Kodak

Prostar
Archive Processor 220-240 V

Prostar
Archive Processor 120 V

Operator's Manual

Safety

User Precautions

- Place the processor on a sturdy, level work surface capable of supporting 63.5 kg (140 lbs) and a table height between 53 cm (21 in.) and 68 cm (27 in.).
- Make sure the electrical power outlet is located within 1.52 meters (5 feet) of the processor and is easily accessible.
- Use only the power cord(s) that was provided with the processor. Using any other power cord may cause electrical shock and/or damage the product.
- Be sure the power cord is securely plugged into the wall outlet. Failure to do so may cause electrical shock or fire.
- Do not damage, knot, cut or modify the power cord. This may cause electrical shock or fire.
- The scanner requires a dedicated power outlet. Do not use an extension cord or power strip with the scanner.
- Do not connect the processor to an extension cord of multi-plug power strip. Use a dedicated power outlet.
- Leave sufficient space around the power outlet so it can be easily unplugged in case of an emergency.
- Do not use the processor if it becomes inordinately hot, has a strange odor, emits smoke, or makes unfamiliar noises. Immediately stop the processor and disconnect the power cord from the power outlet. Contact Kodak Service.
- Follow the Kodak recommended maintenance and cleaning procedures.
- Material Safety Data Sheets (MSDS) are available on the Kodak website at: www.kodak.com/go/msds. When accessing the MSDSs from the website, you will be required to provide the catalog number of the consumable you want the Material Safety Data Sheet for. See the section entitled, "Supplies and consumables" later in this guide for supplies and catalog numbers.
- For disposal or recycling information, contact your local authorities, or in the USA, visit the Electronics Industry Alliance website: www.eiae.org.

CAUTION: Moving parts, avoid contact.

CAUTION: Hot surface, avoid contact

Acoustic emission

Maschinenlärminformationsverordnung – 3, GSGV
Der arbeitsplatzbezogene Emissionswert beträgt <70 db(A).

[Machine Noise Information Ordinance — 3, GSGV
The operator-position noise emission value is <70 dB(A).]

EMC statements

United States: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

European Union: WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Japan: This is a Class A product based on the standard of the Voluntary Control Council for interference by information Technology Equipment (VCCI). If this is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波障害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Taiwan: WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時

可能會照造成射頻干擾，在這種情況下，使用者

會被要求採取某些適當的對策。

Peoples Republic of China: WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

声明，该产

此为A级产品，在生活环境中品可能会造成无线电干扰。在这种情况下，可能需要
用户对其干扰采取切实可行的措施

Korean: Please note that this equipment has obtained EMC registration for commercial use. In the event that it has been mistakenly sold or purchased, please exchange it for equipment certified for home use.

이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자

또는 사용자는 이점을 주의하시기 바라며, 만약 잘못 판매 또는

구입하였을 때에는 가정용으로 교환하시기 바랍니다.

Contents

Introduction

The *Kodak Prostar* Archive Processor 220-240 V and the *Kodak Prostar* Archive Processor 120 V are room-light-loading processors that process 16 mm and 35 mm silver halide microfilms with *Kodak Prostar* Chemicals (or equivalent).

The Archive Processors are self-threading, tabletop units with roller transport.

The Archive Processors feature an energy conservation package that automatically turns off the film transport, rinse water, and film drying system after processing is complete.
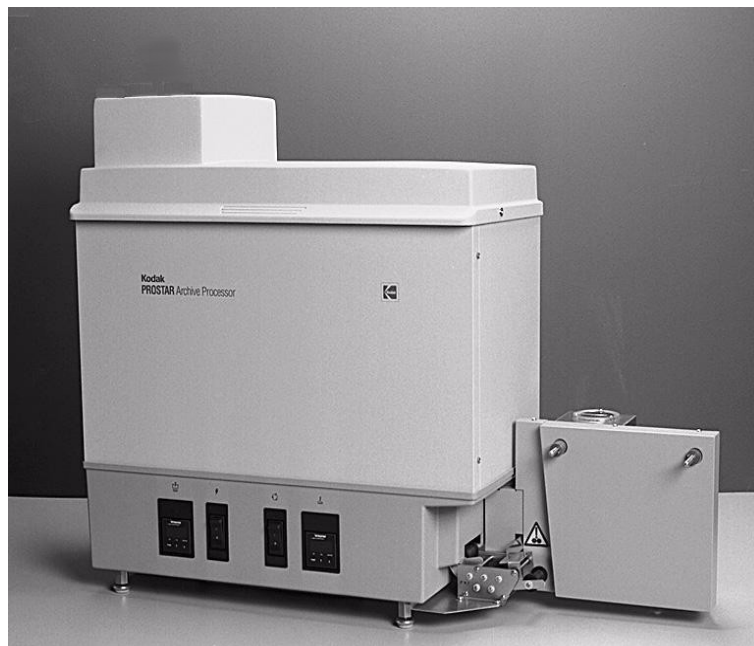
**Kodak Prostar Archive Processor with dual-strand take-up spindles**

Specifications

	Archive Processor 220-240 V	Archive Processor 120 V
Power requirements	220 to 240 VAC, 50 Hz, single phase, 7.5 amp Two-prong electrical plug with ground connection	120 VAC, 50 Hz, single phase, 12 amp 120 VAC, 60 Hz, single phase, 12 amp Three-prong electrical plug with ground connection
Dimensions and weight	**Height:** 91 cm (36 in.) with the cover open **Length:** 110 cm (43 in.) with reel on take-up spindle **Depth:** 56 cm (22 in.) with the cover open **Weight:** 52.2 kg (115 lb) empty 63.5 kg (140 lb) with chemicals, water, and processing racks **Support:** Table or stand between 53 and 68 cm (21 and 27 in.) high	**Height:** 91 cm (36 in.) with the cover open **Length:** 99 cm (39 in.) without reel on take-up spindle 110 cm (43 in.) with large reel on take-up spindle **Depth** 61 cm (24 in.) with the cover open **Weight:** 52.2 kg (115 lb) empty 63.5 kg (140 lb) with chemicals, water, and processing racks **Support:** Table or stand between 53 and 68 cm (21 and 27 in.) high
Operating environment	**Ambient Temperature:** 18.5 to 30°C (65 to 86°F) **Relative Humidity:** 20 to 76%	**Ambient Temperature:** 18.5 to 30°C (65 to 86°F) **Relative Humidity:** 20 to 76%
Heat emissions	**Maximum:** 5100 BTU (5380 Kjoules) **Standby:** 350 BTU (366 Kjoules) **Processing Film:** 4100 BTU (4325 Kjoules)	**Maximum:** 5100 BTU (5380 Kjoules) **Standby:** 350 BTU (366 Kjoules) **Processing Film:** 4100 BTU (4325 Kjoules)
Noise emission	**Operator Position Standby Mode** • Sound Pressure Level (L_A): 51.2 dB(A) **Operator Position Full System Operating Mode** • Sound Pressure Level (L_A): 59.3 dB(A) • Instantaneous Peak Values 130 dB(C): None • **Sound Power Level (L_{WA})** • Standby: 63.4 dB(A) • Full System: 69.6 dB(A)	**Operator Position Standby Mode** • Sound Pressure Level (L_A): 51.2 dB(A) **Operator Position Full System Operating Mode** • Sound Pressure Level (L_A): 59.3 dB(A) • Instantaneous Peak Values 130 dB(C): None **Sound Power Level (L_{WA})** • Standby: 63.4 dB(A) • Full System: 69.6 dB(A)

|	Archive Processor 220-240 V	Archive Processor 120 V
Water supply	NOTE: An auxiliary hot water heater should be located within 6 m (20 ft) of the Archive Processor to provide consistent water temperature.	
	To Mixing Valve: • Hot Water 46°C (114°F) minimum • Cold Water 24°C (75°F) maximum Pressure 276 to 621 kPa (40 to 90 psi)	**To Mixing Valve:** • Hot Water 46°C (114°F) minimum • Cold Water 24°C (75°F) maximum • Pressure 276 to 621 kPa (40 to 90 psi)
	From Mixing Valve: • Mixed Water 34.5 to 36.5°C (94 to 98°F) • Pressure 207 kPa (30 psi) minimum	**From Mixing Valve:** • Mixed Water 34.5 to 36.5°C (94 to 98°F) • Pressure 207 kPa (30 psi) minimum
	Drain: Minimum 22.7 L/min (6 gal/min) capacity floor drain or wall drain located a minimum of 20 cm (8 in.) lower than the Archive Processor to prevent wash water from backing up	**Drain:** Minimum 22.7 L/min (6 gal/min) capacity floor drain or wall drain located a minimum of 20 cm (8 in.) lower than the Archive Processor to prevent wash water from backing up
	Water Consumption: 1.9 L/min (0.5 gal/min) while processing	**Water Consumption:** 1.9 L/min (0.5 gal/min) while processing
Film Widths	16 mm or 35 mm single strand 16 mm dual strand in lengths up to 65.5 m (215 ft)	16 mm or 35 mm single strand 16 mm dual strand in lengths up to 65.5 m (215 ft)
Film Lengths and Thicknesses	30.5 m (100 ft) of 0.14 mm/5.2 mil-thick film 38.1 m (125 ft) of 0.11 mm/4.2 mil-thick film 65.5 m (215 ft) of 0.07 mm/2.7 mil-thick film	30.5 m (100 ft) of 0.14 mm/5.2 mil-thick film 38.1 m (125 ft) of 0.11 mm/4.2 mil-thick film 65.5 m (215 ft) of 0.07 mm/2.7 mil-thick film
Film Transport Speed	3 m/min. (10 ft/min)	3 m/min. (10 ft/min)
Film Processing Time	30.5 m (100 ft): 11 minutes 65.5 m (215 ft): 22.5 minutes	30.5 m (100 ft): 11 minutes 65.5 m (215 ft): 22.5 minutes
Process Duration	Approximately 55 seconds for the self-threader to exit from the Archive Processor	Approximately 55 seconds for the self-threader to exit from the Archive Processor
Film Loading	Room-light conditions with camera film spools only	Room-light conditions with camera film spools

