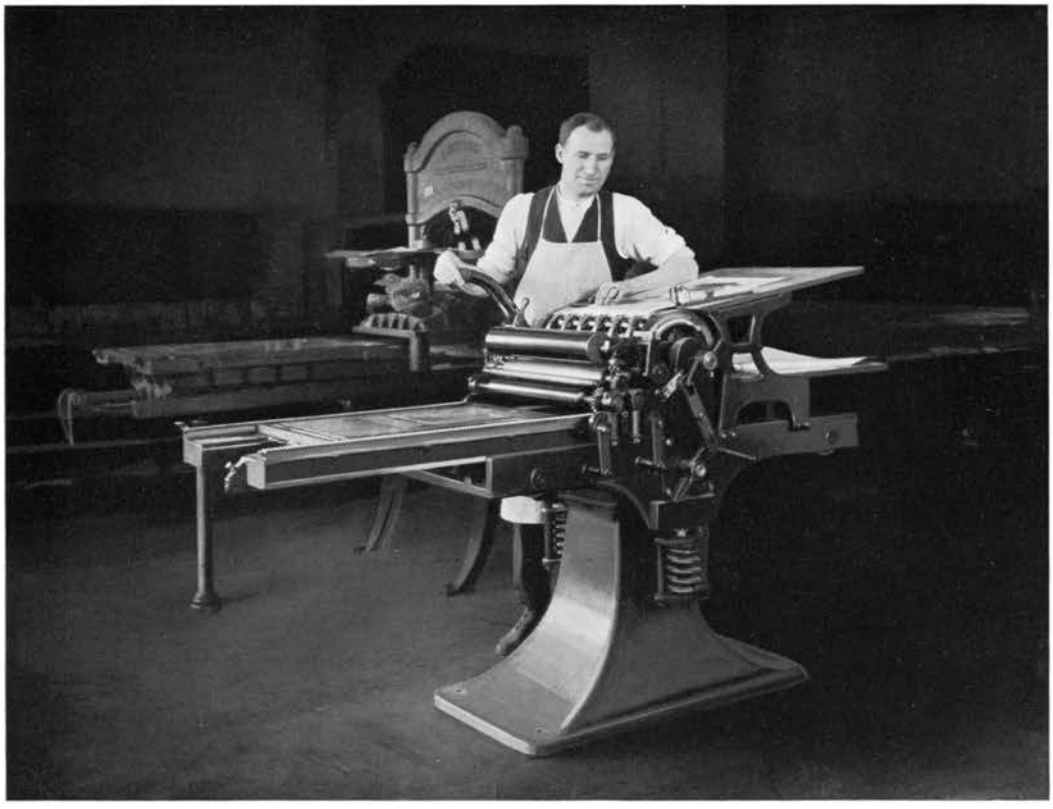
HACKER PRESSES

and Proofing Equipment for Photo-Engravers

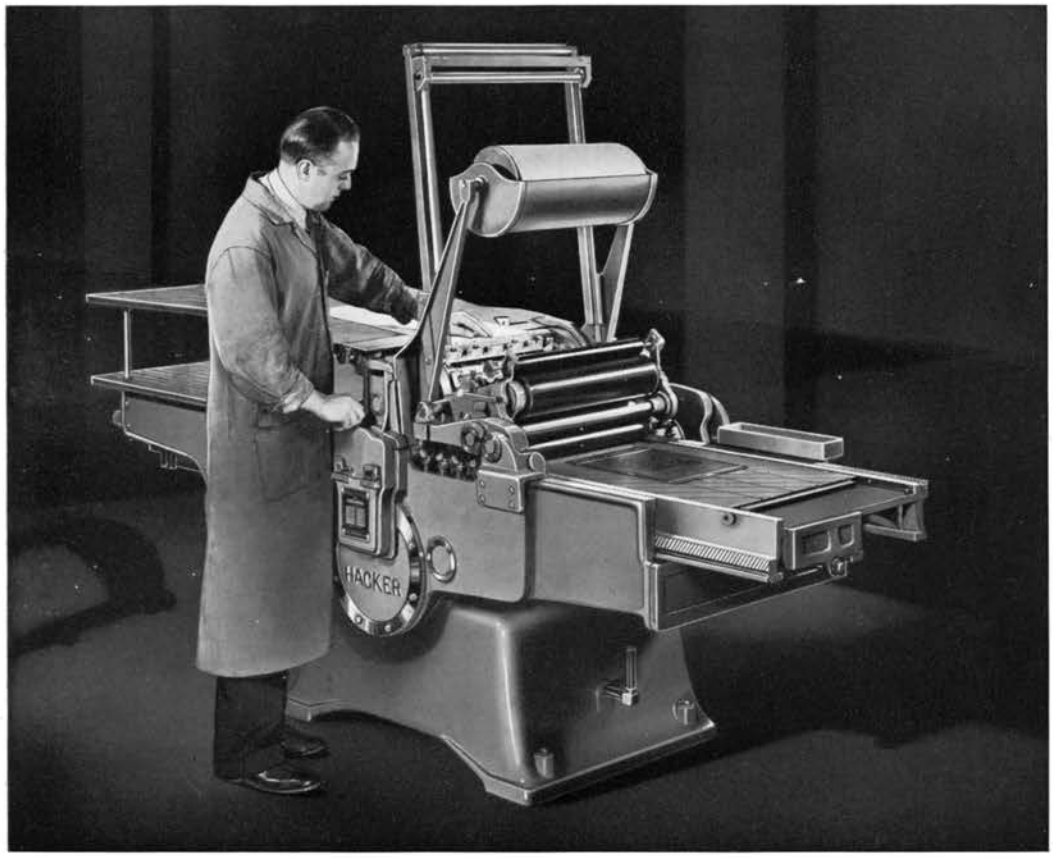
Catalog
No. 36

Precision impression, uniform distribution, and accurate register in the testing of color plates and black and white plates by cylinder proof press

HACKER MANUFACTURING COMPANY
320 SOUTH HONORE STREET • CHICAGO, ILLINOIS



The first Hacker Press in a photo-engraving plant—1923.



A modern Hacker Press—hydraulic power drive.

Cylinder Proofing *and* Hacker Presses

In 1923 a few courageous engravers adopted cylinder proofing and set the pace for what has since become new proofing standards for the industry. Hacker pioneered this development. He originated the technique and methods now in general use. Hacker Presses were, in fact, instrumental in greatly increasing the use of color plates. They speeded up the proofing and the etching. They gave true proofs and taught engravers how to make better plates for cylinder and rotary printing. The latest developments in the equipment are set forth in this catalog.

The outstanding and most important characteristic of Hacker Test Presses is impression, now as in the beginning. By a patented mechanism, the bed and cylinder are held together, bearer on bearer, with uniform weight in amount greater than form requirement. This is the foundation of test proofing. It means true readings of plates, direct and definite plate correction, full bed size capacity, and impressional accuracy enduring automatically against wear, needing no re-adjustment.

The control of register was a striking feature which had great influence in the adoption of Hacker Presses by photo-engravers for the reason that it greatly speeded up the proofing of color plates. The method of mounting plates in immediate register, the proofing of two or more plates at one time in automatic register, the micrometer feed guides, the ability to break and then recover a register set-up, all first developed by Hacker, have now been carried forward by refinements.

The power drive is an achievement of first rank. The drive is hydraulic—the first application to printing presses. The great advantage of this kind of transmission is flexibility. Starting, stopping and variable speeds are as controllable as by hand crank. It is all done by a touch of the fingers on a small lever. A proofing press, of all printing machinery, must be flexible. Moreover, the small number of parts and the automatic lubrication insure freedom from servicing delays.

Hacker Presses are strong and the years have proven them durable. The new models Nos. 5, 6 and 7, are built exceptionally heavy and rugged. They are, in fact, fine printing presses, equal in all comparable respects to the finest printing machinery that is made. They are major tools of modern design and have lifted proofing to new levels of importance and efficiency.

The No. 6 Power Press with four form rollers and the No. 4 Hand Press with two, or three, form rollers have pyramid inkers in the standard practice. The No. 5 and No. 7 Presses, both hand and power, have motor-driven two-roller inkers.

The inkers of No. 5 and No. 7 Presses have the entirely new feature of pre-distribution by motor at *each* end of the printing stroke so that the return pass over the plate is with freshly distributed rollers, thus insuring equal coverage at the bottom as at the top of large plates. This unique design has other marked advantages.

Automatic frisketting, long considered impractical on cylinder presses, was applied successfully for the first time on the No. 6 Hacker Power Press and is now available on all models. This device doubles the speed of proofing in that class of work for which it is adapted.

Uniform ink feed without fountain has been refined to insure maintenance of color first to last. The micrometric adjustment of the feed per proof which holds color unvariable is built into the four-roller inker of the No. 6 Power Press and also the two-roller inkers of the No 5 and No. 7 Presses, both hand and power.

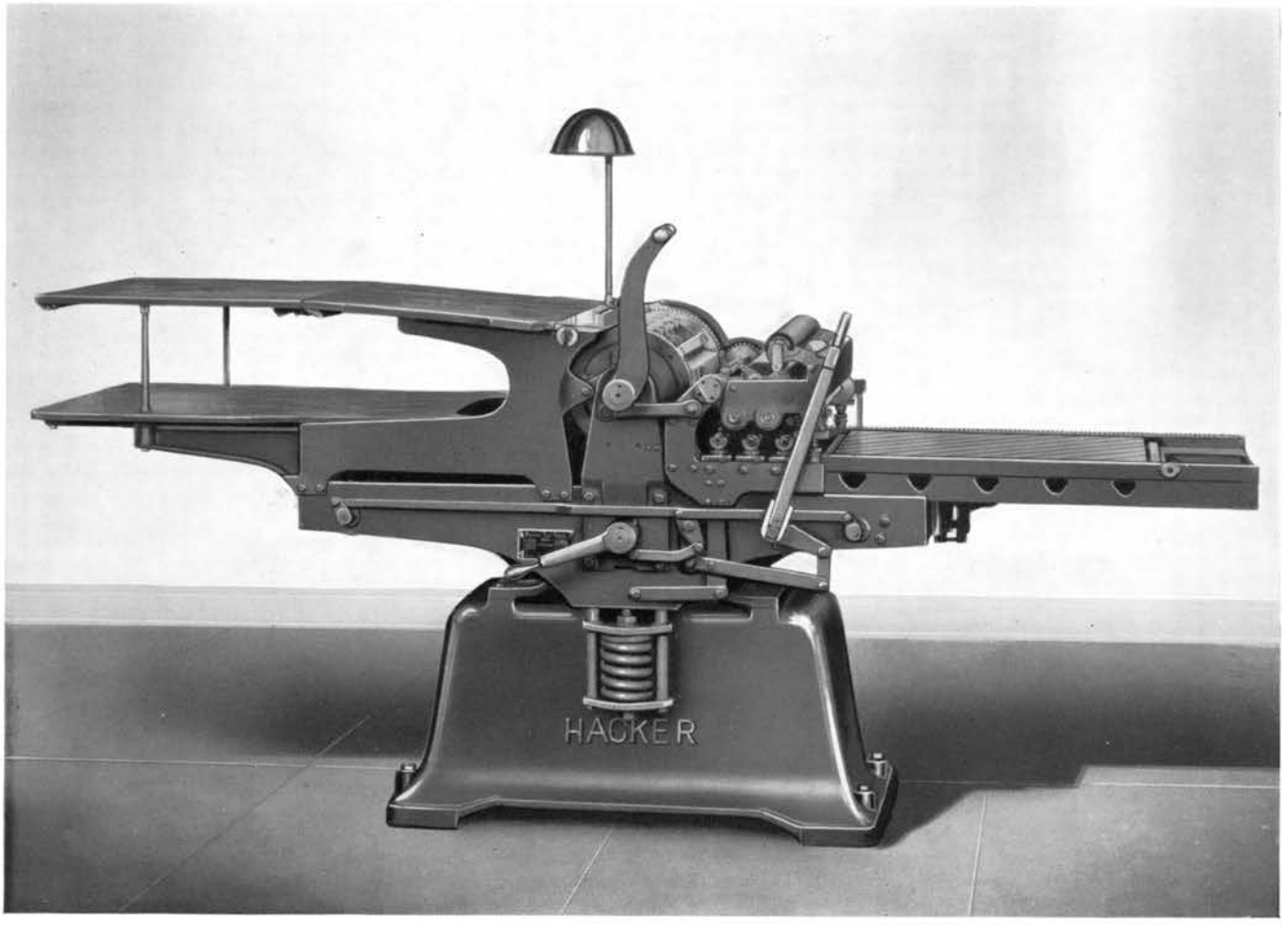
On Hacker Test Presses the beds reciprocate under cylinder and inker as on cylinder printing presses the world over. The impression is concentrated in a vertical line where it can be controlled. The operator stands in one position.

