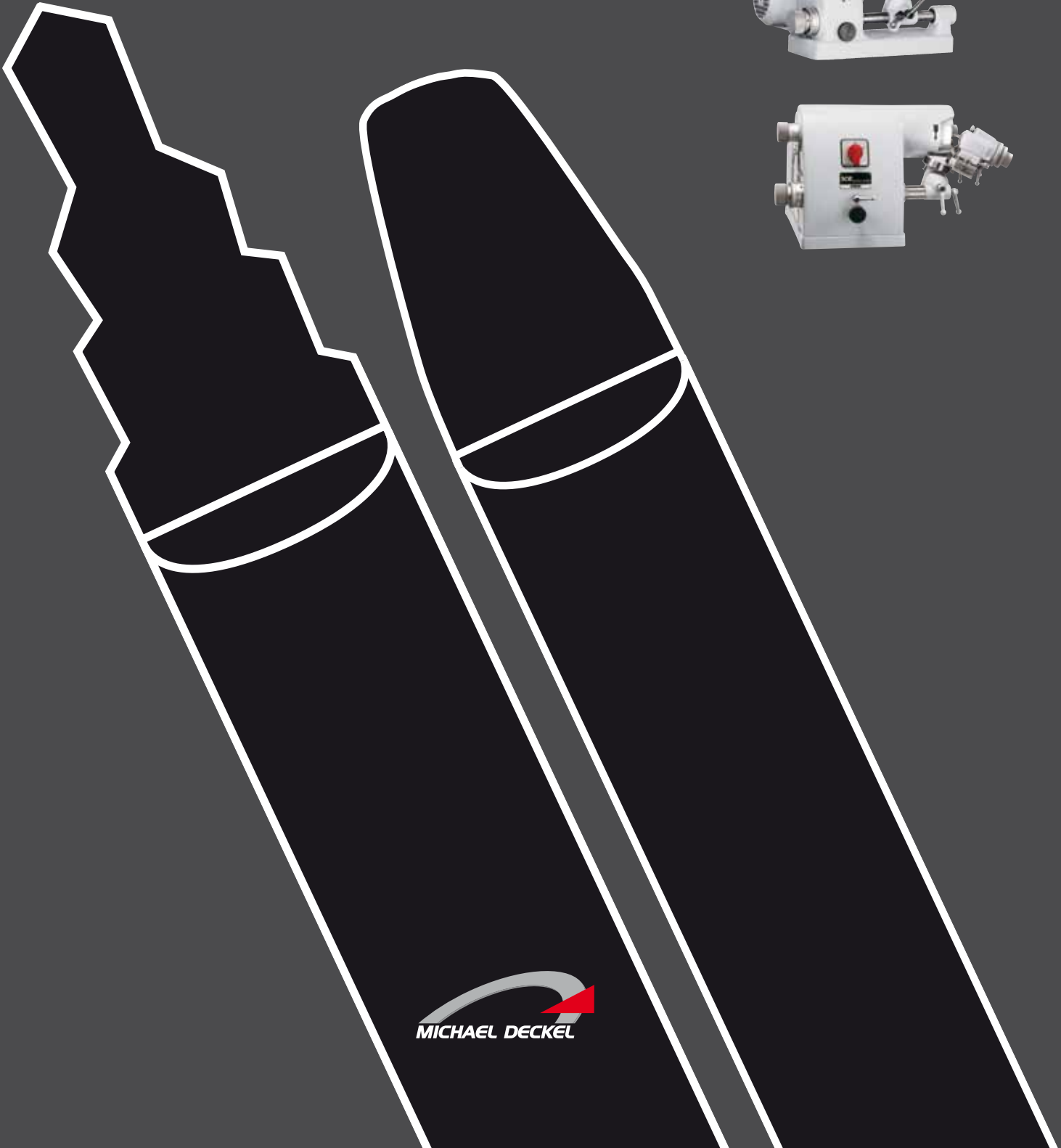


Single-lip Cutter Grinding Machines

SO/SOE

quick
uncomplicated
precise



**MICHAEL DECKEL**

SO/SOE

***TIME-PROVEN, STURDY
AND VERSATILE***

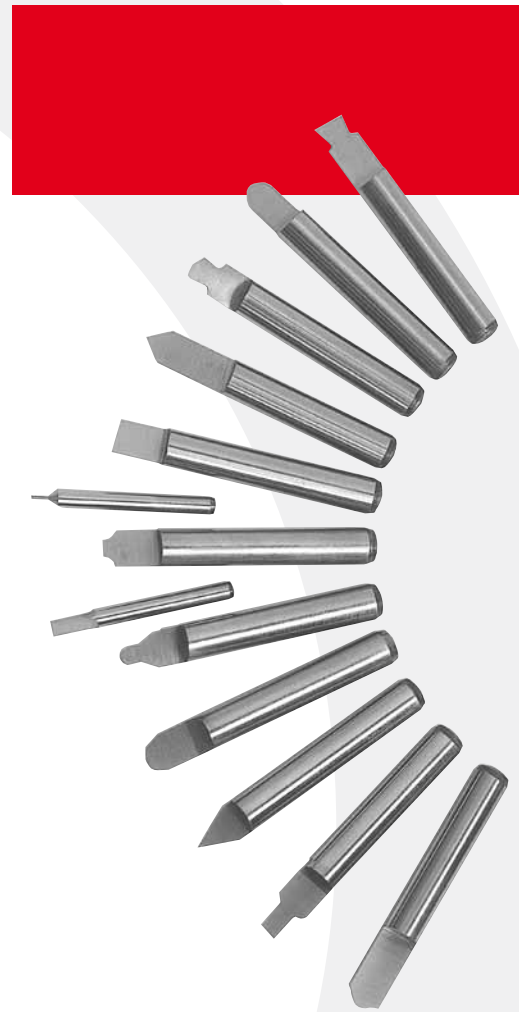


For applications that require the grinding of engraving tools, die sinking cutters or other tools necessary for processing complicated work piece shapes with a high degree of surface finish, the high powered DECKEL S0 and S0E single lip cutter grinders are the solution.

Durable construction, amazing versatility, exceptional precision and quality. These outstanding features have ranked the DECKEL S0 and S0E as the worldwide leader in single-lip cutter grinding machines.

Whether the application calls for high precision grinding, producing superior single-lip cutters, making complicated edge shapes quickly or regrinding rapidly, there is no alternative to the DECKEL S0 and S0E.

The S0 and S0E offer the versatility to not only grind accurate single-lip cutters but also to produce stamps, cutting and shaping tools, tracer pins and centering points. Other round parts are also prepared quickly and economically. Even drills, straight-fluted radius cutters and the end faces of end mills can be made razor sharp again.



▶ **S0** – the small powerful 0.25 kW machine

▶ **S0E** – with an increased power of 0.55 kW

POWER PACKED



The S0 is our time-proven basic model. Its ingenious construction and fundamental design with nearly unlimited setting choices, make the DECKEL S0 an indispensable machine necessary for every business. With the S0 you perform your daily grinding tasks with style.

The DECKEL S0 has often been copied, but never equalled in terms of quality and reliability. Our meticulous machining and assembly guarantee long-term precision, even after many years of rugged use in the workshop. DECKEL precision and quality, combined with proper machine maintenance, make the S0 an unbeatable investment.

- ▶ Integrated dressing device
- ▶ Precise grinding spindle
- ▶ Diversified setting range
- ▶ On the machine measuring



Index-head of the S0



Radial positioning using a setting finger

An Ingenious Concept

The unique capabilities of the S0 are based on its universal capacity for swivelling and setting.

Uncomplicated Working

All controls are easily accessible because they are located on the front of the machine. The heart of the S0, the index head, can take tools up to a maximum diameter of 18 mm and be adjusted crosswise to its vertical swivel axis to grind off-center radii. As an option, other tool holders are

available for square or rectangular shaped tools. (see page 10).

