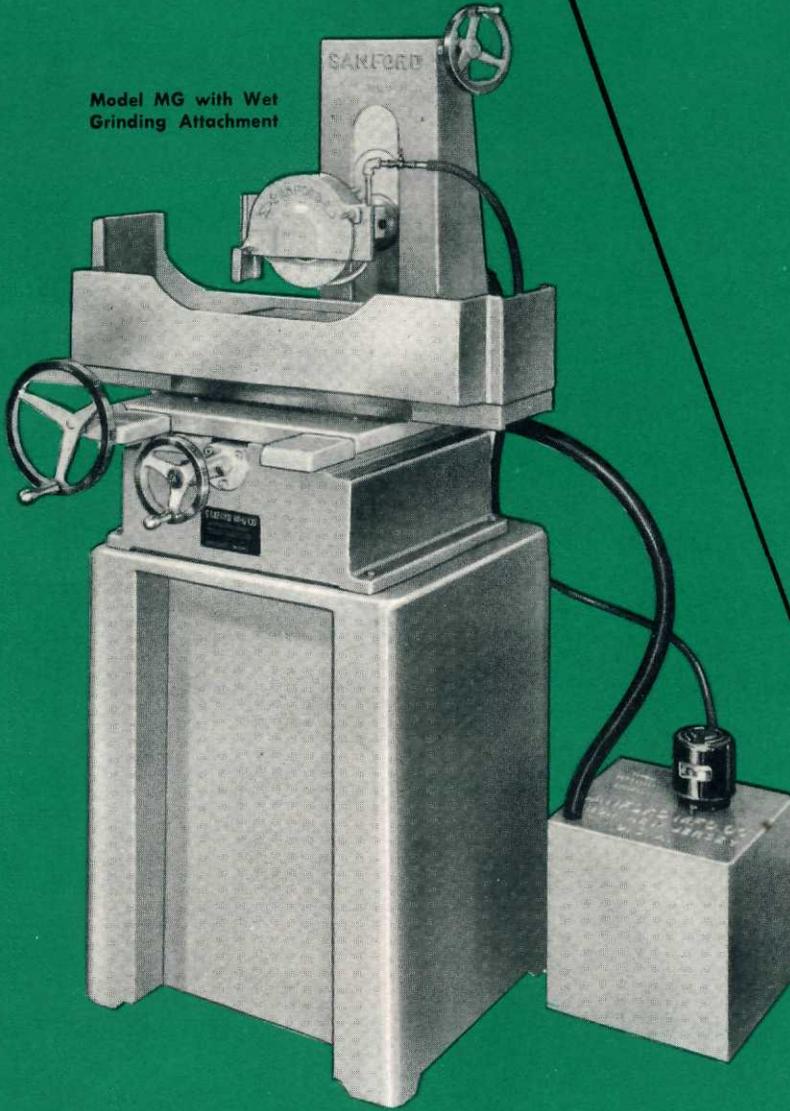
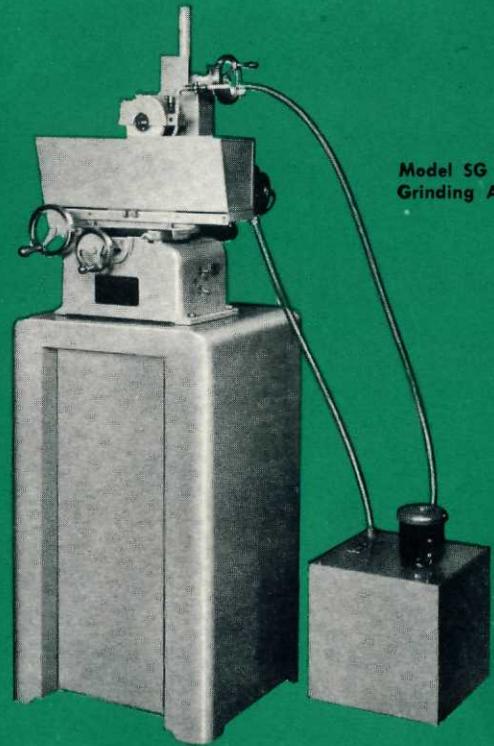