All Hacker Presses are *test* presses. Their correct name is Hacker TEST Press. With precision impression, precision distribution and precision register, they offer standardized conditions for *testing* the printing characteristics of plates. They show true dot formation, true color value, a true reflection of all the workmanship that has gone into the plate.

Hacker Presses and equipment of today represent years of development in the details of photo-engravers' proofing. Careful engineering in the numerous and very technical problems are the groundwork of the high performance of these machines under practical production and diverse proofing requirements.

For speed and output they have surpassed all records, by old machines or modern, hand or power. Numerous trials under diverse conditions have established a lower cost performance. This is not only a product of the convenience, flexibility and ease of operation of the presses, which is unique, but it is also and in a large part due to the precision construction and standardized equipment by which definite results can be predicted and duplicated, thereby saving many lost motions in the trial and error of makeready, register and distribution.

Hacker Presses and Proofing Equipment reduce proofing costs.



With three-roller inker also supplied
With two-roller inker

Hacker Test Press No. 4 — *hand — size 18″ x 25″*

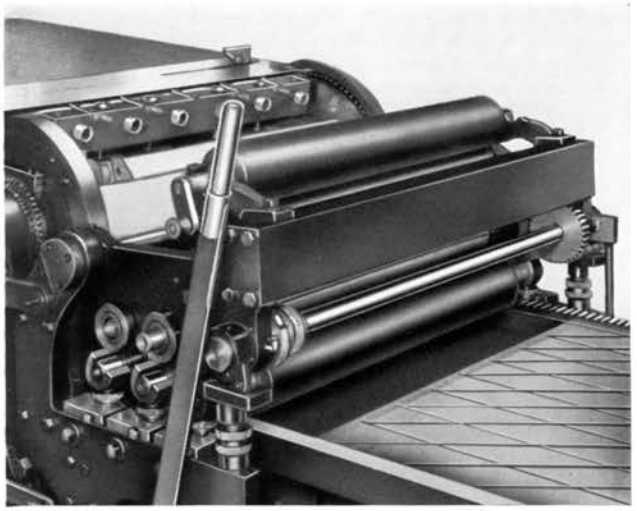
This is the original "Hacker" Press in size, style and mechanical principles, although it represents many improvements over the early models. Every detail has been evolved out of experience with the particular needs of photo-engravers' proofing. It is the machine that started cylinder proofing in photo-engraving and is in wide general use.

Strength and accuracy of impression, the primary and underlying requirement in test proofing, is secured by a patented mechanism which insures positive bearer contact under all normal loads. Moreover, this precision is permanent and is so guaranteed. In these respects, Hacker Presses are absolutely unique among all the presses in the world. "Hacker impression" is recognized as the final test, in careful work, by those who have had comparative experience with all kinds.

Both bed and cylinder ride on ball bearings to make them easy in operation. The bed is center gibbed to insure alignment and register.

The register of all Hacker Presses is perfect. Successive proofs on the top tympan will show exactly dot on dot register. A sheet fed twice to the guides will show dot on dot register. Error in the press being eliminated, the operator's only concern is accurate sheet feeding at the feedboard, location and security of the plate on the bed, and the proper cylinder packing and plate height.

The distribution is like that of all production presses in that the printing form moves under a fixed inking



The Three-Roller Inker. Three form rollers, two vibrators and a large distributor supply ink while a plate is being rolled. A fountain roller and a ductor feed ink each stroke.

Open for wash-up. Only one roller, the fountain, is removed. Others are washed in position. Cleaning is rapid and easy.

unit in receiving its ink deposit. The ink is agitated only as the bed moves forward and back.

The radial mushroom grippers will not move the sheet. They bear on a metal block, not on the cylinder packing. The cylinder packing can be changed at will without disturbance to register.

The feed guides, both front and side, have micrometer graduations and adjustments to .001″. They are so constructed that by keeping a record of position a set-up may be broken and later returned to, without loss of a sheet from misregister.

The three-roller inker has three form rollers, two vibrators, a large composition rider, a steel ductor, and a composition fountain roller. The two-roller inker has two form rollers, two vibrators, a large composition rider and a steel distributor. All rollers separate automatically at each end of stroke to prevent stop-streaks. All rollers are washed in position. Wash-up is easy and rapid. Ink is fed each stroke of press.

The Two-Roller Inker. Two form rollers, two vibrators, a rider, a distributor.

All Hacker presses are regularly equipped with flop frisket for masking out dead metal. There is also an automatic frisket which can be supplied as an extra. (See page 20)

SPECIFICATIONS—Hand Press No. 4

Bed size	18¼″x25″
Length, bed extended	100″
Length, bed extended, frisket extended	118″
Width	36″
Net weight	1880 lbs.

Standard Equipment, Three-Roller Inker

Ideal rollers (any other composition supplied if preferred)

Extra set form cores.	1 frisket frame.
Extra cylinder packing.	Makeready and frisket paper.

1 feedboard light, complete.

All small tools and accessories necessary to operate press.

Composition Rollers

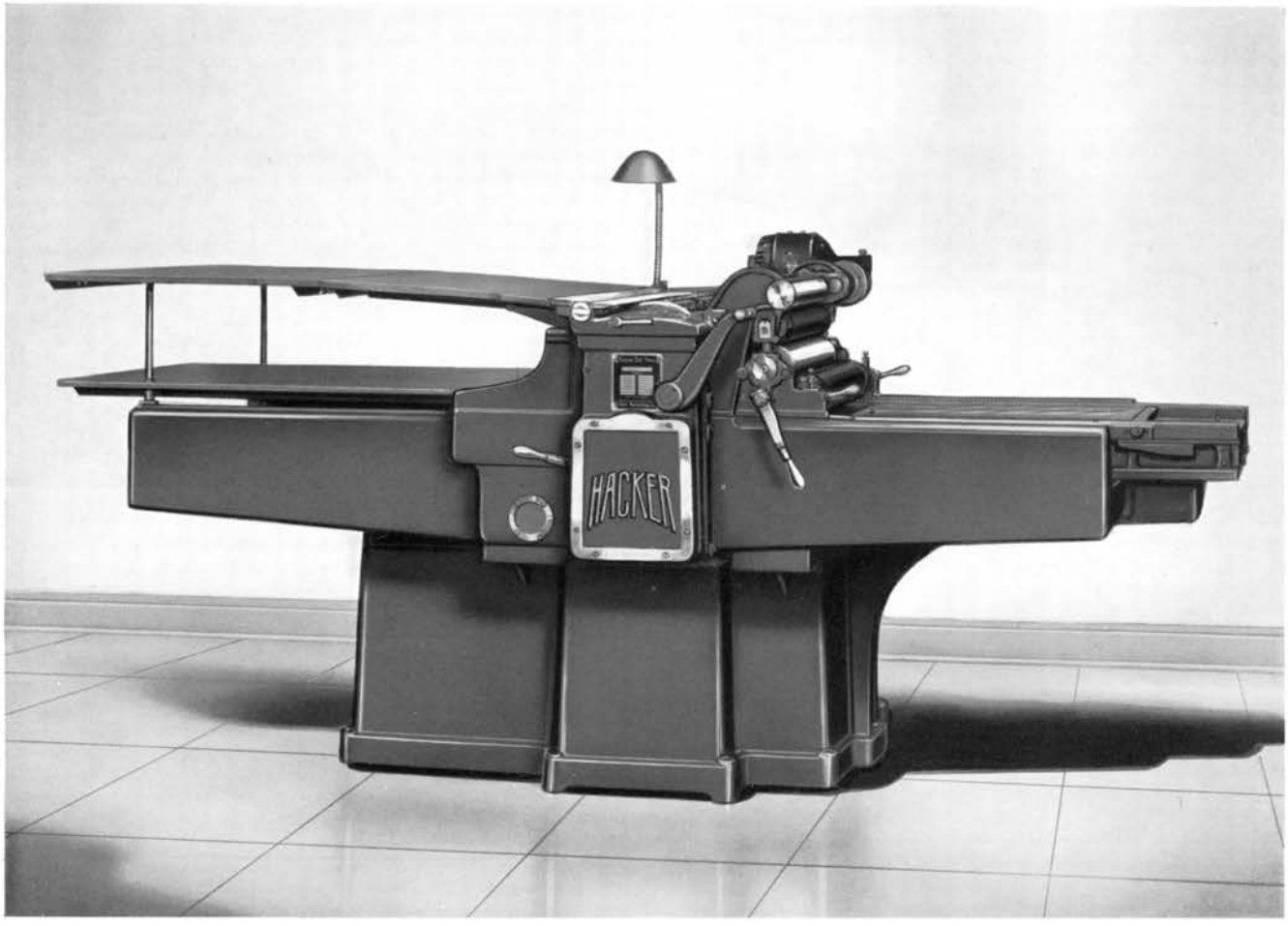
2 Forms	2½″ dia.	1 Feed	2½″ dia.
1 Form	2 7/16″ dia.	1 Rider	3 ″ dia.

Standard Equipment, Two-Roller Inker

The same, except 2 glue form rollers and no feed roller.

Shipping Data

Domestic, assembled, one crate, weight	2285 lbs.
Export, one box, 65″x37″x53″, weight	2420 lbs.



Motor-driven inker
***without* fountain feed**

Hacker Test Press No. 5-B — *hand — size 19″ x 25″*

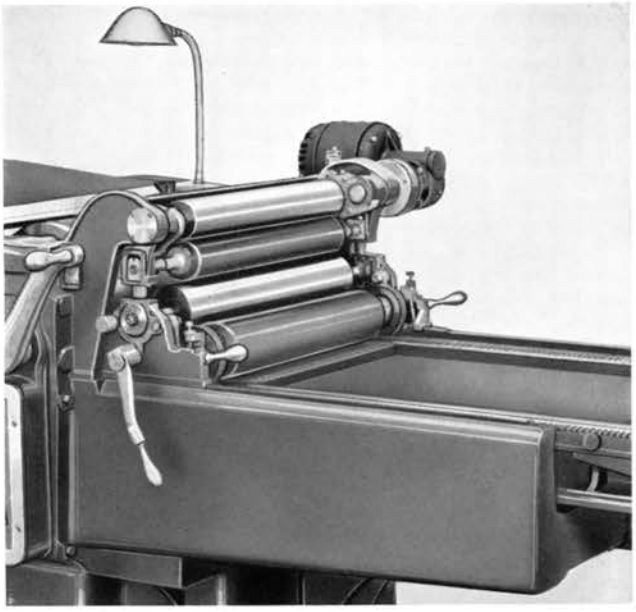
This is the simplest of a new line of modern presses with many important improvements. The others are No. 5-A, No. 7-B and No. 7-A, as described on following pages. Principles of proven value and typical Hacker construction are preserved in these new models. New features and new efficiency have been added.

The weight and strength, the operating parts, the design, are all scaled to modern machine tool practice and will give the same dependable performance as modern machine tools. No printing presses are better made.

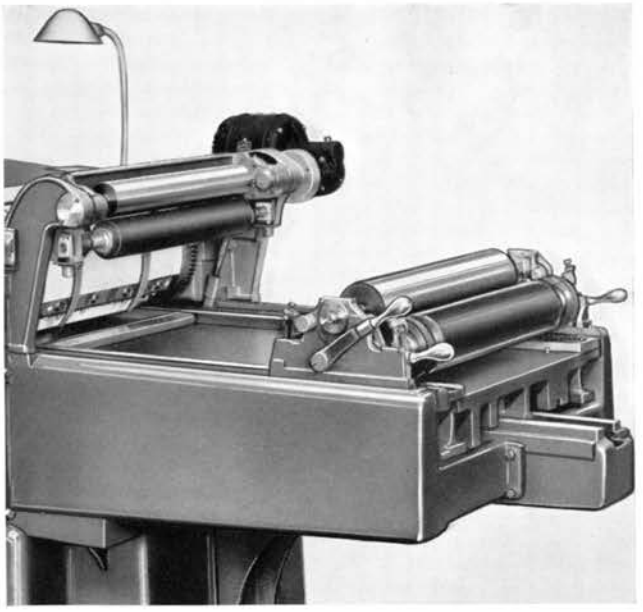
These four models—two sizes, each in hand drive and power drive—are not only alike; most of the parts are actually interchangeable. This standardization means that they can be used interchangeably on the same work, experienced operators will be more available, servicing is simplified.

The hand presses turn over with amazing ease. This is because the cylinder rides the bed bearers, the bed is center gibbed, ball bearings are at every load point, and the ink friction of the rollers is divorced from the hand crank. The pulling load is scarcely perceptible on the heaviest plate.

