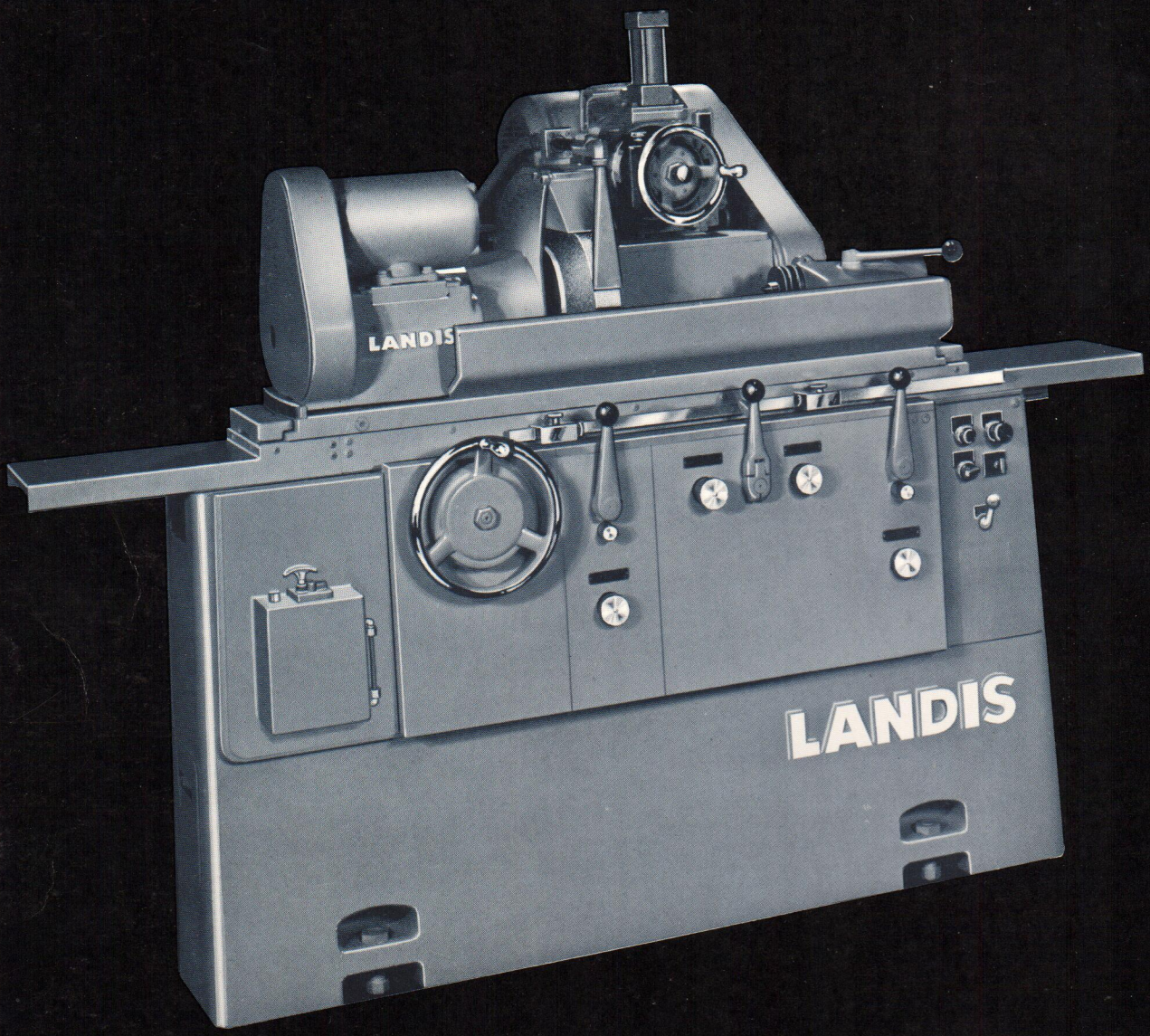
LANDIS

TYPE 1R CYLINDRICAL GRINDERS
for small precision parts

LANDIS TOOL COMPANY, WAYNESBORO, PENNSYLVANIA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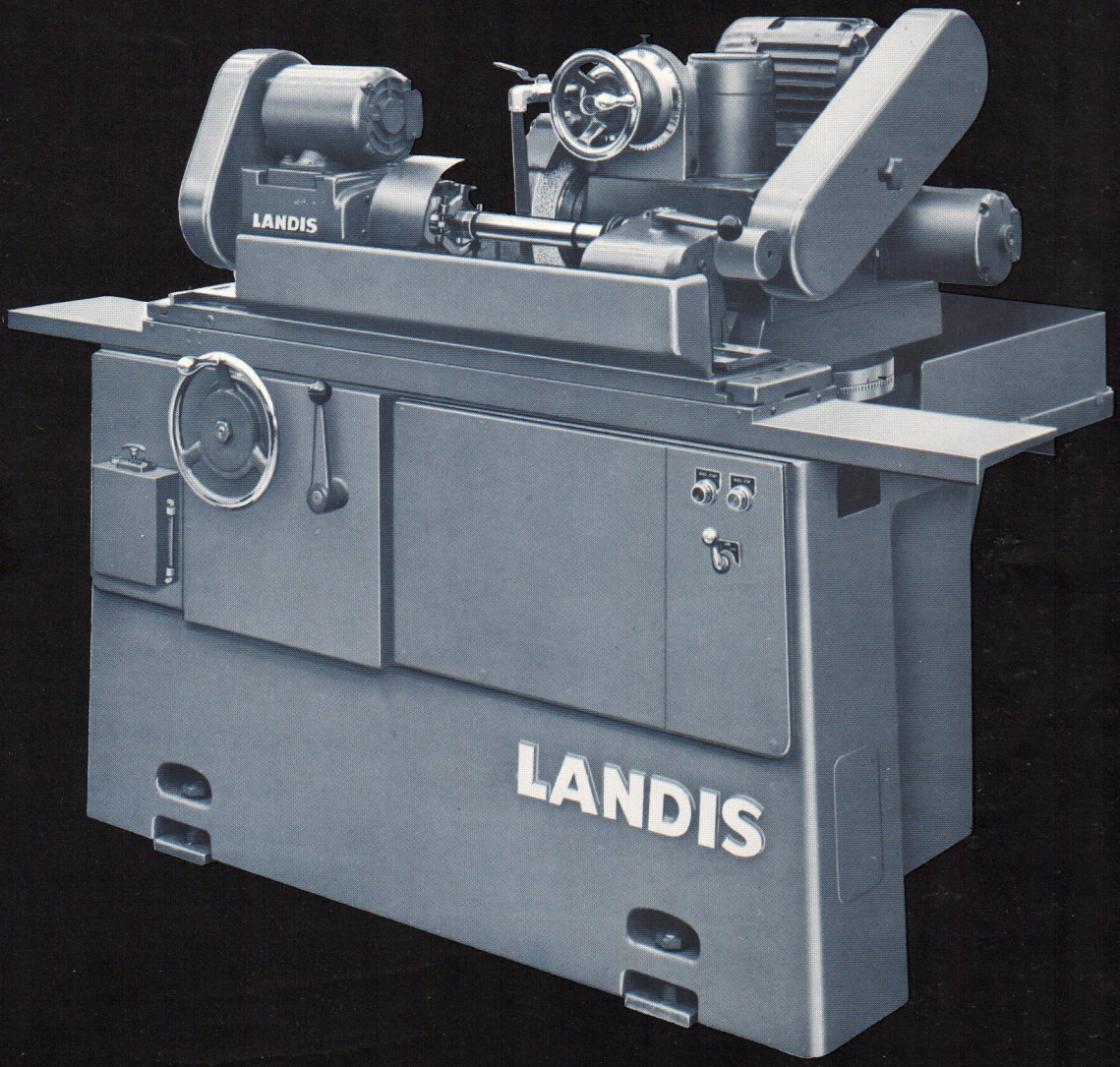
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PERFORMANCE