Consistent Quality

The grinding spindle is mounted in pre-tensioned high precision bearings. This means that it is free of play and allows the operator to grind without vibration thereby eliminating chatter marks. A seal for protection against grinding dust and soiling guarantees years of using this machine without any deterioration in quality.

Quick and Practical

Dressing the grinding wheel on the S0 is also effortless. The standard dressing device with its fine-adjustment screw is integrated in the safety cover of the grinding wheel and with one movement can be brought to its working position. The dust cover, allows a dust extractor unit to be easily attached.

The S0 is available either as a bench model or on a sturdy pedestal.

THE COMPETITIVE EDGE



Demanding jobs – The SOE gives you the competitive edge. When specifications require high degrees of precision, complex cuts or large quantity runs, the SOE's features provide the advantages that help you outperform the competition.

The SOE adds another dimension to single-lip cutter grinding. The SOE advances the capabilities of the SO with a totally enclosed housing, built-in drive system, a fly-mounted tool holder, an axially adjustable grinding spindle, more powerful motor and built-in dust exhaust unit.

As with the SO, bench or pedestal versions are available.

- ▶ Integrated dust exhaust unit
- ▶ Adjustable grinding spindle
- ▶ Precision bearings
- ▶ Fly-mounted index-head
- ▶ Measuring on the machine
- ▶ Cross slide movable to the right and left



Index head slide

Greater Accuracy and Flexibility

The fly-mounted index head allows for a greater range of movements and quicker handling during set-up and grinding. The tool holder is slid into an approximate position axially. To adjust the tool to the grinding wheel or to advance it a fine adjustment is made in hundredths of a mm (thousandths of an inch), with the fine adjustment screw.



Dressing with closed protection cover

Higher Precision

As with the S0, two swivel bearings enable the tool to be swivelled on dual levels vertical to each other. Since the vertical swivel bearings are encased in needle bearings, a higher degree of accuracy can be obtained.

The index head slide can be adjusted with the vernier over a 10 mm (0.4") range on both sides of the guide way. Therefore, with the SOE you can grind eccentric radii which are greater than half the tool diameter.

Ideal Dressing

The axially adjustable grinding spindle simplifies adjustments, minimises errors and saves time. On adjusting, the grinding wheel moves toward the dressing diamond.

An eccentric disc limits the swivel motion of the dressing diamond, in such a way that a small lip remains on the wheel face. This prevents overheating the cutting tool during grinding.



EXPANDABLE AND OPEN-ENDED



The manufacture and re-grinding of tools for delicate and intricate engraving or complex milling within strict tolerances require both skill and a trained eye. For this precise reason the MICROSCOPE is available for the DECKEL S0 and SOE.

Its advantage: Reducing set-up time by up to 80 % and exactly checking and measuring the tool without re-clamping it.



With a field vision imaging 6 mm (1/4") diameter and magnification of 1:20, the microscope is ideal for small tools with intricate shapes and strict tolerances. Since the microscope remains fitted during the grinding process, the tool can be continuously monitored, a particular advantage when grinding complex shapes. Additionally, the microscope provides a three-dimensional image, supplying the operator with data on the quality of the cutter's surface. The microscope is indispensable in micro engraving. The microscope can be easily retro-fitted.

In the following pages a wide range of accessories are offered that can increase the scope of application of your S0 and S0E and make your machine even more versatile and economic.

For ease of identification, indispensable accessories are marked with a red triangle (▲), while a black triangle (▲) designates parts that can be retrofitted at any time.



