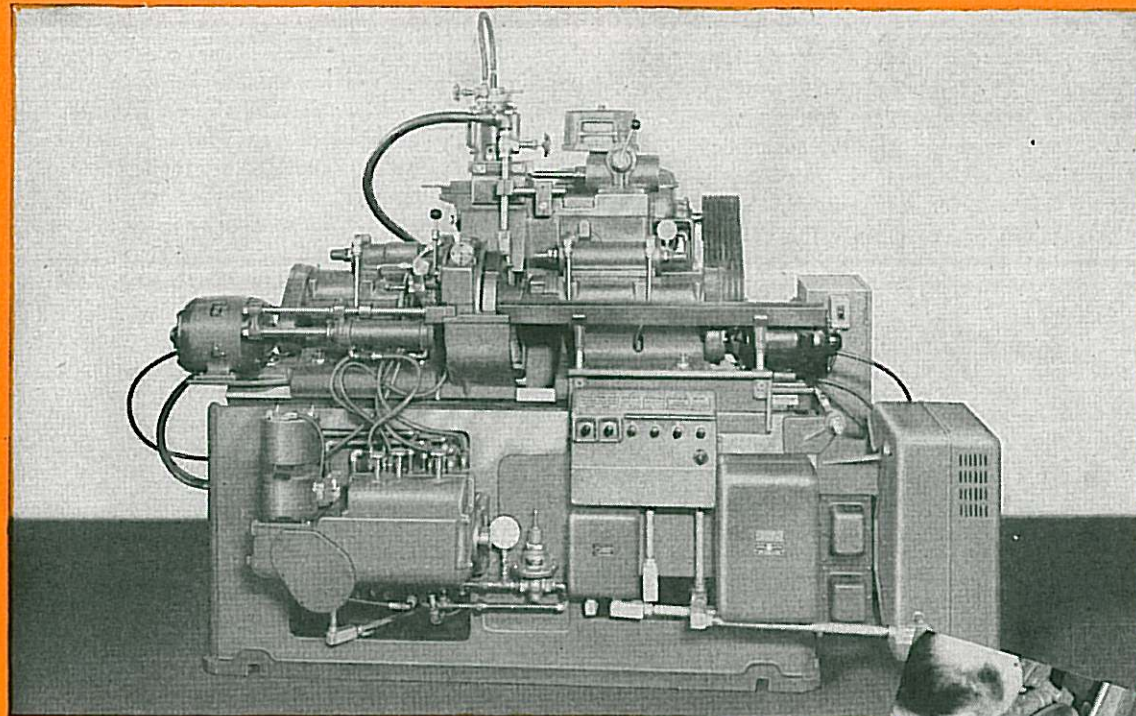
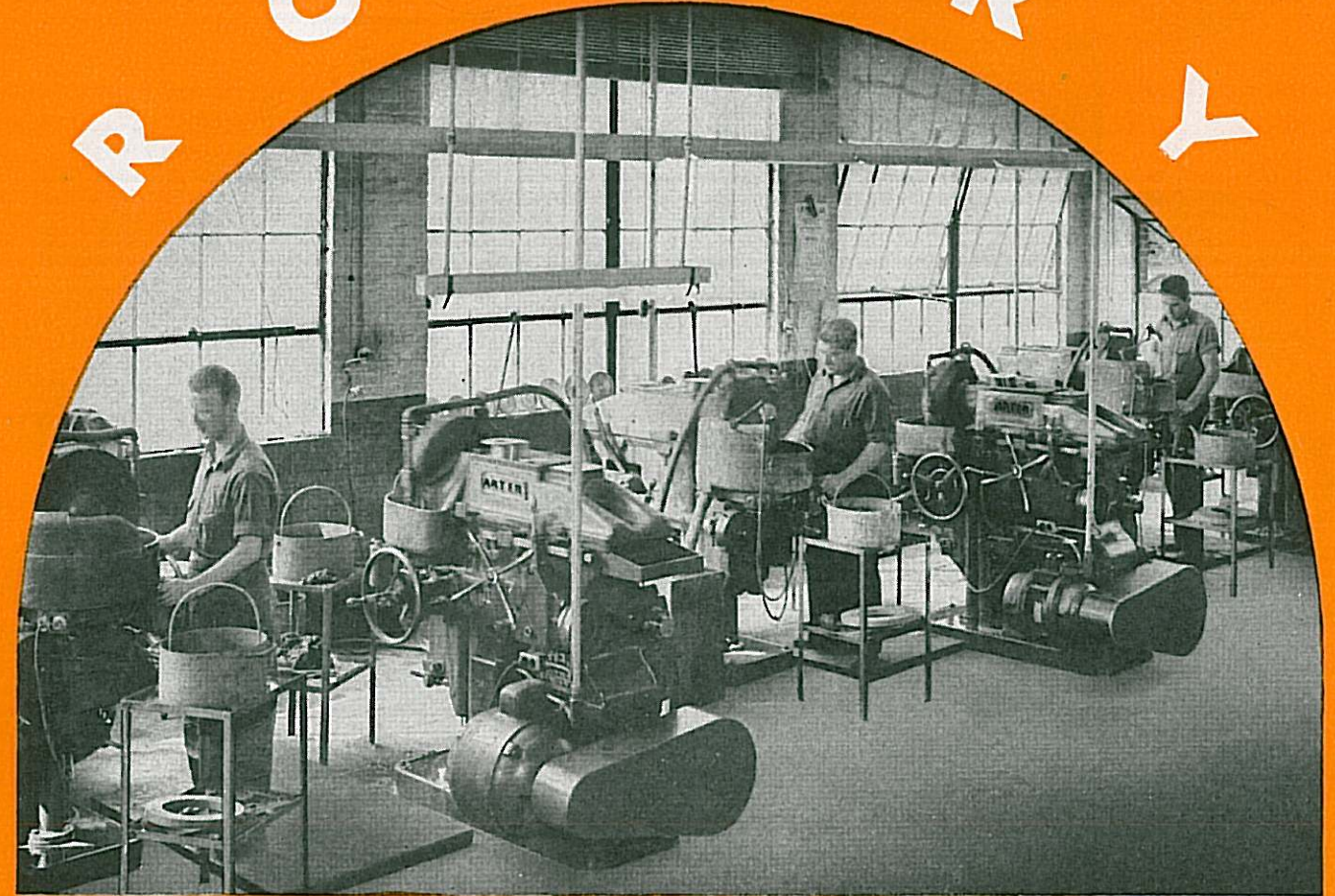


