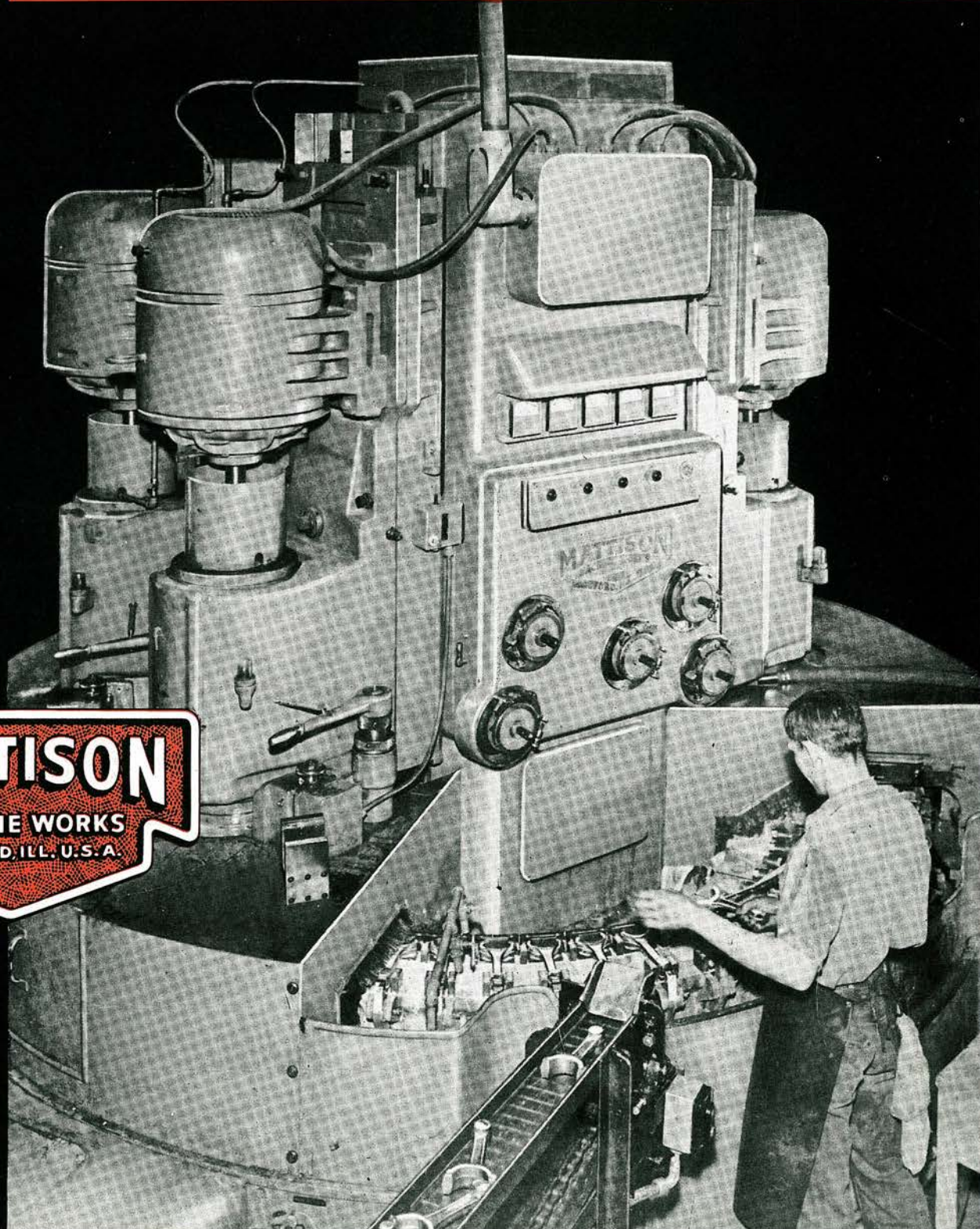


NO. 72 and 100 HIGH PRODUCTION

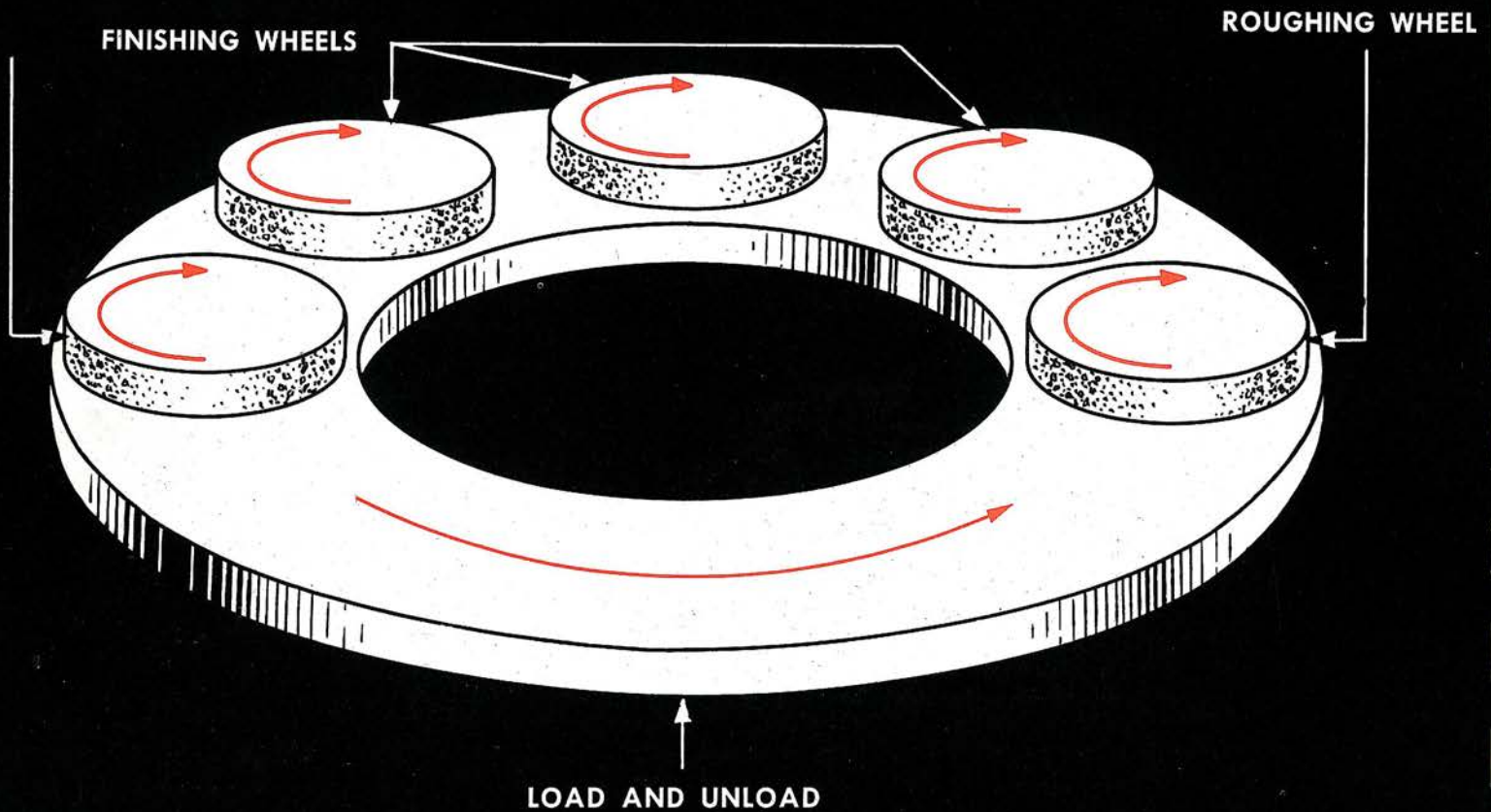
ROTARY AUTOMATIC

SURFACE GRINDERS



MATTISON
MACHINE WORKS
ROCKFORD, ILL. U.S.A.