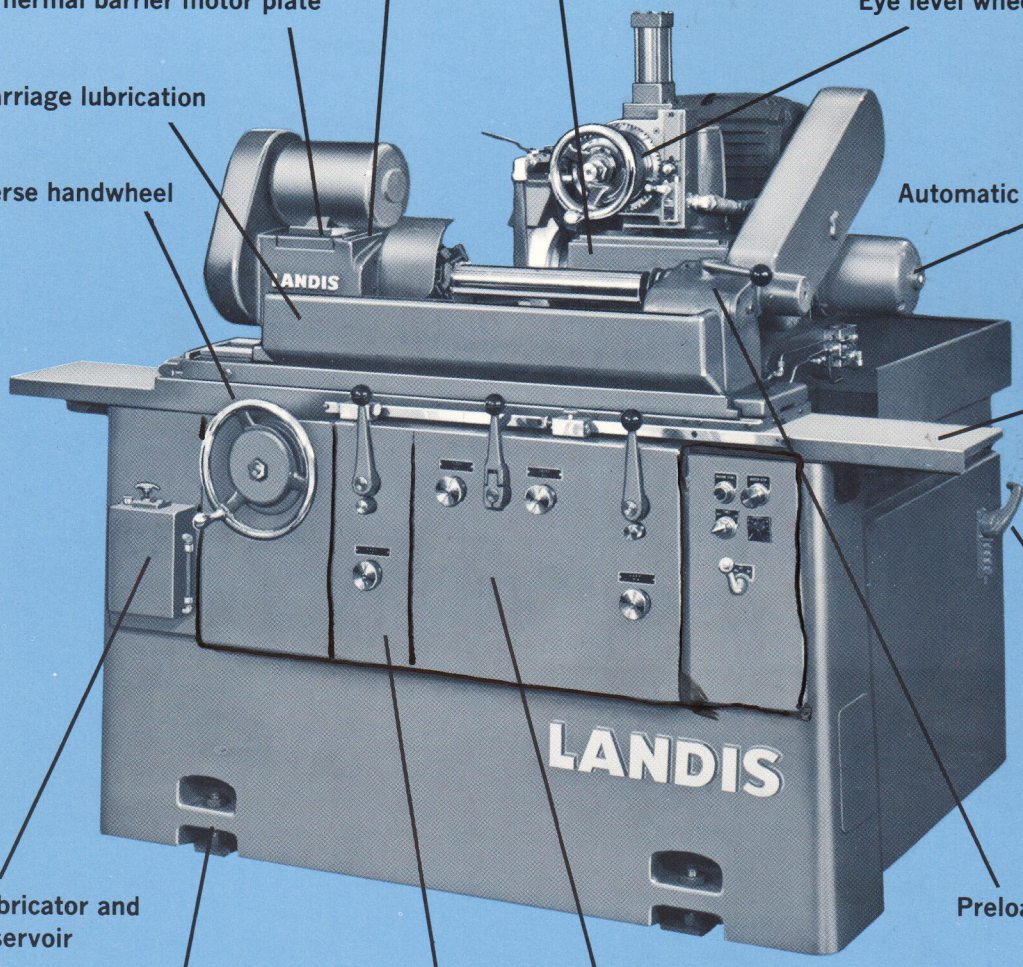
LANDIS 1R GRINDERS WILL

- Grind round to less than 25 millionths
- Hold size to less than 50 millionths
- Grind to less than 2 micro inch finish

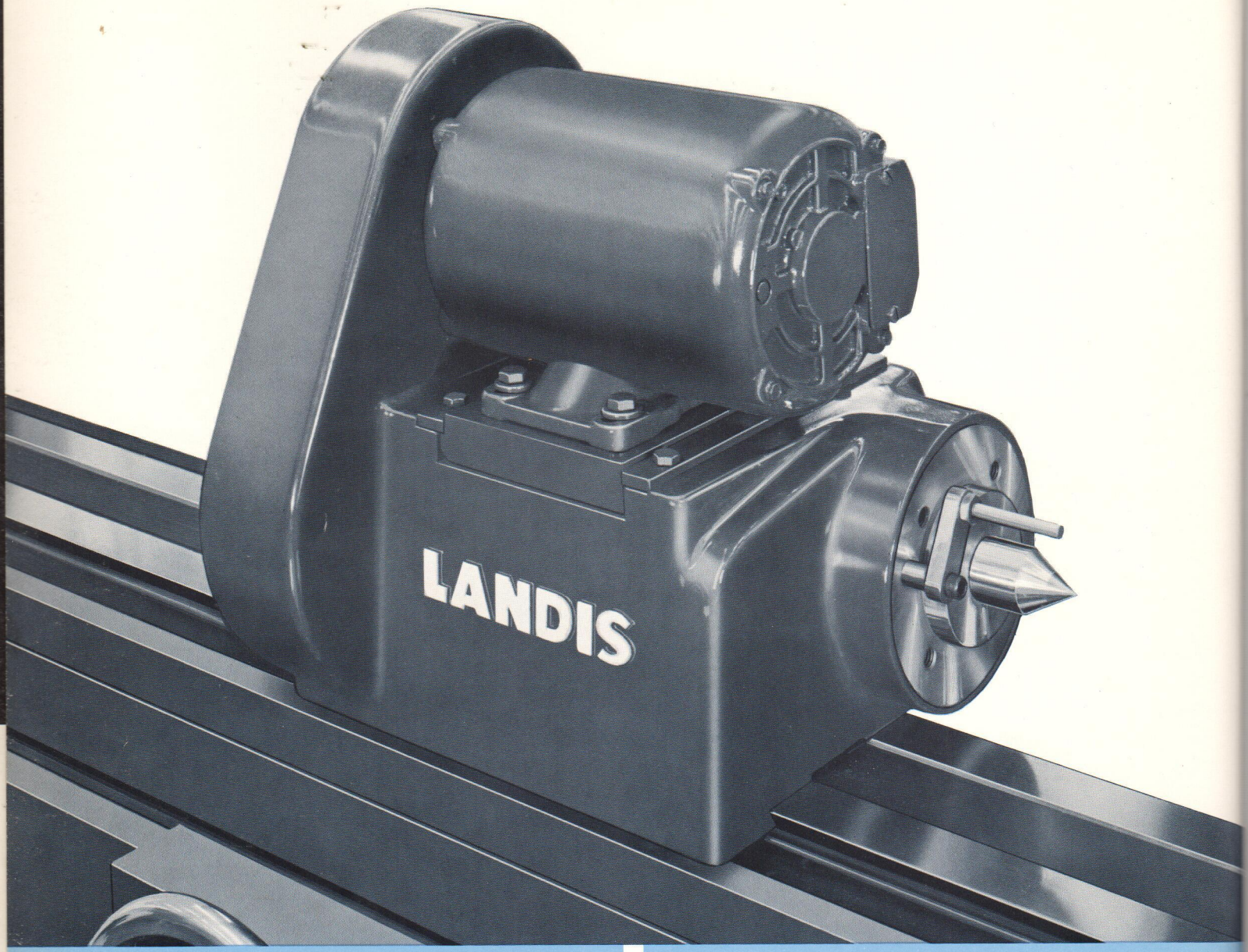
VALUE

NO COMPROMISE IN LANDIS QUALITY

- Manufactured under the same exacting conditions and quality controls as all Landis grinders
- Same features, quality and reliability as in all Landis grinders
- Easy to maintain. There are no oil cups or grease fittings on these machines
- Hand operated machine, plain or universal, is under $10,000—well within reach of any shop



Type 1R grinder with hydraulic traverse and hydraulic infeed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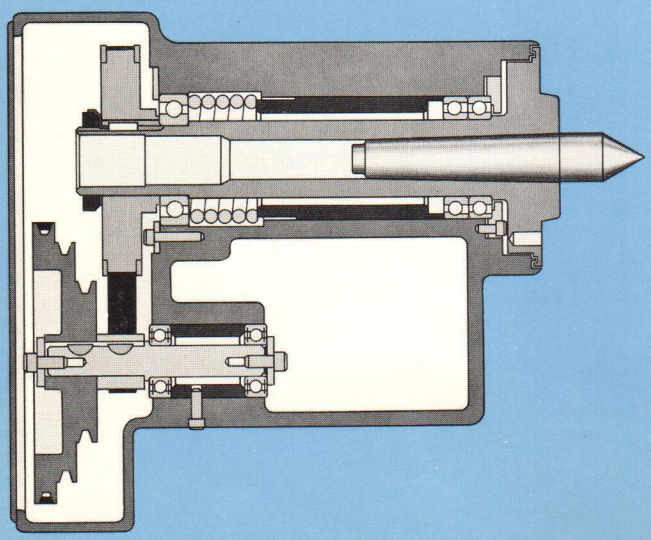