Dust exhaust unit for the S0 ▲

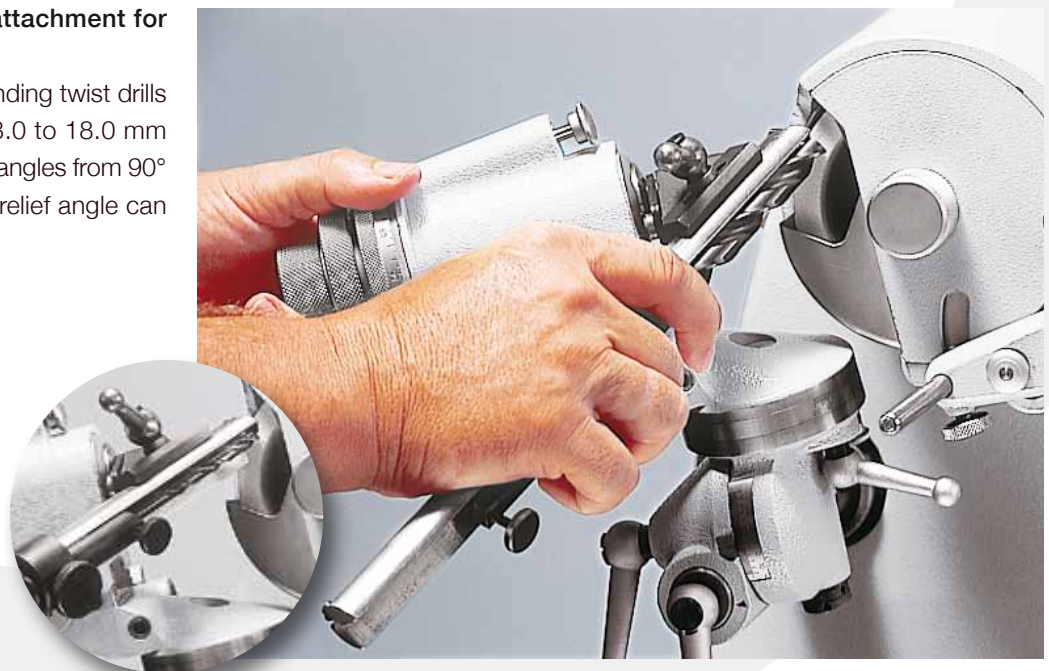
The standard dust protection cover makes it possible to equip the S0 with an external dust exhaust unit.

Two types are available, a standard unit or the Category H style, which is approved for harmful environments with carcinogenic dusts of Group I and II.



Twist drill grinding attachment for the S0 and S0E ▲

A useful device for grinding twist drills with diameters from 3.0 to 18.0 mm ($\frac{1}{8}$ " to $\frac{11}{16}$ ") and point angles from 90° to approx. 120°. The relief angle can be set as required.



USEFUL ACCESSORIES FOR PERFECT GRINDING RESULTS

Tool holder for S0 and S0E ▲

For reconditioning and manufacturing of rectangular or square tools with any desired profile or for grinding radii on reversible carbide tips up to 20 mm (0.78") height. In conjunction with the SOE's microscope, you can gauge radii and profiles up to the height of 8 mm (0.31") in mere seconds.



Handle for S0 and S0E ▲

Just slip on to the indexing head to facilitate quick and easy cylindrical grinding.

Collets for S0 and S0E ▲

The standard "DECKEL" style with a 20 mm shaft diameter and a 20 x 2 mm buttress mounting thread; clamping range 0.5 to 18.0 mm ($1/32$ " to $11/16$ " diameter). Also available for square tools in metric or inch sizes.



