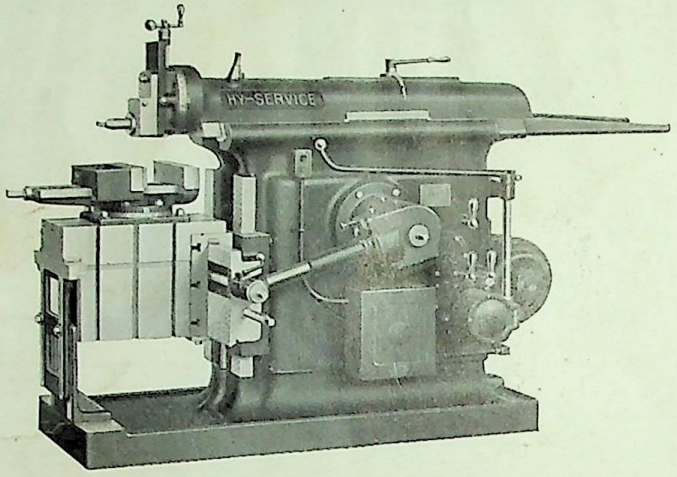
The

ROCKFORD HY-DRAULIC

SHAPER · PLANER

ROCKFORD MACHINE TOOL CO.
Rockford, Illinois, U. S. A.

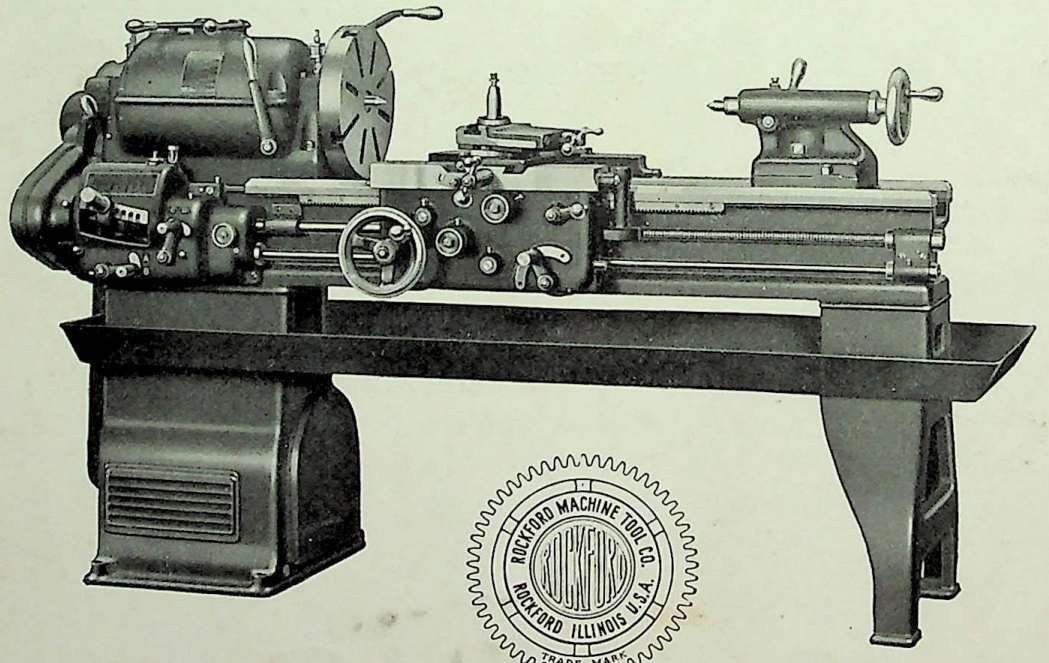
Other PRODUCTS » »



Hy-Service Shapers—built in 16″, 20″, and 24″ Heavy Patterns—20″, 24″, and 28″ Standard Patterns. A few outstanding features are:—balanced bull gear, unique positive feed mechanism, single-screw elevating device, outboard table support with gib adjustment, forced and showered lubrication, Twin Disc clutch and brake.

