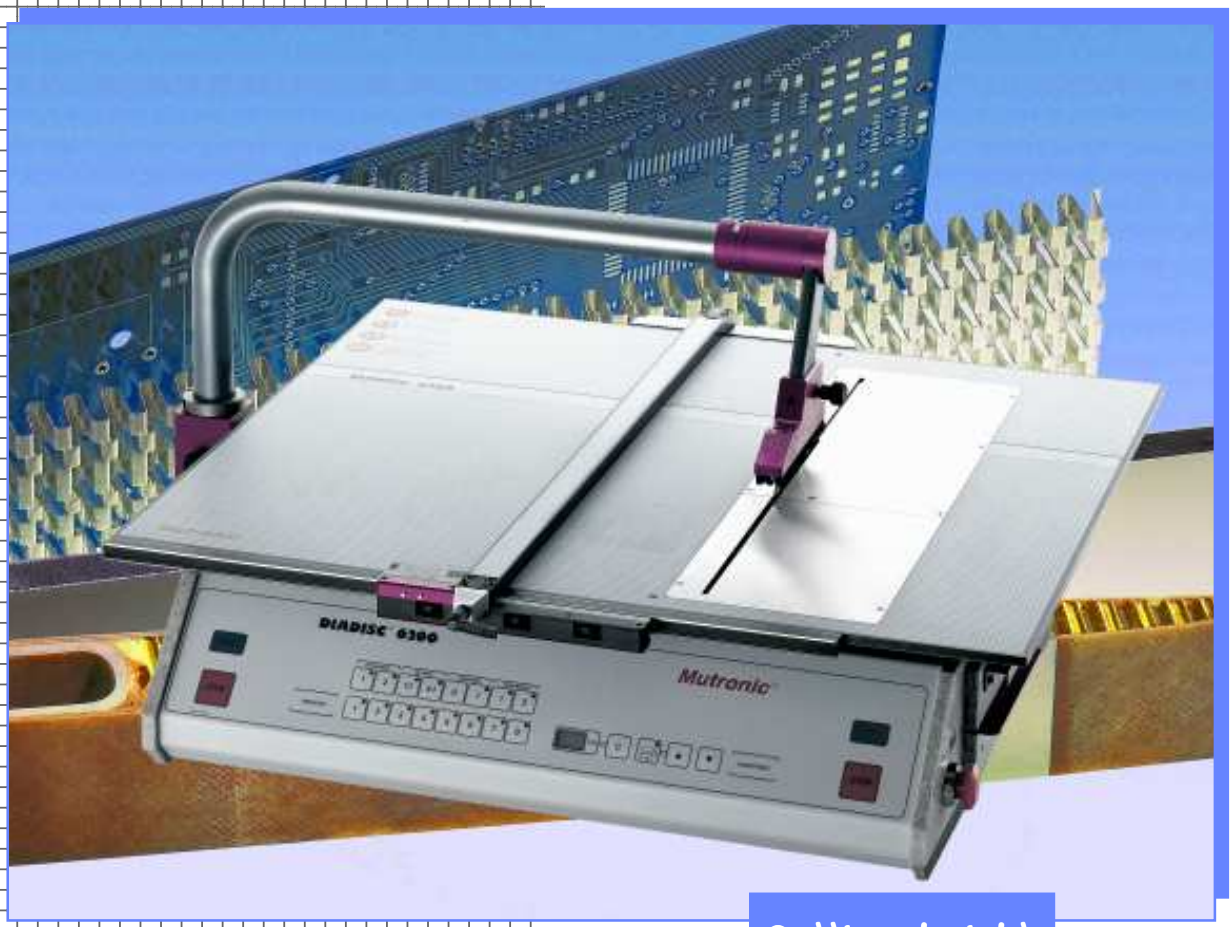
DIADISC 6200

Powerful production parting-off saw



Cutting height
0-35 mm

Mutronic®

CONTENTS

Note:

Brochures and other information publications sometimes need updating, supplementing and correction after only a very short time, thanks to constant advances in the pace of new and further developments of products and machine options.

We have therefore decided to print most of our brochures ourselves. This enables us to provide speedy and constantly updated issues of requested information. We would, however, ask you to forgive the difference in printing quality when compared to high-gloss offset printing methods.
You can also avail of information with high-resolution illustrations in the internet.

