

A Revolution in Cutting Technology

**Powerful, high-capacity cutting machine,
designed for the production environment**

Extremely simple operation

Just two operating keys. No programming required

Unprecedented capacity and accessibility

Up to four different cutting modes

Two cutting tables

Fixed table and optional, moveable table

Laser straight edge for easy positioning

Unique technologies and features:

ExciCut - easy through the hardest workpieces

OptiFeed - intelligent feed control

AxioCut - cutting mode module

Variable cutting offset - flexible wheel positioning

Three operation modes - block non-essential controls

AxioWash* - automatic cleaning program to clean the inside of the machine

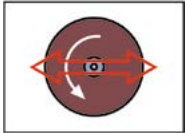
*) Patent EP 1965947B1



Effortless operation even wearing working gloves

ExciCut -for cutting the hardest materials

The Exotom-150 comes standard with the unique ExciCut feature. The technology was first introduced by Struers a decade ago, and appears on the Exotom-150 in a highly refined version. Through an oscillating movement of the cut-off wheel, the contact area between the wheel and the workpiece is kept at a minimum throughout the cutting process.



ExciCut is ideal for hardened materials and means faster cutting of standard materials. Since the contact area between sample and cut-off wheel constantly changes, cooling is greatly improved.

In turn, this means reduced risk of damage to the workpiece, and reduced work in the processes following the cutting.

Direct Cut -the classic cutting mode



For smaller samples and softer materials it might be an advantage to use the direct cutting mode where the cut-off wheel is fed through the workpiece in a linear movement.

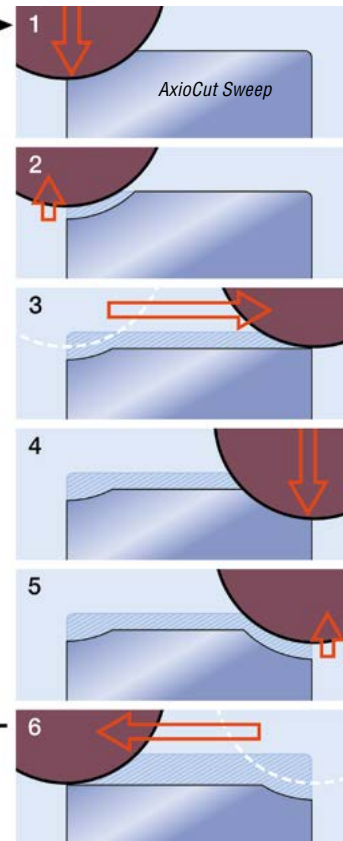
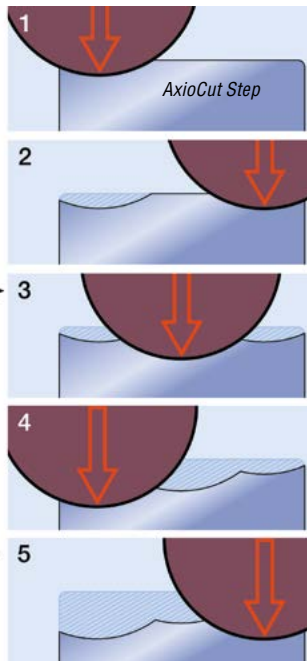
AxioCut -for extra large workpieces

For cutting of larger workpieces, additional 150 mm cutting capacity is available with AxioCut.



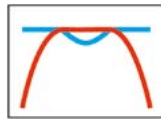
This feature allows cutting of work-pieces with a dimension of e.g. 100 x 450 mm (for other dimensions,

please refer to Cutting Diagram on page 5 of this brochure). The field-upgradable option includes two different cutting modes: Step and Sweep. Step cutting offers very fast cutting, whereas Sweep cutting offers fast cutting combined with better wheel economy.



