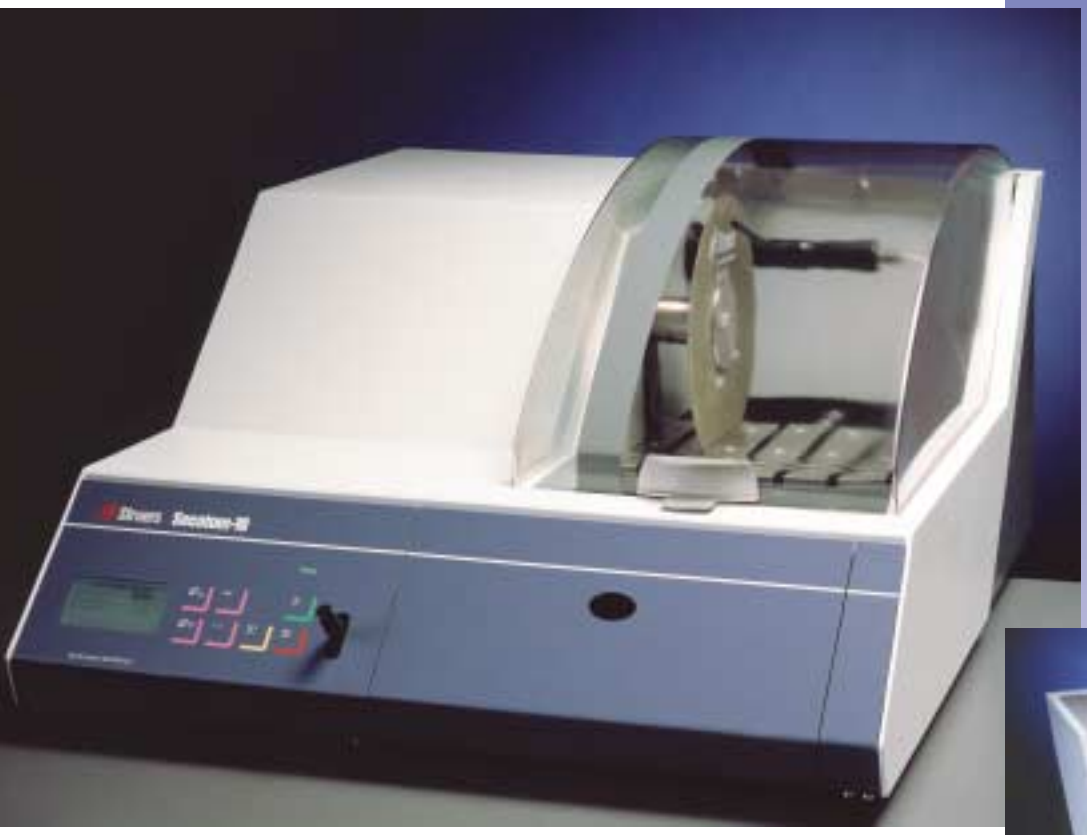
Secotom

Struers



Secotom-10
Precision cut-off machine for cutting of larger samples

Secotom-1
Cut-off machine for cutting of PCBs and other thin plates

To fulfil the need for a user-friendly precision cut-off machine specifically designed for precision cutting of larger samples, Struers introduces Secotom-10

Precision, Flexibility and User Friendliness - all in one

Features - Secotom-10:

- Very user-friendly and easy to operate - no programming required
- Spacious cutting chamber for optimal accessibility
- Large, movable cutting table allows cutting of larger and deeper samples
- Fast positioning with a joystick saves time
- Height adjustment of cut-off wheel allows for easy compensation for wheel wear
- OptiFeed ensures the fastest possible cutting speed within the set parameters
- Variable cut-off wheel speed provides optimal cutting speed with different wheel types and sizes
- Adjustable cutting length and AutoStop lets you attend to other tasks while the machine is working
- Large selection of clamping tools and specimen holders provides maximum clamping flexibility
- Positioning accuracy of 5 µm
- Optional: Manual cutting table for cutting PCBs