ADDITIONAL ACCESSORIES

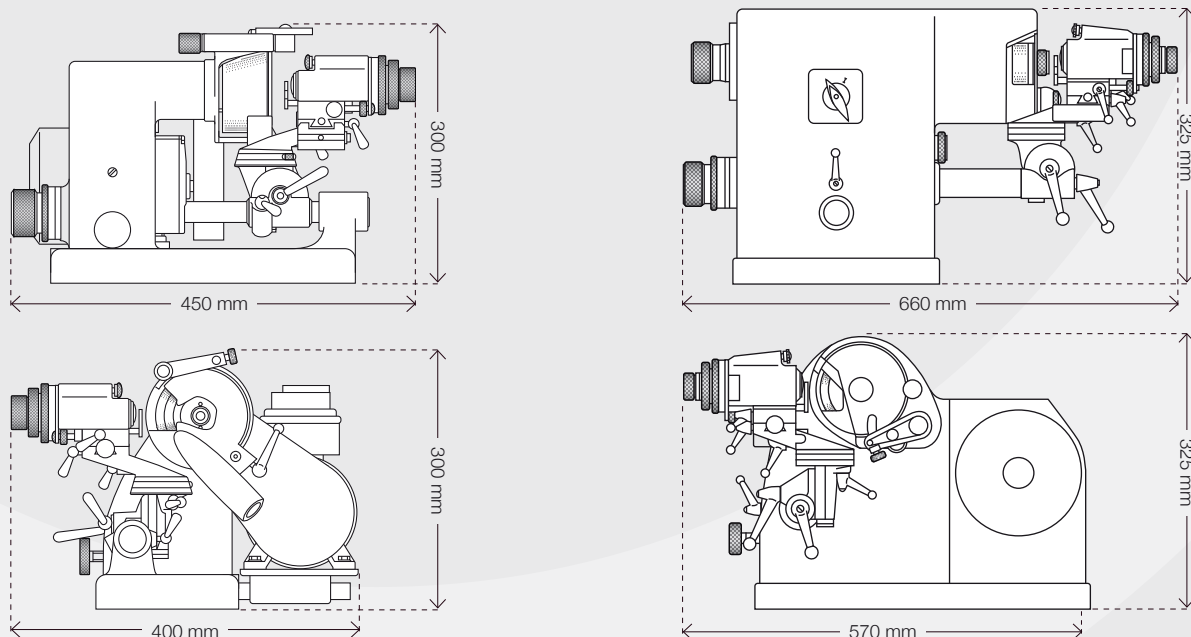
- ▲ Articulated-arm halogen lamp for the S0 and S0E
- ▲ Grinding wheels
- ▲ Grinding wheel mounts
- ▲ Dressing diamond
- ▲ Diamond handlapper
- ▲ Collet stop
- ▲ Spare filters for dust exhaust unit
- ▲ Main power cable with plug

Technical Specifications S0/S0E

Grinding motor/spindle	S0		S0E	
Power rating	0,25 kW	0,34 hp	0,55 kW	0,75 hp
Motor speed	2800 rpm		2800 rpm	
Spindle speed	4500 rpm		4500 rpm	
Tool holder	S0		S0E	
Tool diameter with collets	0.5 – 18.0 mm	¹ / ₃₂ to ¹¹ / ₁₆ in.	0.5 – 18.0 mm	¹ / ₃₂ to ¹¹ / ₁₆ in.
Square-collets	4-5-6-7-8-10-12 mm		4-5-6-7-8-10-12 mm	
Tool holder settings	S0		S0E	
Lateral adjustment	10.0 mm	0.4 in.	10.0 mm both ways	0.4 in.
Longitudinal adjustment	40 mm	1.6 in.	40 mm	1.6 in.
Maximum relief angle	45 °		45 °	
Fine adjustment of indexing head relative to spindle	15 mm	0.6 in.	15 mm	0.6 in.
Number of registers on index plate	12		12	
Dimensions	S0		S0E	
Length	450 mm	18 in.	660 mm	27 in.
Width	400 mm	16 in.	570 mm	23 in.
Height	300 mm	12 in.	325 mm	13 in.
Height of machine pedestal	915 mm	36 in.	856 mm	34 in.
Weight	S0		S0E	
Table model	32 kg	70 lb.	65 kg	145 lb.
Pedestal model	67 kg	150 lb.	125 kg	275 lb.
Standard accessories				
Wheel mount for cup grinding wheel				
Extractor nut for wheel mount				
100 x 50 x 20 mm cup grinding wheel for HSS tools				
Tool set (8 wrenches)				
Paintwork, structure	S0		S0E	
Machine	Light Grey, NCS-S-1502-G		Light Grey, NCS-S-1502-G	
Pedestal	Median Grey, NCS-S-4502-G		Median Grey, NCS-S-4502-G	

Each machine is supplied with a detailed set of operating instructions and a spare parts list with instructions on removing and fitting.

Dimensions



Subject to modifications consistent with technical advance and errors excepted.
The representations and descriptions in this brochure include options with costs.

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