ON LONG RUN JOBS...MATTISON HIGH PRODUCTION



Continuous single-pass grinding produces more parts...more accurately...at lower unit cost!

• Over 30 tons of power and precision* . . . up to *five* rigidly mounted wheel heads . . . large rotary work table . . . plus automatic compensation for wheel wear make the Mattison Rotary Automatic one of today's lowest cost machining methods. Parts are finished from the rough in *one pass* through the machine . . . frequently in half the time required for milling or broaching. With no special skills, the operator easily produces accurate surfaces. There is no curling or warping of the piecepart due to clamping. Dimensional tolerances

and surface finishes are beyond the range of most machining methods. Minimum stock allowances reduce material costs. Stock removal wheels cut through hard scale easily — there's no slowup of cutting speed or damage to costly cutting tools. With automatic or manual fixtures, magnetic chucks, and automatic handling devices, one operator can produce more parts, more accurately, *at lower unit cost* than several general-purpose machines.

* Model No. 100, 5-spindle.

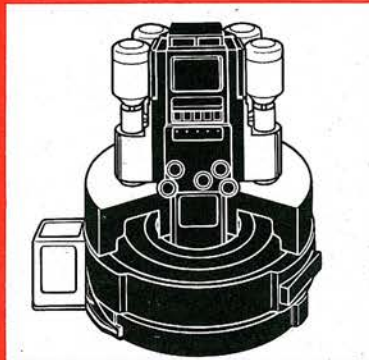
ISON ROTARY METHOD FOR

**HERE'S WHY ROTARY AUTOMATICS GIVE YOU HIGHER PRODUCTION...
CLOSER TOLERANCES...FINER
FINISH...WIDER WORK RANGE!**

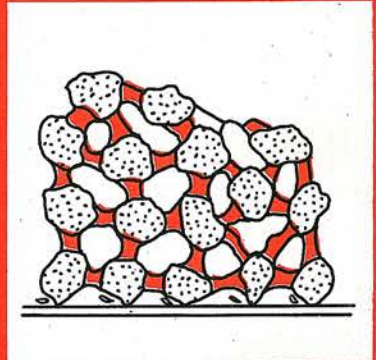
"CENTER COLUMN CONSTRUCTION MAKES WHEEL AND WORK EASILY ACCESSIBLE FROM ANY LOCATION."



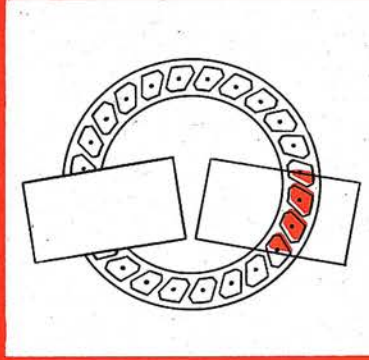
"AUTOMATIC SIZER GAUGE AT EACH SPINDLE ACTUATES FEED TO COMPENSATE FOR WHEEL WEAR"



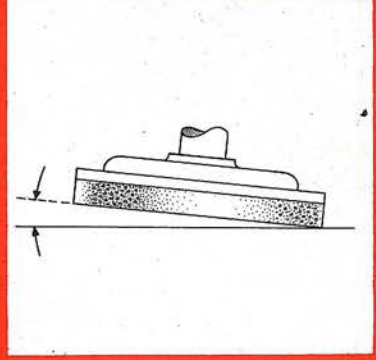
1. Rigid center column permits higher horsepower at the wheel.



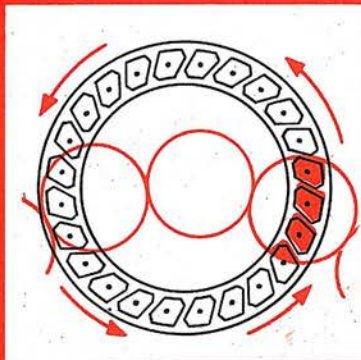
2. Rigidity and high power increase stock removal rates . . .



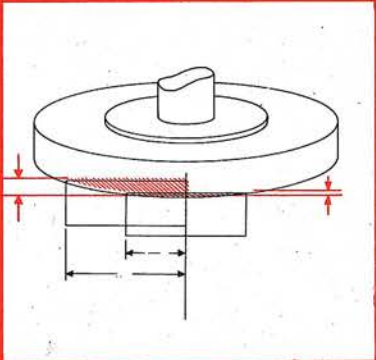
3. . . . permit larger contact area, and wider work range.



4. Free-cutting action minimizes wheel clearance required, increases accuracy...



5. . . . improves stock removal qualities for grinding finer finishes.



6. . . . Head adjustment permits proper relationship of work to leading edge.

MATTISON ROTARY AUTOMATICS ARE AN ADVANCED METHOD FOR MACHINING FLAT SURFACES!

"CENTER COLUMN CONSTRUCTION
MAKES WHEEL AND WORK EASILY
ACCESSIBLE FROM ANY LOCATION."