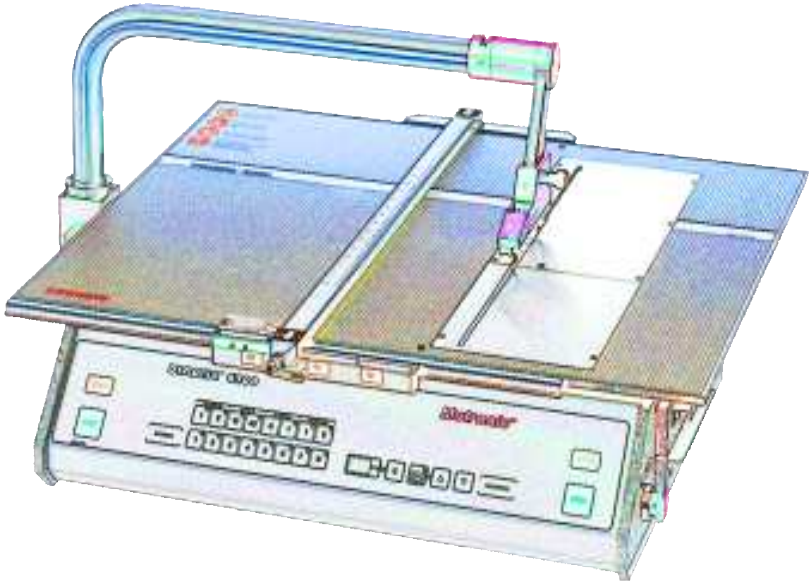
The machines illustrated in the pages of this brochure are mainly depicted with optional expansions.
The price list contains further details relating to accessories and optional equipment. Please contact us if you feel you need further clarification. The illustrations of machines, options and accessories may deviate from the colour, shape and design, both technical and constructional, of the delivered goods.

You can find information on other *Mutronic* products (along with information on trade exhibitions) in the internet under: www.mutronic.de

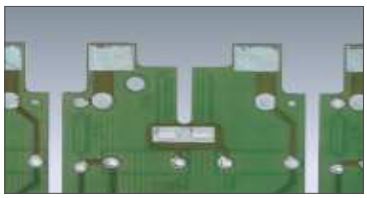
PRO TOTYPING + PRODUCTION

SAWING · CUTTING · MIILING · DEBURRING

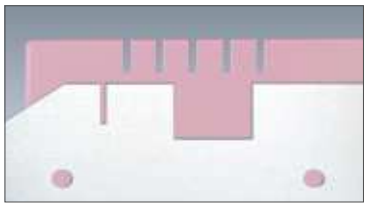
Cuts all materials with precision



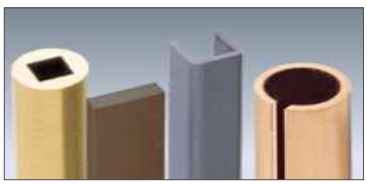
Cutting, milling, chamfering and scribing of PCB's



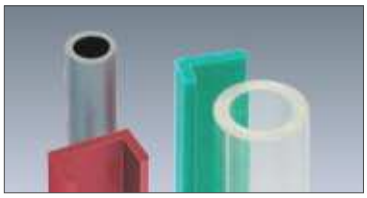
Cutting out, notching and deburring metal and plastic plates



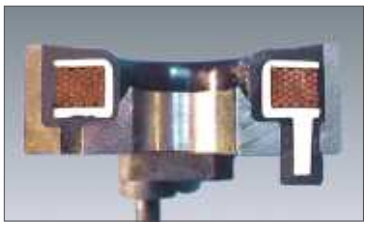
Cutting tubes, profiles and bars to length and slotting etc.



Cutting out test samples with high precision



Cutting V-grooves with defined angles in test samples



Test cuts for quality control in production and the laboratory.

High-precision *DIADISC* bearing assembly ensures a perfect cut.

The high concentricity of the drive elements and the use of special saw blades means that hardly any burring occurs during machining. The cutting quality reaches peak-and-valley values of RZ 4-6.
This is smoother than fine milling!
In other words:
reworking of the cut surface is no longer necessary in many cases!
This saves valuable working time.

The variety of optional equipment which is available enable the DIADISC concept to be rapidly adapted to the respective application. The most important optional equipment is described hereafter in detail.
Compact dimensions enable it to be used in every workplace, even in confined areas such as laboratories and workshops.

MACHINING EXAMPLES

In addition to test sample machining, *DIADISC* cut-off saws can be used for a variety of other machining tasks. They can cut all materials and material combinations successfully, achieving an extremely smooth cutting surface which is practically free of burrs.

Examples from customer applications and the options described on the following pages give information to the versatility of the *DIADISC* cut-off saw.

Cutting NE profile parts into sections with no-burr high-precision sawing cut.

Composite material made of glued layers with various materials.

Machining components made of ferrite, porcelain, glass, fired and "green" ceramic.

Test section through an airbag for cross-section measurements on the targeted breakpoint.

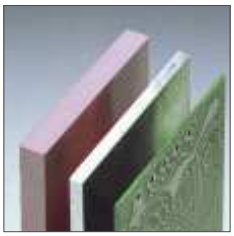
Quality assurance cuts on metalelastomer materials for measuring with a profile projector.

Extremely smooth QS cut through a HF-transformer for the loca-lisation of a winding error.

Test cut through a ball bearing to certify higher loads.

Qualirty assurance cuts on stretched materials for measuring crosssections.

Cutting hard steel, tough spring steel, hardened or coated steel parts.



