

# Crestline<sup>®</sup> Dampening System

## Installation Instructions

Shinohara 66

**ACCEL**  <sup>®</sup>  
*Graphic Systems*

# GENERAL INFORMATION

## **ATTENTION CRESTLINE® DAMPENER OWNER!**

Accel Graphic Systems provides parts and service through its authorized distributors and dealers. Therefore, all requests for parts and service should be directed to your local dealer.

The philosophy of Accel Graphic Systems is to continually improve all of its products. Written notices of changes and improvements are sent to your Accel Graphic Systems Dealer.

If the operating characteristics or the appearance of your product differs from those described in this manual, please contact your local Accel Graphic Systems Dealer for updated information and assistance.

Always update your dampener when improvements are made available, especially those related to safety.

### **YOUR AUTHORIZED CRESTLINE® DEALER IS:**

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### **THE SERIAL NUMBER OF YOUR CRESTLINE DAMPENER(S) IS:**

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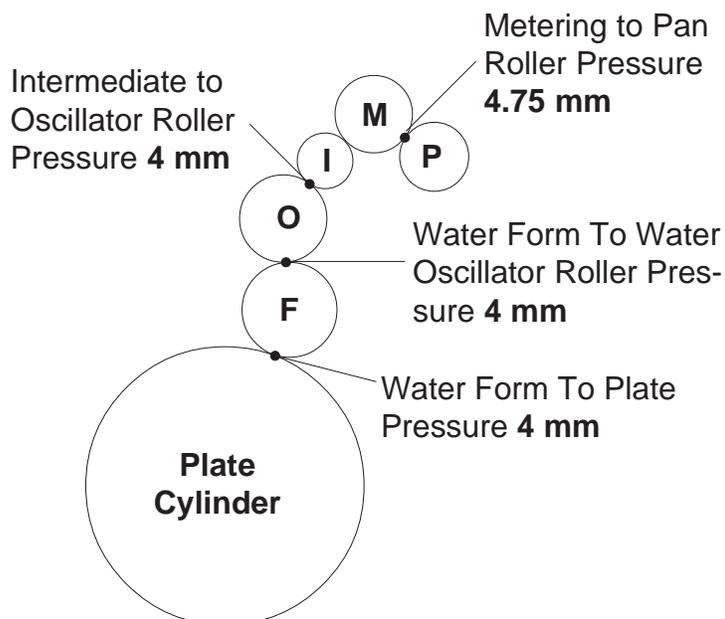
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## **SAFETY INFORMATION**

**For your safety, do not disengage or remove any guards from the Crestline® Dampener. The dampener contains some inward rotating roller nips that can cause injury if left unguarded.**

# GENERAL INFORMATION

## BASIC CONFIGURATION OF CRESTLINE® AND ROLLER PRESSURES



## REQUIRED TOOLS

|                                  |                        |
|----------------------------------|------------------------|
| 2.5MM Allen Wrench               | 22MM Open End Wrench   |
| 4MM Allen Wrench                 | 24MM Open End Wrench   |
| 5MM Allen Wrench                 | 3/16"(5MM) Punch       |
| 6MM Allen Wrench                 | 1/4"(6MM) Punch        |
| 8MM Allen Wrench                 | Hammer                 |
| 8MM Open End Wrench              | Snap Ring Pliers       |
| 13MM Open End Wrench             | Standard Pliers        |
| 17MM Open End Wrench (or socket) | Flat Head Screwdriver  |
| 19MM Open End Wrench             | Phillips Screw Driver  |
|                                  | Gear Puller (Optional) |

## TERMINOLOGY

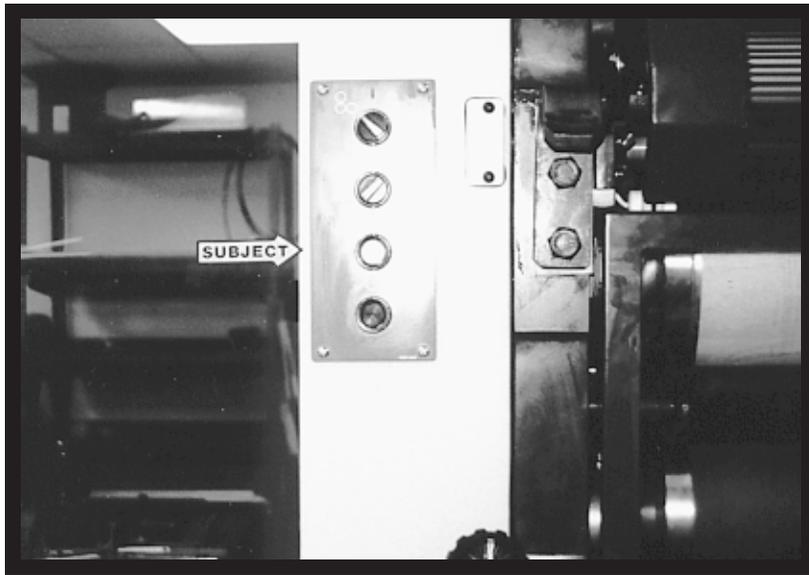
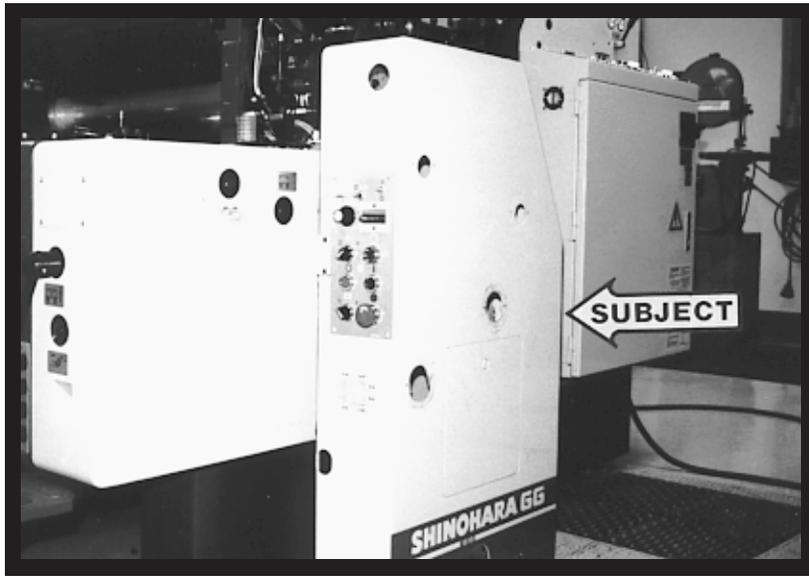
|      |   |                     |
|------|---|---------------------|
| OPS  | = | Operator's Side     |
| NOPS | = | Non Operator's Side |

## TECHNICAL ASSISTANCE

For technical assistance during the installation, please contact:

**Accel Graphic Systems**  
**11103 Indian Trail**  
**Dallas, TX 75229**  
**(972) 484-6808**  
**FAX (800) 365-6510**  
**E-MAIL [accel@dallas.net](mailto:accel@dallas.net)**  
**WEB SITE [www.accelgraphicsystems.com](http://www.accelgraphicsystems.com)**

Crestline is covered by U.S. Patents and patent pending.



# DISASSEMBLY

1

Disconnect power supply from press. At OPS, remove all knobs and levers, as well as the steel trim rings, from upper section of the press. Remove all cap screws securing the side cover to the press frame and lift cover from press. It can be placed on the floor beside the press as shown and it will not be necessary to disconnect the control panel wiring harness.

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2

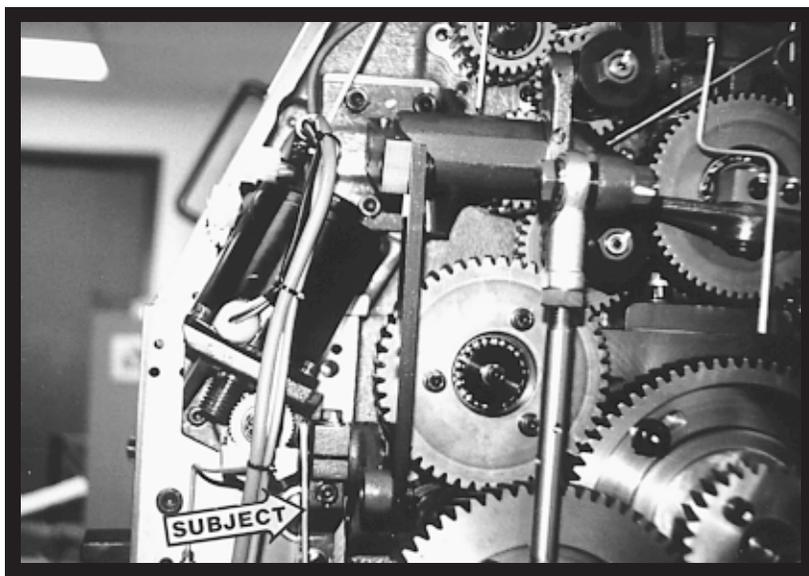
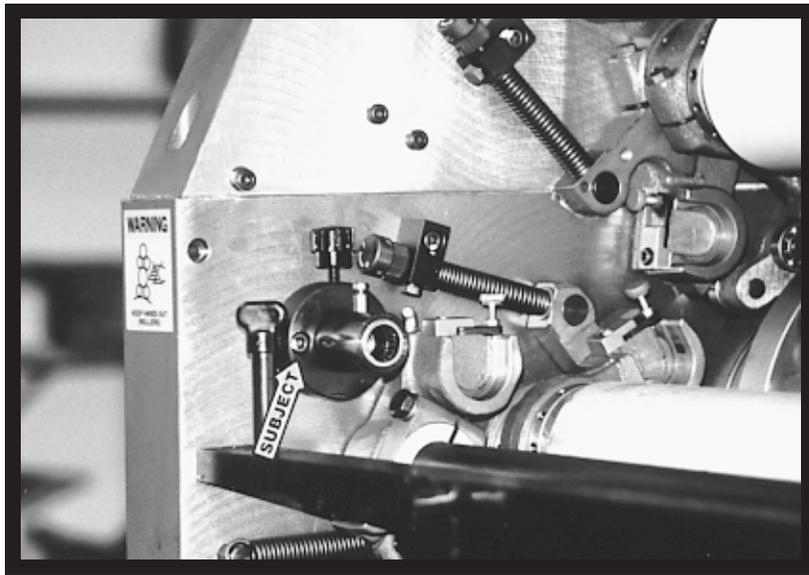
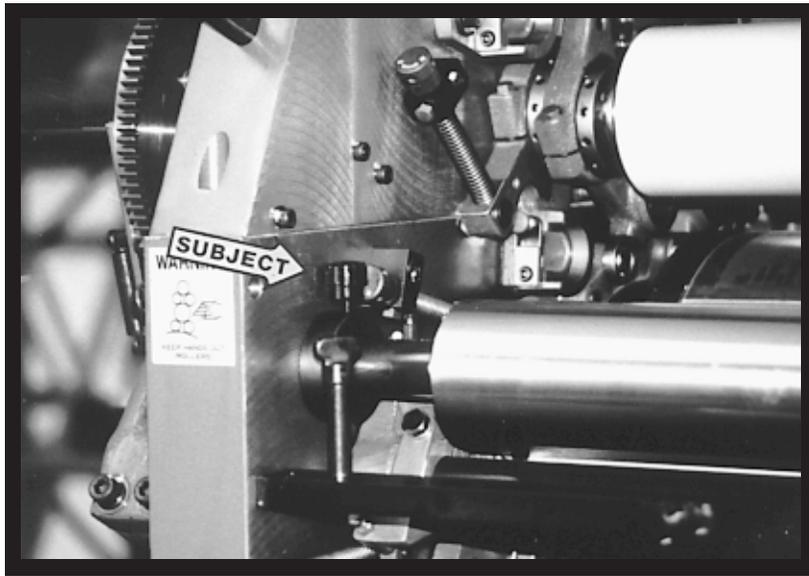
At NOPS, the control panel (subject arrow) must be disconnected prior to removing the side cover from the press. Remove the four Phillips head screws securing the panel to the side cover, pull panel out, and unplug the harness. There will also be a conduit nut and plate which fastens the wiring harness to the press cover. Remove these and save for re-installation. Now, remove the cap screws securing the cover to the press and lift off the cover. It is helpful at this point to temporarily reconnect the control panel to the wiring harness to jog the press as needed until the installation is complete.

---

3

Remove water pan and disconnect all hoses. Also, remove the water form rollers and the ductor roller from the original dampener.

5



## DISASSEMBLY

**4**

Remove pan roller by loosening knurled knob at OPS (subject arrow) and pushing bearing sleeve outward and free of the pan roller journal. Roller may then be lifted out of the press.

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**5**

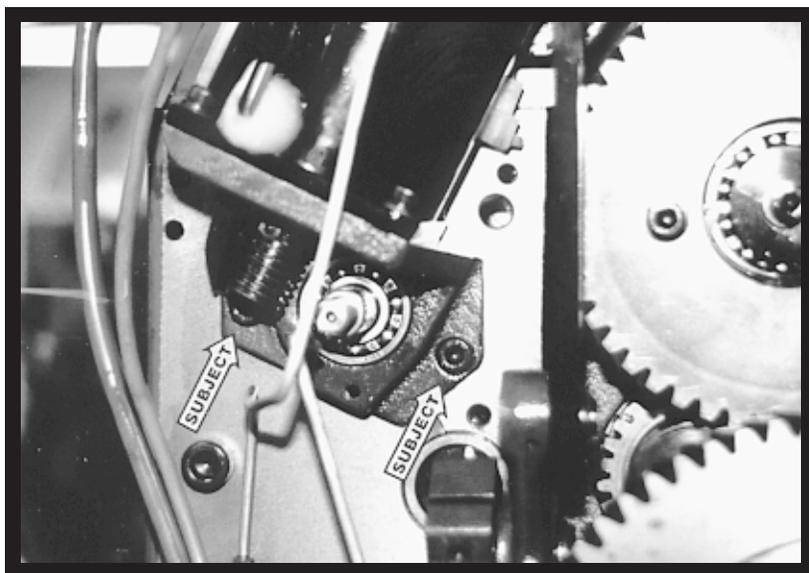
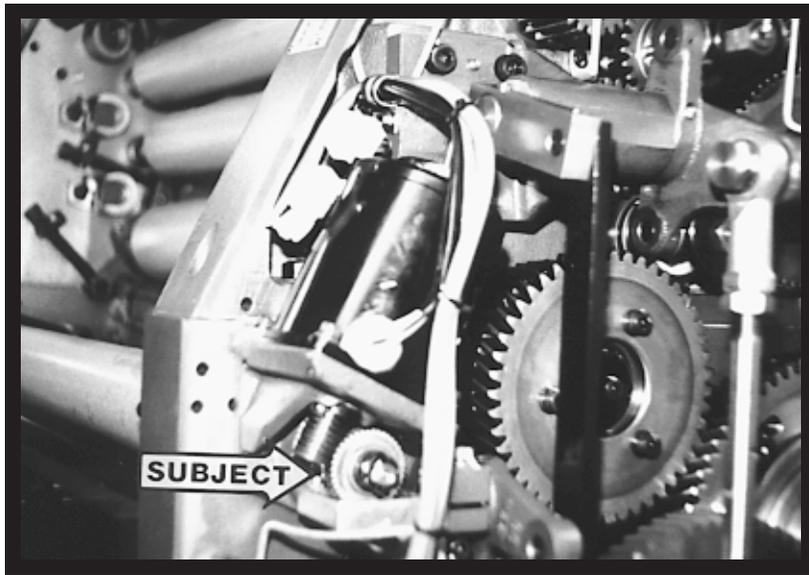
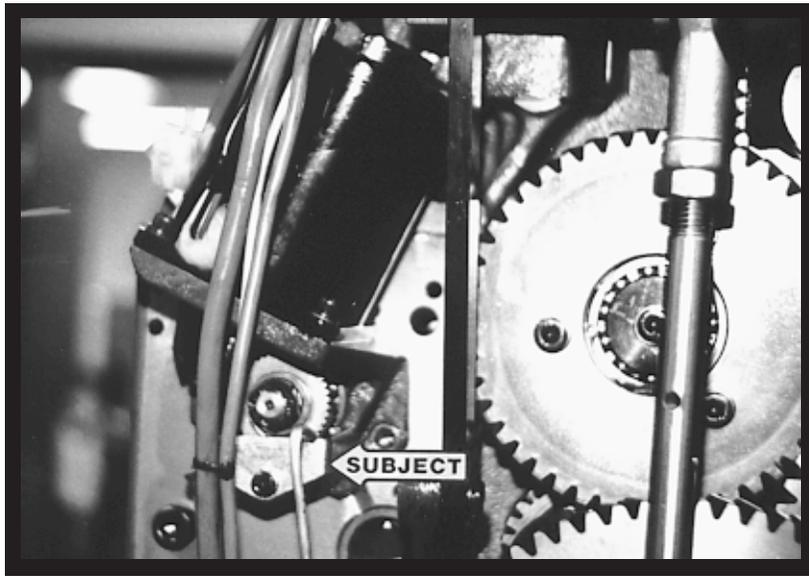
After pan roller is removed, remove OPS pan roller bearing sleeve assembly from press by removing the two cap screws (subject arrows).

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**6**

At NOPS, loosen cap screws securing the oscillator mechanism (subject arrow) and let mechanism drop down and out of the way of the pan roller drive gear.