PRECISION
SPEED
SENSITIVITY

Model MG with Wet Grinding Attachment



Model SG with Wet Grinding Attachment

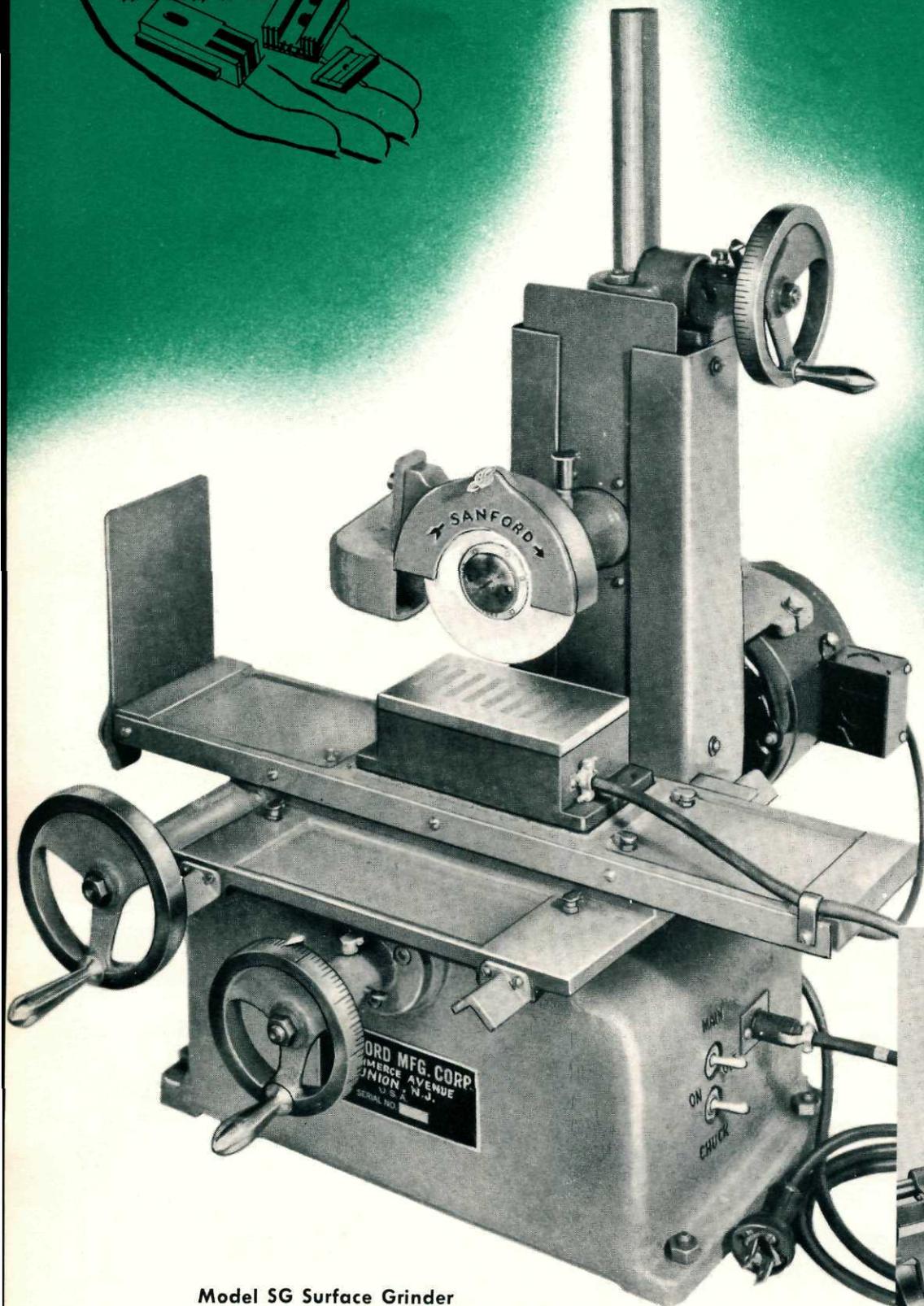


SANFORD SURFACE GRINDERS

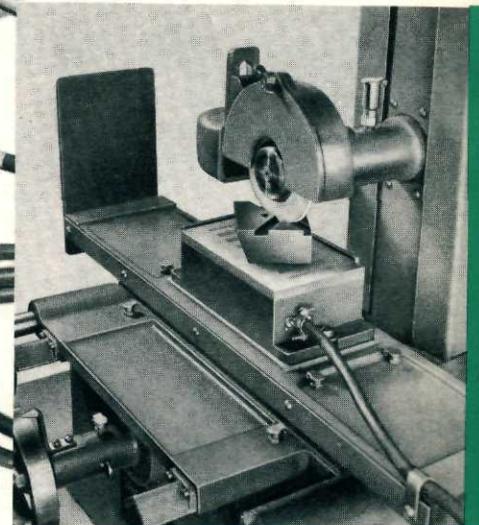


MANUFACTURING CORP. • 1020 Commerce Ave., Union, N. J.

If it fits in the palm of your hand



Model SG Surface Grinder equipped with electromagnetic chuck ready for operation.