Archive Processor Overview

Front

Shown throughout this manual is an Archive Processor equipped with Dual-Strand Take-up Spindles
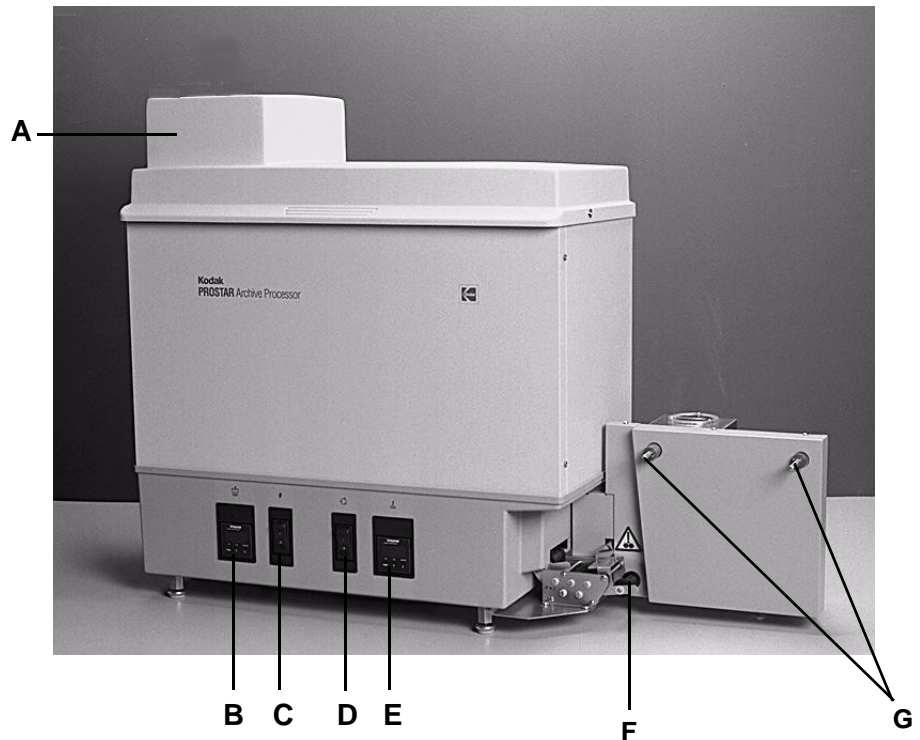
A **Processing Section Cover** — light-tight cover for the film processing section.

B **Developer Temperature Control and Display** — controls the developer temperature and displays a value relative to the water temperature surrounding the developer tank.

C **Power Switch** — turns the power on (I) and off (O).

D **Mode Switch** — the standby position (O) maintains the developer temperature. The run position (I) activates the film transport, rinse water, and film dryer blower.

E **Film Dryer Temperature Control and Display** — controls the dryer air temperature and displays the air temperature in the drying chamber.

F **Tension Roller** — loss of film tension after processing causes the tension roller to be released, initiating a time delay prior to activating energy conservation mode. Once energy conservation is activated, the film transport, rinse water, and film dryer blower will all turn off.

G **Take-Up Spindles** — mechanisms that wind the processed film onto the take-up reel.

Rear
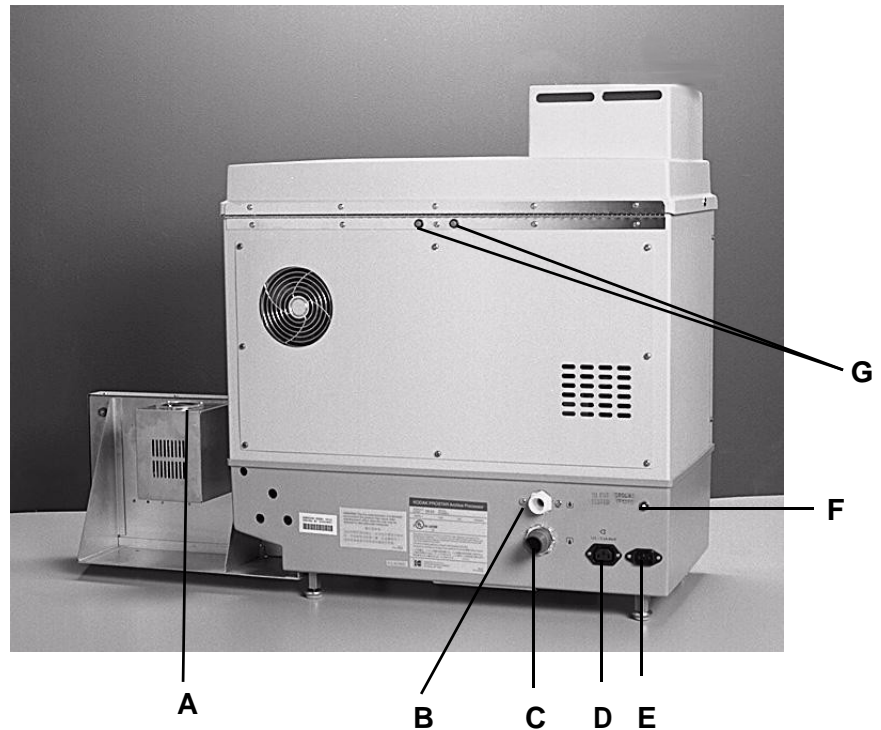
A **Usage Meter** — displays the total number of hours the film transport motors have been operating. You can use the usage meter to determine when to change the processing chemicals.

B **Water Inlet** — connection to thermostatic mixing valve.

C **Water Outlet** — connection to drain line.

D **Accessory Receptacle** — supplies power to the optional automatic Replenishment Unit accessory.

E **Power Receptacle** — connection for main power cord.

F **Circuit Breaker** — safety feature in case of electrical overload.

G **Hose Input** — connectors for the optional automatic Replenishment Unit accessory hoses.

Start-up Procedures

Daily start-up

Follow these procedures when starting up the Archive Processor at the beginning of the day, assuming that the Archive Processor was properly shut down.

Uncovering the processing section

• Lift the processing section cover until it is in an upright position.

The inside of the Archive Processor is shown below without racks.

Dryer Section (Rack #7)

Wash (Rack #6)

Fixer Tanks (Racks #4 and 5)

Wash (Rack #3)

Developer Tank (Racks #1 and 2)
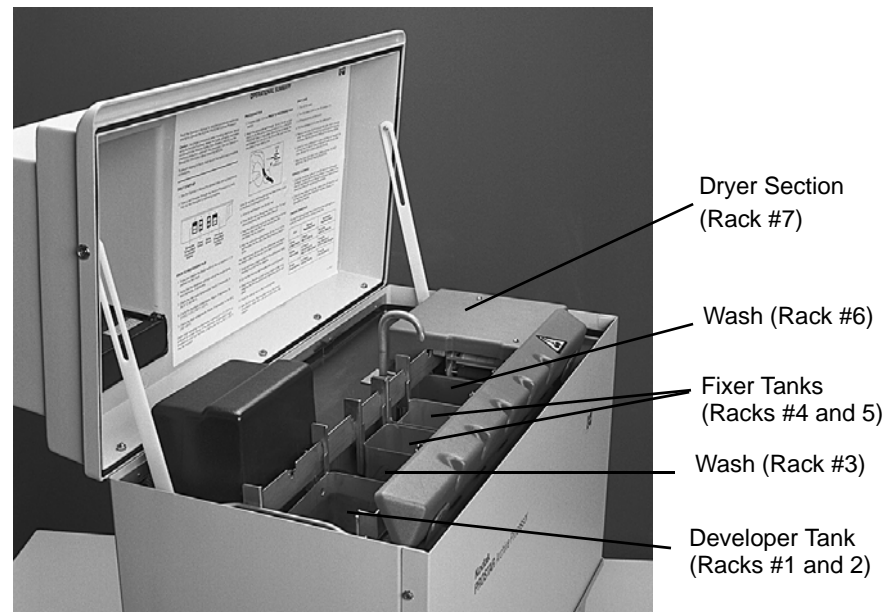
Filling the fixer tanks

If the Archive Processor is powered up, shut it off before you remove the fixer tanks or turn off the water. This reduces the possibility of water overflowing the water jacket later when you reinsert the tanks.