**7**



## DISASSEMBLY

7

Remove oil bath beneath pan roller gear (subject arrow).

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8

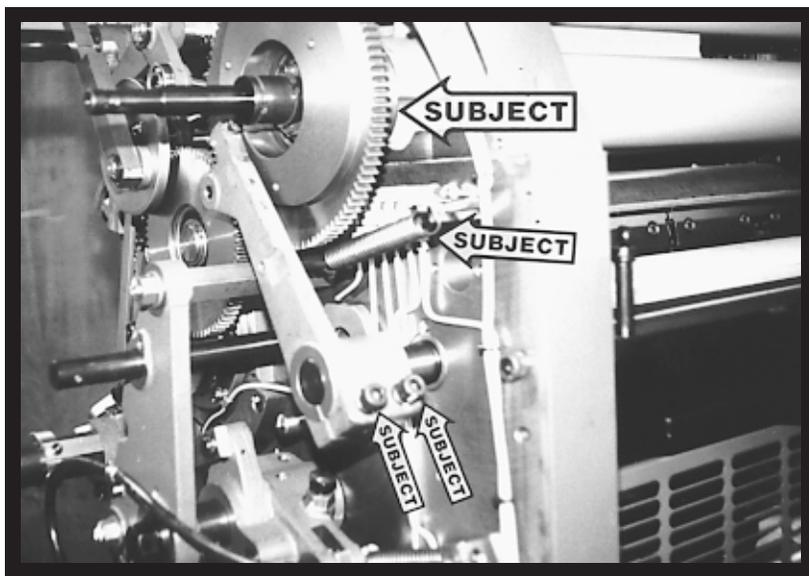
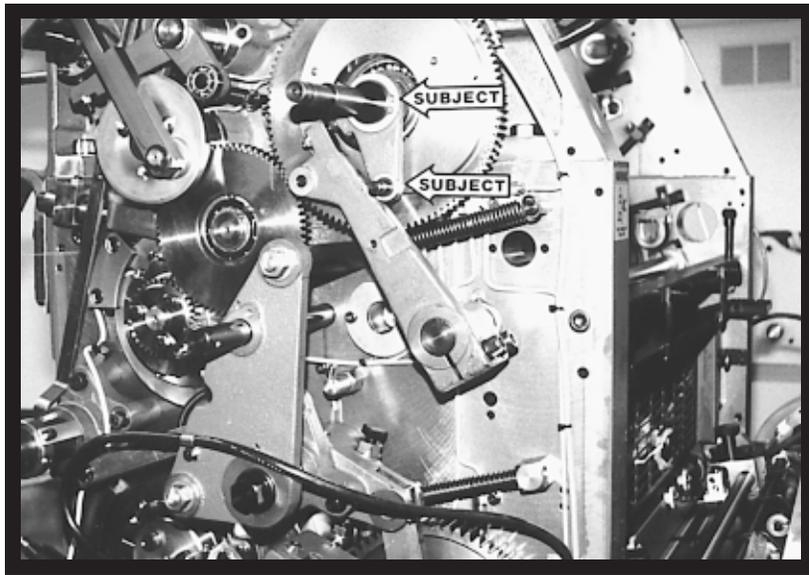
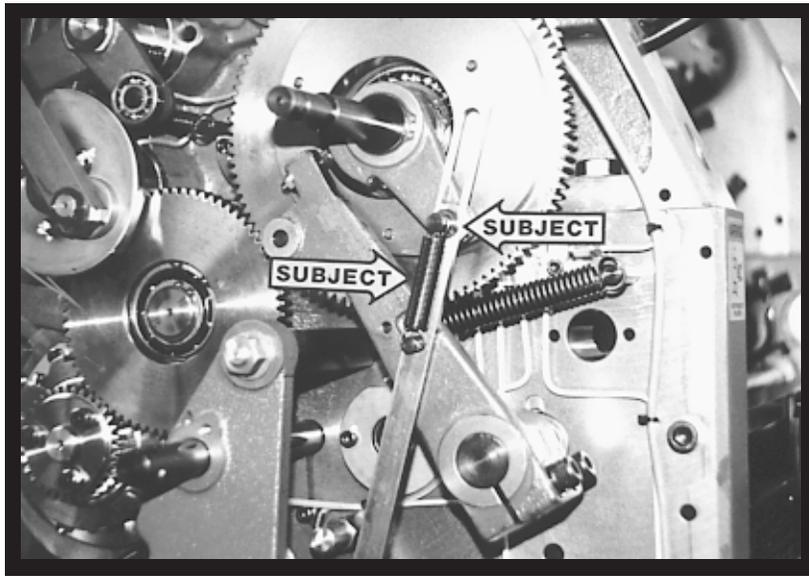
Remove cotter pin, nut and gear (subject arrows) from the end of the pan roller drive shaft.

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9

Disconnect wiring harness from pan roller motor. Remove two cap screws (subject arrows) that secure the motor to the press frame and lift motor off of the press.

9



**10**

At OPS, remove spring (left subject arrow) and snap rings (right subject arrow) from the link arm. Remove the washers that were behind snap rings and pull off link arm.

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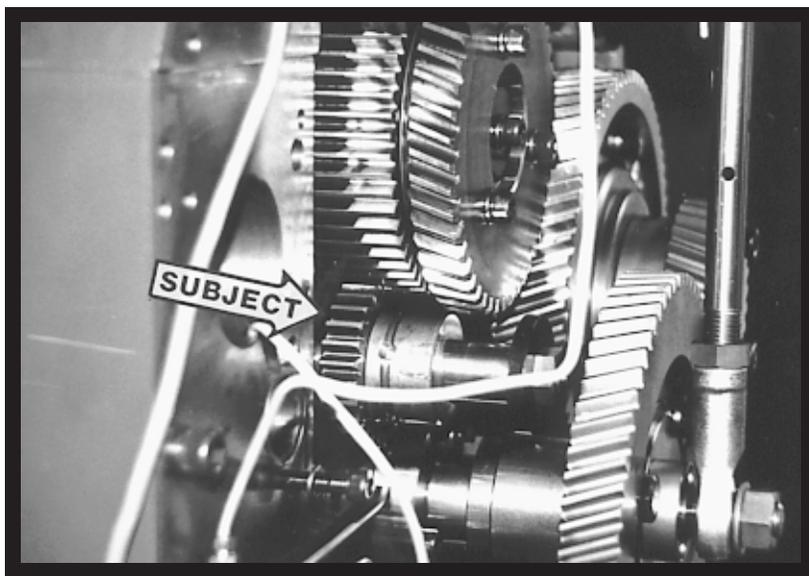
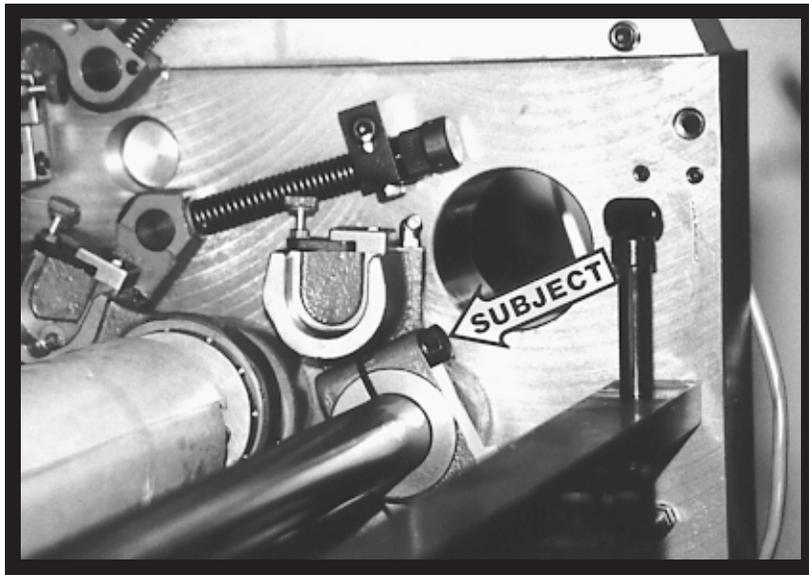
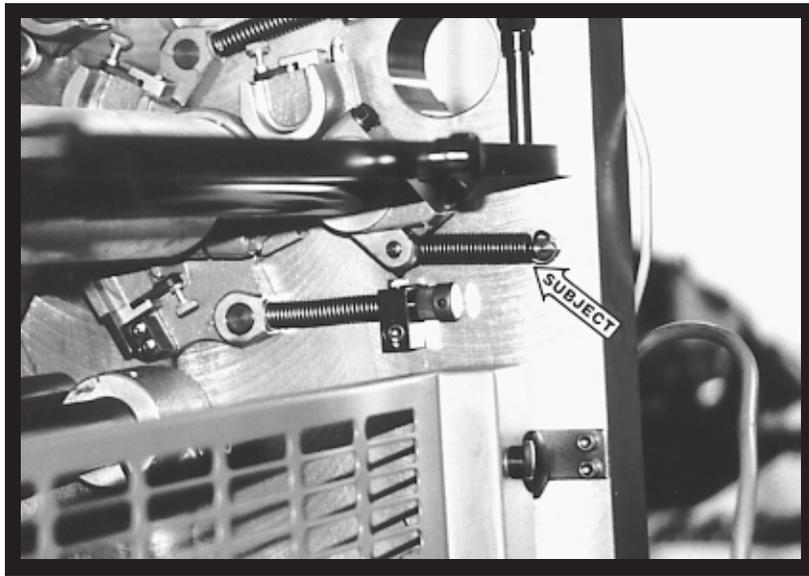
**11**

At OPS, remove large snap ring (upper subject arrow) and ductor linkage (lower subject arrow) which is attached to large gear.

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**12**

At OPS, remove extension spring (middle subject arrow). Loosen large cap screws in ductor drive arm (lower subject arrow) and remove arm from ductor shaft. It may help to take a large flat head screw driver and place it in the "split" of the ductor arm and pry apart slightly. After ductor arm is removed, remove the snap rings from the gear shaft and pull off gear (upper subject arrow).



**13**

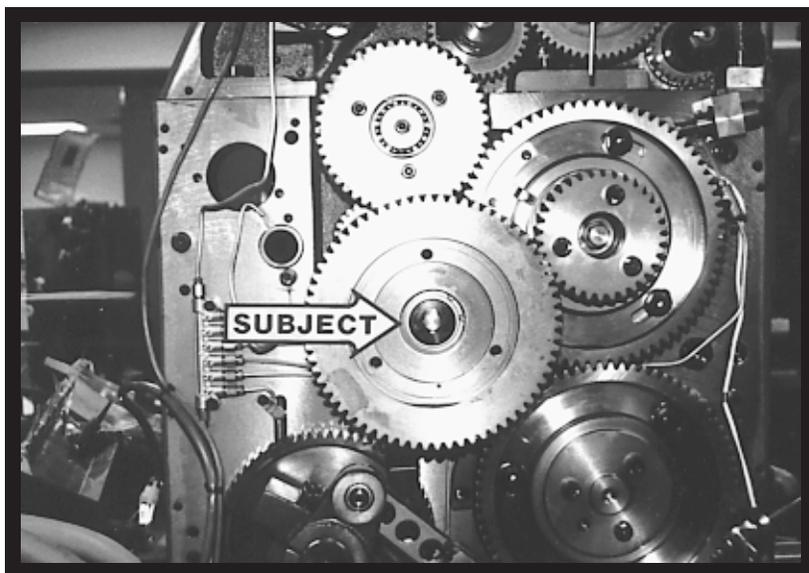
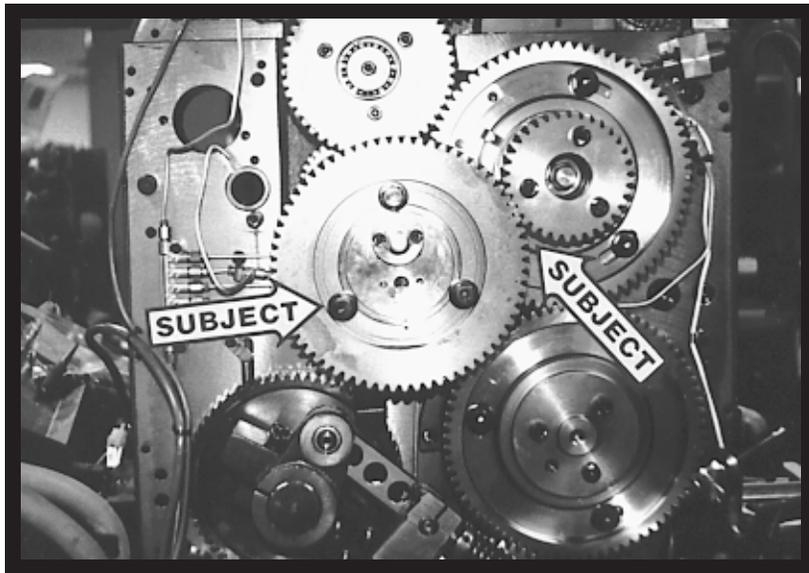
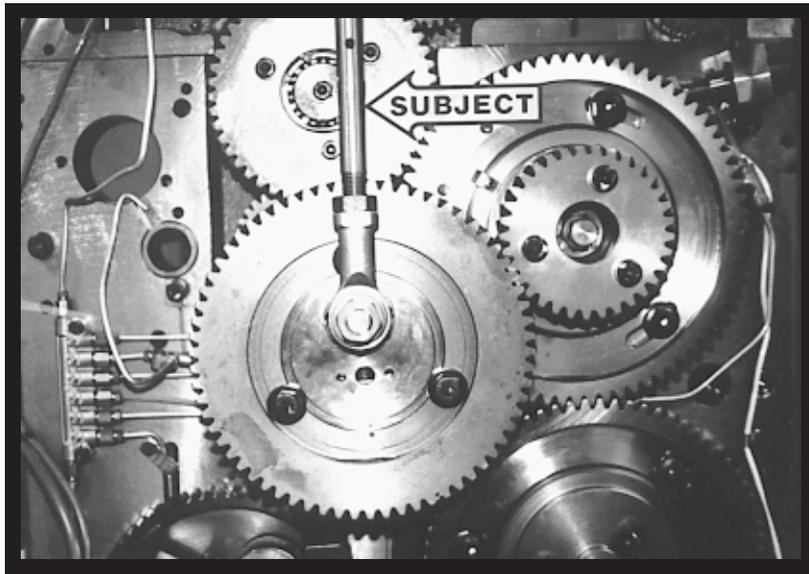
Inside the press frames at OPS & NOPS locate extension spring connected to ductor roller carriage and press frame (subject arrow) Disconnect the springs from the press frames.

**14**

At OPS and NOPS, loosen bolt in ductor roller carriage that clamps it to ductor shaft (subject arrow). Grasp the ductor shaft from outside OPS frame and pull out of press. The ductor roller carriages will slide off end of shaft as it is pulled from the press.

**15**

At NOPS, locate gear at end of water oscillator (subject arrow) and with a small flat blade screw driver, remove the wire retainer ring from the hub of gear. Exposed will be a taper pin securing the gear to the oscillator journal. Temporarily reconnect the power supply and jog the press until, when viewed from outside NOPS, the small end of the taper pin is at about 10 O'clock. Stop the press, disconnect power supply, and do not move it again until instructed.



**16**

Remove oscillator control arm (subject arrow) from large gear. It is secured with a large nut and washer at each end. Save these parts for re-installation.