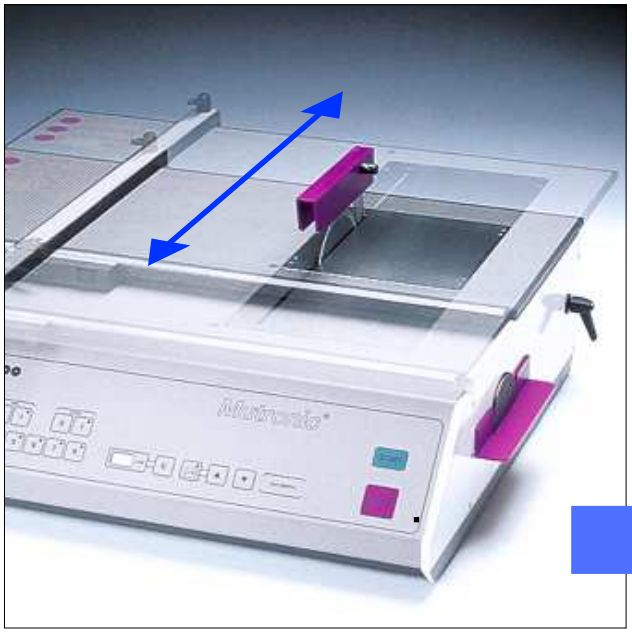
Sawing boards to measure made of plastic or fibrereinforced materials such as glassfibre reinforced plastic, carbonfibre reinforced and metals.

Cutting out a tooth imprint for strength tests of the epoxy material.

Smooth sawing of Acrylic rods and plates or other transparent plastic material.

Wir entwickeln kundenspezifische Lösungen zum Sägen oder Trennen spezieller Werkstoffe. Bitte nennen Sie uns Ihre Anforderungen.

TABLE TOPS



Stable working base - Basis for exact cuts

Rigid aluminium table top (without illustration)
For simple sawing and cutting work.
A special aluminium alloy lends high strength for the processing of many materials.

Precision slide table in cast aluminium (illustration)
Fitted for highest requirements with double tapered rolls guide for absolute clearance-free movement.
For machining parts which need to be machined with high precision.
Together with the option "Automatic table drive" an optimum of cutting quality can be achieved.
Various slide paths are available – more detailed information is contained in the separate price list.

By the optional slide path limitation, defined longitudinal cuts and slots can be carried out easily or fixed dimensions for series manufacture can be set.
If necessary the table can also be locked solid in position.

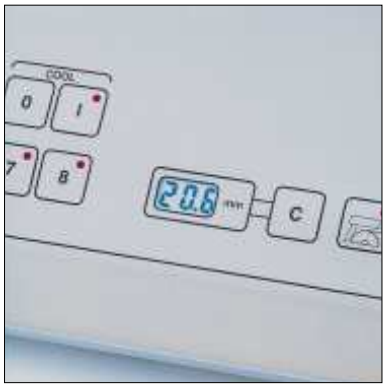
AUTOMATIC TABLE FEED

Electronically controlled cut!

The table feed is started with a foot pedal and the material can be cut at a continuous speed.
The feed can be continuously varied between „hard" for metal ans „light" (for example) for glass ceramic etc.

You can achieve greater precision, because the feed parameters can be adjusted to suit exactly the material being processed. The result is a clean, homogenous cut

DISPLAY FOR CUTTING DEPTH



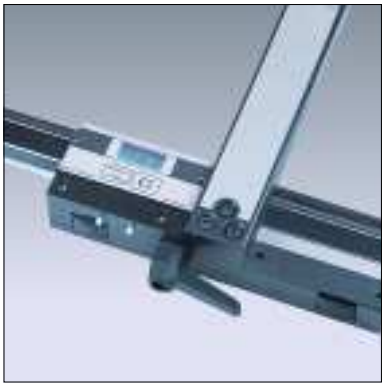
The digital display for the depth of cut is an important prerequissite for defined cuts such as grooves.
The height of the saw blade can be varied continuously at the touch of a button and the desired value can be read on the display.

MATERIAL STOPS

For precision working

Parallel stop with tape measure system

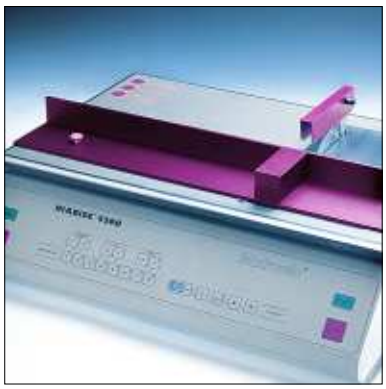
This stop has a larger guide carraige and an additional fine adjustment feature. The dimension can be read and fixed on the mm scale.



Parallel stop with digital precision

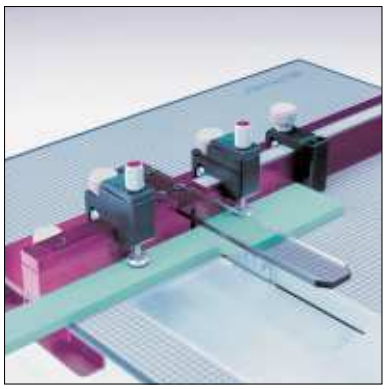
For the highest exactitude and particularly quick adjustments. The LCD digital measuring system displays the set dimension exactly in mm or inch.

