Instructions for the CPA-2 and CPP-2 Processors

1. Processor Specifications; CPA-2 and CPP-2

[CPP-2]

[CPA-2]

- Tempering bath capacity: 4.75 gallons (18 liters)
- Base Area: 38 x 15 inches (96.5 x 38.1 cm), including overhang
- Chemical Solution Capacity: Four 260 ml (8 oz.) graduates; six 1000 ml (34 oz.) bottles
- Voltage: 120 Volts, 60 cycles (Hz) AC
- Power Consumption: 480 Watts, 4.4 Amps
- Accommodates tanks/drums: All 1500, 2500, 2800, and 3000 series

Note:

Tanks or drums with a first or last digit of '3' only work with the JOBO Lift accessory. Tanks with a last digit of '1' come with an attached magnet (#1504.) All tanks or drums (except extension modules) with a last digit of '0' require a magnet accessory (#1504), mounted on the bottom, to be used on the CPA-2 or CPP-2 Processor (without the JOBO Lift). The 1526 Combo Drum does not come with either a magnet or cog. To use any of the above tanks or drums with the JOBO Lift (except the ones already equipped with a cog), you must add a Cog (#1505). Install it in the lid of the tank or drum.

Reels:

1501 (35 mm, 1 or 2 120, 220), 1502 (2 110, or 16 mm 5' or 1.5 M maximum), 1555 (35 mm Stainless Steel), 1557 (120 Stainless Steel), 1559 (220 Stainless Steel) 2502 (35 mm, 1 or 2 120, 220), 2509N (4 x 5", 6 x 9 cm, 9 x 12 cm, up to six sheets), 2514 (4 x 5" Polaroid format, up to six sheets), 2517 (70 mm, 5' or 1.5 M maximum), 2518 (2 1/4 x 3 1/4" up to six sheets) 3073 (35 mm x 26' or 8 M maximum), 3075 (70 mm x 16.4' or 5 M maximum). See Appendix for table and illustrations of tanks and reel capacity.

Accessories:

CPA-2/CPP-2 JOBO Lift (#4072); additional or replacement: Black Bottle 1000 ml (#3372), White Bottle 1000 ml (#3373), Graduate 260 ml (3308), Color Thermometer (#3321).

For other JOBO products that will enhance the use of your processor, check your JOBO catalog, talk to your JOBO dealer, or call JOBO Customer Service at (734) 677-6989, ext. 4721. Our hours are from 8 a.m. to 5 p.m. Eastern Time, Monday through Friday, but our voice mail answering system is available 24 hours a day. You may fax us at (734) 677-6963. If you wish to write us, our address is: JOBO Fototechnic, P. O. Box 3721, Ann Arbor, MI 48106-3721, USA. We will be happy to help you.

Back to Top

Go To:

1. **Processor Specifications; CPA-2 and CPP-2**
2. **Safety First**
3. **Differences Between the CPA-2 and the CPP-2 Processors**
4. **Processor Description**
5. **Cleaning the Processor**
6. **Processor Maintenance and Tips**
7. **Processing Instructions for Film Using Magnet Drive**
8. **Processing Instructions for Prints Using Magnet Drive**
9. **Processing Using the JOBO Lift Accessory**
10. **Processing Instructions With the JOBO Lift Accessory**
11. **Precautions for Film and Paper Processing**
12. **Additional Processing Information**
13. **Spare Parts**
14. **Fuse Replacement**

2. Safety First

[CPP-2]

This checklist details important electrical and safety considerations. Please read and observe all the following.

Although your processor is designed to work in a wet environment, it is not designed to be totally immersed in water. Any electrical equipment placed close to water may be dangerous, if improperly used. At a minimum, observe these instructions. Contact JOBO to clarify any safety concerns not addressed in this manual, or any you do not fully understand. (See Section 1, Introduction, on how to contact JOBO.)

• Keep these instructions available for reference.

• Do not use the processor until you read and understand all the warnings contained in this manual.

• Observe all warnings in this manual.

• If any precautionary information is not clearly understood, contact JOBO for assistance before proceeding.

• Do not use the processor if:

• A grounded power outlet is not used (a ground fault interrupt is strongly recommended)

• The power cord is frayed or damaged

• The ground connection of the power cord is damaged

• Fuses of the wrong rating are substituted for correct ratings (see Appendix)

• If the processor has been dropped or damaged (have it checked by a qualified service technician).

• The top cover or hardware is removed.

• Water or chemicals has gotten inside the motor head.

• There is not at least five inches (15 cm) of water in the lower trough.