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**17**

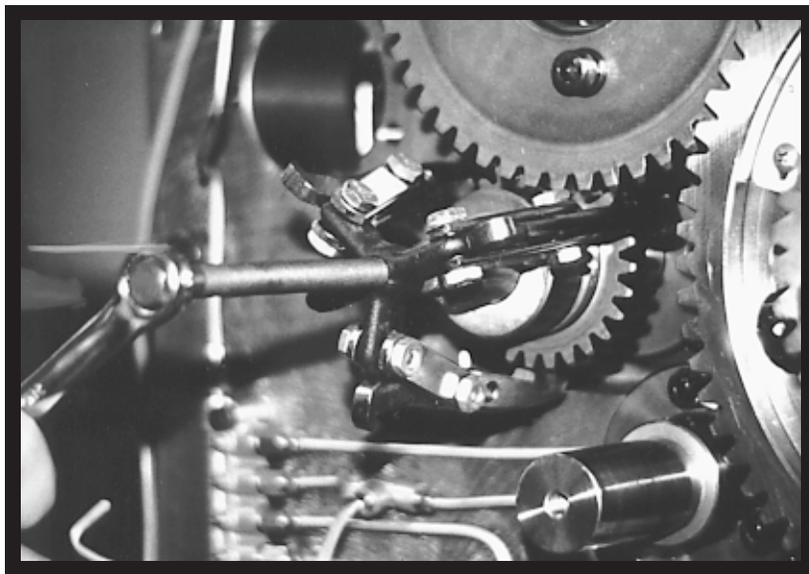
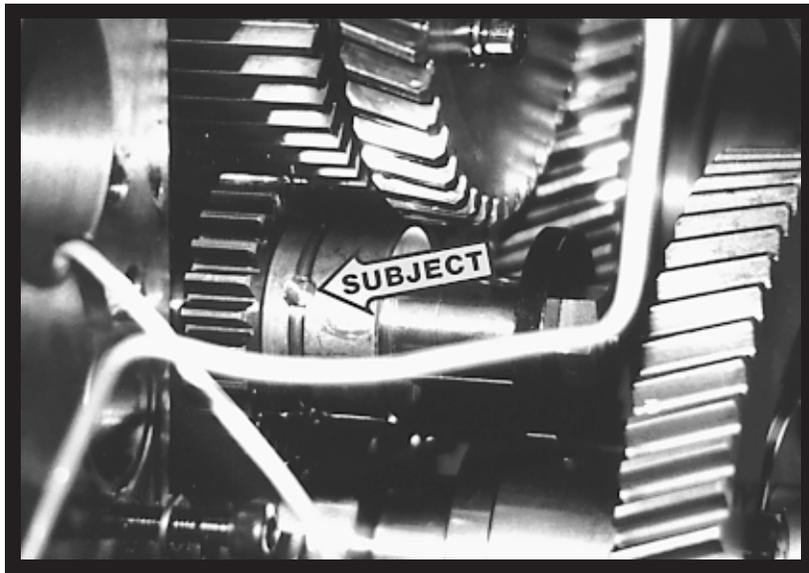
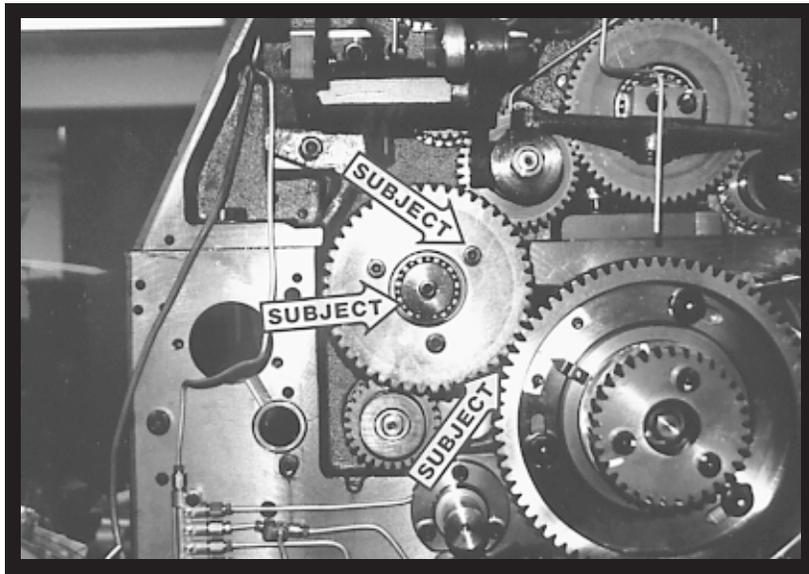
Locate the large gear in photo and place a timing mark between this gear and the smaller gear with which it meshes (right subject arrow). Paint or liquid paper works great. Remove the three hex head bolts (a 17mm socket is helpful here) and lift out center piece of the gear (left subject arrow) Save bolts and center piece for re-installation.

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**18**

On the gear from last step, remove cap screw and large washer (subject arrow) from center of gear and pull gear off. Save these pieces for re-installation.

**15**



**19**

Just above gear previously removed is a smaller helical gear connected to the face of a spur gear. As before, place timing marks between this gear and the gear with which it meshes (lower subject arrow). Remove the three cap screws (upper subject arrow) around the gear and the cap screw and washer from the center of the gear (middle subject arrow). You can now pull both this gear off as well as the spur gear that was behind it. A spacer which fits between the gears will also come off. Save all of these pieces for re-installation.

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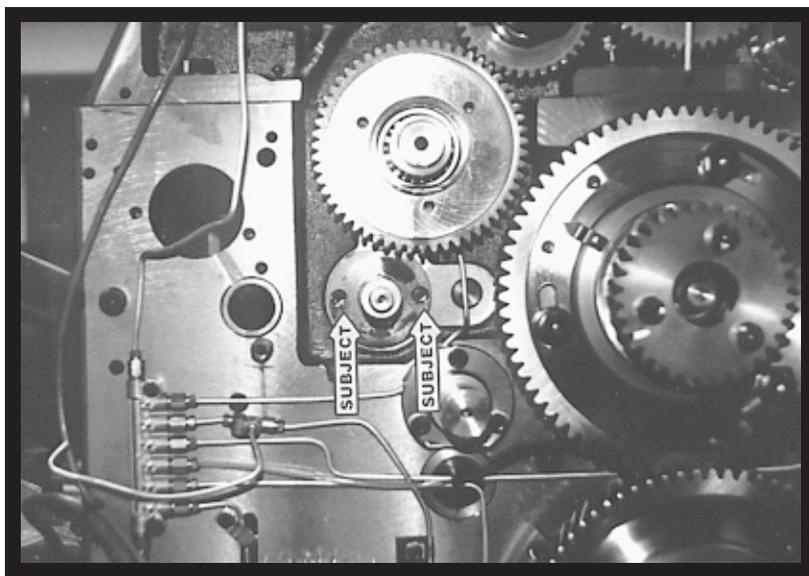
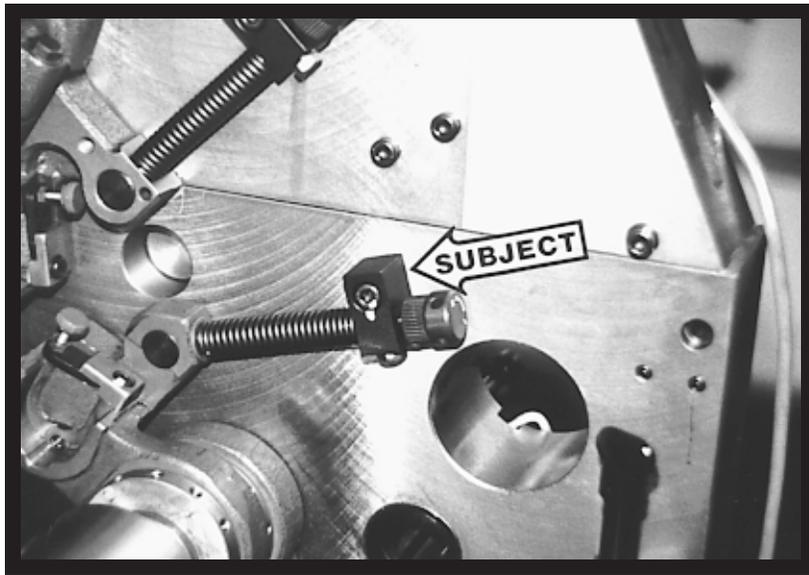
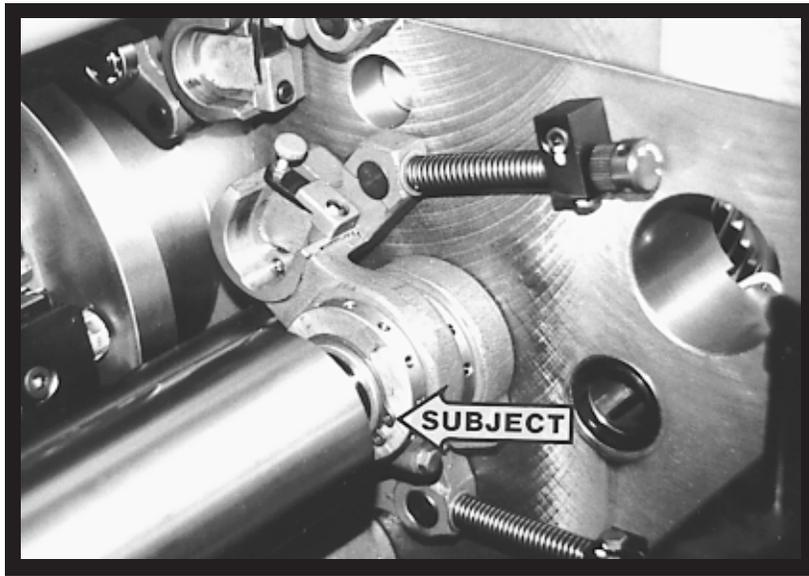
**20**

Observe again the gear on the end of the oscillator journal. Using a 1/4" blunt punch, drive the pin out of the gear (subject arrow). Some pins are very tight and may need to be drilled out. If so, center punch the pin and with a 5/32" drill bit, slowly drill through the pin. Once the drill bit breaks through the other side, the pin should be easily driven out. After the pin is out, also remove the set screw from the gear hub.

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**21**

Remove the nut and large washer from the end of the oscillator journal. The nut is left hand thread and must be turned clockwise to loosen. You may now remove the gear from the end of the oscillator journal. Sometimes this gear may still be tight even though the pin and set screw is removed, and, therefore, will require a gear puller to remove.



**22**

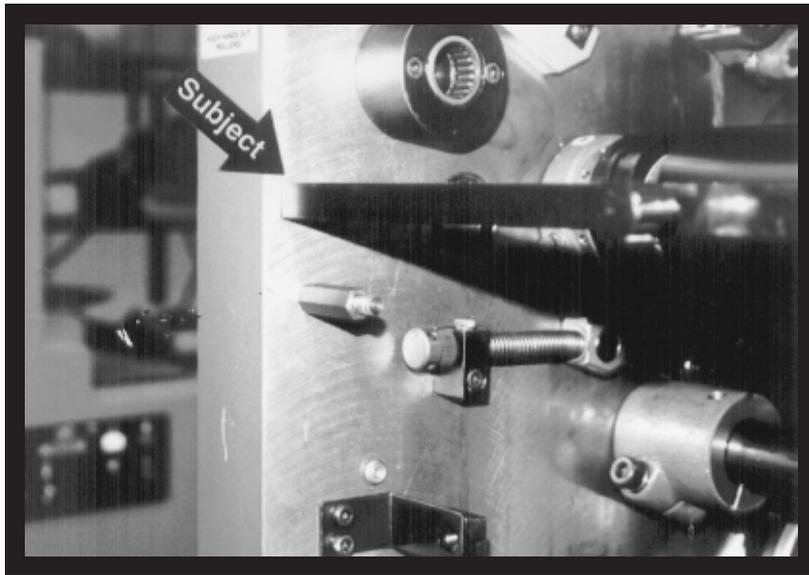
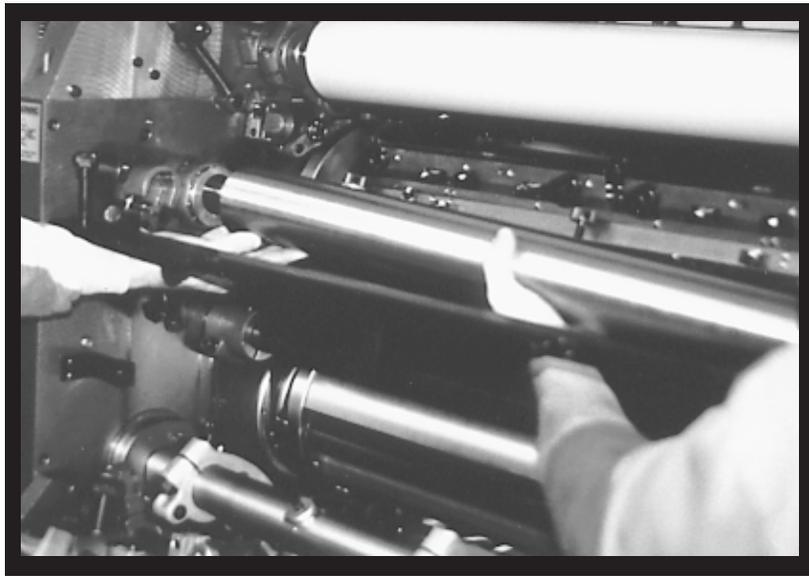
On the inside of the press frames, locate the large external snap ring at OPS and NOPS oscillator housing and disconnect (subject arrow).

**23**

On the inside of the press frames, locate the two water form adjustment mechanisms at OPS and NOPS (subject arrow). They are secured to the press frames with one cap screw each. Remove this screw on all four adjustment mechanisms then push the water form carriages toward the middle of the press until they slide off the oscillator housing. At this point, the snap rings and carriages will hang loosely on the oscillator journals. Save two of the cap screws for re-installation.

**24**

At OPS and NOPS, remove the two cap screws (subject arrow) from the oscillator housing and pull housing out. The NOPS housing can be completely removed but the OPS housing can only be pulled out until it hits a large plate. Save for re-installation.



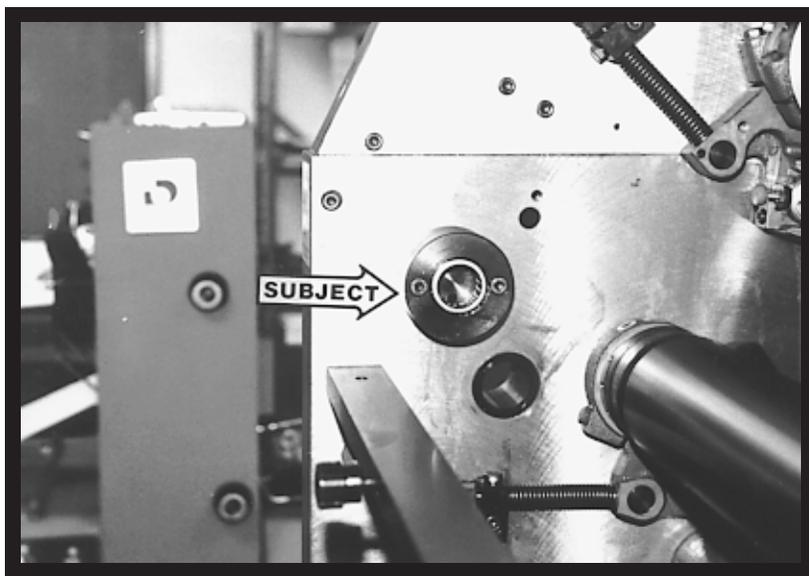
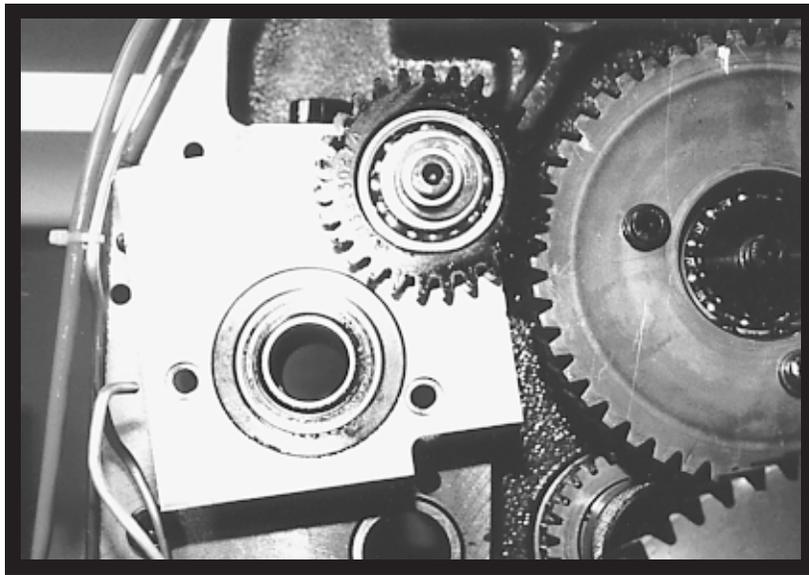
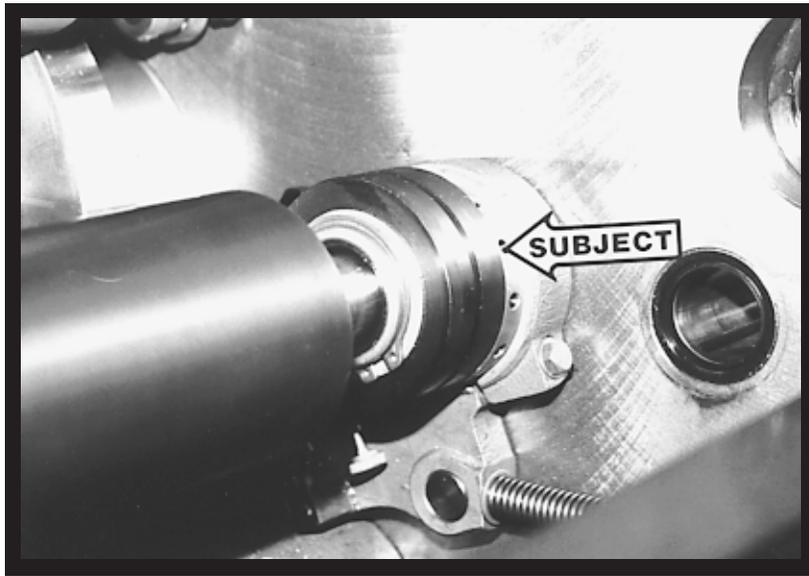
**25**

Push oscillator all the way toward NOPS. The OPS journal should then clear the press frame and the roller can be lifted out as shown. Once the roller is out of the press, slip off the water form hangers and snap rings. Save for re-installation the outer form hangers and snap rings. (The inner form hangers will not be re-used). It may be helpful to mark the outer form roller hangers as to OPS or NOPS.

**26**

Remove the tie bar from the press as indicated by the subject arrow in the photo. Save the bolts for installation of a provided new tie bar in a later step.

**YOU ARE NOW READY TO INSTALL THE CRESTLINE®.**



# INSTALLATION

**1**

Install new oscillator roller provided by repeating disassembly steps 15 - 25 in reverse order with the following exceptions:

A. A pulley (subject arrow) is used in place of the original inner form roller hangers removed earlier.

B. Do not re-connect oscillator mechanism at NOPS at this time (this was removed in disassembly step 6). Remember, when re-installing gears to match up all timing marks. Also, it is advisable to leave the protective paper cover on this roller when installing to prevent and nicks or scratches. Remove paper after roller is installed.