The inkers are motor-driven, with removable and exchangeable lower units. They are alike on all No. 5 and No. 7 presses, both hand and power. They are available with fountain feed and without fountain feed. They are simple in the extreme, yet effective, and entirely adequate for the severest distributional requirements and for all classes of work.



Motor-driven inker *without* fountain feed. Simplest inker made. Only two steel and three composition rollers. Same for No. 7 Press. Thorough break-up. Uniform color.



Open for wash-up, adjustment or exchange with another color unit. Quick wash-up. Motor predistribution. Uniform lay top to bottom. Same for hand press and power press.

The motor predistributes the ink on the rollers at *each* end of stroke during *both* the sheet feeding and sheet delivering pauses. Thus the return pass is under freshly distributed form rollers the same as the forward pass. This feature is new to the art. It means uniform color at the bottom of long plates. It made possible a reduction in the number of rollers and a shorter wash-up without loss, and even with gain, in distributional power and uniformity.

The two 4-inch form rollers are friction driven by rubber tires on tracks outside the bed bearers. There are no gears to generate streaks. The large vibrator is self-contained and reverses in either direction without timing, being friction driven by the form rollers.

The lower inker unit—form rollers and vibrator—is pulled forward on the frame for wash-up, adjustment, or exchange. It may be lifted off and stored on any flat surface with no rollers touching. Another unit for another color can be inserted in position immediately without locks or adjustments.

The inker *without* fountain feed, because of its simplicity and quicker wash-up, is recommended for miscellaneous proofing and frequent color change. It lays absolutely uniform color for any one proof. Ink is knifed on the rollers and is quickly broken up and spread by the motor. With only three composition and two steel rollers, cleaning is easy and rapid.

The inker *with* fountain feed (see page 13) is recommended for long runs. It feeds ink each stroke and maintains uniform color, proof to proof, for any reasonable number of proofs. A charge of ink is distributed on the fountain roller, and a ductor removes a measured amount. The feed adjustment is very fine. There are three additional rollers—a ductor, a large steel fountain roller, a fountain vibrator.

SPECIFICATIONS—Hand Press No. 5-B

Bed size	19¼″x25½″
Length, bed extended	9 ft. 4″
Length, bed extended, frisket extended	11 ft. 2″
Width	3 ft. 10″
Net weight	2875 lbs.

Composition Rollers—*Without* fountain feed

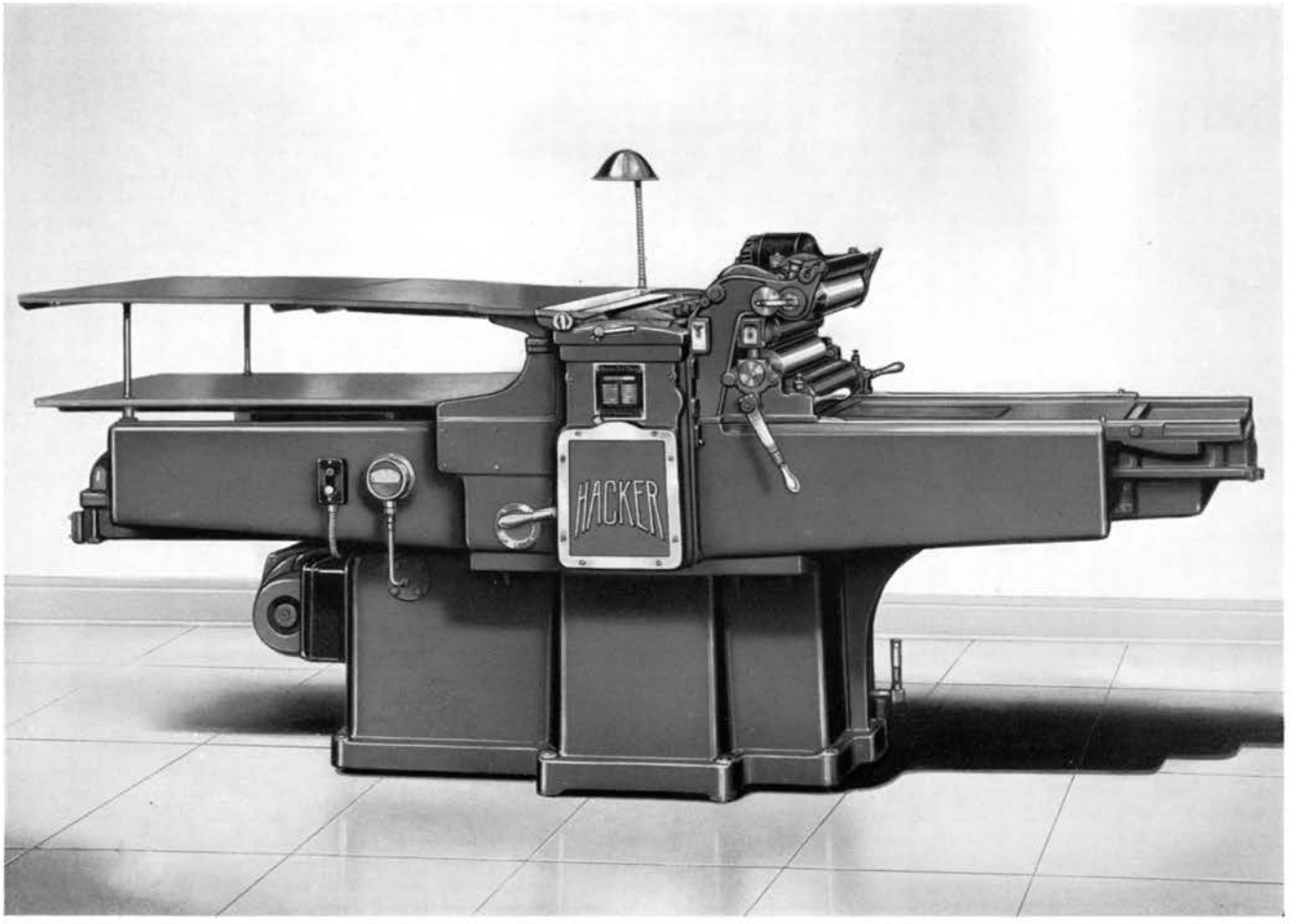
2 Forms . . . . . 4″ dia. 1 Distributor . . . . . 2½″ dia.

Standard Equipment

¼ h.p. Inker Motor, assembled. Feedboard light, complete.
Ideal distributor roller. 2 extra form cores.
Composition form rollers (any other kind supplied, as preferred).
1 frisket frame. Makeready and frisket paper.
Cylinder packing.
All small tools and accessories necessary to operate press.

Shipping Data

Domestic, assembled one crate, 9 ft. 2″x4 ft. 3″x4 ft., wt. . 3575 lbs.
Export, assembled one box, 9 ft. 2″x4 ft. 3″x4 ft., wt. . . . 3375 lbs.
Export, one box parts, 4 ft. 6″x3 ft.x1 ft., wt. . . . . 300 lbs.



Motor-driven inker *with* fountain feed.

Hacker Test Press No. 5-A—*power—size 19″ x 25″*

This is the same press as No. 5-B in all respects except for the addition of power drive. There is a different base carrying the power unit and mechanism. Power is not an attachment; it is inbuilt from the ground up. It is a real transmission and the press is a genuine power press of sound design and durable construction.

Power is transmitted by oil on the hydraulic principle, the same as on the No. 6 Press. This is the most flexible method known, and is ideal for proofing. A small throttle controlled by the fingers makes, within a range of four inches, every move of bed and cylinder that is required and does it as sensitively and definitely as a hand crank on a hand press.

This finger throttle starts the press, stops it, runs it fast or slow, reverses it, inches it. For normal proofing the throttle is thrown over and the press stops automatically at each end of the stroke. No switches, no clutches, no brakes—just a touch of the fingers and an instant response. Every move of the throttle is immediately followed by a like move of the bed in same ratio but longer scale. It is unbelievably flexible and responsive and handy.

The number of parts are but a fraction of those required in mechanical drives, and all internal ones are self-lubricating. This kind of low-pressure oil transmission is trouble free and foolproof and durable. The thirty-five gallons of oil in the pedestal will last for years without change.

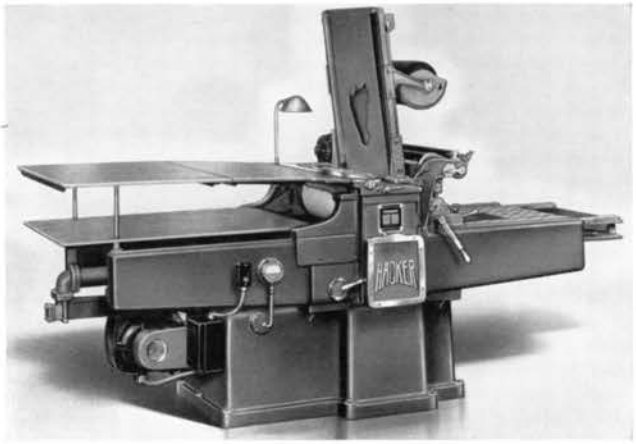
Power at touch of fingers. Flexible for every proofing need.

Hydraulic drive is remarkable for its simplicity of construction, reliability in performance and flexibility of control. Its use on fine machine tools is growing rapidly. It has had several years field experience on No. 6 Hacker Press. It is the one best power drive for cylinder proofing, with all the starting and stopping, and great variety of manipulations.

The cylinder trips and inker trips are manually operated on both hand and power presses. The inkers, cylinders and guides are the same. They all have pre-closing grippers. They have long wide feedboards and large delivery boards.

Hacker power drive takes the labor out of proofing without any penalty whatsoever of awkwardness or inconvenience. The operating conditions are exactly the same as on the hand-driven press. The operator is spared the fatigue of steady running, and keeps a better edge on his skill and judgment which good proofing demands. Better work follows, naturally.

Power presses will presently replace hand presses where the volume or the peak is heavy, because of more rapid and more economical production. Hacker Power Presses are prepared for this demand.



Automatic frisket doubles running speed on work for which suited.

SPECIFICATIONS—Power Press No. 5-A

Same as No. 5-B (page 7) except—Net weight.....3375 lbs.

COMPOSITION ROLLERS—*With* fountain feed

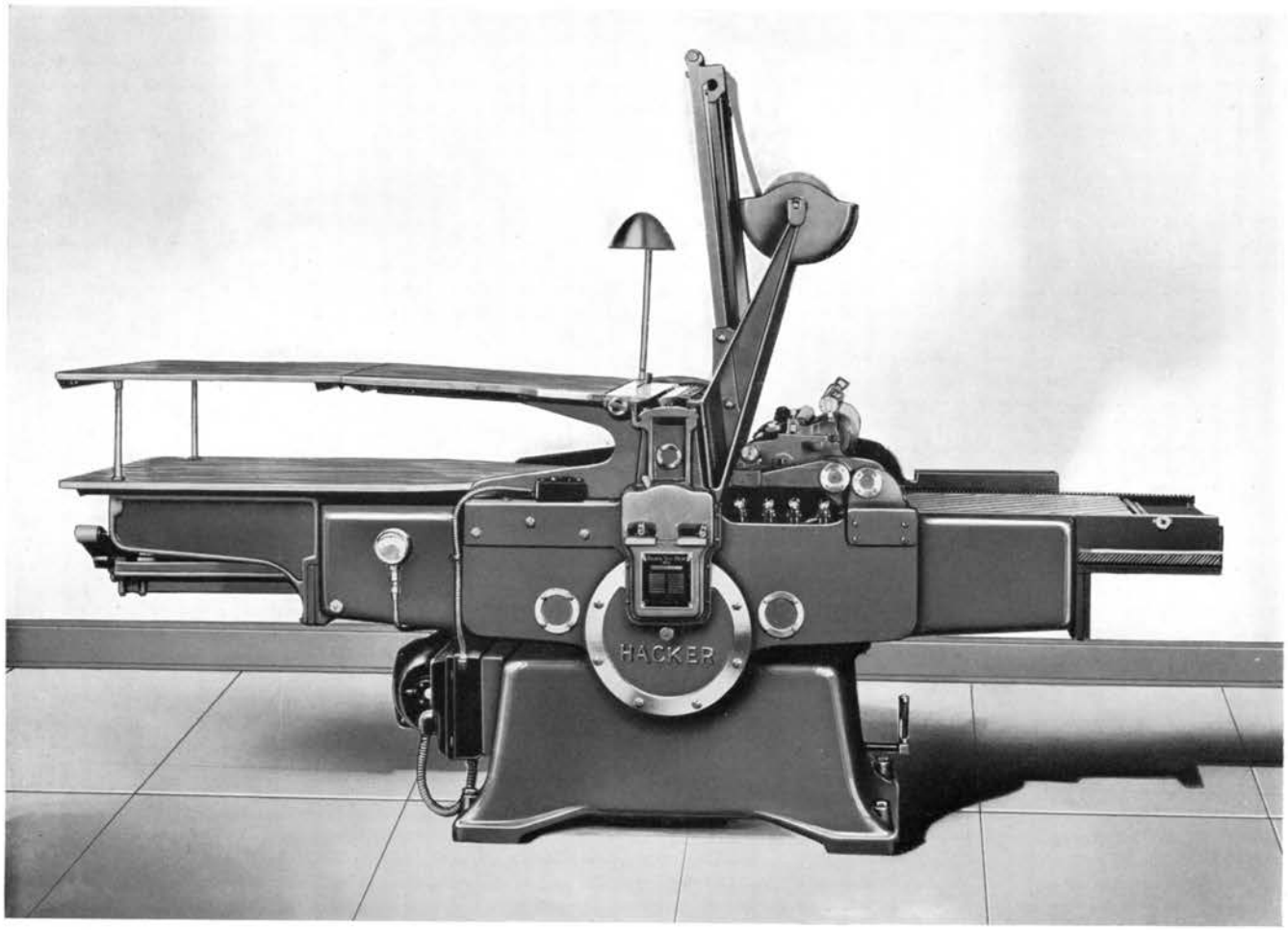
2 Forms.....4″ dia. 1 Ductor.....1½″ dia.
1 Distributor.....2½″ dia. 1 Fountain Vibrator 1⅝″ dia.