"Economy" Lathes—built in 12″, 14″, and 16″ capacities, cone or geared heads. Modernized, Timkenized, right up to the minute, these lathes meet the demand for a small heavy duty lathe of sufficient weight and power to handle the high production of modern manufacturing practice.

Both of these machines are accurate, durable, built from carefully selected materials by expert mechanics—and sold at remarkable price for tools of their high quality. Write for specifications and complete description of design and construction.



ROCKFORD MACHINE TOOL CO.

Rockford, Illinois, U. S. A.

PRINTED IN U. S. A.

..DESIGN and CONSTRUCTION..

BEFORE the Rockford Universal Shaper-Planer was placed on the market about two years ago several of these machines had been running for some time in commercial service outside of our own shop. The Shaper-Planer of 1927 rapidly became popular with railroad shops, tool and die makers, and manufacturers having a quantity of work which taxed the capacity of their larger shapers or else tied up the time of planers that could have been used to better advantage on larger work.

As each Shaper-Planer went into service it was studied carefully for possible improvements in design or construction. At the same time every advancement in machine design was analyzed and recorded if it was believed to be valuable in a possible new machine. These data were used as the basis for building new units, such as table drives, feed mechanisms and controls, which were thoroughly tested in experimental machines. Finally the cream of these was incorporated in the Shaper-Planer which is described briefly in the following paragraphs:

Advantages

Some of the most interesting features of this machine, as compared to the Shaper-Planer of two years ago, are:

- Increased work capacity.
- Greater power, strength, and rigidity.
- Finger-tip convenience of control.
- *Exact* adjustment of speeds and feeds to work requirements.
- Speedier operation.
- Higher table-return ratio.
- Simplicity.
- Longer life.
- Extreme accuracy—easily maintained.
- Pressure lubrication of bearings by filtered oil.

These and other advantages are provided by features of design and construction worthy of careful consideration by all those interested in more and better work of the class which this Shaper-Planer is so admirably fitted to produce.

All Hydraulic

The outstanding feature of this machine, and one which perhaps renders it unique among machine-tools, is the fact that *both* table and feeds are operated by hydraulic power. An Oilgear pump operates an hydraulic cylinder which is mounted in the bed close up under the table. The piston of this cylinder is directly connected to the table and exerts a maximum pull of 10800 pounds. Here is ample smooth-flowing power for heavy duty, high production and a quality of finish that is unexcelled. Any desired cutting speed up to 75 feet a minute is available instantly. Table reversals are smooth and shockless. Ratio of cutting speed to return is one to *three!* Think how this alone speeds up production!

Feeds

Hydraulic power for the feeds is provided by a separate pump. There are 20 horizontal feeds ranging from .010″ to .200″ and an equal number of vertical feeds ranging from .004″ to .080″. Feed takes place after the table returns and before the cut starts.

Power Rapid Traverses

A small electric motor at the top of the column supplies plenty of power for raising and lowering the counterbalanced rail and for rapid-traversing the rail-head in either direction. Interlocking mechanisms, automatic trips, and shear pins thoroughly protect the machine against damage.

Lubrication

A third pump forces filtered oil to the ways—about the only bearings on the whole machine which require this type of lubrication because of the hydraulic drives.

Controls

Centralized, sensitive, accurate and convenient—the controls lighten the task of the operator, increase his all-day efficiency and provide a facility of operation which we believe to be novel and which raises production to new high levels.

Pumps

A housing at the rear of the machine encloses and protects the three pumps. A door equal in size to the housing provides ready access. Engineers of the Oilgear Co. cooperated with us in designing and installing all of the hydraulic mechanisms. Their extensive and practical experience in this work has been an important factor in the successful consumation of our design.

Crossrail « Head « Side Head

The Crossrail is "L" shaped with a long vertical bearing and narrow guide carefully fitted and gibbed to the front face of the column. The side head and its rail are adjustably mounted on the front of this vertical section in a manner that removes any need for rescraping the column in order to keep the side head square with the rail.

A stocky box-section brace is dowelled and securely bolted to the Crossrail and reaches clear back to the rear of the column where it bears, and may be clamped, on an accurately machined surface.