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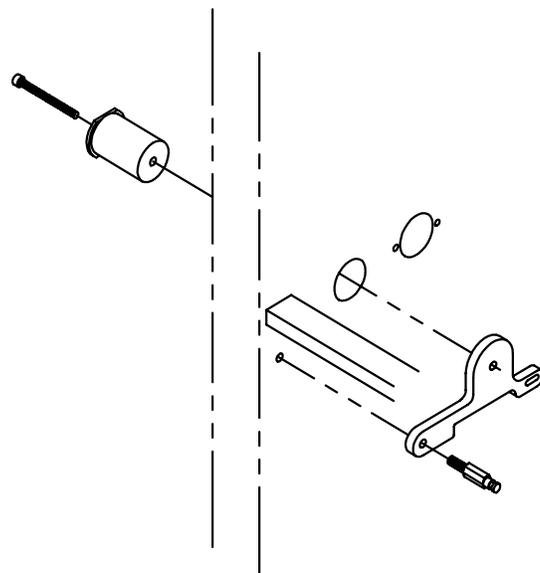
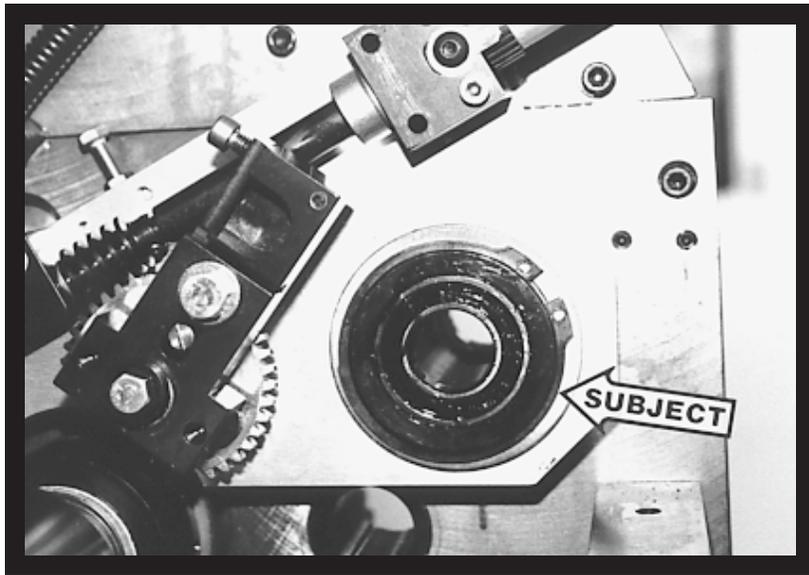
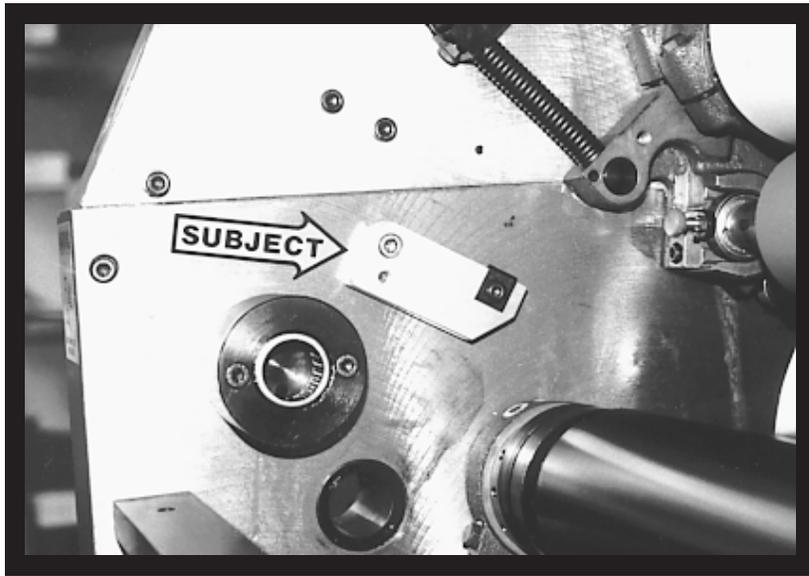
**2**

At NOPS install pan roller bearing housing and secure with 2 provided shallow head cap screws. There is a spur gear attached to this plate, be sure to check the mesh of this gear to the press gear before fully tightening bolts. (Photo shows housing and plate only partially installed).

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**3**

At the OPS, install pan roller bearing housing (subject arrow) as shown with 2 cap screws provided.



4

At the OPS & NOPS, install pressure adjustment block (subject arrow) by slipping spool through hole in press frame and securing block with cap screws provided.

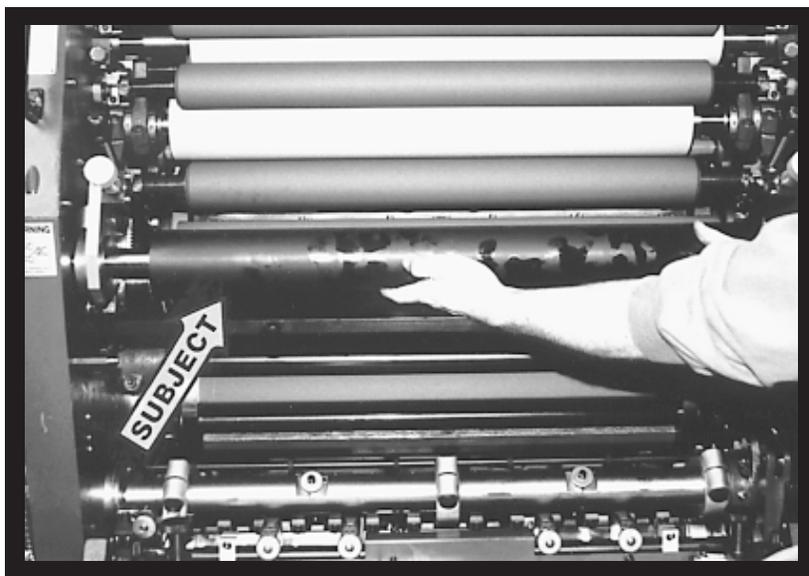
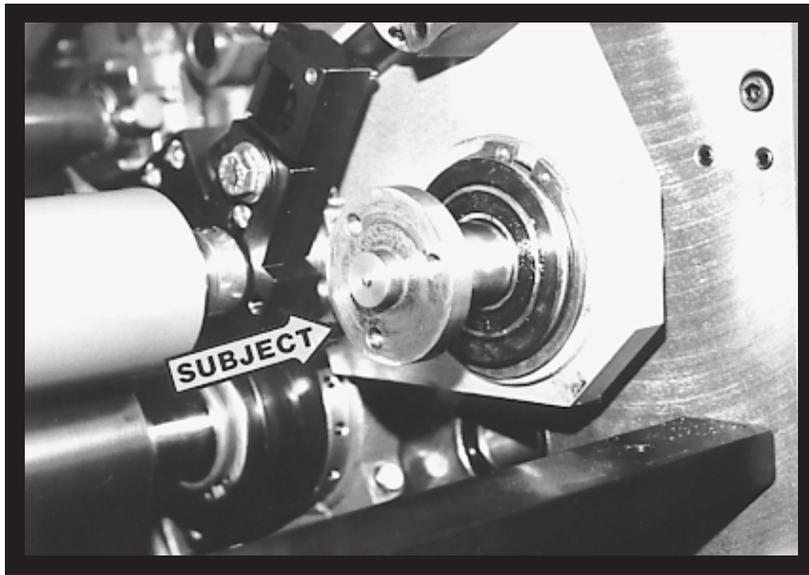
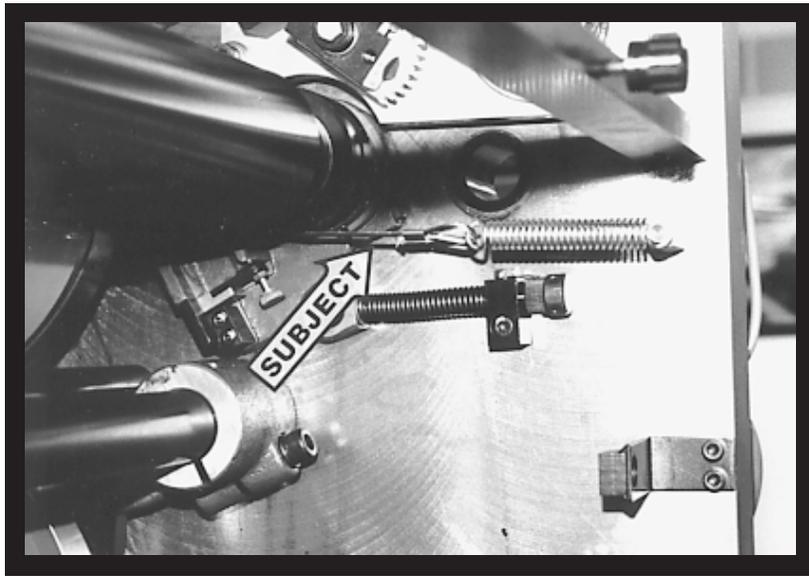
5

At OPS & NOPS install dampener side frame assembly as shown. Slip large bronze bushing in the dampener frame over the pan roller bearing housing (subject arrow). Slip large bronze washer over the pan roller bearing housing and up against the dampener frame. Secure the frame with the large snap ring provided. Check for end play in frame. If necessary, remove snap ring and add shim washers provided to tighten fit.

**NOTE: Actual frame assembly may differ slightly than photo.**

6

Install the OPS rider roller mounting bracket as shown in the diagram. The large mounting spool fits in the dutor shaft hole. The spring stud goes through the mounting brackets and threads into a press frame hole directly under the tie bar. Repeat this procedure for the NOPS.



**7**

At OPS & NOPS, route cable (subject arrow) attached to dampener side frame around the groove in the pulley installed earlier and attach spring to the stud installed in previous step.

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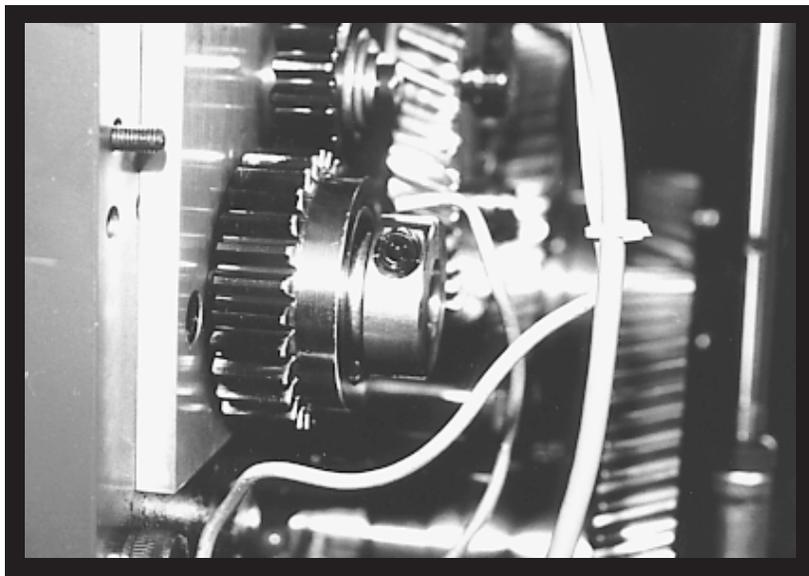
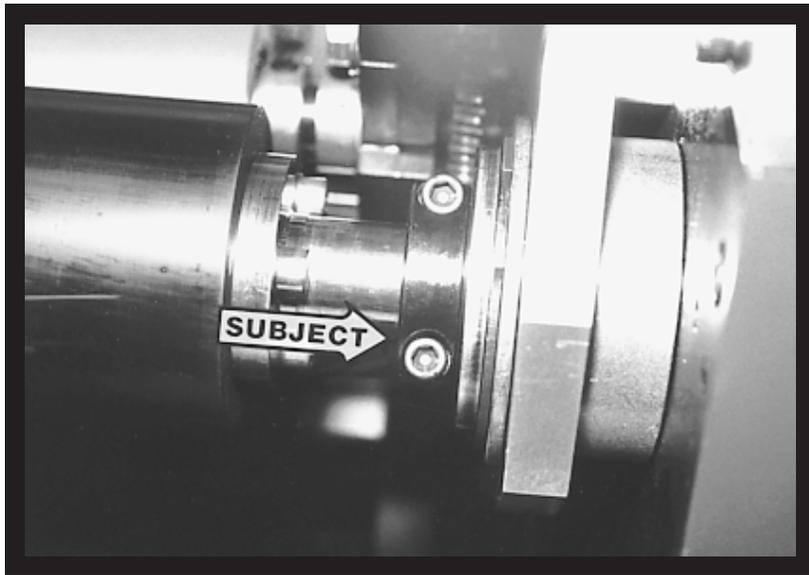
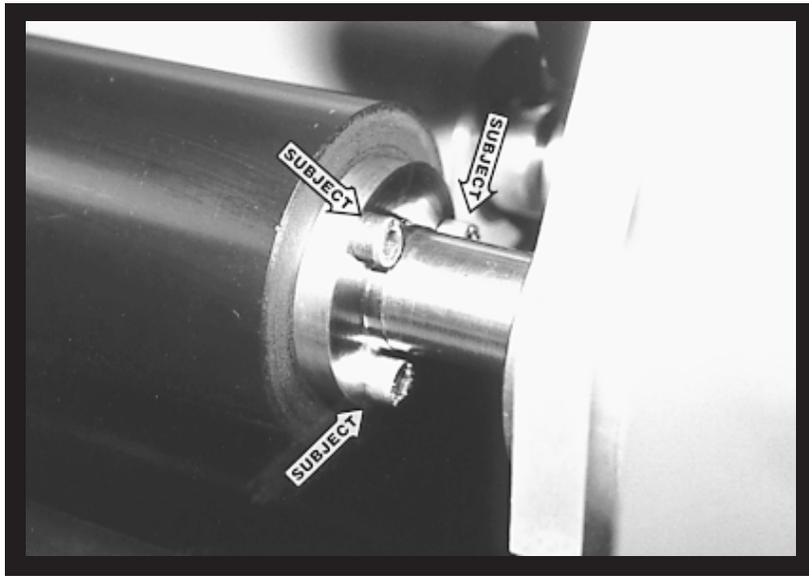
**8**

At NOPS, slip the provided bronze thrust washer (not visible in photo) over pan roller drive shaft (subject arrow), and slip pan roller drive shaft through bearing housing and push toward outside as far as it will go.

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**9**

Install pan roller (subject arrow) by lowering it into the press and inserting into the OPS bearing housing as far as it will go. While supporting the roller with one hand, push the drive shaft at NOPS until it engages the end of the pan roller.



**10**

Rotate the drive shaft until the 3 holes in the drive shaft line up with the 3 holes on the end of the pan roller. Using 3 6mm hex bolts and lock washers provided (subject arrow), secure the drive shaft to the pan roller.

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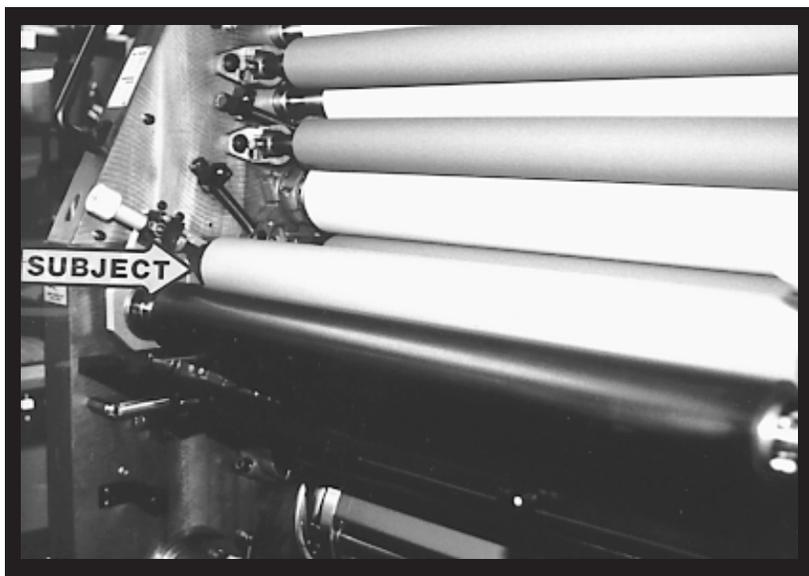
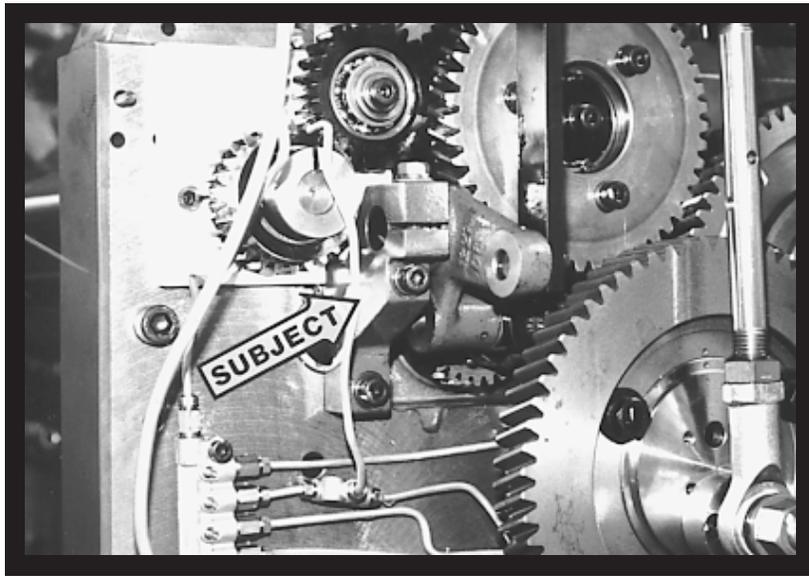
**11**

Make sure the pan roller is pushed all the way toward OPS. Take provided split set collar (subject arrow) and place around pan roller drive shaft at NOPS. Push collar and washer all the way against bearing housing and tighten both screws securely. Spin pan roller by hand and check for freedom of movement.