NOTE: Use proper precautions when using fixer. Review the MSDS for the fixer.

1. Pull the gear cover back and lift the fixer tanks out of the Archive Processor. Each fixer tank is labeled with an **F**.

2. Fill the fixer tanks with *Kodak Prostar* Plus Fixer, or equivalent, until the level reaches the fill line (approximately ¼ gallon or 0.65 liters per tank).

3. Hold the gear cover back and **slowly** and **carefully** lower the fixer tanks into the fourth and fifth position in the Archive Processor.
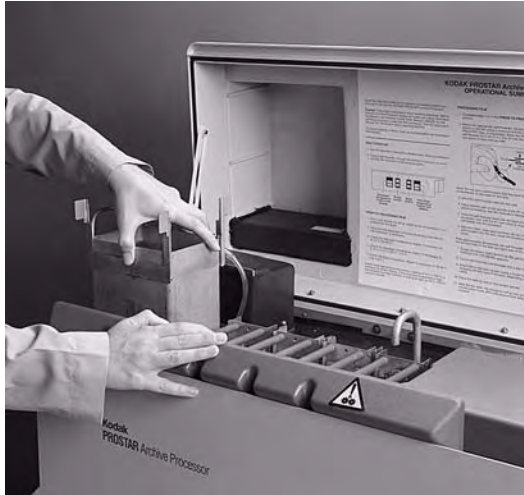
   NOTE: Make sure that the tanks are fully seated and level with the fill lines toward the rear of the Archive Processor.

Filling the developer tank

If the Archive Processor is powered up, shut it off before you remove the developer tank or turn off the water. This prevents water from overflowing the water jacket later when you reinsert the tank.

NOTE: Use proper precautions when using developer. Review the MSDS for the developer.

1. Pull the gear cover back and lift the developer tank out of the Archive Processor. The developer tank is labeled with a **D**.

2. Fill the developer tank with *Kodak Prostar* Plus Developer, or equivalent, until the level reaches the fill line (approximately ½ gallon or 1.3 liters).

3. Wrap the overflow tubing closely around the right side of the developer tank.

4. Hold the gear cover back and **slowly** and **carefully** lower the developer tank into the first position in the Archive Processor.

   NOTE: Make sure the tank is fully seated and level with the fill line toward the rear of the Archive Processor.

5. Fill the squeeze bottle with developer.

   The squeeze bottle will be needed later to top off the developer tank between processing rolls of film.

Installing the processing racks

1. Make sure that the rollers of each rack turn freely when you rotate the drive gear.

2. Drain off any excess water if the racks were left submerged in water since the last time film was processed.

3. Hold the gear cover back and lower the processing racks into the processor (#6 rack first, then #5, #4, #3, #2, and #1).

   The rack number is located just above the drive gear.
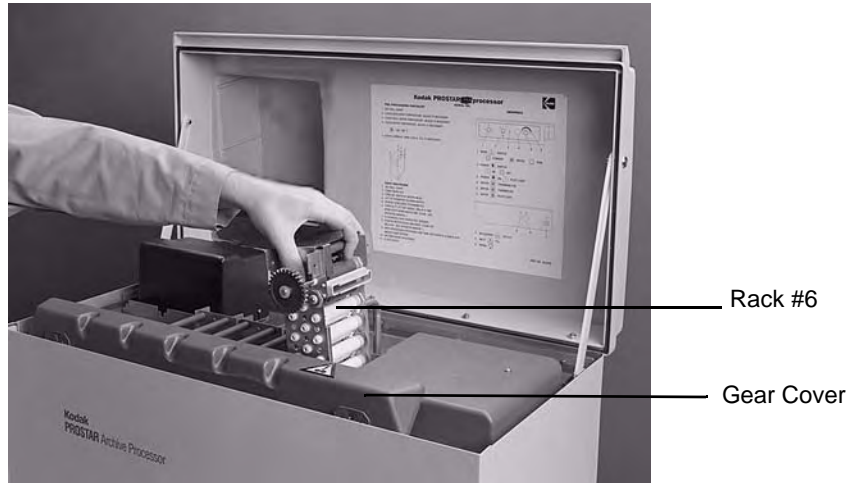
Rack #6

Gear Cover

CAUTION: Lower the racks *slowly* and *carefully* into the Archive Processor to avoid splashing any chemicals.

Installing the dryer rack

1. Lift off the dryer section cover.

Dryer Section Cover

Dryer Rack (#7)
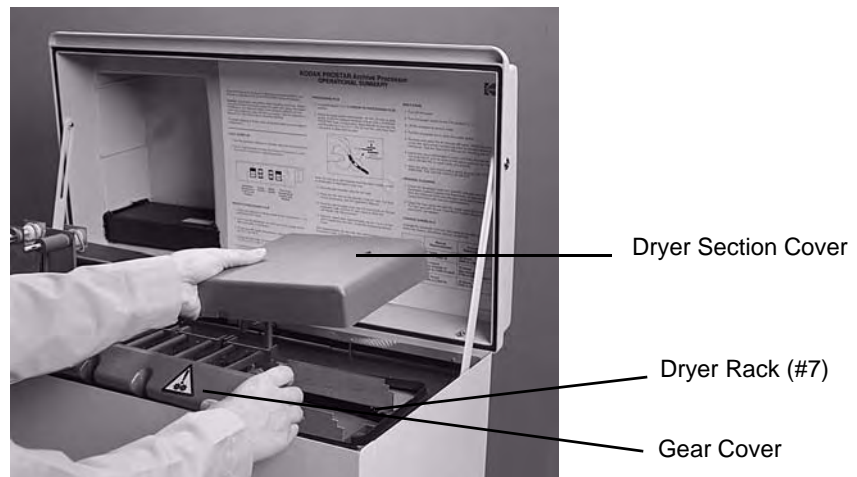
Gear Cover

2. Make sure that the rollers of the dryer rack turn freely when rotating the drive gear.

3. Pull the gear cover back and lower the dryer rack into the dryer section.

4. Replace the dryer section cover.

Adjusting the inlet water temperature

1. Turn on the water supply using the thermostatic mixing valve.

2. Turn the power switch to the On position.

3. Insert the thermometer in the thermometer fixed measuring point sleeve located in the front right corner of the #1 rack.

Thermometer

Thermometer Sleeve

4. Install the standpipe in the Archive Processor tank after the water temperature, indicated on the mixing valve, reaches 34.5 to 36.5°C (94 to 98°F).
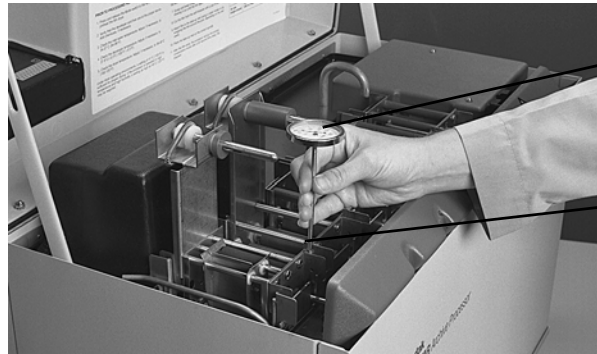
   Installing the standpipe after the water reaches the proper temperature at the mixing valve enables the developer solution to reach operating temperature sooner.
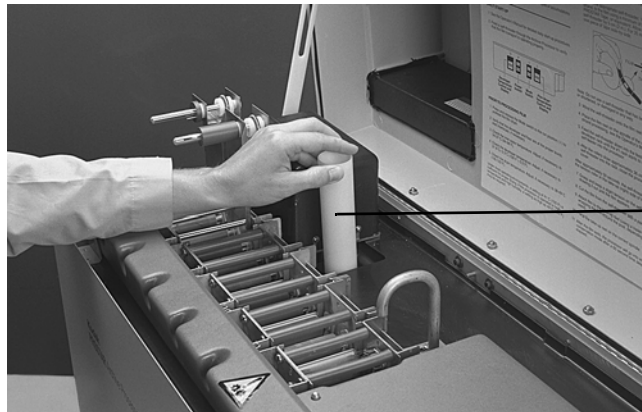
Standpipe

5. Route the tubing from the developer tank through the notch in the partition.

6. Insert the tubing into the standpipe.

7. Allow the water jacket to fill up.

8. A float switch automatically turns off the water flow when the water level is just below the top of the standpipe.

9. Close the processing section cover.

10. Allow approximately 25 minutes for the developer temperature to stabilize before adjusting the temperature control setting.

Adjusting the developer temperature control

The Archive Processor's developer temperature control is factory set to a value of 88.0 to control the developer temperature at 37.8°C ±0.3°C (100°F ±0.5°F). The display values and setpoint value are arbitrary numbers and do not represent the temperature in degrees; they are values relative to the developer temperature.

Reading the developer temperature

The developer temperature must be read on the dial thermometer.

