

SET-UP & OPERATING INSTRUCTIONS

CONRAD COMBINATION PRESSES

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MOTORIZED MODELS

Good common sense will prevent damage to the press and to your person. Motorized presses will require even greater care and caution.

1. Even though this press is equipped with a self-centering control switch, upper printing roll guards and other built in safety features, it is the printmaker's responsibility to operate this press with care and caution.

2. The press must be disconnected from its power source before any adjustments of the press can be made, or work in progress such as taking wrinkles out of blankets or before repair or service to the press is attempted.

3. Always allow the self-centering switch to center itself before changing bedplate directions.

IMPORTANT SAFETY INSTRUCTIONS

READ THESE SAFETY INSTRUCTIONS BEFORE OPERATING YOUR PRESS!!

1. The safe and successful operation of this press depends on your using safe and prudent techniques.
2. This press is to be operated only by those who are competent and instructed in its safe operation.
3. Only one person shall operate this press at a time.
4. This press is to be operated only when all safety guards, stops, and switches are in place and in good operating condition.
5. Do not allow any person to turn the star wheel or hand crank while anyone is making adjustments on the press.
6. Do not allow any person to turn the star wheel or hand crank while anyone is straightening or attempting to take wrinkles out of the blankets.
7. Never place or permit any clothing, hand, or any part of one's body to be placed on the press, bedplate or rollers at any time when press bed is moving or when upper roll is moving.
8. A bedplate of the same size and specifications as that furnished with this press is the only bedplate to be used on this press.
9. NEVER run wood blocks, lino blocks or any thick build ups or montage through the press when it is adjusted for any etching plate, litho plate or thin pressure application.
10. NEVER run the bedplate stops into the frame.
11. The user shall determine the suitability of this product for their intended use and assume all risk and liability in connection therewith.

INTRODUCTION

These instructions are intended to familiarize you with the Conrad Combination Press so that the pressure adjustments and the change-over from one medium to another can be accomplished accurately and efficiently.

The press is flexible enough to suit a variety of printing needs other than the traditional ones described. You are urged to experiment with approaches possibly more suited to your particular needs.

If you do not own a stand which can be adapted to the Conrad Combination Press, it is suggested that you purchase the steel stand available through Conrad Machine Co. Provisions should be made to bolt the frame of the press to the stand to provide a firm foundation for the press operations.

On motorized presses a source of electricity should be available which will provide 120 volts AC current and be fused to provide the 15 amperes maximum requirements of the press. The receptacle should be such as to accept the standard 3-wire grounded plug for 120 volt operations. (For 220 volt optional wiring, fuse for 5 amperes.)

If it becomes necessary to lay the press on it's side, or if the press is to be left in storage for a long time, replace the vented plug on the motor with a solid plug so oil will not leak out.

SET UP & INSTALLATION OF PRESS

UNCRATING YOUR PRESS

1. Your press is shipped on a wooden skid that is covered by a heavy double wall corrugated cardboard cover. You may want to save the carton in case you ever move or have to send your machine to a different location. The carton can be folded flat and will take up very little space. Remove the carton exposing the press. If you purchased the larger Combination Press (Model C-36) or the smaller Combination Press (Model C-16) you will notice that it is not covered with a carton. It is wrapped in clear plastic. Remove the plastic.

2. Unbolt and remove the two bed support outriggers from the skid.

3. At this point if you would like to lighten your press for easier handling you may remove the upper roll. Follow the steps outlined on page 4. You will have to place a piece of plywood approximately the size of the bedplate between the upper and lower roll. You can use your bedplate if you want to but it is easy to damage it if you are not careful so we recommend a piece of plywood. If you don't put something between the two rolls it is difficult to control the roll as you slide it out. You will have a great likelihood of dropping it and damaging it if you don't do this. The plywood should be blocked up at each end so it gives you a level surface to work from.