LATERAL STOPS



Lateral stop A „Standard"

Used in combination with a slide table of any desired size, long parts such as pipes, profiles and plates etc. can be set to the correct length in the right angle.



Lateral stop B

As the standard lateral stop, however with a measuring tape, an adjustable stop and clamping rail. Elastic clamping pieces (optional equipment) hold sensitive material reliably.

FEED APPLIANCES

The feed appliances (with ball bearing guides) serve to position the workpiece exactly and convey it to the saw blade. Thus pipes, rods, profiles etc. can be set to the correct length, parallel or slanted, with great exactness.

A variety of adapter plates are provided to hold differently shaped workpieces. The quick-clamp securing clips or your own fixtures can be mounted on these.

SPEED - REDUCTION

change into the correct gear

Hard or brittle materials such as steel, hard metal, glass and ceramics, etc. require extremely slow speeds - by contrast, aluminium and some plastic materials higher areas.

Cutting speeds have to be correctly set to machine all materials with optimum cut surface. As the drive motor does not provide sufficient torque at low speeds, for these machining purposes a belt transmission is available with fixed reduction ratio of 4:1 and a version with areas of 1:1 and 4:1, which can be switched over, as an option, by pushing a button.

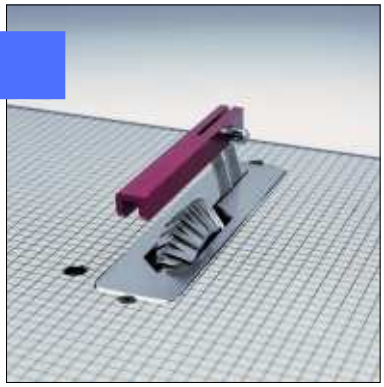
1:1 / 4:1

GROOVE-CUTTING/DEBURRING DEVICE

FOR EFFICIENT DEBURRING

of PCB's, aluminium and plastic.
A special blade is drawn along the workpiece, milling a a clean bevel free of chatter. The width of the bevel can be infinitely adjusted.

This device also enables so-called "printed plug contacts" on PCB's to be bevelled on one or two sides:
the copper paths remain unaffected by this operation.



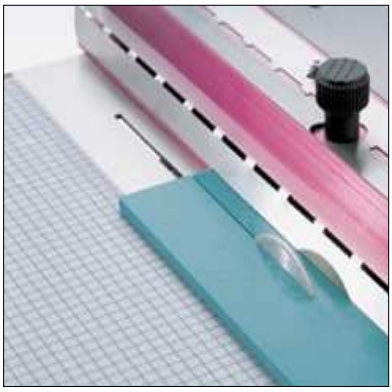
BENDING AND NOTCHED GROOVES

For the production of housings made of PVC, plexiglass etc. This enables 90° camfered grooves to be produced effortlessly and with infinitely adjustable depth (photo on left).

STANDARD TEST SAMPLE CONFORMING

Test samples with different widths can be sawed accurately and parallel in seconds by affixing suitable interchange-able templates.
An integrated clamping runner holds even small test samples securely.

The attachment is secured to the table top and can be used together with the parallel stop.



CLAMPING DEVICE ON PARALLEL-STOP

Small parts can be fixed precisely in the right angle and cutted rational in combination with sliding tables and parallel stop.

IMPORTANT OPTION

Disk grinding device

Helpful and practical
An optional disk grinding device on the right-hand machine side enables work to be carried out subsequent to sawing, such as deburring, circular grinding, chamfering, etc. Even blunt drills can be sharpened.
Suitable grinding disks with Velcro fasteners are available with different grit sizes.

Protective equipment

Protect youself at all times!
The pivoting splash guard is shatter-proof and protects against swirling dust particles, chips and spraymist of the coolant system.

USEFUL ACCESSORIES

Machine-cabinet

Compact and mobile
Tool cabinet made of solid steel with four pivoting rollers, specially designed for DIADISC cut-off saws. The cabinet can hold the machine with all required accessory parts, thanks to its high load-bearing capacity.

Protective glasses + Sliding rod

Protect yourself, absolutely, from thrown up dust particles. Metal cuttings or parts of a tool which got broken. These special protective goggles are splinter-resistant and prevent injuries to your eyes. The parts are fed with the aid of a sliding rod, leaving hands and fingers outside the danger zone at all times. Protective glasses offer additional safety.