1. Lift the processing section cover.

2. Locate the dial thermometer in the front right corner of the #1 rack.

Thermometer

3. Read the value on the thermometer.

   If the developer temperature thermometer value is not 37.8°C ±0.3°C (100°F ±0.5°F), you must make an adjustment. Adjust the developer temperature control setpoint value only if necessary. Refer to the next section, "Changing the developer temperature control setpoint value."

4. Close the processing section cover.

Changing the developer temperature control setpoint value

The developer temperature control is located on the left side of the control panel.

1. Press and release the PGM button on the developer temperature control.

    The light to the left of the SP (setpoint) illuminates. The control is now in the setpoint mode.

2. Change the developer temperature:

    *   Push and release the down arrow to lower the temperature.

    *   Push and release the up arrow to raise the temperature.

    The amount of change to the setpoint is equal to the amount of change to the developer temperature in degrees Celsius. For example, increasing the developer temperature setpoint by 1.2 will increase the developer temperature by approximately 1.2°C (2.2°F).

    To increase or decrease the developer temperature by 1°F, increase or decrease the developer temperature setpoint by 0.56. For each degree Fahrenheit (°F) of desired change, multiply by 0.56 and round to the nearest tenth.

    For example, if the dial thermometer reads 98.5°F, an increase of 1.5°F is required to obtain 100°F. Multiply 1.5°F by 0.56 and you get 0.84
    (1.5 x 0.56 = 0.84). Round 0.84 to the nearest tenth to get 0.8. Therefore, to increase the developer temperature 1.5°F, you must increase the developer temperature setpoint by 0.8.

    3.Press and release the PGM button on the developer temperature control to return to display mode.

    The green light indicator to the left of the SP is no longer illuminated. The current temperature is displayed.

    The green light indictor illuminates when the temperature is at the setpoint and flashes when the temperature is above the setpoint. The light does not illuminate when the temperature is below the setpoint.

    This light can be used to determine when the temperature has stabilized at the setpoint.

4. Wait 20 minutes between adjustments.

5. Lift up the processing section cover.

6. Read the developer temperature. If the temperature is not 37.8°C ±0.3°C (100°F ±0.5°F), repeat steps 1 through 6 until the temperature stabilizes at the setpoint.

7. Close the processing section cover.

Checking the dryer temperature

1. Turn on the drying heater and blower:

   - If the water jacket is not full, fill the water jacket and press and release the Mode switch to the Run position.

   - If the water jacket is full, press and release the Mode switch to the Run position.

2. Check the temperature reading on the dryer control after it stabilizes (approximately 5 minutes).

   If the drying temperature stabilizes (the displayed value stops climbing) before it reaches the setpoint, the room temperature may be too low or the specified setpoint is too high for the Archive Processor to obtain. The green light will be off. (See *Operating Environment* in the "Specifications" section.)

   The Archive Processor is stabilized at the setpoint when the display temperature cycles (decreasing, then increasing) and the indicator light cycles (on, flashing, off).

3. Adjust the dryer temperature control (if necessary) so the dryer temperature falls within the acceptable temperature range of 38 to 52°C (100 to 125°F).

Under most operating environments, a setting of 48°C (118°F) is sufficient for proper drying. If the processor is operated in a high temperature and high humidity environment, a setting as high as 52°C (125°F) may be required.

Adjusting the dryer temperature

1. Press and release the PGM button on the dryer control (located on the right side of the control panel).

   The light to the left of the SP (setpoint) illuminates. The control is now in the setpoint mode.

2. Change the dryer temperature:

   - Push and release the down arrow to lower the temperature.

   - Push and release the up arrow to raise the temperature.

3. The amount of change to the setpoint is equal to the amount of change to the dryer temperature.

   For example, increasing the dryer temperature setpoint by 5 will increase the dryer temperature by 5°C on the Archive Processor 220-240 V or 5°F on the Archive Processor 120 V.

   NOTE: The Field Engineer can change the control readout to either Fahrenheit (°F) or Celsius (°C).

4. Press and release the PGM button on the dryer control to return to display mode. The light to the left of the SP (setpoint) is no longer illuminated. The current temperature is displayed.

5. Allow some time for the dryer chamber temperature to stabilize after each adjustment (approximately 5 minutes).

NOTE: Film must feel dry to the touch. If the dryer temperature is too high, film could stick to the rollers and cause a film jam. Also, a temperature setting that is too high can cause the film to stick together on the reel (bricking).

If the dryer temperature is too low, the film will not dry completely, causing it to feel tacky when it exits and stick together on the take-up reel.

Image quality defects will occur if the temperature setting is too low or too high.

6. Turn the dryer and the transport off by lifting and releasing the tension roller.

The dryer and transport will stop after a preset time delay has elapsed. (The factory preset is 60 seconds. The Field Engineer can change the time delay.)

Checking the film transport
1. Press and release the Mode switch to the Run position.

2. Feed a self-threader into the feed chute on the #1 rack to make sure that all racks are fully seated and working properly. Allow the self-threader to exit the processor.

3. Lift and release the tension roller to shut off the processor. The processor will stop 60 seconds after the tension roller is released.

Operating the Archive Processor

Attaching film to a take-up reel

As processed film exits the Archive Processor, you must attach it to a take-up reel. There are different ways to attach film to a take-up reel, depending on the type of reel you are using. One way is to use a trailer holder (snubber). Another way is to wrap the film around the center of the reel. Both ways are described in this section.

NOTE: Kodak no longer supplies this reel with a separate trailer hold. Kodak supplies only the integral film cinch pin as shown below.

Using a trailer holder

1. Wrap the film counterclockwise around a trailer holder (snubber).

2. Wrap the film around the trailer holder one more time.

3. Insert the trailer holder (snubber) in the core of the take-up reel.

4. Insert the film in the slot of the take-up reel.
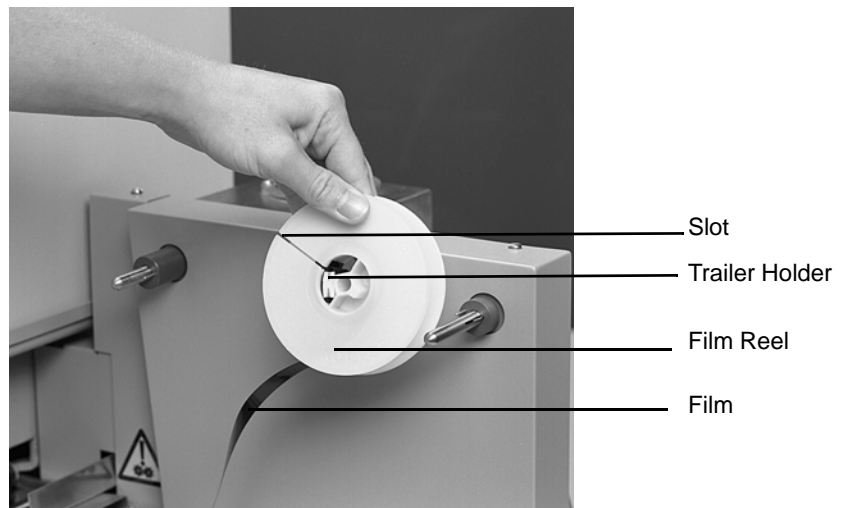
Looping the film

1. Make a loop of film about four inches long.

2. Insert the film loop in the slot of the take-up reel.

3. Push the film around core of the take-up reel and wrap the loop around the pin in the center of the take-up reel.

Pin

Slot

Film

Film Reel

4. Pull the film gently to tighten it around the take-up reel.

When to start processing

When the developer, film dryer, and water have reached their acceptable operating temperatures, you may begin processing film. Leave the dial thermometer in the developer tank; this makes it easier to check the developer temperature before processing the next roll.
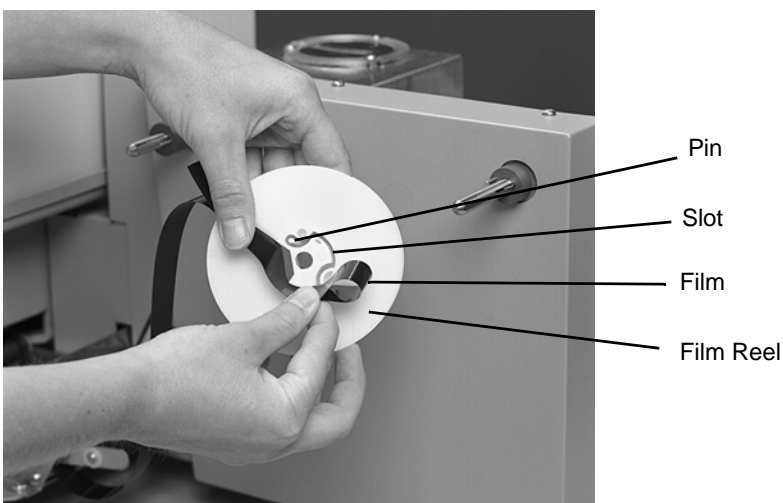
NOTE: When the Archive Processor is idle for an extended period, the solutions may evaporate. Check the solution levels and replenish the developer and fixer tanks as necessary.

Use the usage meter as a guide to changing chemicals. It displays the number of hours the film drive system has run. Replace the developer and fixer with fresh chemicals according to the frequency listed in "Replenishing the Archive Processor," or every two weeks, whichever interval comes first.