4. If you purchased the Twin-Torque 2 speed hand drive press you can also remove the drive to save an additional 37 pounds. To remove the drive simply remove the set screw that locks the back hub of the drive to the lower roll. Once this is removed the drive will slide off the roll. Be careful not to lose the 3/8" key that drives the lower roll. When you remount the drive make sure the key is securely seated in the keyway of the shaft. Line up the drive so the keyway lines up and slide the drive back on the shaft. Make sure the dimple in the shaft is lined up with the set screw before screwing in the set screw. If you remove the set screw completely you can shine a flashlight in the hole of the hub until you see the dimple line up. Tighten the set screw securely.

5. Remove the four nuts that hold the main frame/base assembly to the skid, then install the press on a table or stand. It

is necessary that you provide an adequate stand for the operation of this press. If you use your own table make sure it is strong enough to support the 500+ pounds of the press and bedplate. Keep in mind if you are doing stone litho work, the stone can sometimes weigh several hundred pounds. The stand should be approximately 24" high, 33" wide and 66" or more long. Holes should be provided so you can secure the press to the stand.

6. Release lock nuts on all three pressure screws that protrude through the top of the press. If you purchased micrometer gauges, only the center screw will have a lock nut on it.

7. Turn the outer pressure screw counter clockwise raising the screw about 1.5" This will allow the center screw to be raised.

8. Turn the center screw counter clockwise backing out the center screw about 1" and remove the wood block between the two rollers.

9. With 1/8" hex key, loosen 4 1/4" set screws that lock the outrigger pivot pins to the main frame, then remove the pins.

10. Install outrigger to the press with pivot pins. Push the pins in as far as they will go so the head doesn't stick out and the outrigger is in contact with the main frame. Tighten set screw securely.

11. Securely bolt base down to the stand. The outrigger can also be bolted down to the stand but this is not necessary. Although the press does not have to be absolutely level in all directions, the press will operate more efficiently where the press is mounted as level as can be practically attained.

12. If you purchased a hand drive model equipped with spokes you will have to install the spokes. See addendum A.

13. Now the press is ready to operate. Read the rest of these instructions carefully before operating press.

GENERAL OPERATING INFORMATION

1. The self centering spring loaded safety switch is located on the lower right hand side of the front of the machine.
2. To remove the upper roller it will be necessary to perform the following steps:
 - a. Lower the upper roller until it comes to rest on the bedplate. Place a piece of cardboard or heavy paper under the roller to protect the bedplate.
 - b. Remove the 3/8" upper roll retaining bolts at either end of the top of the scraper bar housing, thus releasing the upper roller assembly from the scraper bar housing.
 - c. By turning the center pressure screw in a counter clockwise direction, raise the scraper bar housing until it clears the top of the upper roller assembly. The upper roller assembly is now resting free on the bedplate. You are cautioned to guide the upper roller yoke assembly with one hand to avoid its toppling over on the bedplate and causing possible damage.
 - d. Slide the upper roller assembly toward the operator's side until the bearing block on the far end of the roller clears the side frame of the press. Swing the far end of the roller to the right until the near end of the roller and bearing block swing free from the near side frame. This clearance is assisted by a notch built into the right hand side of the near bearing block. At this point a little careful movement of the total roller assembly will allow the roller to free itself and be moved to a convenient location. The scraper bar may be inserted into the scraper bar housing, and the press is then ready for use as a traditional litho press. To reinstall the upper roller assembly, perform the same steps in reverse order.
3. When the instruction "apply pressure" is given, it means to push the lever down to horizontal position which raises the lower roller and bedplate. To "release pressure", raise the lever to vertical position which lowers the lower roller and bedplate.

4. To lower upper roller or scraper housing turn center adjustment screw clockwise. To raise, turn counter clockwise.
5. The pressure locking screws should not be moved into position for intaglio work until the proper operating pressure has been attained through the use of the center pressure screw.
6. The press is designed to operate properly on intaglio plates when the following types of blankets are used: First, a lightweight blanket placed directly over the paper to catch the sizing. Second, a thick pressed felt blanket, very soft and cushiony, to guarantee uniform pressure over the printing area. Third, a hard woven pusher blanket against the roller to absorb the driving friction of the upper roller. In general, where adequate blankets are used, less pressure is needed and finer printing results.
7. The end frames can fold to an upright position if required to assist in storage or movement of the press.