Both Rail and Side Heads are of the graduated swiveling type, new in design, and provided with tapered gibs. The Rail Head has Horizontal and Vertical power feeds in both directions and rapid traverse to right or left. The Side Head has vertical power feed and hand horizontal feed.

Grinding

Here is a new and valuable feature in this type of machine-tool. By mounting a grinding head on the Crossrail, a reversing cam on the table and making two simple adjustments this Shaper-Planer is converted quickly into a high grade accurate surface grinder. Provision is made for the complete protection of all finished surfaces on the machine. The table speed, approximately the same in both directions, is correct for surface grinding and feed takes place at both ends of the stroke.

Bed

The hydraulic table drive removes cross shafts and working parts from the interior of the bed, permitting it to be extra heavy in section strongly ribbed and stoutly reinforced to withstand the heaviest loads which may be imposed upon it. The ways are accurately scraped to gages and are lubricated by filtered oil under pressure.

Table

Of deep box type construction gibbed to wide flat-top "V" ways, the table has three machined "T" slots and four rows of reamed holes.

Column

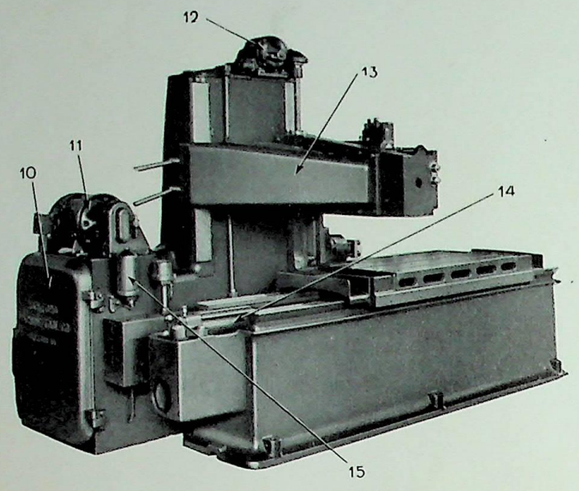
In harmony with the unusual strength and stiffness of the bed, table and cross rail, the column is keyed and rigidly bolted to the bed.

Equipment

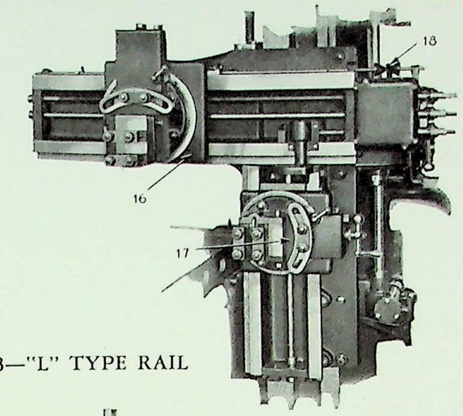
Extra equipment can be furnished for this machine as follows: Second rail head, side head, circular planing head, grinding head, two piece vise (stationary jaws), standard shaper vise, boom crane, shoe and wedge chuck, driving rod brass planing fixture, index centers, etc.

