



CUTTING

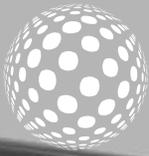
SERVOCUT

602



metken[®]
Technology behind Specimen

20
YEARS



metken[®]
Technology behind Specimen



**New Concept Fully Automatic
Abrasive Cutting Machine**

SERVOCUT[®]

602



SERVOCUT 602 is an advanced high capacity cutting machine especially designed for cutting extra-large and multiple specimens.

- Modern and sturdy design
- Extra Large Cutting Capacity
- Extraordinary access for easy handling
- Programmable with colored HMI touch screen controls
- X-Y-Z three axes cutting capability
- Ergonomic Joystick control offers excellent application versatility
- Cut-Off Wheel Diameter Measurement
- Inbuilt Lubrication System

DESIGN

Servocut 602 is a fully automatic 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 602 has a robust and reliable design with low noise and emission levels. The modern and sturdy design with powerful 15 kW cutting motor ensures fast and efficient cutting through the hardest and complex materials with precision servo motor driven axis controls.

SERVOCUT 602 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 cutting wheel movement.

A large, stainless steel 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 servo driven table provides a long travel depth making the SERVOCUT 602 ideal for cutting long or deep samples up to **100Hx500D** in a single pass.

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.



SERVOCUT 602 Abrasive Cutting Machine

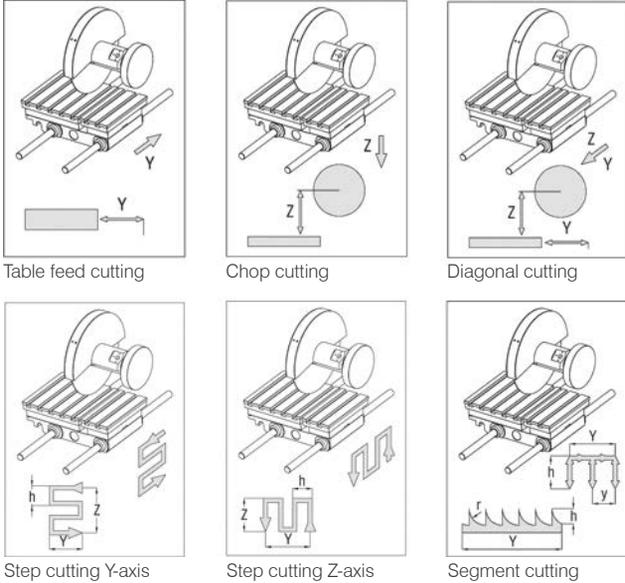


Extra large cutting chamber with easy access and handling.

Safety

SERVOCUT 602 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. A two-hand control feature ensures that the operator's hands are completely out during positioning and prevented from reaching into the moving components with open sliding door. A stack light is located on the top of the equipment to provide visual and audible indication of machine status. Easily accessed and operated E-stop button ensures immediate shut down.

Automatic Operation



SERVOCUT 602 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 control 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.

SmartFeed: The feedrate is automatically reduced once the preset cutting force is reached. It increases the cut off wheel life and ensures optimum cutting without overloading.

Multi-Slice Cutting: The movable cut off wheel on x-axis allows programmable plane parallel sectioning. Slices of equal thickness with number of slices as well as programming slices of different thickness is possible. SERVOCUT 602 has the largest cutting capacity on x-axis (cross sectioning)

Optional Cutting Methods:

Diagonal Cut - for increased cutting capacity.

Step Cut - for extra hard materials

Segment Cut - for difficult workpieces are available which make SERVOCUT 602 the perfect choice for a broad range of heavy duty cutting applications.

Cutting Parameters:

The preselection of the cutting force level as well as the setting of cutting feed rate (0,02-5mm/sec) is possible with 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. Optional speed regulating unit is available to adjust the cut-off wheel speed between 600-2400 rpm.

Programmable Return Positions

SERVOCUT 602 has 3 different stop modes:

Auto stop: Stops when the specimen has been cut through.

Relative Stop: Stops when it has returned to its starting point.

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

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 anytime. Data with Metkon cutting consumables is also listed for easy selection.