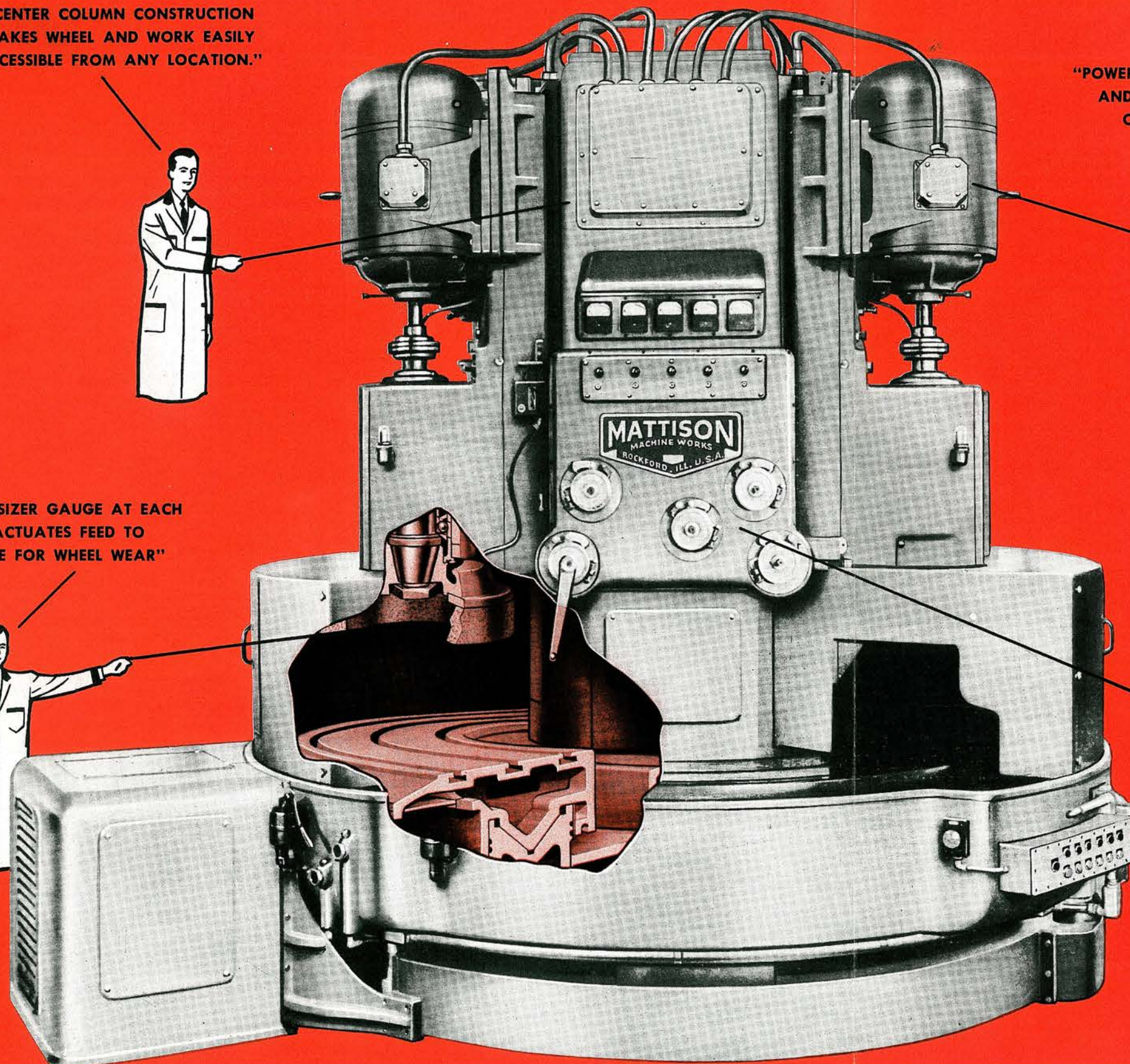
"POWERED FOR FAST STOCK REMOVAL
AND FREE-CUTTING ACTION
ON WIDE RANGE OF WORK."



"AUTOMATIC SIZER GAUGE AT EACH
SPINDLE ACTUATES FEED TO
COMPENSATE FOR WHEEL WEAR"

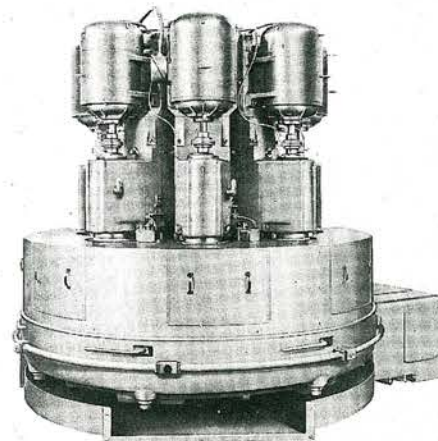


"CENTRAL AUTOMATIC FEED PANEL
SIMPLIFIES OPERATION . . .
REDUCES DOWNTIME."

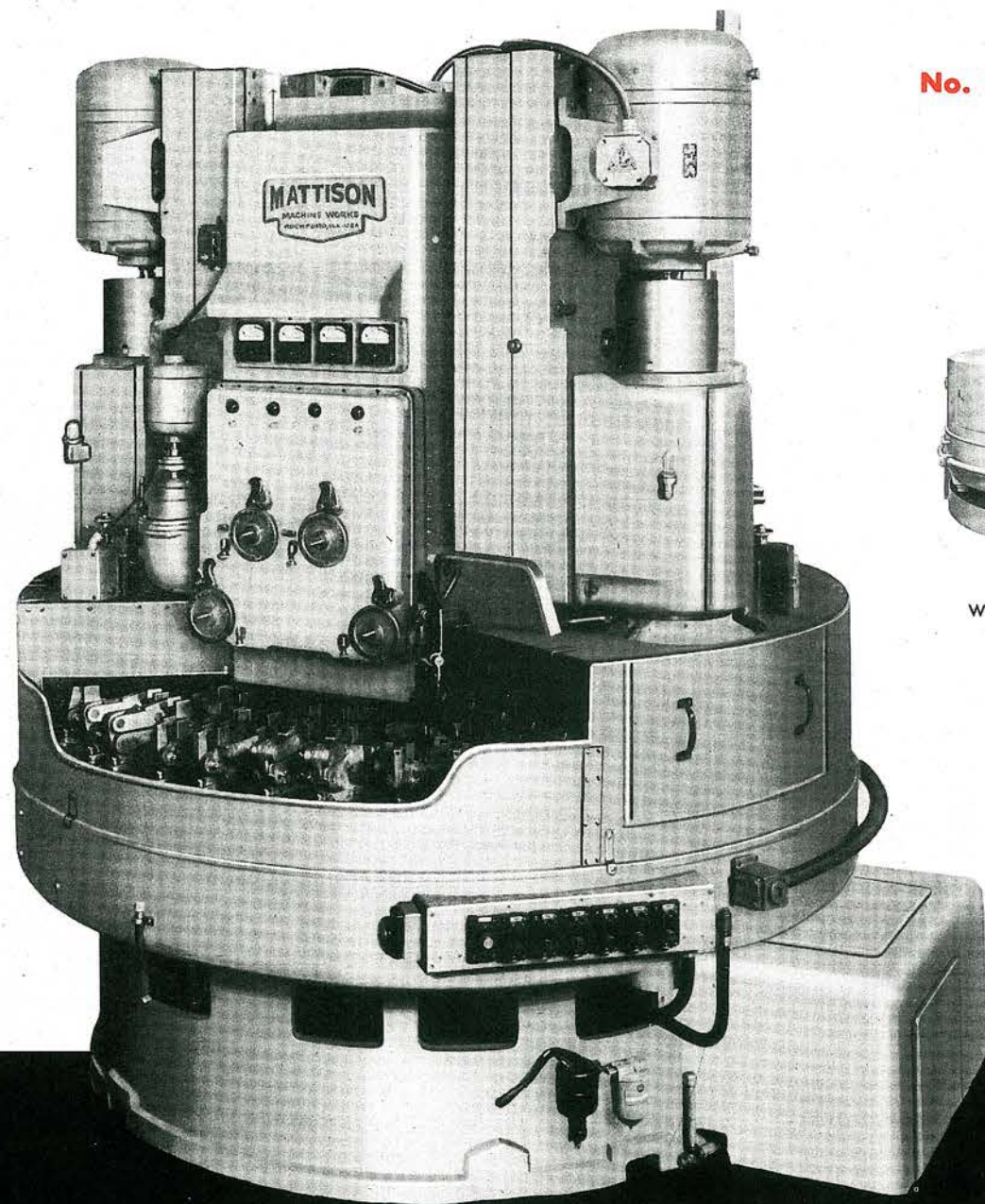
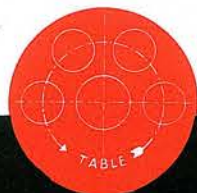


**CHOICE OF 3, 4, OR 5 VERTICAL GRINDING HEADS
TO SUIT EVERY STOCK REMOVAL NEED!**

No. 72 ROTARY AUTOMATIC



Wheels are quickly and easily serviced through individual guard doors.