POWERFUL-FAST-HYDRAULIC

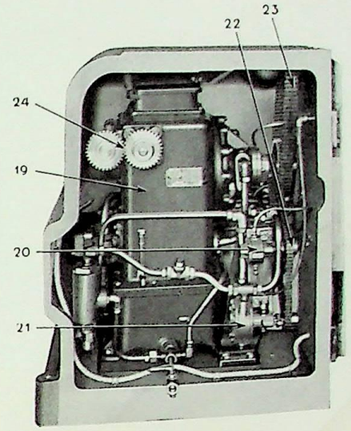
The Rockford Hy-Draulic Shaper-Planer



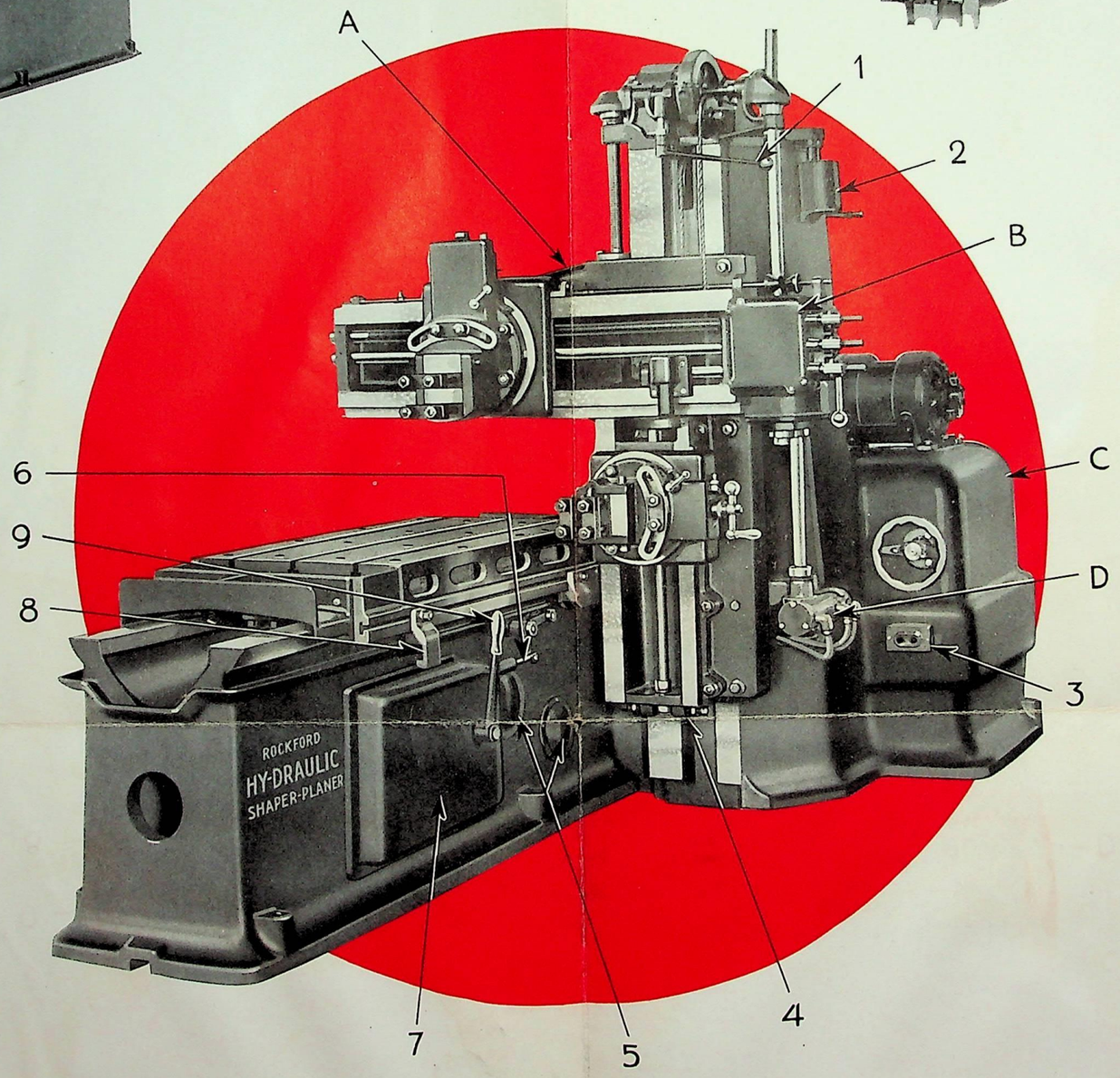
A—REAR VIEW



B—"L" TYPE RAIL



C—PUMP UNIT



Note These Points

1. Rail Elevation Control Lever.
2. Power Elevation Reversing Switch.
3. Push Button Control.
4. Side Head Rail Adjustment.
5. Grinding Control-Valve Covers.
6. Hand Table-Reverse.
7. Table Valve Mechanism Cover.
8. Table Reverse Dog.
9. Table Control Lever.

A—REAR VIEW

10. Pump Compartment.
11. Pump Drive Motor.
12. Elevation and Rapid Traverse Motor.
13. Rail Brace.
14. Table Drive Cylinder.
15. Oil Filter.

