



ABRASIVE CUTTING SERVOCUT 502

SERVOCUT 502 is an advanced high-capacity cutting machine especially designed for very large specimens.



AUTOMATIC

ABRASIVE CUTTING MACHINE

DESIGN

SERVOCUT 502 is an advanced high capacity cutting machine, offers the advantage of combining different cutting techniques and methods to obtain superior cut surfaces for a broad range of heavy-duty cutting applications. Automatic cutting guarantees the highest level of reproducibility through automatic processing of the specimen.

SERVOCUT 502 has a robust and reliable design with low noise and emission levels. The modern and sturdy design with powerful 11 kW cutting motor ensures fast and efficient cutting through the hardest and complex materials.

SERVOCUT 502 has X-Y-Z triple axes cutting capability:

Z-axis Chop cutting

The specimen is clamped and the cut-off wheel approaches the specimen.

Y-axis Table-feed cutting

Feeding the clamped specimen into a rotating cut-off wheel using a T-slotted feed table.

X-axis Parallel Cutting (optional)

Parallel serial sectioning in the x-axis with optional movable x-table.

Two Hand Control For Safety Operation



Extra large cutting chamber with easy access and handling.



SERVOCUT 502

SERVOCUT 502 is an advanced high-capacity cutting machine especially designed for very large specimens.

- Modern and sturdy design
- Extraordinary access for easy handling
- Powerful, with spacious cutting chamber
- Unique belt protection system
- Advanced cutting features for hard and difficult work pieces
- Advanced safety features
- Ergonomic joystick control offers excellent application versatility
- Programmable with colored HMI touch screen controls



Extra large cutting chamber with easy access and handling.

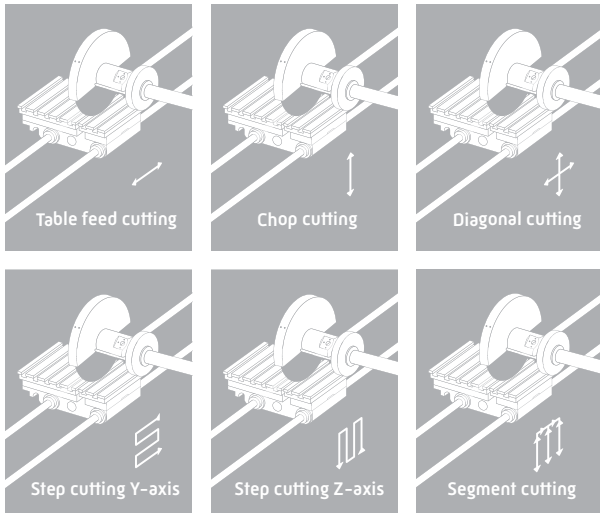
A large, T-slotted feed table located in the cutter's generous work area can accommodate a variety of different clamping devices which need to be selected. The feed table provides a long travel depth making the SERVOCUT 502 ideal for cutting long or deep samples in a single pass. Stainless small parts tray to catch small specimens is supplied with the cutting table as standard.

The front sliding door and side cover can be completely opened for easy access and handling to all sides. Side access ports make it possible to make transverse sections on long specimens. A large window of Lexan and a sealed LED lamp in the cutting chamber allow precise observation of the cutting process at an optimum degree of safety.

SAFETY

SERVOCUT 502 automatic cutting machine has the highest safety standards. The interlocking safety device does not allow the motor to be started unless the sliding door or the side access ports are closed. The sliding door cannot be opened before the cutting motor is stopped. The electronic brake system, which is a standard feature, brings the cutter to a quick full stop in seconds after it has been switched off.

AUTOMATIC OPERATION



Optional Cutting Methods

Optional cutting methods make SERVOCUT 502 perfect choice for a broad range of heavy-duty cutting applications.

Diagonal Cut: For increased cutting capacity.

Step Cut: For extra hard materials.

Segment Cut: For difficult and complex shaped materials.

Combined Cut: For increasing cutting capacity.

SERVOCUT 502 Automatic cutting machine has advanced techniques and software with programmable HMI touch screen controls increasing the productivity, sample consistency and minimize operator intervention. Control of X/Y/Z Axis can also be performed with the ergonomic proportional Joystick that offers smooth and precise positioning.

Cutting Methods

Chop cutting [Z-axis] and Table feed cutting [Y-axis] combined with pulse cutting is standard. New cutting methods ensures easy cutting of large and complex specimens.

Multi-Slice Cutting

The optional automatic x-table allows programmable plane parallel sectioning. Slices of equal thickness with number of slices as well as programming slices of different thickness is possible.