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



Ergonomic Joystick Control



Two Hand Control For Safety Operation



Easy Exchange of Cut Off Wheel



FILTERMIST

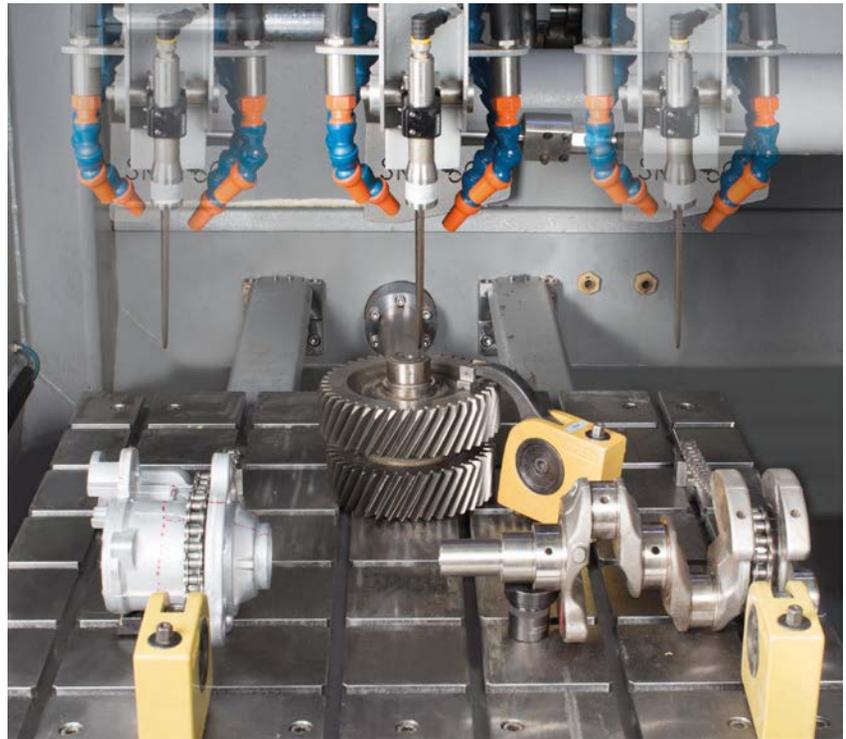
NEW CUTTING FEATURES

Instafeed – Optimizes the feedrate according to the specimen hardness and contact of cutting area.

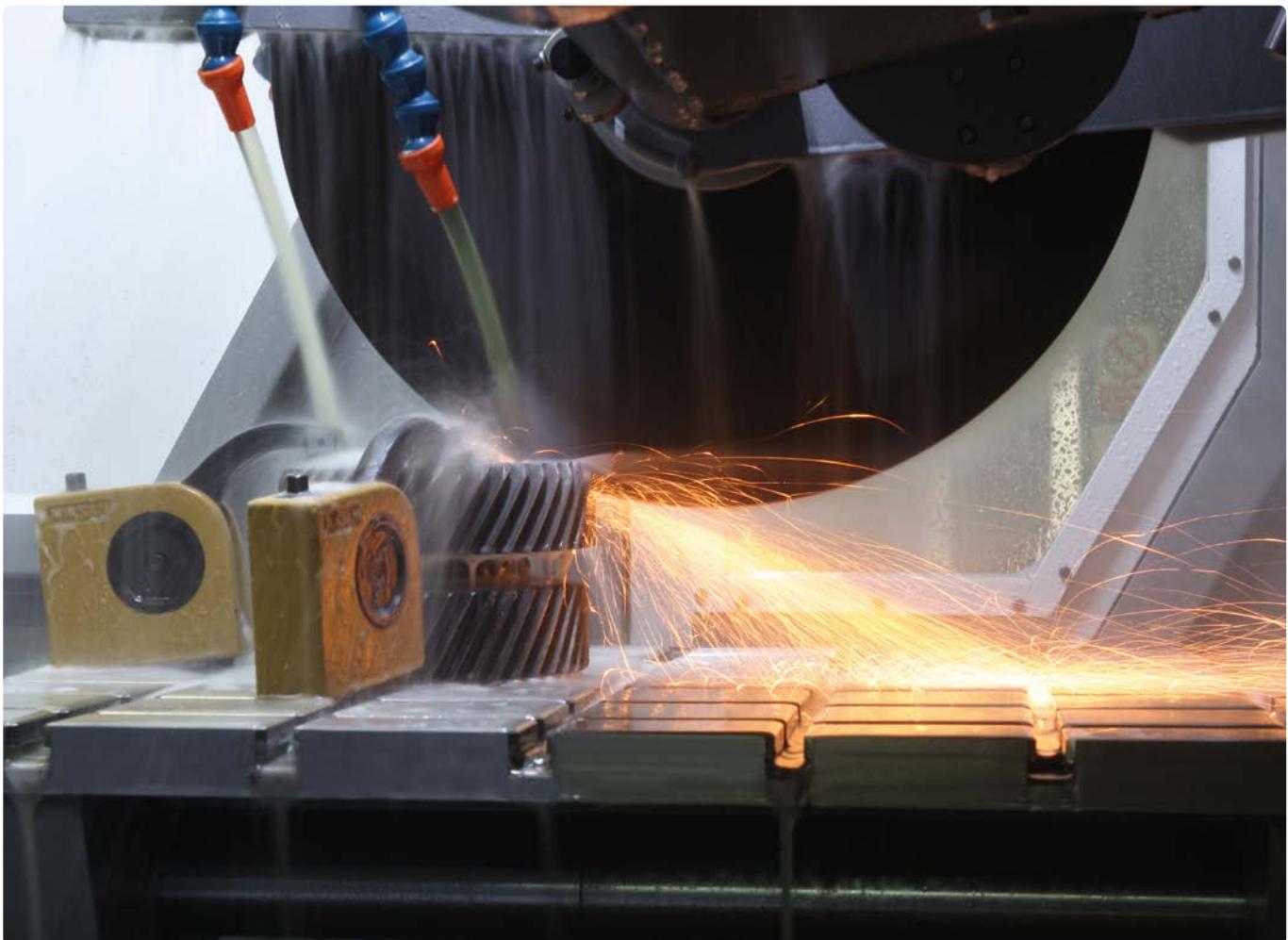
Rapid Pulse – Reduces contact time and ensures maximum cooling of specimen.

