QUAD-STACK™

PRESSMAN'S MANUAL

WebPress
Revolutionary

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NOTE:
Improvements in design and manufacture are incorporated as soon as experience demonstrates their value; all illustrations and procedures may not apply to all presses.

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SECTION 1 SAFETY

IT IS ESSENTIAL THAT THIS SECTION BE READ, UNDERSTOOD AND REVIEWED BY EVERY PERSON WHO WILL BE IN THE PRESSROOM WHILE THE PRESS IS OPERATING.

SAFETY

SAFETY INSTRUCTIONS

1. **Stand clear when hearing warning bell sounds.**
2. **Do not operate or assist unless you are trained and authorized.**
3. **All guards must be kept in proper position.**
4. **All safety devices must be operational.**
5. **Put controls on “SAFE” to clean, lubricate or adjust.**
6. **Cut main power before doing any electrical maintenance.**

SAFETY

GENERAL

- Operation of printing or rotating equipment of any nature can present hazards to the operator and to others in the area of the operating equipment.

- Proper training can decrease hazards, proper operating practices, staying alert at all times and paying strict attention to what is happening on the equipment and to what others in the area are doing.

- Specific safety reminders for operating the equipment are given below and throughout the contents of this manual. These reminders supplement any oral or written instructions, which the operator may have received prior to operating or servicing the equipment.

- We strongly suggest that these reminders be part of your daily routine during operation of the equipment and that they be reviewed periodically, especially with new personnel.

- It is not only the management of the firm but also you, yourself who holds the responsibility to maintain a regular program of safety checks and instructions.

- The safety program should be especially concerned with the equipment operating practices and specifically designed to minimize hazards of injury to personnel and of damage to the equipment.

SAFETY DEVICES

- Use the **RED *STOP/SAFE*** push button to stop the press as quickly as possible in the event of direct or potential hazard to personnel, broken equipment on the press, web break, or other unusual or threatening circumstances. When the **RED *STOP/SAFE*** push button is pushed in, the press is in the "***SAFE***" condition and cannot be started until the **RED *STOP/SAFE*** push button is pulled back out, and the reset button is pushed in.

- ***ALWAYS*** put the press in ***SAFE*** mode when making adjustments or doing maintenance work. ***ALWAYS*** disconnect the main power switch before doing any electrical maintenance work.

- The **RED *STOP/SAFE*** push button should always be pushed ***IN*** at the station closest to the area where the work is being done, even though the ***SAFE*** may be already ***IN*** at another machine or on the console. ***ALWAYS*** disengage the unit clutch when working around rollers, cylinders, gears and other mechanisms which can be rotated.

- Do ***NOT*** bypass built-in safety devices and interlocks. All safety devices, whether mechanical or electrical should be functioning at all times. Check these devices periodically.

- Do ***NOT*** open guards and covers when machinery is operating. **Do *NOT* operate machinery if guards or covers are removed or are open.**

SAFETY

PRESS

- Do ***NOT*** touch any moving part of the press. Make sure the press is stopped and on ***SAFE*** and the appropriate clutch is disengaged before touching any operating part.
- Do ***NOT*** oil or grease the machinery when in operation.
- Stand clear of the press when you hear the ***RUN*** bell; be sure others are also clear of the machinery.
- In a twin –press room be sure to stand clear of either press when the warning bell or buzzer sounds.
- Clean up paper dust, spilled ink, oil or grease and any other wastes which may accumulate on or around the press.
- Do ***NOT*** leave tools, cloths, oilcans, grease guns, or other materials in the aisles, on press frames, housings, or platforms.
- Keep steps and sidecars free of tools, dust, ink, and grease to assure safe footing. Do ***NOT*** place papers or roll headers on platforms.

PERSONNEL

- Dress for the occasion and the job you do.
- Do NOT wear long, loose, torn, or ill fitting clothing.
- Dress in short-sleeved shirt and tight fitting clothing.
- Wear properly fitting safety shoes with oil proof, skid proof soles.
- Wear safety glasses when pouring liquids, using cleaning solutions, and using tools, grinders, etc.
- Remove jewelry from clothes, neck, ears, wrists, and fingers prior to working on the press, and see that your co-workers do the same.
- Know where each fire exit is and where the fire fighting equipment is located. Take time to read the instructions for operation; ***IT COULD SAVE YOUR LIFE.***
- At all times conduct yourself in a proper manner around moving equipment. Treat it with respect and avoid needless injury.

UNIT

- **Remove all tools immediately after they have been used, and before starting the press.**

- **Do *NOT* operate if all guards are not in place and functional.**

- **Avoid standing in the aisles between units while press is running.**

- **Do *NOT* attempt to clean blankets or to clean cylinders while press is moving. Use sponges rather than rags to avoid the chance of damage or catching your finger. Roller nips can pinch severely even when the unit is rotated manually.**

- **Do NOT attempt to oil or grease levers, gears, shafts, bearings, or mechanisms while the press is moving.**

CAUTION:

ALWAYS be aware of where your hands are in relation to operating parts of the press. STAY ALERT AT ALL TIMES.

SECTION 2

TROUBLESHOOTING

The following headings describe most of the common printing problems that are likely to be encountered.

Below each heading are probable causes of the problem. By locating the correct heading and checking each probable cause, a pressman will be able to handle most printing problems.

PRINTING UNIT

PROBLEM:	PROBABLE CAUSE:
BLINDING Parts of image not printing	1. Weak or worn image on plate. 2. Ink dried on plate 3. Dampener solution too acid 4. Plate or blanket over packed 5. Form roller setting too heavy
CATCH-UP Radial band of ink in non-print areas.	1. Not enough dampener solution 2. Dirty or dry dampener rollers 3. Ink form roller(s) are set too tightly on one end.
FILL-UP Type or halftone screens plugging with ink	1. Too much ink. 2. Greasy or dirty ink. 3. Form roller settings too heavy 4. Plate and blanket over-packed. 5. Not enough dampener solution 6. Worn plate (check plate surface for scratches, burnishing).
GRAININESS Grainy, gray or weak printing.	1. Not enough ink. 2. Not enough impression. 3. Glazed blankets 4. Weak or worn image on plate 5. Weak ink 6. Form roller setting too high.

TROUBLESHOOTING

PROBLEM:	PROBABLE CAUSE:
PICKING AND HICKIES White spots on solid areas and black spots in white areas of printed page.	1. Ink too stiff or tacky, pulling particles of paper from the web. 2. Excess lint on paper stock. 3. Foreign particles in ink. 4. Dirty inking or dampener rollers. 5. Dirty blankets. 6. Tacky blanket surfaces.
SCUMMING Areas of non-printed surface taking ink	1. Dampener setting too low or insufficient solution in fountain. 2. Dirty dampener rollers. 3. Incorrect pH dampener solution. 4. Too much ink. 5. Form rollers incorrectly set, causing bouncing and skidding. 6. Incorrectly developed plate.
SLURRING Bands of blurred image appearing across Web.	1. Improper dampener solution. 2. Ink dried on plate. 3. Blanket under or over packed. 4. Form rollers incorrectly set. 5. Roller sprockets or bearings worn. 6. Loose blanket 7. Web guiding roller not turning freely.
STREAKING Streaks appearing across the web.	1. Ink form rollers set too lightly. 2. Hardened or glazed form rollers, use Varn “Revital” or equivalent to renew surface. 3. Poor balance between ink and dampener solution. 4. Improper pressure setting.

TROUBLESHOOTING

PROBLEM:	PROBABLE CAUSE:
STRIPPING Uneven printed image, rollers refusing to take image.	1. Inking roller glazed. 2. Dampener solution too strong and emulsifying ink. 3. Improper ink formulation. 4. Incorrect roller setting.
TINTING Light tint or wash appearing over the entire sheet.	1. Too much dampener solution. 2. Greasy ink. 3. Thin ink. 4. Incorrect conductivity dampener solution. 5. Improperly coated or developed plates. 6. Check local water supply.

TROUBLESHOOTING

WEB TRAVEL

PROBLEM:	PROBABLE CAUSE:
LOOSE WEB Web runs loosely between unit and folder	1. Ink too tacky. 2. Blankets over packed. 3. Lint builds up on blankets. 4. Nipping rollers set too loose. 5. Trolleys set incorrectly. 6. Not enough brake.
WEB BREAKS	1. Too much dampener solution during roll-up. 2. Web tension incorrectly set. 3. Faults in paper.
OVER FEED BETWEEN DECKS	1. Different style blankets. 2. Blanket height not right. 3. Not enough brake.

SECTION 3

CONTROLS

GENERAL INFORMATION

A ready mode exists when the power unit is ready to receive command to operate. This means that all drive status devices are in the ***SAFE*** or normal position, and that all ***RED STOP/SAFE*** push button switches are ready for operation.

The operator control that starts the press moving is the ***INCH*** push button. Once the command is received, an alarm bell rings for three seconds as a warning that the press is about to move. The alarm is then silenced, the drive is enabled, and the press begins to move. Press operations will continue in the selected mode as long as the operator permits.

When the ***RED STOP/SAFE*** button is depressed, the drive is shut off, the motor stops, and the alarm cycle is automatically reset. Once the ***RED STOP/SAFE*** push button is pulled out, and the reset button is pushed in, the system is again in the ready mode.

DESCRIPTION OF FUNCTIONS

The controls mentioned in the following descriptions are located at the operator's control console. In addition to the controls noted above, auxiliary push button stations incorporating a stop, inch or slow down functions may be located elsewhere on the press.

PUSH BUTTON

STOP – By depressing the ***RED STOP/SAFE*** push button, the drive begins dynamic braking and stops the press – regardless of operating speed. The stop has priority over all other controls.

A safety alarm signal automatically resets during the dynamic braking period. The three second alarm is sounded again before the press can be run.