STANDARD EQUIPMENT

Same as No. 5-B plus—2 h.p. drive motor, assembled
Magnetic starting switch. 35 gal. of oil.

SHIPPING DATA

Domestic, assembled one crate, 9 ft. 2″x4 ft. 3″x4 ft.,wt. 4075 lbs.
Drum of oil..... 230 lbs.
Export, assembled one box, 9 ft. 2″x4 ft. 3″x4 ft.,wt. ..3875 lbs.
Export, one box parts, 4 ft. 6″x3 ft.x1 ft., wt. ..... 300 lbs.



Four-roller pyramid inker with feed.

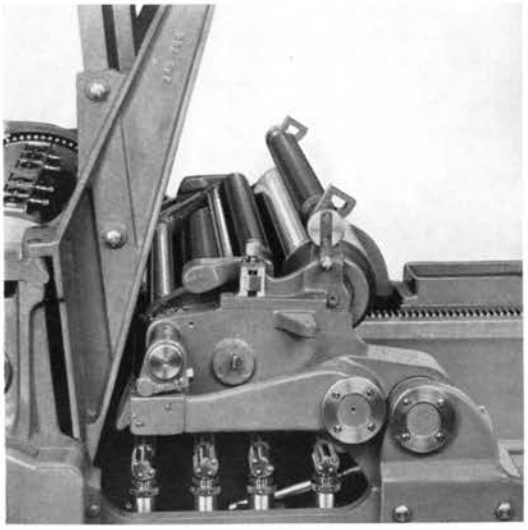
Hacker Test Press No. 6 — *all power — size 19″ x 25″*

This was the first real power press and the first hydraulic drive in any printing press. It was the first cylinder proof press to be built modern and thorough, and in the best engineering practice. It stepped out of the crude "proof press" class into the machine tool class. And the increased efficiency has justified the cost. Numerous batteries of four of them have been turning out enormous volumes of work for a number of years.

The application of power and method of control is practically the same as on No. 5 and No. 7 power presses (see pages 8 and 14). But this No. 6 Press also has power trips for cylinder and inker. A touch of the fingers on the small levers directly under the throttle operates the trips. With these three little levers, covered by one hand, the operator makes all major movements of the press. For him it is the very minimum of effort and motions.

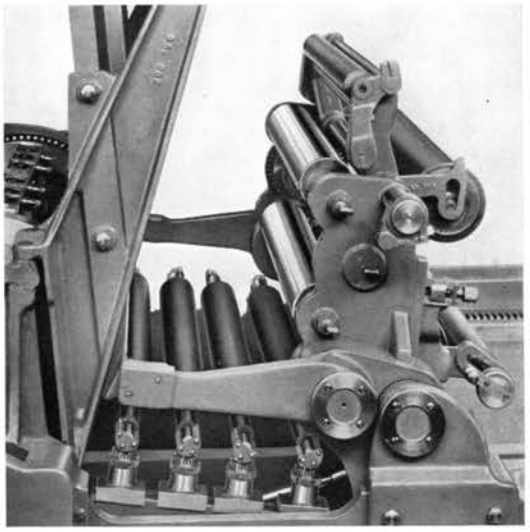
This press has a four-roller pyramid inker in the standard practice of cylinder presses. The inker is gear driven from the bed and moves only with the bed. There is an ink feed mechanism from fountain rollers, capable of fine adjustment, to hold color uniform. Runs of considerable length can be held to exact color.

The bed runs on three long roller tracks as on all cylinder presses. The entire machine is built heavy-duty throughout. It was the first proof press so built.



Four form rollers, two vibrators, driven by bed; fountain feed, finely adjustable. Uniform color per proof, also proof to proof.

Control levers. Throttle (above) starts and stops press or moves it fast or slow. Trips (below) raise and lower inker and cylinder. Within these few inches the press is operated.



Wash-up position, all rollers separated and accessible; all washable without removal. Form rollers lift from open sockets.

It is still the finest machine in the line and the finest proof press in the world. It has demonstrated its capacity for steady output, year in and year out, with a minimum of service.

Four No. 6 Hacker Presses, one for each color, equipped with automatic frisket and grouped conveniently, give the fastest production on magazine plates known to the art, in both dry and wet proofing. The record is available. No other single machine or group or combination has approached this record in proofs per hour and plates per day.

There are no better wet proofs, technically, than are produced on four of these presses—no closer approach with flat plates to wet printing conditions. From first-ink-on-plate to last-color-on-paper nothing is faster. Proofs show the characteristic effect of overprinting wet and of ink trapping. Plates etched to these proofs print as planned on the rotaries.

Yet this wet proofing unit is comprised of four self-contained and individually complete presses, each of which can be diverted instantly to any other kind of work. By means of Hacker automatic register they can be quickly returned to four-color proofing, wet or dry. They are not special machines for a special purpose. They are all-round machines for every purpose. They give the most return for the money invested and space allotted.

SPECIFICATIONS—Power Press No. 6

Bed size	19¼″x25½″
Length, bed extended	9 ft.
Length, bed extended, frisket extended	10 ft. 10″
Width	3 ft.
Net weight	3625 lbs.

COMPOSITION ROLLERS

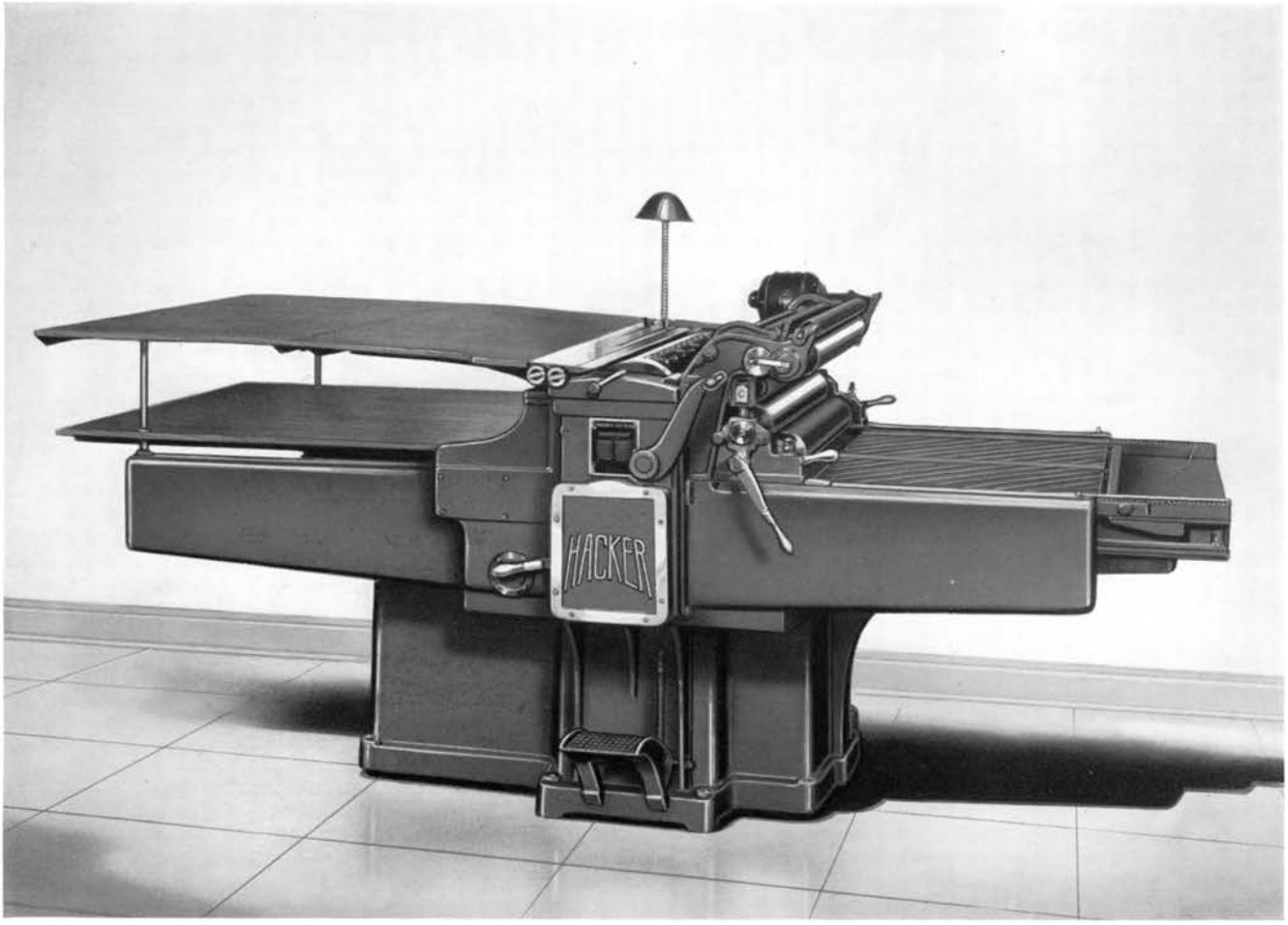
4 Forms	2″ dia.	1 Ductor	1⅜″ dia.
1 Rider	3½″ dia.	1 Distributor	1⅝″ dia.

STANDARD EQUIPMENT

2 h.p. motor, assembled.	Magnetic starting switch.
Ideal rollers (any other composition supplied if preferred).	
4 extra form cores.	30-gal. drum of oil.
1 frisket frame	1 feedboard light, complete.
Extra cylinder packing.	Makeready and frisket paper.
All small tools and accessories necessary to operate press.	

SHIPPING DATA

Domestic, assembled, one crate, weight	4400 lbs.
Export, one box, 102″x45″x52″, weight	4710 lbs.
Export, one box, 57″x36″x14″, weight	520 lbs.
Drum of Oil	230 lbs.



Motor-driven inker *with* fountain feed.

Hacker Test Press No. 7-B — *hand — size 30″ x 25″*

This is the same press as No. 5-B in all respects except width. It is 30″ between bearers. Thus the bed is wider than it is long, as with all cylinder presses.

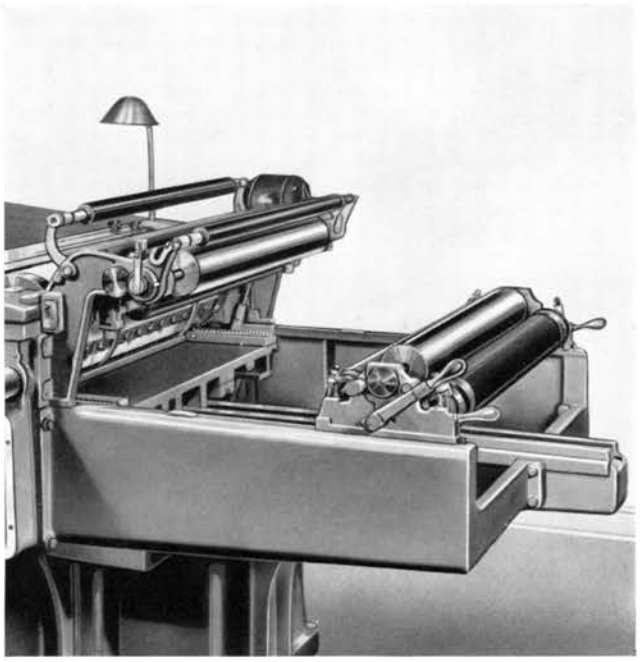
Notwithstanding the greater weight of parts, this press, for all practical purposes, is just as easy to turn over as the smaller presses. There is no consciousness of effort, so easy does the crank pull over the impression even on the largest and heaviest plate. The entire design was pointed at ease of operation, and operators attest to its achievement.