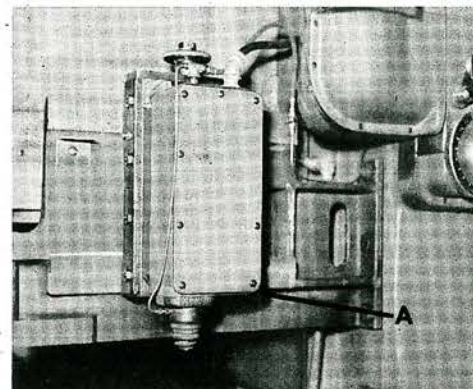
• For work up to 11" high* and stock removal to .100", the Mattison No. 72 Rotary Automatic is renowned for high productivity and wide work range . . . is particularly suited for jobs requiring extra-fine finish and high accuracy. It's available with either *three* or *four* spindles powered by 20 horsepower motors.** Each wheel is equipped with automatic sizing — once set, it will feed

* Length of column may be varied to accommodate special work heights.

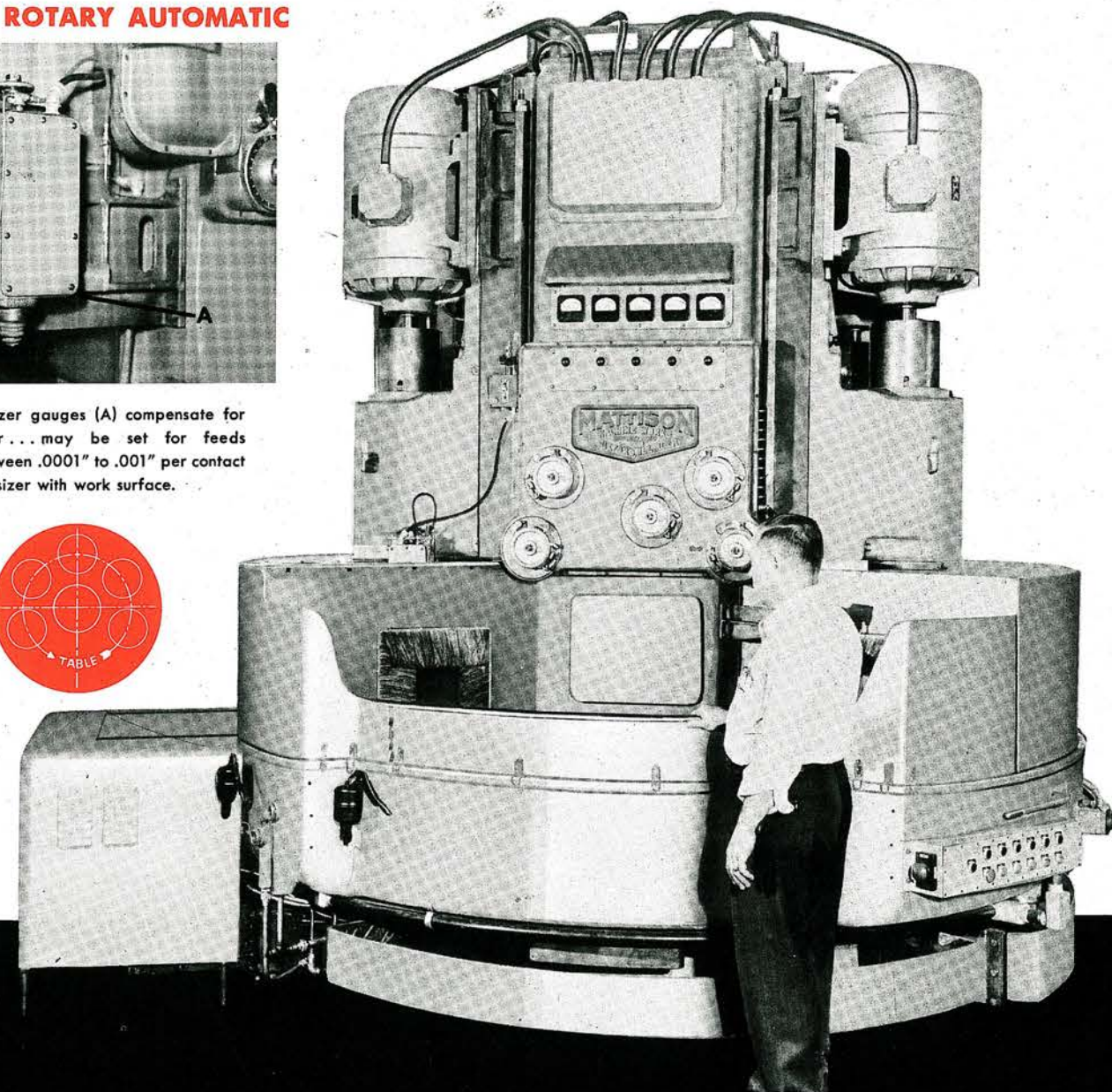
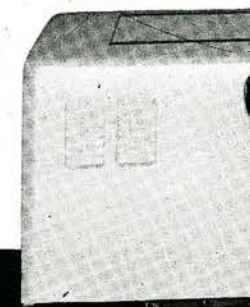
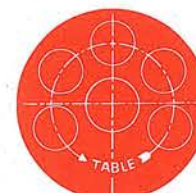
automatically to compensate for wear and grind within required dimensional tolerances. Rough, semi-finish, and finish cuts are taken with only *one pass* through the machine. Rigid, one-piece, 72" diameter work table has large 16" wide "T" slotted work area . . . accommodates variety of fixtures, chucks, and loading devices that practically eliminate nonproductive time.

** 25 hp motors available on 4-head machine.
40 hp motors available on 3-head machine.

No. 100 ROTARY AUTOMATIC



Automatic sizer gauges (A) compensate for wheel wear . . . may be set for feeds ranging between .0001" to .001" per contact of sizer with work surface.



• For work up to 16" high* and stock removal to .150", the "No. 100" is a high-powered production grinder, with exceptional rigidity and wide work range. Five spindles powered by 40 horsepower motors** permit maximum flexibility in selection and use of wheels for grinding small, medium, or large parts. Large 100" diameter table, with 20" wide "T" slotted work area, accommo-

* Length of column may be varied to accommodate special work heights.

dates time-saving fixtures, chucks, and loading devices. Parts are rough ground, semi-finished, and finished in *one pass* through the machine. There's no starting and stopping. Parts are loaded and unloaded with machine in operation. Automatic sizing eliminates need for checking and resetting wheels. Inspection time is minimized. Addition of automatic loading and unloading makes entire operation *completely automatic*.