NOTE: Do not restrict the movement of the tension roller. The tension roller must be allowed to pivot freely for proper operation of the Archive Processor.

Single-strand processing

Make sure that you have completed all of the procedures in the "Daily start-up" section and that you have familiarized yourself with the information in the "When to start processing" section before beginning processing.

NOTE: To prevent film jams, remove as much curl from the self-threader as possible by winding the self-threader in the opposite direction from the existing curl.

1. Press and release the Mode switch to the Run position to pre-heat the film dryer.

IMPORTANT: Always press and release the Mode switch to the Run position, even if the transport is running. This prevents the film transport from stopping during processing.

2. Lift the processing section cover.

3. Verify that the developer is at the proper level and add developer, if necessary.

To replenish the developer, place the neck of the squeeze bottle in the developer tank and squeeze the bottle until the solution level reaches above the middle of the first white roller located below the feed chute.

4. Open the film box and remove the roll of exposed film.

   NOTE: Do not let the film unwind.

IMPORTANT: Follow the next steps carefully to avoid film jams.

5. Using the reel flanges to guide you, line up a 16 mm self-threader (a special leader that helps prevent film jams) with the film edges.

6. Slide the self-threader, with the black side up, under the leading edge of the film and hold it in place with your index finger.

   The film should overlap the self-threader by a minimum of 51 mm (2 in.) with the emulsion (light-colored) side of the film contacting the black side of the self-threader.

7. Fasten the leading end of the film to the self-threader using a minimum of 76 mm (3 in.) of *Kodak Prostar* Tape, or equivalent.
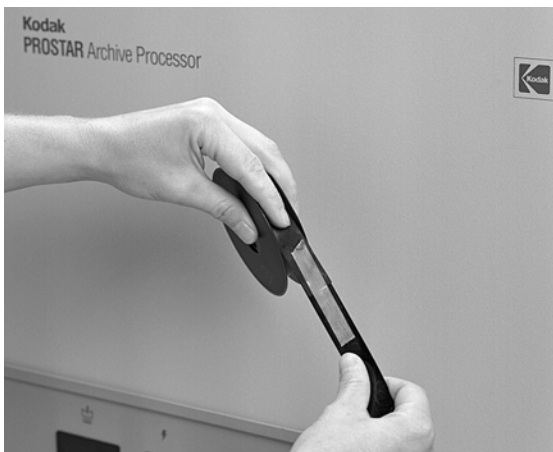
NOTE: For 35 mm film, place several pieces of tape side-by-side to fasten the leading edge of the film to the self-threader.

8. Wind the self-threader onto the film reel.

   NOTE: Make sure the tape does not extend over the edges of the film or self-threader. Avoid leaving fingerprints on the adhesive side of the tape.

9. Verify that the temperatures of the developer, film dryer, and water are all within specification.

   NOTE: Under normal operating conditions, the dryer will have reached the operating temperature by the time you have attached the self-threader.

   If there is high humidity, low temperature, or low line voltage, the dryer may take longer to reach the acceptable operating temperature. In these situations, you may want to wait until all three operating temperatures are acceptable before you attach the self-threader.

10. Place the roll of film on the supply spindle of the #1 rack so the film unwinds off the right side of the reel (when you are facing the front of the Archive Processor).

    The emulsion (dull) side of the film and the gray side of the self-threader both must face the left side of the Archive Processor.

11. Feed the self-threader down into the feed chute in the first developer rack until the #1 rack starts to draw the self-threader into the Archive Processor.

Feed Chute
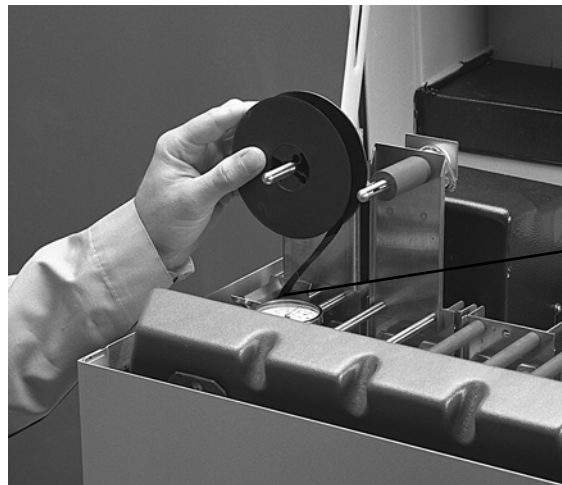
12. After the rollers draw the approximately 36 cm (14 in.) of the self-threader into the rack, close the processing section cover.

    After approximately 50 seconds, the self-threader exits below the tension roller on the take-up (right) side of the Archive Processor.

    IMPORTANT: As the self-threader exits the dryer, make sure that it does not catch on anything that will cause the film to back up and jam in the processor.

13. Grasp and keep a slight tension on the self-threader while drawing it out until the film appears.

14. Cut the film from the self-threader with a pair of scissors.

15. Attach the film to a reel using one of the methods described in "Attaching film to a take-up reel."

16. Place the take-up reel on the spindle.

NOTE: If you pull on the self-threader or when you remove the self-threader from the film, you may unintentionally raise and lower the tension roller. Raising and lowering the tension roller activates the time delay for energy conservation mode, which causes the film transport to stop after 60 seconds (3 m or 10 ft of film).

If approximately 2.5 m (8 ft) of film has exited from the Archive Processor but has not yet been tensioned, lift and release the tension roller to reset the time delay for an additional 60 seconds.

If the film transport stops before the film is tensioned, immediately press and release the Mode switch to the Run position or lift and release the tension roller bracket. This will restart the film transport. If film is left stopped in the processing chemicals, image quality problems will result.

Remove all film ends and tape before reusing the self-threaders. Do not use self-threaders that have been folded, curled or shortened. Store the self-threaders by hanging them from the prepunched hole in the end.

When the trailing end of the film leaves the dryer rack, tension is lost and the tension roller automatically lowers. The loss of tension activates the 60-second time delay for the energy conservation mode. Once energy conservation mode is activated, the film transport, rinse water, and dryer blower will all turn off.

17. Add developer to the developer tank if the Archive Processor operates in manual replenishment mode.

Add developer after 61 m (200 ft) of 0.14 mm/5.2 mil-thick film or 65.5 m (215 ft) of 0.07 mm/2.7 mil-thick film has been processed.

Dual-strand processing

If your Archive Processor is equipped with Dual-Strand Take-up Spindles, follow the steps below to process two reels of film simultaneously. Before processing, complete all of the procedures in the "Daily start-up" section and familiarize yourself with the information in the "When to start processing" section.

NOTE: To prevent film jams, remove as much curl from the self-threader as possible by winding the self-threader in the opposite direction from the existing curl.

1. Press and release the Mode switch to the Run position to pre-heat the film dryer.

IMPORTANT: Always press and release the Mode switch to the Run position, even if the transport is running. This prevents the film transport from stopping during processing.

2. Lift the processing section cover.

3. Verify that the developer is at the proper level and add developer, if necessary.

   To replenish the developer, place the neck of the squeeze bottle in the developer tank and squeeze the bottle until the solution level reaches above the middle of the first white roller located below the feed chute.

4. Open the film box and remove the roll of unexposed film.

   NOTE: Do not let the film unwind.

IMPORTANT: Follow the next steps carefully to avoid film jams.

5. Using the reel flanges to guide you, line up the narrow end of a dual-strand self-threader (a special leader that helps prevent film jams) with the film edges.

6. Slide the self-threader, with the black side up, under the leading edge of the film and hold it in place with your index finger.

   The film should overlap the self-threader by a minimum of 51 mm (2 in.) with the emulsion (light-colored) side of the film contacting the black side of the self-threader.

7. Fasten the leading end of the film to the dual-strand self-threader with a minimum of 76 mm (3 in.) of *Kodak Prostar* Tape, or equivalent.

Self-threader

8. Wind the self-threader onto the film reel.

    NOTE: Make sure the tape does not extend over the edges of the film or self-threader. Avoid leaving fingerprints on the adhesive side of the tape.

9. Verify that the temperatures of the developer, film dryer, and water are all within specification.

    NOTE: Under normal operating conditions, the dryer will have reached the operating temperature by the time you have attached the self-threader.

    If there is high humidity, low temperature, or low line voltage, the dryer may take longer to reach the acceptable operating temperature. In these situations, you may want to wait until all three operating temperatures are acceptable before you attach the self-threader.

10. Place the roll of film on the supply spindle of the #1 rack so the film unwinds off the right side of the reel (when you are facing the front of the Archive Processor).

    The emulsion (dull) side of the film and the gray side of the self-threader both must face the left side of the Archive Processor.

11. Place the self-threader on top of the racks.

12. Load the second roll of microfilm on the spindle of the #2 developer rack so that it unwinds from the right. Hold the film in place with your index finger to prevent the film from unwinding.