OptiFeed -Protection and speed

Cutting of workpieces with uneven cross-section or composition, represents a great challenge to the operator. The risk of damage to the workpiece or the cut-off wheel is high. Bearing this in mind, Struers has developed the new OptiFeed principle,



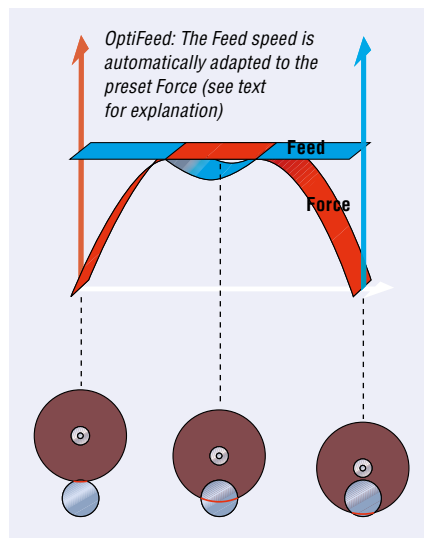
based on a preset maximum force limit. As the contact area (between workpiece and wheel, cf. below diagram) is getting larger, the force increases to maintain the preset feed speed. If the preset force limit is reached, the feed speed is automatically reduced to avoid damage.

When the cut-off wheel has passed the centre of the workpiece, the contact area is getting smaller again, and with it the resulting force. In turn, the feed speed is automatically increased to the preset maximum. Thanks to OptiFeed you will always cut through the work-piece at the fastest possible speed, within the set parameters - and without overloading the workpiece and the cut-off wheel.

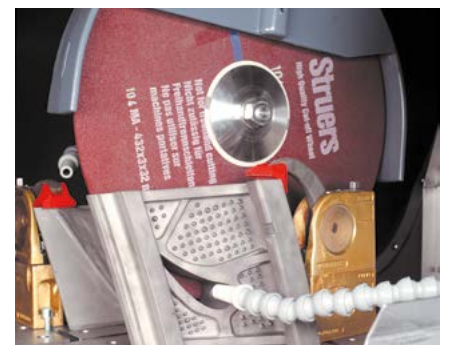
Controls of Unique Simplicity

Two simple keys combined with a large graphic display are incorporated on a swivelling control panel. With the multi-function knob, all cutting parameters are easily controlled even wearing working gloves. The joy-stick is used for fast and precise positioning of the cut-off wheel.

The side-mounted control panel is kept away from the machine for maximum safety and to avoid soiling of display and controls. Also the risk of slipping samples damaging the display is eliminated. The control panel can easily be moved if very long workpieces have to be placed in the cutting chamber.

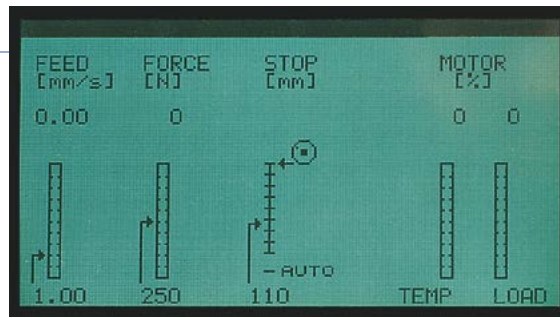


OptiFeed: The Feed speed is automatically adapted to the preset Force (see text for explanation)



Two flexible water jets for additional cooling. Ideal for hollow workpieces.

Single-level display:
Full control of cutting process +
motor information in same view



Large Cutting Chamber

The corrosion resistant cutting chamber is exceptionally spacious with its 600 x 564 mm cutting table, offering unrestricted access. Bulky workpieces are easily placed manually or using a forklift truck, since the cutting table is the highest point in the chamber. Maximum mounting flexibility is provided by multiple, bidirectional 12 mm T-slots. The powerful flushing gun is placed outside the cutting chamber for easy access and improved ease of use. Extra large windows and fully, indirect lightning, give an excellent, non-glare view of the cutting chamber.

A balanced mechanism ensures effortless opening and closing of the hood.

The Cutting Table

With Exotom-150 you can choose between a fixed cutting table or a moveable cutting table, which can be moved 150 mm in the X-direction. The scale on the positioning wheel has indications for every 0.1 mm, allowing for precise positioning of the workpiece. The moveable table allows cutting of parallel slices without having to reposition and reclamp the workpiece. The table on the left can be removed completely, which makes it possible to insert custom made clamping tools for special requirements.