B—"L" TYPE RAIL

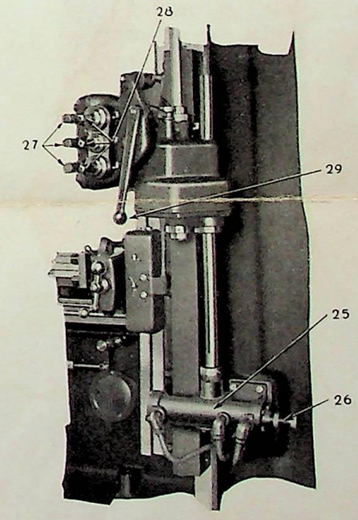
16. Rail Head.
17. Side Head.
18. Safety Stop.

C—PUMP UNIT

19. Oilgear Pump.
20. Feed Pump.
21. Lubricant Pump.
22. Auxiliary Pump Silent Chain Drive.
23. Main Drive Silent Chain.
24. Table Speed Control.
25. Feed Engine.

D—HYDRAULIC FEED-MECHANISM

26. Feed Adjustment.
27. Controls for Power Feeds.
28. Feed Screws.
29. Rapid Traverse Control Lever.



D—HYDRAULIC FEED-MECHANISM

Specifications

B—"L" TYPE RAIL

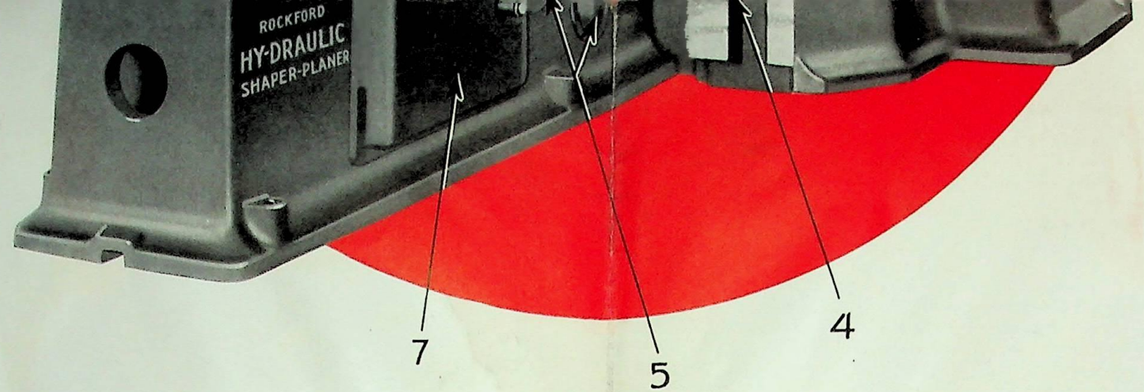
16. Rail Head.
17. Side Head.
18. Safety Stop.

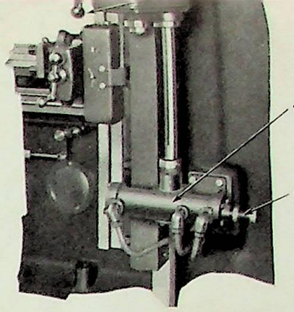
C—PUMP UNIT

19. Oilgear Pump.
20. Feed Pump.
21. Lubricant Pump.
22. Auxiliary Pump Silent Chain Drive.
23. Main Drive Silent Chain.
24. Table Speed Control.
25. Feed Engine.

D—HYDRAULIC FEED-MECHANISM

26. Feed Adjustment.
27. Controls for Power Feeds.
28. Feed Screws.
29. Rapid Traverse Control Lever.





D—HYDRAULIC FEED-MECHANISM

Specifications

Stroke of Table—standard machine (42″)	43″
Stroke of Table—66″ machine	67″
Stroke of Table—90″ machine	91″
Length of Table—standard machine (42″)	54″
Length of Table—66″ machine	78″
Length of Table—90″ machine	102″
Width of Table—All Machines	24″
Working Surface of table—standard machine (42″)	24″ x 42″
Working Surface of table—66″ machine	24″ x 66″
Working Surface of table—90″ machine	24″ x 90″
Three 11/16″ Slots—center to center	7″
Four Rows of Holes in Table	1″ diam.
Depth of table	6¼″
Maximum Pull to table	10800 lbs.
Maximum distance—table to cross rail	24″
Cutting speed of table	0″ to 75 ft. per min.