INCH – With the control system in the ready mode depressing the ***INCH*** push button sounds the three second alarm before the press moves. After the alarm has sounded, the press will operate at inch speed while the ***INCH*** push button remains depressed. Once the ***INCH*** push button is released, the press will come to a halt. Succeeding inching may be done immediately without having the alarm sound. However, if an inch is not repeated within four seconds, another four-second-alarm cycle will occur before the press operates.
Inching can occur only when the drive has not been placed in the run mode. If while inching the ***RUN*** push button is depressed, the run mode will have priority and take over.

RUN – With the press in the inch mode, momentarily depressing the RUN push button establishes a continuous run mode. The press will accelerate to the speed selected at the speed adjust potentiometer.

SLOWDOWN – (Optional) – The slowdown feature permits the press to be brought to a slow speed by a remote operator station located at the rollstand. The SLOWDOWN push button causes the drive control to electronically disconnect the speed adjust potentiometer from the power unit. The press will slow to a pre-adjusted value and then continue to operate at this speed until the ***RED STOP/SAFE*** push button is engaged. To resume normal operation, the power unit must be stopped and restarted.

OPERATOR ADJUSTABLE CONTROLS

SPEED ADJUST POTENTIOMETER - This operator-accessible speed adjustment is used for varying the press speed in the run mode. It is located on the operator control console. ***Clockwise*** rotations of the adjustments result in ***increasing*** press speed, up to a maximum of 30,000 impressions per hour.

CONTROLS

Use the RED *STOP/SAFE* push button to stop the press as quickly as possible in the event of direct or potential hazard to personnel, broken equipment on the press, web break, or other unusual or threatening circumstances. In non-emergency situations, decelerate the press to threading speed with the speed control knob or, if so equipped, the SLOWDOWN push button, before depressing the *RED STOP/ SAFE* push button.

Controls for the entire press are located at control console. The function of each control is listed below.

CONTROL	COLOR	FUNCTION
STOP / SAFE Push Button	RED	Push In to **stop** press. Pull Out to **run** press
INCH Push Button	WHITE	Starts and runs press at minimum speed when held in.
RUN Push Button	BLACK	Starts press when pushed in conjunction with Inch push button.
SPEED CONTROL	BLACK	Controls press speed; *Clockwise to increase Speed.* *Counterclockwise to decrease speed.*
GOOD COPY COUNTER		Switch: ON / OFF To reset: move thumbwheel upwards.
KEY COUNTER		Runs continuously with folder. To reset: turn key one full turn *clockwise.*
KICKER COUNTER	BLACK	Set batch size
KICKER SELECTOR	BLACK	Select on-half or quarter-fold.
BRUSH /FOUNTAIN MOTOR	GREEN / RED	Push to Start / Stop dampener System Start / Stop
DAMPENER SPEED CONTROL	BLACK	Controls dampener feed to all units: *Clockwise to increase,* *Counterclockwise to decrease*
IMPRESSION ON / OFF	GREEN **LIGHTED** SWITCH	Plate / Blanket, blanket / blanket impression

CONTROLS

CONTROL	COLOR	FUNCTION
FORM ROLL (Ink / Water)	GREEN LIGHT SWITCH	*Clockwise* to engage Ink and water forms *Counterclockwise* to disengage units. The automatic setting can be used when the run circuit is complete, it will shut off when the stop button is pushed
RESET	BLUE	Push to reset stop circuit.
FAN	GREEN LIGHTED SWITCH	Controls fan on Quad-stack
OIL PRESSURE	RED LIGHTED SWITCH	Lights up and audible alarm sounds when Oil pressure is low.

CONTROLS

COMPENSATOR

Registers page cut-off when running directly from unit to the folder. Turning the switch to the ***advance*** position will ***increase*** the top margin of the page.

OPERATING CONSOLE

The ***STOP / SAFE*** push button and dampener feed controls are located in a convenient station mounted on the unit.

INK FOUNTAIN KEYS

Move the fountain blade to control the ink flow. Turning the keys ***clockwise reduces*** the ink flow.

NOTE:
Never turn tight to roller or the blade will damage the roller.

WATER FEED CONTROL

A ***speed control / shutoff*** for the dampener fountain pan rollers are located in the unit operating console. The speed control is used to adjust the amount of solution fed to the oscillator and plate. ***Clockwise*** rotation ***increases*** dampener feed. ***Counterclockwise*** rotation ***decreases*** speed of fountain rolls.

IMPRESSION ON – OFF SWITCH

The switch is turned to the ***ON*** position to move the blanket and plate cylinders in contact (***ON*** impression) and turned to the ***OFF*** position to move them apart (***OFF*** impression).

RUNNING SIDELAY REGISTER

There is one ***Sidelay Register*** for each plate cylinder. Turning the ***Sidelay Register*** moves the image on the web transversely up to .150" either direction from the center. ***Counterclockwise*** rotation moved the image towards Page 1. Total maximum rotation is approximately 4 turns.

RUNNING CIRCUMFERENTIAL REGISTER

One circumferential register is provided for each plate cylinder, located directly above the skew register. Turning the circumferential register moves the image on the web up to .100". ***Clockwise*** rotation moves the image towards the folder pins. Total maximum rotation is approximately 4 turns.

PNEUMATIC THROW-OFF

Impression and form rolls are controlled at the operator station when the selector switch on the Unit is set to "Folder" designation. These also can be engaged independently at each unit if desired.

SECTION 4

MAKE READY

DISENGAGING A UNIT

- Stop with the folder-timing dial at zero.
- Put the press on ***SAFE.***
- Move the switch to the ***OFF*** position to disengage.

ENGAGING THE PRINTING

- Stop with the folder timing at zero.
- Put the press on ***SAFE***.
- Move the switch to the ***ON*** position to engage.

RUNNING A NARROW WEB

For a long press run with a HALF WEB, apply an appropriate lubricant to the end of the roller that is not being used for printing. Allow just enough dampener through the shield to keep the non-printing end of the plate clean, without spitting ink-water emulsification. These lubrication steps will help eliminate ink accumulation and the result pick-out of the roller ends when consistently running webs narrower than the capacity of the press. Your ink supplier can provide a proper roller lubricant that is compatible with the ink oils.

When running webs slightly narrower than the width of the plate cylinder, it will be necessary to reduce the amount of brush dampener spray at the roller ends. (Opening the dampener spray baffle levers to slightly more than closed does this.) **Completely closing the very end baffle will reduce the tendency of dampener solution entering the oscillator bushing and contaminating lubricants.**

WEBBING

- Put the press on ***SAFE*** and release the brake using the dancer throw-off air valve. (Roll-under Unit Only)
- Disengage impression cylinder.
- If more than one web will be used, start with the roll position closest to the folder.
- Tear the leading edge of the web with a long narrow tapered lead and (by having someone feed slack from the paper reel) inch the web through the press webbing diagram. Lead webs as far as the folder R.T.F. and hold them in place by nipping them between the R.T.F. and trolleys.
- After completely webbing the press, adjust the R.T.F. trolleys to a slight drag on the web(s).
- Turning the folder by hand, thread all webs over the former and through the cutting cylinder / drum nip.
- ***With more than four webs,*** manual turning will be difficult and you should use the following procedure to ***CAREFULLY*** web the folder under power.
- Inch the press with the folder engaged and lead the webs down the former, between the rollers point of former and down to the nipping rollers. If the webs do not feed neatly between the nipping rollers, let some slack accumulate. ***STOP THE PRESS*** and put on ***SAFE***, then insert the webs between the nipping rollers, pulling taut from below.
- Continue inching the press until the webs are approximately one meter below the nipping rollers, and when one of the tucking blades is in accessible position.
- Stop the press and put on ***SAFE***.

MAKE READY

WEBBING (continued)

- Tuck the webs into the space adjacent to, and below the tucking blade so that the rotation of the folder will carry the webs through the nip between the drum and cutting cylinder.
- Inch the press until the folded product is delivered.
- Remove all web slack by gently turning the reels of paper backward. Then move the air throw-off valve to the right to engage the dancer roll.
- Turn the press until the folder timing mark is on zero and put on ***SAFE***.

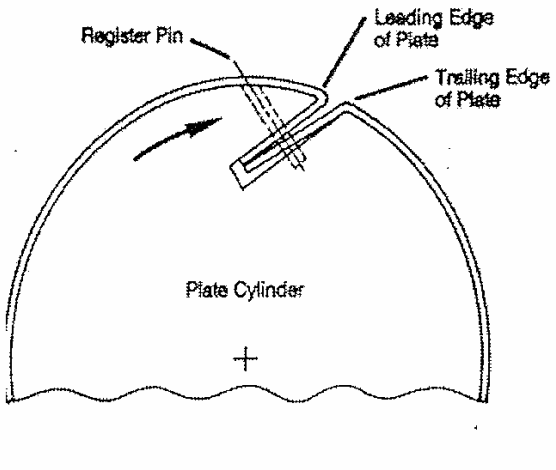
BENDING PLATES

- If plate bender is installed with register pins, locate plate over holes and insert pins.
- Bend and punch lead and trail edges by moving bending bars down as far as they will go, then returning to vertical.

INSTALLING A PLATE

- Put press on SAFE; declutch unit.
- Rotate handwheel until lockup slot is accessible. Starting with a corner, urge the edge of the plate into the slot, being sure the register notch goes astride the register pin in the center of the cylinder. Check that the plate is hooked on the nose properly.
- Rotate the handwheel while maintaining hand tension on the plate until lockup slot is again accessible.
- Engage the ink form.
- Insert one corner of the trailing edge of the plate into the cylinder slot and carefully slide into slot with the thumb pressure across the cylinder face to the opposite side, seating register notch on the cylinder pin.
- Disengage ink form and urge plate down until snug. Repeat for other plate cylinder.
- Rotate handwheel to the line up timing marks on unit and engage clutch.

CAUTION:
Remove handwheel immediately after engaging clutch.