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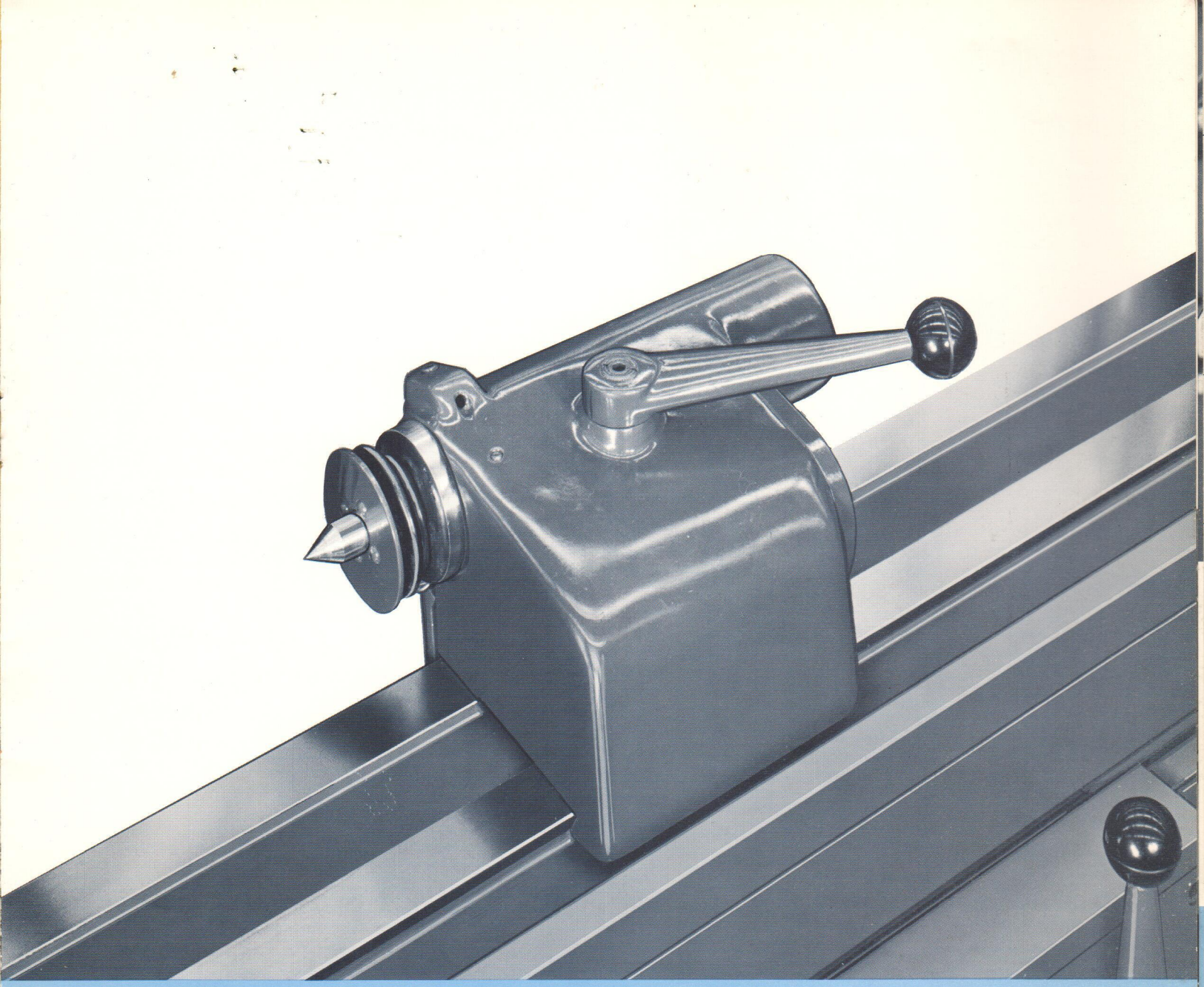
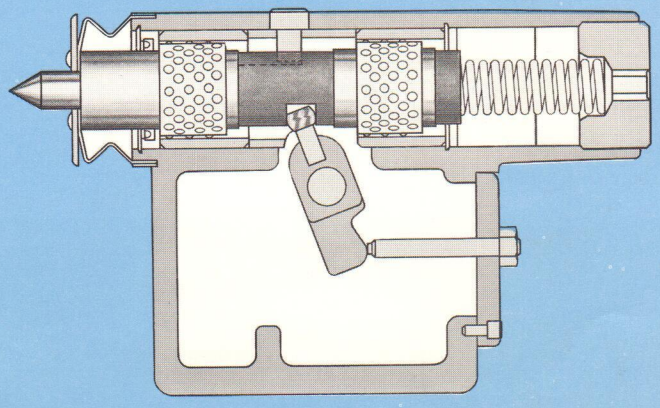
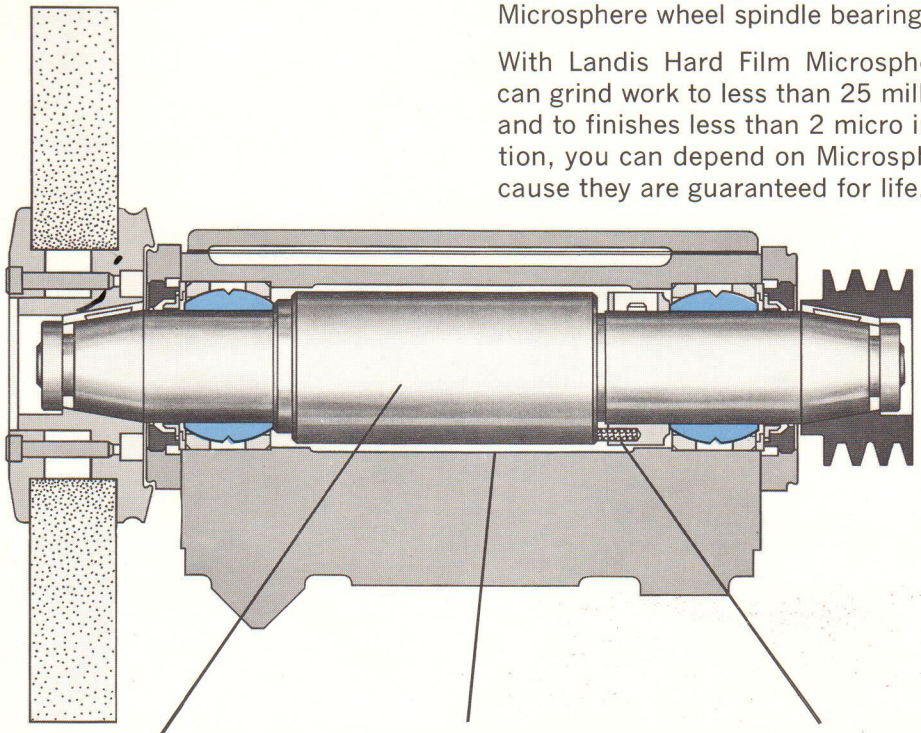




EQUIPPED WITH NEW HARD FILM MICROSPHERE WHEEL SPINDLE BEARINGS GUARANTEED FOR LIFE*

A major essential for grinding round work is a wheel spindle bearing which will operate reliably at a close running clearance. Landis engineers have developed a new bearing lubrication technique which permits the wheel spindle to run in the bearings with the closest clearance in the industry—about one half of the former close clearance Microsphere bearings. These new bearings are identified as Hard Film Microsphere wheel spindle bearings.

With Landis Hard Film Microsphere bearings you can grind work to less than 25 millionths roundness and to finishes less than 2 micro inch. And, in addition, you can depend on Microsphere bearings because they are guaranteed for life.