13. Place the film on top of the self-threader, overlapping it by 51 mm (2 in.), and fasten the end of the film to the black side of the dual-strand self-threader with a minimum of 76 mm (3 in.) of *Kodak Prostar* Tape, or equivalent.
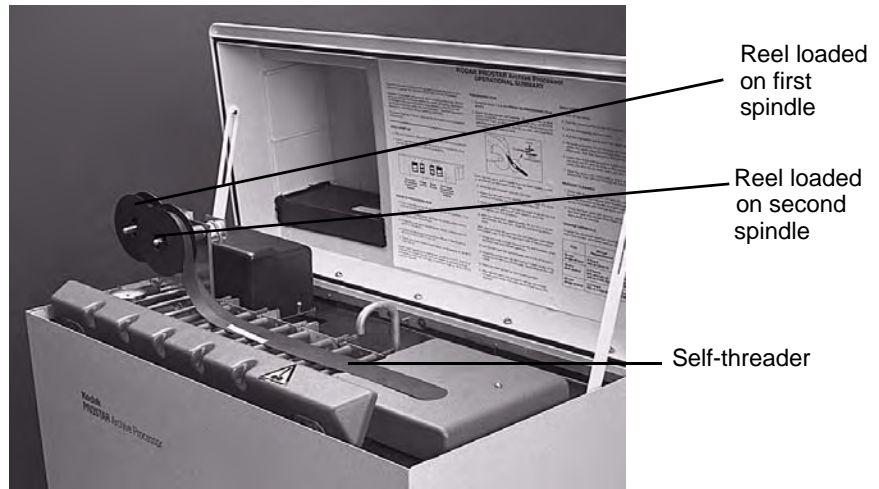

Reel loaded on first spindle

Reel loaded on second spindle

Self-threader

14. Loop the leading edge of the self-threader to the left and beneath the reels.
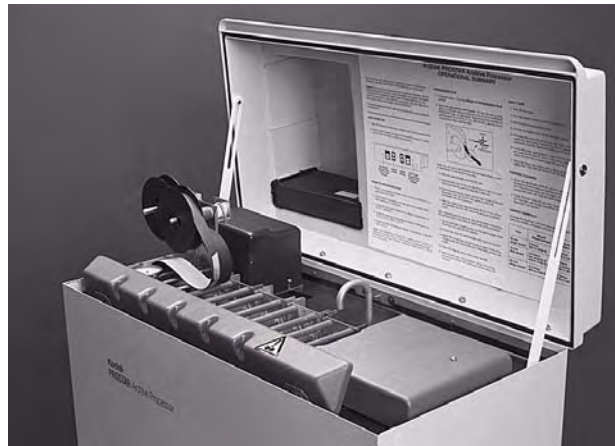
NOTE: Make sure the tape does not extend over the edges of the film or self-threader.

15. Feed the self-threader down into the feed chute in the first developer rack until the rack starts to draw the self-threader into the Archive Processor.

16. After the rollers draw all of the self-threader into the rack, close the processing section cover.

After approximately 35 seconds, the self-threader exits below the tension roller on the take-up (right) side of the Archive Processor.

IMPORTANT: As the self-threader exits the dryer, make sure that it does not catch on anything that will cause the film to back up and jam in the processor.

17. Grasp and keep a slight tension on the self-threader while drawing it out until the first film appears.

18. Cut the first film from the self-threader with a pair of scissors.

19. Attach the first film to a reel using one of the methods described in "Attaching film to a take-up reel."

20. Place the take-up reel on the spindle closest to the processor.

The first film goes on the reel closest to the processor

NOTE: If you pull on the self-threader or when you remove the self-threader from the film, you may unintentionally raise and lower the tension roller. Raising and lowering the tension roller activates the time delay for energy conservation mode, which causes the film transport to stop after 60 seconds (3 m or 10 ft of film).

If approximately 2.5 m (8 ft) of film has exited from the Archive Processor but has not yet been tensioned, lift and release the tension roller to reset the time delay for an additional 60 seconds.

If the film transport stops before the film is tensioned, immediately press and release the Mode switch to the run position or lift and release the tension roller bracket. This will restart the film transport. If film is left stopped in the processing chemicals, image quality problems will result.

Remove all film ends and tape before reusing the self-threaders. Do not use self-threaders that have been folded, curled or shortened. Store the self-threaders by hanging them from the prepunched hole in the end.

21. Continue to keep tension on the self-threader to keep the film moving until the second film appears.

22. Cut the second film from the self-threader with a pair of scissors.

23. Attach the second film to a reel using one of the methods described in "Attaching film to a take-up reel."

24. Insert the take-up reel onto the spindle farthest from the processor.
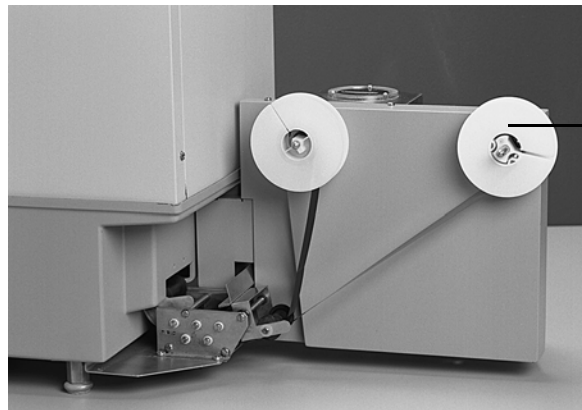
The second film goes on the reel farthest from the processor

When the trailing end of the film leaves the dryer rack, tension is lost and the tension roller automatically lowers. The loss of tension activates the 60-second time delay for the energy conservation mode. Once energy conservation mode is activated, the film transport, rinse water, and dryer blower will all turn off.

25. Add developer to the developer tank if the Archive Processor operates in manual replenishment mode.

Add developer after 61 m (200 ft) of 0.14 mm/5.2 mil-thick film or 131 m (430 ft) of 0.07 mm/2.7 mil-thick film has been processed while in dual-strand operation.

Replenishing the Archive Processor

Replenishment tables

Replace the developer and fixer with fresh chemicals according to the frequency listed in the table below, or every two weeks, whichever interval comes first.

NOTE: Change the developer and fixer at least every two weeks.

Film	Manual Replenishment	Automatic Replenishment
16 mm single strand	5 hours 900 m (3000 ft)	30 hours 5500 m (18,000 ft)
16 mm dual strand	2.5 hours two strands of 450 m (1500 ft) each	15 hours two strands of 2750 m (9000 ft) each
35 mm single strand	2.5 hours 450 m (1500 ft)	15 hours 2750 m (9000 ft)

Mixed film sizes

If you are processing both 16 mm and 35 mm film, use a combination of the chemical replenishment guidelines. The chemical usage ratio for 35 mm to 16 mm film is 1:2.

For example, with manual replenishment, you can process 457 m (1500 ft) of 16 mm film and 230 m (750 ft) of 35 mm film before you need to change the chemicals.

Changing chemicals during processing

Use proper precautions when using processing chemicals. Review the MSDS for the developer and fixer.

1. Power down the Archive Processor or turn off the water. This reduces the possibility of the water jacket overflowing later when you reinsert the tanks.

2. Hold the gear cover back and remove the processing racks from the processor (#1 rack first, then #2, #3, #4, and #5).

   The rack number is located just above the drive gear. Hold a sponge under the racks when transferring them to the sink. This avoids chemicals dripping on surrounding work areas or the floor and possible cross-contamination of chemicals.

3. Pull the gear cover back and lift the fixer tanks out of the Archive Processor. Each fixer tank is labeled with an **F**.

4. Pull the gear cover back and lift the developer tank out of the Archive Processor. The developer tank is labeled with a **D**.

5. Empty the developer tank.

6. Fill the developer tank with *Kodak Prostar* Plus Developer, or equivalent, until the level reaches the fill line (approximately ½ gallon or 1.3 liters).

7. Wrap the overflow tubing closely around the right side of the developer tank.

8. Hold the gear cover back and ***slowly*** and ***carefully*** lower the developer tank into the first position in the Archive Processor.

   NOTE: Make sure that the tank is fully seated and level with the fill line toward the rear of the Archive Processor.

9. Route the tubing from the developer tank through the notch in the partition.

10. Insert the tubing into the standpipe.

11. Empty the fixer tanks.

12. Fill the fixer tanks with *Kodak Prostar* Plus Fixer, or equivalent, until the level reaches the fill line (approximately ¼ gallon or 0.65 liters per tank).

13. Hold the gear cover back and ***slowly*** and ***carefully*** lower the fixer tanks into the fourth and fifth position in the Archive Processor.

   NOTE: Make sure the tanks are fully seated and level with the fill line toward the rear of the Archive Processor.

14. Hold the gear cover back and lower the processing racks back into the processor (#5 rack first, then #4, #3, #2, and #1).

   The rack number is located just above the drive gear. Hold a sponge under the racks when transferring them from the sink. This avoids chemicals dripping on surrounding work areas or the floor and possible cross-contamination of chemicals.

CAUTION: Lower the racks *slowly* and *carefully* into the Archive Processor to avoid splashing any chemicals.

15. Close the processing section cover.

16. Power up the Archive Processor or turn the water on, depending on the action that you performed in Step 1.

17. Allow approximately 25 minutes for the developer temperature to stabilize before attempting to adjust the temperature control setting.