Variable Cutting Offset

The horizontal position (cutting offset) of the cut-off wheel can be set manually. In the ExciCut and Direct Cut cutting modes, the cut-off wheel may be moved 10 mm towards the front and 60 mm towards the back of the cutting chamber. This allows for maximum flexibility when cutting difficult workpieces (e.g. turbine blades) and for clamping in general.

Easy Positioning

The two steel bands next to the cut-off wheel have markers displaying the cutting range for both direct cut and AxioCut. To facilitate positioning of the workpiece before cutting, Exotom-150 has a laser straight edge that marks exactly where the cut-off wheel will enter the workpiece.

Three Operation Modes

Particularly in an industrial environment with many users, operator errors may cause damage to machine and samples. To overcome this, non-essential controls may be blocked partly or fully by using the pass code-protected operation modes.

High-capacity Cooling

With the Exotom-150 you can choose between two different cooling systems, depending on the machine's workload:

- Coolimat-200 (with band filter unit)
- Coolimat-200 static filter

The band filter unit is recommended when the Exotom-150 is used for high sample throughput. Both systems can cater for up to 2 cutting machines and can be equipped with a magnetic filter.

AxioWash

We know from experience that maintenance and cleaning are two of the most difficult issues for the users of our equipment. Therefore we have now built an automatic cleaning function into Axitom. This pioneering cleaning function is called AxioWash (pat. pend.).

After the automatic cleaning is finished the user only has to clean the horizontal surfaces inside the chamber and the machine is 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.

AutoStop

After the workpiece is securely clamped and Start has been pressed, you can leave the machine unattended. OptiFeed makes sure that cutting is completely under control. With AutoStop, Exotom-150 automatically detects when the workpiece has been cut through, returns the wheel to its start position and stops all motors.

QuickPosition

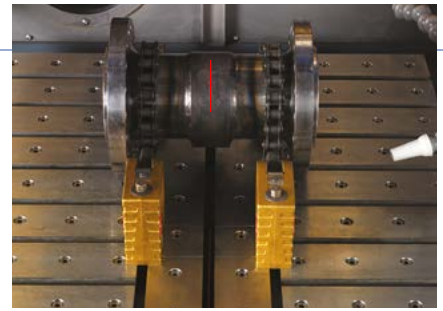
Positioning the cut-off wheel can be sped up dramatically. Simply push the joystick downwards and the cut-off wheel will speed towards the workpiece. On contact with the workpiece, the cut-off wheel stops automatically without harming workpiece or wheel.

After contact, the wheel is automatically retracted a little from the workpiece, to be ready for cutting. QuickPosition can be used both before and during cutting.



Two simple keys combined with a large graphic display are incorporated on a swivelling control panel

A laser straight-edge marks exactly where the cut-off wheel will enter the workpiece



Programmable Return Position

The return position of the cut-off wheel can be set to three different positions: Exotom-150 retracts the cut-off wheel to the top position, to the position where the cutting was started, or it lets the cut-off wheel stay in the cut. In this way, it is very easy to get convenient access to the workpiece or an extremely quick exchange when cutting uniform workpieces.

Electronic Monitoring

More than a dozen electronic sensors monitor the complete cutting process and all machine functions to ensure flawless cutting. Never has sectioning on a large cut-off machine been this safe.

Safety Features

Exotom-150 complies with international safety standards, and safety features include emergency stops and safety sensors for all machine functions and motors. The cutting motor cannot be started before the protection hood is closed, and after Start, the hood cannot be opened before the machine has stopped. The windows of the protection hood are made of impact resistant material.

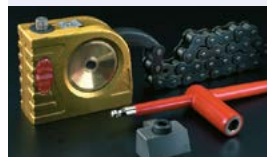
Cut-off wheels

A range of cut-off wheels for all ferrous and non-ferrous metals is available for Exotom-150. Diamond cut-off wheels are available for cutting of ceramic and mineralogical materials and sintered carbides.