• Use an extension power cord only if required. Be sure the cord is undamaged, grounded and rated at least 500 Watts at 120 Volts.

• Route all power cords to avoid contact with water. Position cords to prevent stretching or pinching. Avoid placing cords where they could be tripped on, stepped on, or accidentally unplugged.

• Avoid splashing or spilling of water or chemicals on the motor head of the processor or power cord connections.

• Do not leave the processor running unattended for overnight or longer.

• Unplug the processor if it is not being used.

• **Do not attempt to modify or remove any part or function of the processor.**

• **Do not attempt to service the processor beyond what is outlined in this manual.** If you do not understand the service procedures detailed in this manual, contact JOBO for assistance before proceeding. **Never attempt any service or repair without a full understanding of the procedures and safety issues.** If you are not completely secure in your ability to correctly and safely service or repair your processor, have a qualified service technician do it for you.

• **All service or repair work not covered in this manual must be done by a JOBO service technician.**

3. Differences Between the CPA-2 and the CPP-2 Processors

[CPP-2]

[CPA-2]

You may be wondering what the differences are between the CPA-2, and the CPP-2 Processors. Briefly, they are:

1 The temperature is set, displayed, and controlled digitally with the CPP-2. The temperature is set, controlled, and displayed with an analog dial and indicator light on the CPA-2.

2 The CPP-2 has a Cold Water Solenoid which allows processing at below room temperature. This solenoid also provides more rapid cooling of the tempering bath when changing from a higher to a lower process temperature. To accommodate the additional water from the solenoid, an overflow elbow is provided on the rear of the trough.

Note:

Because of these differences, it is not possible to upgrade a CPA-2 to a CPP-2.

4. Processor Description

[CPA-2 Processor]
(click on part for description)

[CPA-2 Controls]
(click on part for description)

[CPP-2 Processor]
(click on part for description)

[CPP-2 Controls]
(click on part for description)

On/Off Switch

This switch controls the power to the whole processor. '0' is 'off', '1' is 'on'. (Netz is German for 'power.')

Rotation Motor Control

This switch turns the rotation motor on and sets the speed. '0' is 'off.' The 'F' through '7' settings adjust the rotation speed from about 25 R.P.M. to about 80 R.P.M. (The normally recommended rotation speed is 'P' at approximately 75 R.P.M. with 1500, 2500, and 2800 series, and '4' at approximately 50 R.P.M. with the 3000 series tanks or drums.)

Reversal Switch

This mechanism controls the automatic reversal of rotation during processing. It will reverse rotation direction every two revolutions. Turn the fingers away from the magnet coupling (or cog gear, if using JOBO Lift) to provide rotation in one direction only. (Almost all processes are best done with reversal of rotation.)

Pump/Heat Switch

This switch activates the water bath pump and the heating control circuit. The processor will not heat if this control is off.

Thermal Overload Reset Switch

This recessed white button resets the thermal overload circuit breaker. The overload automatically turns off the heating element in cases of overheating, such as heating without a sufficient level of water in the processor. Pressing the button with a blunt, non-conducting object (after the heating element has cooled) will reset the circuit. Even when it has tripped, it will not protrude from the side of the processor.

Temperature Control Dials (CPP-2 only)

These dials are used to select the desired operating temperature. The left dial sets 'tens' of degrees, the middle dial sets 'individual' or 'unit' degrees, and the right dial sets 'tenths' of a degree Celsius (C).

Digital Temperature Display (CPP-2 only)

The LED display indicates the actual temperature (in degrees C) of the processor water bath. The display has two illumination levels that automatically switch from bright in room light, to dim in low light (or safelight).

Temperature Control Dial (CPA-2 only)

This dial is used to select the desired operating temperature (in degrees C). (Although the thermostat will maintain the temperature within ± 0.2º C once set, it is not unusual for the dial itself to be off by ± 2.0º C.)

Heater Indicator Lamp (CPA-2 only)

This light is illuminated when the heating element is in operation. It goes off when the water bath has reached its set temperature.

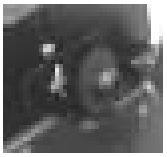
Thermometer Holder (CPA-2 only)

This clip holds the Color Thermometer (#3321) for monitoring water bath temperature.

Bottles & Graduates

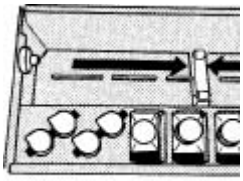
The CPA-2 and the CPP-2 Processors come with four 260 ml graduates, located in the tempering bath. These graduates are used to pre-measure chemical solutions before or during a process. They also can be used to temper rinse water. The graduates lock into place with a 'bayonet' (insert and turn) type fixture to prevent them from floating. Six 1000 ml bottles for storing and tempering processing chemicals or rinse water also come with the processor. These bottles are placed in the six bottle openings. To prevent the bottles from floating, push down and tilt them toward the front side of the processor. Lock the front shoulders of the bottles under the bottle frame.