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**12**

At outside NOPS at the end of pan roller drive shaft place the following parts in this sequence: (1) Washer, (2) Shaft key, (3) gear with hub pointing out, (4) Washer, (5) Shaft Collar. Reform oil line originally routed to ductor shaft to oil gear just installed.



**13**

Reinstall oscillator mechanism (subject arrow) at this time. You may need to shift oscillator roller to one side or the other so that ball bearing on oscillating arm engages properly.

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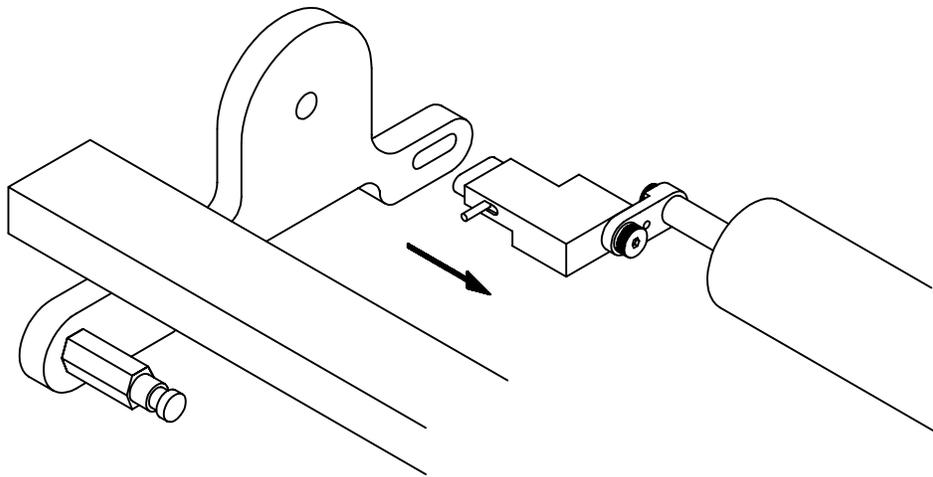
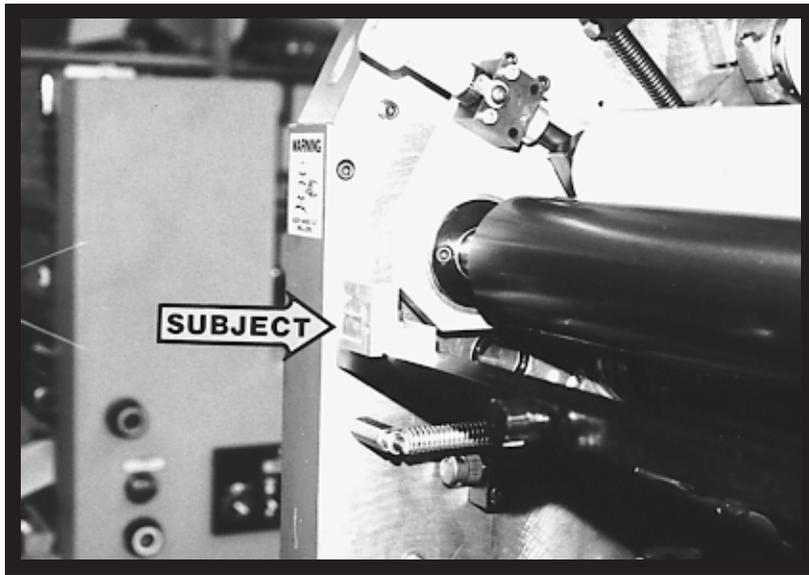
**14**

Install intermediate roller into the lower hangers on the dampener side frames. Install the caps and secure with the provided hardware.

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**15**

Install metering roller (subject arrow) into upper handgers on the dampener side frames. It is held in place with 2 caps and 2 6mm cap screws.



**16**

Install new water form roller provided (subject arrow). It installs exactly as the original.

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**17**

Using the original bolts (saved from disassembly step 26) install the provided tie bar in the same position as the original. Note how the water pan blocks (subject arrow) are facing away from the press.

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**18**

Install the rider roller assembly by sliding the pins (both OPS and NOPS) in toward the center of the press as indicated in the diagram. Place the roller in a position so that the pins will fit into the slots in the rider roller mounting brackets. Make sure that both pins are fully seated in the slots.



**19**

Temporarily re-install the dampener activation handle and move lever from off to on several times. The dampener frames should pivot up and down easily without binding.

**20**

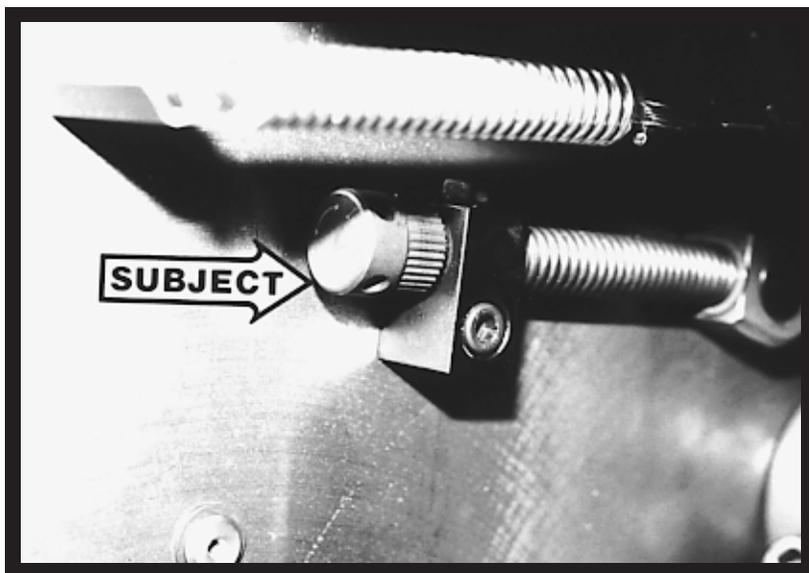
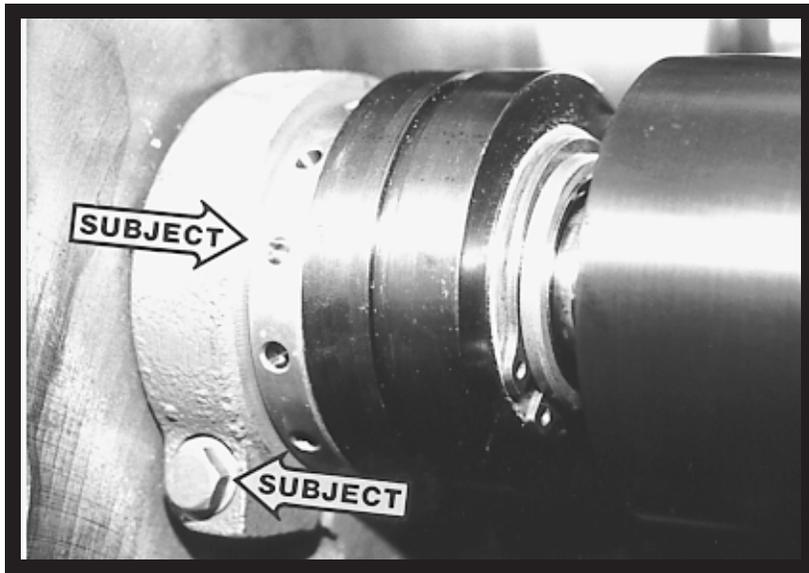
Temporarily re-connect power supply and jog press to check the following:

- A. No oil lines rubbing moving parts
- B. New gears mesh properly
- C. No abnormal noises or binding
- D. Oscillator moves freely from side to side.
- E. In "OFF" position, the top three rollers in the dampener should turn **ONLY** when press is jogged **FORWARD**. They should remain idle when the press is jogged backward.

**21**

Disconnect power supply, remove dampener activation lever, and re-install press side covers. Refer to disassembly steps 1 and 2 if necessary.

**YOU ARE NOW READY TO MAKE FINAL ADJUSTMENTS**



# FINAL ADJUSTMENTS

1

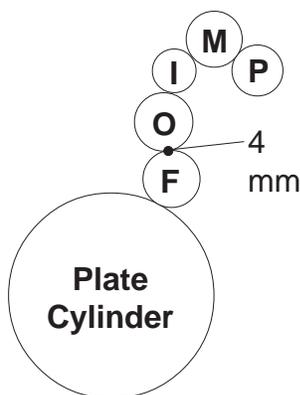
## INK UP DAMPENER

Make sure dampener is in the "OFF" position. Apply a small amount of ink on the dampener oscillator roller only. Turn on press and run for 30 - 40 seconds and allow the ink to mill. Only the oscillator and form roller will ink up at this time.

2

## OSCILLATOR TO FORM ROLLER PRESSURE

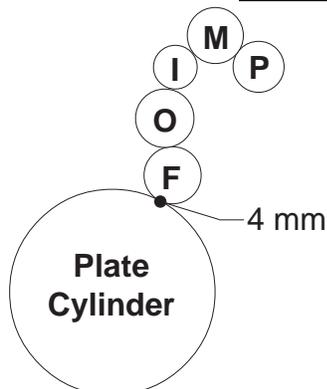
After press sits still for 15-20 seconds, jog press forward while looking at form roller. A stripe or bead line should appear on the form roller which was created by the oscillator, and this stripe should be 4 mm (5/32") wide. To adjust, loosen the hex head bolt (lower subject arrow) on the form roller hanger and, with a pin wrench, turn the bronze eccentric bushing (upper subject arrow). The direction of the turn (increase or decrease) will be shown on a decal on the side frame of the press near the dampener. Continue this process until the proper stripe is obtained.

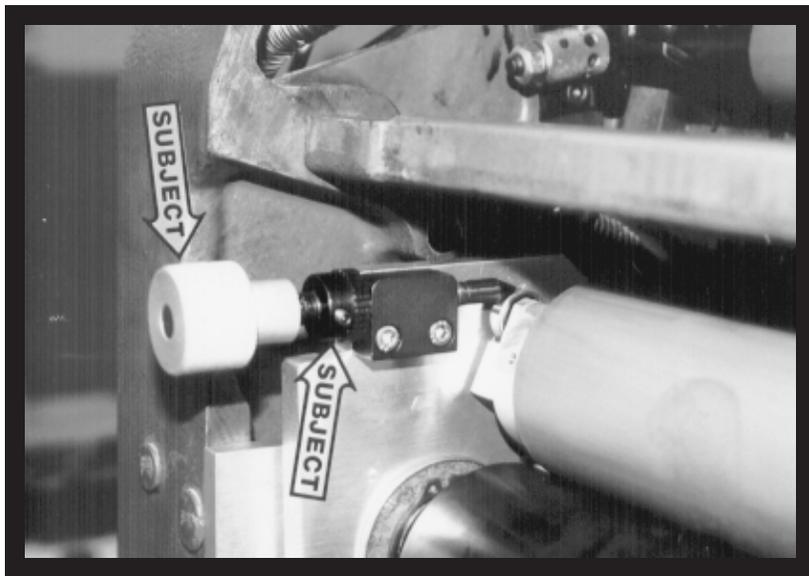
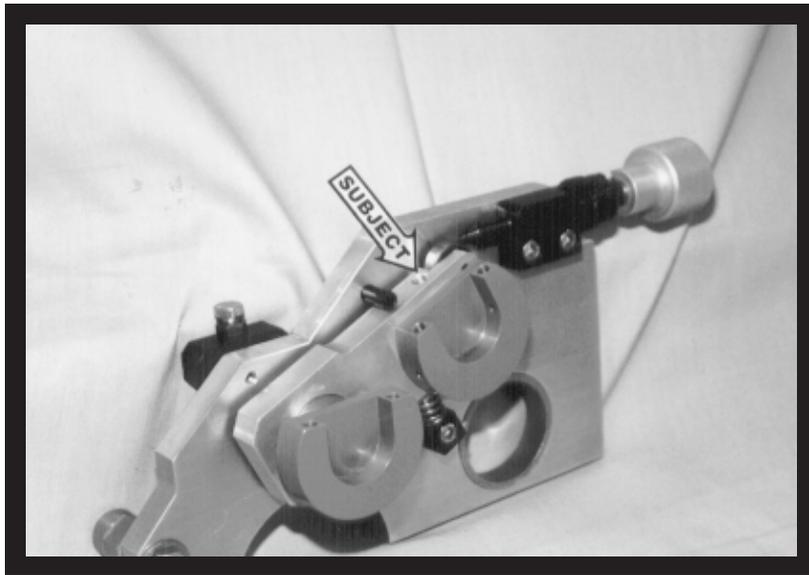
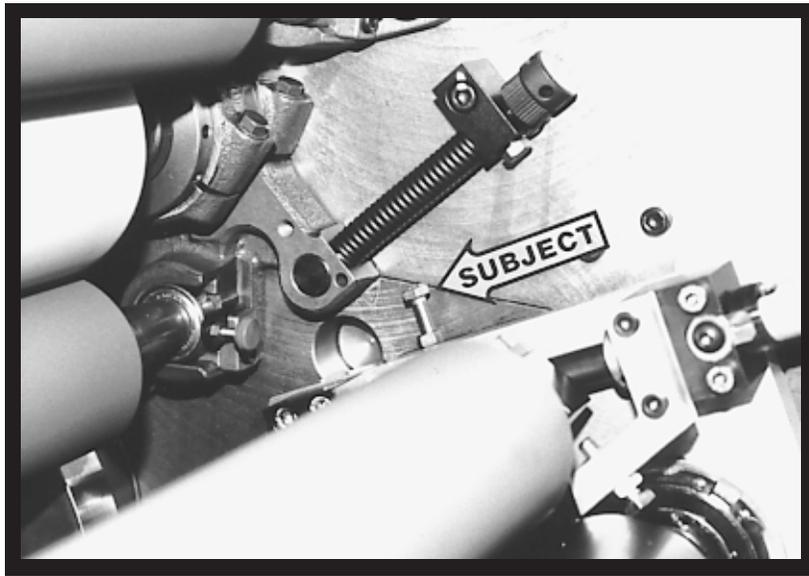


3

## FORM ROLLER TO PLATE CYLINDER PRESSURE

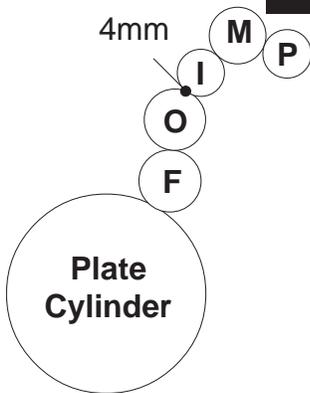
With a metal plate and proper packing mounted to the plate cylinder, drop the dampener form roller down to the plate and back to off again. This will leave a strip on the plate, and this stripe should be 4 mm (5/32"). This stripe is adjusted exactly as the original dampener by turning the knurled knobs (subject arrow) with a pin wrench. The proper direction is imprinted in the top of each knob.





# FINAL ADJUSTMENTS

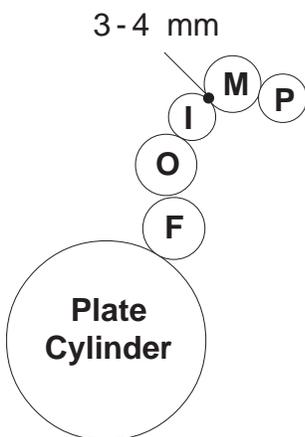
4



## INTERMEDIATE TO OSCILLATOR ROLLER PRESSURE

Temporarily remove the dampener metering roller. Drop the dampener down to the plate cylinder again and back off. In addition to the form roller contacting the plate, the intermediate roller will drop down and contact the oscillator roller. Spin the intermediate roller around by hand to reveal the stripe, which should be 4mm (5/32"). To adjust, turn the hex bolt (subject arrow) at OPS and NOPS. Turning the bolt down will decrease the stripe and vice-versa. After stripe is set, re-install the metering roller.

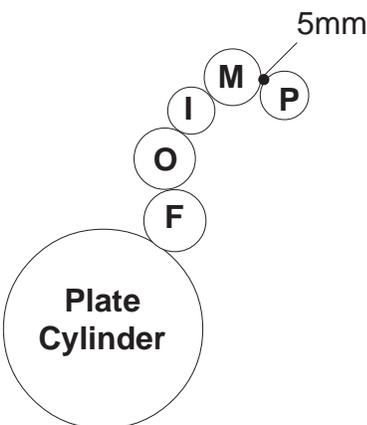
5



## METERING TO INTERMEDIATE ROLLER

With dampener guard open, place single-lever in the "DAMPEN" position and jog the press backwards. Observe the stripe between the metering and intermediate roller. It should be between 1/8"-5/32" (3mm-4mm). To adjust loosen set screw that secures the metering roller hanger and rotate hanger toward intermediate roller to increase pressure and vice-versa. Retighten set screw when complete.