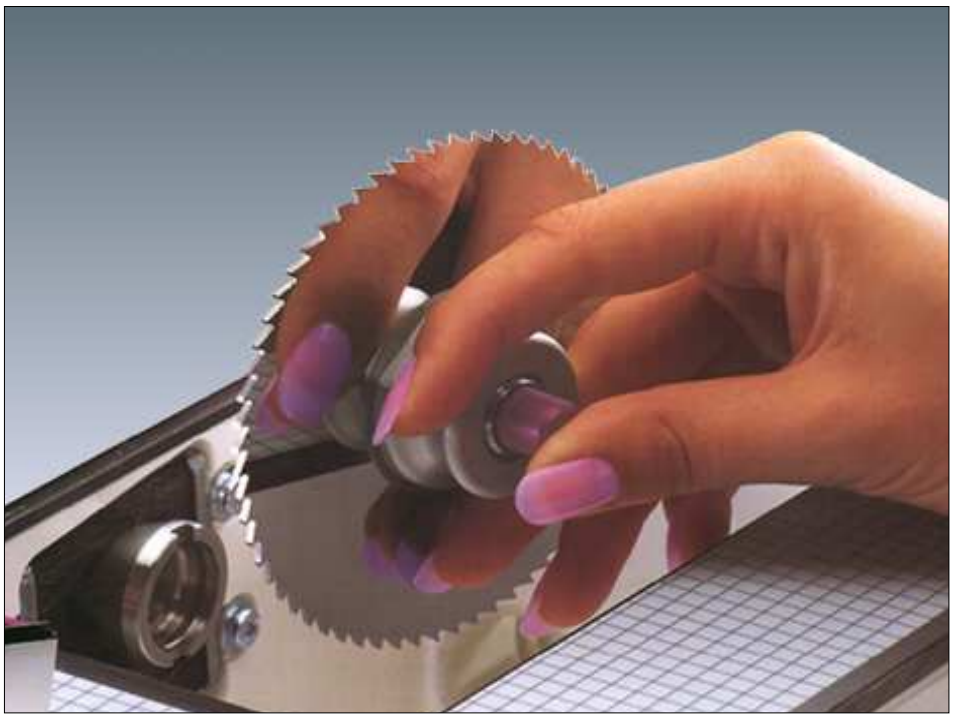
Pedal switch

If the saw blade is blocked, both hands are required to guide the material. The pedal switch enables the machine to be switched off in this situation in a fraction of a second.

Price information on separate list

TOOLJET
Quick-change-system

Saw blades or cutting disks can be changed in seconds at the touch of a button



Clearly positioned in the holding station (accessories) to suit application, material or saw blade thickness.

For universal circular saw applications (i.e. if frequent changing of cutting tools is necessary due to the different materials involved) is the rapid replacement a decisive advantage.
The slim breaking fragility of cutting tools is compensated for and there is no need to use wrenches.
Saw blades and cutting disks are simply replaced at the touch of a button.

By the way: Both old and new *DIADISC*-machines can be fitted with Tooljet.

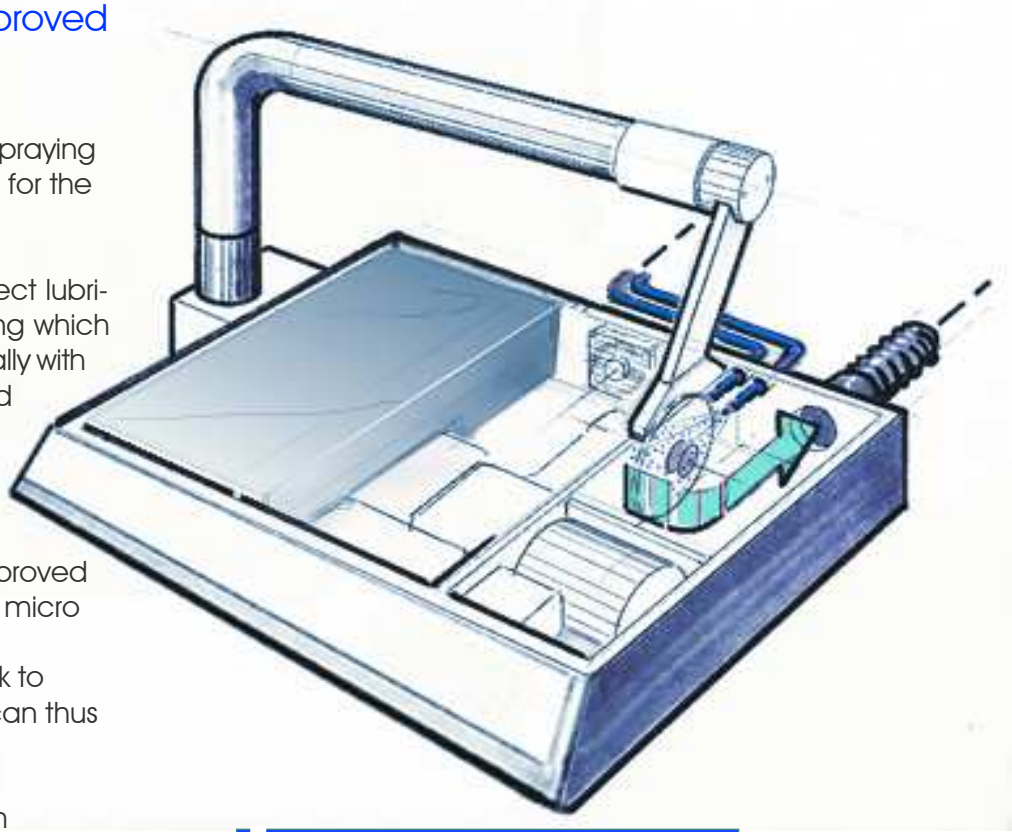
Price information on separate list

MICRO SPRAYING EQUIPMENT

Smooth cuts and improved cutting performance

Wet cutting with the micro spraying equipment is a supposition for the highest cut quality.