18. Press and release the Mode switch to the Run position.

19. Feed a self-threader into the feed chute on the #1 rack to make sure that all racks are fully seated and working properly. Allow the self-threader to exit the processor.

20. Lift and release the tension roller to shut off the processor. The processor will stop 60 seconds after the tension roller is released.

Replenishment unit

If you prefer to use automatic replenishment rather than manual, you must use the optional *Kodak Prostar* Replenishment Unit.

When using freshly mixed chemicals in the replenishment unit:

• 1300 ml (43.9 oz.) fills the tanks.

• The balance of the gallon (approximately 2400 ml) allows you to process 915 m (3000 ft) of 16 mm microfilm.

• Each additional gallon (3785 ml) allows you to process 1525 m (5000 ft) of 16 mm microfilm.

To avoid low film density resulting from low developer levels, change the replenisher bottles when the solution level reaches the level indicated in the operator's manual for the replenisher unit.

Maintenance

Follow the recommended cleaning procedures to provide continued quality film processing and reliable operation, and to extend the life of the Archive Processor.

Cleaning the Archive Processor (daily)

At the end of each day's processing, clean the Archive Processor as follows:

1. Turn off the water at the thermostatic mixing valve.

2. Turn the power switch to the Off position (O).

3. Lift the processing section cover.

4. Pull the standpipe out to drain the water jacket.

5. Hold the gear cover back and remove the processing racks from the processor (#1 rack first, then #2, #3, #4, #5, and #6). The rack number is located just above the drive gear. Hold a sponge under the racks when transferring them to the sink. This avoids chemicals dripping on surrounding work areas or the floor and possible cross-contamination of chemicals.

6. Rinse the racks thoroughly in water while turning the drive gear.

7. Lightly rub the rollers with a clean cloth while rinsing to remove any deposits from processing.

    To remove difficult stains, use a nonabrasive cloth that will not scratch the roller surface. Discoloration of the rollers is normal and causes no harm.

8. Clean the developer racks (#1 and #2) thoroughly.

9. Leave the developer racks (#1 and #2) submerged in clean water until they are needed.

    Do not store the developer racks (#1 and #2) in the same water as the fixer racks (#4 and #5).

CAUTION: When removing and rinsing the fixer racks (#4 and #5), do not splash the developer racks with fixer or drip fixer into the developer tanks.

Hold a sponge under the racks when transferring them to the sink.

10. After thoroughly cleaning the remaining four processing racks, leave them submerged in water until they are needed.

    NOTE: Do not let the racks sit in water containing minerals that can form a coating on the racks.

11. If the chemicals are exhausted, remove the developer and fixer tanks, empty and rinse them out with water.

12. If the chemicals are not exhausted, the tanks can be left in the Archive Processor.

13. Remove the dryer section cover and the dryer rack (#7).

14. Clean the dryer rack rollers with a clean, damp cloth. **Do not rinse the dryer rack with water.**

15. Clean the recirculator cover, the area around the recirculator assembly, and the drip tray with a damp sponge. **Do not remove the probe or pull out the wire from the recirculator.**

16. Close the processing section cover and let the Archive Processor stand as is until it is time to start it up again.

Cleaning the Archive Processor (periodic cleaning)

Clean the developer racks with *Kodak* Developer System Cleaner and Neutralizer, or equivalent, every time the chemical tanks are changed using automatic replenishment (every third time with manual replenishment) to remove silver and chemical deposits.

NOTE: Discharge, treatment, or disposal of spent solutions may be subject to local, state, or federal laws. Contact appropriate authorities to determine the requirements that apply to the use of this product.

Cleaning the developer racks and tank

CAUTION: Follow the safe-handling instructions printed on the bottle label.

1. Mix the *Kodak* System Cleaner.

   - Start with 750 ml of water and add 125 ml of cleaner part "A" concentrate and add 125 ml of cleaner part "B" concentrate then mix until the solution is uniform.

        or

   - 6 parts of water add 1 part of cleaner "A" and 1 part of cleaner "B" then mix until the solution is uniform.

   NOTES:

   - **Do not mix developer system cleaner directly with neutralizer.**

   - Improper mixing and handling, such as allowing the cleaner to come in contact with residual developer or the other processing solutions, can form irritating sulfur dioxide fumes. Use adequate ventilation.

2. Mix neutralizer

   - Start with 875 ml of water, add 125 ml of neutralizer concentrate then mix until the solution is uniform

        or

   - 7 parts of water, add 1 part of neutralizer concentrate then mix until uniform

3. Disconnect the power from the wall outlet.

4. Lift the processing section cover.

5. Lift out the developer racks (#1 and #2).

6. Rinse the developer racks thoroughly with warm water.

7. Empty the developer tank and rinse the with warm water.

8. Fill the developer tank with mixed *Kodak* Developer System Cleaner "A" and "B" or equivalent, until the developer racks are covered, then rotate the drive gears until the deposits are removed.

9. Allow a maximum of 30 minutes to clean heavily coated racks.

   NOTE: Do not soak the racks longer than 30 minutes or at temperatures above 32°C (90°F).

10. Remove the developer racks and rinse them thoroughly while rotating the drive gears with warm water. There may be some discoloration on the rollers; this is normal.

11. Empty the solution from the developer tank and rinse it with warm water.

12. Pour the mixed neutralizer solution into the developer tank.

13. Place the developer racks into the neutralizer for 2 minutes.

14. Lift the developer racks out of neutralizer and wash them with warm water.

15. Empty the neutralizer from the developer tank and rinse it with warm water.

   NOTE: Do not use *Kodak* Developer System Cleaner and Neutralizer on the fixer racks (#4 and #5) and wash racks (#3 and #6) or on the dryer rack (#7). The daily maintenance procedure is usually sufficient for these racks (refer to "Cleaning the Archive Processor (daily)"). If deposits have formed, refer to "Cleaning the fixer racks, wash racks, and fixer tanks.")

16. Close the processing section cover and let the Archive Processor stand as is until it is time to start it up again.

Cleaning the fixer racks, wash racks, and fixer tanks

1. Mix the *Kodak* Fixer/Wash System Cleaner, or equivalent, according to the instructions on the bottle.

   NOTE: If a smaller volume is needed, mix proportional amounts of chemicals and water.

   **CAUTION: Follow the safe-handling instructions printed on the label.**

2. Lift out the fixer racks (#4 and #5) and the wash racks (#3 and #6).

3. Rinse the fixer racks and wash racks thoroughly with water and place them in a plastic container.

4. Fill the plastic container with *Kodak* Fixer/Wash System Cleaner, or equivalent, until the fixer racks and wash racks are covered. Soak the racks until the deposits are removed.

NOTE: Do not soak the racks longer than 30 minutes or at temperatures above 38°C (100°F).

5. Remove the fixer racks and wash racks and rinse them thoroughly.

6. Place the fixer racks and wash racks in a container large enough to hold them standing up and submerged; rinse them for at least 30 minutes in running water.

7. Soak the racks overnight in clean water.

8. Immerse the fixer tanks in the *Kodak* Fixer/Wash System Cleaner, or equivalent.

9. Soak until the deposits have been removed.

10. Rinse the fixer tanks thoroughly with running water.

11. Close the processing section cover and let the Archive Processor stand as is until it is time to start it up again.

Changing the air filter

Change the air filter every six months. The air filter is located under the Archive Processor. It is accessible from the front of the processor.

Air filter   Air filter housing
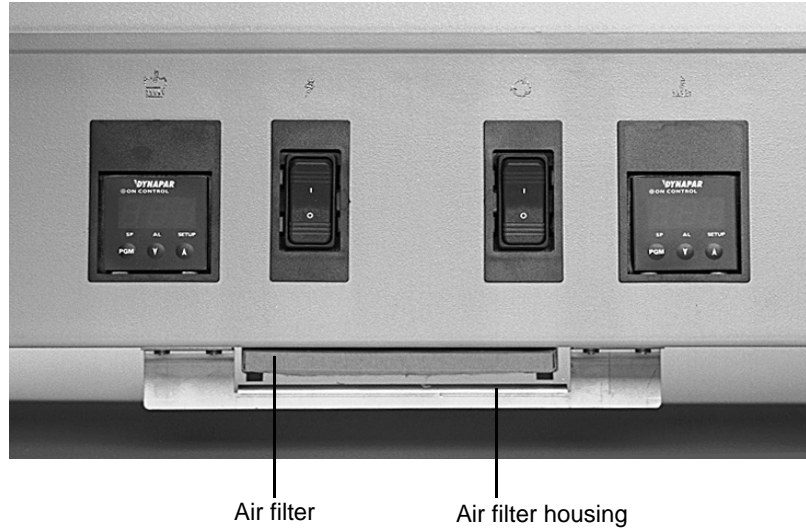
1. Pull the air filter toward you and out of the air filter housing.

2. Hold a new air filter so that the air flow arrow on the edge of the filter points up.

3. Slide the new air filter into the air filter housing.

Troubleshooting

Clearing a film jam

If a jam occurs either before or after the film is tensioned on the take-up reel, follow the procedure below.