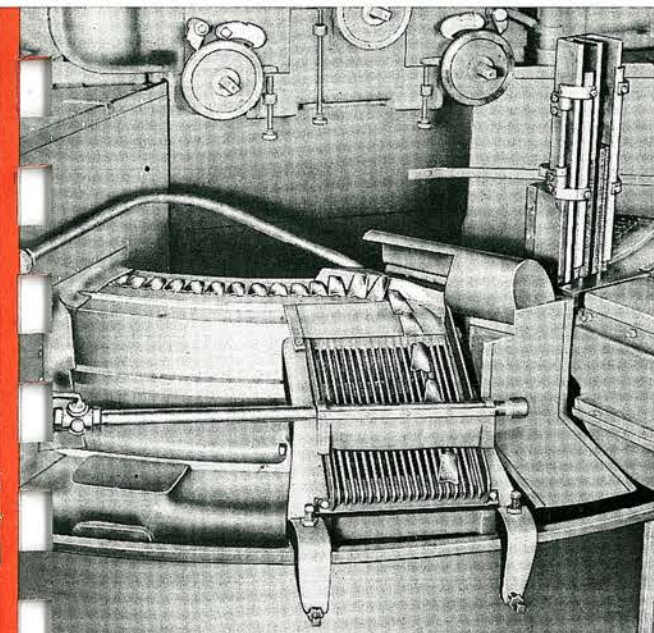
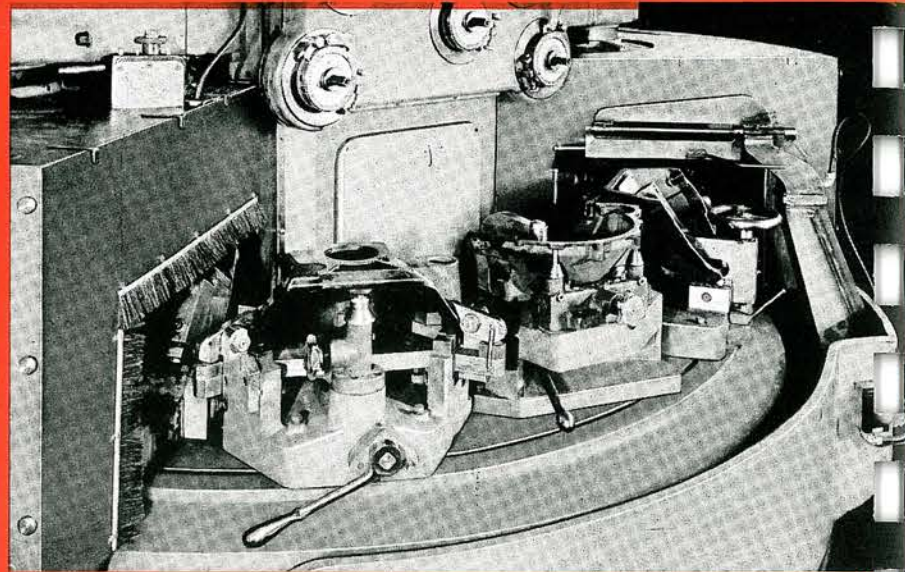
** 50 hp motors available.

PRODUCTION HIGHLIGHTS

Cost-cutting examples of high-production grinding on the Mattison
ROTARY AUTOMATIC

Finishes three faces from the rough . . . 50 pieces per hour

Sets of three different fixtures on this "No. 100" permit grinding pan face, engine face, and transmission face of flywheel housings at rate of 50 finished pieces per hour (150 surfaces). With five grinding wheels powered by 40 horsepower motors, up to $\frac{1}{8}$ " stock is easily removed from the rough castings. Automatic compensation for wheel wear eliminates downtime . . . machine is stopped only when wheels are worn beyond useful limits.

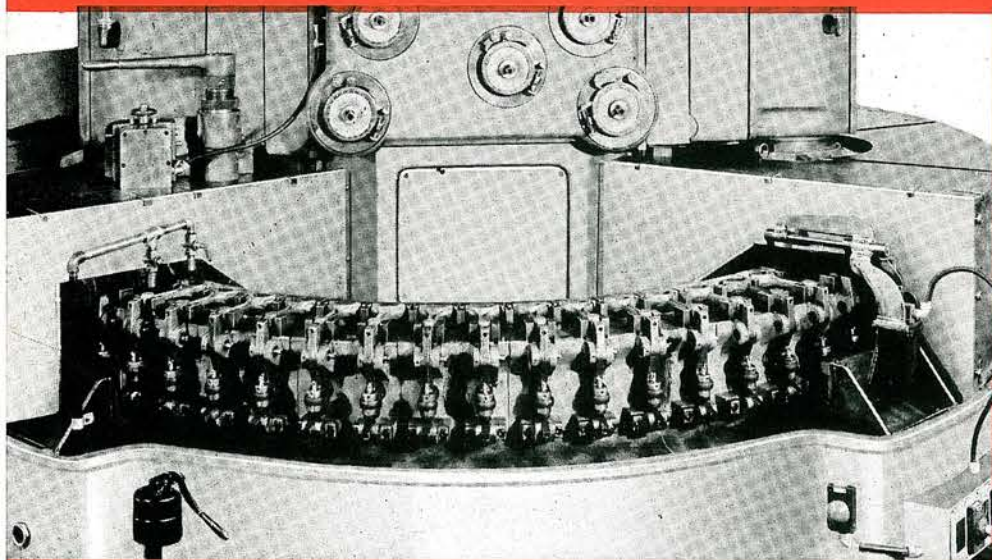
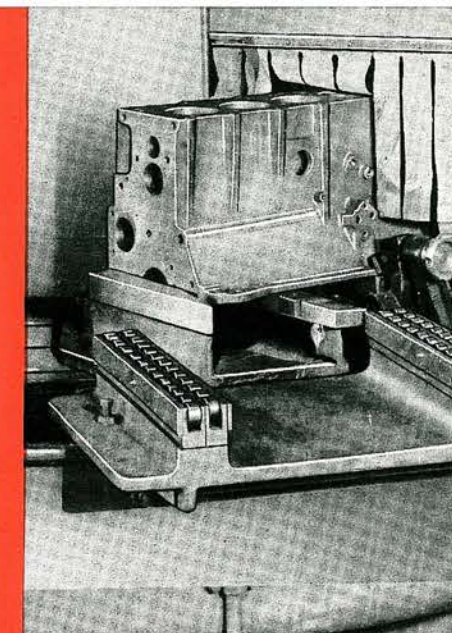


Automatic features increase production to 9,000 per hour

These mower ledger blades are finish ground flat and to .0005" in one completely automatic process on a Mattison "No. 72" three-spindle machine. Blades are hopper fed to a magnetic chuck and automatically released after grinding by a scraper unloader. Stock removal is .010".