The spray mist ensures perfect lubrication every time, something which cannot be achieved manually with a brush. The cooling required for diamond cutting disks is thus achieved when machining hard, brittle materials.
The cutting result can be improved by up to 100% by using the micro spraying equipment.
Cutting surfaces with a peak to valley height of RZ 4-6 µm can thus be reached.



Lubrication is essential when machining the following materials: aluminium, brass, copper, steel and hard metals.

Cooling is necessary with the following materials: glass, ceramic, ferrite, graphite, silicium and all other brittle materials.

Water can be used for cooling, or a special emulsion for lubrication, depending on requirements (see price list "Accessories").

An optical warning display automatically reminds you to refill it in time to keep it from running dry unintentionally.

An automatic mode can be selected using a rotary switch, which automatically activates the spray-nebulizer as soon as the sawing process is started.

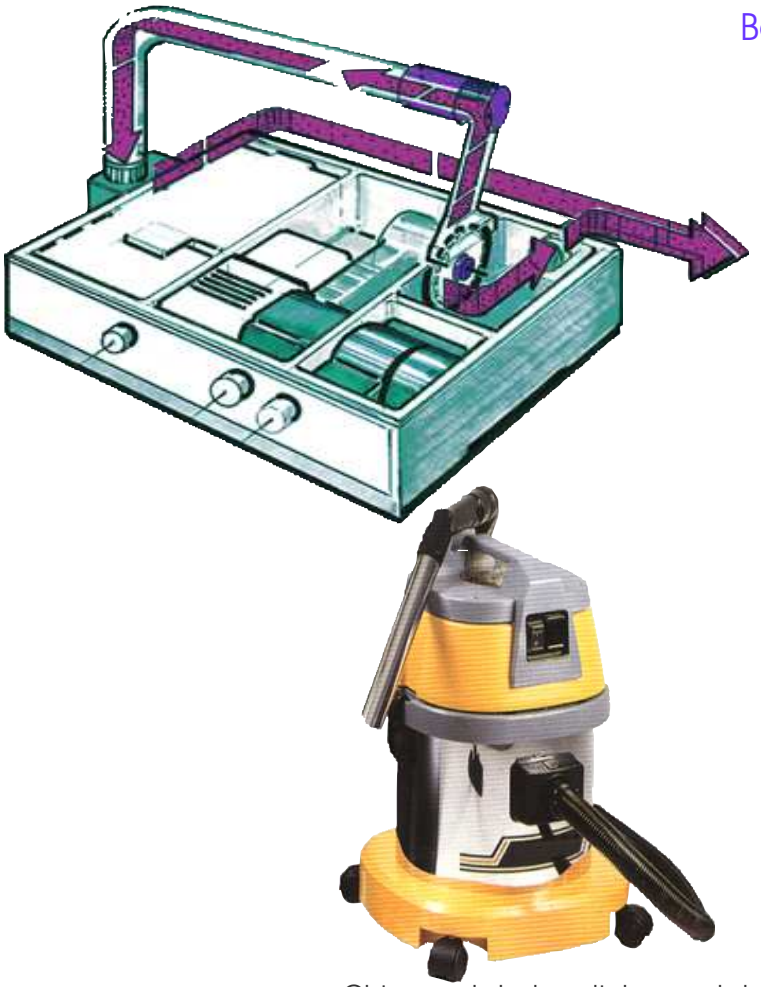
NEW!
Automatic spray nebulizer
switches the spray liquid on and off automatically for the duration of the sawing process.

The micro-fine spray mist is applied to the cutting tool from two sides via two nozzles and adheres securely to the saw blade, even at high speeds.

The Micro-Spraying system with pump, tank and liquid controller is built inside of an external unit and connected with the nozzle by a hose.

DIAVAC-EXTRACTION

Benefits both your health and the environment



Materials which produce fine or health-endangering dust should always be machined in conjunction with the use of an extraction unit. This particularly applies to machining of fibre-strengthened materials (PCB's, fibre-strengthened plastics etc.)

Using *DIAVAC* extraction units prevents fine dust particles being blown out into the atmosphere. Not every extraction unit is suited to this task. The *DIAVAC* extraction units are equipped with a special fine dust filter and thus guarantee optimum results. A socket is provided for connecting the unit.

Chips and dust particles are taken up and transported away by the air current of the extraction unit. This is made possible because the suction arm is equipped with an efficient air conveyance system and a suction head with special sealing bristles. The bristeles are arranged round about, sloping backwards, and enable the workpiece to be sensitively pushed through without slowing or stopping.

