

# Discotom-60/-65



**Discotom-60/-65 offers you a spacious cutting table and maximum user-friendliness, allowing for easy clamping and sectioning of your large and irregular workpieces**



## **The Discotom-60/-65 successfully combines the latest cutting technologies with unprecedented flexibility and user-friendliness**

- Designed for 300 mm cut-off wheels and equipped with a large cutting table of 435 x 265 mm (wxd)
- Versatile automatic and manual cutting machine in one – offering exceptional flexibility
- Large display and extremely simple operation by joystick and turn/push knob
- Automatic Feed Speed Control for fast cutting of hard materials without risk of damaging wheel or sample
- Programmable stop offering three different Stop Modes
- Variable rotational speed option for optimum cutting, and cutting of hard and soft materials without changing cut-off wheel
- Powerful illumination of cutting chamber for easy clamping and cutting
- Corrosion resistant cutting chamber for a long product lifetime



The cutting table is provided with 10 mm T-slots allowing various clamping tools to be used



## Extended cutting capacity

The Discotom-60/65 allows for easy clamping and sectioning of all metallographic samples with a diameter of up to 105 mm (4.1"). Using automatic cutting, samples of e.g. 160 mm depth x 65 mm height or 178 mm depth x 35 mm height can be cut. It is possible to cut samples as long as 435 mm in automatic mode. Please refer to the cutting capacity diagram, which shows the capacity for automatic cutting. If manual and automatic cutting are used in combination, the capacity increases significantly.

Thus, when operated automatically as well as manually, Discotom is offering exceptional flexibility.

## Save time by Automatic Feed Speed Control

The unique Automatic Feed Speed Control does not just reduce feed speed, but is also capable of testing a preset feed speed after a motor overload, and resume cutting using this speed. In other words, feed reduction is done only as and when absolutely necessary, meaning that no time is wasted.

If, during testing, the feed speed does not cause a second motor overload, cutting will continue at the pre-set feed speed. If, instead, cutting fails a third time, the feed speed will be reduced by 20% at which

cutting will resume. This process will repeat itself until the feed speed is reduced to 10% of the pre-set value.

### The optimum feed speed

When the operator has found the optimum feed speed for a particular workpiece he or she can cut similar workpieces, without any problems. The process can be tracked on the Motor Load and Feed Speed bars on the display.

## Programmable stop

Discotom-60/65 features three different Stop Modes for fast and easy cutting: AutoStop, Absolute Stop Position and Relative Stop Position.

### AutoStop

Cutting stops when the sample has been cut through.

### Absolute Stop Position

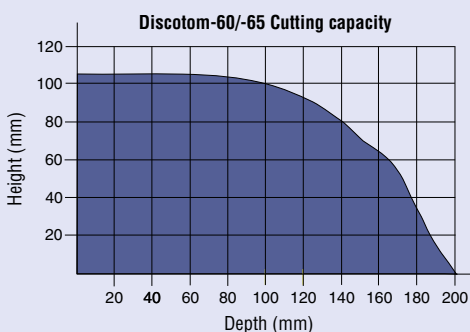
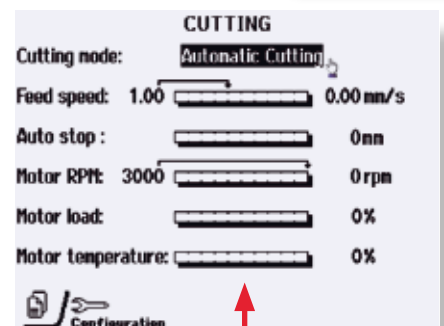
Cutting stops at a pre-set position counted from zero position where the table is at the very front of the cutting chamber. The positioning range is 0-200 mm.

### Relative Stop Position

Cutting stops at a position relative to the position where cutting starts. Thus, after entering the approximate sample size, the cutting process will stop immediately after the sample has been cut through. The positioning range is 0-200 mm.