Ratio of cutting to return speed	1 to 3
Height-floor to top of table	32″
Length of bed supporting table	96″
Width of ways supporting table	37⅞″
Width over ways	19″
Number of Feeds—Horizontal and Vertical	20
Feed—Horizontal	.010″ to .200″
Feed—Vertical	.004″ to .080″
Cross Rail Bearing on Column	48″
Length of Saddle on Cross Rail	16″
Width of Saddle bearing on cross rail	11⅞″
Horizontal Travel of Tool	26″
Vertical Travel of Tool	7½″
Floor Space standard machine (42″)	58⅝″ x 119″
Floor Space 66″ machine	58⅝″ x 143″
Floor Space 90″ machine	58⅝″ x 167″
Maximum Height	101″

Horse Power of motor	7½
Speed of motor	1800 R.P.M.

SPECIFICATIONS OF SIDE HEAD

Maximum distance side head tool above table	18″
Horizontal Travel of head tool	6″
Width of side head saddle	10½″
Length of side head saddle	12⅛″
Number of feeds vertical	20
Feed	.010″ to .200″
Weight of standard machine (42″) with side head without motor (approximate)	14,000 lbs.
Weight of 66″ machine with side head without motor (approximate)	14,400 lbs.
Weight of 90″ machine with side head without motor (approximate)	14,800 lbs.

POWERFUL-FAST-HYDRAULIC

ROCKFORD MACHINE TOOL CO.
ROCKFORD
ROCKFORD ILLINOIS U.S.A.
TRADE MARK

8-INCH
ROCKFORD
ELECTRIC GRINDER
A Power Bench Grinder
Built for Durability

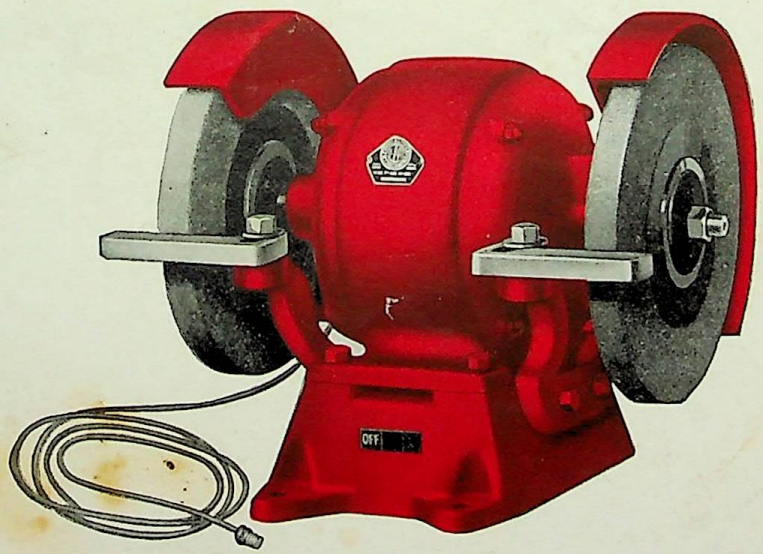
Particularly adaptable for garage, tool room, schools or general grinding.

$38.00

Inclosed Guard Type $44.00

Pedestal $12.50 Extra

⅓ H. P. Motor - 1800 R. P. M. Safety Wheel Guards
¾ x 8 in. High Grade Grinding Wheels
Threaded for 2-B Jacobs Drill Chuck
Dust Proof Bearings - Adjustable Tool Rests
Weight 55 Lbs. - Weight in Box 68 Lbs.
11 Inches High - 13 Inches Wide