1. Turn the power switch to the off (O) position, and unplug the power cord.

2. Lift the processing section cover.

3. Hold the supply spool to keep the film from unwinding.

4. Cut the film where it enters the first rack.

5. Remove the reel of film and immediately put it in the film box.

6. Lift off the dryer section cover.

7. In sequence, starting with the dryer rack, partially raise each rack and cut the film where it enters the rack.

   NOTE: Do not drip fixer from the fixer racks on the developer racks or into the developer tank.

8. Lift each rack out of the Archive Processor and carefully pull the film from the rack.

   If film is wrapped around the rollers and cannot easily be pulled from the rack, use scissors to carefully cut the film free from the rollers. Remove all pieces of film from the rack.

   NOTE: Do not scratch the rollers.

9. Thoroughly rinse all racks except the dryer rack and put them back in the Archive Processor.

10. Turn the power switch to the On (I) position.

11. Press and release the Mode switch to the Run position.

12. Feed a self-threader through the Archive Processor two times to check for further jamming problems.

13. If the self-threader exits from the Archive Processor without problems, resume processing.

14. Lower the processing section cover.

Troubleshooting chart

Problem	Possible Cause	Remedy
Archive Processor does not power up	Power switch is set to the Off (O) position	Turn the power switch to the On (l) position.
	Main power supply is off	Call a qualified electrician to check the power source.
	Electrical plug is not firmly connected in an outlet or at the rear of the Archive Processor	Check the electrical plug connection in the outlet and at the rear of the Archive Processor.
	Circuit breaker is tripped	Reset the circuit breaker (to locate the circuit breaker, see the illustration at the top of Page 5).
Film images are too light or dark	Incorrect developer temperature	• Adjust the thermostatic-mixing valve so that the incoming water temperature is between 34 and 37°C (94 and 98°F). • Adjust the developer temperature control to a nominal 37.8°C (100°F).
	• Developer is exhausted (light images) • Developer tanks are not filled to the correct level (light images)	Replenish the developer. To replenish the developer, place the neck of the squeeze bottle in the developer tank and squeeze the bottle until the solution level reaches above the middle of the first white roller located below the feed chute.
Film jam	Self-threader is incorrectly taped to the film	Clear the film jam (refer to "Clearing a film jam"). Reattach or replace the self-threader (refer to "Operating the Archive Processor").
	Self-threader is not full length	Clear the film jam (refer to "Clearing a film jam"). Replace the self-threader (refer to "Operating the Archive Processor").
	Self-threader is damaged	Clear the film jam (refer to "Clearing a film jam"). Replace the self-threader (refer to "Operating the Archive Processor").
	Self-threader is curled	Clear the film jam (refer to "Clearing a film jam"). Reverse wind the self-threader until it lies flat (uncurled).
	Racks are not fully seated	Clear the film jam (refer to "Clearing a film jam"). Check that all racks are properly seated and that all drive gears are properly engaged.
	Self-threader catches on the table when exiting from the Archive Processor	Clear the film jam (refer to "Clearing a film jam"). Move the Archive Processor toward the right edge of the table so the film clears the table edge.
	Film is loaded backward	Clear the film jam (refer to "Clearing a film jam"). Place the film on the supply spindle so it unwinds from the right side with the emulsion side (light color) of the film facing to the left.
	Dryer chamber is too hot	Refer to "Checking the dryer temperature."
	Film is tacky, sticks to the dryer rack	Clear the film jam (refer to "Clearing a film jam"). Lower the dryer temperature.

Troubleshooting Chart (continued)

Problem	Possible Cause	Remedy
Layers of film (convolutions) stick together on the take-up reel	Dryer chamber is not hot enough to dry the film (film feels damp)	Raise the dryer temperature.
Film is scratched, has digs or abrasions	Racks and tanks need cleaning Make sure that the trouble is not caused by the microfilming equipment in which the film was exposed	Refer to "Maintenance."
Developer temperature does not reach 37.8°C in the required 30 minutes	Developer temperature needs adjusting Incorrect wash-water temperature	Adjust the developer temperature (refer to "Adjusting the developer temperature control"). Adjust the thermostatic mixing valve (refer to "Adjusting the inlet water temperature").
Self-threader separates from the film	Fingerprints on the adhesive side of the splicing tape Adhesive tape is too short	Reattach or replace the self-threader (refer to "Operating the Archive Processor"). Avoid leaving fingerprints on the adhesive side of the splicing tape. Reattach or replace the self-threader using a minimum of 76 mm (3 in.) of tape (refer to "Operating the Archive Processor").
Film quality is poor	Chemicals are exhausted Developer is contaminated by system cleaner or fixer	Change the chemicals. Wash the racks and change the chemicals.
Film stops before it is tensioned on the take-up reel.	The time delay of 60 seconds passed before the film could be tensioned	Train the operator to tension film in less than 60 seconds. Lift the tension arm or press and release the Mode switch to the Run position immediately to reset the 60-second time delay for energy conservation mode (refer to "Operating the Archive Processor").

Accessories and Supplies

Item	Catalog Number
***Kodak* Thermostatic Mixing Valve** Designed to control the water temperature to the Archive Processor at a flowrate of 1.9 to 7.6 liters/minute (0.5 to 2 gal/min).	142 3698
***Kodak* Processor Cabinet** The top of the cabinet has space for the Archive Processor and a chemical replenishing unit. There is storage space inside the cabinet. The unit is 107 cm (42 in.) long, 64 cm (25 in.) deep, and 64 cm (25 in.) high.	144 4256
***Kodak Prostar* Replenishment Unit** Automatically replenishes the developer and fixer in the Archive Processor.	809 0755

Supplies	Catalog Number
Kodak Prostar Plus Developer	102 2490
Kodak Prostar Plus Fixer	102 2656
Kodak Developer System Cleaner and Neutralizer	150 0719
Kodak Fixer/Wash System Cleaner	139 5110
Kodak Solid Flange Return Reel (16 mm) case of 300	873 0715
Kodak Solid Flange Return Reel (35 mm) case of 150	144 2433
Microfilm Storage Carton, 16 mm case of 160	849 8966
Microfilm Storage Carton, 35 mm case of 80	841 8741
Kodak Prostar 16 mm Self-Threader	199 0993
Kodak Prostar 16 mm Dual-Strand Self-Threader	146 5194
Kodak Prostar 35 mm Self-Threader	199 1009
Kodak Prostar Tape and Dispenser	199 0977
Supplies	**Part Number**
Kodak Prostar Air Filter	321984

Material Safety Data Sheets (MSDS) are available on the Kodak website at: www.kodak.com/go/msds. When accessing the MSDSs from the website, you will be required to provide the catalog number of the consumable you want the Material Safety Data Sheet for. See the section entitled, "Supplies and consumables" later in this guide for supplies and catalog numbers

New Equipment Warranty

For Installations in the United States

***Kodak Prostar* Archive Processor 120 V:** Kodak warrants the processor to function properly for three months from date of initial installation, when installed within one year from date of shipment. This warranty covers the purchaser of this equipment as well as anyone else who owns it during the warranty period.

Warranty Repair Coverage: If this equipment does not function properly during the warranty period, a Kodak Global Customer Service and Support (GCSS) Field Engineer will provide on-site repair service during Kodak's normal working hours. Such repair service will include any adjustments and/or replacement of parts necessary to maintain the equipment in good working order. Off-hours service is available at overtime rates.

Days and Hours of Coverage: Warranty coverage is available Monday through Friday during Kodak's normal working hours (usually 8:00 a.m. to 5:00 p.m.), excluding holidays celebrated locally.

How to Obtain Service: Call your nearest Kodak GCSS Office.

Limitations: Standard warranty service is limited to the contiguous United States, the island of Oahu in Hawaii, and certain areas of Alaska.

This warranty does not cover: circumstances beyond Kodak's control; service or parts to correct problems resulting from the use of attachments, accessories, or alterations not marketed by Kodak; service required as the result of relocation; unauthorized modifications or service; misuse; abuse; failure to follow Kodak's operating instructions; or supply items (such as glass and lamps).

KODAK MAKES NO OTHER WARRANTIES, EXPRESS, IMPLIED, OR OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE FOR THIS EQUIPMENT.

Repair or replacement without charge are Kodak's only obligations under this warranty. **KODAK WILL NOT BE RESPONSIBLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES RESULTING FROM THE SALE, USE, OR IMPROPER FUNCTIONING OF THIS EQUIPMENT, REGARDLESS OF THE CAUSE.** Such damages for which Kodak will not be responsible include, but are not limited to, loss of revenue or profit, downtime costs, loss of use of the equipment, cost of any substitute equipment, facilities, or services or claims of your customers for such damages.

This limitation of liability will not apply to claims for injury to persons or damage to property caused by the sole negligence or fault of Kodak or by persons under its direction or control.

For Installations outside the United States

For installation in countries other than the United States, the terms and conditions of the new equipment warranty will be provided by the Kodak company in the country in which the sale is finalized, or by a Kodak-appointed distributor in those countries where Kodak does not have direct sales representation.

Kodak