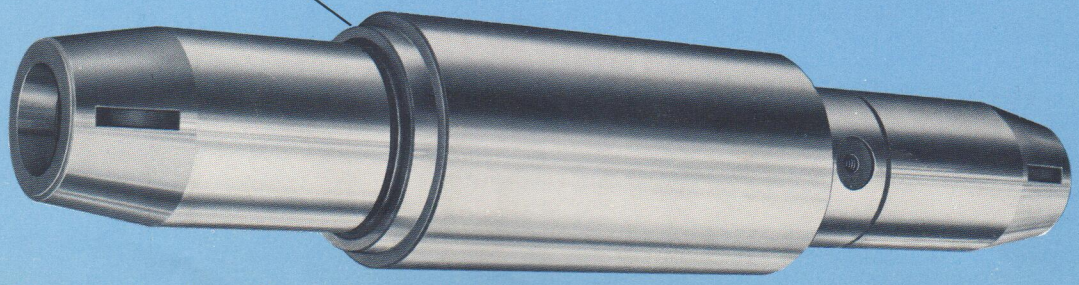


Increased diameter of the spindle between the bearings greatly increases spindle rigidity over conventional single diameter spindles.

Automatic lubrication from a separate system has a built-in safety feature. The wheel will not start until there is pressure in the system. If there is a failure in the system, the machine stops automatically.

Endwise stability of the wheel spindle is assured by this constant and self-adjusting preload arrangement for thrust. Running clearance of the thrust is automatically set to a minimum amount. There's no compromise as required with a manually adjustable thrust clearance which must be set warm and will be too open when cool. With a Landis 1R, no time is lost waiting for spindle warm-up.

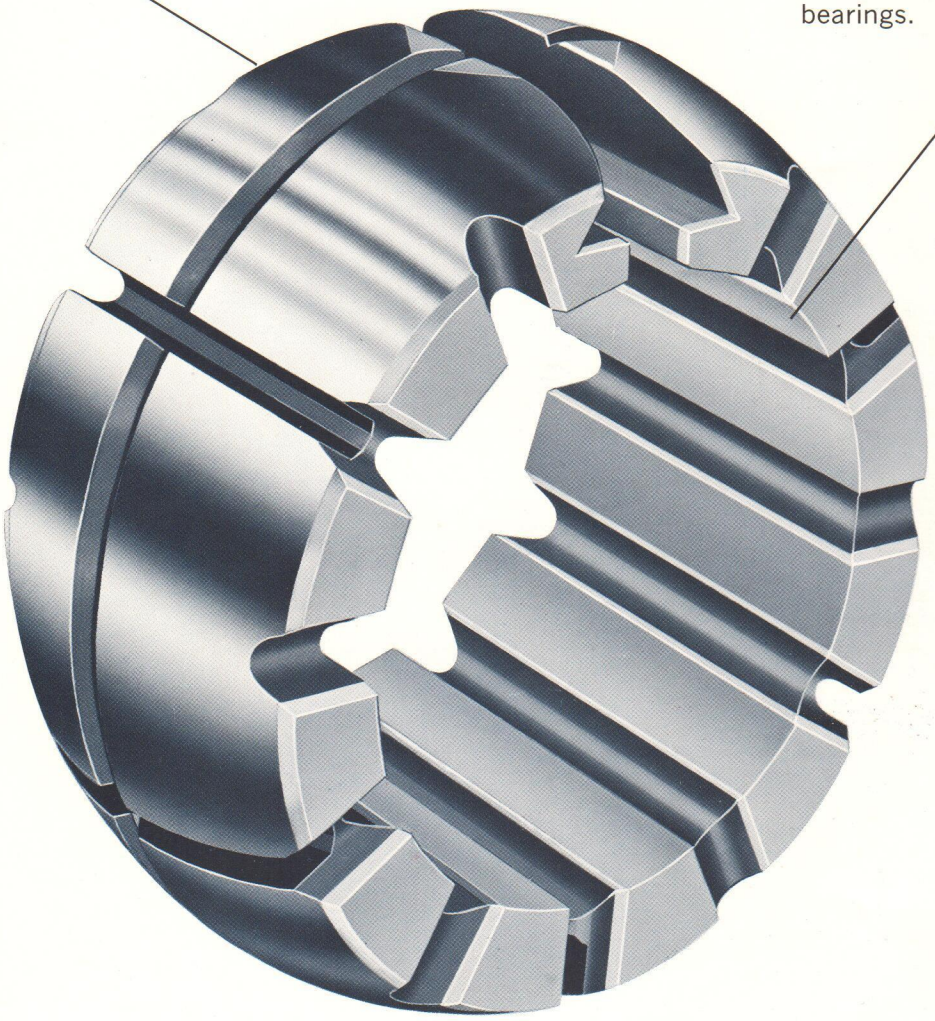
End thrust of the spindle is against this precision ground shoulder of the wheel spindle. This provides improved conditions for grinding shoulders by eliminating spindle weave or thrust clearance.



* in the hands of the original purchaser with normal care and maintenance

Spherical shape of this one-piece steel bearing allows perfect alignment of the bearing to the spindle at assembly.

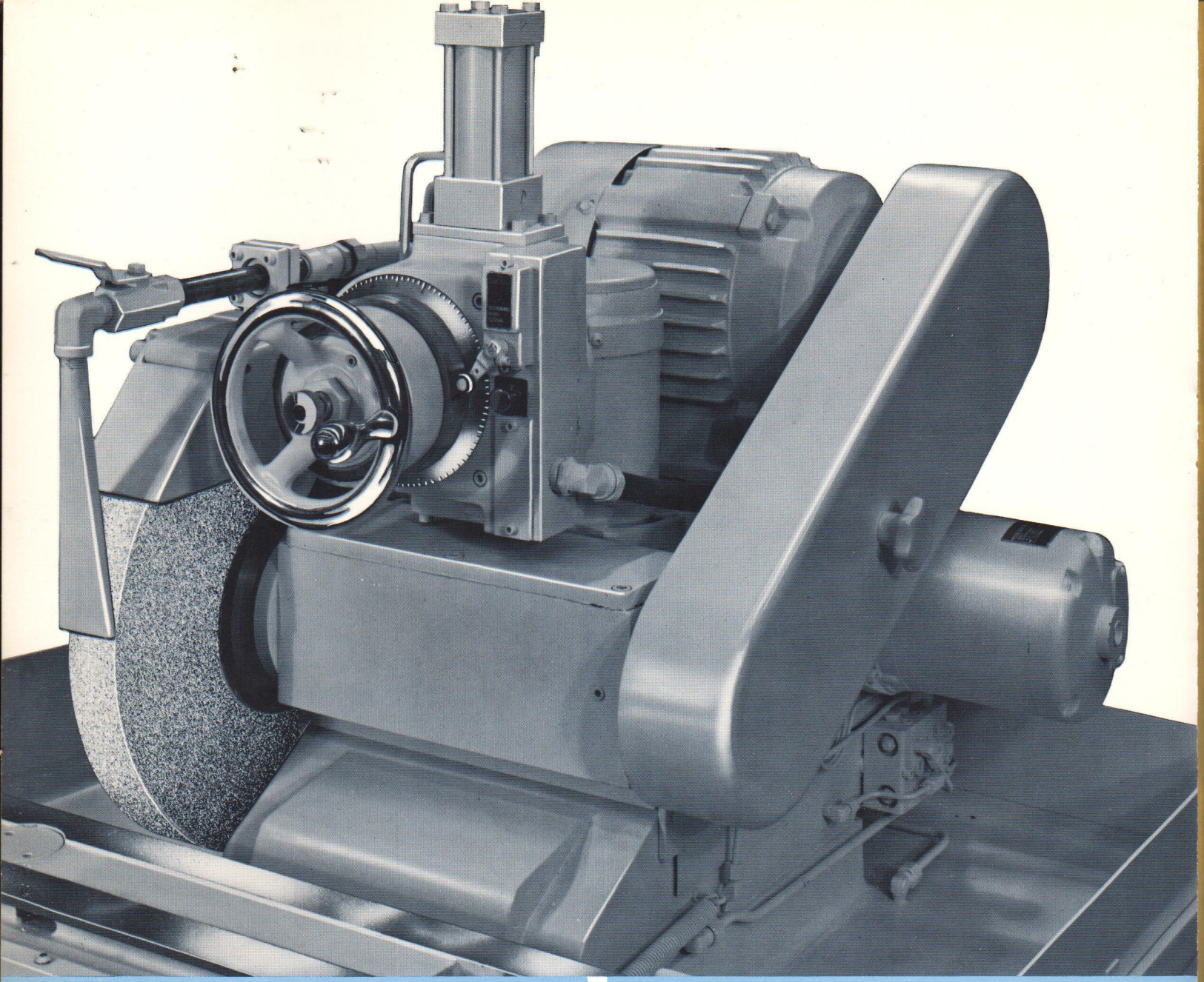
The bore and thrust faces are lined with babbitt. This is the same material which has proved successful on over 32,000 Microsphere bearings.