USING THE PRESS FOR INTAGLIO (ETCHING)

1. With pressure released, raise upper roller to allow one inch or more clearance over bedplate. It may be necessary to raise pressure locking screws to allow for proper setting.
2. Position the felts on the bedplate under the upper roller.
3. Apply pressure.
4. Lower upper roller until firm against felts.
5. Turn the two pressure locking screws down until they lightly touch on top of the scraper housing.
6. Turn the center pressure screw up (counter clockwise) until it feels firm. This holds the scraper housing firmly in contact with the two pressure locking screws allowing the pressure locking screws to carry the full roller pressure. This also provides stiffest pressure similar to the conventional etching press and is necessary for most intaglio printing. Maximum pressure can be obtained only by following this procedure.

7. To further adjust the roller:

- a. Release pressure.
- b. Increase pressure by turning down (clockwise) on the center pressure screw. This relieves the tension on the pressure locking screws allowing them to be adjusted.
- c. Turn down (clockwise) pressure locking screws 1/8 to 1/4 turn. The two pressure locking screws should always be adjusted equally. If one side is turned down more than the other side you will have uneven pressure.
- d. Turn up (counter clockwise) center pressure screw to again hold scraper housing firmly against pressure locking screws to their new locations.
- e. To decrease pressure turn up (counter clockwise) the two pressure locking screws, starting at 1/4 turn--more or less, as desired.
- f. Turn up (counter clockwise) center pressure screw to again hold scraper housing firmly against pressure locking screws in their new locations.

8. Pressure can now be applied or released at any time by raising or lowering the lever.

9. When ready for printing, release pressure and position bed at one end of press. Place inked plate to be printed in center of, and directly on, the bed without soft padding underneath (which causes plate to curl). Place the printing paper over the plate, then the felts on top. Slide bed so that the ends of the felts are underneath roller. (If too thick to pass under roller, stagger them). Apply pressure. Move bed of press by turning switch in appropriate direction. The press should be stopped before the bedplate passes completely out from under the rollers.

USING THE PRESS FOR RELIEF PRINTS
(WOODBLOCKS, COLLOTYPES, PLATE LITHOGRAPHY, ETC.)

1. Turn up pressure locking screws. This allows upper roller

to cant slightly to adjust automatically to warpage or irregularity in the relief surface. For certain reliefs you may wish to use the pressure locking screws to provide for a rigid upper roller.

2. With pressure released, raise upper roller and position bed and relief block under it with one inch or more space between the block and the roller.

3. Repeat steps 3 through 9 under **ETCHING** except less pressure will be needed.

SEVERAL APPROACHES TO RELIEF PRINTING

1. Place relief face up on bed. Cover with printing paper and then a piece of red press board larger than the relief. Apply pressure as close as possible to end of block and run through, stopping at same point on other end of the relief. This method will distribute pressure all the way to the ends of the relief without its passing completely under the roller.

2. For slight to heavy embossing, cover printing paper with stiff smooth cardboard, linoleum or soft padding such as a blotter, and then with a piece of red press board.

3. Pressure can be applied directly to the paper alone over the block (as in 1) or to the paper covered with cardboard, etc. (as in 2), but you may experience difficulty in getting the relief to print at the extreme ends, also, the printing paper may wrinkle.

4. In printing face up, if you wish the roller to pass completely over the entire block (past both ends), either place "runners" along each side of the block of exactly the same thickness as the relief surface, extending out from both ends of block 1" or more. Apply pressure to the ends of these "runners", or use pressure locking screws to keep roller up in a rigid position and hold block stationary to bed by using a "chase" arrangement. You can drill and tap into the bed as in steel and use machine screws, or drill guide holes only slightly smaller than screws and use wood screws to hold a chase to it.