Fast cutting with efficient cooling



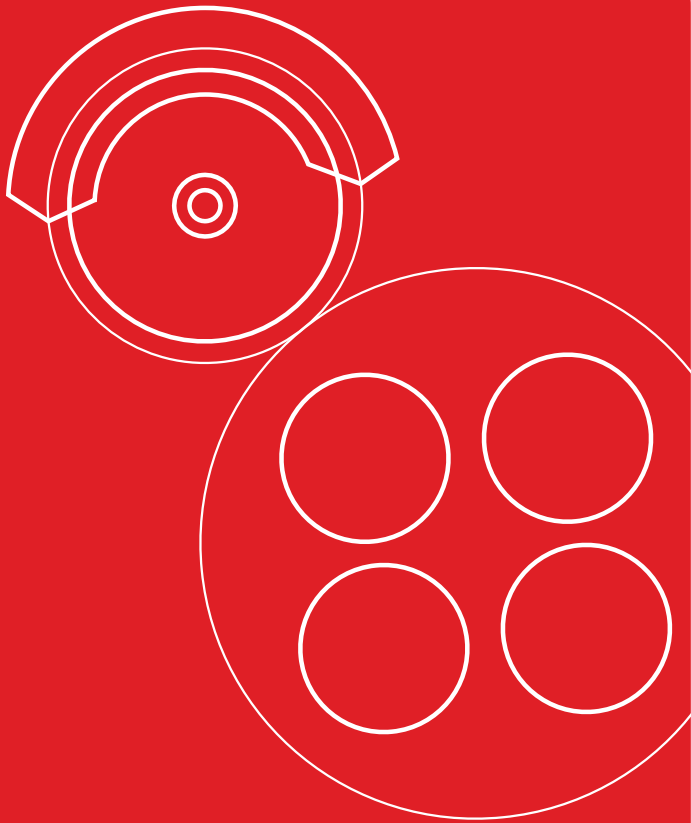
Ergonomic Joystick Control



Easy Exchange of Cut Off Wheel



FUMEFILTER, Fume and Mist Removing Unit



Cutting Parameters

The preselection of the cutting force level as well as the setting of cutting feed rate [0,02-5mm/sec] is possible from the touch screen LCD. The feed rate is automatically adjusted, if needed reduced, resulting in perfect cuts and eliminating sample and machine damage. Pulse cutting mode is a standard feature in all automatic models for cutting extra hard specimens. Integrated speed regulating unit is available to adjust the cut-off wheel speed between 600-2400 rpm.

Programmable Return Positions

SERVOCUT 502 has 3 different stop modes:

Stay at the end of cutting:

Stops when the specimen has been cut through.

Back to starting point:

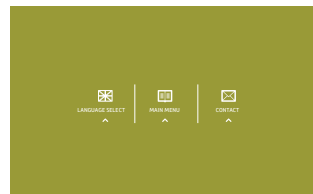
Stops when it has returned to its starting point.

Back to reference point:

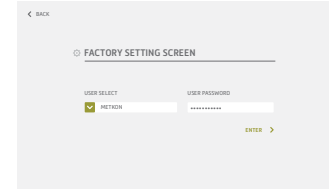
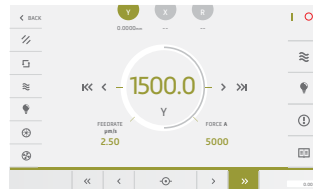
Stops when the ultimate reset point in all axes has been reached.



Auto Clean Function



HMI touch screen controls with various cutting methods and database with cutting programs and maintenance monitoring



DATABASE

A library of 99 different cutting programs with related specimen name or number can be saved with all cutting parameters which can be recalled at any time. Data with Metkon cutting consumables is also listed for easy selection.





NEW CUTTING FEATURES

Instafeed

Optimizes the feedrate according to the specimen hardness and the preset cutting force. It increases the cut off wheel life and ensures optimum cutting without overloading.

Table Oscillation

During chop cutting the table makes an oscillation movement to minimize the contact area to reduce the risk of specimen damage.

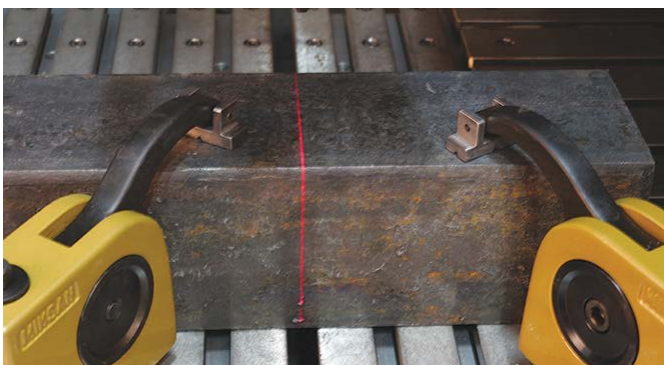
Multi Target Cutting

Rapid Pulse

Reduces contact time and ensures maximum cooling of specimen.