The machine is capable, as to impression and as to distribution, of handling the largest plate that can be mounted on the bed, and do it with ease and decision. Thus it is a press for large work.

The press can be used for small plates by working on the near side, since all the parts are duplicates, except as to width, of the smaller No. 5 press. Thus it is a press for small work and will produce right alongside of a small press.

The press can be used for proofing two plates in different colors at one time on separate sheets by reason of two side guides, preclosing grippers, split vibrators, and divided bases. Thus it is a two-color press for plates up to magazine size.

Motor-driven inker *with* fountain feed. Uniform color, proof to proof, by uniform ink feed. Finely adjustable. Same for No. 5 press. Pre-closing Grippers.



Open for wash-up. All rollers separated. Same for hand press and power press.

This wide range of usefulness of No. 7 Press makes it invaluable to photo-engravers with a wide variety of work. In one and the same machine, it is a large press for large work, and a small press for small work, with full efficiency on both. It meets the problem of large plates without a heavy investment standing largely idle. It can be used for all the various kinds of work now being done on small presses. And by substituting an inker unit with split vibrator it can be used for doubling up and for two-color proofing (see page 15).

No. 7 Press can have the inker *with* fountain feed (see illustrations on this page) for long runs or same color. It may have the inker *without* fountain feed (see illustrations on page 7) for short runs or frequent change of color. The lower inker is the same in both cases.

The inker *with* fountain feed will maintain uniform color, proof to proof, for any reasonable run. A vibrator distributes the ink on a large steel fountain (storage) roller, and a ductor withdraws an exact and adjustable amount each stroke. The inker *without* fountain feed will lay uniform color throughout entire bed area. Ink is knifed on and broken up by motor and vibrator.

This inker is remarkably simple and easy to control for so large a press. It does not add any load to the hand crank. It lays a smooth film on the largest plate without streaks or shadings.

SPECIFICATIONS—Hand Press No. 7-B

Bed size	30″x25½″
Length, bed extended	9 ft. 4″
Length, bed extended, frisket extended	11 ft. 2″
Width	4 ft. 10″
Net weight	3950 lbs.

COMPOSITION ROLLERS—Same as No. 5

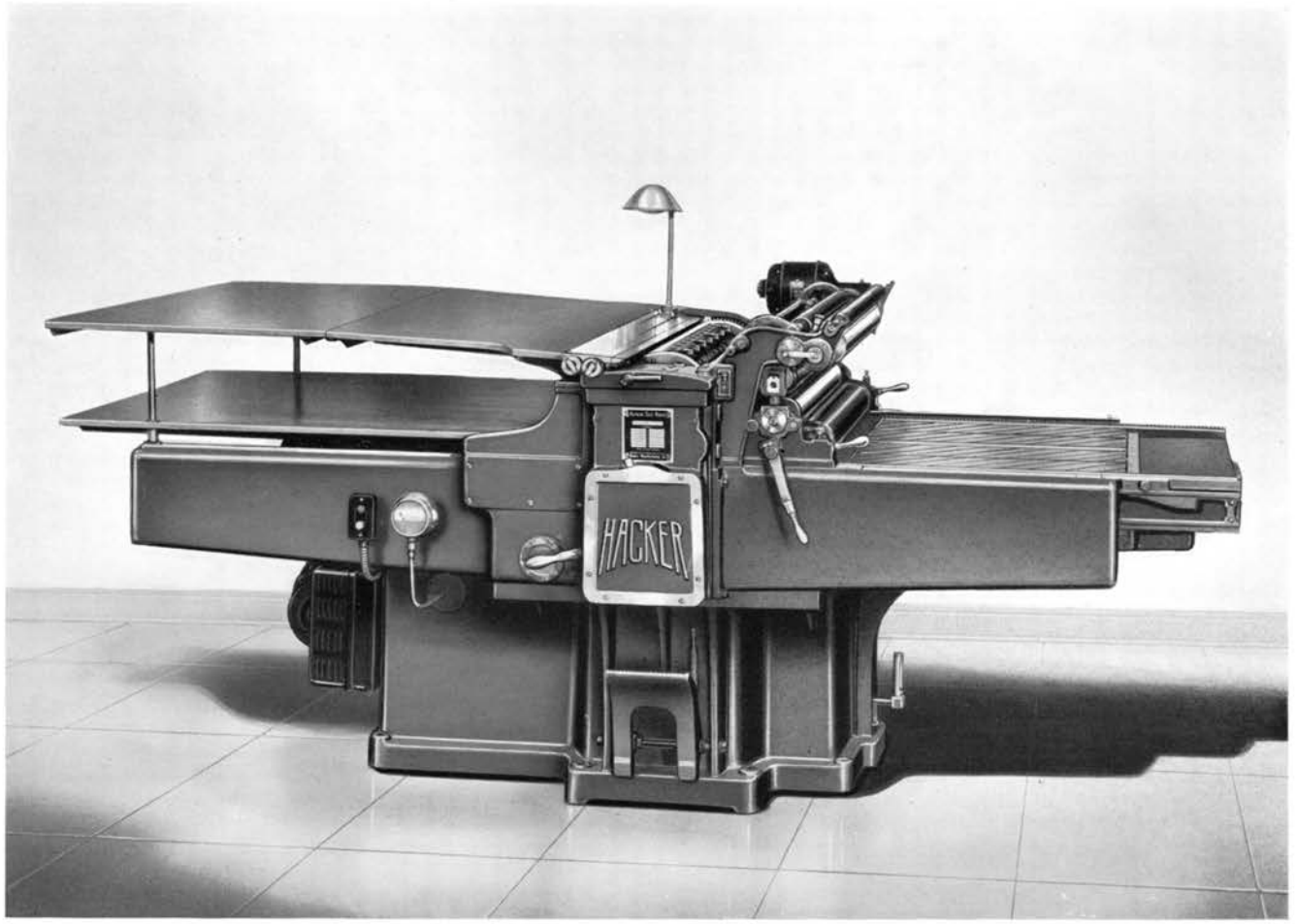
Without fountain feed (see page 7). *With* fountain feed (see page 9).

STANDARD EQUIPMENT

Same in all particulars as No. 5-B (page 7).

SHIPPING DATA

Domestic, assembled one crate, 9 ft. 2″x5 ft. 3″x4 ft., wt. 4600 lbs.
Export, assembled one box, 9 ft. 2″x5 ft. 3″x4 ft., wt. . . 4450 lbs.
Export, one box parts, 4 ft. 6″x5 ft. 3″x1 ft., wt. . . . . 300 lbs.



Motor-driven inker *with* fountain feed.

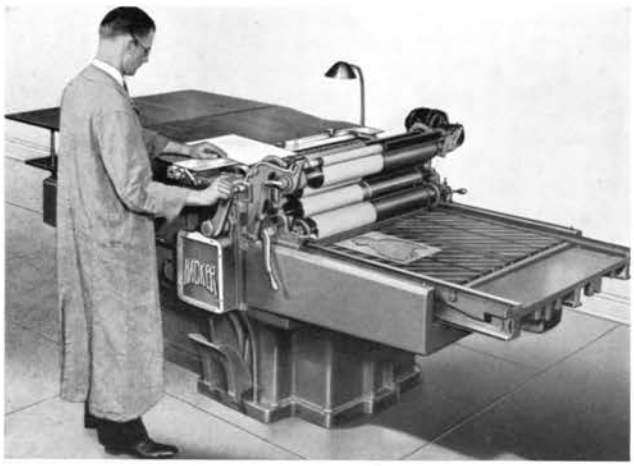
Hacker Test Press No. 7-A—*power—size 30″x 25″*

This is the same press as No. 7-B in all respects except for the addition of power drive. It has all the advantages of the No. 7 design (see pages 12 and 13) but with the added merit of power. The power drive is the same as on No. 5-A (see pages 8 and 9).

The oil drive is so smooth and strong, and responsive to the controls, this press is operated with exactly the same speed and flexibility as the smaller No. 5 and No. 6 power presses. It is not slower, nor is it in any respects inconvenient on account of the size. It handles small work just as rapidly. It would handle large work just as rapidly except for the unavoidably slower pace incident to large plates and large paper.

As between No. 7 hand press and No. 7 power press the results achieved are identical. A choice between them should turn on the points of volume of work and operator fatigue. The same may be said as between the smaller No. 5 hand press and No. 5 power press. All four models produce like quality and in the same manner.

When used as a combination or universal machine, No. 7 press is best equipped with two lower inker units—one with long vibrator and one with split vibrator (see illustrations page 15). The long vibrator is for large plates. The split vibrator is for small plates and for two-color proofing. A split fountain vibrator always accompanies



Doing small work on No. 7-B hand press. Same on No. 7-A power press. Working on near side, exactly same conditions as o smaller No. 5 press. Just as easy.

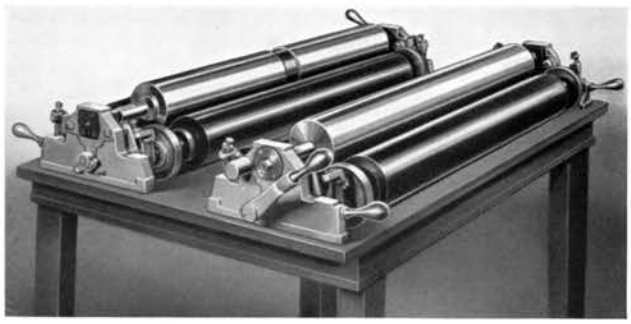
Doing two-color work on No. 7-B hand press. Same on No. 7-A power press. Divided bases, split vibrators, two side guides, pre-closing grippers. A one-color proof and a two-color proof each stroke, one operator.

the split form roller vibrator. By these devices two colors can be used on the inker simultaneously and will not mix. Vaseline or oil is put on the far side of rollers when proofing small plates on the near side.

The base is divided so that two plates of magazine size can be mounted independently. There is a pre-closing gripper device and two side guides so that two sheets can be fed to the cylinder, in register with each other and with the two plates. The proof from the near side is next moved to the far side. Thus each stroke of the press gives one one-color proof and one two-color proof.

Two No. 7 presses make a four-color wet proofing unit; one makes a two-color wet proofing unit. This is common sense wet proofing. It is practical. There is no other way of getting better wet proofs. It is economical, since the machine can be instantly shifted to other kinds of work and as quickly returned. There is a special automatic frisket for masking two magazine plates at one time.

No. 7-A Power Press is the last word in range of work, flexibility, and general utility.



Removable inker with long vibrator for large work
also
Removable inker with split vibrator for small work and two-color work.

SPECIFICATIONS—Power Press No. 7-A

Same as No. 7-B (page 13) except—Net weight.....4450 lbs.

COMPOSITION ROLLERS

Same as No. 5.

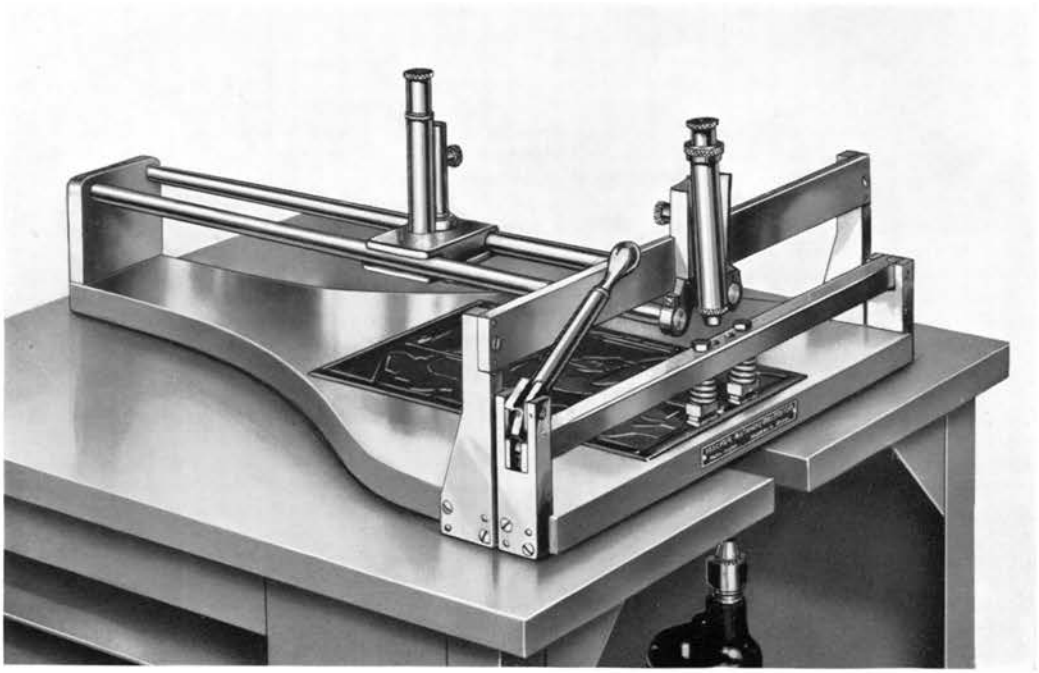
Without fountain feed (see page 7). *With* fountain feed (see page 9).