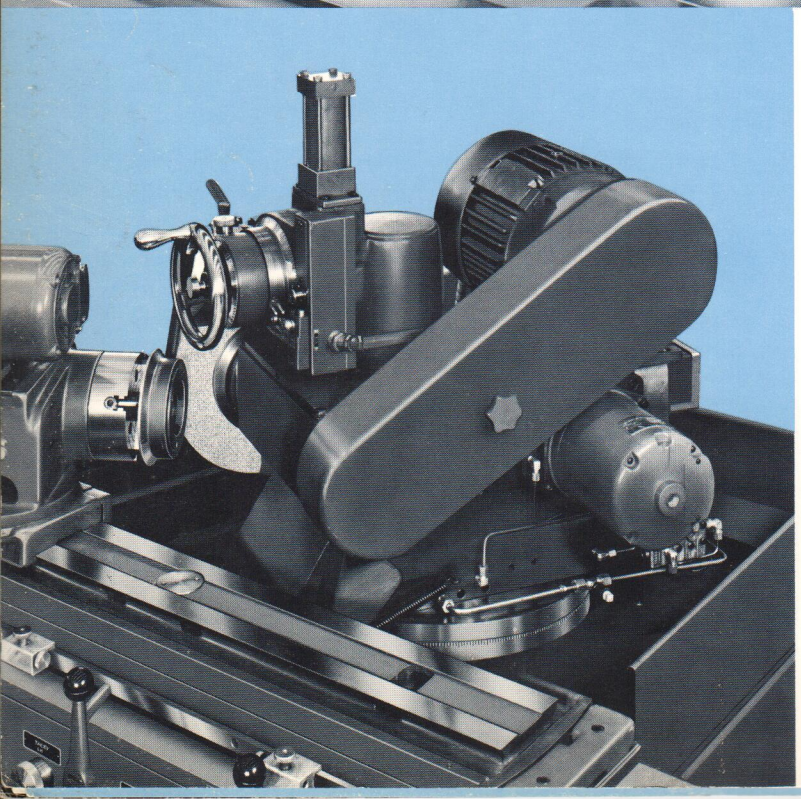


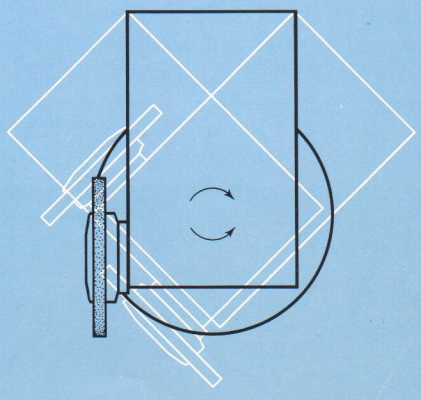
Extremely close running clearance produces high oil film pressure pads which completely surround the spindle at the bearings. This creates a high oil film preload which resists normal wheel unbalance and keeps the spindle rotating on its geometric axis. Displacement of the spindle due to grinding load or wheel unbalance is confined to low millionths.

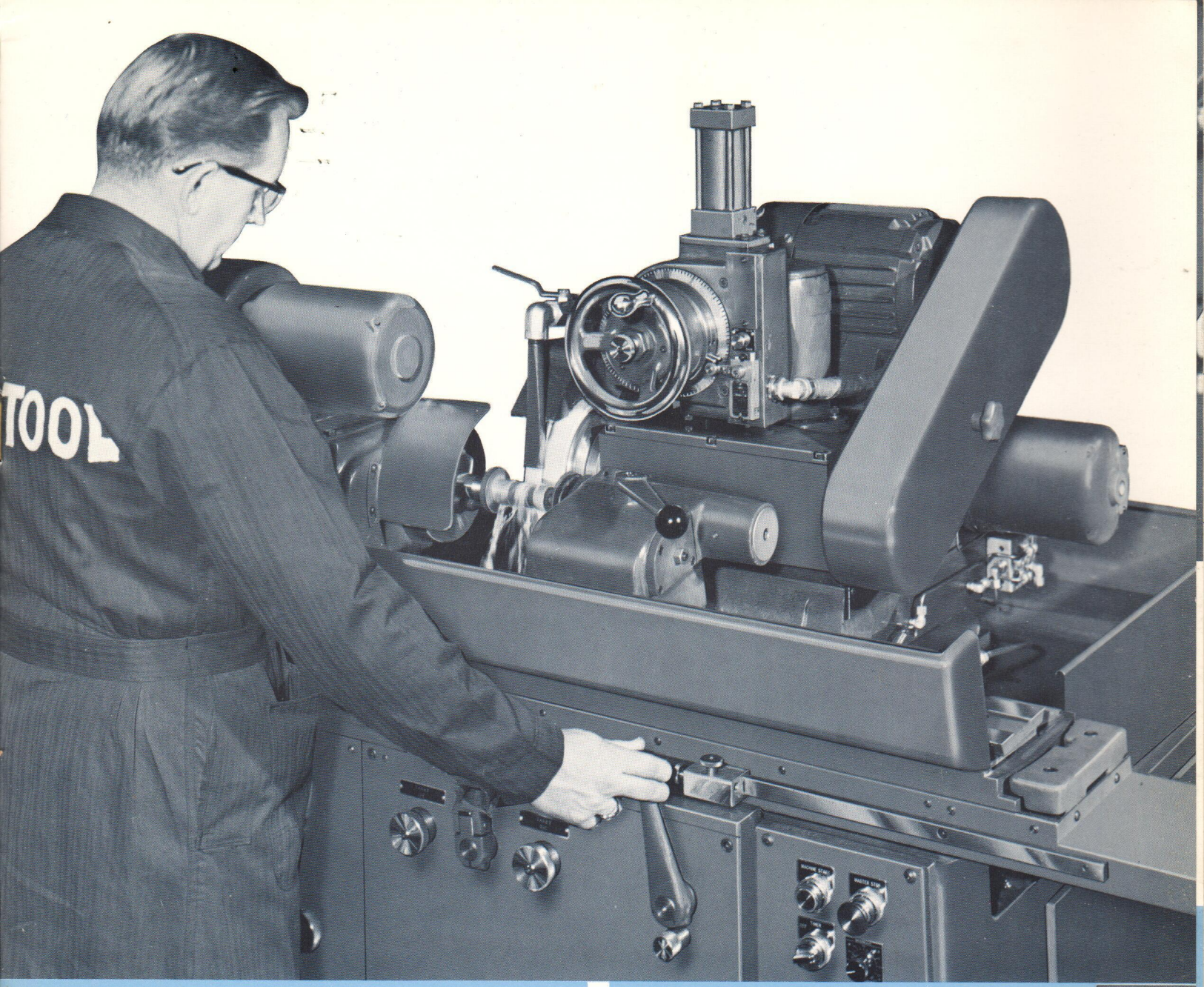
With Hard Film Microsphere Bearings you can . . .