Magnet Coupling



This magnet couples with the magnet on the bottom of a JOBO tank or drum. The coupling provides rotary agitation for the tank or drum. (If you are using the JOBO Lift accessory, see 'Processing Using the JOBO Lift'.)

Roller Block Assembly



This cluster of parts serves as a support point for the tanks or drums during processing. It is placed at various distances from the magnet coupling (or cog gear, if using JOBO Lift), depending on the length of the tank or drum. It is attached on the raised ridge molded in the tempering bath trough. The roller block assembly is also adjustable in height, to accommodate the drum or tank series being used.

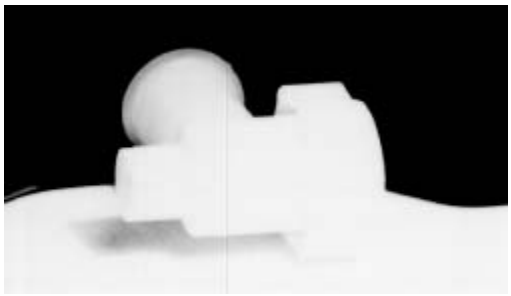
Tempering Bath (Also called Water Bath)

The lower trough (black) tempers the bottles and graduates. Tanks or drums being used for processing are tempered in the upper (red) trough or 'tempering bath'.

Water Level Dial

Rotate this dial to change the level of water in the upper trough. The numbers on the dial may be used for reference on later resets of the dial.

Lower Trough Drain



This drain allows emptying the processor of water for transportation and storage. Do not run the processor without a sufficient level of water in the trough. To route the drain discharge to another location, connect a 5/8" (16 mm) inside diameter flexible hose to the end of the drain. Keep all the hose below the lower trough for proper draining.

Cold Water Solenoid and Overflow Elbow (CPP-2 Only)

The solenoid has a brass adapter for a standard 3/4" washing machine hose connection to a cold water supply. This solenoid allows the processor to be rapidly cooled when changing to a lower temperature process, or to run a process at below room temperature. There is a thirty-second delay before the solenoid activates. The elbow is used to keep the processor from overfilling when using the cooling system. You do not have to hook up the cold water solenoid. However, if you do, the overflow must be allowed to drain. To route the elbow discharge to another location, connect a 3/4" (19 mm) inside diameter flexible hose to the end of the elbow. Keep all the hose below the lower trough for proper draining.

5. Cleaning the Processor

[CPP-2]

Clean all chemical spills immediately to prevent staining the unit, contamination of the tempering bath, and possible introduction of corrosive chemicals into the control unit.

The CPA-2 and the CPP-2 Processors are made of chemical resistant plastics, however, periodic cleaning is recommended:

1 The outside of the processor can be cleaned by simply wiping it with a damp cloth.

2 The water in the tempering bath should be changed regularly to prevent buildup of algae. Depending on local conditions and water quality, this step may be needed weekly or even daily. For best results, drain the tempering bath at the end of your processing session.

3 The inside of the tempering bath should be cleaned periodically to remove any buildup of scum.

WARNING: Do not use chlorine bleach (Clorox) or other products that contain chlorine to clean or maintain the water bath. Chlorine will corrode the heating element, possibly causing an electrical short circuit. The amount of chlorine, in 'chlorinated' drinking water, is not enough to damage the heating element.

JOBO offers an excellent product for cleaning your processor called Processor Clean II, a powdered concentrate, available in two sizes #4135 (4.7 lb. jug) and #4136 (4 oz. packet). To use: Turn off the processor. Drain all water from the processor. If the outside of the bottles or graduates need cleaning, leave them in their slots, otherwise remove them. Place about 200 ml. (6 3/4 fluid oz.) measure of the powder (or two packets) in a graduate or bottle with about 1 liter (34 oz.) of water and dissolve. Fill the trough with water. Pour the container of dissolved cleaner into the lower trough. Turn on the processor. Set the temperature of the processor to about 38°C (100°F). Leave the processor on (to recirculate) for at least eight hours or overnight. Turn off the processor. Drain and rinse the troughs. Refill the lower trough before using the processor.

6. Processor Maintenance and Tips

[CPP-2]

Your CPA-2 or CPP-2 processor is nearly maintenance-free under normal operation. However, with heavy, long-term usage, a periodic check of the items below will ensure maximum performance and reliability from your processor. Also included are usage tips and cleaning recommendations.