Finishing sides and bottoms of slots

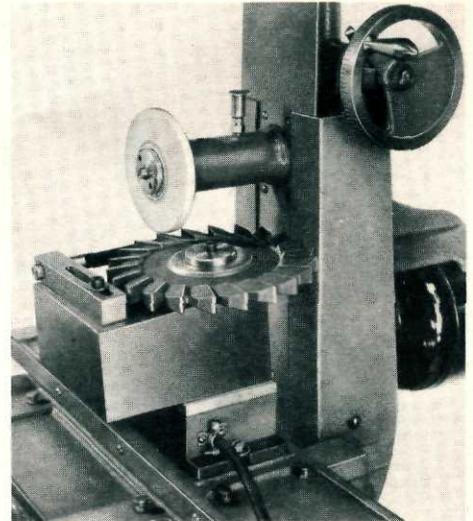
.. grind it on the **SANFORD**

Model SG _____

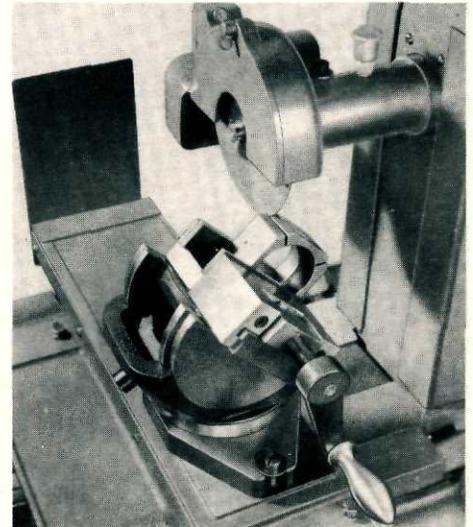
Combining split-tenth accuracy with compactness, high speed and easy controllability, the Sanford Bench Surface Grinder Model SG is unrivalled by any other small parts surface grinder on the market. With finishing tolerances for small parts becoming ever closer — less than a ten-thousandth of an inch, in many cases — the need for a precision surface grinder adapted exclusively for these small parts is increasingly evident. The Sanford Model SG Grinder was created to fill this need. It is a low-cost precision machine of 4" x 8" x 6" capacity suited for dry surface grinding dies, gauges, instrument parts and other small parts which would fit in the palm of the hand. The SG, however, may be adapted to wet grinding. Many plants manufacturing precision equipment have greatly reduced overall finishing costs by using Sanford Bench Grinders for finishing small intricate parts while performing heavier duty surface grinding on larger, more expensive machines.

The Sanford Bench Surface Grinder is not another mass-produced, assembly line job. Each unit is an individual project embodying the fine precision craftsmanship and high quality materials which have built the Sanford reputation. The machine has been well termed:

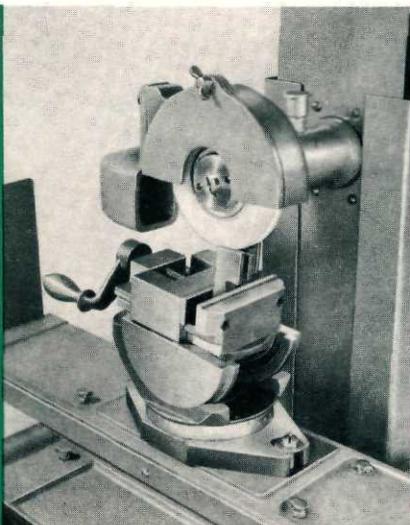
"A Mighty Mite for Grinding Right!"



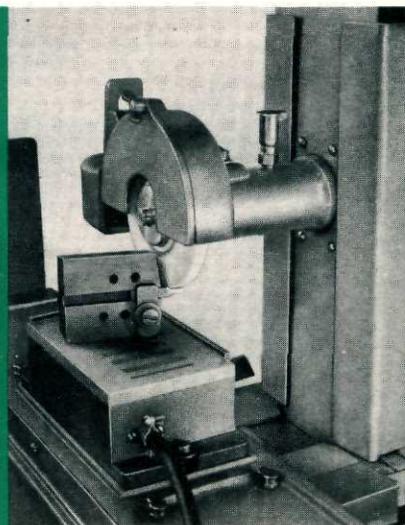
Grinding side clearances with special Cutter Grinding Attachment mounted in horizontal working position



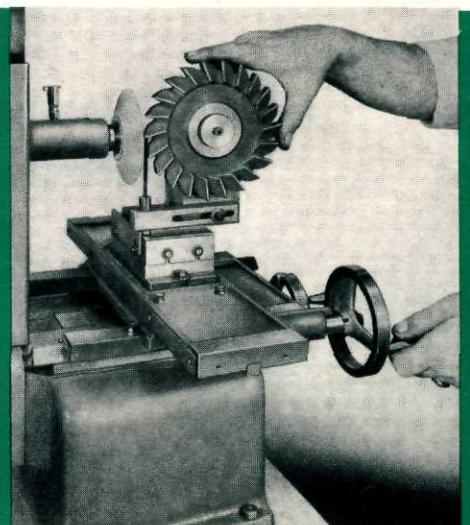
Finishing slots with formed wheel



Grinding surfaces and clearances on small, intricate forming punch



Grinding square-thread cutting tools to close tolerances



Grinding cutter periphery with special Cutter Grinding Attachment mounted in vertical working position