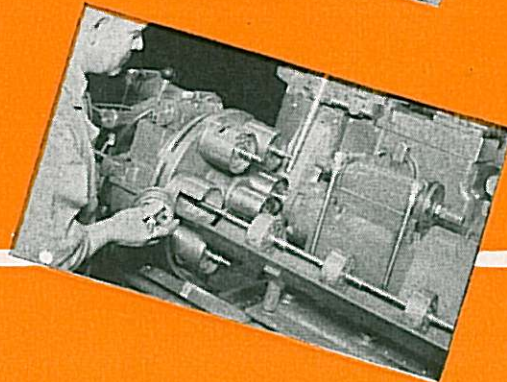
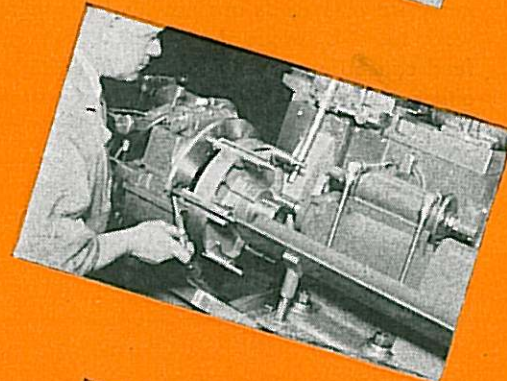
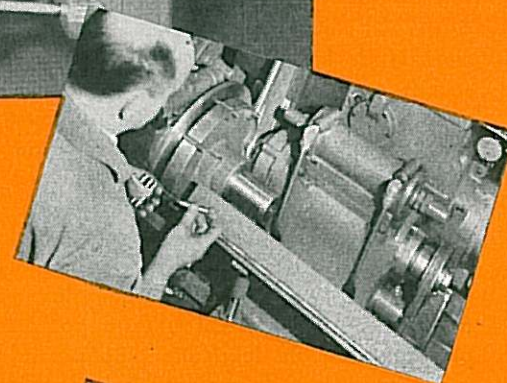
ARTER

R O T A R Y



NO. 135 AUTOMATIC CYLINDRICAL GRINDER

Grinds by the straight-in or plunge cut feed method, straight or tapered diameters such as are presented on roller bearings, valve stem guides, tappets, pistons, piston pins, bushings, shafts and similar work which can be held on centering devices. A work turret or carrier having a plurality of holes is used. Work may be loaded into the turret by hand or automatically according to the nature of the work. As the turret indexes to the grinding position the two live centers automatically pick up and drive the work. Frictional force created by hydraulic pressure on the centers is the driving means. A section of the turret is cut away so that the wheel can contact the work. The wheel automatically moves in and grinds the work to size. A dwell at the end of the stroke against a positive stop permits the wheel to grind clear. The amount of grinding and dwell time is relatively adjustable. The work spindles are driven by a pair of direct current motors operated from a General Electric Thymotrol unit. This construction permits the selection of a speed exactly suitable for the diameter of the work being ground.