1 Wipe up all chemical spills when they happen. Most chemicals will not stain the processor unless they have had time to set in. A damp sponge or towel will remove still wet chemicals. Do not use any abrasive cleaning materials as they may scratch the surface of the processor. If necessary, use a damp sponge with a mild soap. Follow with a water rinse using a clean damp sponge. This procedure will usually remove dried chemical deposits. Processor Clean II may be used to remove more stubborn chemical deposits. Follow instructions provided with the cleaner. Whenever cleaning the motor head (electrical equipment), unplug the processor and be sure to avoid getting moisture inside the unit.

2 The drive cogs on earlier versions of the processors were white. The current version drive cogs are black. The newer black drive cogs are used with all versions of the processors. Use part number #95523, a black drive cog, for the straight rotation motor shaft. Tapered shaft rotation motors require a black drive cog, part number #95555.

3 Make sure the three-finger reversal mechanism (it looks like a 2" white 'chicken foot'), located next to the rotation motor shaft, is pointed towards the motor shaft. This position allows the reversal switch to function. Turning the mechanism to face away from the motor shaft will cause the motor to rotate in one direction only. If the three-finger device is constantly 'kicked' away from the drive cog (and does not reengage), tighten the small Phillips head screw, located in the center of the three finger device, clockwise very slightly. If this screw is overtightened, the motor will reverse rapidly, without making a complete revolution.

4 Be sure to fill the tempering bath with water whenever you are using the processor, to prevent overheating and tripping of the thermal overload mechanism. Running the processor without water but with a tank or drum will also cause excessive wear on the roller block assembly.

5 Do not exceed the maximum quantity (1000 ml) of chemicals or water (in a tank or drum), for any process. If you use an Expert drum, be especially careful to not set the water level too high (more than 1/4" or 6 mm above the bottom lip of the drum) in the upper trough. If the level is too high, the Expert drum will be rotating a very large quantity of tempering water in addition to the chemicals in the drum which can wear out the rotation motor prematurely.

6 When using the stainless steel reel system, be sure to keep the plug in the funnel fully inserted.

7 Periodically examine the upper and lower trough for buildup of foreign deposits. Hard water often leaves deposits of rust and calcium. A warm bath of water is likely to accumulate an algae-like growth. If any of these deposits are noticed, use Processor Clean II (follow the instructions that come with the product). Microorganism growth can be minimized by draining and rinsing the processor troughs between uses.

WARNING: Do not use chlorine bleach (Clorox) or other products that contain chlorine to clean or maintain the water bath. Chlorine will corrode the heating element, possibly causing an electrical short circuit. The amount of chlorine, in 'chlorinated' drinking water, is not enough to damage the heating element.

8 If the pump performs sluggishly, or the flow of water in the upper trough is minimal, check the Pump Motor Housing (see illustration below) for foreign material as follows: Unplug the processor. Remove the four large thumbnuts on the lower corners of the motor head that hold it to the lower trough. Remove the motor head from the lower trough. Gently rock the pump motor housing to remove it. Carefully remove any material accumulated inside the housing or on the pump shaft. The CPP-2 has a temperature-sensing probe (small black rod) mounted parallel to the pump shaft, so be very gentle if you must clean the probe, as it is easily damaged or dislocated. To reassemble, reverse the procedure. Be certain to place the end of the pump shaft into the center ring on the bottom of the pump housing. The bottom of the pump housing will look as though three of the four cross bracing supports to the center ring are broken or missing. It is not a defect or damage.

Note:

The modification to the pump housing mentioned above was made by JOBO to minimize noise, vibration, and wear.

9 If you wish to cool a CPA-2 processor below room temperature, or cool a CPP-2 processor below room temperature (without using the cold water Solenoid), use the following procedure: Fill unused or extra 1000 ml bottles with water, and cap loosely. Do not put more than 1000 ml in each bottle. Place the bottles in a freezer or refrigerator until frozen or cool. Put these bottles into unused bottle slots. Set the temperature on the processor to the desired process temperature. Let the processor run until the correct temperature is obtained. Be sure to check the temperature of the chemicals and rinse water. Run the process when all temperatures have stabilized at the desired point. You may need to exchange chilled bottles periodically in long processes (extra bottles already cooling in the refrigerator would be useful). The chilled bottles constantly cool the water bath, and the heating element of the processor heats as necessary to bring the temperature up to the process temperature. Alternatively, re-freezable 'ice packs' (Blue Ice) may be carefully placed in the trough. Be sure the pack does not interfere with the moving parts of the processor.