## Maximum user-friendliness

Discotom-60/65 is equipped with a large display and a joystick-controlled cutting-table. Cutting parameters and cutting mode are fast and easily selected via the turn/push-knob.



The Recirculation Cooling System extends the lifetime of the cooling water, and effectively removes swarf (option).



Discotom-60/65 is equipped with a large easy-to-read display and user-friendly turn/push knob and joystick.

Optional table unit



Parallel cutting table (option) for cutting of multiple slices.

### Graphic display

The large LCD display permits the graphic display of a lot of information in an easy-to-read fashion:

#### Cutting mode

The top bar lets the user select between Automatic Cutting (with moving cutting-table) and Manual Cutting (manually moving the cut-off wheel into the sample).

#### Feed Speed bar

The Feed Speed bar presets the Feed Speed. The Automatic Feed Speed Control may interfere on this preset speed as and when necessary.

#### Rotational speed (rpm)

On Discotom-65 the user can select a spindle speed between 1000 and 3000 rpm. By changing the spindle speed, the properties of the cut-off wheel change. In effect, one cut-off wheel can be used for a wide range of materials, wasting no time changing wheels.

Ordinary SiC and Al<sub>2</sub>O<sub>3</sub> wheels get 'harder' with higher spindle speeds, and vice versa. The benefit of the higher speed is that the wheel wears at a slower rate. At the same time, the workpiece becomes more prone to heat damage that is countered by reducing feed speed. Using a slower spindle speed, the same wheel becomes softer, and capable of cutting through harder materials, with less risk of workpiece damage. The downside is increased wheel wear.

Thus, by adjusting the spindle speed, the user is in control of the cutting properties of the wheel as well as the wheel wear.

#### Stop position

Pop-up menu for choice of 3 different ways of programming the stop. Please refer to separate section, called Programmable Stop.

#### Motor Load bar

The load bar indicates the load on the cutting motor. The load bar range is 0-200%.

### Effective cooling during cutting

Discotom-60/-65 should be configured with the Cooling System-5, containing a 100 litre tank and a small pump. Choice of control unit (Cooli-1/-3/-5) depends on required filter type and/or whether Cooli accessories are required.

For intensive use, and for materials generating a lot of swarf, we always recommend the use of bandfilter, which requires either the Cooli-3 or -5 control unit. Otherwise, the static filter will suffice. For easy configuration, the Cooling System includes all the necessary elements. The complete circulation unit will fit into the practical table unit, 05116916, (specifications overleaf).

### Built-in flush hose for cleaning

Discotom comes with an external flushing hose. The waterflow is adjusted directly on the watergun.

### High level of safety

The Discotom-60/-65 has an electric, dynamic motor which allows to stop the cutting motor within a few seconds. The safety lock, which ensures that the operator cannot be injured by a rotating cut-off wheel, will open for access to the cutting chamber as soon as a sensor detects that the cut-off wheel is not rotating. During cutting, the protection guard is locked. If the protection guard is forcibly opened, the cut-off wheel will immediately stop spinning.

For cutting of very long workpieces which cannot fit into the cutting chamber, an opening is made in the left side wall, which is accessed via a 'tunnel' on the outside. This effectively prevents anybody from being harmed on the cut-off wheel. The tunnel is offered as an option.

### A long product lifetime

The top of the cutting table is fitted with stainless steel bands which are very resistant to corrosion. If damaged, the steel bands are easily exchanged.



Struers cut-off wheels are especially designed for Struers machines, taking into consideration the most recent developments in wet cutting techniques.

### Rotational Speed Settings using 40A30 Cut-off wheel

Metalog Guide Description	Tested Material	Hardness HV	Speed RPM
Non-ferrous soft metals	Aluminium	50-110	3000
Very ductile metals	Stainless steel	220	2200
Medium soft ferrous metals	UHB IMPAX Cold work tool steel	300	2200
Medium hard ferrous metals	UHB IMPAX Cold work tool steel	480	2000
Hard ferrous metals	UHB ARNE Cold work tool steel	750	1750

## SPECIFICATIONS

### Discotom-60/-65

Automatic cutting machines. Automatic feed with electronic control of feed speed. Manual operation possible. For 300 mm (12") cut-off wheels. Cutting table with 10 mm T-slots. 4.0 kW (5.4 HP) motor. Recirculation cooling unit, clamping devices and table unit are ordered separately.