STANDARD EQUIPMENT

Same in all particulars as No. 5-A (page 9).

SHIPPING DATA

Domestic, assembled, one crate, 9 ft. 2″x5 ft. 3″x4 ft., wt..5100 lbs.
Drum of oil..... 230 lbs.
Export, assembled, one box, 9 ft. 2″x5 ft. 3″x4 ft., wt...4950 lbs.
Export, one box parts, 4 ft. 6″x5 ft. 3″x1 ft., wt..... 300 lbs.



Hacker Automatic Register Plate Driller

Automatic register, conceived and developed by Hacker and first introduced in 1923, has so speeded up the proofing of color process plates as to have influenced materially their wider use. The Register Plate Driller and the Register Base (see pages 17 and 18) are the two devices which accomplished this advance in the art. Color plates are drilled accurately in relation to the register marks and then mounted over accurately located pins in the register base. Successive color plates will thus be in register at once and require no shifting.

Precision drilling being the vital factor, microscopes with reticles are used to position the register mark in relation to the drill bushing. Even register marks broken by the screen angle can be definitely positioned to a dot between the black parallel and crossed hairlines in the focus of the lenses.

There are two microscopes, one fixed and one sliding on parallel bars. The plate is carefully located under both glasses and drilled at the front edge. It is then turned around, located again, and drilled at the opposite edge. Plates of the same set are similarly drilled under the same setting of the microscopes. Thus all plates of a set have two holes in exact relation to two register marks on opposite sides in the dead metal. The holes, like the register marks, are common to the design on all colors.

The holes are beside the mark, not through it. There are advantages in preserving the mark, and in emergencies, plates can be drilled on the opposite side. The pin mountings on the base are located so as to square up the plate and the proof.

The double microscope plate driller has a number of other helpful uses. It checks plates which themselves are out of register and permits "splitting the difference" in drilling. The distance between register marks on proofs can be compared to the plates to check sheet stretch. Negatives themselves can be checked for camera mis-register. The glasses can be reset to a drilled plate for the drilling of a make-over.

The Automatic Register Plate Driller is supplied only on this Steel Stand. Wired for light, and small drill motor. Five shelves for plates, proofs, or paper. Three drawers for paper, proofs or tools.

This microscope device has a number of uses other than precision drilling, such as checking negatives, plates and proofs for register. Eye pieces are protected by metal cap-covers.

The plate driller is mounted on a steel cabinet containing shelves and drawers for storage of proofs and supplies.

The small Bench Plate Driller and Jig provides a simpler and less expensive means of quick register for the smaller shops. It is not so exact as the microscope driller but it does the work so closely that a very little shifting at the feed guides or on the base will quickly throw the job in register. Certainly it is a very great time-saver over the old try-and-shift method.

The plate is drilled through the center of the register mark. The drill jig is first clamped to the plate over the register mark. There is a sighting guide for position which, after clamping, is removed and replaced with a drill bushing.

Bench Plate Driller and Jig. Register mark on plate is located central in jig, through sighter; plate clamped and drilled through bushing.

There are special pin mountings on the base for plates drilled through center of register mark.

The Drill Jig is also used on large plates—those which are too large for the Automatic Register Plate Driller and too large for Nos. 4, 5 and 6 presses. Thus large plates for No. 7 press can be mounted over pins in register.

Both types of plate drillers employ standard 1/8" twist drills, and will run from a light socket.

SPECIFICATIONS—Automatic Register Plate Driller

Takes plates up to ..... 19"x25"
On cabinet ..... 32"x27"x48" high
Net weight ..... 360 lbs.

STANDARD EQUIPMENT

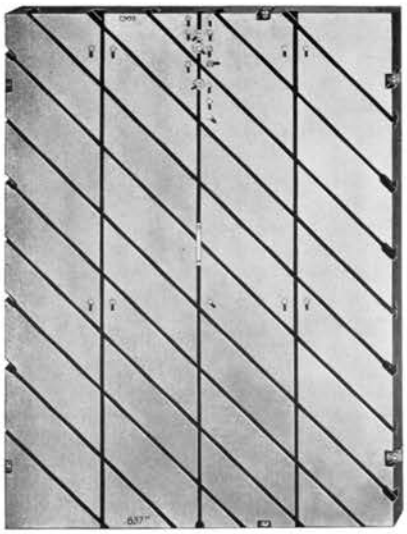
Drill and motor assembled. Runs from light socket.
2 Microscopes. 1 Light assembly.
Drills, broach, burring tool, chuck wrench.

SHIPPING DATA

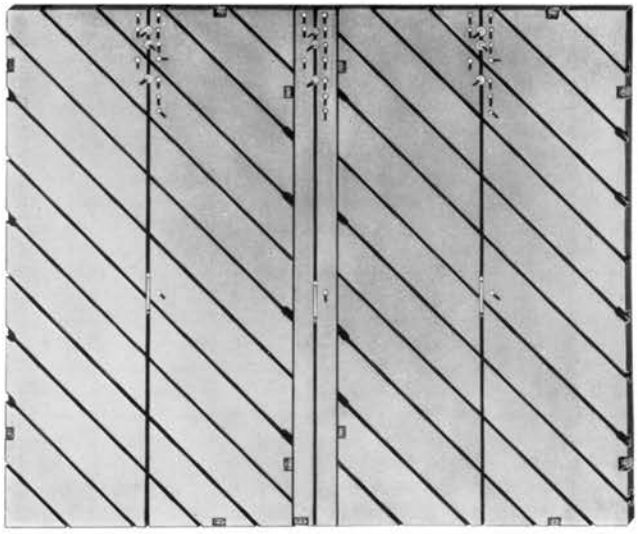
Domestic, assembled on cabinet, one crate, weight ..... 535 lbs.
Export, one box, 40"x36"x58", weight ..... 560 lbs.

SPECIFICATIONS—Bench Plate Driller and Jig

11"x6"x20" high. Net weight, 21 lbs.
Shipping weight, one box ..... 40 lbs.
Drill and motor assembled. Runs from light socket.
Drill jig with register mark locator and drill bushing.
Drills, broach, burring tool, chuck wrench.



For Nos. 4, 5, and 6 presses



For No. 7 presses

Hacker Automatic Register Bases

This one-piece diagonal groove metal base has a fixed head pin, and a tail pin moving freely lengthwise in a slot. The base is locked firmly in the bed and when a drilled plate is slipped over these two pins, it is held securely in all directions. Successive plates of the same set will be in immediate register when placed over the same pins.

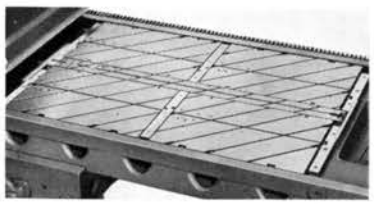
The head pin can be lifted and moved to other holes at top center to accommodate different margins. There are three positions in line with the slot for plates drilled through the register mark (by Bench Plate Driller) and ten positions beside the slot for plates drilled on either side of the register mark (by Automatic Register Plate Driller). The lower key-pin takes any position in the center slot according to the length of the plate.

The vertical slots on each side, together with the additional holes top and halfway down, are to accommodate additional plates to be proofed concurrently. All head pin holes except the one in use are filled with flush plugs to keep them clean. A special tool lifts head pins and plugs from the holes.

The diagonal grooves are for plate clamps or register hooks. All the grooves are T shape. The surface width is $\frac{3}{16}''$, the narrowest of any base, half the width of patent bases for electrotypes. This is a factor of great importance in proofing thin copper or zinc pattern plates. Wider grooves show through under heavy impression.

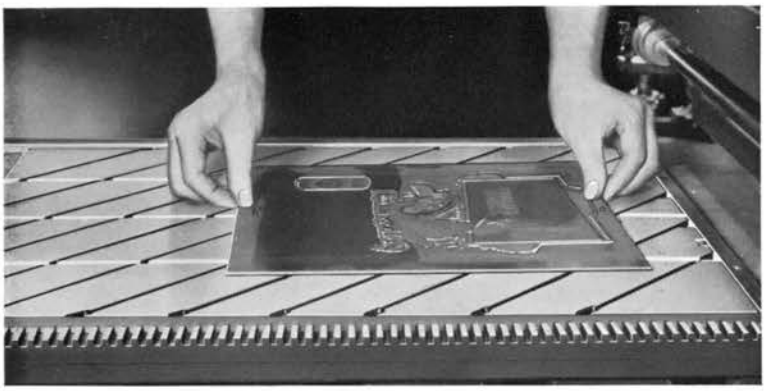
Plate clamps are provided for long runs and for warped plates and large plates, to hold them down and always on the pins and to reenforce the head pin against the drag of impression. Small plates and flat plates need nothing more than the pins to hold them for try proofing. These plate clamps have angle faces for either side of plate, and a square opposite face for top and bottom in the straight grooves. They will hold any kind and size of plate absolutely immovable on the base.

The Register Base for the large No. 7 press is made of three pieces—a long thin center strip for mounting large plates in register, and two individual bases, one on each side, for mounting small plates in register. Thus the large press can be used interchangeably for—(1) large work, (2) small work by mounting plates on the near side, (3) doubling up by mounting two plates of same color side by side, (4) two-color work after changing to split vibrators. The construction offers both automatic register and flexible individual adjustment.



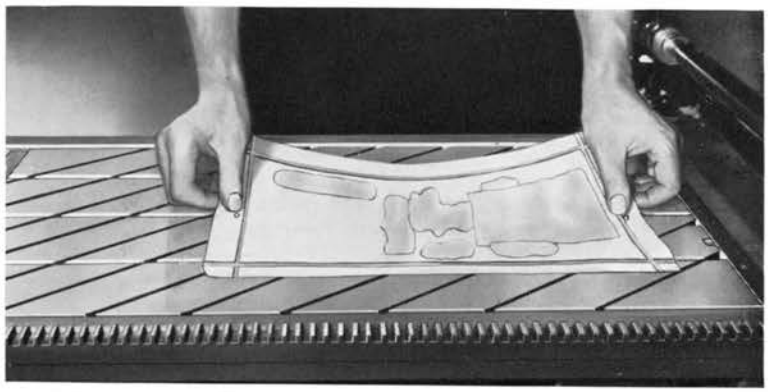
Four-piece Register Base
Special to order only

All Hacker Bases fill the beds of the presses except for $\frac{1}{4}''$ on the sides for lock-up. No reduction of capacity for a frisket frame. Rigid, definite lock-up by screws.



Mounting plate in register on pins. Put on or taken off in a few seconds. Any size plate, any sequence. If accurately drilled, not a shift will be needed. No other fastening required for small flat plates. Large or warped plates are held down by clamps.

Mounting makeready in register on pins under plate. Base sheet proofed on plate is punched at holes. Plate and makeready always in register. Plate and makeready can be lifted any number of times and always be put back in immediate register. Re-proofs use original makeready.

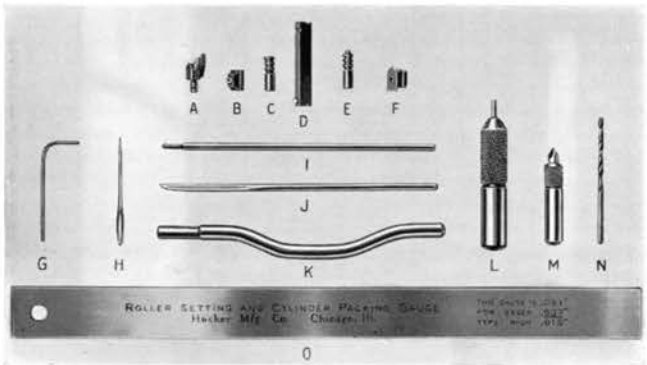


Hacker Register Bases are guaranteed flat and uniform in thickness within a half thousandth. They are made .837″ high which allows .019″ for underlay (frisket relief, makeready and mounting sheet) with 16-gauge copper (.0625″). These bases represent sound design and fine machine work. Their precision and flexibility account, in considerable measure, for the efficiency of Hacker Press performance.