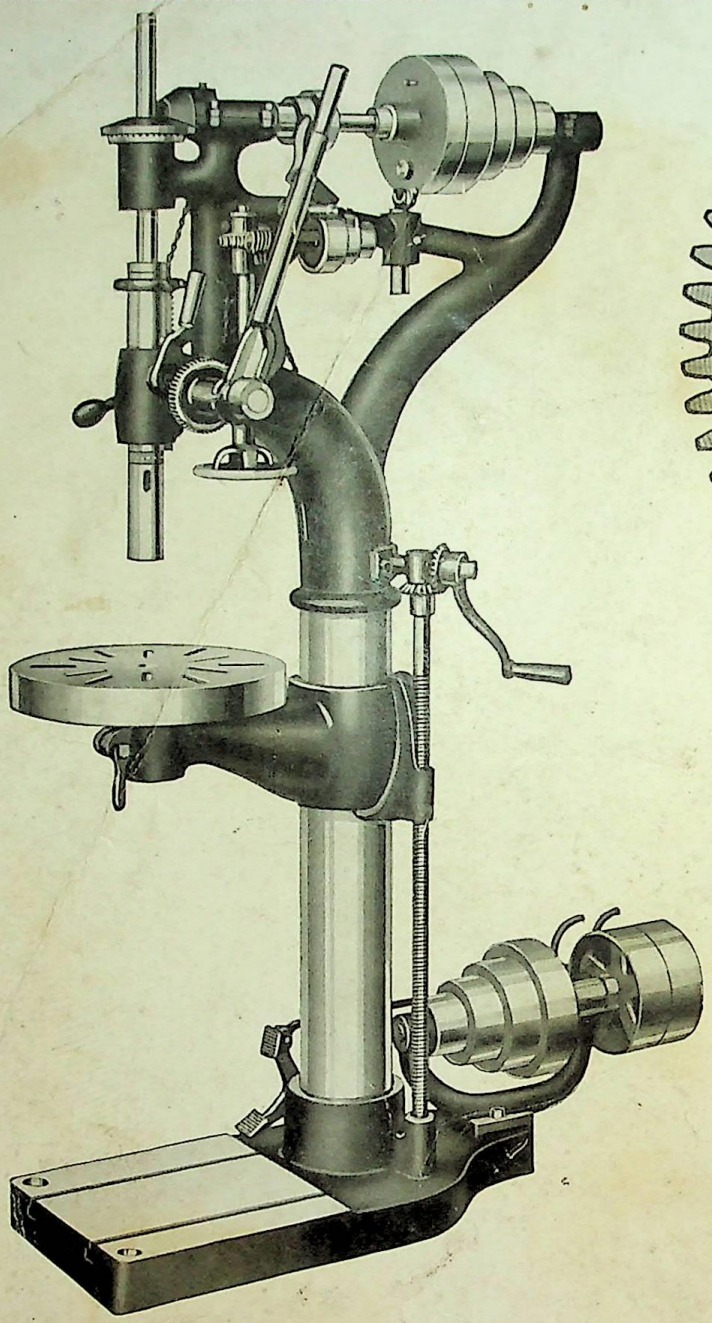
Furnished with two ¾ x 8 in. grinding wheels, having ½ in. hole, and ten feet of cord with plug and toggle switch. 110 volt A. C. current. D. C. and special currents at small additional charge. When ordering, current must be specified.

Rockford Machine Tool Company
ROCKFORD, ILLINOIS, U. S. A.

Also Manufacturers of

ROCKFORD ECONOMY LATHES - HY-SERVICE SHAPERS - UNIVERSAL SHAPER PLANERS AND DRILL PRESSES

L-M



ROCKFORD MACHINE TOOL CO. ROCKFORD ILLINOIS U.S.A. TRADE MARK

The Independent

20-INCH DRILL

This Drill Press was designed with the welfare of the garage repair shops in view. All working mechanism is unusually simple, bringing the possibility of shut downs due to disorder to a minimum. Speeds and Feeds may be chosen that have a very good range. All parts are manufactured with accurate jigs and fixtures which make like parts interchangeable. A long table travel on column, a substantial table and arm, an unusually heavy and thick base, a strong reinforced column of large diameter, a ball thrust bearing for the spindle, a balanced top shaft and good material and workmanship makes this drill the popular decision for use in garage and repair shops. Capacity 1½ inch in cast iron.