### Discotom-60

Cat.no:	Voltage:
05906129	3 x 200-210 V / 50-60 Hz
05906135	3 x 220-230 V / 50 Hz
05906136	3 x 220-240 V / 60 Hz
05906146	3 x 380-415 V / 50 Hz
05906154	3 x 460-480 V / 60 Hz

### Discotom-65

Cat.no:	Voltage:
05916135	3 x 220-230 V / 50 Hz, with EU cable
05916136	3 x 200-240 V / 50-60 Hz, with UL cable
05916146	3 x 380-415 V / 50-60 Hz, with EU cable
05916154	3 x 460-480 V / 60 Hz, with UL cable

## TECHNICAL DATA

Subject	Specification
Cut-off wheel size	300 mm / 12"
Cutting motor	Constant cutting power (S1): 4.0 kW / 5.4 HP Intermittent cutting power (S3): 4.7 kW / 6.3 HP
Rotational speed	Discotom-60: 2860 rpm at 50 Hz, 3415 rpm at 60 Hz Discotom-65: 1000-3000 rpm at 50/60 Hz
Cutting Table w x d Cutting table movement	435 mm x 265 mm (17.1" x 10.4") 200 mm (7.8")
Cutting capacity	Ø 105 mm (4.1") 160 mm at 65 mm height 120 mm at 90 mm height
Recirculating cooling unit, 05766xxx, (option)	100 l (26.4 gallons) tank volume 42 l/min (11 gallons/min) flow at 0.2 bar
Dimensions w x h x d	700 mm x 795 mm x 750 mm 27.5" x 31.3" x 29.5"
Table unit, 05116916 (option) Dimensions w x h x d	900 mm x 750 mm x 800 mm 35.4" x 29.5" x 31.5"
Weight	171 kg (377 lbs)
EU-directives	98/37/EEC - Safety of Machinery 73/23/EEC - Low Voltage Directive 89/336EEC, 92/31/EEC, 93/68/EEC - EMC Directive
Dynamic Balancing	Max. admissible unbalance Uper according to ISO 1940/1, Balance Quality Grade G6.03: Uper = 2 gmm/kg = 110 gmm.
Noise Level	Approx. 67 dB(A) during cutting, at a distance of 1.0 m/39.4" from the machine.

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

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

## Accessories

### Recirculation System-5

With 100 l water tank (05766905), Small pump (05766xxx), 100 l static filter\* (05766907) and Cooli-1\* control unit (05761116)

Cat.no:	Voltage:
05766816	1 x 100 V / 50 Hz
05766822	1 x 220 V / 50 Hz
05766823	1 x 120 V / 60 Hz
05766824	1 x 240 V / 60 Hz
05766916	1 x 100-120 V / 50/60 Hz CSA

\*) For intensive use, bandfilter (05766901) and Cooli-3 (05761316) are required.

### Table unit

For Labotom, Discotom and Unitom. With compartment for recirculation cooling unit. Width: 900 mm, depth: 750 mm, height: 800 mm.

Cat.no: 05116916

### Quick-clamping tool for 10 mm T-slots, Left

For securing the workpiece. Complete with back stop. To be mounted on the left-hand side of the cut-off wheel.

Cat.no: 05876909

### Quick-clamping tool for 10 mm T-slots, Right

For securing the work piece. Complete with back stop. To be mounted on the right-hand side of the cut-off wheel.

Cat.no: 05876910

### Replacement Stainless Steel Band

For cutting table on Discotom-60/-65. 1 pc. of 40 mm x 265 mm.

Cat.no: 05906901



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