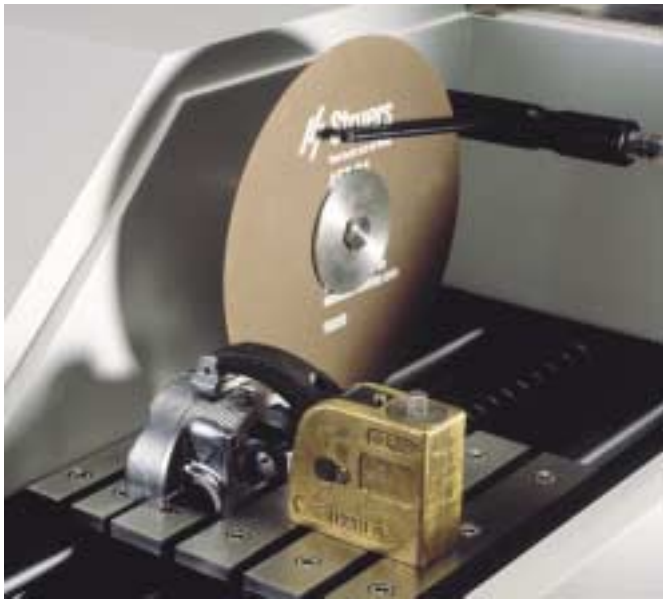
Secotom-10 is a high performance table-top cut-off machine, which successfully combines the latest precision cutting technology with flexibility and user-friendliness.

Application areas:

Secotom-10 performs precise and deformation-free cutting of:

- Metals
- Ceramics
- Composites
- Sintered carbides
- Electronic components
- Crystals
- Biomaterials
- Minerals

Secotom-10



Struers vertical clamping device on the movable cutting table of Secotom-10

Cutting larger samples
One of the major features of Secotom-10 is its flexibility with regard to sectioning samples larger than previously possible in a precision cut-off machine. The cutting chamber is provided with a movable cutting table (196 x 184 mm / 7.7" x 7.2") made of corrosion resistant cast aluminium and fitted with a top surface of stainless steel bands. These steel bands are easily exchanged if damaged or worn.

By moving the cutting table instead of the cutting wheel, Secotom-10 cuts larger and deeper samples up to 60 mm diameter or 150 x 160 mm / 2.3" dia. or 6.2" x 2". Maximum clamping flexibility is provided by multiple 8 mm T-slots, which allow a wide range of clamping tools to be used.
Secotom-10 is the most universal precision cut-off machine in the Struers line.

Easy-to-use
Secotom-10 is very user-friendly. The machine is operated from a touch pad on the ergonomically designed, slanting front panel. Parameters for positioning and cutting are presented on the large graphic display. No programming is necessary - all parameters are displayed automatically and can be monitored throughout the process.

Fast positioning with a joystick
The joystick allows fast manual positioning of the sample saving set-up time. Simply push the joystick upwards and the cutting table will move towards the wheel. The speed of the cutting table varies according to how much pressure you put on the joystick. This enables fast and precise positioning of the workpiece.

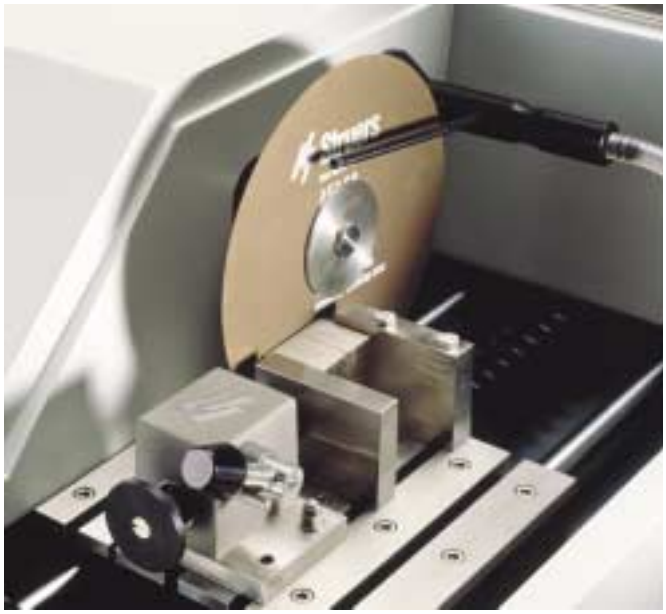
Height adjustment of the cut-off wheel
The height of the cut-off wheel (in relation to the cutting table) can be adjusted in a range of 40 mm. This enables the use of a large variety of cut-off wheel sizes, and makes it easy to compensate for wheel wear. In addition, it eliminates the use of shims when the specimen is clamped directly on the cutting table.