WARNING: Do not put loose ice in the processor trough! The ice could be sucked up into the pump motor system and cause severe damage.

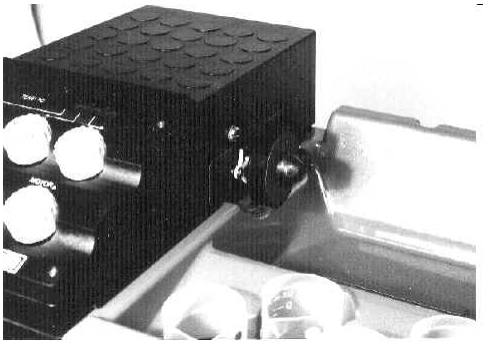
This procedure will also work with a CPP-2 when the temperature of the cold water line is above the desired process temperature. Do not use the cold water solenoid if the cold water line is warmer than the selected process temperature. The solenoid does not cool the water going into the processor.

10 If you have obtained this instruction manual as a replacement to earlier editions, use the process recommendations in this book (where they are different), not the recommendations in the earlier

manual(s). These instructions reflect the changes that have been made in film, paper, and chemicals since the original book was written. (If you already have processing procedures that completely satisfy you, don't change them just to match the directions in this book.)

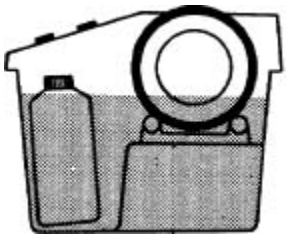
11 Don't worry. The CPA-2 and the CPP-2 Processors are excellent machines. They will produce quality processing simply and consistently with only a little care and understanding of these instructions.

7. Processing Instructions for Film Using Magnet Drive



Read and familiarize yourself with the entire process procedure, before starting the process.

1 Fill the lower trough with water to the shoulder of the bottles (or on the CPP-2 until water starts to come out of the overflow elbow). -- To speed warming of the processor you may fill the trough with water at the process temperature, but check the solution temperatures before starting the process.



2 Turn the On/Off switch, and the Pump/Heat switch to 'On'.

3 Set the temperature control(s) to the desired processing temperature. The CPA-2 heater indicator lamp should light if the temperature in the tempering bath is cooler than the temperature set. When the lamp turns off (and then cycles on and off), the processor has reached its operating temperature. The CPP-2 temperature display will show when the processor has achieved the correct temperature.

Note:

(For the CPA-2 only.) When the temperature of the processor has stabilized, the heater indicator lamp will cycle on and off. The thermostat works to maintain the proper temperature. Check the developer temperature with the Color Thermometer (JOBO accessory #3321) and adjust the temperature control if necessary.

Always monitor for correct process temperature in a bottle or graduate containing chemicals or water. The trough temperature will be several tenths of a degree higher than the temperature maintained in the bottles or graduates. Monitoring the temperature of water or chemicals poured out of a tank or drum, or coming out of the JOBO Lift drain hose, is not an accurate indication of the process temperature.

The temperature of the actual process (inside the tank or drum) is equal to the temperature stabilized in the bottles or graduates, not the temperature of the trough or post-processing effluent.

The following steps can be completed while waiting for the processor to reach operating temperature.

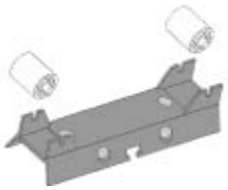
4 Chemicals should be mixed, and bottles filled and in place, before turning on the processor. This sequence ensures the chemicals will reach the processing temperature about the same time as the tempering bath. If the bottles or graduates are put in the processor (or refilled) after heating has started, check their temperature. Do this after the processor is at the correct temperature.

Caution: Do not start a process until all solutions are at the required processing temperature.

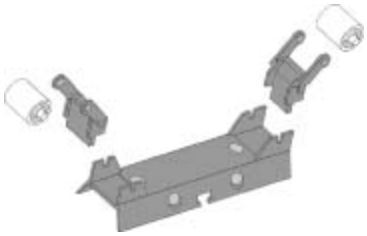
5 Be sure you have enough rinse water available. If your process does not require the use of all six bottles, the unused bottles may be used for rinse water. They are kept at the processing temperature by the lower trough. If you do not have room in the processor, and require additional rinse water, use one or more bottles or graduates filled with water at or about 10º F (5º C) over the processing temperature. For most color processes, rinse water should be within ± 8º to 10º F (4º or 5º C). The cooling that takes place before use will not drop the temperature out of tolerance. Black and white processes usually use room temperature rinse water.