REMOVING A PLATE

1. Disengage unit.
2. Disengage impression.
3. Unwind roll on rollstand to give slack to web at Quad-Stack.
4. Roll unit forward with handwheel until Page 2, Deck 1 plate cylinder gap is exposed.
5. Roll unit forward one more revolution.
6. Remove tail from Deck 1 plate.
7. Reverse unit until gap on Deck 2 plate cylinder is exposed.
8. Remove tail from Deck 2 plate.
9. Reverse unit until gap on Deck 3 plate cylinder is exposed.
10. Remove tail from Deck 3 plate.
11. Reverse unit until gap on Deck 4 plate cylinder is exposed.
12. Remove tail from Deck 4 plate.
13. Remove plates from machine.
14. Follow steps 4 thru 13 for Page 1 side of machine.

DAMPENER FEED

One dampener reservoir tank is supplied with each printing unit. It supplies the dampener solution to all the printing.

No ink is fed back into the tank because:

- There is not physical contact between the dampener and inking system. The solution is ***SPRAYED*** from the dampener to the inking system.
- The dampener solution does not re-circulate within the printing unit, but instead through a remote "leveling cup".
- The leveling cup reservoir has a hose connection to the dampener pan in which the solution seeks an equal level. The dampener solution does not circulate through the pan but rather through the leveling cup. The drainpipe of the leveling cup is turned to raise or lower the standpipe, raising or lowering the solution height in the pan.

To obtain good printing results from your press, you should follow these recommendations:

- Mix solution according to supplier's instructions and check for conductivity.
- The uppermost leveling cup is fitted with a valve that controls the amount of solution pumped into the uppermost float cup. The over-flow of the upper cup fills the next lower cup; therefore you should allow a slight excess of solution to over-flow the drain from the next lower module.

The spray interrupting baffles are provided along the entire width of each dampener system, eliminating the need for squeegee type "water stops". The baffles (in their lowest position) block the dampener spray. In their upper most position, the baffles allow the spray to pass uninterrupted. It is left to the discretion of the operator as to how much dampener solution passes along each 30mm width section.

SECTION 5
RUNNING

SET UP

- Engage the units required for the run; disengage those not required.
- Fill the ink and dampener fountains at units in use.
- Preset inks for job coverage.
- Adjust baffles where necessary
- Web the press.
- Adjust the folder for product width.
- Center cylinder side registers; plate the press.

INK FEED

- Before starting a run, fill all ink fountains to be used. Agitate any old ink remaining.
- When running half-width rolls, shut off ink flow on the unused portion of the unit by turning in the fountain screws until the ink flow is at a minimum, ***without scraping the blade on the roller.*** Absence of pickup roller pattern on the fountain roller ink film indicates a shut-off condition.
- Apply roller compound or other suitable lubricant to prevent swelling and premature wear of any inking roller that will not be fed ink.

INITIAL START-UP

- Start the press; run at 2,000 i.p.h.
- Engage the water and ink feeds.
- Examine the running webs and make preliminary adjustment to ink, dampener, register and tensions.
- Check the product for page positions and cutoff, correcting as necessary.
- Run the press up to speed and make fine adjustments as required.

DURING THE RUN

- Make constant checks of all products.
- Make adjustments to ink and dampener feed as required.
- Keep ink and dampener fountains full.
- Keep the ink worked at all times.
- Do not allow contaminants to enter fountain solution.

TO STOP

- Shut off dampener and ink fountain motors.
- On each unit, disengage the form rollers.
- Slow down and ***STOP THE PRESS*** on the mark; put on ***SAFE***.
- Disengage impression.

CAUTION:
Disengage any units to be worked on.

TO START

- Engage impression.
- Start the press and run it up to speed.
- Start the dampener system.
- Engage the forms.

AT THE END OF EACH DAY

- Slow down the press.
- Shut off dampener motors; shut off ink fountain motors.
- On each unit, disengage form rollers.
- Let the press run for a few impressions to clear any surplus ink off the blankets.
- ***STOP THE PRESS*** on the mark; put on ***SAFE***.
- Disengage impression.
- Turn ***OFF*** dampener pump.

RUNNING

CLEAN UP

NOTE:

If the plates are left on the cylinder for more than two days, solution accumulated beneath the surface of the plate can damage the plate surface.

- **Wash all blankets used for the run.**
- **Remove all plates from the press and wipe the cylinders with a lightly oiled cloth.**
- **Wipe down entire press.**
- **Wipe out fountain trays.**
- **Remove all objects and tools and put them in their proper place.**

CAUTION:

Do not leave tools or cleaning materials on the press.

SECTION 6
MAINTENANCE

MAINTENANCE

MAINTENANCE RECORDS

A log of all press maintenance should be kept. It should be used to record blanket packing, roller setting, press lubrication or any other parts that may have required special attention. The log should include the specific settings used each time packing or metal-to-metal settings are changed so that reference is available in case of problems.

CAUTION:
Never work on press unless it is on SAFE.

GENERAL

- Clean around press.
- Wipe side frames and clean platforms.
- Place tools in their proper place.
- ***WEEKLY***: Check supplies used for the press room, such as sponges, rags, gum, and washes; obtain supplies before inventory is depleted.

PLATE CYLINDERS

- Remove plates; wipe cylinders clean.
- Coat cylinder surface with a light film of oil.

BLANKET CYLINDERS

- Wash blankets.
- Check the blanket surface for smashes, nicks and signs of excessive tackiness or wear.

Replace blankets not producing a good quality print; note in maintenance log.

- Clean cylinder before installing a new blanket or changing packing thickness.
- Check the packing for creep. Replace packing when creep occurs; note in log.
- ***WEEKLY***: Check blankets tightness and tighten when necessary.
- ***WEEKLY***: Wash blankets with glaze-remover solution.

ROLLERS

- Check condition and settings of brush dampener rollers. Change when necessary; note in log.
- ***WEEKLY***: Check roller settings, reset when necessary; note in log.
- Clean rollers with wash recommended by roller manufacturer.
- ***MONTHLY***: Check condition of bearings and sockets.
- Check for out of round, pitted, hard, or cracked rollers; replace when necessary.
- When a roller is glazed but not cracked and feels lively, recondition the roller per manufacturer's instructions.
- If the roller is not deeply pockmarked, regrinding may restore the roller. Rubber covered rollers may be re-ground 1/8" below the original diameter.

PAPER LEAD ROLLERS

- ***BEFORE EACH RUN***: Clean dirty lead rollers.
- ***MONTHLY***: Clean rollers covered with Velcro, brush lightly with stiff nylon brush to remove dried ink, lint, or other matter which may mark the web or, if built up sufficiently, interfere with proper web travel.

MAINTENANCE

Many runs that are not possible on competitive presses are commonplace on Quad-Stack installations. One of the major features that make these unique runs possible is the size of the plate and blanket cylinders, as well as their center to center, can be easily changed by the slight amounts necessary to balance web tensions on complicated web leads. The cylinder sizes and impression settings are adjustable, not locked-in bearers or other design limitations. The following table will be filled by Web's installer after he tests and balances out the most complicated web leads your production requirements and press configurations anticipate. Subsequent changes, if any, should be noted in the table for easy reference.

A SPECIAL WORD OF CAUTION **– any operating adjustments inherently involve the possibility of incorrect adjustment and consequent poor performance. Experience has shown that the most usual cause of web tension problems is the failure of pressmen to understand that *IT IS ESSENTIAL THAT THESE SETTINGS BE CHECKED AND MAINTAINED.* If you experience any web tension problems, check these settings first. Metal-to-Metal settings (clearances between cylinders) are made without plates or blankets installed.**

METAL-TO METAL SETTINGS

Plate cylinder to Blanket cylinder	**.075**
Blanket cylinder to Blanket cylinder	**.139**
Blanket height on cylinder	**.076**

NOTE:
Blanket height is measured with reliable blanket height gauge after installation and short run-in of blanket. Combined thickness of blanket (usually .067"), and packing (usually .009") will be about .002" less than height gauged after run-in due to the normal pull-down of compressible blankets.

DECK 1	DECK 2	DECK 3	DECK 4
P/B _____	P/B _____	P/B _____	P/B _____
B/B _____	B/B _____	B/B _____	B/B _____
Height	Height	Height	Height

MAINTENANCE: Lubrication

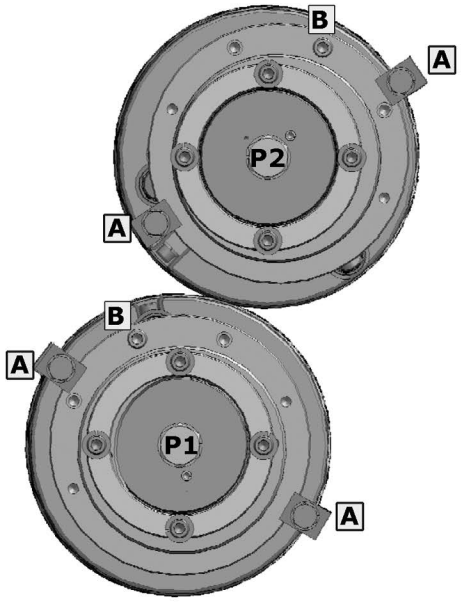
NOTE:
Frequent addition of small quantities of lubricant is best; over-lubrication at long intervals will severely shorten the life of affected parts.

- **Before applying grease, all fittings should be wiped clean to prevent dirt from entering the bearings.**
- **WebPress relies upon reputable lubricant manufacturers to suggest proper and tested products which will suit the requirements of your press. Except where abnormal conditions are encountered, the lubricants listed (or their equivalent), should be used.**
- **Lubricant intervals are based on a single shift, daily operation of 50,000 impressions per day. If your press is equipped with an operating hour meter, consider daily as 6 hours, weekly as 30 hours, monthly as 120 hours and 4 times per year as 350 hours of operation.**

INTERVAL	PART DESCRIPTION	GREASE FITTINGS	LUBRICANT	METHOD
WEEKLY	Blanket Cylinder	32	Chevron EP2	Grease Gun
WEEKLY	Plate Cylinder	32	Chevron EP2	Grease Gun
WEEKLY	Oscillator Drive Shaft & Gear	16	Chevron EP2	Grease Gun
MONTHLY	Water Vibrator Drive Pin		Chevron EP2	Apply to Surfaces
MONTHLY	Ink Vibrator Drive Pin		Chevron EP2	Apply to Surfaces
MONTHLY	Drive Shaft Bearings	3	Chevron EP2	Grease Gun
4 Times per Year	Plate Cylinder Side Lay Arm		Chevron EP2	Apply to Surface and Hub
4 Times per Year	Ink Form Throw-Off Cam		Lubriplate L0152	Apply to Surface

CAUTION:
Do not over grease the oscillator bushings. Doing so will cause the oil seals to pop out.

