block.

Cat. no.: 05876924

### **Crown for Support block**

60-80 mm 80-100 mm 100-120 mm **Cat. no.:** 05876902

Cat. no.: 05876903

Cat. no.: 05876904



Cat. no.: 05046906

Arm extension for vertical clamping tool.



**Cat. no.:** 05116911

### Swivel shoes for vertical clamping tool

Set of four multi-shaped swivel shoes for vertical clamping tool.



Cat. no.: 06316920

### Clamping set tool kit 12 mm

Universal tools for T-slot type cutting tables. For supporting and clamping of irregular shaped workpieces.



**Cat. no.:** 05876906

### T-slot turntable for 12 mm T-slots

0-90 degree turntable for angular cutting. For use with various 12 mm T-slot clamping tools. Table height 42 mm. Table size  $220 \times 205$  mm.



Cat. no.: 06316901

### Adjustable support for cylindrical parts

Can be used for both longitudinal and cross-sections. Easy to move and position on the cutting table. Can be adjusted for all different diameters.



Cat. no.: 06316902

### Adjustable stop for serial cutting

Precise setting for repetitive cutting. Easy to adjust. Delivered with ruler for precise adjustment.

Struers' cut-off wheels are designed for Struers' cut-off machines and cover the full range of materials that are met in materialographic applications. All Struers abrasive bakelite wheels have built-in compensation to changing wear characteristics. Axitom can be used with cut-off wheels diameter 350/400 mm / 14/16".

For more information about Struers' Cut-off Wheels, please see the brochure Cut-Off Wheels.

To find the perfect cut-off wheel for your job see the Cut-Off Wheel selection guide in the Cut-Off Wheel brochure.



Abrasive bakelite wheels with alumina or SiC grains, and a choice of fiber-reinforcement. Get smooth, reliable, burn-free surfaces for most metals and alloys.



Hexagonal abrasive bakelite wheels with alumina grains. Improve cooling with the characteristic 3D surface.



Premium abrasive bakelite wheels with hard, self-sharpening grains. Increase the number of cuts or cutting speed with the spiral-shaped, slim wheels.



Diamond and CBN wheels with the hardest abrasives. Get reliable, repeatable results in the toughest applications.

400 mm Cut-Off Wheels		
S0000101-417	X20A400C-417 Cut-Off Wheels (10 pcs)	For cutting of soft ferrous metals, steel tubes and small pieces (HV 80 - 400) and for cutting of medium soft ferrous metals.
\$0000102-417	X30A400C-417 Cut-Off Wheels (10 pcs)	For cutting of medium soft ferrous metals (< HV 300) and for general applications. Aluminum oxide. Resin bond.
S0000103-417	X40A400C-417 Cut-Off Wheels (10 pcs)	For cutting of medium hard ferrous metals (HV 200 - 500), stainless steel and general applications. Aluminum oxide. Resin bond.
\$0000104-417	X50A400C-417 Cut-Off Wheels (10 pcs)	For cutting of hard ferrous metals (HV 450 - 600). Aluminum oxide. Resin bond.
\$0000105-417	X60A400C-417 Cut-Off Wheels. (10 pcs)	For cutting of extra hard ferrous metals (> HV 600). Aluminum oxide. Resin bond.
\$0000106-417	X58A400C-417 Cut-Off Wheels. (10 pcs)	For high volume cutting of hard ferrous metals (HV 450-600). With spiral pattern. Ultra-hard Aluminum oxide abrasive. Resin bond.
\$0000107-417	X68A400C-417 Cut-Off Wheels. (10 pcs)	For high volume cutting of very hard ferrous metals (HV 400 - 800). With spiral pattern. Aluminum oxide. Resin bond.

See **Cooling Systems** and **Coolimat-2000** brochure for more info about recirculation units.



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