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

Multi Target Cutting – Several clamped specimens can be cut in one step. Same or different cutting parameters can be set for each specimen. Cut off wheel moves to the predefined start position automatically for rapid and fast positioning.



Multi Target Cutting



Fast cutting with efficient cooling

Features

Automatic Wheel Measurement

The cut off wheel diameter is measured prior to each cut for exact positioning. Also the peripheral cutting speed is automatically arranged by automatic wheel measurement system.

Variable Cut-Off Wheel Speed

The cut off wheel speed can be adjusted between 600-2400 rpm to optimize cutting of difficult and complex specimens. Also one type of cut off wheel can be used for various specimens without changing the cut off wheel.

AutoClean

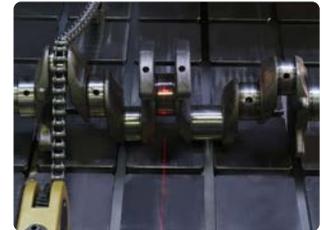
Automatic cleaning function up to 10 min. can be performed to maintain the cutting chamber. Two powerful spiral water nozzles are perfectly located in the cutting chamber for effortless cleaning. The cleaning gun can also be used for cleaning the remained residual on horizontal surfaces.

Central Lubrication System

The Central Lubrication System is optionally available to minimize maintenance and shutdowns. The system optimizes the amount of lubrication to the machine components and supplies lubrication only when it is needed, thus reducing the amount of lube required for the machine, and limiting the chance of excess lube contaminating the coolant.



Automatic Wheel Measurement



Lazer Alignment Unit



Central Lubrication System



Auto Clean Function

Clamping Devices

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.

Mechanical Clamping Device



GR 0610

Height Block



15 04

Serial Clamping Device for clamping multiple specimens from 1 to 4



GR 0611

Chain spanner set with anchor block



GR 0033

Angular Precision Clamping Device in 3-Axis Direction



GR 0612

V-Block for holding parts above table slots



15 00

Vertical Clamping Device with clamping shoe



15 02

Accessories

LASER ALIGNMENT UNIT - for rapid and accurate positioning of the cut of wheel and helps to define the exact cutting line.

COOLING SYSTEM - A closed loop recirculating cooling unit is a standard part of the machine. The cutting surface is cooled by spray nozzles whose water jets hit both the cutting wheel and the specimen. This provides an efficient cooling of the sample and prevents the overheating of the surface structure.

BANDCOOL - is optionally available for cutting materials which generate a lot of swarf or for higher volume usage. Band filter conveyor for the automatic collection and disposal of swarf, with large capacity of 150 lt. for long continuous usage. BANDCOOL can also be matched with a magnetic separator. It is environmentally friendly filtering the coolant and depositing the swarf in a separate container for easy disposal.

FILTERMIST - advanced fume and mist removing unit is optionally available for SERVOCUT 602. Removes coolant mist for better illumination and viewing with centrifugal separator.