OPERATOR SIDE



GEAR SIDE

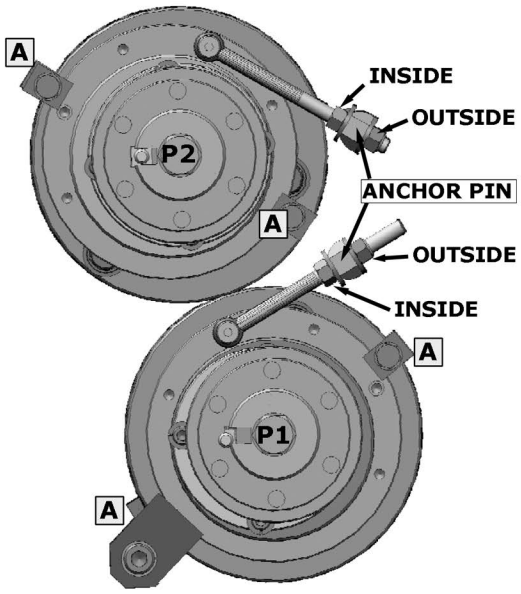


PLATE TO BLANKET PRESSURE SETTING (without Plate & Blanket)

PAGE 1

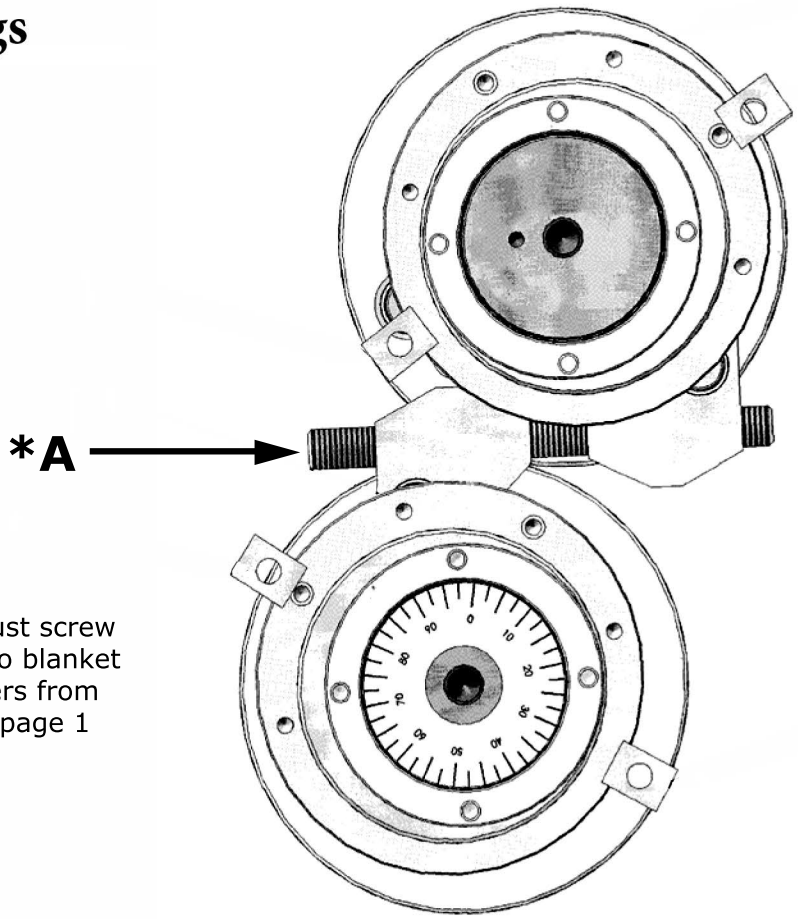
- Engage Impression
- Loosen Bolts A on Blanket cylinder eccentric
- Operator side eccentric adjustment:
  Tap bolt B counter-clockwise to loosen pressure; clockwise to tighten pressure
- Gear side eccentric adjustment:
  Tighten inside adjustment nut against anchor pin to tighten pressure; tighten outside adjustment nut against anchor pin to loosen pressure
- Set pressure at .075
- Re-tighten bolts A and confirm both gear side adjustment nuts are tight against anchor pin

PAGE 2

- Engage Impression
- Loosen Bolts A on Blanket cylinder eccentric
- Operator side eccentric adjustment:
  Tap bolt B clockwise to loosen pressure; counter- clockwise to tighten pressure
- Gear side eccentric adjustment:
  Tighten inside adjustment nut against anchor pin to loosen pressure; tighten outside adjustment nut against anchor pin to tighten pressure
- Set pressure at .075
- Re-tighten bolts A and confirm both gear side adjustment nuts are tight against anchor pin

Due to the unique double eccentric design of the Quad-Stack, please confirm blanket-to-blanket settings after any plate-to-blanket adjustment.

Pressure Settings



* Access to adjust screw located next to blanket cylinder bearers from inside frame (page 1 side of unit)

BLANKET TO BLANKET PRESSURE SETTING

Without Blanket & Packing

- Engage Impression
- Check pressure with feeler gage approx. 4” from bearer location on both gear and operator end.
- Adjust setting as required with screw A

With Blanket & Packing Installed

- Disengage Impression
- Place strips of aluminum foil between the blanket cylinder bearers on both the gearside and the operator side set
- Engage Impression
- Disengage Impression
- Check mark on foil
- Adjust with screw A to achieve a 1/32” to 1/16” mark on the foil

Due to the unique double eccentric design of the Quad-Stack, please confirm plate-to-blanket settings after any blanket-to-blanket adjustment.

MAINTENANCE

Centering Skew Adjustment

NOTE: The following procedure assumes that the ink fountain rolls are level

1) Place Skew Adjust (Item 39) into the center of the adjustment distance.

2) Using a machinest level in the center of the plate clynder, check for level.

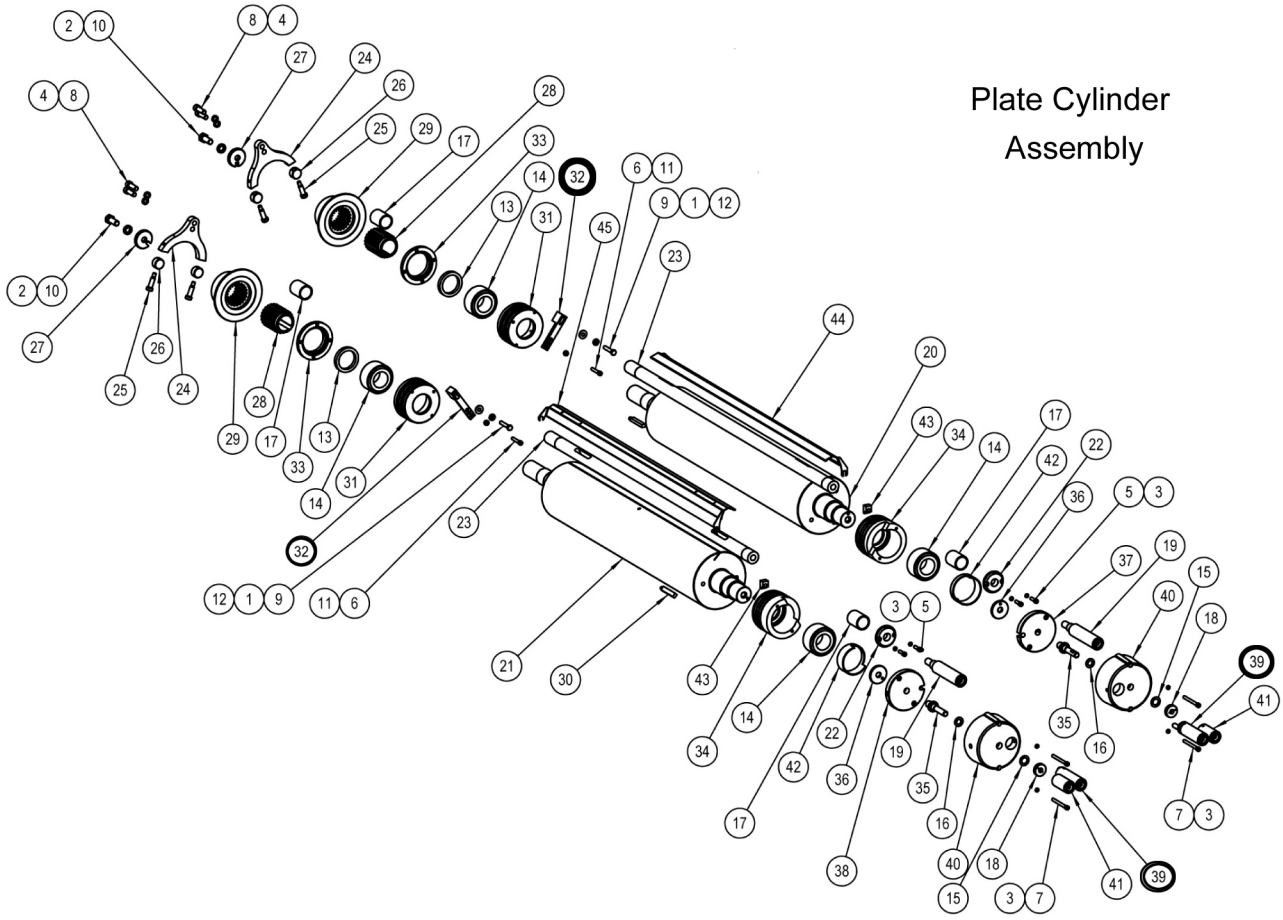
3) If an adjustment is necessary:

   A. Unlock the gearside eccentric adjustment arm bolt (Item 32)

   B. **Push** adjustment FORWARD to **RAISE** the GEAR SIDE of the plate cylinder
   or
   Pull the adjustment BACK to **LOWER** the GEAR SIDE of the plate cylinder

4) After Adjustment is complete, tighten adjustment arm bolt

5) Check and adjust if necessary form roll stripes to plate

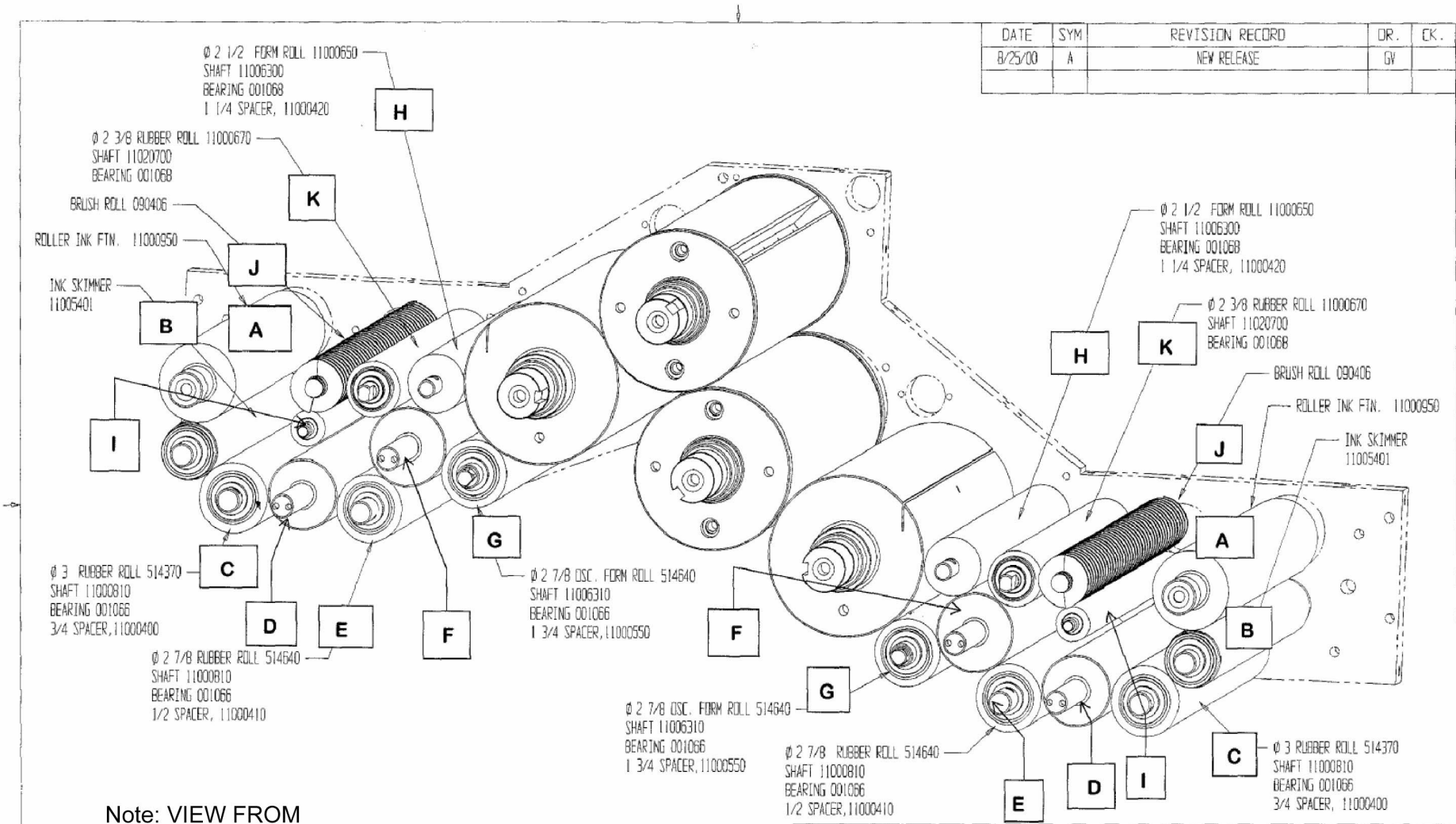


MAINTENANCE

Roller Specifications

ROLLER	TYPE	DIA.	SURFACE MATERIAL	SET TO	CORRECT SETTING METHOD
A	Ink Fountain	3”	Steel	Blade	Snug steady pull with .002” feeler gauge
B	Ink Skimmer	2.5”	Steel	Roller A	Snug steady pull with .004” feeler gauge
C	Ink Transfer	3”	Rubber	Roller B and D	3/16” stripe
D	1st Non-driven Oscillator	2.4”	Nylon Covered Steel		No Adjustment required
E	Ink Transfer	2-7/8”	Rubber	Roller D & Roller F	3/16”ink stripe observation
F	Ink Oscillator	3”	Nylon		No Adjustment required
G	Ink Form	2-7/8”	Rubber	Roller F & Plate Cylinder	3/16” stripe
H	Ink Form	2.5”	Rubber	Roller F & Plate Cylinder	3/16” stripe
I	Dampener Fountain	1.5”	Stainless	Roller J	Light uniform contact Light bristle splay
J	Dampener Brush	2”	Brush		
K	Dampener Roller	2-3/8”	Rubber		No adjustment required

See Drawing 11029440, Roller Configuration on the next page



DATE	SYM	REVISION RECORD	DR.	EK.
8/25/00	A	NEW RELEASE	GV	

TOLERANCES (EXCEPT AS NOTED)
DECIMAL .xx ± .01 .xxx ± .005
FRACTIONAL ± 1/32
ANGULAR ± 1 Deg

DRAWN BY G. VARGAS
APPROVED BY

WEB PRESS CORP., KENT, WASH.
TITLE ROLLER CONFIGURATION
DWG NO. 11029440
SCALE 1/4 | DATE 8/25/00 | SIZE B | REV - A

ROLLER "STRIPE" MEASUREMENT

Observation and measurement of roller stripes (flats) is the most *reliable* method of checking roller settings. The pressure rollers are accurately reflected by the ink stripe method. Set roller stripes to widths given below.

FORM ROLLER TO PLATE STRIPE

To make a visible stripe for indicating form roller-to-plate pressures, install a plate and follow the procedures listed below.

- Uniformly ink-up the rollers.
- With the press stationary and with the plate gap visible, throw the ink form rollers ***ON*** then ***OFF*** the plate.
- Rotate the unit forward until the two stripes on the plate are visible. They should be 3/16" wide, uniform end-to- end.

NOTE:
There are two ink form rollers, thus there should be two stripes on the plate. Be sure to adjust the roller being observed.

If the mounted plate is to be re-used, thoroughly gum the plate and protect the surface by using the proof sheet procedure as follows:

- Ink up the rollers.
- Stop the unit so the plate cylinder gap is in view.
- Insert a proof sheet between the form rollers and the plate.
- Remove the proof sheet and check the width of the stripes.

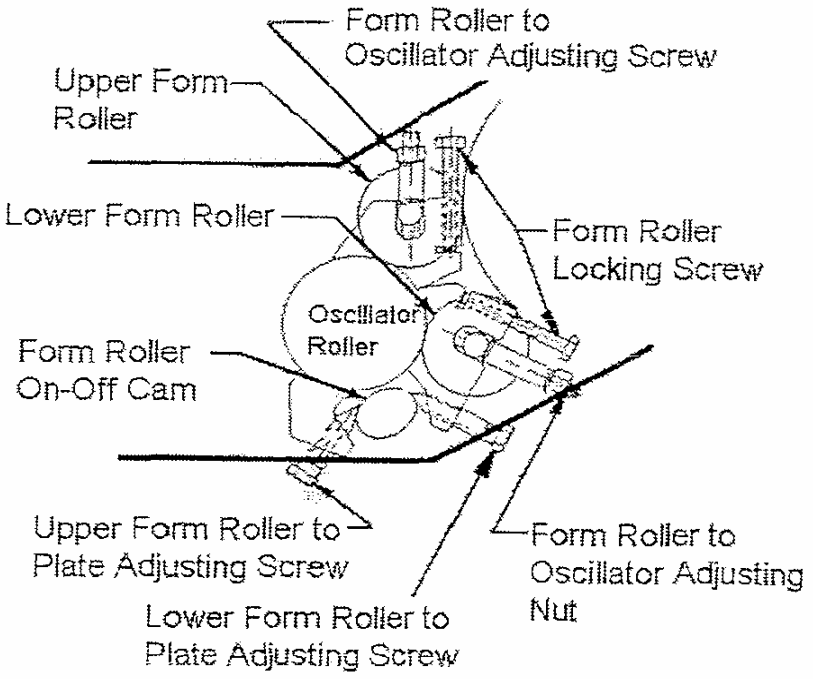
INK STRIPE ADJUSTMENTS

FORM ROLLER TO OSCILLATOR

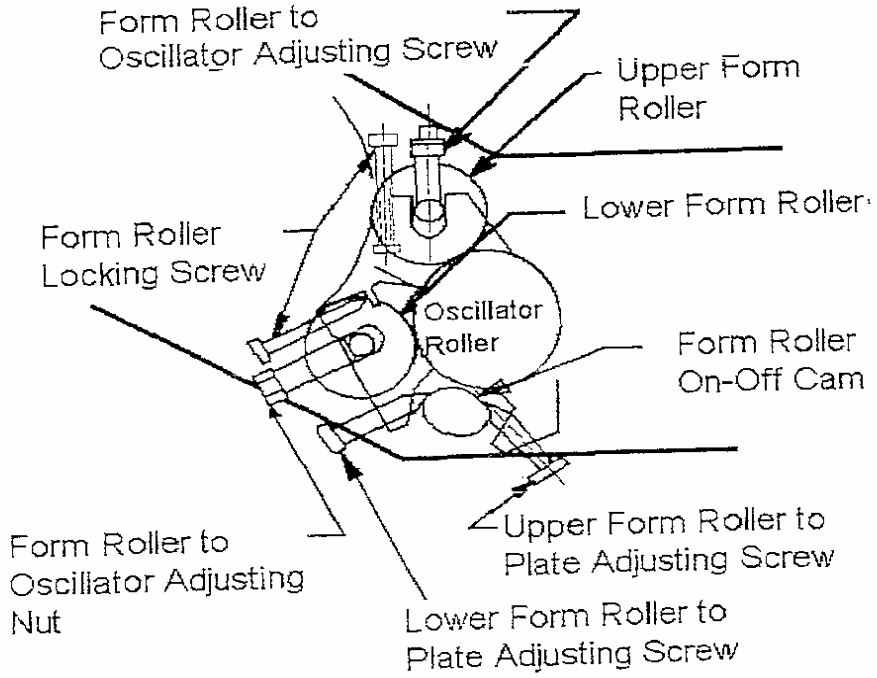
- Check the width of the stripe.
- Loosen the roller locking screw.
- Turn the adjusting nut ***IN*** to ***INCREASE*** the stripe; ***OUT*** to ***DECREASE*** the stripe.
- Tighten the roller locking screw again, check the stripe width.