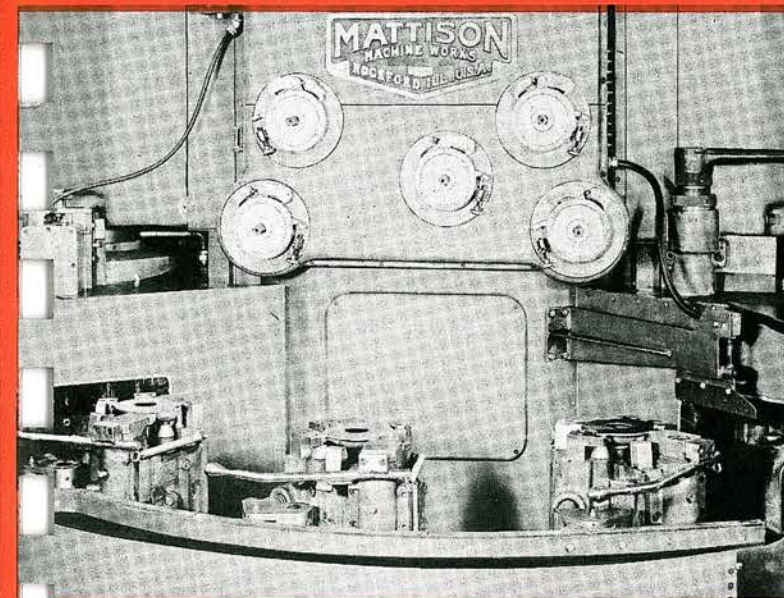
Grinds 120 motor blocks per hour, removing .150" stock

Mattison "No. 100" finishes large motor blocks from the rough . . . holding flatness and size within .001". High horsepower permits heavy stock removal with minimum wheel clearance, increasing accuracy. Production is 120 finished motor blocks per hour.



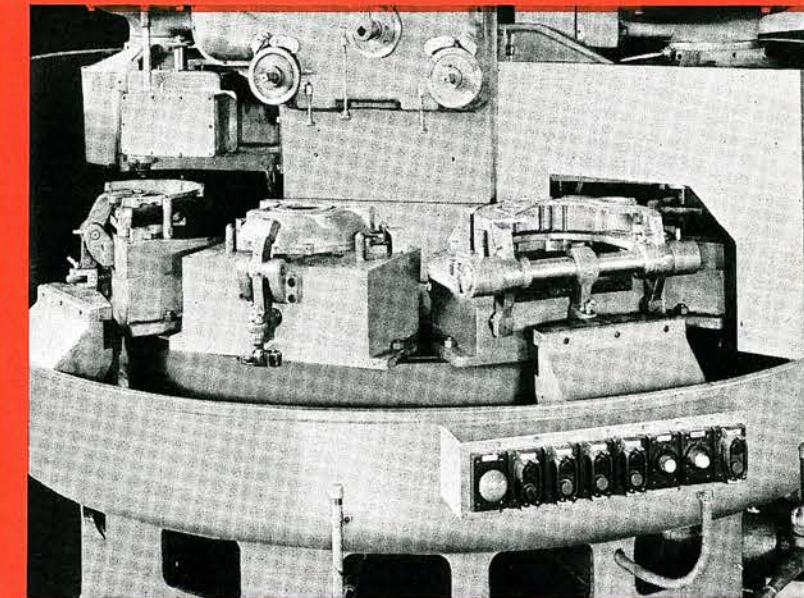
Machines 750 connecting rods per hour . . . grinding two sides

Removing .030" stock from rough forgings, this "No. 100" grinds both ends of one-piece connecting rods. Three wheels grind crank ends . . . two wheels grind pin ends . . . step and parallelism are held to .001". Ground surfaces are used to locate succeeding operations. Automatic clamping and unclamping minimize nonproductive time . . . permit one operator to finish 750 rods per hour — 4 surfaces per rod.



Holds flatness within .002" over large surface . . . grinding 360 water pump bodies per hour

Three solid locaters and two adjustable jacks rigidly support thin-walled cast iron water pump bodies for grinding large surfaces, holding flatness within .002". With four roughing wheels and one finisher, the "No. 100" removes $\frac{1}{8}$ " stock . . . finishes 360 pieces per hour.

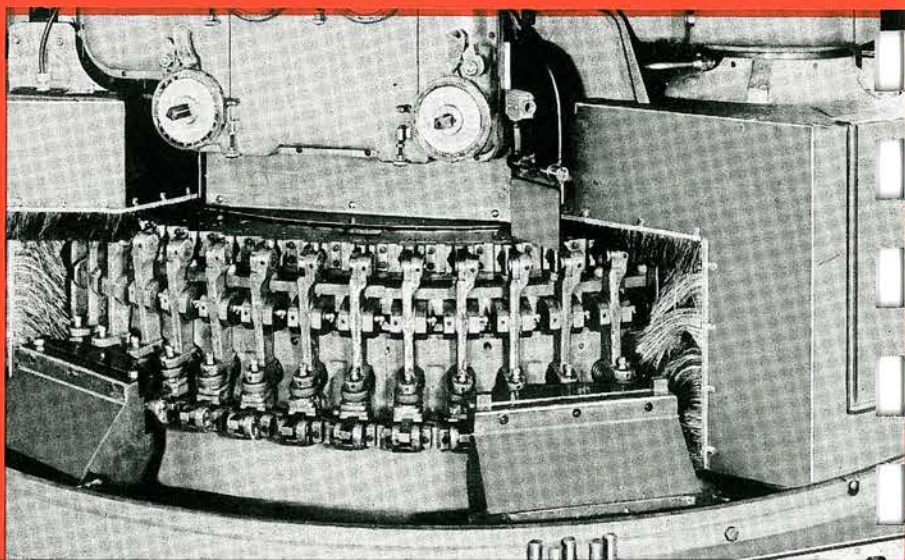


Grinds two different housings on same setup . . . 160 surfaces per hour

Automatic mechanical clamping and unclamping simplify operation of this Mattison No. 72 three-spindle Rotary Automatic for grinding engine and transmission faces of two different flywheel housings. Production is 160 finished surfaces per hour, holding flatness within .003".