Combined Cut (Optional)

For cutting larger specimens that cannot be cut in one cycle. Y and Z axis are combined for additional cutting capacity. First the cutting is performed with Z-axis chop cutting, subsequently the specimen is cut with Y-axis Table-feed.



Laser Alignment Unit



3-Lights Warning Beacon

CLAMPING DEVICES

Quick Acting Clamping Vise Assembly  GR 0121 GR 0122	Serial Clamping Device for clamping multiple specimens from 1 to 4  GR 0611	Angular Precision Clamping Device in 3-Axis Direction  GR 0612	Vertical Clamping Device with clamping shoe  15 02
Height Block  15 04	Chain spanner set with anchor block  GR 0033	V-Block for holding parts above table slots  15 00	Adjustable V-Support  GR 0615 GR 0616 GR 0617 GR 0618

Many sample preparations applications require the sectioning of a specimen from a small or irregularly shaped sample or component part. The small size or irregular sample shape can create positioning and clamping difficulties for the operator.

To overcome these difficulties, METKON offers a number of special clamping devices for use with SERVOCUT abrasive cutters. METKON cut-off machines are equipped with stainless T - slot clamping tables. All clamping devices are made of stainless steel and can be attached to the cutters T - slot beds in seconds for fast and positive clamping of parts having virtually any configuration.



ACCESSORIES

Fast cutting with efficient cooling

Laser Alignment Unit

For rapid and accurate positioning of the cut-off wheel and helps to define the exact cutting line.

Cooling System

The cutting surface is cooled by spray nozzles whose water jets hit both the cutting wheel and the specimen.

Fumefilter

It is an advanced fume and mist removing unit that optionally available for SERVOCUT502.

Coolant Level Sensor

Informs operator when coolant level is insufficient.

3-Lights Warning Beacon With Audible Signal

Informs operator about machine status from the long distance.

AutoClean

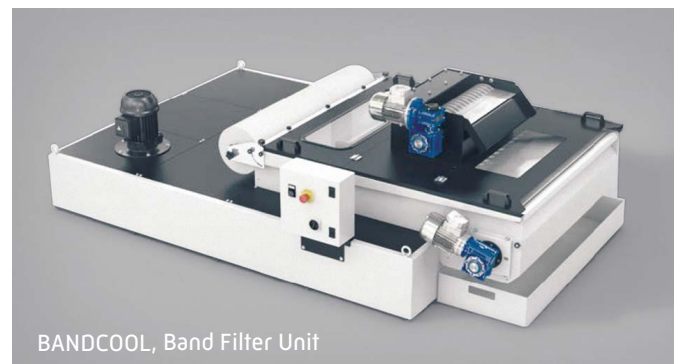
Cleaning & Maintenance is an important job and can be time-consuming.

Magnetic Collector Rods

Collects the finest magnetic particles from the cooling liquid and keep it clean.

Bandcool

It is optionally available for cutting materials which generate a lot of swarf or for higher volume usage.



BANDCOOL, Band Filter Unit

SPECIFICATIONS

15 77 – SERVOCUT 502

Automatic Abrasive Cutting Machine Programmable with 7" HMI touch screen control, with Siemens PLC control unit, with automatic chop cutting and automatic table feed cutting systems, with various cutting methods, programmable with coloured LCD display of cutting parameters, accurate and motorized positioning of the specimen in X – Y and Z axis (X-axis for plane parallel cutting is optional), ergonomic joystick with adjustable speed control, integrated feed path control, power dependent adjustable feedrate, variable cutting force, rapid pulse cutting mode, bar graph overload display, with unique belt protection system, powerful cutting motor, with variable cutting speed 600–2400 rpm, with electronic brake system, cutting capacity upto 130/180 mm solid stock, with cut-off wheels upto Ø400/500mm, twin T-slotted table (Y-direction only) made of stainless steel, bottom part as rugged alloy base casting, extraordinary access for easy handling with sliding door and side openings, with extra advanced cutting methods: "Rapid Pulse Cutting, Table Oscillation Cutting, Instafeed Cutting, Automatic Chop Cutting, Automatic Table Feed Cutting, Joystick Cutting" Ready for operation. Without clamping devices, without recirculating cooling unit.

Includes a standard set of cutting consumables composed of;

- An assortment of 20 cut-off wheels with 500 mm dia.
- 5 lt of Metcool cooling fluid.

400 V, 3 phase, 50/60 Hz.

15 77-AX – SERVOCUT 502-AX

as above(15 77) and including an automatically driven X-axis table with 200 mm travel for programmable serial plane parallel cutting.

GR 0925

Software package for optional cutting methods;

- Diagonal Cut
- Step Cut
- Segment Cut
- Combined Cut

GR 1226

Power Supply for SERVOCUT 502

Transformer kit for 200–240 VAC, 3 phase, 50/60 Hz mains voltage.