6 Adjust the roller block (see illustrations, below) to the tank size being used.

[1500 Series]

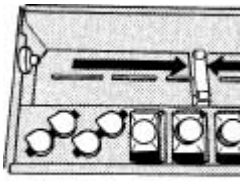


[2500 and 2800 Series]



[3000 Series]

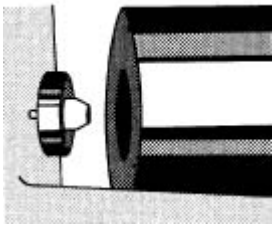
Press the roller block onto the raised ridge in the upper trough until it snaps into place. Position it so the black body of the tank being used rests on the rollers as far to the right under the tank as possible. Do not allow the tank to rotate on the red ring.



7 Load your tank in the dark. Note the volume of chemicals required for the tank and reel combination. (See instructions included with the tank.)

8 Turn the Rotation Speed Dial to 'P.'

9 Couple the tank to the magnet coupling (see illustration below).



Notes:

A Practice with an empty tank until you can complete the coupling with a smooth, even motion.

B It is easiest to make the coupling when the drive magnet on the processor is near its stopping point. Mount the tank on the drive magnet when the drive magnet is changing direction of rotation.

C Observe the drive magnet. As it reaches the end of a rotation cycle, move the base of the tank up to the drive magnet. Move it with the tank in a horizontal position. You will feel the magnet try to 'grab' the tank. Let go of the tank, and it will attach to the drive magnet and begin to rotate.

D To uncouple, grasp the tank body and lift the free end straight up, at a right angle to the processor. This motion will break the magnetic bond, and the tank can be removed from processor.

10 Refer to instructions for the specific process you are using. They will cover pre-rinse or pre-warm time, as well as times for each processing step, rinses, etc. Be sure the water level is high enough in the upper trough to bathe the tank with water (1/8" to 1/4", or 3 mm to 6 mm, above the bottom of the tank). Do not go too high. The lid end of the tank will float.

Note:

A When using a pre-warm, allow the tank to rotate in the upper trough (the loaded tank is dry inside, with no water or chemicals in it) for the specified warm-up time.

B When using a pre-rinse, allow the loaded tank to rotate in the upper trough with the appropriate amount of rinse water (see Section 3 for specified pre-rinse times).

C At the end of the pre-warm or pre-rinse step, remove the tank from the processor. Remove the red cap. Pour out the pre-rinse water (if a pre-rinse was used). Pour in enough of the chemical for the tank and film you are using. Replace the red cap. Start timing the step.

Caution: Many photographic solutions can produce gasses that cause a pressure buildup inside the tank. The red cap is constructed with a flexible membrane section at its center. Press down the center of the red cap before putting the cap on the lid. Pressure generated will move the depressed membrane in the cap, rather than forcing the cap off the tank.

D When processing film (without the JOBO Lift attached), manually invert the tank two or three times. This action ensures that the solution has covered all the films' surface quickly. Strike the bottom of the tank against the heel of your hand, or against the counter top to dislodge any 'air bells' (bubbles) on the film. Couple the tank to the processor.

E About ten seconds before the end of the time for the chemical step, remove the tank from the processor. Remove the red cap. Pour out the used solution.

F Pour in the next chemical (or rinse, if specified). Replace the red cap. Start timing, and couple the tank to the processor.

G Continue this sequence of emptying and filling until the process is complete.

H For the pre-rinse step only, use one filling of water for the tank. Do not change the rinse water for the duration of this step. Other rinse steps are done in the tank, using a series of 30-second rinses to make up the total rinse time required. (An example would be: 2 minute rinse = 4 x 30-second rinses.) The final rinse step may also be done this way. The tank may be removed from the processor, and a running water rinse with the JOBO Film Washer #3350 may be used. (See table below for recommended rinse water quantities.) Either procedure will provide a thorough final rinse.

Be sure the water level is adjusted high enough in the upper trough (see illustration below) to bathe the tank with water (1/8" to 1/4" or 3 to 6 mm, above the bottom of the tank.) Do not go too high. The lid end of the tank will float, causing uneven development

11 Rinse Water: Rinsing (washing) of photographic material is a very important part of the process. Insufficient rinsing can produce inferior processing results which are likely to fade or deteriorate much sooner than would happen with sufficient rinsing.

Three factors affect rinsing: the water quantity used, the number of water changes, and the rinse time. For best results, use the amount of rinse water listed in the chart below. Use of rinse amounts higher than listed is discouraged, because the decreased agitation inhibits the rinsing process. The water should be changed about every thirty seconds for the duration of the rinse step. The time of each rinse step must be determined for each process. Consult Section 3 on Specific Processes, or the chemical manufacturer's instructions for details.