The front part of the suction head can be tilted upwards to enable the saw blade to be viewed during set-up. The suction head can be continously adjusted with a knop to suit the height of the workpiece. This option offers a high degree of user-com-fort, as it can be pivoted upwards or removed completely if necessary when changing the saw blade.

Price information on separate list

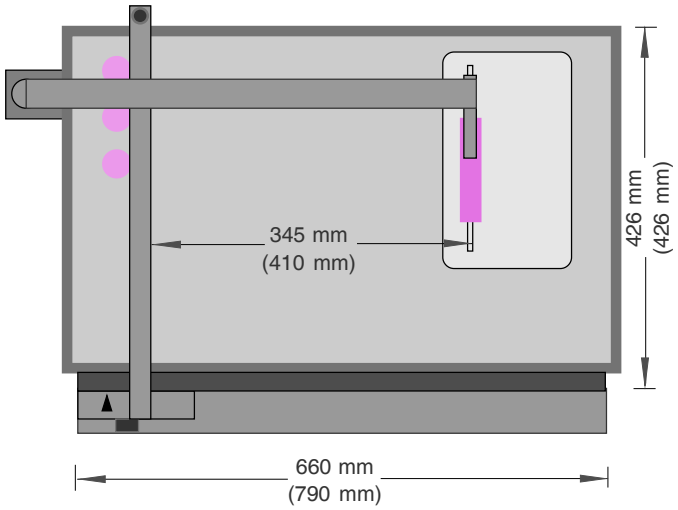
TECHNICAL DATA

Maschine:	*DIADISC 62OO*
Cutting height:	0 - 35 mm, variable
Speed:	1000 - 8000 min-1,
Drehmoment:	Overload switch-off in 2 steps
Tool:	Ø 125 mm
Input-Power/Output-Power:	max. 1500 Watts / 550 Watts
Oper.mode [1]:	S1
Control process:	full-wave control
Special characteristics:	High upgradeability
Overload protection:	thermal, electrical
Restarting protection:	yes/relay
Drive:	Special V-belt
Noise level:	72/78 dB(A) idling/sawing
Dimensions [2]:	790 x 790 mm
Weight:	approx. 30 kg
Fuse protection:	not EX protection!
Working temperature:	+15° C to 25° C
Area-humidity:	30% to 50%

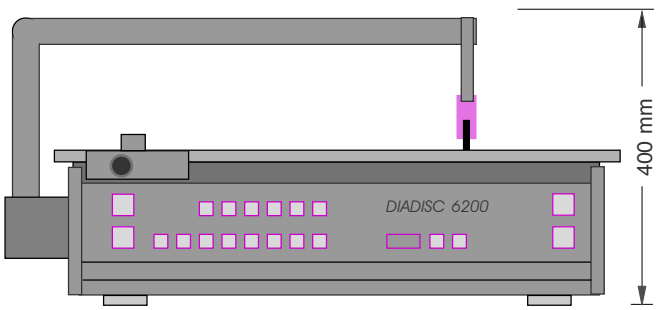
The *DIADISC 62OO* can be supplied in various modified designs. For instance: with modified tabletop for use in hard metal machining, where small cutting widths and cutting gaps are needed or special designs for the manufacture of QS-cuts. Please enquire

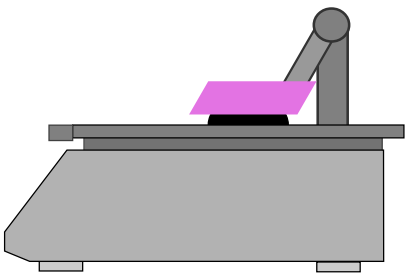
1) S1 = continuous running, ON duration (OD) 100 %,
2) Machine dimensions, equipped with maximum table top size

Bearing assembly:	Precision instrument ball bearing x 2, stainless steel ("corrosion-free")
Application:	Cut-off saw for test sample production, as for cutting of plastics, non-ferrous metals, steel, glass, ceramic etc. and PCB's made from laminated paper and fibreglass (FR4)
Area of application:	Workshop, production. Only be used in a dry environment.
Tools:	HSS-and solid hard metal saw blades, diamond cutting disks, corundum cutting disks and special tools.