Register Bases can be supplied in either iron or aluminum, iron being standard equipment. Iron bases are more durable, and are recommended when the base is seldom lifted. Aluminum bases are lighter by almost two-thirds, and are recommended when the base is frequently lifted to permit proofing blocked plates.

Eleven-point copper or electrotypes can be handled in the same manner as sixteen-gauge copper by special thin bases made to order. Ground steel shims can be provided for the difference in plate thickness so that the one base can be used for both.

Register Hooks for the diagonal grooves are available for color plates lacking dead metal, or which for any reason cannot be registered by the pin method. They are adjustable, strong, and will stay put. When proofing two or more plates at one time they are useful in combination with the Automatic Register.



Base and Driller Accessories.

A. Register Hook
B. Register Hook Lock
C. Hole Plugs
D. Tail Pin on Key
E. Head Pin
F. Plate Clamp
G. Clamp Wrench
H. Hook Pin Wrench
I. Base Pin Wrench
J. Head Pin Lifter
K. Base Lifter, also Reel Rod Wrench
L. Broach ⅛″
M. Burring Tool
N. Twist Drill ⅛″
O. Roller Setting Gauge

SPECIFICATIONS—Automatic Register Bases

For No. 4 press, 1 pc., 18″x24½″x .837″,
Net weight, iron . . . . . 90 lbs.
Aluminum . . . . . 35 lbs.
For No. 5 and No. 6 presses, 1 pc., 19″x25¼″x .837″,
Net weight, iron . . . . . 98 lbs.
Aluminum . . . . . 39 lbs.
For No. 7 press, 3 pc., 29¾″x25¼″x .837″,
Net weight, iron . . . . . 148 lbs.

STANDARD EQUIPMENT FOR ONE-PIECE BASES

3 head pins.
3 tail pins on sliding keys.
8 plate clamps.
1 plate clamp wrench.
1 base pin-wrench.
1 base lifter.
1 head pin lifter.
Register hooks on order only.
2 roller setting gauges. (No. 4 and No. 6 presses only.)

STANDARD EQUIPMENT FOR THREE-PIECE BASE

Same plus 3 head pins, 3 tail pins, 8 plate clamps.

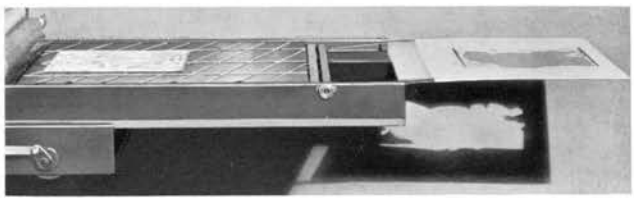
Automatic Frisket

Automatic frisketting on cylinder presses was originated by Hacker and has put quantity proofing on a production basis. It doubles the output compared to the usual method of masking. By interposing the frisket between the cylinder and the inker, a masked out proof is taken every stroke of the bed, whereas the flop-frisket, and hand laid friskets, require two strokes, one for inking (without frisket) and one for printing (with frisket). Moreover, the automatic frisket saves the labor of tripping the cylinder, tripping the inker, throwing the frisket frame. It also helps register when there are gaps in plates or between plates.

A web of paper is clamped to the rear end of the bed. It runs under the cylinder and upward, inside of the inker, over a roller in a frame. In operation, the frisket follows the cylinder, hugging the proof sheet to it. There is no tension to distort it. Irregular shapes lay down upon, and peel from, the plates smoothly at full operating speed of both Hand Presses and Power Presses.

Presses can also be equipped with a clamp on the cylinder for the frisket. The web of paper then wraps around the cylinder over the proof. This device delivers the printed proof back on the feedboard.

Obviously many jobs cannot use automatic frisketting. It is principally valuable on long runs of magazine color plates.



Flop Frisket

Flop Friskets are standard equipment on all models of Hacker Presses. They are thin frames of spring steel, mounted on cone points to lie flat around the plate when printing and outward from the bed when inking.

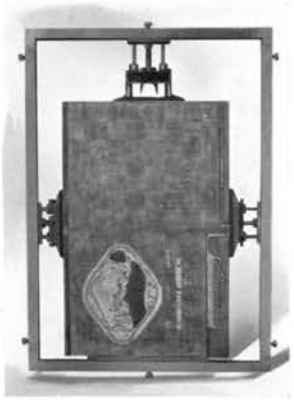
Frisket paper is attached to the frame by special rubber-gummed tape. No paste. No clips. Masks can be preserved and used again in perfect register.

Frisket frames on all Hacker Presses are constructed to lay directly on top of the register base and to permit printing within one-half inch of each bearer.

Register for Blocked Color Plates

This equipment is designed to give quick register on color plates that have been blocked. It comprises:

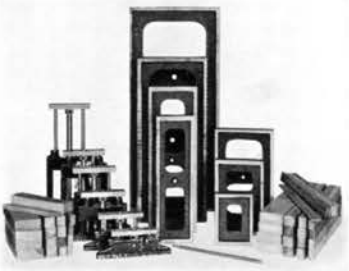
(a) A chase with outside register screws.
(b) A selected font of iron and wood furniture and adjustable locks.
(c) A sheet of celluloid and mounting pins in front chase clamp.



Register Chase with blocked color plate locked in position. Screws outside of chase give quick shift to register under the transparent key proof.

The key plate is locked within the chase and the chase locked within the bed. A proof is then taken on the celluloid. This key proof establishes the register position for the set.

The other colors are moved into register with the celluloid proof by means of the register screws on the chase. The locked form and chase are shifted as a unit. The positive screw adjustment gives very quick and accurate results. It is much faster and more reliable than shifting furniture and screw quoins.



**Lock-up Material—
A font of iron and wood furniture and a set of quick adjustable locks for firm inside lock-up of blocked plates.**

Supplies

REGISTER MARKS, perforated sheets, gummed paper, three sizes, free to all for the asking.

CUT TYMPANS, best oiled manilla, cut to shape and ready to use; pkgs. 12, 25, 50, 100, 500, 1000.

FRISKET PAPER, chemically treated and impervious to ink; pkgs. 12, 25, 50, 100, 500, 1000, in sheets 18″x18″ and 18″x25″; rolls 18″x8½″.

FRISKET TAPE, non-drying rubber adhesive, removable and reusable, for fastening friskets to frames and other convenient uses; rolls 1″ wide.

MAKEREADY PAPER, for base sheet, frisket relief and underlay; pkgs. 100 sheets each, thicknesses .001″ to .010″, sizes 12″x18″ and 18″x24″.

VISCO PASTE, for makeready; tubes of 4 oz., cans 1 pt. and 1 gal.

ROLLERS, Ideal and Process in stock, other kinds on order.

The foregoing and other supplies on separate Supplies Price List.

HACKER IMPRESSION

Strength and accuracy of impression distinguishes Hacker Test Presses from all others. This precision is obtained by a patented construction which holds the cylinder bearers and the bed bearers in firm contact under a uniform and measured load. Powerful springs, calibrated and pre-loaded, take the place of the usual impression adjustment. Up to the rated load they are equivalent to the rigid setting of standard practice. Beyond that the bearers separate and the springs take the overload. After which the impression returns to its original setting without loss or change of any kind whatsoever.

This construction compensates automatically for wear of parts. It safeguards the press. It insures permanent accuracy of impression. It is the basis of the guarantee accompanying all Hacker Test Presses which is stated in these specific terms:

Guarantee

1. We guarantee the impression to be accurate within .0005", (half the thickness of tissue paper).
2. We guarantee the uniformity of the impression setting indefinitely.
3. We guarantee the strength of the impression indefinitely.

The bearer loading is adjustable to any poundage required to print. The standard setting on the 18" No. 4 Press is 1800 lbs. per side, 3600 lbs. total; on the 19" No. 5 and No. 6 Presses it is 1900 lbs. per side, 3800 lbs. total; on the 30" No. 7 Presses it is 3000 lbs. per side, 6000 lbs. total. These impression settings equal maximum printing load and far exceed average need. Maximum impression for coated and book stock is 200 lbs. per impressional inch (an inch between bearers). The presses handle easily a full bed of solid printing surface. If needed for rough or hard paper stocks the impression can be quickly increased.

Of the many hundreds of Hacker Presses in use since the adoption of this construction in 1919, not one has lost its impressional power or uniformity, or needed re-setting. None have lost precision except when bed or cylinder have been injured by accident or abuse.

It is to be noted that accurate cylinders and accurate beds do not make precision presses. Machining of accurate parts is a commonplace nowadays, but without uniform bearer contact they mean little. Cylinders and beds must hold position under the heavy load of printing. The printing distance—between bed and cylinder—must be a constant. This requires rigidity and bearer contact. Nothing less can be called a precision test press. Nothing less is capable of real test proofing. Presses which lift off bearers while printing do make proofs but not real test proofs. Makeready is required for the impression variables in the press itself, and such makeready conceals or distorts the true dot formation of the plates.

The Hacker is the only press that can guarantee impression—a known amount uniformly applied, held indefinitely. The rigid setting of common practice is not uniform to begin with, changes under wear and strain and is never under control. The Hacker construction is rigid until it needs to be flexible, i.e., under overload, and is always under control. Hacker impression is a reliable standard of measurement.

What Impression Means in Photo-Engravers' Proofing

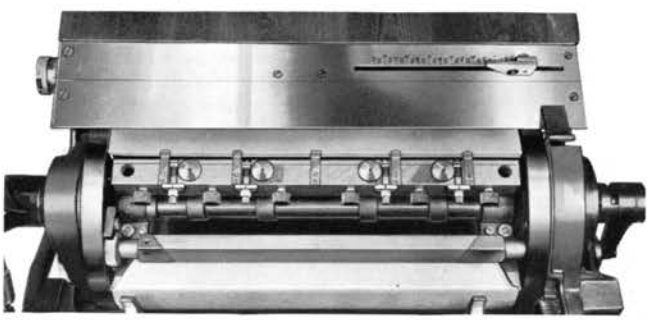
Impression is the heart of a proof press, as it is of a printing press. Above all other specifications it determines the value of proofs.

Hacker Impression means that:

1. Light plates and heavy plates all print with the same squeeze.
2. As many plates as the bed holds will print perfectly and with equal squeeze.
3. A plate as large as the base will print perfectly all over with uniform squeeze.
4. The impression is the same at all places on the bed and a plate will print the same in all positions.
5. The impression is always alike, from day to day and year to year, and is not affected by the previous job nor any operation of normal use.
6. There is instant response to makeready, and since there is no piling up of makeready to meet press deflection, the amount of makeready required is extremely small and simple. Makeready is for plates; none is required for the press.
7. Makeready is by underlay only—a patch of extra support for the solids—excepting for rough surface stocks or poor plates.
8. Jobs may be moved from one Hacker Press to another and will print alike with the same makeready.
9. Proofs show exactly what is in the plate and exactly what corrections have been made.
10. Etchers work with more assurance, fewer corrections and fewer re-proofs.
11. Standarized proofing conditions result inevitably in better plates.
12. Plates which prove well may be depended on to make good printing plates.

REGISTER OF HACKER PRESSES

Every Hacker Test Press is finally inspected for register by taking successive proofs directly on the tympan which must show dots coinciding. This checks the mechanics of the press. A sheet is then fed twice and must show dot upon dot. This checks the guides and grippers.



Micrometer Feed Guides on cylinder and feedboard. Mushroom radial grippers.

Both front and side guides are graduated in thousandths of an inch. Operators quickly learn the distance between dots on different screens and move the guides a measured distance into register.

The cylinder guides and grippers are mounted independently of the tympan and clamps so that the cylinder packing can be changed at will without any disturbance whatever to register.

Not only do Hacker Presses register perfectly but the register controls on feedboard, cylinder and base are flexible to the last degree in meeting the diverse conditions of proofing. Any misregister arises from mis-feeding, mis-adjustment, wrong form height and cylinder packing, or other improper operating method.

HACKER AUTOMATIC REGISTER

The Hacker Automatic Register System for unmounted process color plates, built upon the precision driller and the precision base, is a tremendous time-saver over the old shift-and-try method. Drilled plates mounted over the pins are in immediate register. Not a proof need be wasted for registering in the second, third and fourth colors. If anything does go wrong, there are immediate and precise adjustments.

Plates can be removed for color correction and replaced in exact position without loss of a proof.

A color job can be interrupted at any point, removed, another job of different size put on, and the first one later replaced and picked up exactly where it was left off. Numbered graduations in thousandths on front and side guides, plus automatic register, plus underlay makeready, make this possible. A proof is marked with the readings of each of the three guides and preserved as a record of position. The set-up can then be completely broken and returned to, precisely and at once.