BANDCOOL, Band Filter Unit

Specifications

14 87 SERVOCUT 602

Fully Automatic Abrasive Cutting Machine For cutting large and multiple specimens, ability to work with cut-off wheels up to Ø600 mm, cutting capacity up to Ø225 mm solid stock 100Hx500D mm for rectangular specimens, 15 kW cutting motor with electronic brake system, with variable cut-off wheel speed 600-2400 RPM, ability to set fixed peripheral speed of cut-off wheel from 20 to 60 m/s. overload display and protection system, accurate Servo motor driven table and wheel movement for precise and fast positioning, 3-axis joystick with adjustable speed control, stainless steel table (772x710mm) with 560 mm Y-axis movement range, Programmable with 10" HMI touch screen control, Siemens PLC control unit, automatic cut-off wheel diameter measurement and automatic starting position adjustment according to cut-off wheel wear, Positioning System allowing clamping several components simultaneously, with automatic chop cutting and automatic table feed cutting systems, with automatic cutting feedrate control, with extra advanced cutting methods: "Rapid Pulse Cutting, Table Oscillation Cutting, Instafeed Cutting Automatic Chop Cutting, Automatic Table Feed Cutting" Powerful LED illumination, 3 lights warning beacon with audible signal, robust construction, 200 lt recirculating cooling unit with pumps and connection hoses. Ready for operation. Without clamping devices. Includes a standard set of cutting consumables composed of; *An assortment of 10 cut-off wheels with 600 mm dia. *5 lt of Metcool cooling fluid. 400 V, 3 phase, 50/60 Hz.

14 87-AX as above (14 87) and with Automatic X-Axis Movement Kit Servo motor driven cut-off wheel positioning system on X-axis, Precise and fast positioning, 540 mm positioning range, including advanced cutting methods: "Serial Parallel Cutting" for slicing multiple pieces from a specimen automatically in one cycle. "Multi Target Cutting" for cutting up to 10 different clamped specimens on the table to be cut automatically in one cycle.

GR 0928 Software package for optional cutting methods;
*Diagonal Cut
*Step Cut
*Segment Cut

Clamping Devices for SERVOCUT 602

GR 0610 Mechanical Clamping Device
GR 0611 Serial Clamping Device for clamping multiple specimens from 1 to 4
GR 0612 Angular Precision Clamping Device in 3-Axis Direction
15 02 MBU 1031 Vertical Clamping Device with clamping shoe, clamping height upto 115mm.
15 04 MK 10 22 Height Block, 70 mm
15 00 V-Block for holding parts above table slots
GR 0033 Chain spanner set with anchor block

Accessories for SERVOCUT 602

GR 0134 FILTERMIST Centrifugal Separator
Removes coolant mist for better illumination and viewing
(To be ordered simultaneously together with the machine order)
GR 0135 Laser Alignment Unit
(To be ordered simultaneously together with the machine order)
GR 0136 Central Lubricating System with programmable maintenance cycle
(To be ordered simultaneously together with the machine order)
GR 0137 AUTOCLEAN Automatic Cleaning System for cutting chamber
(To be ordered simultaneously together with the machine order)
GR 0591 BANDCOOL Band Filter Unit
Band filter conveyor for the automatic collection and disposal of swarf, with capacity of 150 lt., with fluid level indicator, complete system on wheels, with connection kit. 400V, 3phase,50Hz

SERVOCUT 602

Order No	14 87	14 87-AX
Model	602	602-AX
Max. Cut-off Wheel Diameter	Ø600 mm	Ø600 mm
Max. Cutting Capacity, Ø	Ø225 mm	Ø225 mm
Max. Cutting Capacity, HxD	100x500 mm	100x500 mm
Z-Axis Travel, (mm)	340 mm	340 mm
Y-Axis Travel, (mm)	560 mm	560 mm
X-Axis Travel, (mm)	-	540 mm
T-Table Dimension, (mm)	772x710 mm	772x710 mm
T-Slot dimension, (mm)	18 mm	18 mm
Cutting Motor Power (S1)	15 kW	15 kW
Variable Wheel Speed	600-2400 RPM	600-2400 RPM
Wheel Diameter Measurement	Standart	Standart
Constant Peripheral Wheel Speed	Standart	Standart
Cutting Feedrate, (µm/s)	20-5000	20-5000
HMI Touch Screen Controller	10 inch	10 inch
Chop Cutting in Z- Axis	Auto	Auto
Table Feed Cutting in Y-Axis	Auto	Auto
Parallel Cutting in X-axis	-	Standart
Multi Target Cutting	-	Standart
Table Oscillating Cutting	Standart	Standart
Rapid Pulse Cutting	Standart	Standart
Smart Feed Control	Standart	Standart
StepCut; SegmentCut; DiagonalCut	Optional	Optional
Automatic Cleaning System	Optional	Optional
Central Lubricating System	Optional	Optional
Size WxDxH	184x173x236 cm	184x173x236 cm
Weight	1600 kgs	1600 kgs
Recirculation Cooling Unit	200 lt	200 lt

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