The number of water changes (cycles) is more important than the timing of the cycle in rinse steps. If you have difficulty in cycling the rinse water every thirty seconds, take whatever time for the cycle you need, but, be sure to have at least as many cycles as recommended. (Divide the rinse time in minutes by two, to determine the number of rinse cycles.) In virtually all processes the rinse time may be longer without causing any problems. For best results, do not shorten rinse times or reduce the number of water changes.

Rinse water volumes:

If the chemical volume is between:	Then the minimum rinse water volume is:
40 ml - 260 ml	260 ml
300 ml - 470 ml	500 ml
540 ml - 600 ml	600 ml
600 ml - 1000 ml	1000 ml

9. Processing Using the JOBO Lift Accessory

The JOBO Lift (Part #4072) for both the CPA-2 and the CPP-2 Processors simplifies processing. It eliminates the need to remove the tank or drum during the process. Filling and draining of chemicals and rinse water from the tank or drum is done with the JOBO Lift. This enhancement ends wet hands and messy counter tops, improves timing accuracy, and gives better chemical distribution. The JOBO Lift can be added to the CPA-2 or CPP-2 Processors at any time with a minimum of effort.

The JOBO Lift accommodates 1500, 2500, 2800, and 3000 series tanks and drums. The 1500 and 2800 series tanks and drums require the addition of a cog (part #1505). Tanks 2521 and 2551 (from the one and two reel sheet film kits) also require the addition of a cog (part #1505). Tanks 2523, 2553, 2563, 2583, and 2593 come with the cog already built into the lid. (Tanks 2521/2523, and 2551/2553 have the same capacity for rolls of film. The only difference is a magnet on the bottom or a cog lid on the top.) All tanks and drums which number either begins or ends with a '3' already have a cog in the lid.

See the instructions Cogs and Magnets for the procedure used in permanently mounting the cog to the lid.

Note:

You don't need to remove the magnet from the bottom of the tank or drum when using the JOBO Lift.

Tanks and drums are filled immediately by pouring liquids into the built-in funnel in the top of the JOBO Lift. Liquids are drained from the tank or drum by moving the lever of the JOBO Lift counterclockwise to allow the liquid to flow out the hose on the left side of the JOBO Lift.

When using the JOBO Lift, processing instructions are the same as the preceding General Processing Recommendations, except:

1. Do not remove the tank or drum during intermediate steps. Filling and draining is done with the JOBO Lift.
2. The red membrane cap is not used on the tank or drum.
3. The procedure outlined in sections 9 A-D and 10 B-E of Section 2, General Processing Recommendations should not be done.

10. Processing Instructions With the JOBO Lift Accessory

1 Practice mounting and removing a tank or drum on the JOBO Lift, before you start actual processing.

Note: The retention clip may snap loudly when removing the tank or drum. This sound is normal. When lowering the lift, the cog gear will mesh with the transfer gear. They may make a 'thunk' noise as they engage. This sound is normal too.

2 Check that the correct chemical/wash outlet (on the lift arm, looks like two horizontal nozzles one above the other) has been selected by plugging the unused outlet with the bell-shaped red cap. (The upper outlet is only used for 3000 series drums; all others use the lower outlet.)

3 Set the roller block assembly and rollers in the proper position, for the tank or drum being used. Make sure the rollers are not under the red locking ring (or black bands on the 3000 series) of the tank or drum.

Note: Special black rollers with stainless steel shafts (#92167) are available to reduce friction and wear. They are recommended for Expert Drum use, and are suitable for use with any tank or drum.

4 To mount a tank or drum, push the lid assembly straight into the outlet on the JOBO Lift. The retention clip will snap the lid into place.

5 To remove the tank or drum, grasp the bottom end of the tank or drum and pull up and toward you. The retention clip will release the lid.

Note: Expert Drums should then be tilted vertically over the upper trough, before leaving the processor, to drain the water from the bottom tempering slots.

6 The final rinse of a process should have at least the first three cycles of rinsing done with the JOBO Lift, even if you are planning to finish the rinse off the processor. This action rinses the JOBO Lift and leaves it prepared for the next process run. At the end of a processing session, or when switching processes, flush the interior of the JOBO Lift by pouring about a liter (quart) of clean water into the funnel on the top of the lift (with a large empty tank attached) and drain the tank.

7 When raising and lowering the JOBO Lift, do not stop the rotation motor.

8 When pouring liquids into the JOBO Lift funnel, pour steadily so liquid does not overflow the built-in funnel. Pouring too rapidly can cause some liquid to flow out the drain, or leak into the motor unit, causing damage. It is normal for a few drops of chemicals to flow out the drain hose of the JOBO Lift when pouring in chemicals. Always place the end of the hose into a drain or container when pouring into the JOBO Lift.