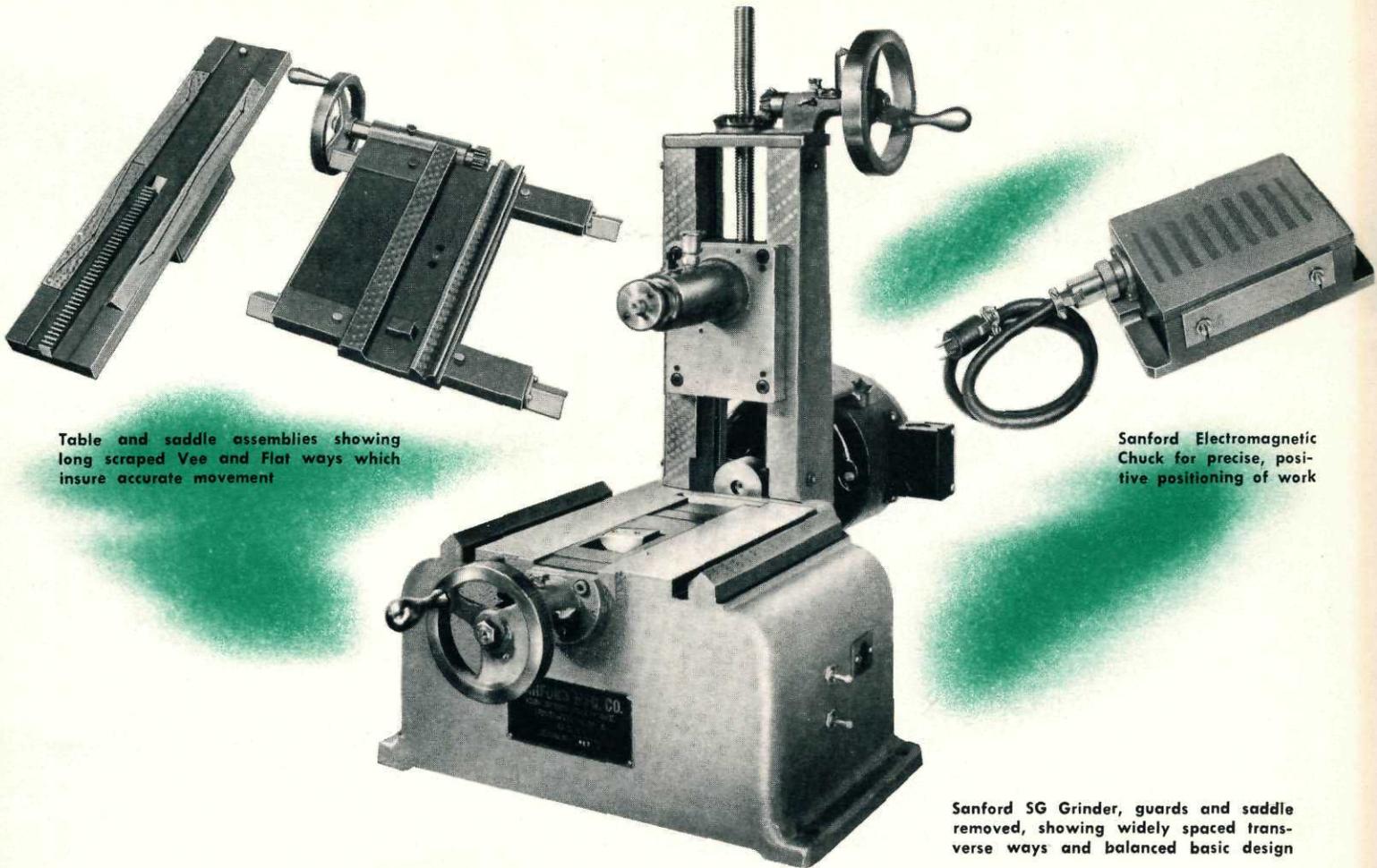


Table and saddle assemblies showing long scraped Vee and Flat ways which insure accurate movement

Sanford Electromagnetic Chuck for precise, positive positioning of work

Sanford SG Grinder, guards and saddle removed, showing widely spaced transverse ways and balanced basic design

SPECIFICATIONS

Magnetic chuck surface3" x 5"

Longitudinal travel of table8"

Transverse travel4"

Vertical movement of wheel head6"

Maximum distance between table and 4" wheel.....6"

Maximum distance between magnetic chuck and 4" wheel4"

Standard Grinding Wheel dimensions....4" x 3/8" x 1/2"

Spindle speed.....Approx. 5500 RPM

Motor, dynamically balanced, 1/6 Hp, 110 Volt AC, 60 cycle, 3450 RPM

Net WeightApprox. 160 lbs.

Shipping Weight—domestic190 lbs.