OptiFeed - intelligent feed control
The feed speed can be pre-set and controlled in the range of 0.005 to 3 mm/sec. This wide range allows even the most delicate samples to be cut. If the feed speed is set too high, resulting in motor overload, OptiFeed automatically reduces the feed speed to an appropriate value. As soon as the load on the motor is reduced again, the feed speed is increased to the pre-set level.

Cutting workpieces with an uneven composition represents a great challenge to the operator. The risk of damage to the work-

The large graphic display of Secotom-10

Height adjustment of the cut-off wheel -one of the major advantages of Secotom-10



Struers quick-clamping device on the movable cutting table

piece or the cut-off wheel is high. As the contact area between the workpiece and wheel gets larger, the force increases to maintain the pre-set feed speed. This may overload the machine, but thanks to OptiFeed, the feed speed is automatically reduced.
When the contact area gets smaller again, the feed speed is automatically increased to the pre-set maximum.

Adjustable cutting length and AutoStop
On Secotom-10 the cutting length can be pre-set between 0-190 mm and adjusted in steps of 1 mm. Or you can use the AutoStop function, which automatically detects when the workpiece has been cut through, returns the cutting table to its start position and stops the motor. This gives you the freedom to attend to other tasks while the machine is cutting.

Read-out of load
The load on the cutting motor can be monitored throughout the process on the display on the front panel of Secotom-10.

All types of cut-off wheels from 75-200 mm diameter can be used on Secotom-10

Variable cut-off wheel speed
The cut-off wheel speed on Secotom-10 can be varied from 300 rpm to 5000 rpm in 100 rpm increments. This enables a more accurate choice of wheel speed for different cut-off wheel types and sizes.

Cut-off wheels
All types of cut-off wheels from the size of 75-200 mm, including abrasive wheels, can be used on Secotom-10. Struers offer a large variety of diamond, CBN, Al_2O_3 and SiC cut-off wheels covering all possible applications.

Different flange sizes
Two additional flange sizes - 42 mm and 110 mm diameter - are available. This makes it easier to choose the correct flange in relation to different cut-off wheels, depending on whether you want maximum support of the wheel or maximum cutting capacity.

Clamping tools
Struers quick-clamping device is particularly useful for clamping regularly shaped workpieces. For irregularly shaped workpieces or when you need to position the cut at a specific angle, the verti-

The stand for manual positioning with one of the specimen holders from the Accutom series

A wide range of specimen holders can be used on Secotom-10

cal clamping system is especially well-suited.

Positioning accuracy of 5 µm
The stand for manual positioning with a built-in micrometer allows precise positioning of the specimen in steps of 5 µm. This enables the cutting of plane-parallel slices in a well-defined thickness. The total lateral movement of the clamping tool is 33 mm.

Sample rotation
The optional rotating stand increases the Secotom-10's capacity even further. Sample rotation reduces the contact area between the cut-off wheel and the sample to a minimum. This decreases frictional heat and allows fast cutting of extremely hard materials. In addition, it increases the machines capacity by enabling you to cut larger samples – up to 100 mm diameter.
Both the stand for manual positioning and rotation are used together with specimen holders with dovetail plates.

Specimen holders
A large variety of specimen holders can be used with Secotom-10. All specimen holders are provided with a dovetail plate, which allows the sample to be clamped into the specimen holder outside the cutting chamber; it is then easily inserted into the dovetail fixture of the stand. Struers offers a comprehensive selection of specimen holders.

Recirculation cooling unit
The recirculation cooling unit ensures a constant low temperature during cutting, and an efficient removal of cutting debris. The coolant is applied to both sides of the cut-off wheel, and tracks with the wheel for long cuts. For easy maintenance the coolant hose can be used as a cleaning hose and the recirculation tank can be cleaned without removing the cut-off wheel.