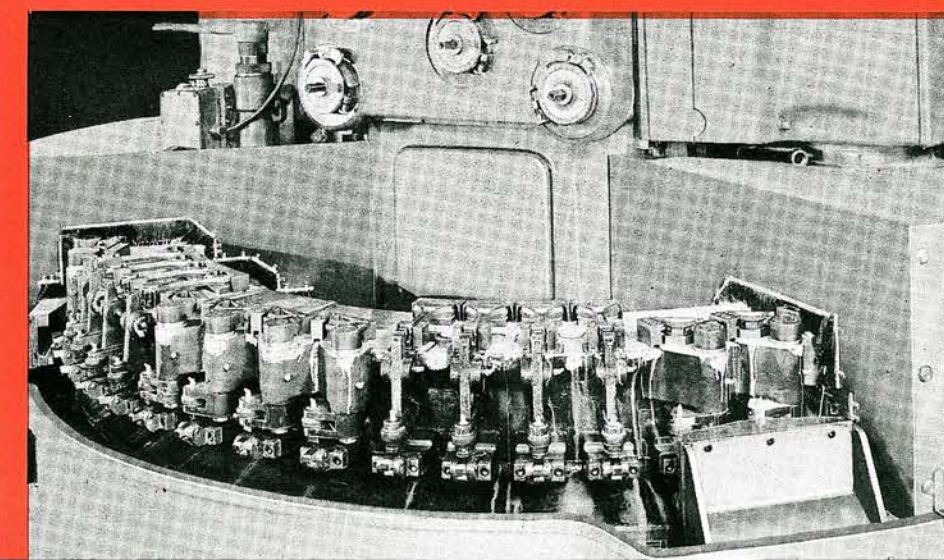
Holds close tolerances and fine finish . . . grinding 3,000 push rods per hour

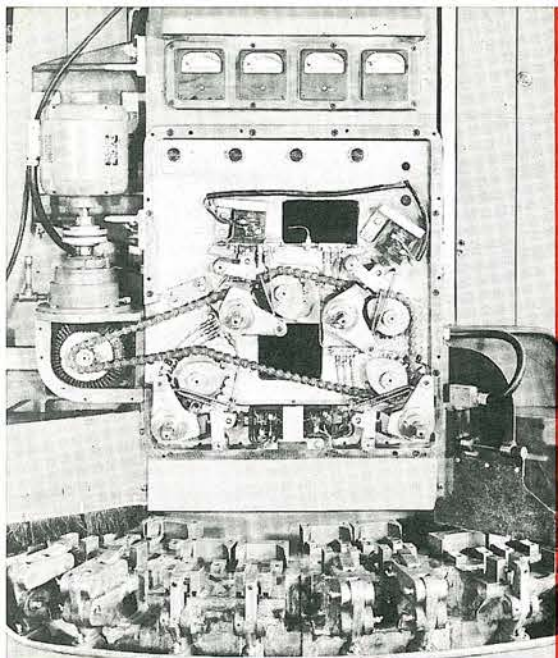
This Mattison "No. 72" four-spindle machine grinds chilled ends of push rods at the rate of 3,000 per hour. Ends are ground square to .0005" . . . length is held to .001" . . . finish is excellent. Automatic compensation for wheel wear, automatic clamping and unclamping, and automatic unloading simplify operation and cut production costs.



Does two operations on two sides of connecting rods and caps . . . 375 gross per hour

Automatic clamping fixtures hold connecting rods and caps for semi-finish and finish grinding two different dimensions, holding accuracy of step and parallelism to .001". Parts are turned and finished in two passes. Gross production is 375 rods and 375 caps, or 2250 surfaces, per hour. Stock removal is .040" per side. Two wheels rough and finish crank ends to one dimension — three wheels (two roughing and one finishing) grind opposite pin end and caps to different dimensions. Automatic clamping and unclamping simplify operation and make it foolproof.



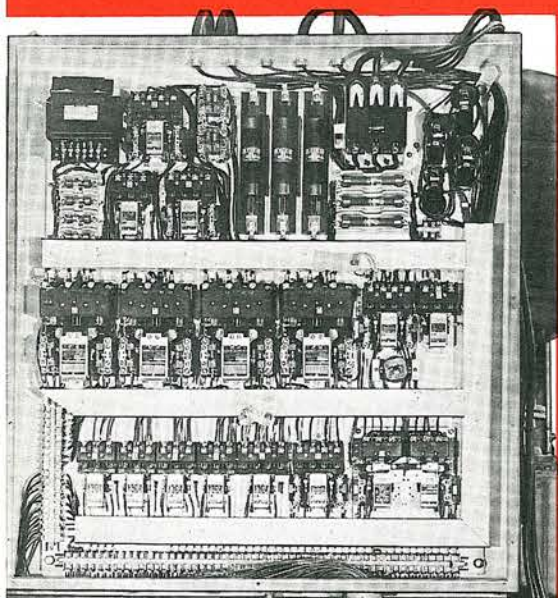


Central automatic feeds simplifies control Saves inspection time and minimizes nonproductive machine time. Automatic feed mechanism operates wheel feed screws to compensate for wheel wear as gauged by work sizers. Feed cams are driven by continuously-running, 1/2 hp motor. When pieceparts approach high limit, solenoid trips catch-lever, allowing feed dog to drop back and feed a predetermined amount (.0001" to .001"). Accuracy of feed is within .0001". Red lights signal and machine stops automatically when wheels are worn beyond useful limits.

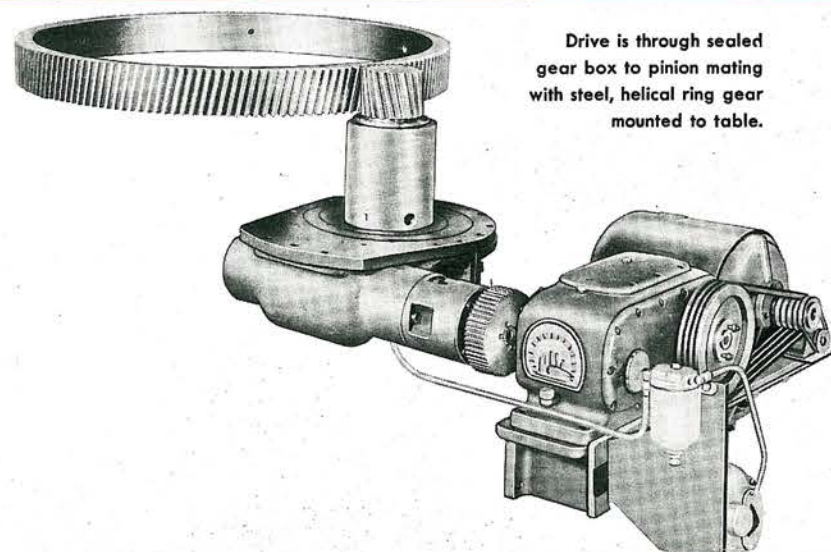
Central power distribution simplifies servicing Mounted in compact, channel-type panel at rear of machine, complete electrical system is accessible for servicing. All controls and wiring meet JIC standards. Wiring fully protected against dirt and moisture.

High power improves stock removal Three or four 20 hp motors on the "No. 72" (five 40 hp motors on the "No. 100") give you high power necessary to take full advantage of today's improved grinding wheels. Higher hp available, large, rigid spindles, and 4 3/4" diameter preloaded precision ball bearings give you improved stock removal qualities for finer finish. Bearings at lower end of spindle counteract vertical thrust. Tank at top of column pipes lubricant to bearings through sight feed... then to tank, pump, and filter in base. Patented Mattison head mounting permits setting wheels exactly parallel to table or at any angle to provide clearance desired.

Gives you wide choice of table speeds Drive mounted outside base gives you wide selection of table speeds, from 3' to 30' per minute. Ruggedly constructed... no chatter, or windup at any point.