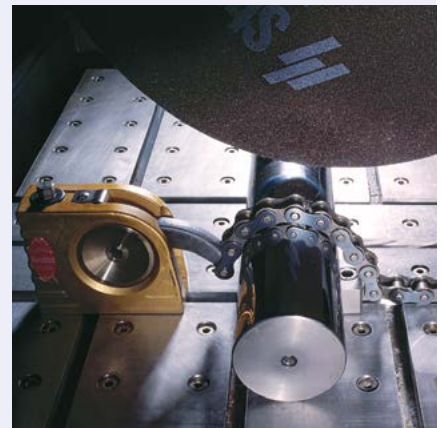
Application	Dimensions	Abrasive	Name
For cutting of extra hard ferrous metals (> HV 600).	432 x 3.0 x 32 mm	Al ₂ O ₃	60A43
For cutting of extra hard ferrous metals (> HV 600). Fibre reinforced.	432 x 3.0 x 32 mm	Al ₂ O ₃	62A43
For cutting of hard ferrous metals (HV 450-600).	432 x 3.0 x 32 mm	Al ₂ O ₃	50A43
For cutting of hard ferrous metals (HV 450-600). Fibre reinforced.	432 x 3.0 x 32 mm	Al ₂ O ₃	52A43
For cutting of medium hard ferrous metals (HV 300-450) and for general applications.	432 x 3.0 x 32 mm	Al ₂ O ₃	40A43
For cutting of medium soft ferrous metals (< HV 300) and for general applications.	432 x 3.0 x 32 mm	Al ₂ O ₃	30A43
For cutting of soft, non-ferrous metals (HV 30-300).	432 x 3.0 x 32 mm	SiC	10S43
For direct cutting of hardened steels	406 x 1.8 x 32 mm	CBN	B0C41
For direct cutting of sintered carbides and ceramics	350 x 1.5 x 32 mm 350 x 1.5 x 32 mm	Diamond Diamond	B0D35 MOD35
For mounted specimens and workpieces containing resin	350 x 1.5 x 32 mm	Diamond electroplated	E0D36

Clamping Tools

Struers offer a wide range of clamping tools for Exotom-150. Clamping requirements differ greatly, which is why Struers have chosen to supply Exotom-150 without any 'standard' clamping devices. Rather, the user can order exactly the clamping system matching his requirements. Please refer to separate brochure.



Struers chain spanner for large irregular samples.



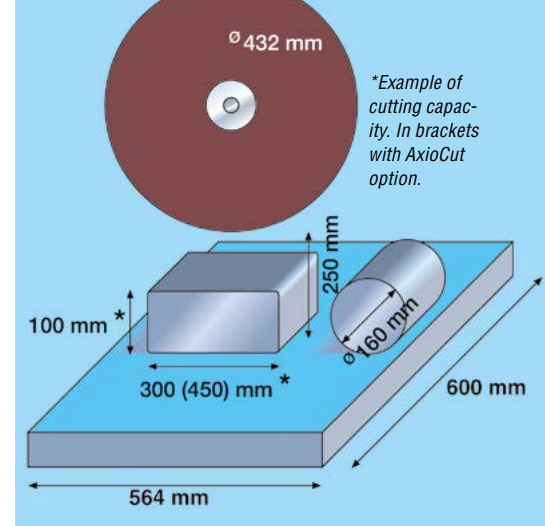
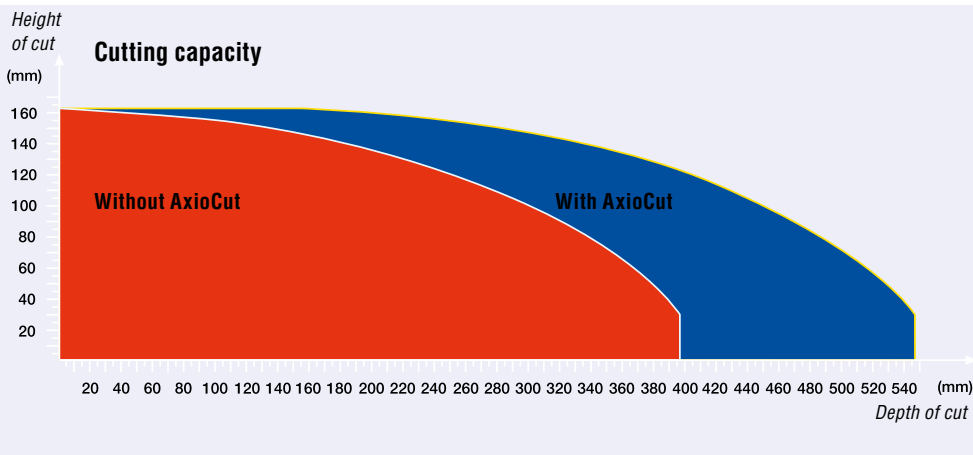
Coolimat-200 for Exotom-150, equipped with 200 l tank, band filter and Cooli-2 control unit.