High safety standards
Secotom-10 complies with international safety standards. The cutting process cannot be started until the cover has been closed completely. This provides maximum safety for the operator, while inserting and positioning the sample. After the start button has been pressed, the cover is locked mechanically and cannot be opened until the cut-off wheel has stopped.

Cutting certain materials may produce both harmful and unpleasant fumes. Secotom-10 is prepared for direct connection to an external exhaust system, in line with our general recommendation to install an exhaust from the cutting chamber.

Accessories

Large manual cutting table with built-in illumination
The transparent cover of Secotom-10 can easily be removed and replaced by a large manual cutting table, which enables cutting of PCBs. To make positioning of the PCB as easy and precise as possible, the manual cutting table is illuminated from below.

Clamping tools
- Stand for manual positioning, with digital read-out. To be used together with specimen holders with dovetail
- Stand with rotation or oscillation, for manual positioning. To be used together with specimen holders with dovetail
- Quick-clamping device for 8 mm T-slots
- Vertical clamping system for 8 mm T-slots

Specimen holders
- Three jaw-chuck for easy clamping and centering of round samples.
- All the specimen holders with dovetail plate from the Accutom programme can also be used on Secotom-10 with a stand.

Manual dresser
Secotom-10 is equipped with a manual dresser for dressing of diamond or CBN cut-off wheels while the machine is running. In this way, the cutting ability is improved and thereby also the cutting result.

Secotom-1

New cut-off machine for manual cutting of PCBs

Features - Secotom-1:
- Large cutting table with built-in illumination
- Very easy to operate

Secotom-1 has been designed for manual cutting of PCBs and similar applications. With the large cutting table and the easy to adjust guide rail, PCBs of all different shapes and sizes can easily be sectioned for sample preparation.

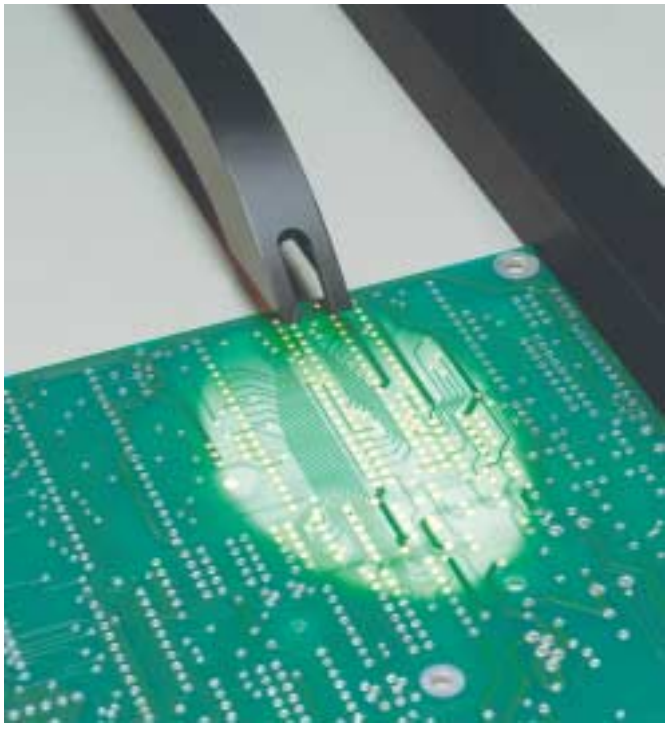
Secotom-1 can also be used for sectioning all other types of thin plates of materials, which can be cut with a resin or metal-bonded diamond cut-off wheel. This could be ceramic sheet or plate material, tiles or other glass or carbon fibre reinforced materials.

Easy to operate
Secotom-1 is very easy to operate. As soon as the start button is pressed the light in the cutting table is switched on and the cut-off wheel starts rotating. The PCB can then be positioned in front of the cut-off wheel so that the cut can be performed exactly where necessary.

Easily adjustable guide rail
The guide rail is effortlessly adjusted to the left or right and allows the PCB or other sample material to be moved exactly parallel to the cut-off wheel.