FORM ROLLER TO PLATE

- Check the width of the stripes.
- Turn adjusting screw ***IN*** to ***INCREASE*** the stripe width, ***OUT*** to ***DECREASE*** the stripe.


Form Roller to
Oscillator Adjusting Screw
Upper Form
Roller
Lower Form Roller
Form Roller
Locking Screw
Oscillator
Roller
Form Roller
On-Off Cam
Upper Form Roller to
Plate Adjusting Screw
Form Roller to
Oscillator Adjusting
Nut
Lower Form Roller to
Plate Adjusting Screw

Page 1


Form Roller to
Oscillator Adjusting Screw
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Roller
Lower Form Roller
Form Roller
Locking Screw
Oscillator
Roller
Form Roller
On-Off Cam
Upper Form Roller to
Plate Adjusting Screw
Form Roller to
Oscillator Adjusting
Nut
Lower Form Roller to
Plate Adjusting Screw

Page 2

CHECKING RUBBER TRANSFER OSCILLATING STRIPES

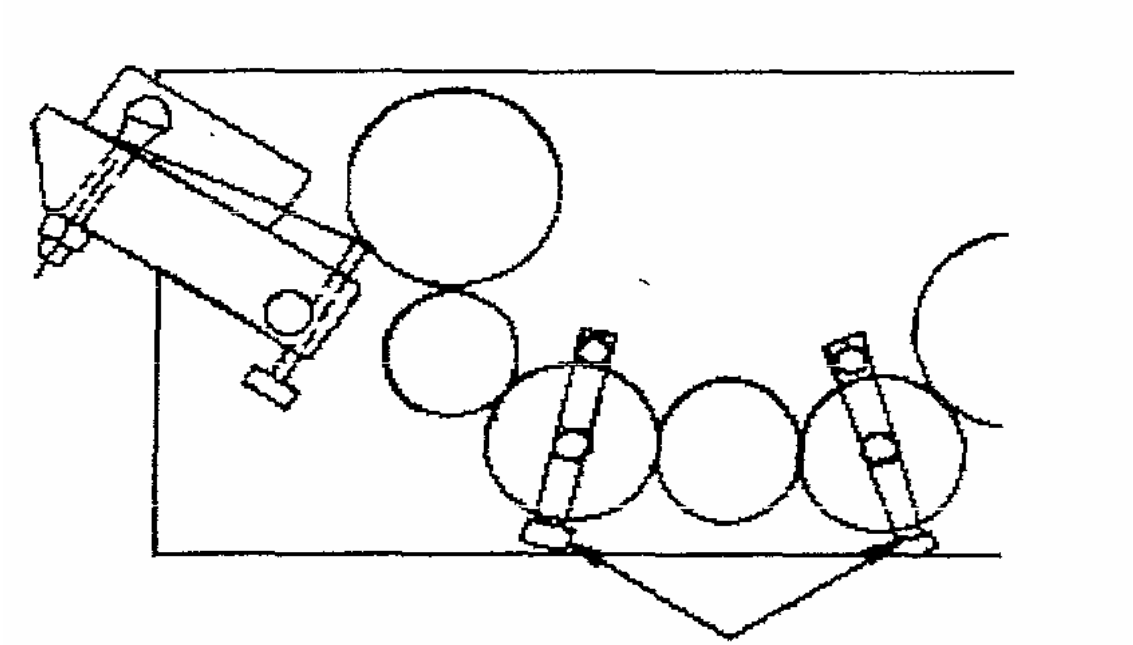
- With the form rollers off the plate, rotate the unit until a sufficient supply of ink is uniformly distributed.
- Stop the press, place on ***SAFE***, wait for a few seconds then quickly rotate the press by hand to bring the stripes into view. Use additional lighting to aid in viewing the rollers not well lit by ambient lighting. ***STRIPE*** should be uniform 3/16" width across the entire length of the rollers.

NOTE: The stripe may be viewed from either the metal or rubber roller, and from above the rollers.

- Check the width of the stripe.
- Turn adjusting nut ***IN*** to ***INCREASE*** the stripe width, ***OUT*** to ***DECREASE*** the stripe width.

ADJUSTING RUBBER TRANSFER ROLLER TO OSCILLATING ROLLER

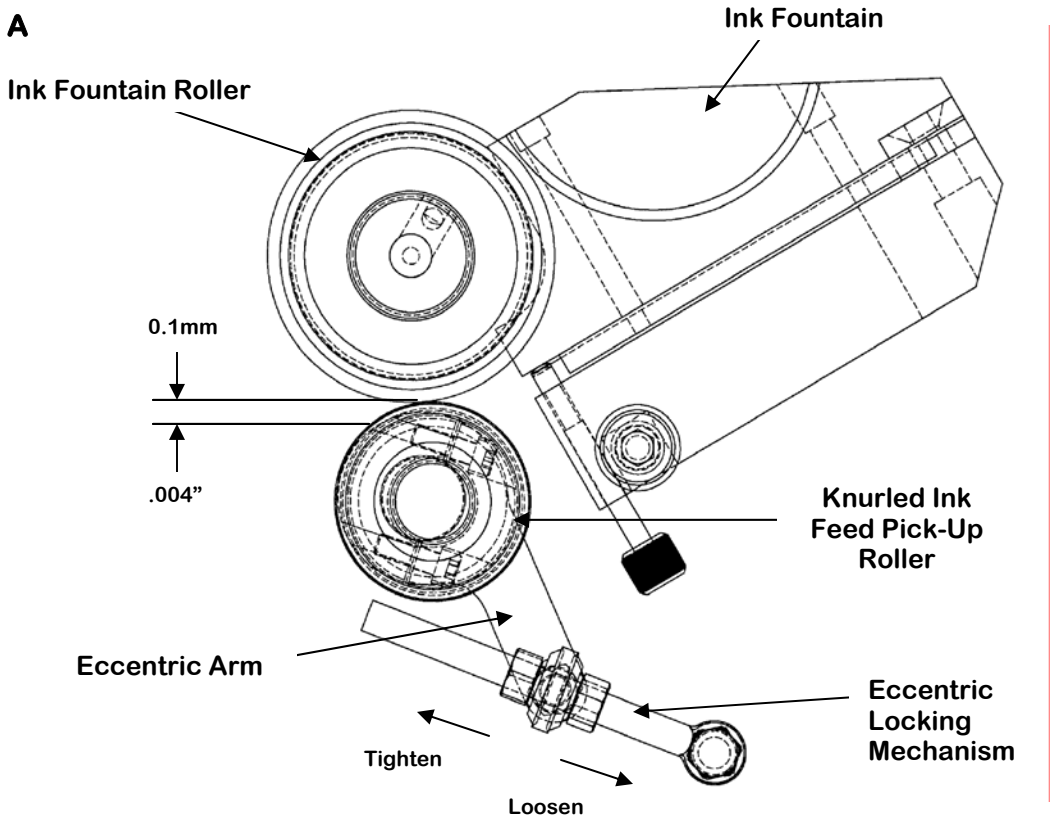
- Check the width of stripe.
- Turn adjusting nut ***IN*** to ***INCREASE*** the stripe width, ***OUT*** to ***DECREASE*** the stripe width.