Grind rounder
Improve finishes
Control size better
Grind faster





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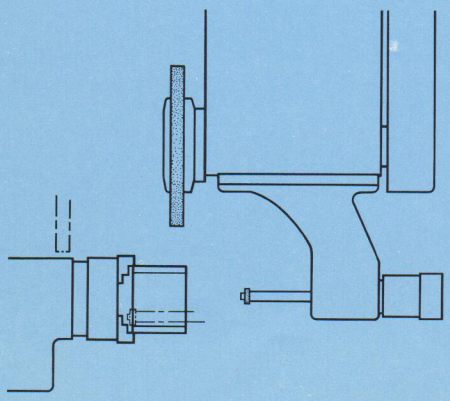
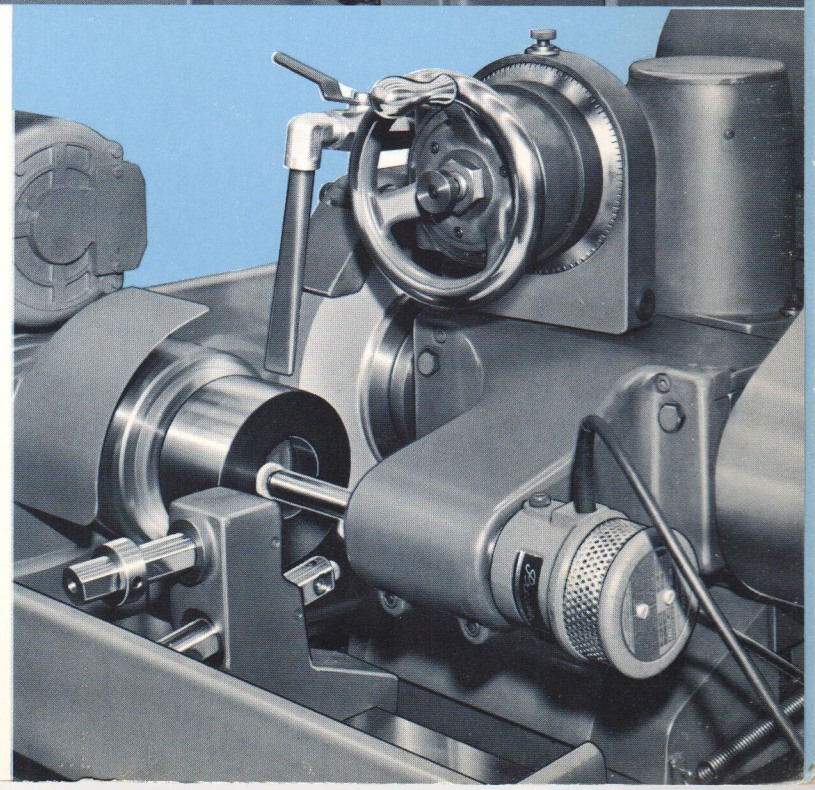
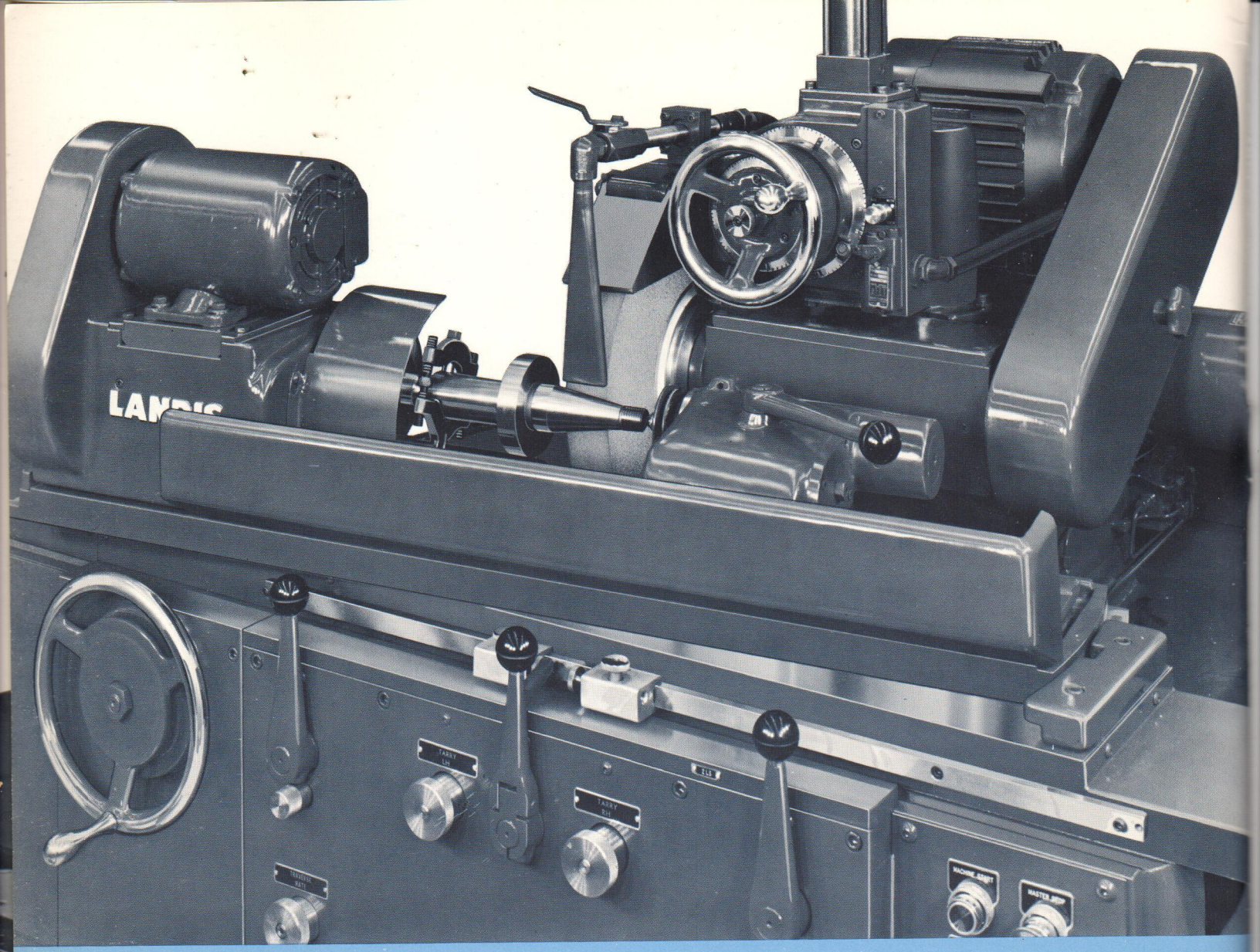
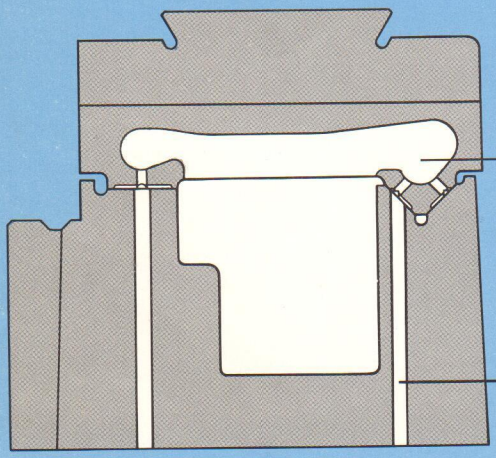