Illuminated cutting table
To make positioning of the PCB as easy and precise as possible, the manual cutting table is illuminated from underneath. This allows very small holes in the PCB or even the copper conductor paths to be identified through the PCB.

Built-in wheel cooling
Secotom-1 has a built-in wheel cooling system, which ensures a constant low temperature during the cutting process, thus avoiding damage of the sample surface. At the same time the water holds on to the particles created during cutting, reducing the risk of inhalation.



Illumination from below - makes positioning easy and precise

Technical data

	Secotom-10	Secotom-1
Cutting motor:	800 W	800 W
Cut-off wheel sizes:	75-203 mm / 3-8" dia.	203 mm / 8"
Dimensions and weight:	Height: 356 mm / 14" Width: 610 mm / 24" Depth: 740 mm / 29" Weight: 54 kg / 119 lb	Height: 335 mm/13.2" Width: 575 mm/22.6" Depth: 735mm/28.9" Weight: 46 kg/101 lb
Rotational speed:	300-5000 rpm (in steps of 100 rpm)	2800 rpm at 50 Hz 3400 rpm at 60 Hz
Cutting power:	800 W	800 W
Cutting table dimensions:	Width: 196 mm / 7.7" Length: 184 mm / 7.2" T-slots: 8 mm	
Positioning range of cut-off wheel:	0-40 mm up/down	
Feed speed:	0.005 - 3 mm/s (in steps of 0.005 mm)	
Cutting length:	0-190 mm (in steps of 1 mm)	17 mm high
Cutting capacity:	60 mm dia. or 160 x 50 mm / 2.3" dia. or 6.2" x 2"	
Recirculation cooling unit:	Contents: 3.8 l Flow: 800 ml/m	
Safety standards:	Machinery Directive (MD) 89/392/EEC, 91/368/EEC, 93/44/EEC EMC-Directive (EMC) 89/336 EEC Low voltage Directory (LVD): 73/392/EEC	UL508; NFPA 70: 1996; EN 60204-1: 1997 (VDE 0113) / IEC204-1; EN 50081-1: 1992; EN 50082-2: 1997.

Specifications

Secotom-10
Table-top, precision cut-off machine with movable cutting table and variable speed. Automatic feeding with electronic control of feed speed. Motorized positioning system and digital read-out. Complete with recirculation cooling unit, additive for cooling fluid (ADDUN), flange set 65 mm dia.
Cut-off wheels, additional specimen holders and clamping tools are ordered separately.

Secotom-1
Cut-off machine for manual cutting. Complete with cutting table with built-in illumination. Cut-off wheels have to be ordered separately.

Accessories, Secotom-10

Specification	Code
Clamping Tools	
Stand for manual positioning,with digital read-out. To be used together with specimen holders with dovetail	SECMA
Stand with rotation or oscillation, for manual positioning. To be used together with specimen holders with dovetail	SECRO
Quick clamping device	SECQU
Vertical clamping device	SECVE
Dresser	
Dressing unit	SECAF
Manual cutting table	
Manual cutting table for sectioning of PCB or similar workpieces	SECTA
Specimen holders	
Three jaw-chuck	SECLO
For general use. Vice type with max. opening 60 mm	CATSI
For round or square specimens. Teardrop type with max. opening ø 40 mm / ø 1½"	CATFF
For round or square specimens. Teardrop type with max. opening ø 25 mm / ø 1"	CATEL
For irregular specimens, with 7 screws. Max. width 40 mm / 1½"	CATTY
With goniometer	CATNI
For adhering specimens	CATPE
With ceramic vacuum chuck for thin sections	CATAP
For small specimens. Vice type	CATAN
Double parallel vice	CATAL
Joints to be mounted between the dovetail and the specimen holder	
Tilting joint with max. angle ±10°	CATJO
Angling joint with max. angle +30/-90°	CATJA
Base Plate	
With dovetail. For mounting of other types of specimen holders	CATFU
Flange sets	
Set of flanges, 42 mm dia.	SECFS
Set of flanges, 110 mm dia.	SECFL
Steel bands	
Replacement stainless steel bands, set of 2	SECSB

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

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