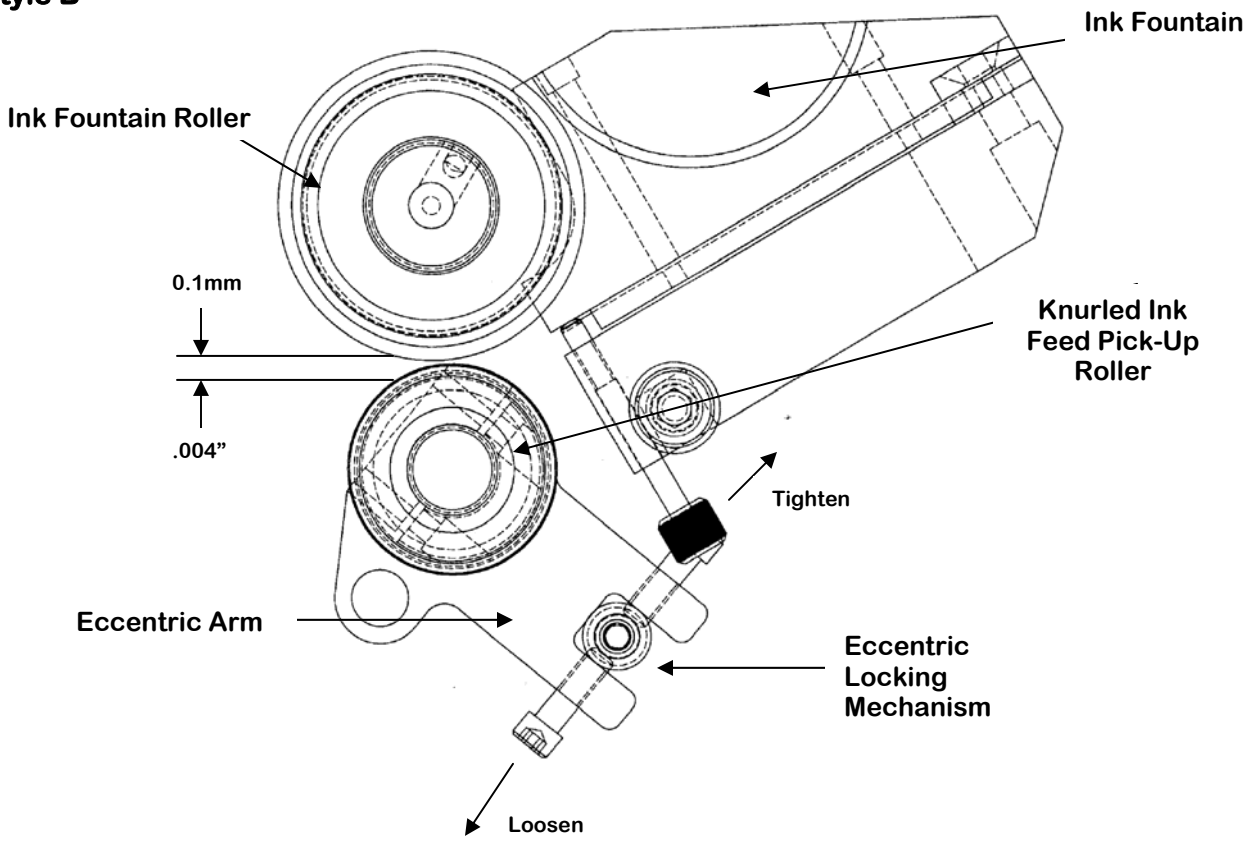
Rubber Roller to Metal Roller Adjusting Nut

MAINTENANCE
Ink System

Style A



Style B



INK PICK-UP ROLLER

The knurled ink feed pick-up rollers are mounted in eccentrically bored bearings. These eccentrics are held in place and set into the stationary shaft by a bolt placed into the setscrew hole of the bearing. Loosening these bolts and rotating the eccentric will increase or decrease the distance between the pick-up and the fountain rollers.

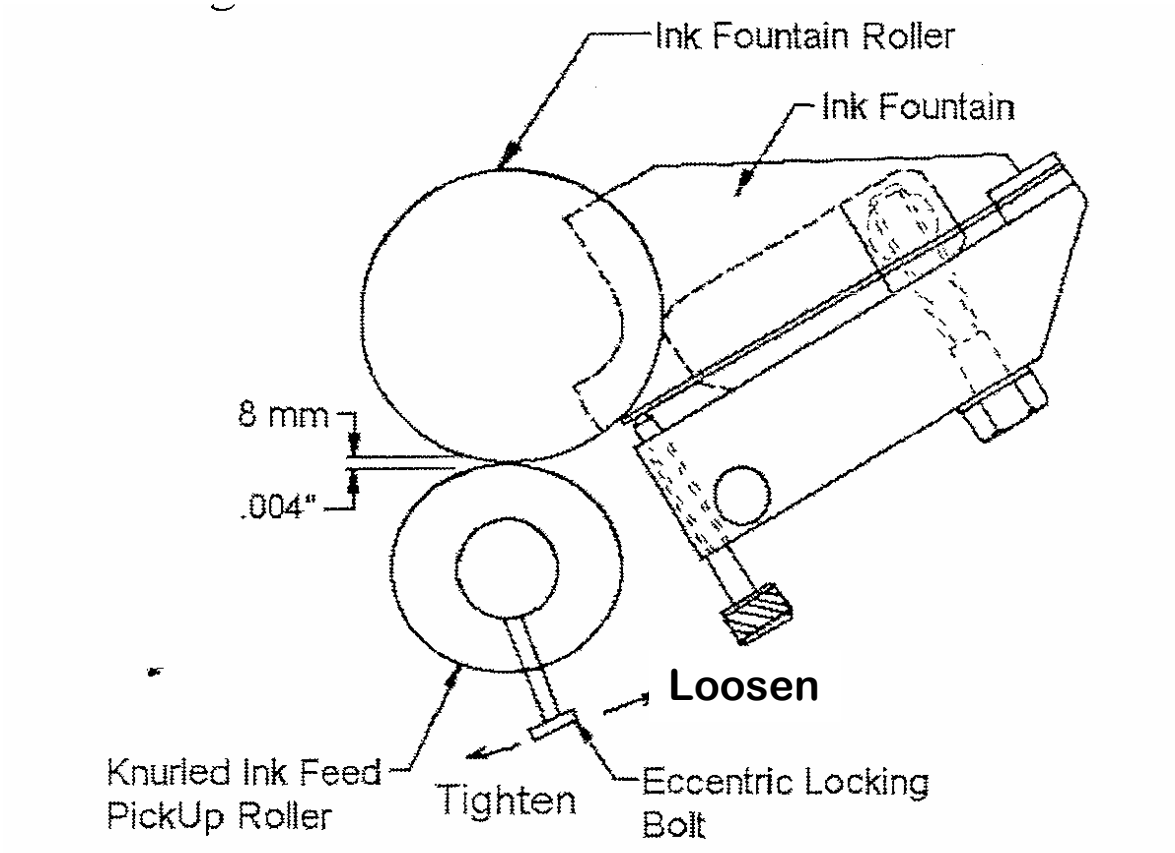
IF MISALIGNMENT TO THE FOUNTAIN IS EVIDENCED BY:

- **Uneven Inking across the web**
- **Tendency for ink fountain roller to be scraped by pick-up roller**
- **Excessive opening of fountain keys**

THEN RESET AS FOLLOWS:

1. **Put the press on *SAFE.***
2. **To gain proper access, remove lower ink roller cover.**
3. **Loosen the eccentric locking bolts and using the locking bolts as a handle, rotate the eccentric bearing inner race until a snug fit is obtained with a .004" feeler gauge across the entire length of the rollers.**
4. **Tighten the eccentric locking bolts.**
5. **Re-check the gap setting across the entire length of the rollers.**

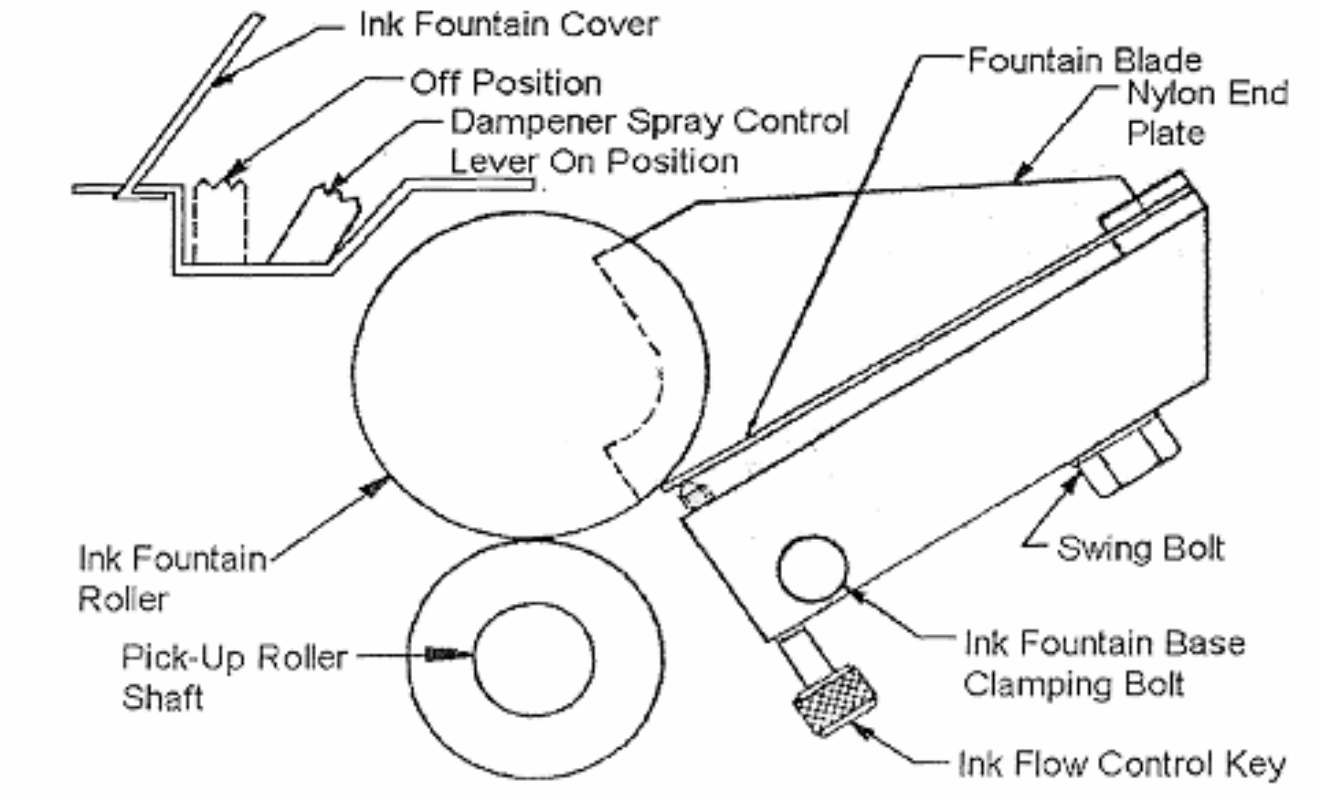
Style C



MAINTENANCE
Ink System

CLEANING THE INK FOUNTAIN

- **Put the press on *SAFE* and remove the ink from the ink fountain.**
- **Loosen the first three ink flow control keys at each end of the fountain to free the fountain blade and end plates from the fountain roller.**
- **Swing the front printing unit cover to the open position and loosen the ink fountain base clamping bolt.**
- **Loosen the two swing bolts at each end of the ink fountain and pivot them up so they will swing away, to allow the ink fountain to be lowered.**
- **Clean all parts thoroughly. For cleaning the fountain roller, run its drive motor.**
- **Swing the fountain base to the up position, lock the end swing bolts, and securely tighten the clamp bolt.**
- **Adjust the ink flow control keys until a gap can just be seen between the blade and the roller. Alternately, insert a .002" feeler gauge between the fountain roller and blade, then adjust keys until a snug steady pull is obtained. Repeat for each key across the roller surface working from the center outward to each end. This is the zero position.**
- **Tightening the end key will tighten the nylon end plate against the end of the fountain roller.**



BRUSH DAMPENER FOUNTAIN

The dampener fountain rollers (pan rollers) are motor driven. Their speed is collectively controlled by a potentiometer located at the console and individually controlled by potentiometers at the printing units. Pan rollers can be individually silenced at each unit when printing couple or unit is not in use and also collectively silenced by a master switch at the Main Control Console.