6



## MAXIMUM METERING TO PAN ROLLER PRESSURE

Rotate the press forward by hand and observe the stripe between the metering and pan roller. It should be 3/16 (5mm). It is adjusted by the large black knurled knobs (upper subject arrow) attached to the top of the dampener. Turning the knobs clockwise will increase the stripe and vice-versa. After the proper stripe has been achieved, spin the ratchet wheels (they are not yet locked to the knurled knobs) until they bottom out on the black block (lower subject arrow). You may have to hold on to the knurled knob with one hand to keep it from moving while spinning down the ratchet wheel. At this point, secure the ratchet wheels to the knurled knobs by tightening the set screws (two in each ratchet wheel).

This set the maximum metering roller pressure which will be the driest setting for the dampener.

39



## FINAL ADJUSTMENTS

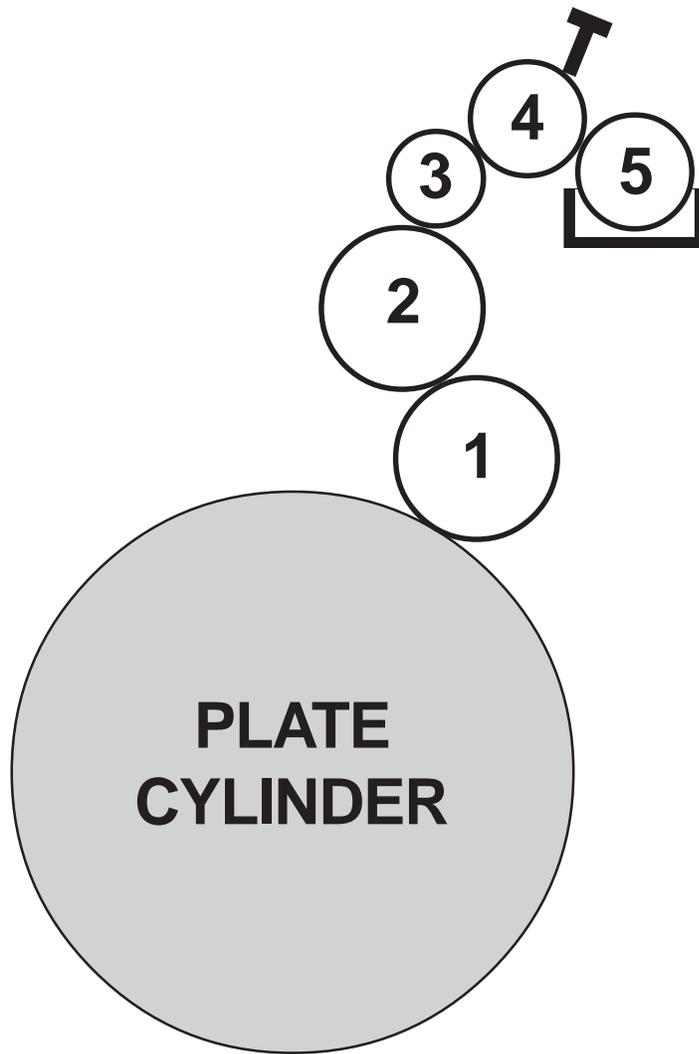
**7**

Attach feed and drain hoses to pan. Install weir over drain hole and turn on circulator pump. Slowly open supply valve until water flows into the pan. A slow steady flow is all that is required for proper circulation. Avoid feeding water too fast into the pan.

**YOU ARE NOW READY TO PRINT.**

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- 1 Water Form Roller
- 2 Water Oscillator Roller
- 3 Crestline Intermediate Roller
- 4 Crestline Metering Roller
- 5 Crestline Pan Roller

## OPERATION PANEL CONTROLS

The features of the Shinohara operating levers and electronic control panels change very little with installation of Crestline®. Probably the most major change is that the original water ductor is no longer on the press so any related controls will no longer have a function. The manual water form levers will still raise and lower the Crestline, or if press is fully electronic, the Crestline® will still sequence properly in the press's automatic modes.

## PREPARING THE DAMPENER FOR PRINTING

- A. Make sure all rollers are installed in the Crestline and the knurled metering knobs are screwed clockwise until they stop.
- B. Apply a very small amount of ink on the dampener oscillator and metering rollers. Turn on press and idle for 30 - 40 seconds to mill ink.

**OPTIONAL:** The dampener can be inked after the ink rollers are inked by turning on the press and dropping the ink and water forms to the printing plate. Since the dampener does not yet contain water, the plate will ink up solid and will therefore ink up the dampener. After a very light film of ink has covered the dampener rollers, water can then be turned on and the plate can be cleaned up by turning on the press and dropping the dampener to the plate.

- C. Attach water pan to mounting blocks and attach feed and drain hose from circulator. Close control valve, turn on pump, and slowly open control valve until a slow trickle of fountain solution flows into the pan.
- D. Place all ink and water controls in the "AUTO" mode where applicable.

## **ADJUSTING THE AMOUNT OF WATER DELIVERED TO THE PLATE**

The amount of water delivered to the printing plate is adjusted by the knurled knobs on top of the dampener. Generally speaking, you should begin all jobs with the knobs turned all the way down. This is the minimum water position for Crestline.

Should you require more on the plate, turn the knobs counter-clockwise one “click” at a time until desired water volume is achieved. Typically, when the press is running slowly such as during make-ready, the Crestline may need to be opened up one or two clicks to keep proper moisture on the plate, and, then when production printing speeds are initiated, the metering knobs can be turned back down.

## **FOUNTAIN SOLUTIONS AND ALCOHOL**

Accel recommends using the manufacturer’s instructions for mixing fountain solution. Generally, a pH factor of 4.0 to 4.5 is recommended for most metal plate solutions. Conductivity should be about 1000 - 1500 mmhos above your base water.

Alcohol is not required for the Crestline® to function properly, but will not harm the dampener if you so desire to use it, provided you keep the ratio under 15 %. Alcohol substitutes may also be used according to the manufacturer’s recommendations.

# CLEANING & MAINTENANCE

## WASHING UP THE CRESTLINE®

Generally speaking, the Crestline® must be washed up upon each color change and at the end of the day. The following procedures should be followed:

- A. Close circulator control valve, remove weir, and allow water pan to drain. If necessary, loosen pan knob at NOPS and drop pan down to aid draining. Turn off circulator pump when pan finishes draining.
- B. Make sure a metal plate is mounted to plate cylinder. Attach wash-up blade to inker, turn on press and wash inker as normal. When the inker is approximately 50% clean, drop the both the ink and water form rollers to the plate and continue washing the inker. Typically, the dampener will pick up enough solution off the plate to clean itself. Avoid applying excess wash directly to the dampener as most of it will end up in the water pan.

An optional method which will prohibit roller wash dripping into the water pan is to turn the knurled knobs on the dampener counter-clockwise until the metering roller breaks contact with the pan roller. You can then apply more wash directly to the dampener and wipe the pan roller down by hand.

- C. When all the ink and water rollers are clean, be sure to wipe the excess wash that may accumulate on the ends of the Crestline® rollers.
- D. Remove water pan and inspect for any excess wash that may have dripped from the dampener rollers. If needed, wipe the pan clean and re-mount.
- E. If this is the last wash-up of the day, spin the knurled knobs counter-clockwise until the metering roller breaks contact with the pan roller to relieve the pressure. Be sure to spin these knobs back down before beginning the next day.

# CLEANING & MAINTENANCE

## DEGLAZING THE CRESTLINE®

Periodic deglazing of water-soluble contaminants will be necessary with the Crestline . Typically, once every 2-3 weeks will be sufficient, unless you are running electrostatic plates on a daily basis whereas deglazing should be performed weekly. A 50/50 solution of household ammonia and hot water can be used for deglazing purposes. If you prefer a commercially available deglazer, avoid those containing pumice or gritty substances. Always follow deglazing with straight water and then roller wash. Accel offers a product called **COMPOUND X** that we recommend for deglazing our system. Contact your dealer or Accel for more information.

## OILING AND GREASING

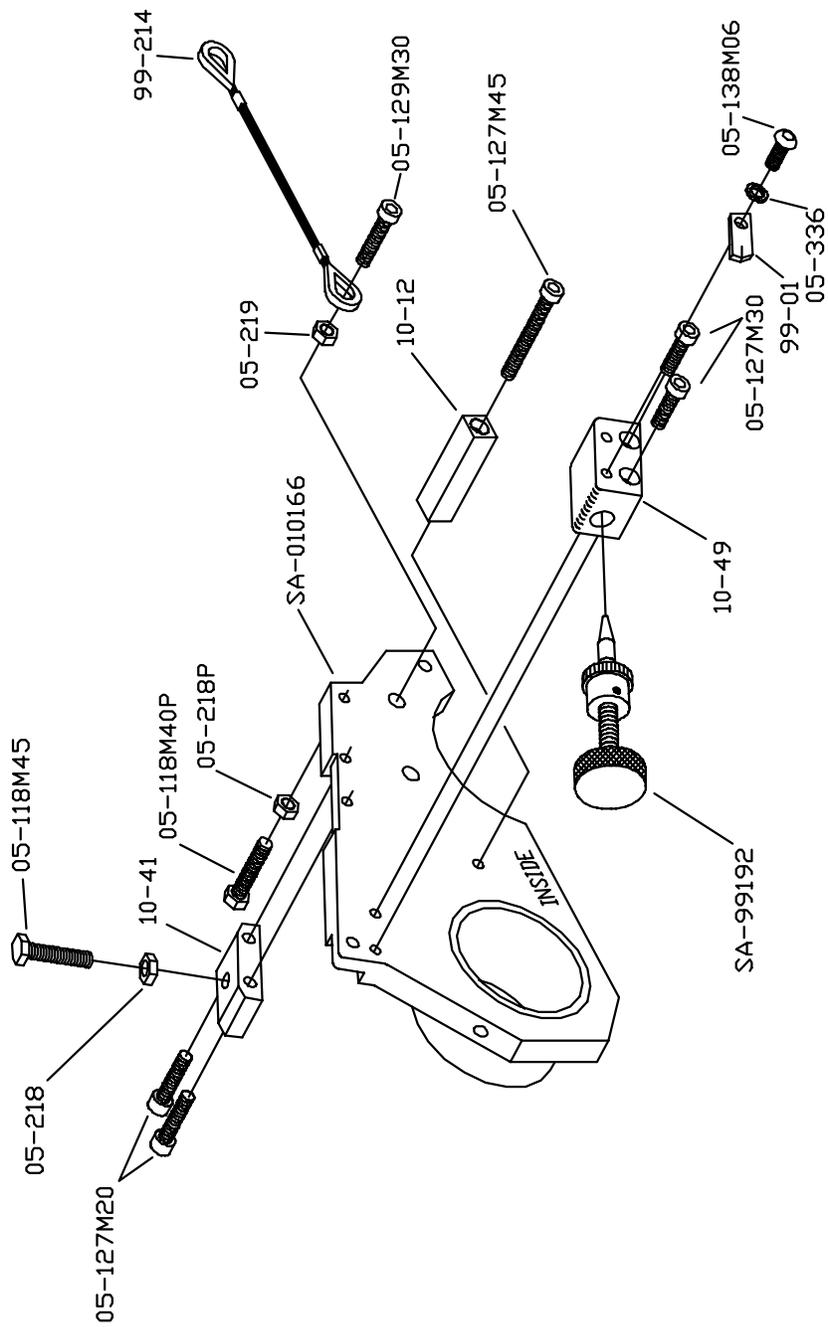
The dampener either contains maintenance-free ball bearings or will be oiled by the central lubrication system on the press.

# CLEANING & MAINTENANCE

## CRESTLINE® CLEANING & MAINTENANCE CHART

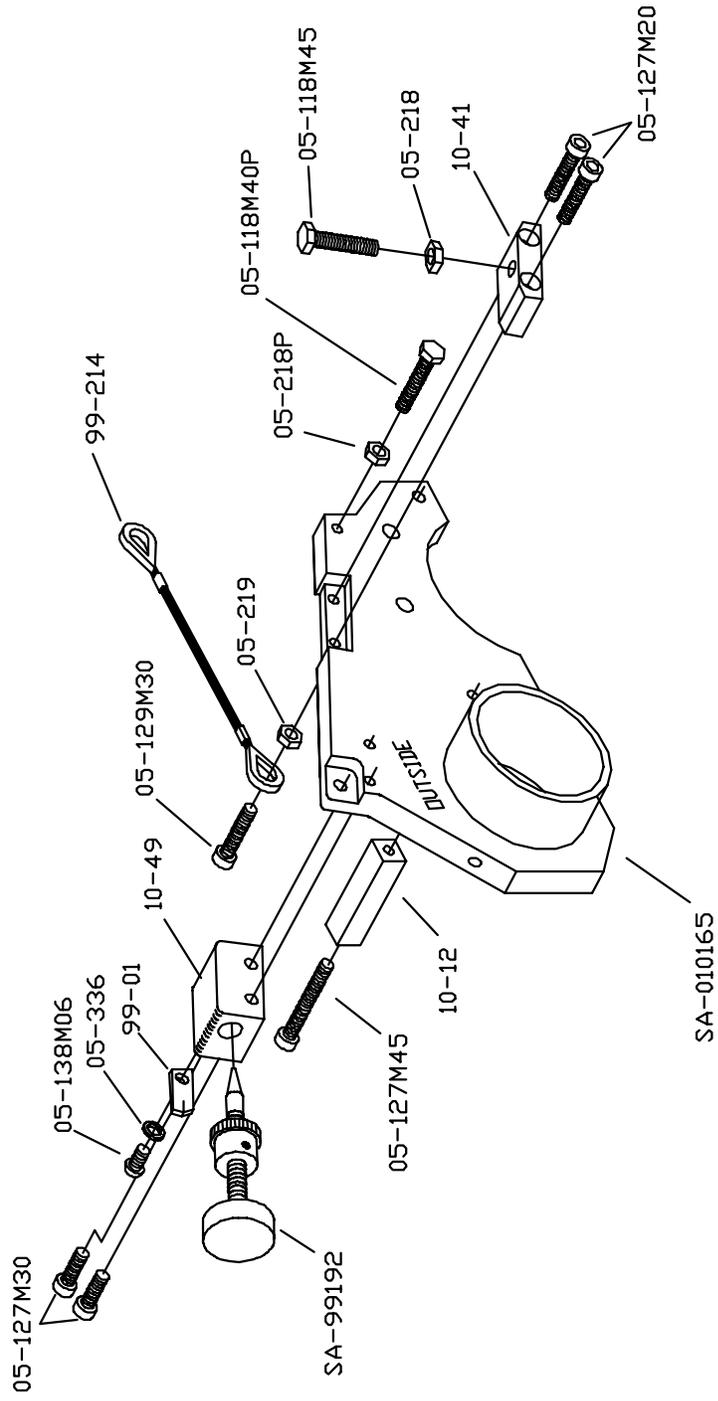
|                           | Daily | Weekly | Bi-Weekly | Monthly |
|---------------------------|-------|--------|-----------|---------|
| Wash Rollers              | ✓     |        |           |         |
| Deglaze Rollers           |       |        |           |         |
| Metal Plate Users         |       |        | ✓         |         |
| Silvermaster Plate Users  |       |        | ✓         |         |
| Electrostatic Plate Users |       | ✓      |           |         |
| Grease Gears              |       |        |           | ✓       |
| Inspect Ball Bearings     |       |        |           | ✓       |
| Check Roller Pressures    |       |        |           | ✓       |
| Check Roller Surfaces     |       |        |           | ✓       |