5. For exact color registry and for control of gray tonalities

in black and white printing, print relief face down. The bed should be covered with red press board (for strict relief), then printing paper, then the relief, or, for slight to heavy embossing, cover the bed with linoleum, stiff cardboard or a blotter. Pressure should be applied to the end of the relief and run through to other end. Pressure will be distributed to extreme ends of relief even though the roller does not run completely to ends of block.

USING THE PRESS FOR STONE LITHOGRAPHY

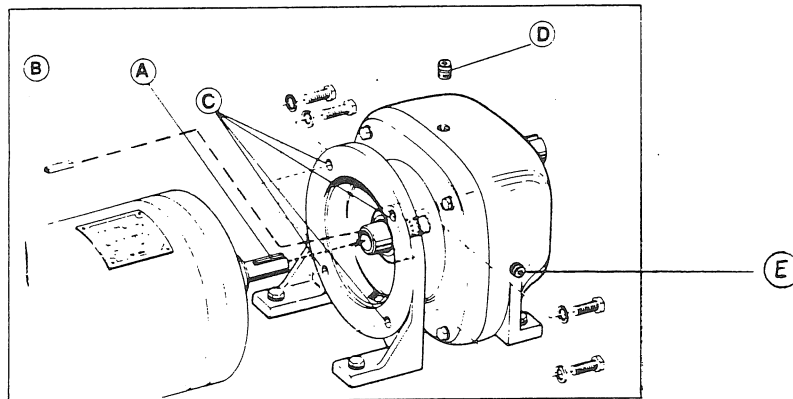
1. Remove upper roller and turn up pressure locking screws.
2. Cover bed with a piece of "battleship" linoleum or equivalent to give the stone cushioning and to protect the bed. (Warning: stone may break if this is not done.)
3. Place appropriate size wooden scraper bar in scraper housing and secure with thumb screw.
4. Place stone on bed and raise scraper until stone will pass under it with 1/2" or more. Adjust pressure by turning center screw clockwise or counter clockwise. **DO NOT USE PRESSURE LOCKING SCREWS.** Pressure is taken up by central screw only.

LUBRICATION

The single most important area to be routinely lubricated is the two lower roll bearings. The oil goes into the top of the two bearing blocks and lubricates the roll journal, then works its way out to the cam that raises and lowers the lower roll. A drop or two of oil into each bearing block every day will assure many years of trouble free service. **Important:** if you do not oil these bearings you could damage bearings and cam!!

Using a 30 wt. motor oil or equivalent, oil the following:

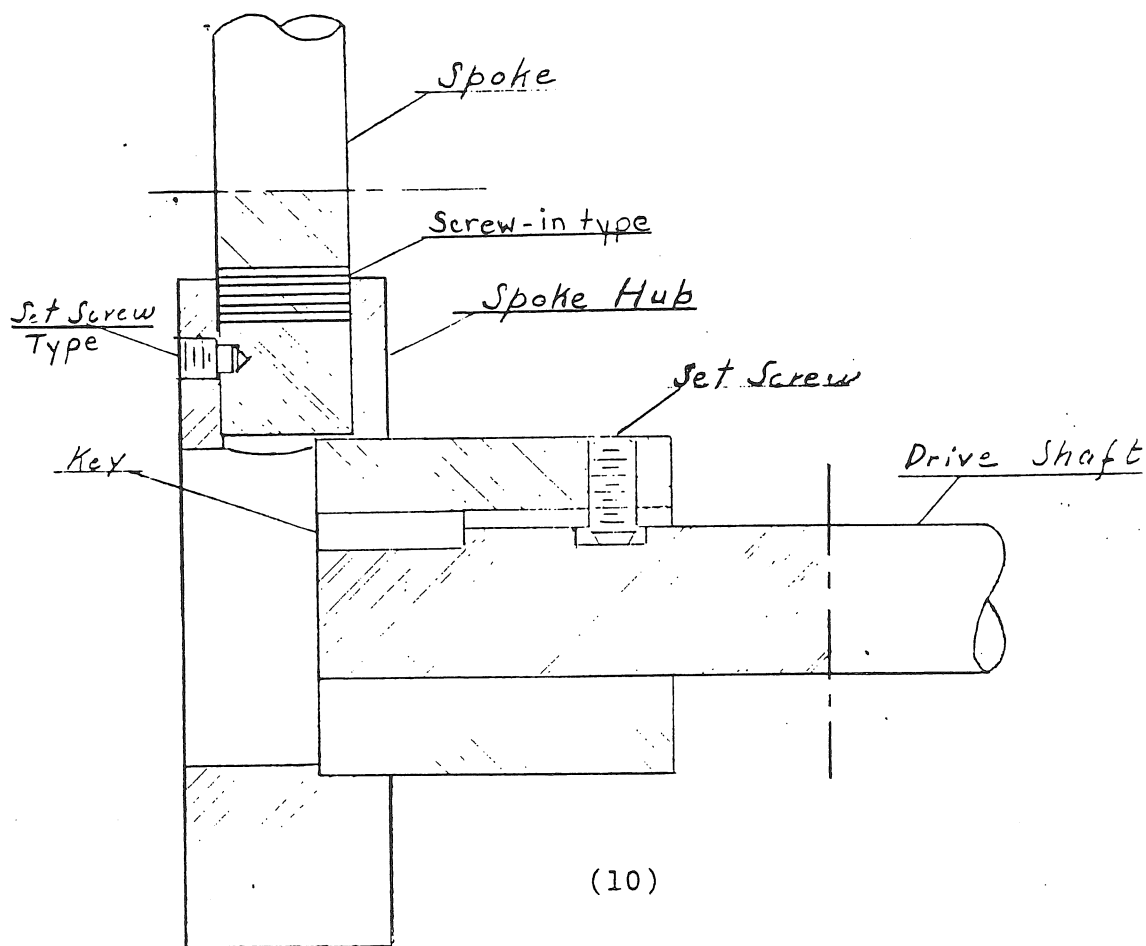
1. The oil holes at each end of the upper roller bearing blocks (every 6 months).
2. The oil holes at each end of the lower roll bearing blocks (daily - 2 drops).
3. The chain - any place - the oil will distribute itself as the chain rotates (once a year).
4. On motorized models check and maintain oil in gear housing up to the lower plug (E) (see illustration). If you ever have to add oil use SAE 90 oil and add it through the filler/vent plug (D). It is a good idea to check the oil level when you first receive your press to make sure oil has been put into the gear housing at the factory. After that check once a year. If for any reason you ever have to turn the press so the filler/vent plug (D) is in a horizontal position (while moving or transporting) oil will come out of the hole in the plug. It is suggested you replace this plug with a solid one and when you are ready to use the press again put the filler/vent plug (D) back in place.