Flushing gun for cleaning the cutting chamber.



Adjustable support blocks (turnable, horizontally and vertically adjustable), and vertical clamping tools (optional Arm Extension).



Technical data

Subject		Metric/International	US
Cutting Specifications			
Workpiece Dimensions (max.)	<i>Workpiece inside cutting chamber:</i>		
	Height	250 mm	10"
	Width	650 mm	25.6"
	Depth	550 mm	20"
	<i>Workpiece protruding cutting chamber*:</i>		
	Height	165 mm	6.5"
	Depth	360 mm	14.2"
Cutting Capacity **	Max. cutting diameter	160 mm	6.3"
	<i>Rectangular sample:*** (In brackets with AxioCut option)</i>		
	Height	100 mm (100 mm)	3.9" (3.9")
	Depth	300 mm (450 mm)	11.8" (17.7")
Physical Specifications			
Cutting Motor	Cutting power, constant [S1]	7.5 - 9.0 kW	10 - 12 HP
	Cutting power, intermittent [S3, 15%]	10.9 - 13.0 kW	14 - 17 HP
	Maximum power	15 - 18 kW	20 - 24 HP
Cut-off Wheel	Diameter x Thickness x Centre-hole	432 x 3 x 32 mm	17 x 0.12 x 1.26"
	Rotational speed (running idle)	1950 rpm	1950 rpm
Positioning & Feed	Positioning range (of cut-off wheel)	0 - 250 mm	0 - 9.8"
	Max. positioning speed	50 mm/s	2.0"/s
	Feed Speed range (adjustable in steps of)	0.05 - 5 mm/s (0,05 mm/s)	0.002 - 0.2"/s (0.002"/s)
	Cutting force	Max. 700 N	Max. 150 lbf
Cutting table	Width	2 x 297 mm	2 x 11.7"
	Depth	564 mm	22.2"
	T-slots	12 mm	0.48"
Dimensions and Weight	Height (closed/open hood)	1756/2300 mm	69/90.5"
	Width (ex/including control panel)	1050/1350 mm	41.3"/53.1"
	Depth	1500 mm	59.1"
	Weight	820 kg	1810 lbs
X-table (Optional)	Positioning range	0-150 mm	0-5.9"
Coolimat-200 bandfilter (Optional)	Tank volume	200 l	53 gallons
	Approx. flow	60 l/min (large pump)	13.2 gallons/min (large pump)
Cooling System 2 for Exotom-150	Tank volume 150 l / 33 gallons	Approx flow 60 l/min (large pump)	13.2 gallons/min (large pump)
Environment			
Noise level	78 dB(A) measured at idle running, at a distance of 1.0 m/39.4" from the machine.		
Electrical Data			
Voltage/Frequency	3 x 200 V / 50 Hz / Max. power 15 kW / Max. load 69 A		
	3 x 200-210 V / 60 Hz / Max. power 15 kW / Max. load 67 A		
	3 x 220-230 V / 50 Hz / Max. power 15 kW / Max. load 60 A		
	3 x 220-240 V / 60 Hz / Max. power 15 kW / Max. load 55 A		
	3 x 380-415 V / 50 Hz / Max. power 15 kW / Max. load 34 A		
	3 x 380-415 V / 60 Hz / Max. power 15 kW / Max. load 32 A		
	3 x 460-480 V / 60 Hz / Max. power 18 kW / Max. load 34 A		

*Requires accessory box-extensions.