Work capacity diameter	5"	Floor space occupied.....	85" x 70"
Work capacity length one grind	5"	Net Weight	8,000
Maximum distance between centers	18"	Gross Weight, crated	9,500
Grinding Wheel diameter (12" hole, width as required)	20"	Gross Weight, boxed	10,000



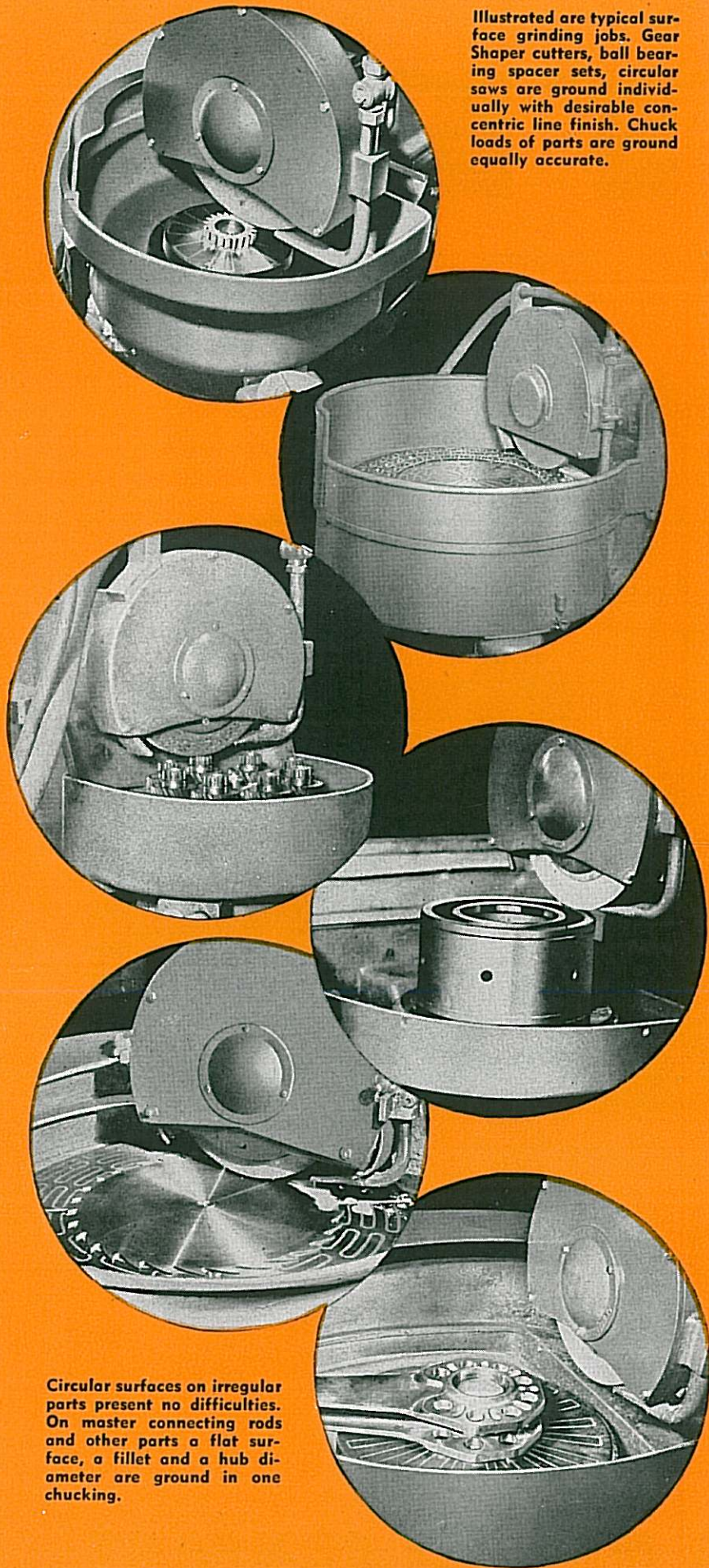
ARTER GRINDING MACHINE CO., WORCESTER 5, MASS.