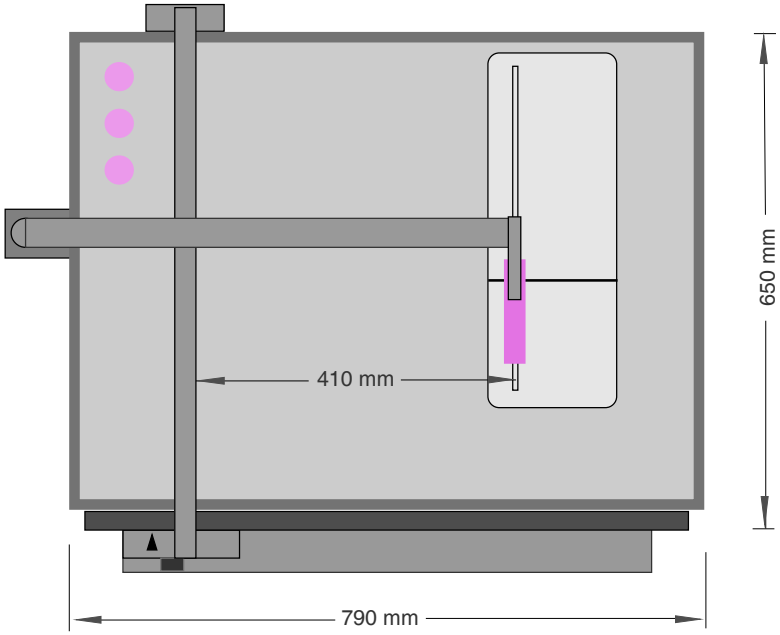


The illustration shows the basic machine with the following optional equipment: table top A(B) and parallel stop for table top A(B)

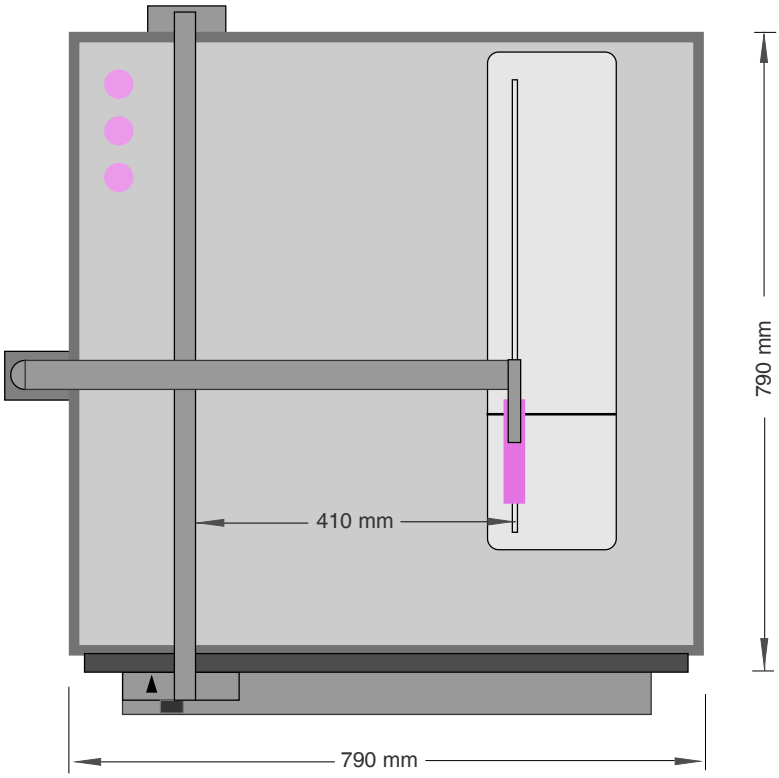




TECHNICAL DATA



The illustration shows the basic machine with the following optional equipment:
table top C and parallel stop for table top C.



The illustration shows the basic machine with the following optional equipment:
table top D and parallel stop for table top D

Price information on separate list

TECHNICAL QUALITIES

Drive mechanism and safety

DIADISC precision machines are equipped with special high-speed balanced motors to maintain an universal and broad speed range as possible. An electronic speed regulator controls the motor spindle.
The respective load is determined and additional output is readied automatically if necessary.
The speed can be steplessly adjusted throughout the entire range. It is characteristic of the speed that it does not remain entirely constant when the motor is under load, but rather adapts itself accordingly in critical situations.
The tendency of drills and milling hobs to block (along with the possibility of tool fracture as a result) is thus considerably reduced.■

Material and quality

The construction and assembly elements used (milled and turned parts, ball bearings, etc.) are made exclusively of high-quality materials, such as non-corrosive stainless steel, special anodised aluminium or brass.
Particularly important construction parts, such as chassis, bearing seats, pulleys and drive shafts are made of solid raw material turned, milled and ground on precision CNC machines.

Punched and bent parts are not used, due to their tolerance and stability characteristics.
Parts from other suppliers, such as motors, control electronics and bearings, are produced exclusively in Germany, Austria and Switzerland in accordance with our production and quality stipulations.
This ensures a long-term guarantee of both precision and the supply of spare parts.■

Development and production

All *DIADISC* machines are developed in our production facilities and brought to their final technical maturity under the direction of engineers and experienced technicians.
The machines are designed for lengthy periods of application, constructed with suitable stability and comply with currently valid standards.
Newly developed options are so designed as to be also suitable in most cases for retrofitting older serial models.
Machines and options are thus useful long-term investments.

The entire final production and quality control is carried out at our works in Rieden.■

Further options and detailed information are contained in the separate price list. Please make enquiries in advance with regard to prices in the event of placing an order, as these can be subject to change.

Mutronic®

Precision for laboratory and production

Mutronic Präzisionsgerätebau GmbH & Co. KG St. Urban Straße 20
D - 87669 RIEDEN bei Füssen Telefon: 0049/8362/93090-0 Telefax: 0049/8362/93090-49
e-mail: info@mutronic.de Internet: www.mutronic.de