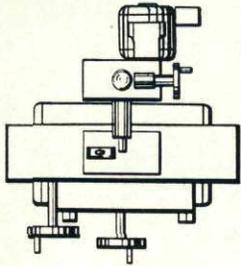
Shipping Weight—boxed for export250 lbs.

Cubic Measurement 23" wide x 30" deep x 27" high

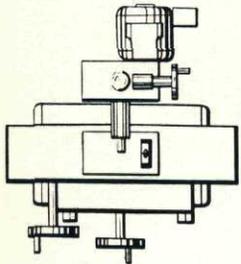
Standard equipment includes motor; electromagnetic chuck and rectifier; grinding wheel; flat belt; exhaust type wheel guard; spark shield; spanner wrench.

Optional Equipment: Wet Grinding Attachment; Diamond Wheel Dresser and Holder; Cutter Grinding Attachment; Portable Mounting Table; Metal Base for Floor Mounting.

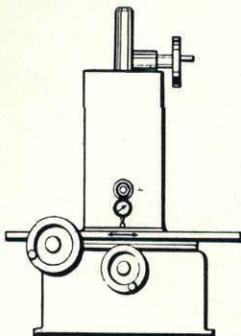
Each Sanford Grinder is Carefully Inspected and Tested Before Shipment



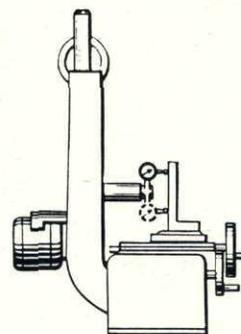
Maximum table error longitudinal direction, checked level with dial indicator. - .0001"



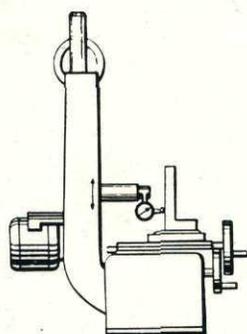
Maximum table error transverse direction, checked level with dial indicator. - .0001"



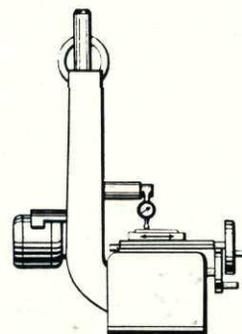
Maximum error longitudinal table movement, checked with dial indicator - - .0001"



Spindle parallelism with table, measured by swinging dial indicator on 4" dia. - .0002"



Vertical movement of spindle square with table, checked with dial indicator - .0002"



Maximum error transverse table movement, checked with dial indicator - .0001"

Sanford Surface Grinders, both bench type and large models, are designed for vibrationless operation. This is a result of Sanford's exclusive method of assembling the grinding spindle, vertical column and bed. These three main parts are always in perfectly balanced alignment. Consequently, there is no chance for vibration or grinding inaccuracy. As long as they are given the normal careful treatment that should be extended to all precision tool room equipment, Sanford Grinders will guarantee a fine finish to less than .0001" tolerance each time they are used.

CONSTRUCTION DETAILS

CASTINGS — Close grained Meehanite used at all points of wear, gives longer life, greater vibration damping capacity. All castings are heat treated and annealed to preserve dimensional accuracy.

SLIDING MEMBERS — Accurately ground and lapped, then handspotted to provide for sensitive movement. Amply lubricated.

ALIGNMENT — Accurate relationship of grinding spindle, vertical column and bed maintained through simple means of adjustment.