SURFACE GRINDERS



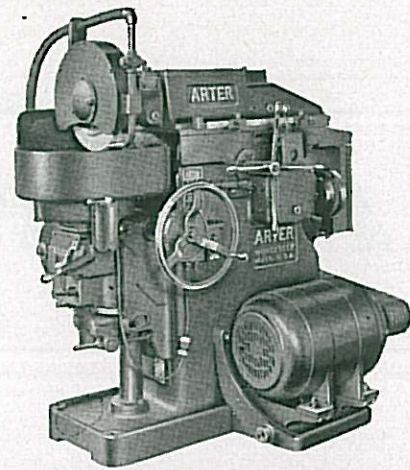
ARTER GRINDING MACHINE COMPANY
WORCESTER 5, MASSACHUSETTS

Illustrated are typical surface grinding jobs. Gear Shaper cutters, ball bearing spacer sets, circular saws are ground individually with desirable concentric line finish. Chuck loads of parts are ground equally accurate.

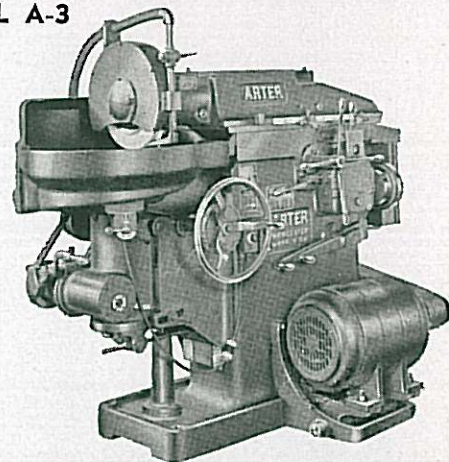


Circular surfaces on irregular parts present no difficulties. On master connecting rods and other parts a flat surface, a fillet and a hub diameter are ground in one chucking.

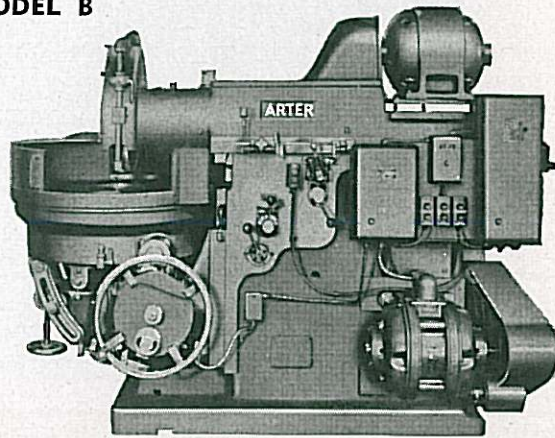
MODEL A-1



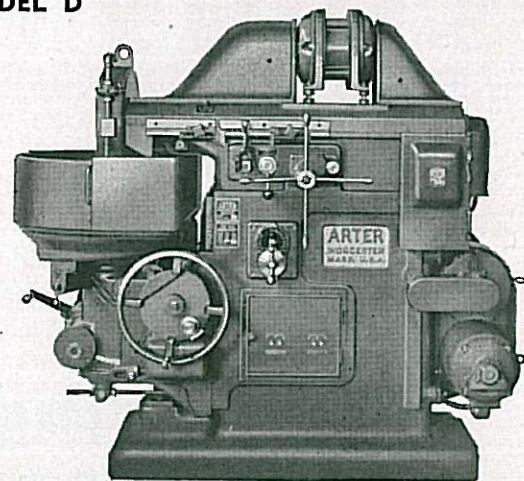
MODEL A-3



MODEL B



MODEL D



ROTARY SURFACE GRINDERS have been a product of the Arter Grinding Machine Company for the last thirty years. **Model A-1** has been continuously in production over that period. Two sizes are offered, one with an eight inch diameter electric magnetic chuck, the other with a twelve inch chuck. This model has three chuck speeds and for each speed, three wheel slide traverse speeds are available. The drives to the chuck and to the slide are primarily by a flat belt running over three step pulleys. The wheel spindle is mounted in straight-holed, split, adjustable bronze bearings. End thrust is taken on a collar running between bronze discs. Bearings are positively oiled by throwers positioned in the reservoirs adjacent to each bearing. The work table is hung in a slide, mounted on dovetailed ways. The table can be tilted for grinding external tapers or bevels and internal tapers or reliefs. The chuck spindle runs in a self-centering, conical bearing at the top and a straight-holed, adjustable bronze bearing at the bottom.