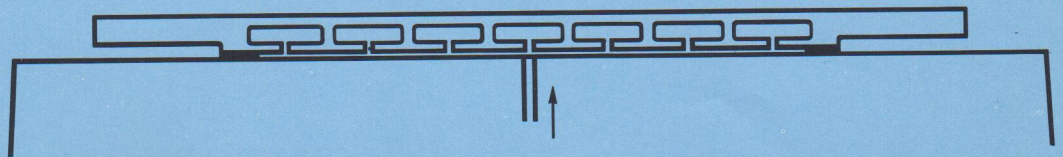






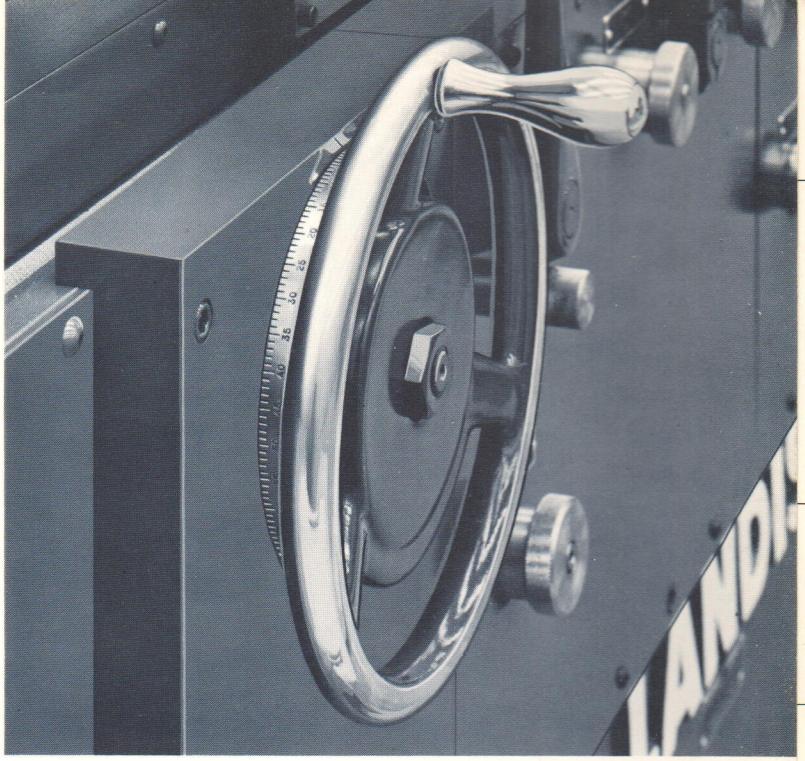
These pockets accumulate the excess of lubricating oil pumped to the ways. Since the pockets are open to atmosphere there is no danger of floating the carriage from excessive pressure.

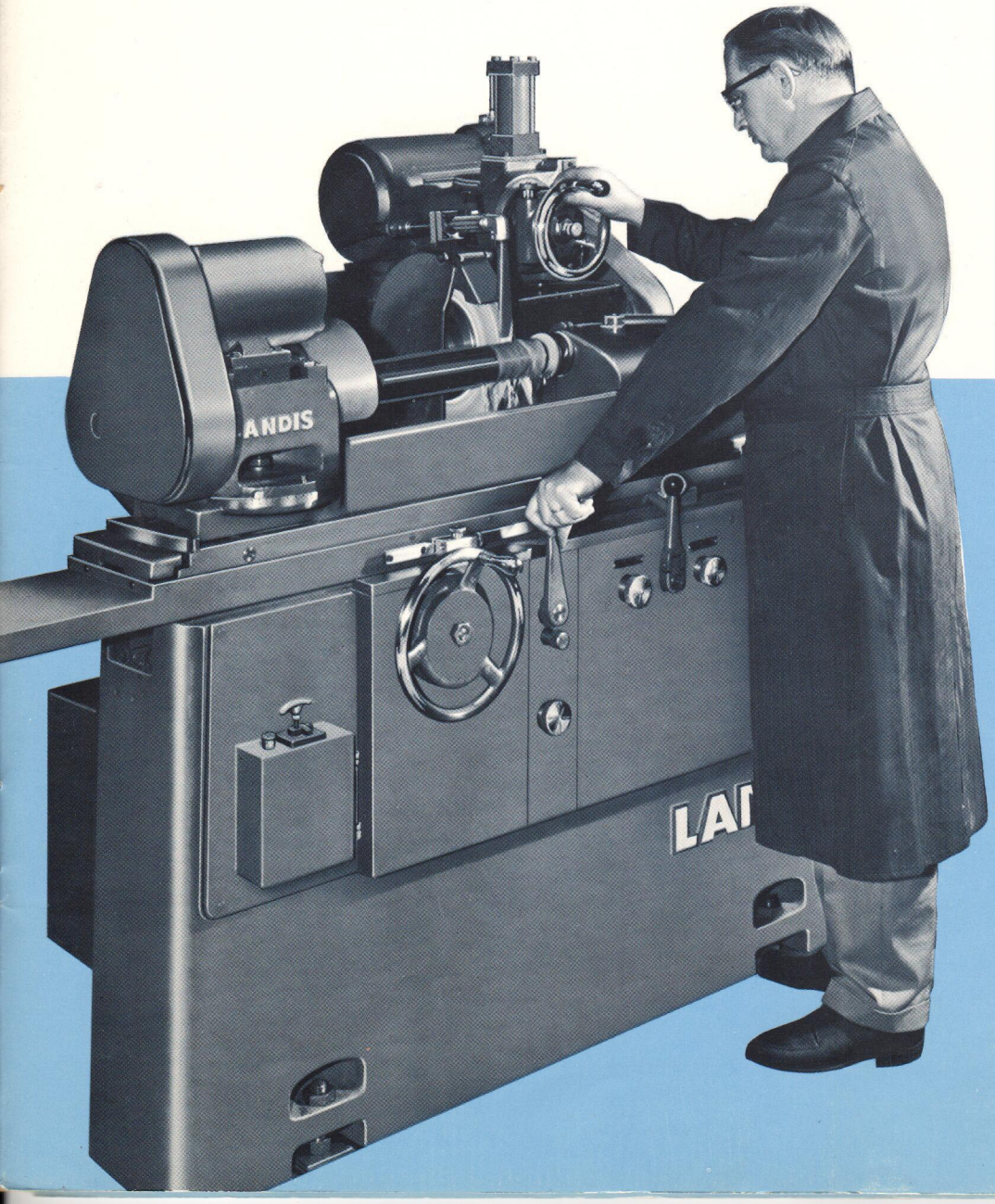
Lubricating oil is pumped through these holes to lengthwise and cross grooves in the carriage ways.



Multiple pockets for the full length of the carriage V and flat ways fill with the excess oil pumped to the ways.

Excess oil in pockets, and oil from ways, overflows into the bed channel between the ways and is piped back to the lubricating oil reservoir.

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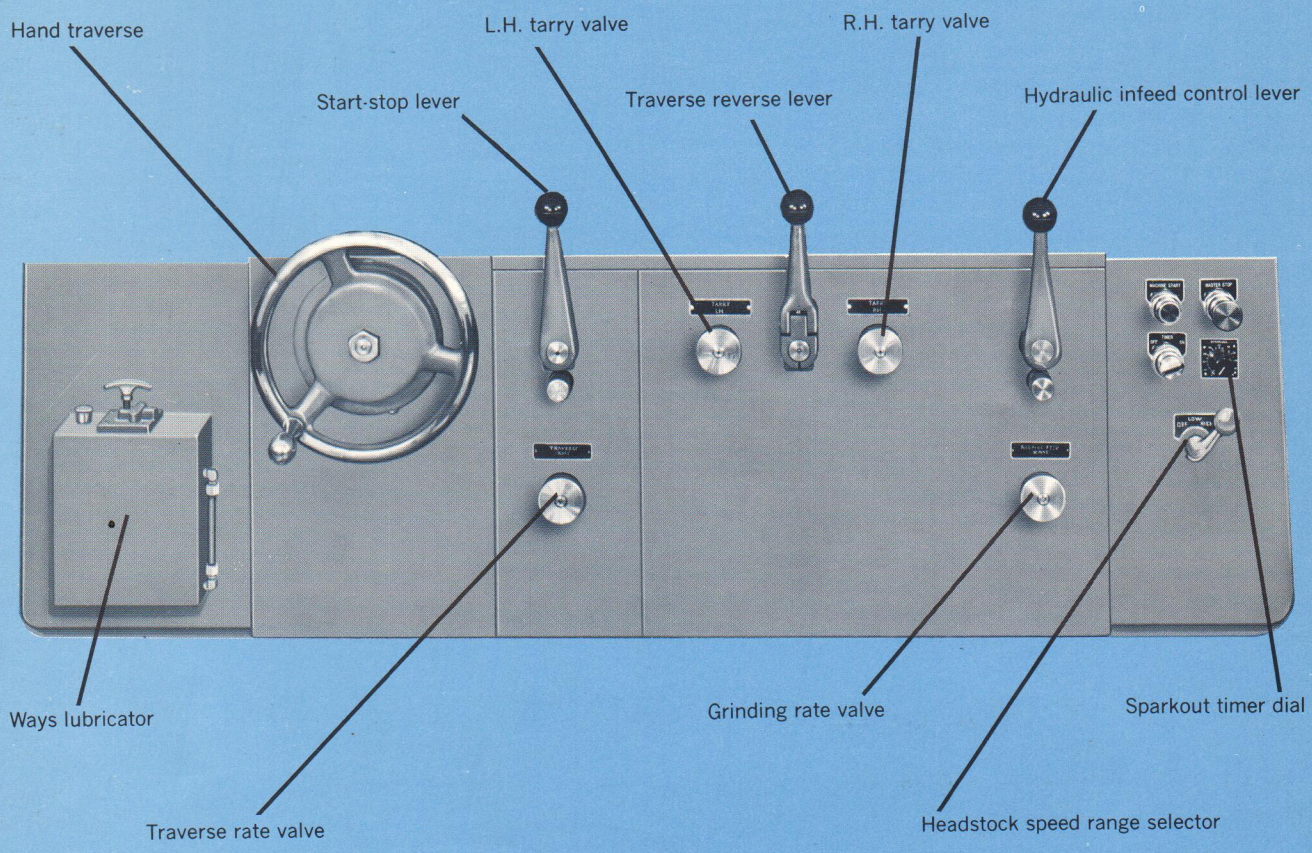
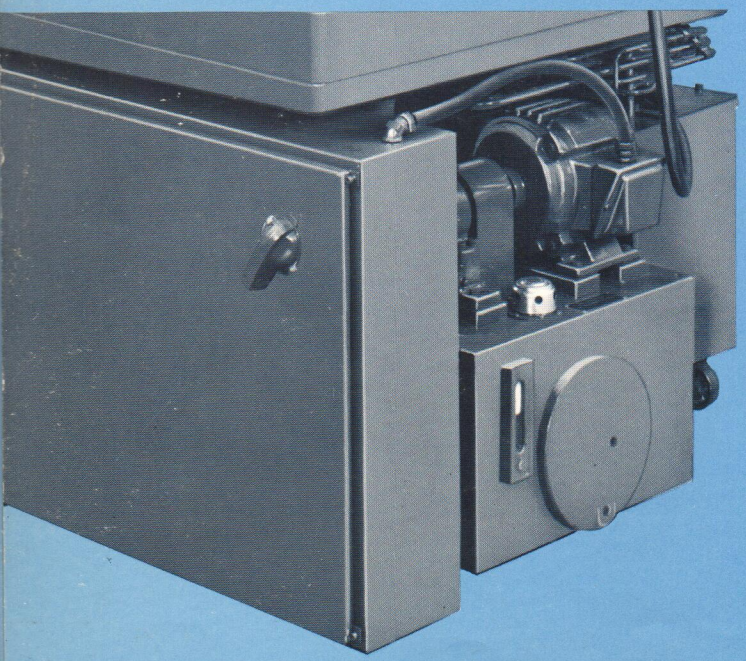