Specifications

Drills to center of circle	20 in.
Distance from column to center of spindle	10⅜ in.
Maximum distance spindle to base	40 in.
Maximum distance spindle to table	25¼ in.
Maximum travel of spindle without stop	8½ in.
Maximum travel of table on column	21 in.
Diameter of column	5⅝ in.
Diameter of table	16 in.
Tickness of table	2 in.
Diameter of sleeve	2 3/16 in.
Diameter of spindle in sleeve	1⅜ in.
Diameter of spindle above sleeve	1¼ in.
Morse Taper in spindle	No. 4

Thickness of Base	3 in.
Size of cone pulleys	3 5/16, 5 5/16, 6 13/16, 8 5/16 in.
Face width of cone pulley	2⅛ in.
Size of tight and loose pulleys	2½x8 in.
Speed of driving pulleys	300 R. P. M.
Range of spindle speeds	20 to 360 R. P. M.
Feeds, per revolution of spindle	.003, .005, .008 in.
Horse power required	1 H. P.
Floor space required	15¼ x 45½ in.
Total Height, top of cone pulley	70 in.
Weight, net	680 lbs.
Weight, (Belt Drive) crated	760 lbs.
Weight, (Motor Drive) crated	825 lbs.

L-M

THE 20" Independent Drill Press embodies the most modern and practical aids for efficient drill press operation on a tool of this type. The experience derived from building good quality machine tools has been used in manufacturing this 20-inch drill with the result that we have placed at the disposal of the user a drill that has well balanced lines to carry the shock and strain to which a drill is placed and a tool which may be relied upon to be accurate and efficient.

The working mechanism has been simplified to the greatest possible extent from standard drill press design, but still retains the power and capability of drills using complicated mechanisms. This means less number of working parts to keep it in order, therefore the greater power and increased efficiency. Our jigs and fixtures for producing this drill are very complete, which insures every drill of accurate machining and makes all similar parts interchangeable. A tool of high quality workmanship and design and with standard uniformity in every drill that we offer.

THE BASE has T-slots for bolting down work. It is unusually heavy and of liberal thickness, giving a good foundation for the drill.

THE COLUMN is heavy in proportions and has a large diameter and extra strong walls at the finished surface and at the bend to give extreme rigidity under heavy thrusts on the spindle. It is fastened securely by bolts to the base so that it cannot twist out of line with spindle.

THE STATIONARY HEAD has adjustment for taking up wear on the spindle sleeve and gives a bearing of good length to the sleeve.

THE SLEEVE has a good diameter bearing for the spindle and a ball thrust bearing is provided between the spindle and sleeve to reduce the friction. The sleeve is graduated in fractions of an inch.

The SPINDLE is of high carbon steel forging, accurately ground to size and has a Number 4 Morse Taper. It is counterbalanced by a weight in the column.

THE TABLE ARM is accurately machined to fit the column and is proportioned so as to give a rigid support to the table. The arm may be raised or lowered by turning the elevating crank, swung to either side or locked into position by clamping wrench on the arm. The table has correct bearing in the arm and is tested for close accuracy in a horizontal plane at right angles to the center line of the spindle. It may be locked in position if desired.

THE CONE PULLEYS have good diameters and wide faces. The tight and loose pulleys are also given a large diameter and wide face. Power may be applied to drill by means of the shifting pedal located on the base.

THE BACK GEARS are made of steel with the exception of one gear of a large diameter. The back gear was designed to obtain a perfectly balanced top shaft. The result is a well balanced drill at high speeds, pulling its capacity. **This feature is worth remembering.**

SPEEDS AND FEEDS. Eight well spaced spindle speeds are provided; ranging from 20 to 360 R. P. M. and a choice of three power feeds of good variation. Three types of feeds may be had; power feed with automatic trip, hand wheel feed, and lever feed. A quick return handle is furnished to bring the spindle quickly into starting position.

MOTOR DRIVES are arranged by replacing the lower countershaft bracket with our special motor bracket. The drive is obtained through spur gear and rawhide motor pinion.