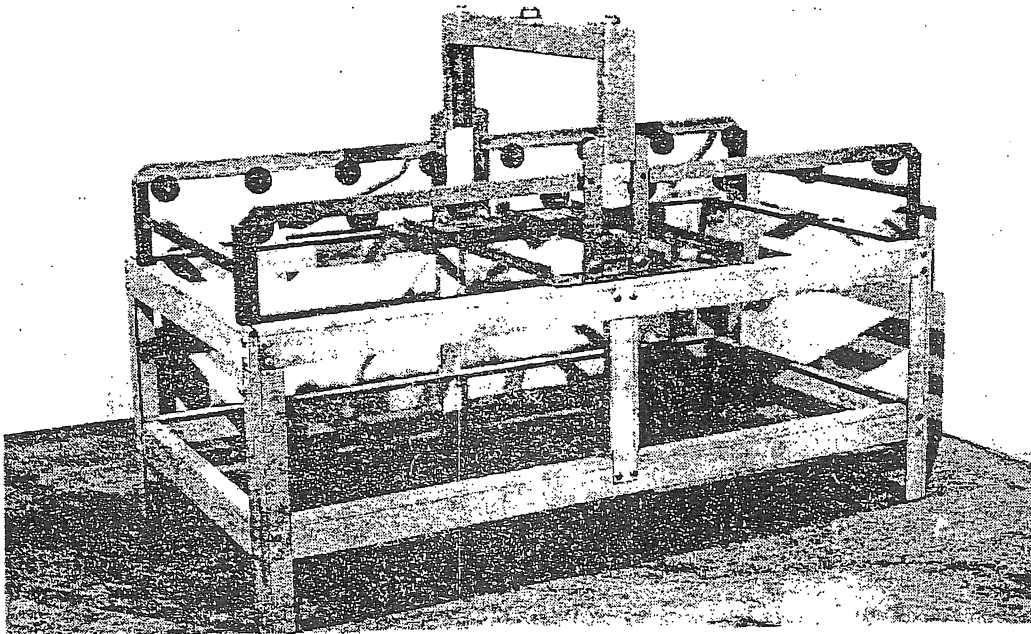


ADDENDUM A

SPOKED HAND DRIVE MODELS

On spoke driven presses you will have to install the spokes in the spoke hub. There are two types of hubs, set screw and screw-in type. If you have the set screw type you will see that the hub has 5 holes for the 5 spokes. Each hole has a small intercepting threaded hole through the face of the hub. This intercepting hole is for a set screw. You will see that each spoke has a small detent or dimple in it so the set screw will lock into the dimple. Install each spoke and line up the dimple with the threaded hole, then tighten the set screw with the hex wrench provided. On the screw-in spoke style each spoke is threaded on one end to be screwed into the threaded hole of the hub. Screw in each spoke until the threads bottom out in the hub. Periodically check each spoke to make sure they are still tight.





CAUTION

Maxium Load Per Stand is 700 Pounds

- I Stand Parts:
- | | Number | Length |
|-----------------------------------|--------|--------------------|
| A. Stringer, Upper (Left & Right) | 2 | 63" |
| B. Stringer, Lower | 2 | 63" |
| C. Leg, Corner | 4 | 23 $\frac{1}{2}$ " |
| D. Leg, Center-Upper | 2 | 16 $\frac{1}{2}$ " |
| F. Spreader (2 left & 2 right) | 4 | 32 $\frac{1}{2}$ " |
- II Fasteners:
- 40 pcs. 3/8 x 1/2" Hex Cap Screws - For Stand Assembly
 - 4 pcs. 3/8 x 1 $\frac{1}{2}$ " " " " - For Press Mounting
 - 44 pcs. 3/8" Hex Nuts
 - 4 pcs. 1/4 x 1 $\frac{1}{2}$ " Hex Cap Screws - For Outrigger Mounting
 - 4 pcs. 1/4" Hex Nuts
 - 8 pcs. 1/4" Washers
- III Plywood Top & Shelf: Stand is designed to be used with or without table top. Should table top and/or shelf be desired, Obtain (2) pieces of 1/2" plywood 33 x 63 $\frac{1}{2}$ "; shelf must either be set in place while joining front and rear assemblies (2 & 3) or cut in two (33 x 31-3/4) and placed in after construction.
- IV Suggested Assembly Procedure : Assemble all parts with very little tension on bolts so stand may be squared when done.
- (1) Front Assembly: Lay out one (A) stringer, one (B) stringer and two (C) corner legs. Note that (A) stringer has holes for press mounting and goes on outside of legs(C) and that (B) stringer goes on inside of legs(C). Attach upper (D) and lower (E) center legs to assembly as shown in sketch.
 - (2) Repeat operation (1) for Rear Assembly.
 - (3) Join Front & Rear assemblies with spreaders (F). Note that upper spreader assembles to outside of legs and under stringers; also notice that the mounting holes in the spreaders for the outrigger bolts are closer to front of stand. Lower spreader goes inside of legs and under stringers (see sketch).
 - (4) If plywood top is to be used, prepare top by clamping to assembled stand and using stand holes as guides drill mounting holes in the plywood. Notice that mounting holes for press frame are offset to the right as you face the press on the operators side and the holes for the outriggers are closer to the front of the stand.
 - (5) Square up all corners and securely tighten all nuts.
 - (6) Place press on stand (or table top if used) and bolt frame and outriggers to the stand.

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