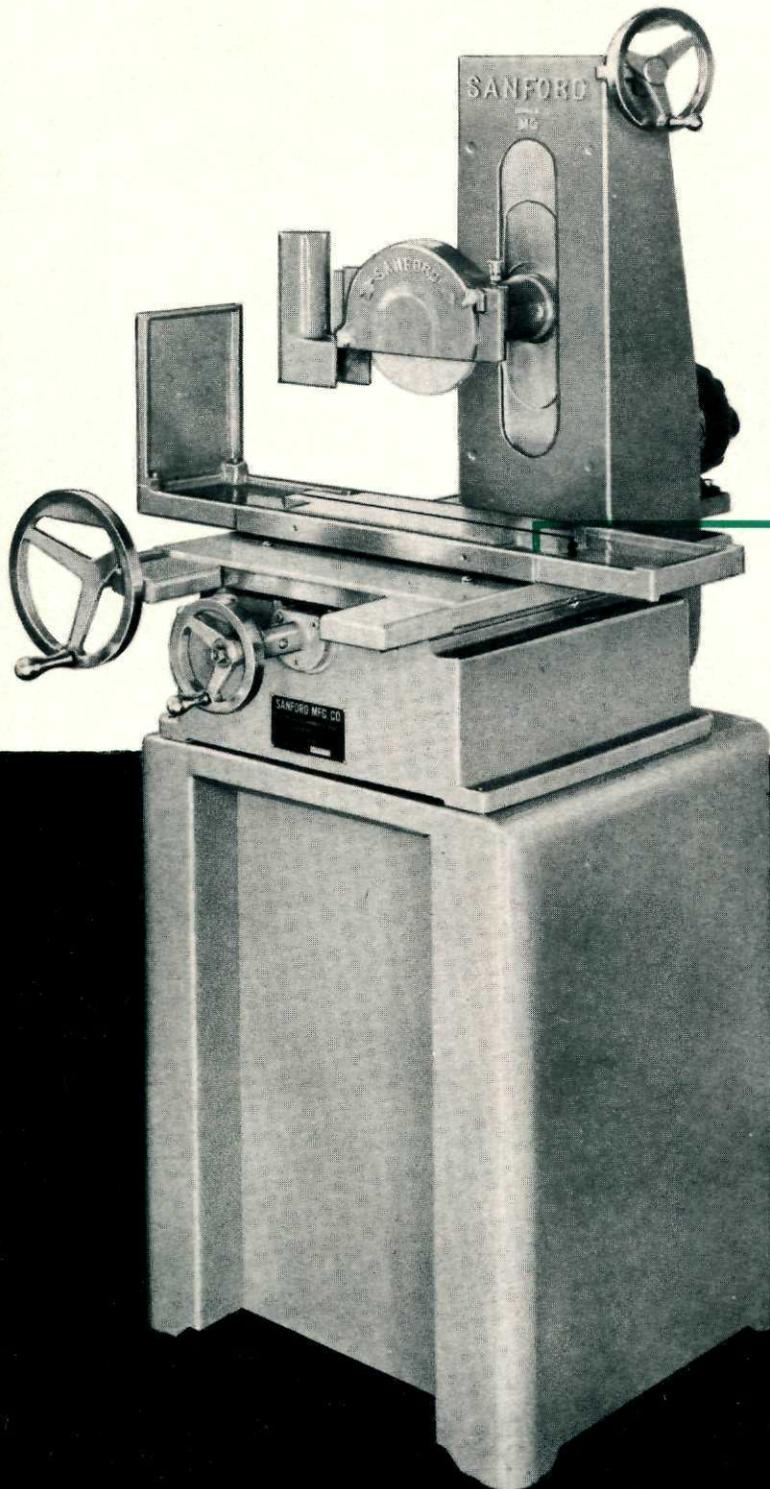
SPINDLE — Made of high quality alloy steel, expertly ground, mounted in precision ball bearings. Adjustment provided for bearing take-up. Vertical travel actuated through pinion, bevel gear and precision screw and controlled by handwheel with .0005" graduations.

SADDLE — Accurately fitted to inverted, widely spaced Vee ways. Micro-meter cross feed screw is actuated by handwheel graduated in .001".

TABLE — Rests by its own weight in the saddle and travels on long Vee and flat ways. Handwheel control through closely fitted rack and pinion gives smooth, sensitive movement. Pinion shaft mounted on needle bearings, sealed against dust and grit, lubricated for life.

SANFORD

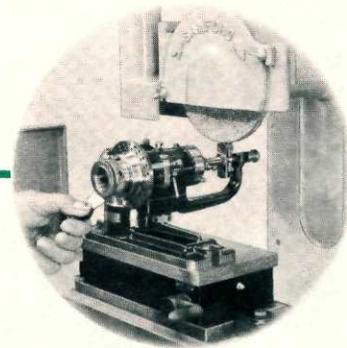
micro grinder . . . *model MG*



- **LARGE CAPACITY**

- **HIGH PRECISION**

- **LOW COST**



Speed on grinding punches

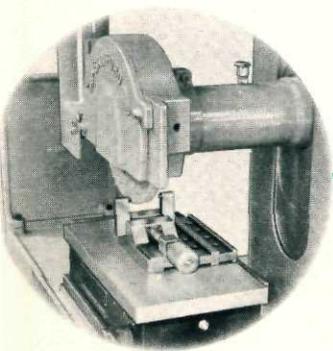
All moving parts are completely guarded against destructive dust and grit

The Sanford MG Micro Grinder, for dry or wet grinding, is a larger, heavier duty surface grinder than the model SG, having a capacity of 8" x 12" x 12". It handles large work as well as small intricate jobs. As its name implies, the MG grinds to micro-inches, is sturdy, extremely well constructed and has exceptional sensitivity of control. Like the SG, the MG Micro Grinder embodies the experience and skill acquired by manufacturers who have, for years, specialized in the construction of small grinders which are used almost exclusively for tool and gauge work of the highest precision.