The same colors of different sets can be proofed successively before wash-up and color change. Regardless of size or sequence, they will be in register. So will all reproofs.

Underlay makeready on a base sheet is mounted over the pins like the plates. Thus, the makeready is always in register and can be removed and replaced along with the plates. This saves a great deal of time on later reproofs. Also, reproofs being made from the original makeready will reflect only the corrections that have been made.

Two or more sets can be proofed at one time on one sheet of paper on one press and be in automatic register. Standard bases will take six plates. Extra holes can be provided on order for more. In addition to the very great time saved on small plates by this method there is also the marked advantage of uniform color throughout the group.

On the large No. 7 press, 30″ wide, two magazine size plates of the same set can be proofed at one time, each in a separate color. There are two side guides for feeding two sheets, split vibrators to hold ink separated, and individual register bases for each plate. The first proof is moved to the second position so that each stroke of the press gives one one-color proof and one two-color proof.

Four presses can be registered together, one for each color, dry or wet proofing, and all plates go down in register automatically. Figures of the zero position of the guides are scratched on the brass edge of feedboard. This frees the presses for other individual work since the group register can be instantly returned to. Two of the wide No. 7 presses, when equipped for two-color proofing, may be used in the same way.

Register by this system is under such control at all times that there need be no waiting for plate correction. The presses can be kept busy on other plates of other sets, or on unmounted black and white.

For trimmed plates or those without register marks, there can be provided regular register hooks fitting the diagonal grooves in the base.

Bed full of blocked black and white plates proofed at one time.

Where the volume justifies the investment, the most efficient work is done with a battery of four presses, one for each color. This saves a vast amount of time washing up and changing inks.

BLACK AND WHITE PROOFING

Let no one suppose that the emphasis upon color proofing herein implies that the equipment is less effective for black and white. The principles of impression and ink lay, apply with equal force. The operating economy and the better workmanship are just as important. Black and white plates need to be proofed by cylinder impression with cylinder inks on printing stock.

The capacity of Hacker Presses is such as to permit of the mass proofing of halftones. The bed can be literally filled with them and all proofed at once, so strong is the impression, so uniform the distribution. One or many, the effect is the same.

Plates can be proofed, mounted or unmounted, according to preference, requirements, or routine conditions. If unmounted, they are placed on the same base used for color work. In many cases they can be laid loose. In others there are clamps for fastening. Makeready is by underlay.

By rubbing beeswax on the backs of a number of small plates, distributing them on a large heavy sheet of paper, and running them dry under the impression cylinder for squeeze, they can be made to adhere firmly and all be handled as a unit.

Blocked plates are proofed in the usual manner, singly or in groups. The base for unmounted plates is removed. No makeready is possible under the blocks, other than levelling. Interlay is highly effective and stays on to benefit the electrotyper and printer, but it is slow.

It is important that blocked plates be planed to type-high, or proper printing height. Accurate blocks save the proofer a great deal of time levelling the impression. They save the printer makeready. They save plates from criticism. Hacker Block Levellers and Hacker Plate Gauges (see separate catalog) were especially designed to get accurately blocked plates.

Where the volume of work does not justify separate presses for color and black, the same Hacker Press can be used for both. The machine is flexible for all requirements.

MAKEREADY ON HACKER PRESSES

Makeready on Hacker Presses is almost entirely by underlay. The development of this practice was by deliberate intention. The purpose was to make better plates—"to put it in the plates" so that they need no makeready. It was made possible by the rigid precision impression of Hacker Presses.

Overlay or any type of makeready can be used. But with hard packing on the cylinder a flat proof shows the "top" of the plate and permits working up the plates to their best possible showing without leaning on the crutches of overlay. Overlay may be necessary for hard rough surface paper stocks.

The underlay makeready used is only one or two thin patches under the solids. This support and the incidental relief to the highlights is all that is needed on a great majority of plates. Obviously, it cannot handle detail. Detail should be made in the plate and require no makeready. Certain publication stock requires more contrasty makeready than coated stock but in general the less makeready the better the plate. The objective is plates so made that even on a flat proof the solids will come up full and the highlights be clear.

Hacker developed the operating methods for this kind of test proofing and it is in general vogue today. With this technique, founded on precision impression, photo-engravers have learned to make better plates, that is, plates better fitted to the needs of printing presses and yielding a better printed result.

This system of makeready is obviously a great time-saver. Being mounted on a separate sheet it is removable and re-useable. Reproofs will be exactly like the original except for plate correction. Presses are not held idle to hold the makeready. In the case of color plates the register of the makeready is automatic, as it is with the plates.

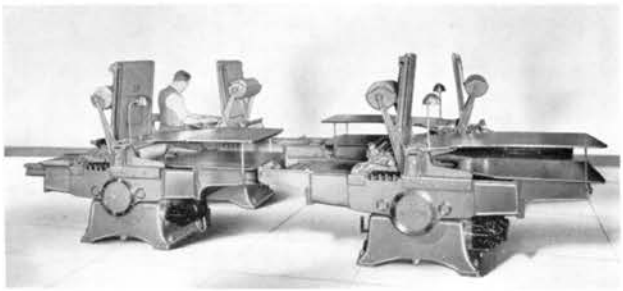
WET PROOFING

Two Hacker Presses can be registered together, and wet proofs made to duplicate the conditions of two-color printing presses. Advance knowledge can thus be had of the effect of super-imposition of wet inks and their trapping qualities.

Four Hacker Presses can be registered together for the wet proofing of plates to be run on multicolor rotaries. A sheet is proofed and passed successively to each press in the color sequence indicated. A finished four-color proof can be taken in less than half a minute —and right on at this speed for the run.

Two Hacker Two-Color Presses (No. 7) can be used in the same way on single page magazine size plates. Two sheets are fed to two plates side by side, each inked in different color, resulting in one one-color proof and one two-color proof, each stroke of the press. The sheets are passed to the second press for the third and fourth colors.

Moreover, the plates are laid in automatic register, they are automatically frisketted and automatically inked immediately in advance of printing. This equipment is the fastest known production of wet proofing in proofs per hour and plates per day. With checks on the ink by means of trap guides, proofs can be made to match the final printing.



Four Hacker Power Presses arranged for four-color wet proofing.

A battery of four presses, hand or power, can be arranged for one-man, two-man or four-man operation, each being a different layout in the interest of speed and convenience. For commercial shops with a variety of work, two-man or four-man grouping is best. The two-color press (No. 7) has but one operator and makes a four-color wet proofing set-up of two men and two presses.

By reason of the automatic register heretofore described in this catalogue the register adjustment for wet proofing of a battery of four single presses or two two-color presses can be broken at any time and each press assigned to any other work. When wet proofing is again called for they can be instantly registered together again. This is but another example of the great flexibility of Hacker equipment and its capacity for handling all of the proofing problems of the photo-engraver.

Flat Proofing, or CYLINDER PROOFING

Ink applied to paper by flat impression lays with different effect from ink applied to paper by cylinder impression. The light-bodied printing inks used in production will mottle in the solids and shadows by flat impression. The highlights and middle tone dots will print oversize with any kind of ink.

On the other hand, cylinder impression using cylinder ink lays smoother solids and sharper highlights. The method is that by which a majority of printing is done. The effect is the same—hence such proofs can be matched in the printed job.

The ancient custom of proofing engravings by platen long-dwell impression on very expensive and fine surfaced paper with very expensive short-bodied and heavy pigmented ink produced beautiful proofs. Yet they were essentially deceptive to the customer since they could not be reproduced under commercial printing conditions.

Moreover, this historic method gave inefficient and uncertain results within the shop itself. A proof, aside from the handicaps of squash impression, unnatural paper and unnatural ink, also represented the vagaries of impression of that particular proof press and the idiosyncrasies of makeready by that particular proofer. Etchers and finishers were at sea. Proofers were called upon to help match copy, which they did by hand manipulation of ink, makeready and squeeze.

This tradition entailed high production cost. It was pointed at selling proofs, not plates. It emphasized the artistic, and neglected the practical. It failed in the primary function of making plates for production printing presses.

Cylinder proofing recognizes the final printed result as criteria for the plates. It uses printing inks and printing papers, and endeavors to match as closely as may be practical the printing conditions.

By Hacker equipment it is much faster, and lower in cost. By Hacker methods the operations are standardized so that proofs reflect the true surface of the plate and the work proceeds by definite orderly steps to conclusive results. And the proofs can be matched on cylinder presses and rotary presses.

TEST PROOFING, The Fundamental

The invention of the Hacker Test Press introduced test proofing, a new function—test proofing of the work on the plates as distinguished from proofing for effect or for record.

The Hacker Test Press presented, for the first time in the industry, a standard of printing impression—a measured and guaranteed accuracy of impression. Proofs reflected only the plates, there being no errors of impression in the press. They were real test proofs and that is why the machine was named *Test* Press.

No ordinary proof press approaches these standards or can be used for these purposes. Hacker Presses stand alone in respect of rigid, accurate, guaranteed precision impression.

With such dependable standard of comparison, etchers and finishers know exactly what they are doing and quickly learn the shortest road to predictable results. When Hacker Test Presses are properly used, with right impression and right inking, the superintendent has a decisive check upon the *printing* value of plates. He can hold the work up to that standard.

Hacker Test Presses are noted for their speed in making beautiful proofs, but they are equally appreciated for the more vital functions of *Testing Plates*.

Proofing, THE KEY DEPARTMENT

It used to be that any old machine would do for proofs, and proofers were not even recognized as photo-engravers. This attitude was all the stranger in view of the fact that all operations converge at the proof press and can only be inspected by a proof. No one can look at a plate and know how it will print. A printed proof is necessary. Could anything, therefore, be more important than the proofing department?

Proofing represents so considerable a proportion of plate costs, the proofing department deserves every facility for speedy and effective work.

Cylinder test proofs, properly made, show conclusively the printability—or printing characteristics of plates.

Since proofing is the final check on all previous workmanship the equipment should afford reliable standards of comparison and its use be practiced under standardized methods.

Recognition of this primary importance of proofing explains the wide adoption of Hacker Proofing Equipment. Hacker lifted proofing to its proper No. 1 place by developing the needed tools and technique.

PRICES

F. O. B. Chicago

HACKER TEST PRESS No. 4, hand operated, size 18″x25″,
with standard three-roller inker ..... $ _____
Same with two-roller inker ..... _____

HACKER TEST PRESS No. 5B, hand operated, size 19″x25″,
with motor-driven two-roller inker, *without* fountain feed . _____
Same *with* fountain feed ..... _____

HACKER TEST PRESS No. 5A, power operated, size 19″x25″,
with motor-driven two-roller inker, *without* fountain feed . _____
Same *with* fountain feed ..... _____

HACKER TEST PRESS No. 6, power operated and power trips, size 19″x25″,
with standard four-roller pyramid inker, with fountain feed _____

HACKER TEST PRESS No. 7B, hand operated, size 30″x25″,
with motor-driven two-roller inker, *without* fountain feed . _____
Same *with* fountain feed ..... _____

HACKER TEST PRESS No. 7A, power operated, size 30″x25″,
with motor-driven two-roller inker, *without* fountain feed . _____
Same *with* fountain feed ..... _____

EXTRAS

Automatic Register Base for No. 4 Press, iron ..... _____
aluminum ..... _____
for No. 5 and No. 6 Presses, iron ..... _____
aluminum ..... _____
for No. 7 Press, 3-piece, iron only ..... _____
Automatic Frisket Device for No. 4 Press ..... _____
for No. 5 and No. 6 Presses ..... _____
for No. 7 Press ..... _____
Automatic Register Plate Driller and Steel Cabinet ..... _____
Bench Plate Drill and Jig ..... _____
Register Chase, etc., for Blocked Color Plates ..... _____

(*Supplies and small accessories on separate price list*)

Date of Quotation _____

See HACKER TEST PRESSES (separate catalogue), precision cylinder machines for test proofing plates, type, ink, paper, color proofing, pre-makeready, pre-lineup.

See HACKER BLOCK LEVELLERS (separate catalogue), for accurate type high planers.

See HACKER MAKE-UP AND LOCK-UP GAUGES (separate catalogue), for squaring, sizing, justifying, lining and registering original type page forms and chase forms.

See HACKER TYPE AND SLUG GAUGES (separate catalogue), for measuring lino-slugs and type.

See HACKER PLATE GAUGES (separate catalogue), for measuring plates, blocks, bases, metal, paper, etc.

SEE HACKER TEST BLOCKS (separate catalogue), for precision gauges for checking errors of impression on cylinder presses.

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