SIDE FRAME ASSEMBLY, DPS  
SHINHARA 65-66



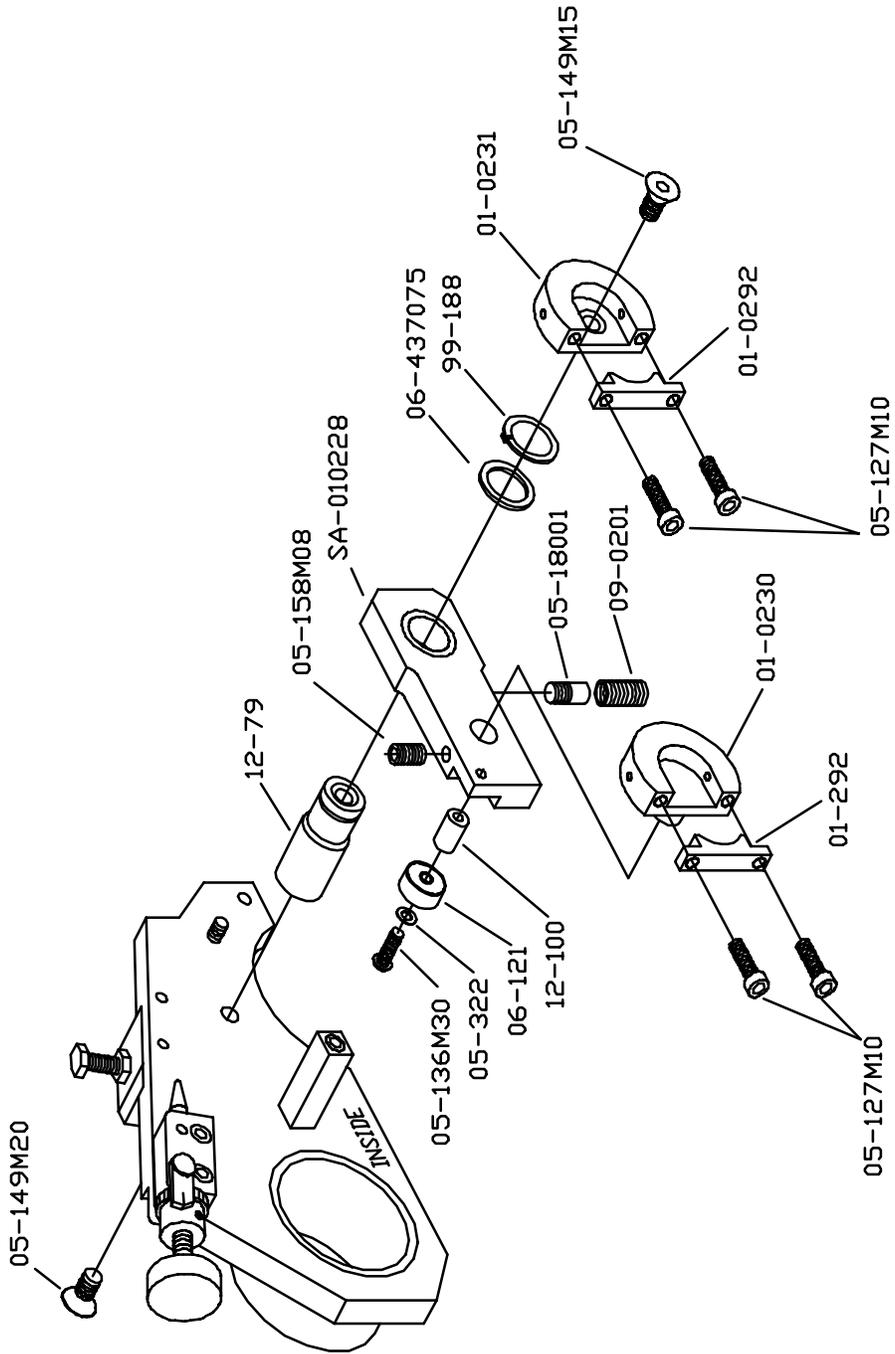
SHIN66C01, 1-15-98

SIDE FRAME ASSEMBLY, NOPS  
SHINHARA 65/66

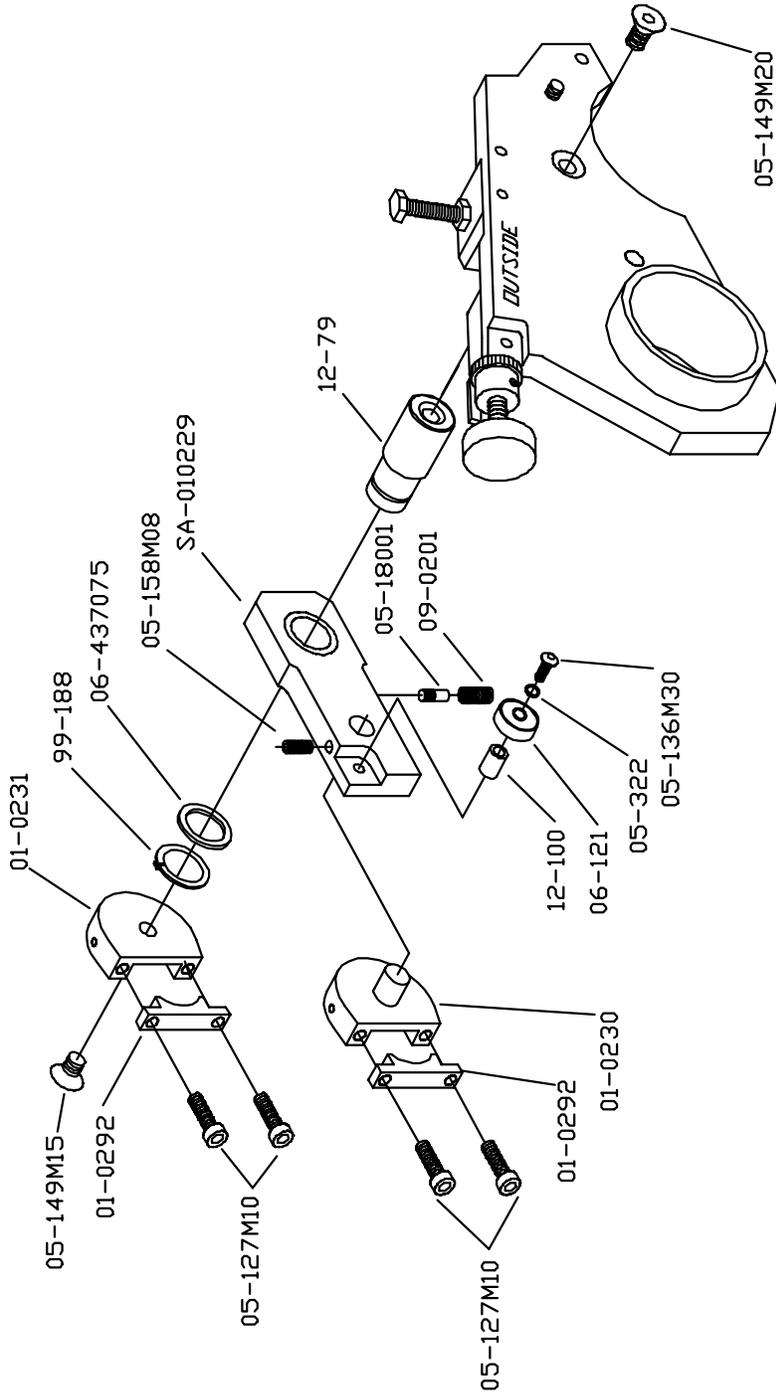


SHIN66C02, 1-15-98

METERING-INTERMEDIATE HANGER ASSEMBLY, OPS  
SHINOHARA 65/66

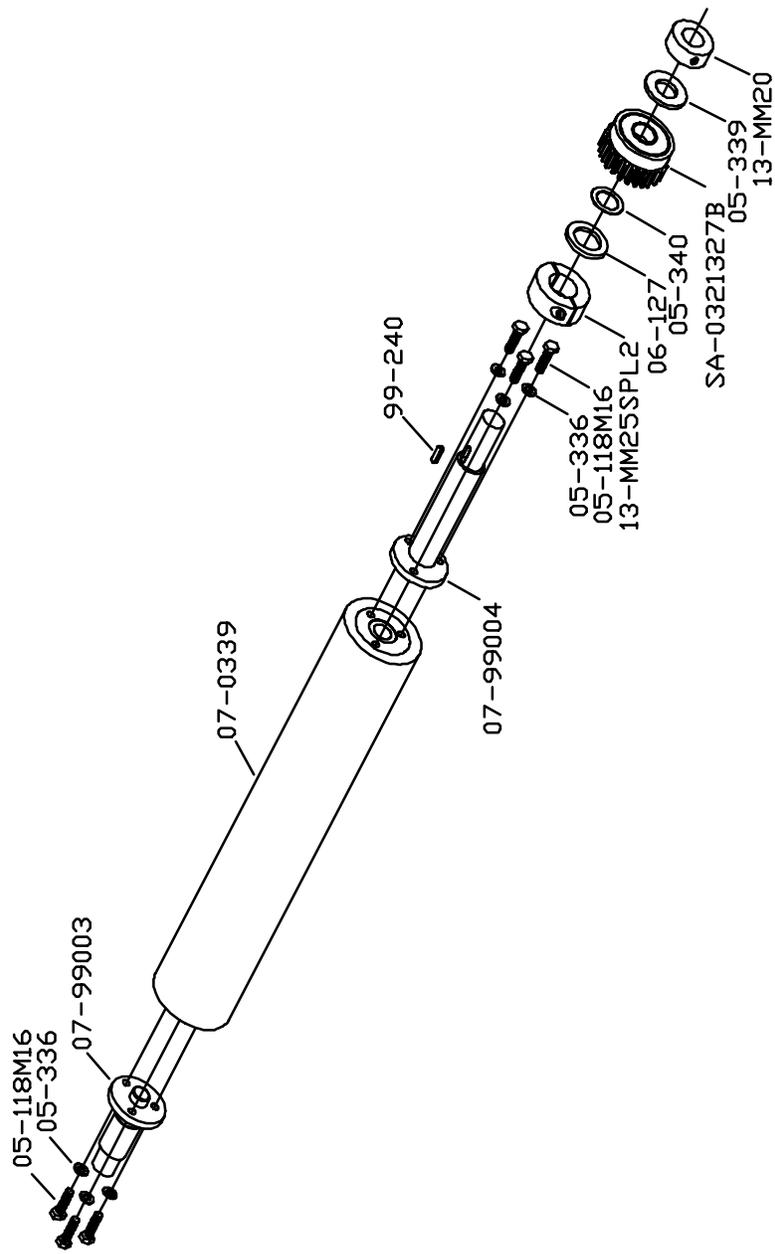


METERING-INTERMEDIATE HANGER ASSEMBLY, NDPS  
SHINDHARA 65/66

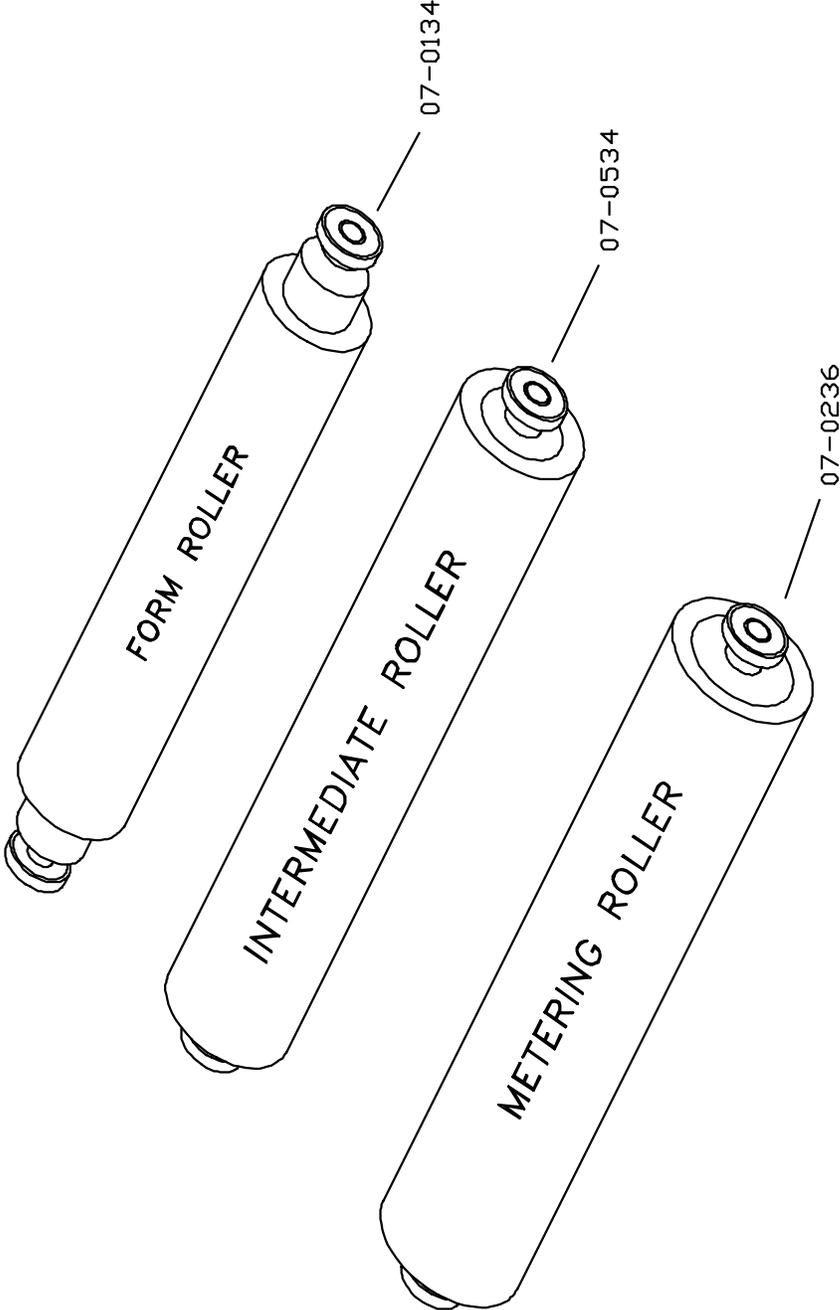


SHIN66C04, 1-15-98

PAN ROLLER ASSEMBLY  
SHINDHARA 65/66

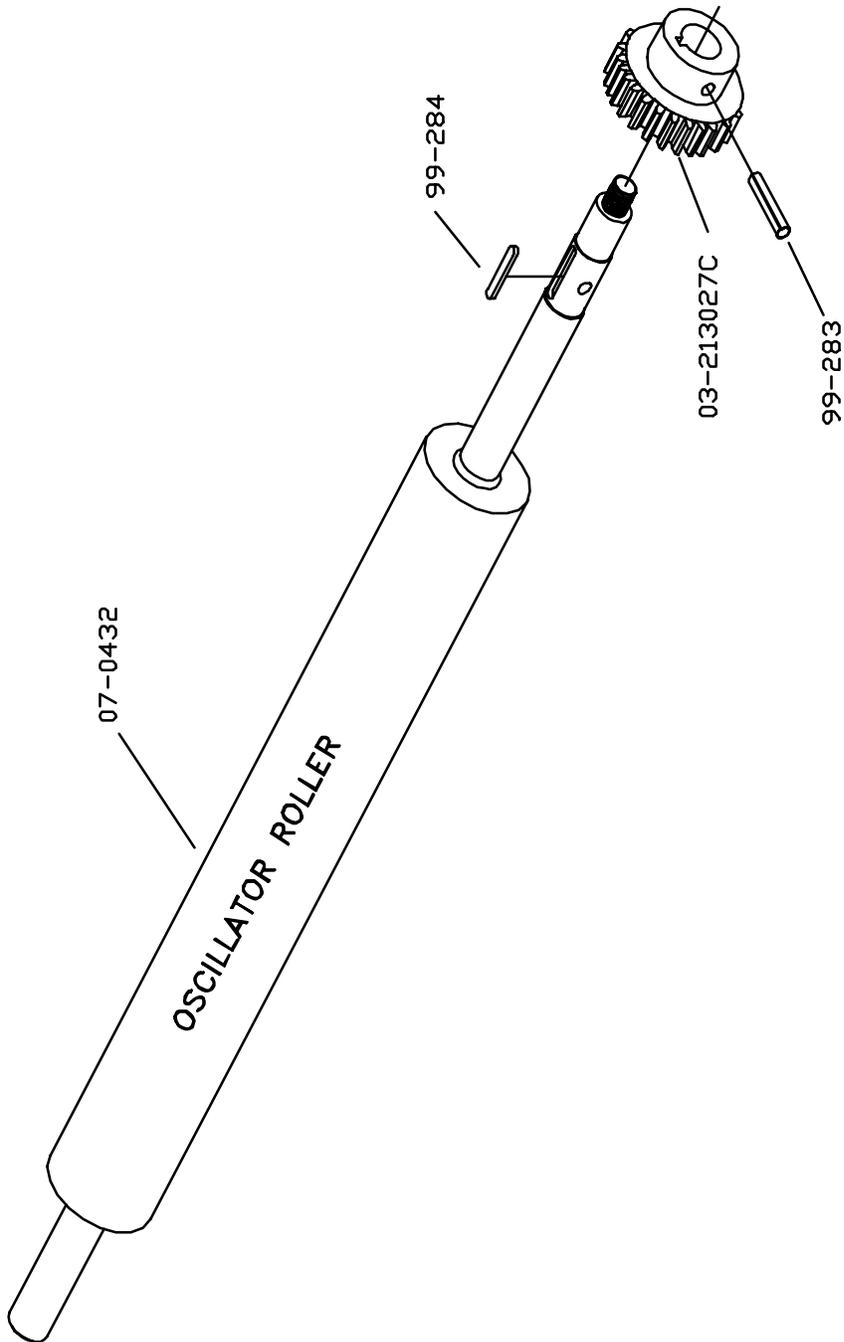


METERING, INTERMEDIATE AND FORM ROLLER ASSEMBLIES  
SHINDHARA 65/66



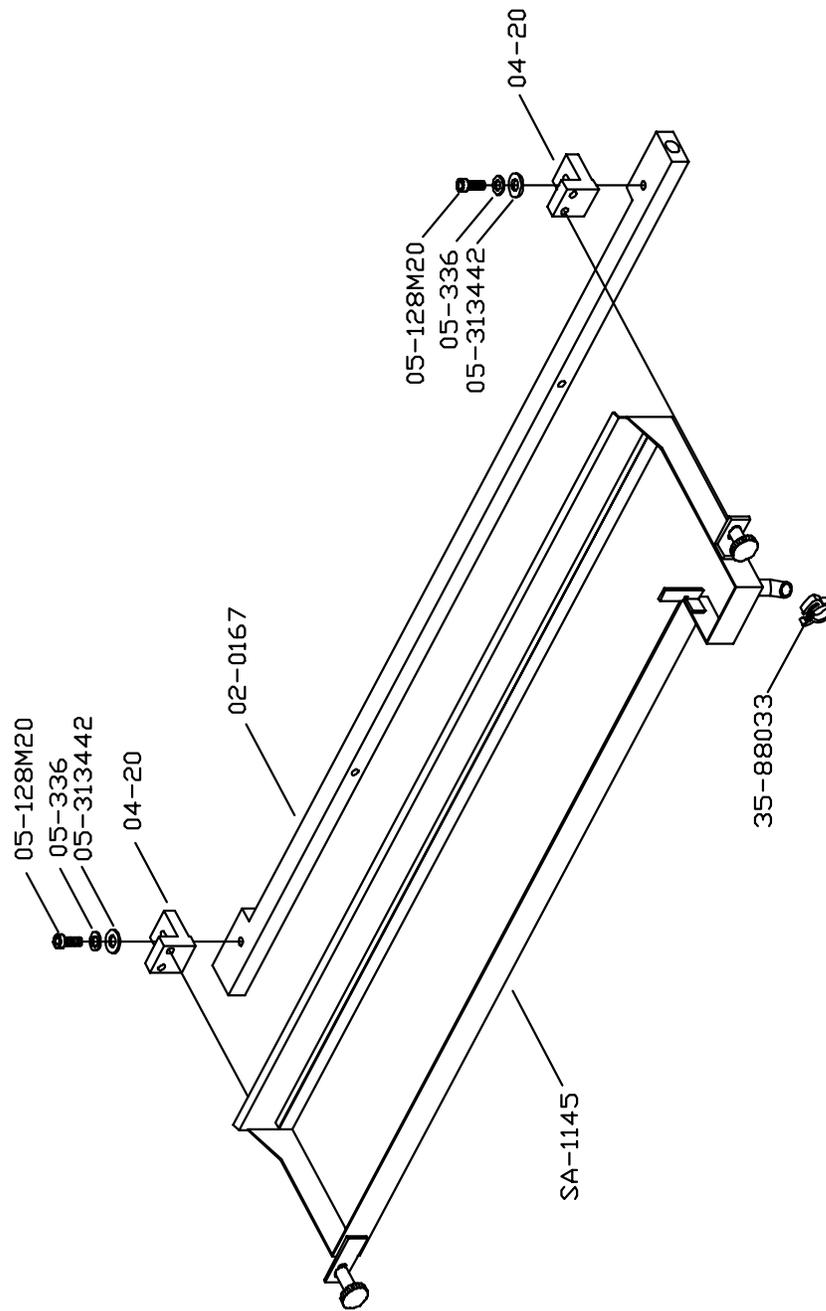
SHIN66C06, 1-15-98