Model A-3 grinders are of the same general design as the A-1's but the major units are of greater proportions. Made in 12" and 16" chuck sizes. Four chuck speeds are available, each with three wheel slide traverse speeds. The chuck spindle is mounted in precision, preloaded double row ball bearings top and bottom. Final drive is by worm and worm wheel, the worm shaft being driven by vee belts. The wheel spindle runs in bronze bearings and its long pulley, between the bearings, is driven by a flat 4" leather belt from the main shaft. The wheel slide moves in one flat and one vee way. Oil rollers in pockets in the base provide adequate lubrication. Both hand and automatic traverse feeds are provided. Hand feed only to work table is standard equipment, but an automatic feed can be provided as an extra. This gives feeds at either or both ends of the wheel slide stroke, ranging from .00025 to .003". The main drive motor is pivotably mounted and adjustment screws are provided to maintain belt tension. The coolant tank and motor driven pump comprise a separate unit positioned on the floor at the rear of the machine.

Model B machines are built in four chuck capacities 20", 24", 30" and 40". The machines are mainly hydraulically operated, the wheel slide being moved by a piston, the chuck is driven primarily by an hydraulic motor, and hydraulic means are employed for automatic, work table elevating feed. The magnetic chuck, instead of being supported on a spindle as in our **Model A** machine, runs on a flat circular track bearing, thus providing rigid support for the work, regardless of the weight, position on the chuck, or wheel pressure. The oil tank for the hydraulic system is positioned on the floor behind the machine. Vickers pump, motor and valves are used. The wheel spindle is mounted at the front in a steel-backed, babbitt-lined bearing, three inches in diameter by twelve inches long. The rear bearing is a precision double row ball bearing. The spindle end pulley is driven by multiple vee belts from a 10 H. P. motor.

Model D grinders are the latest addition to our line. Presently they are built in two capacities 12" and 16". A 5 H. P. motor, precision balanced, mounted on the wheel slide delivers full power by multiple vee belts, to the wheel spindle. The wheel slide is moved hydraulically on wide flat and vee ways, automatically lubricated, and which extend forward of the front wall of the base. The piston rod, and the wheel spindle axis are in the same horizontal plane as the ways. This construction gives greater support and stability to the wheel slide, particularly when extended over the work. The wheel spindle is mounted at the front in a long steel-backed babbitt lined bearing, and at the rear in a double row precision ball bearing. The work table slide has widely spaced dovetailed ways, automatically lubricated. Hand and automatic feeds are provided. The work spindle is mounted, top and bottom in double row precision ball bearings. The primary drive to the spindle is a U. S. Electric Vari-Drive unit mounted on the end of the machine and giving stepless speeds from 60 to 250 RPM. Intermediate drive is by vee belts and final drive is by worm and worm wheel. The hydraulic oil tank is hung on the rear wall of the machine, a gear pump providing power pressure. Overload switches for each motor are mounted in a built-in cabinet. A separate line switch is provided.

Specifications	Model A-1		Model A-3		Model B				Model D	
	8"	12"	12"	16"	20"	24"	30"	40"	12"	16"
Surface Diameter of Magnetic Chuck	8 1/2"	13"	13"	17"	21"	25"	31"	40"	13"	17"
Greatest Swing Inside Water Pan	11"	16"	20"	20"	26"	30"	38"	44"	20"	20"
Vertical Capacity—Full Diameter Wheel	9"	9"	9 1/2"	9 1/2"	8"	8"	8"	6 1/4"	9"	9"
Tilt of Work Table for Convex Grinding	10°	10°	10°	10°	10°	10°	10°	10°	10°	10°
Tilt of Work Table for Concave Grinding	10°	8°	10°	10°	10°	10°	10°	3°	10°	8°
Diameter of Grinding Wheel	14"	14"	14"	14"	20"	20"	20"	20"	14"	14"
Chuck Speeds	86-156-283	53-96-174	30-50-90-150	30-50-90-150	120 Max.	95 Max.	75 Max.	75 Max.	60-250	60-250
Main Shaft RPM	500	500	500	500	420	420	420	420	—	—
Wheel Spindle RPM	1500	1500	1500	1500	950	950	950	950	1500	1500
Main Drive Motor RPM	1800-1500	5HP	5HP	7 1/2 HP	10HP	10HP	10HP	10HP	2HP	2HP
Wheel Spindle Motor	—	—	—	—	10HP	10HP	10HP	10HP	5HP	5HP
Net Weight	3350	3550	4500	5000	9000	9500	10000	10400	6000	6200
Crated Weight	3800	4000	4800	5300	9600	10100	10700	11200	6600	6800
Boxed Weight	4150	4850	5100	5600	10200	10700	11300	12300	7000	7300
Floor Space Occupied	70"x70"	72"x70"	80"x70"	82"x70"	94"x87"	96"x87"	100"x87"	120"x87"	84"x60"	84"x60"