Coupling type drive wheel heads, with totally enclosed fan cooled motors, are standard equipment.



Drive is through sealed gear box to pinion mating with steel, helical ring gear mounted to table.

No. 72 — THREE OR FOUR SPINDLE HEADS

CAPACITY — Work up to 11" high... special heights to order. Round work up to 15" diameter; square work up to 12" x 12"; rectangular work 4" wide x 30" long, to 8" wide x 20" long.

WORK TABLE — One-piece casting, 72" diameter by 16" wide work area. Three 3/4" circular T-slots. Variable speeds to suit conditions, such as 1/3 to 1-1/3 rpm or other speed ranges.

BED — Circular V-way, 90° - 6" wide at top.

WHEELS AND DRESSERS — Standard, 20" x 3" x 14" cylinder-type, 20" x 6" x 2" face segmental. Other sizes available to suit conditions. Swing arm wheel dressers, with vertical adjustment, for each spindle.

SPINDLES — Preloaded precision spindle bearings, 4 3/4" diameter in bearings.

WHEEL FEED — Manual "up" and "down" feed for each head. Automatic "down" feed controlled by work sizers, from .0001" to .001". Accuracy within .0001".

LUBRICATION — Spindles... oil tank at top of column, piped to bearings through sight feed, to tank, pump, and filter in base. Bijur one-shot systems for head slides and feed panel. Table runs in oil bath on circular V-way. Zerk grease system for all other points.

COOLANT — 400-gallon tank outside base. Compartments, cleanouts, centrifugal motor-driven pumps.

MOTORS — Standard: 20 hp, 900 rpm, 220/440-volt, 3-phase, 60-cycle motors for wheel heads. Table drive motor through variable speed unit: 3 hp, 1200 rpm, 220/440-volt, 3-phase, 60-cycle. Main line disconnect switch. Ammeter connected to each wheel head motor. 25 hp motors available when required on 4-head, 40-hp on 3-head.

FLOOR SPACE — 108" x 116". Extra coolant tank, add 40 sq. feet.

WEIGHT — Complete machine, 29,700 pounds net. Domestic shipment, 32,000 pounds. Boxed for export, 37,000 pounds. Dimensions of export box, approximately, 10' x 11' x 10'.

No. 100 — FIVE-SPINDLE HEADS

CAPACITY — Work up to 16" high... special heights to order.

WORK TABLE — One-piece casting, 100" diameter by 20" wide work area. Three 3/4" circular T-slots. Variable speeds to suit conditions, such as .1 to .4 rpm, or other speed ranges.

BED — Circular V-way, 90° - 8" wide at top.

WHEELS AND DRESSERS — Standard, 20" x 3" x 14" cylinder-type or 20" x 6" x 2" face segmental. Other sizes available to suit conditions. Swing arm wheel dressers, with vertical adjustment, for each spindle.

SPINDLES — Preloaded precision spindle bearing, 4 3/4" diameter in bearings. Center of spindle to O.D. of work table, 10".

WHEEL FEED — Manual "up" and "down" feed for each head. Automatic "down" feed controlled by work sizers, from .0001" to .001". Accuracy within .0001".

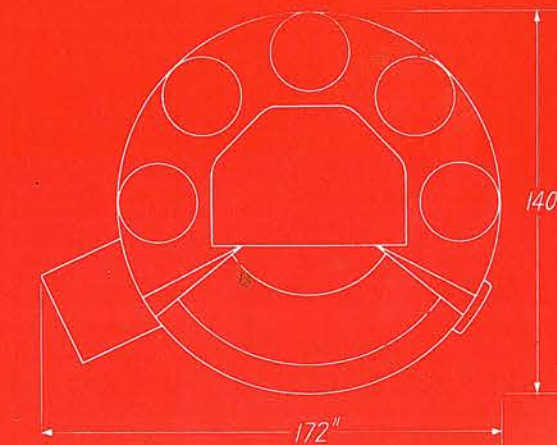
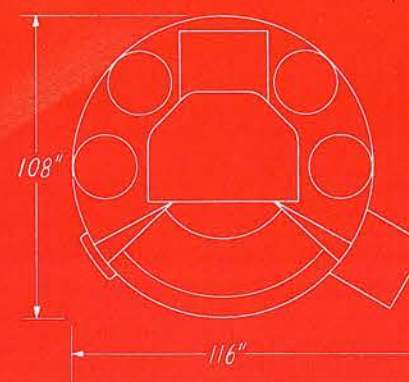
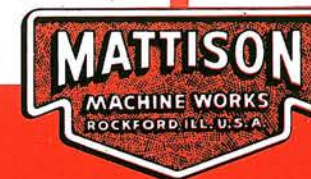
LUBRICATION — Spindles... oil tank at top of column, piped to bearings through sight feed, to tank, pump, and filter in base. Bijur one-shot systems for head slides and feed panel. Table runs in oil bath on circular V-way. Zerk grease system for all other points.

COOLANT — Machine fitted with all nozzles and piping. Coolant tanks, pumps, etc., must be built to order. Large volume of coolant required (approximately 500 gallons per minute) and it is recommended that customer install system to fit needs.

MOTORS — Standard: Five 40 hp, 900 rpm, 220/440-volt, 3-phase, 60-cycle motors for grinding wheel heads. Table drive motor through variable speed unit: 5 hp, 1200 rpm, 220/440-volt, 3-phase, 60-cycle. Extra for main line disconnect switch. Ammeter connected to each wheel head motor. 50 hp motors available when required.

FLOOR SPACE — 140" x 172" without coolant tank.

WEIGHT — Complete machine, 67,000 pounds net. Domestic shipment, 70,000 pounds.





Send parts to Mattison Methods Laboratory
for sample grind and production estimate



Finest test-grinding facilities available anywhere for establishing proper method, horsepower, wheel specifications, fixtures, etc. for accurate, low-cost production of small, medium, and large parts. You can buy with confidence from Mattison knowing every recommendation is backed by a complete line of grinders, expert machine and fixture engineering, and decisive test grinds in the Mattison Methods Laboratory.

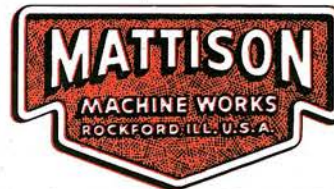
SELECT THE RIGHT GRINDER FOR YOUR JOB FROM MATTISON'S COMPLETE LINE OF OVER 50 DIFFERENT MACHINES

Mattison High Powered Precision Surface Grinders •
Reciprocating Table, Vertical Spindle, Production Surface
Grinders • Plano Vertical and Horizontal Surface Grinders
• Rotary Surface Grinders • Duplex Rotary Surface
Grinders • Automatic Rotary Surface Grinders • Rotary

Automatic High Production Surface Grinders • Rotary
Plano Grinders • "UK" Traveling Wheel Face Grinders •
Traveling Table Face Grinders • Vertical Spindle Disc
Grinders • Double Spindle Production Disc Grinders •
Single-Wheel Disc Grinders • Single-Spindle Disc Grinders

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**IF IT'S A FLAT SURFACE
THERE'S A MATTISON TO GRIND IT**