The brush-roller / pan-roller settings are correct when the brush bristles slightly ***SPLAY*** along the length of the pan roller. The needed splay will be ONLY enough for the brush bristles to "flick" solution from the fountain roller onto the oscillator roller. This setting may change due to eventual brush wear. Uneven dampening or "dry spots" will evidence need for adjustment due to long-term wear of the bristles.

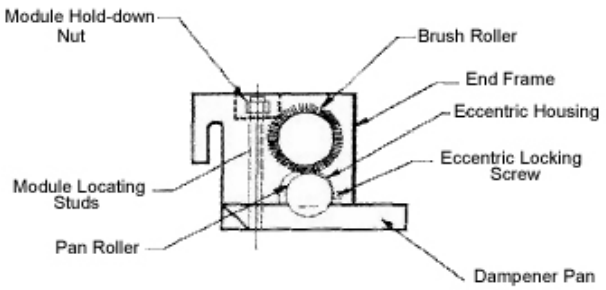
BRUSH / PAN ROLLER NIP ADJUSTMENT

Set the pan-roller to the brush-roller nip by rotating the eccentric bearing housings on the end of the pan roller.

To rotate this eccentric:

- First loosen the eccentric locking screw located on the module side of the frame.
- Push on the screw extending from the eccentric to rotate the eccentric.
- After adjusting, re-tighten the eccentric locking screw.

DAMPENER MODULE ASSEMBLY



DAMPENER MODULE / WATER PAN REMOVAL

- Put the press on ***SAFE***
- Silence the dampener reservoir pump
- Remove baffle and lower ink roller covers.
- Remove the two module hold-down nuts.
- Simultaneously lift both end frames of the dampener module and without cocking them, slide them up and over the locating studs.
- Place the dampener module assembly on a bench or other accessible, clean safe place.
- Drain the dampener pan by removing the standpipe inside the leveling cup.
- Raise the gear side of the pan to drain it thoroughly.
- Disconnect the dampener feed hose by pulling it from the leveling cup.
- Remove the pan by lifting it straight up and over the module locating studs.

DAMPENER MODULE REPLACEMENT

- Put the press on ***SAFE***.
- Replace the dampener pan and reconnect its feed line to the leveling cup.
- Replace the leveling cup standpipe.
- Lift the dampening module assembly over the locating studs and lower it ***EVENLY*** without putting in a bind.
- Let the dampening module end frames rest on the pan ends, giving the dampener side frames a gentle shaking to ensure the nylon driving gears on each end are correctly meshed.
- Replace the hold-down nuts after tightening.

MAINTENANCE
Ink System

BRUSH ROLLER REPLACEMENT

The life expectancy of dampener brush exceeds that of a rubber-inking roller. Even so, it is still recommended that you have a spare on-hand in case of emergency. To remove and replace this roller, follow the procedure described below:

- Place the dampener module on a bench or other accessible, clean, safe place.
- Remove bearing retaining bolt on brush shaft bearing.
- Remove eccentric retaining bolt on fountain roll.
- Remove rubber roll from dampener assembly.
- Remove brush pulley from gear side.
- Gently tap aluminum dampener arm away from roller on each end.
- Remove bearings from shaft.
- Reverse for brush shaft installation.

BRUSH REPLACEMENT

To replace the brush on the shaft, follow the procedure below:

CAUTION:
When stretching the brush over the length of the shaft, care must be taken to keep all coil spacing equal. Do not exceed the elastic limit of the brush's metal backing, otherwise a permanent distortion will occur rendering the brush unusable.

- Remove the two hold down screws at each end and remove the old brush.
- Clean shaft thoroughly.
- Slide the new brush coil over the shaft and secure one end of the metal backing with the two hold down screws.
- Secure that end of the shaft in a vice or other stable clamping device.
- With the right hand holding the unsecured end of the brush coil, gently rotate the coil in the opposite direction of its winding. This action will expand the inside diameter of the coil allowing it to slide further up the length of the shaft. With your left hand pulling over the outside surface of the brush bristles, ***EVENLY*** stretch the distance between coils, starting from the secured end.
- When the brush has attained the required length, rotate the brush coils in the wound direction to reduce it's inside diameter, and tighten it securely against the entire length of the shaft. Install and tighten the other two retaining screws.

NOTE:
The metal backing should be in tight contact with the shaft along its entire length.

BLANKET CARE

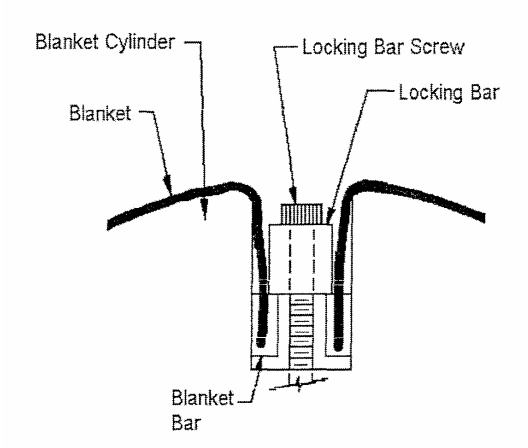
Your blanket supplier can give you complete details on blanket care and cleaning solutions to be used.

CAUTION:
Do not wash blankets unless the press SAFE push button is in.

- A new blanket should be scrubbed with blanket wash before it is used.
- Wash the blankets whenever the press is to be left standing for any length of time.
- Sponge wash blanket with a sponge or clean rag, keeping the wash solution away from the blanket edges as much as possible. This will prevent seepage under the blanket.

NOTE:
If the packing becomes wet, blanket and packing should be removed and the cylinder wiped dry. Replace with new packing, applying grease to the edges of the blanket before replacement.

- After entire blanket has been washed clean, wipe dry with a clean rag. ***DO NOT*** let the solution dry on the blanket.
- After each run, check ***ALL*** blanket surfaces for smashes, nicks, wear and signs of excess tackiness.
- Replace the blanket if any of these problems are found.



BLANKET AND PACKING INSTALLATION

- In all cases, always measure the blanket and packing thickness with a blanket micrometer before installation. The correct thickness of blanket plus under packing is noted on the general specifications page.
- Apply a thin strip of spray adhesive to the leading edge of the manila sheet to provide adhesion to the cylinder until the blanket is fitted.
- Put the press on ***SAFE***.
- Align manila packing .050" back from the leading edge of the slot, feathering the sheets .030" each to make a smooth ramp.
- Rotate cylinder (using the handwheel) one full revolution. Make sure the packing is laid evenly without wrinkles or bubbles.
- Insert the lead edge of the blanket into the slot. Rotate using the handwheel, laying the blanket onto the packing, then insert the tail edge into the slot.
- Fit the locking bar in the slot and insert the screws.
- Tighten the screws uniformly, first until the heads of all screws are below the surface of the cylinder, then until blanket is snug to the cylinder, and finally torque screws to 35 in. lb.
- Confirm blanket and packing thickness on cylinder by measuring with a packing gauge such as a Colite gauge; note readings in log.
- Pull up the blanket by retorquing the screws after about 3,000 impressions. Tighten them again after about 10,000 impressions. Check all screws weekly thereafter.

MAINTENANCE
Cylinders

CHECKING BY INK STRIPE METHOD

Following the adjustment procedures previously outlined should result in the correct printing cylinder pressures needed for quality printing. This can be verified by using the ink stripe method as described below:

- Install good blankets (of correct size) with correct packing.
- Install correct size plates.
- Engage impression
- Run the press, feeding enough ink to evenly spread a thin film of ink throughout the entire unit including the plates and blankets.
- Stop the press and wait for one minute.
- Disengage impression.
- Rotate unit around until the impression stripes are visible. The plates should each show one stripe (plate-to-blanket) and the blankets should show two, (blanket-to-blanket and plate-to-plate).
- Plate-to-blanket stripe should be 3/8" wide.
- Blanket-to-blanket stripe should be 7/16" wide.

If preferred, place a sheet of newsprint between the plate and blanket cylinder nips (and also between the blanket nips). ***Engage*** impression then ***disengage*** and check the stripe width on the sheets. The stripes should be approximately 1/32" wider because of the additional newsprint thickness.

TIMING BELT TENSION

- Timing belts should be tensioned to a snug fit, neither drum tight nor slack. The belt's positive grip eliminates the need for high initial tension. A properly tensioned belt will deliver long life, quiet operation and minimum wear of either belt or associated parts.
- When torque is unusually high, a belt may "jump" a tooth. In such cases, belt tension should be increased gradually until satisfactory operation is achieved.

BELT HANDLING

- On installation, the belt should never be forced or pried over the pulley flange. Moving the belt idler will permit the belt to slide onto the pulley easily, otherwise one or both pulleys should be removed.
- To assure smooth operation and prevent premature failure, belts in storage should be protected against sharp bending or creasing. These should not be subjected to extreme heat, low temperatures or high humidity.

NOTES