OSCILLATOR ROLLER ASSEMBLY  
SHINDHARA 65/66



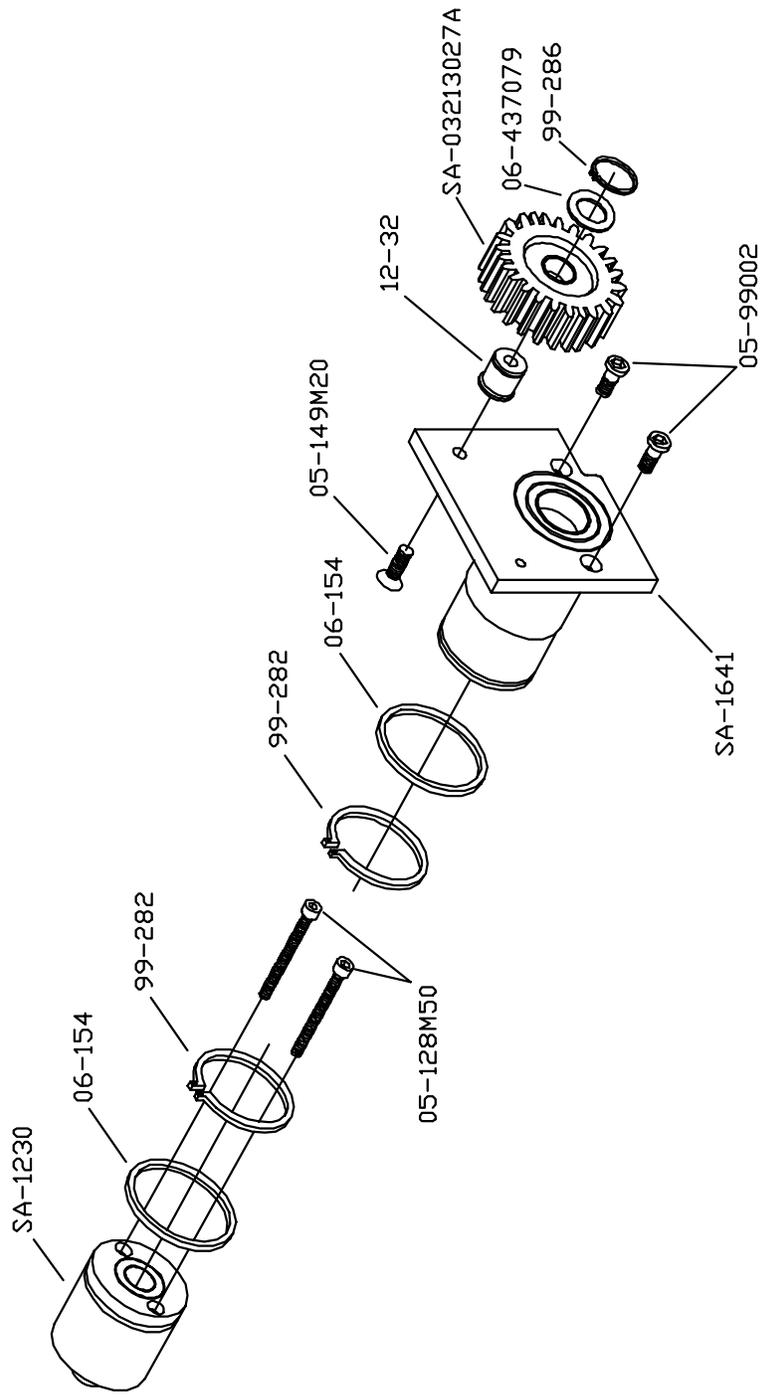
SHIN66C07, 1-15-98

WATER PAN MOUNTING ASSEMBLY  
SHINDHARA 65/66

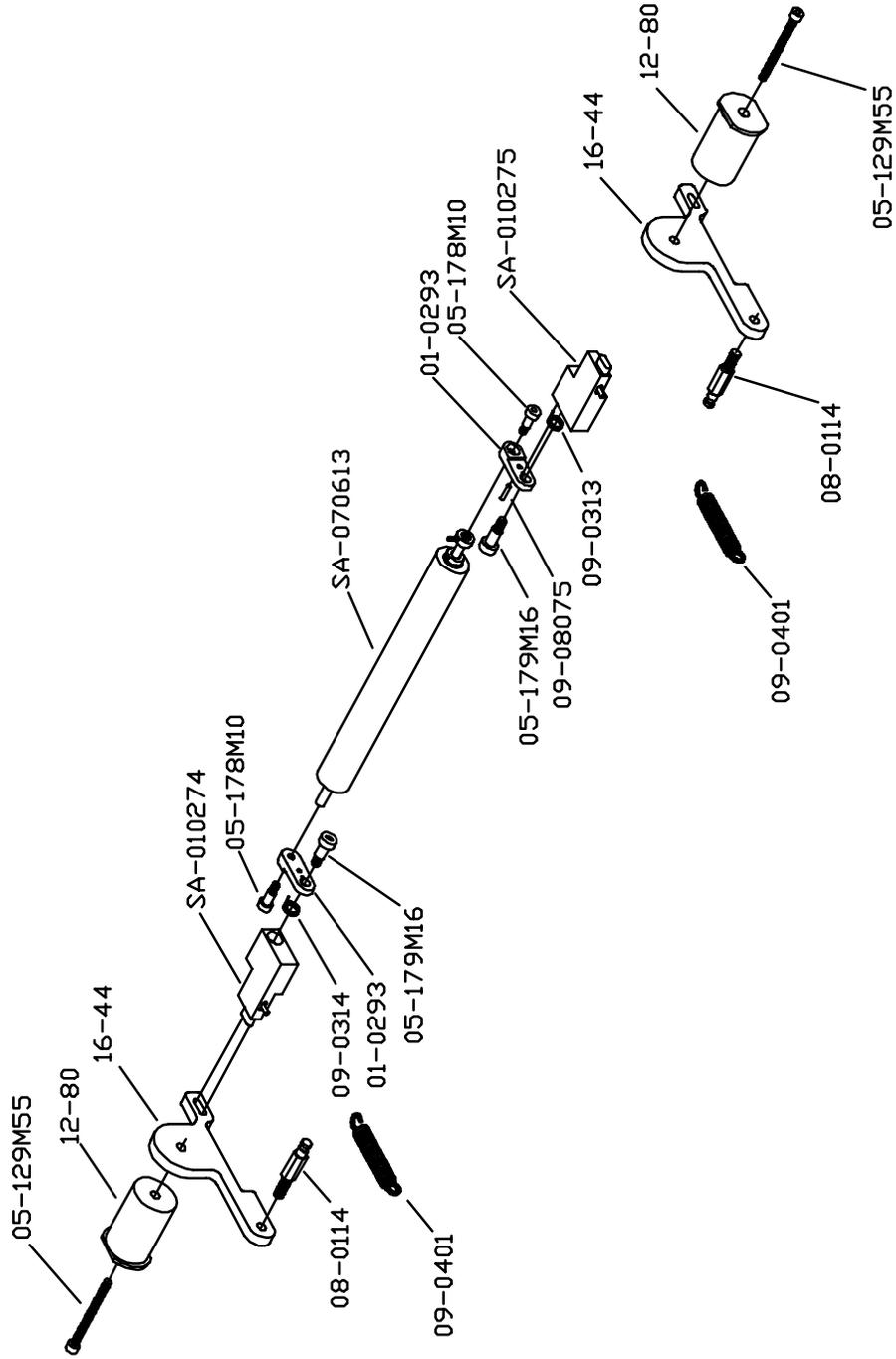


SHING66C08, 1-29-98

DAMPENER MOUNTING ASSEMBLY  
SHINDHARA 65/66

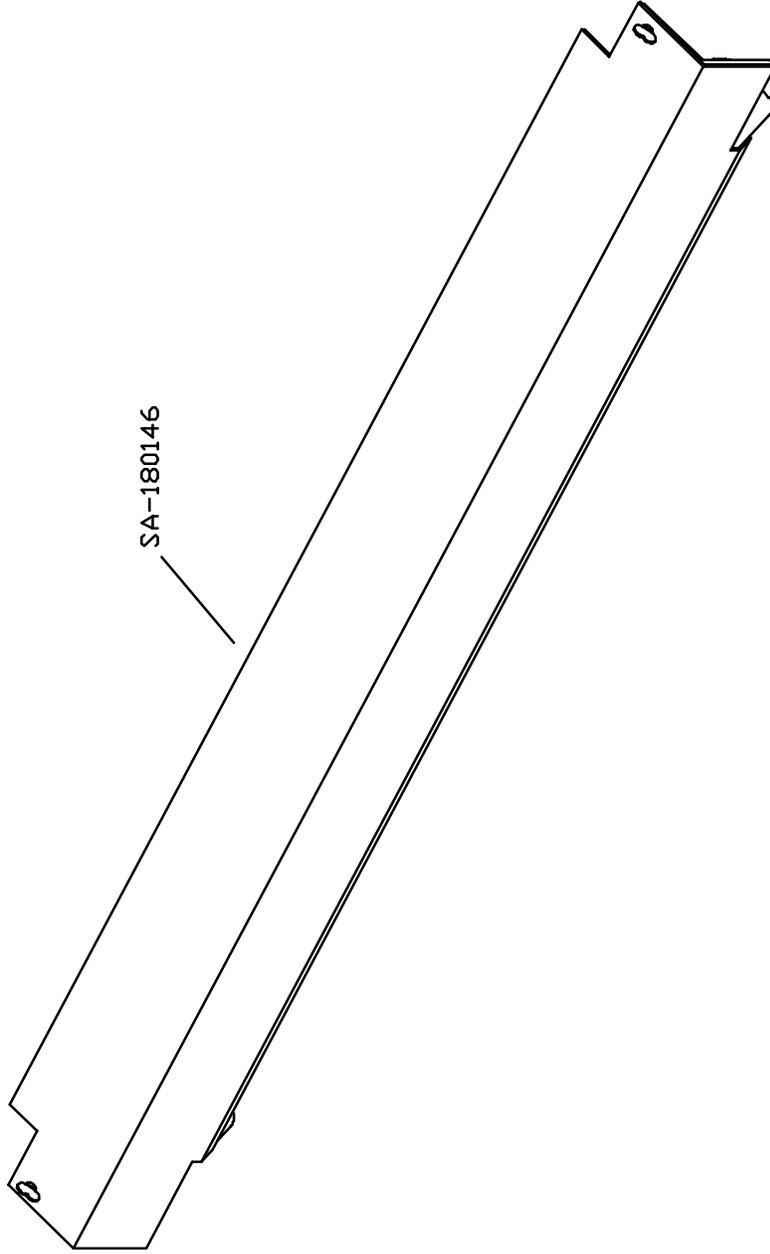


RIDER ROLLER ASSEMBLY  
SHINOHARA 65/66

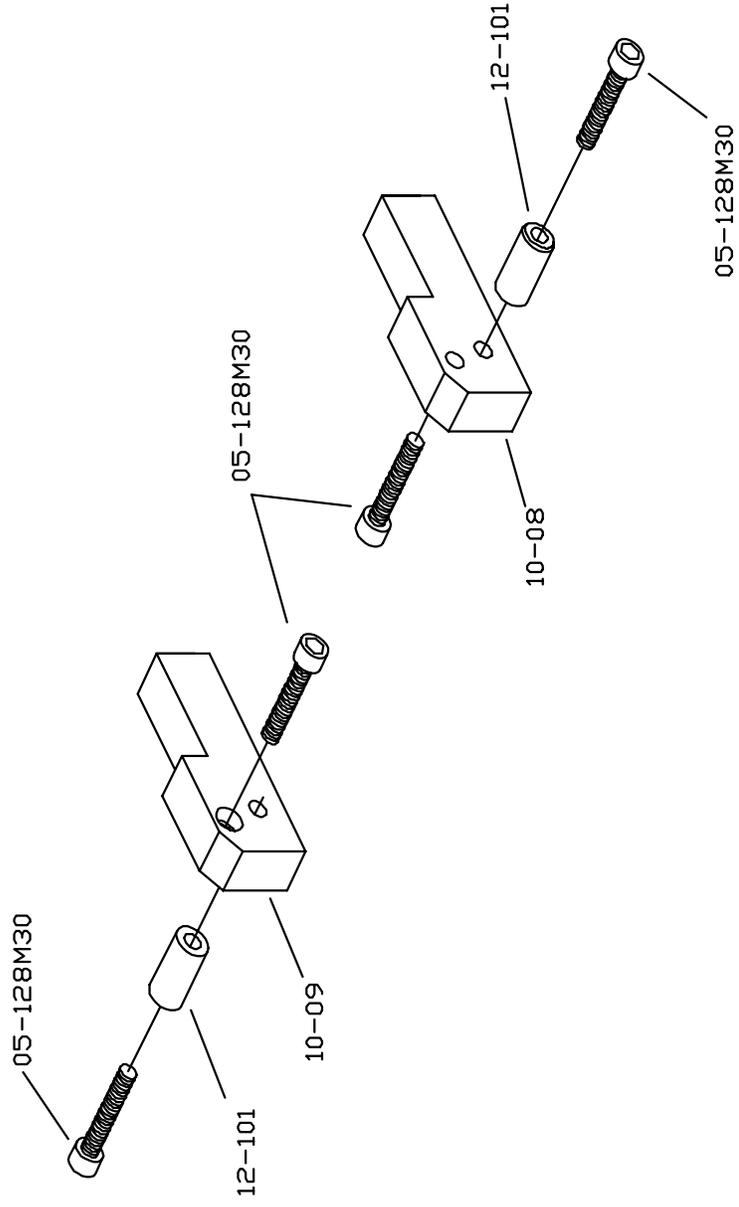


SHIN66C10, 1-15-97

DAMPENER SHIELD ASSEMBLY  
SHINDHARA 65/66

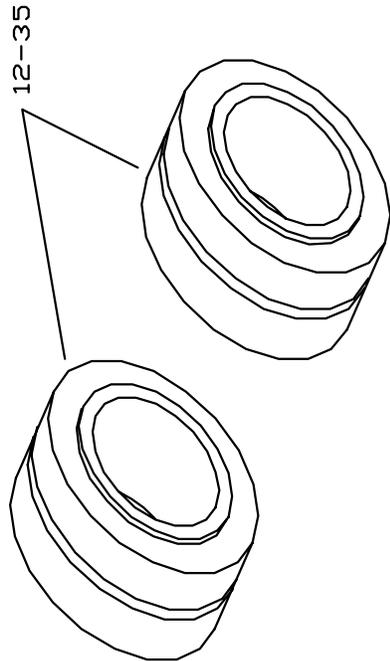


STRIPE ADJUST STOP BLOCKS ASSEMBLY  
SHINHARA 65/66



SHIN6612, 1-15-98

LANYARD GUIDE SPOOLS  
SHINDHARA 65/66







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