Cooling Systems for SERVOCUT 502

GR 1544 – Recirculation cooling tank with pump system, 135 lt tank capacity

YM 8815 – Fine filter sheets for recirculation cooling tank (GR 1544), 10 pcs

GR 1559 – Coolant level sensor for recirculation cooling tank, Informs operator when coolant level is insufficient.

GR 1540 – Magnetic collector rod for recirculation cooling tank

GR 1561 – BANDCOOL Band Filter Unit for SERVOCUT 302/402/502
Band filter conveyor for the automatic collection and disposal of swarf, with capacity of 115 lt., with fluid level indicator, complete system on wheels, with connection kit.
400V, 3phase,50Hz

YM 8878 – Filter roll for BANDCOOL, 50 m, SRC 302/402/502

Clamping Devices for SERVOCUT 502

GR 0121 – Quick Acting Clamping Vise Assembly, Right, for SRC 502 (Stainless Steel)

GR 0122 – Quick Acting Clamping Vise Assembly, Left, for SRC 502 (Stainless Steel)

15 02 – MBU 1031 Vertical Clamping Device with clamping shoe, clamping height upto 115mm.

15 04 – MK 10 22 Height Block, 70 mm

GR 0609 – Serial Clamping Device for clamping multiple specimens from 1 to 2

GR 0612 – Angular Precision Clamping Device in 3-Axis Direction

GR 0033 – Chain spanner set with anchor block

15 00 – V-Block for holding parts above table slots

GR 0615 – Adjustable V-Support, Small (Height Range: 57–67mm)

GR 0616 – Adjustable V-Support, Medium (Height Range: 65–85mm)

GR 0617 – Adjustable V-Support, Large (Height Range: 85–115mm)

GR 0618 – Adjustable V-Support, Extra Large (Height Range: 115–155mm)

Accessories for SERVOCUT 502

GR 1554 – FUMEFILTER Centrifugal Separator for SRC 502

Removes coolant mist for better illumination and viewing

[To be ordered simultaneously together with the machine order]

YM 8835 – Spare Filter Kit for FUMEFILTER (GR 1554)

GR 0139 – AUTOCLEAN Automatic Cleaning System for cutting chamber [To be ordered simultaneously together with the machine order]

GR 0140 – 3 lights warning beacon with audible signal

[To be ordered simultaneously together with the machine order]

GR 0125 – Laser alignment unit for SERVOCUT 402/502

[To be ordered simultaneously together with the machine order]

GR 0983 – Protection box for left side opening, 50 cm, for cutting long parts

GR 0993-01 – Flange Set with larger diameter, Ø166 mm

GR 0996 – Extension Box for cutting long specimens from the left hand side opening, 50 cm length, for SERVOCUT 502

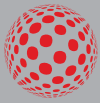
Spare Part Kit for SERVOCUT 502

GR 1965 – Recommended Set of Spare Parts, SERVOCUT 502

* Other voltages and frequencies available upon request.
Please state when ordering. All specifications are subject to change without notice.

SPECIFICATIONS

ORDER NO	15 77	15 77-AX
MODEL NO	SERVOCUT 502	SERVOCUT 502-AX
Max. Cut-off Wheel Diameter	Ø500 mm	Ø500 mm
Max. Cutting Capacity, Ø	Ø180 mm	Ø180 mm
Max. Cutting Capacity, HxD	100x400 mm	100x400 mm
Z-Axis Travel, [mm]	350 mm	350 mm
Y-Axis Travel, [mm]	380 mm	380 mm
X-Axis Travel, [mm]	-	200 mm
T-Table Dimension, [mm]	764x608 mm	(634+200)x608 mm
T-Slot dimension, [mm]	12 mm	12 mm
Cutting Motor Power [S1]	11 kW	11 kW
Variable Wheel Speed	600-2400 RPM	600-2400 RPM
Cutting Feedrate, [µm/s]	20-5000 µm/s	20-5000 µm/s
HMI Touch Screen Controller	7 inch	7 inch
Chop Cutting in Z- Axis	Auto	Auto
Table Feed Cutting in Y-Axis	Auto	Auto
Parallel Cutting in X-axis	-	Standard
Table Oscillating Cutting	Standard	Standard
Rapid Pulse Cutting	Standard	Standard
Smart Feed Control	Standard	Standard
Step Cut; Segment Cut; Diagonal Cut, Combined Cut	Optional	Optional
Automatic Cleaning System	Optional	Optional
Size WxDxH [cm]	140x134x185	140x134x185
Weight	1100 kgs	1100 kgs
Recirculation Cooling Unit	135 lt	135 lt



metkon®
Technology behind Specimen



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