Hand traverse
L.H. tarry valve
R.H. tarry valve
Start-stop lever
Traverse reverse lever
Hydraulic infeed control lever
Ways lubricator
Grinding rate valve
Sparkout timer dial
Traverse rate valve
Headstock speed range selector

(1)

(2)



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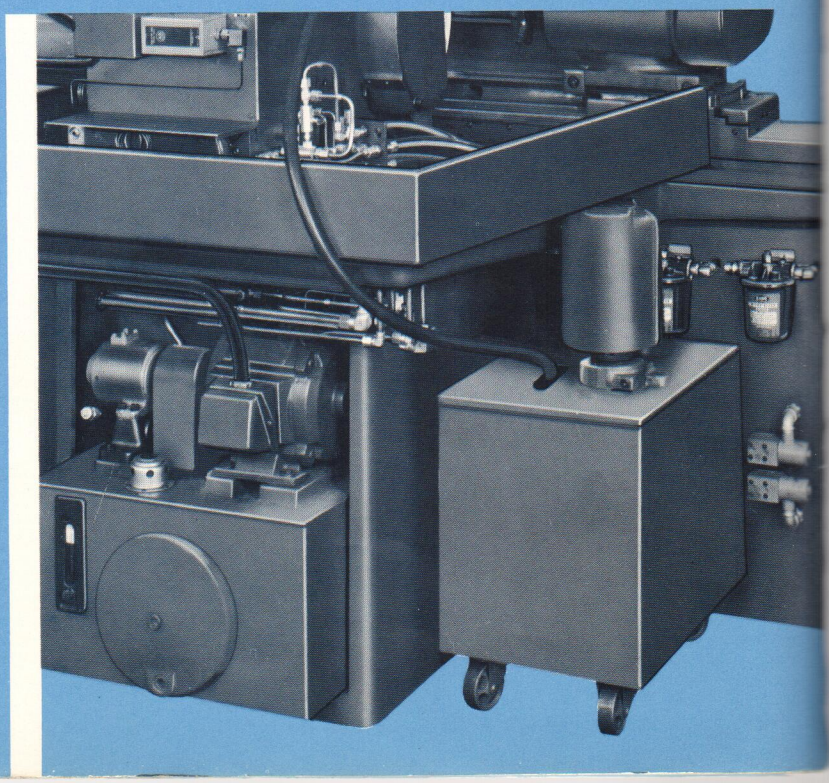

SPECIFICATIONS—*Type 1R Cylindrical Grinder*

	6" x 18" Plain	10" x 20" Universal
GENERAL		
Nominal work swing	6"	10"
Nominal distance between work centers	18"	20"
Maximum diameter work standard machine will grind with full size standard wheel	6⅞"	10⅞"
Minimum diameter wheel to grind zero diameter work on centers	10½"	10½"
Floor space required	106" x 50"	106" x 50"
Coolant tank capacity—gallons	19	19
Hydraulic tank capacity—gallons	9¼	9¼
Height from floor to work centerline	39¾"	41¾"
WORK CARRIAGE		
Traverse speed—inches per minute	2"-240"	2"-240"
Carriage traverse per turn of handwheel	0.200"	0.200"
Swivel table graduated—inches per foot	4"	4"
—degrees included angle	20°	20°
Work rest capacity	¼" to 2"	¼" to 4"
WHEELHEAD AND WHEELFEED		
Grinding wheel size—standard	16" x 1" x 5"	12" x 1" x 5"
Grinding wheel—maximum width	3"	1½"
Grinding wheel spindle speeds—rpm	1500 & 1900	2000 & 2530
Grinding wheel—minimum diameter of worn wheel	9½"	7½"
Maximum distance wheel centerline to work centerline		
—for machines with hand wheelfeed	11½"	11½"
—for machines with hydraulic infeed	12½"	12½"
Minimum distance wheel centerline to work centerline with footstock removed	3½"	3½"
Work diameter reduction—per revolution of handwheel	0.100"	0.100"
—per revolution of fine feed knob	0.001"	0.001"
Minimum feed graduations—on diameter	0.000050"	0.000050"
Maximum hydraulic infeed—on diameter—for machines with hydraulic infeed	0.090"	0.090"
Rapid infeed stroke—for machines with hydraulic infeed	1"	1"
Grinding wheelhead swivel range		90° each way
Internal grinding spindle speeds—rpm		15,000 to 45,000
HEADSTOCK & FOOTSTOCK		
Headstock work center	#10 Jarno	#10 Jarno
Footstock work center	#6 Jarno	#6 Jarno
Headstock swivel range		120°
Work speeds—rpm	60, 90, 125, 225, 400, 600	60, 90, 125, 225, 400, 600
Diameter hole through spindle	1"	1"
Headstock spindle nose	5A2	5A2
ELECTRIC MOTORS		
Wheel drive motor—hp	3	3
Work drive motor—hp	¼	¼
Wheel spindle lubrication motor—hp	¼	¼
Coolant pump motor—hp	¼	¼
Hydraulic pump motor for machines with hydraulic traverse and/or hydraulic infeed—hp	1	1
Internal grinding spindle motor—hp		½
WEIGHTS—net—lbs.		
Machine with hand traverse and hand wheelfeed	3,750	3,750
Machine with hydraulic traverse and hand wheelfeed	4,050	4,050
Machine with hand traverse and hydraulic infeed	4,000	4,000
Machine with hydraulic traverse and hydraulic infeed	4,150	4,150

The Landis Tool Company reserves the right to change, without notice, the design and specifications of these grinding machines and their attachments.

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LANDIS TOOL COMPANY, WAYNESBORO, PA.

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