**Projected cutting capacity with new cut-off wheel. Actual cutting capacity depends on sample material, cut-off wheel and clamping technique.

***Example of cutting capacity. Please refer to Cutting Diagram above.

Struers' equipment is in conformity with the provisions of the applicable International Directives and their appurtenant Standards.
(Please contact your local supplier for details)



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Specifications

Cat. no:

Exotom-150, X-table and AxioCut

050468xx

Automatic cut-off machine with OptiFeed, AxioCut, ExciCut and Direct Cut. 7.5-9.0 kW (10-12 HP). For 432 mm (17") cut-off wheels. Moveable cutting table for parallel cuts with 12 mm T-slots. Recirculation cooling unit (Coolimat-200 061611xx or Coolimat-200 static filter 061612xx), quick-clamping devices (05876911+05876912), and vertical clamping system (05046904) respectively, are ordered separately.

Exotom-150, AxioCut

050467xx

Automatic cut-off machine with OptiFeed, AxioCut, ExciCut and Direct Cut. 7.5-9.0 kW (10-12 HP). For 432 mm (17") cut-off wheels. Fixed cutting table with 12 mm T-slots. Recirculation cooling unit (Coolimat-200 061611xx or Coolimat-200 static filter 061612xx), quick-clamping devices (05876911+05876912), and vertical clamping system (05046904) respectively, are ordered separately.

Exotom-150, X-table

050466xx

Automatic cut-off machine with OptiFeed, ExciCut and Direct Cut. 7.5-9.0 kW (10-12 HP). For 432 mm (17") cut-off wheels. Moveable cutting table with 12 mm T-slots for parallel cuts. Recirculation cooling unit (Coolimat-200 061611xx or Coolimat-200 static filter 061612xx), quick-clamping devices (05876911+05876912), and vertical clamping system (05046904) respectively, are ordered separately.

Exotom-150

050465xx

Automatic cut-off machine with OptiFeed, ExciCut and Direct Cut. 7.5-9.0 kW (10-12 HP). For 432 mm (17") cut-off wheels. Fixed cutting table with 12 mm T-slots. Recirculation cooling unit (Coolimat-200 061611xx or Coolimat-200 static filter 061612xx), quick-clamping devices (05876911+05876912), and vertical clamping system (05046904) respectively, are ordered separately.

Accessories

Coolimat-200

with band filter. Capacity 200 litres

06161116

Coolimat-200 static filter

with static filter Capacity 200 litres

06161216

Filter paper for Band Filter Unit

Replacement filter paper for band filter unit. Width: 51 cm, Length: 500 m

06166901

Cooling System 2 for Exotom-150

Internal static filter. With 150 l tank, Large pump, Cooli-1, XL filter bag with adapter

057674xx

Moveable Cutting Table

Moveable cutting table for mounting on Exotom-150. Positioning range: 150 mm. Movement in With 12 mm slots. Mounted on left hand side in cutting chamber

05046916

Replacement Stainless Steel Bands

For Exotom-150

60 x 225 mm. Set of 2

05046919

60 x 564 mm. Set of 2

05046920

Quick clamping tool for 12 mm T-slots.

Complete with backstop.

Left side

05876911

Right side

05876912

Vertical Clamping System for 12 mm T-slots

For clamping irregularly shaped workpieces. Clamping height up to 92 mm. Complete with operating key and one flat clamping shoe

05046904

Swivel Shoes for Vertical Clamping System

For clamping irregularly shaped workpieces. Set of four multi-shaped swivel shoes

05116911

Riser Block for 12 mm Vertical Clamping System

For elevating Vertical Clamping System when clamping high workpieces. To increase clamping height by 74 mm

05046905

Arm Extension for 12 mm Vertical Clamping System

For extending arm of Vertical Clamping System

05046906

Chain Spanner for 12 mm T-slots

For clamping irregularly shaped workpieces. Complete with anchor block and operating key

05046912

Struers' products are subject to constant product development. Therefore, we reserve the right to introduce changes in our products without notice.

Please refer to separate brochure for Struers' comprehensive range of clamping tools.