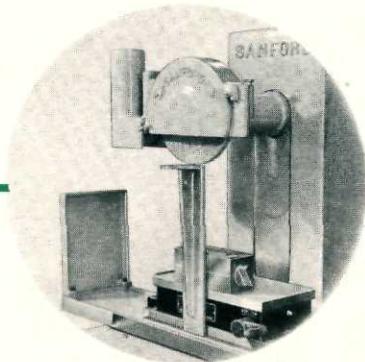
The MG is modestly priced considering its many advantages. For example, transverse ways are double

vee (VV) Meehanite inserts instead of flat surfaces which depend upon an unstable jib for alignment and accuracy. Anti-friction bearings are used wherever possible to insure efficient, trouble-free operation. All slides and bearings are carefully protected to exclude dust and grit. Castings are specially heat treated to insure dimensional stability. Feed screw threads are machined to strictest tolerances. All alignments are checked with sensitive electrical instruments. Control dials are large and legible.

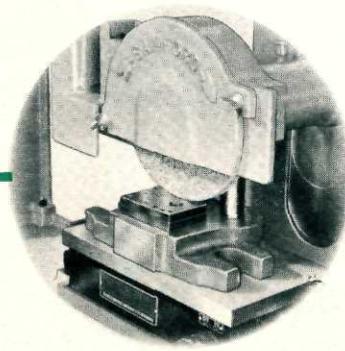
The quality of materials and skilled craftsmanship that go into the manufacture of the MG Micro Grinder are those of much more expensive machines.



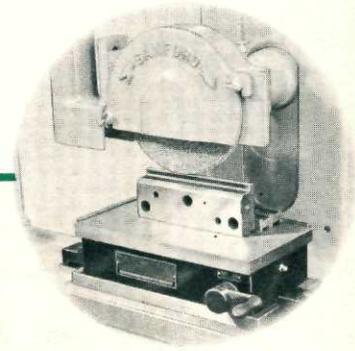
Sensitivity for grinding snap gauges



Extra capacity for larger jobs



Precision grinding of die cutter plate



Grinding a perfect shearing edge plate

SPECIFICATIONS

- CAPACITY** 8" x 12" x 12" — Actual movements: Transverse $8\frac{3}{4}$ ", Longitudinal 13", Vertical 12" under 7" diameter wheel.
- GRINDING WHEEL** 7" diameter, $\frac{1}{2}$ " wide, $1\frac{1}{4}$ " hole. Fits standard adapters.
- TABLE WORK SURFACE** $5\frac{5}{8}$ " x $12\frac{1}{4}$ ". Tee slots for standard $\frac{3}{8}$ " tee bolts. Will take 5x10 or 6x12 magnetic chucks.
- SPINDLE SPEED** Approx. 3000 RPM. Special speeds available.
- VERTICAL HANDWHEEL** Graduated in one-half thousandths (.0005").
- TRANSVERSE HANDWHEEL** . . . Graduated in two-thousandths (.002").
- MOTOR DRIVE** Dynamically balanced, $\frac{1}{2}$ HP, 3450 RPM, 115/230 volt, single phase, 60 cycle motor as standard. Also available are 220 volt, 3 phase, 60 cycle; 440 volt, 3 phase, 60 cycle and 115 volt direct current motors at extra cost.
- NET WEIGHT** Bench Model approx. 540 lbs.; Base mounted approx. 630 lbs.
- SHIPPING WEIGHT** Domestic 600 lbs.; boxed for export 700 lbs.
- FLOOR SPACE REQUIRED** Longitudinally 45", transversely 38".
- CUBIC MEASUREMENT** 33" wide x 40" deep x 38" high.

Standard Equipment includes motor and switch wired to connection box; grinding wheel; wheel adapter, belt, pulleys; wrenches.

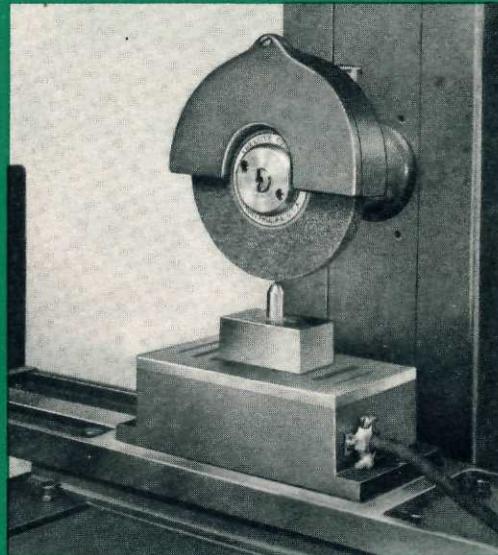
OPTIONAL EQUIPMENT

for SANFORD Surface Grinders



◀ **CUTTER GRINDING ATTACHMENT** — can be used on any surface grinder. Mounts on electromagnetic chuck. Takes Plain and Side Milling Cutters up to 6" diameter having either $\frac{1}{2}$ ", $\frac{3}{4}$ " or 1" arbor holes. Used in vertical position, cutter teeth are ground on periphery of grinding attachment; for obtaining correct side clearances for cutter teeth, attachment is mounted in horizontal position. This is achieved by the incorporation of a predetermined angle in the horizontal mounting surface of the attachment.

DIAMOND WHEEL DRESSER AND HOLDER ▶



◀ **PORTABLE MOUNTING TABLE** — Suitable for any bench surface grinder. Heavily varnished wood top 20" x 34" x 33" high.

Also available: Rigid Floor Mounting Base, Two Types, for Models SG and MG. (See front cover)

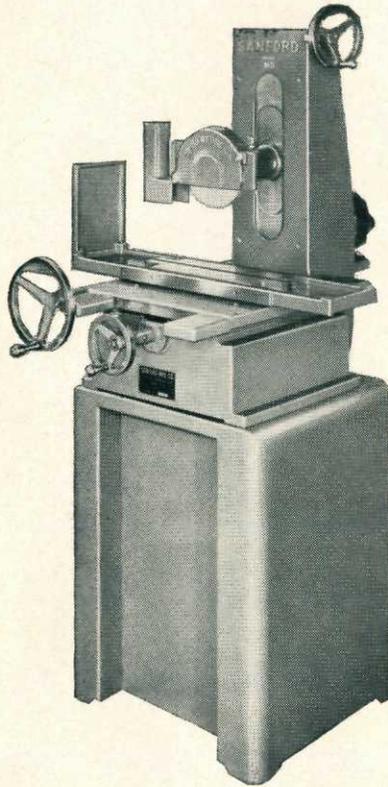
Price List

Effective October 31, 1951

MODEL MG SURFACE GRINDER Complete

Standard Equipment includes: dynamically balanced 1/2 H. P. Sleeve Bearing Motor, 110/220 Volt, single phase, 60 cycle, or 220 Volt, 3 phase, 60 cycle; mounted Motor Switch; Dust Guards; Exhaust Guard; Wheel Adapter; Grinding Wheel and Wrenches.

Net Weight Appr. 540 lbs. \$925.00



—○—

Extra for 220 Volt, 3 phase, 60 cycle fully enclosed Ball Bearing Motor \$ 18.00
 Extra for 440 Volt, 3 phase, 60 cycle fully enclosed Ball Bearing Motor \$ 30.00
 Extra for 110 Volt D. C. Motor \$ 35.00
 Others on Application

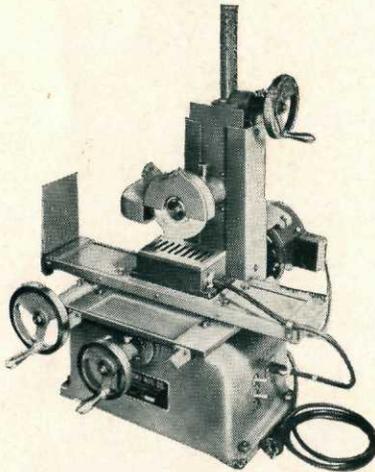
Optional Equipment:

Base for Floor Mounting \$ 75.00
 Wet Grinding Attachment consisting of: 7 Gallon Tank; 1/25 H. P., 110 Volt, 60 cycle, single phase Motorpump; splash guards and all necessary hose and fittings \$165.00
 Milling Cutter Grinding Attachment \$ 50.00
 Diamond Wheel Dresser and Holder \$ 17.50
 Adjustable Table Stops \$ 35.00
 5x10 B & S Permanent Magnet Chuck \$140.80
 5x10 Walker Permanent Magnet Chuck \$136.00

MODEL SG SURFACE GRINDER Complete

Standard Equipment includes: dynamically balanced 1/6 H. P. Sleeve Bearing Motor, 110 Volt, single phase, 60 cycle; Magnetic Chuck and Rectifier; built-in Switches and Plug-in Cord; Dust Guards, Exhaust Guard; Grinding Wheel and Wrenches.

Net Weight Appr. 170 lbs. \$675.00



—○—

Extra for 110 Volt D. C. Motor \$ 12.50
 Extra for Ball Bearing Motors \$ 18.00
 This Machine is ready to operate. No wiring or grinding of Chuck required. With modifications as below this machine can be used for wet grinding.

Optional Equipment:

Base for Floor Mounting \$ 70.00
 Wet Grinding Attachment consisting of: 7 Gallon Tank; 1/25 H. P., 110 Volt, 60 cycle, single phase Motorpump; splash guards and all necessary hose and fittings \$165.00
 (B & S No. 255 Permanent Magnetic Chuck is used, eliminating our own Chuck and Rectifier.)
 Portable Mounting Table \$ 65.00
 Milling Cutter Grinding Attachment \$ 50.00
 Diamond Wheel Dresser and Holder \$ 17.50

Prices stated herein are F. O. B. Union, N. J. and shall be subject to adjustment to the company's prices in effect at time of shipment, but any increase hereunder not to exceed 15%.

SANFORD MANUFACTURING CORP.

1020-28 COMMERCE AVENUE, UNION, N. J.

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