11. Precautions for Film and Paper Processing

In rotary processing, the most frequently seen fault is runs or streaks on film and paper. This effect is caused almost exclusively by water in the tank, drum or reel being carried forward to the next process. This carry-forward affects the contents of the tank or drum before any new solutions reach the film or paper.

Often the first run of the day is fine (the equipment dried overnight). However, the next run may show streaks. **The film tank, film reel, paper drum, and the lids, must all be dry before loading them for the next processing run.**

For the film tank or paper drum:

1. Disassemble all removable components.
2. Rinse and drain completely.
3. Dry inside and out with paper towel or cloth until there is no visible water remaining either inside or out.

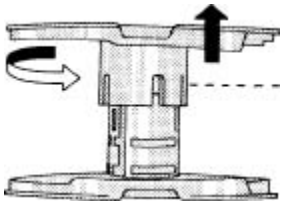
For the tank or drum lid:

1. Disassemble the lid by removing the funnel (except the in 3000 series lids) or beaker. Turn it counterclockwise. Remove the red cap if it is being used.
2. Rinse and drain completely.
3. Dry each piece with a paper towel or cloth until there is no visible water remaining. Shake the lid, or rap it against a towel in the palm of your hand, or counter top. This action will dislodge water droplets that are caught under the red ring of the lid.

For the center core of a film tank:

1. Disassemble the core into its components.
2. Rinse and shake all excess water from inside the cores.
3. Dry the outside of the cores with a paper towel or cloth.

For a film reel:



1. Disassemble the reel into its two halves by twisting counterclockwise past the detent. (Stainless steel reels do not come apart.)
2. Rinse the reel components
3. Rap the reel halves sharply against a towel to dislodge any water droplets from between the spirals.
4. Use a paper towel or cloth to finish drying the reel halves.

Note:

If you have time, any of these items may be left to air dry. Other options are hair dryers (use very low heat), fans, etc. Reels and cores may be put in the bottom of a film drying cabinet to speed drying.

Both film and paper are very sensitive to small quantities of water running across the emulsion. If a drop of water runs across a piece of paper or film before it is pre-rinsed and developed, the droplet area will be easily seen in the finished print or film.

To pre-rinse, pour in all the water quickly, completely covering the paper or film in the drum at one time. This step prevents stray droplets from 'running around' before the pre-rinse.

Rarely, runs across the face of a print or film may be caused by other problems. Almost always a run mark is caused by stray water droplets.

12. Additional Processing Information

[CPP-2]

Warm-up Time:

The processor will require 1 hour, 15 minutes to 1 hour, 30 minutes to warm from about 68° F (20°C) to 100°F (38°C).

If you know when you are using the processor for any given day, it can be set up in advance. Chemicals should be put in the processor bottles. Check the water level and fill the trough as necessary. Switches should be set as if you were ready to start warm-up. Set temperature control(s) to desired process temperature. Set rotation motor control to '0' (Off) and ON/OFF switch and the PUMP/HEAT switch to '1' ('On'). The processor is then plugged into an electrical timer (not supplied by JOBO). Set the timer to turn on about 1 or 2 hours before the next time you want to do processing. The processor will be warmed and waiting for your use.

WARNING: The CPA-2 or the CPP-2 Processors require 480 watts at 120 volts. Any timer used must be capable of switching at least that power level, and must be grounded.

Another method of hastening the warm-up of the processor is the introduction of hotter (not over 50°C or 120°F) water into the lower trough. Do it carefully to avoid overfilling the processor. It may be necessary to drain water from the tempering bath to allow room for the water being added. The On/Off switch and the Pump/Heat switch should be on ('1') and the temperature control(s) set. A little practice with this method will allow you to warm the processor rapidly to operating temperature. (Normally the water bath can be ready in 30 minutes or less with this approach.) In fact, the water bath can be up to temperature almost instantly with this approach. The bottles will not heat as rapidly as the water bath. Check the bottles with a thermometer to be sure the chemicals are at the processing temperature.

Timing Process Steps:

Use this procedure to achieve accuracy in timing any process step. Start timing of the step immediately upon pouring into the lift or tank. Start draining the tank (raise lift, if used) so that it will have just finished draining at the end of the step's time. The time you need for draining will depend on the specific tank and the volume of solution you are using. You may want to do a few practice runs with water and no film (or paper) until you get the technique to run smoothly and accurately. As a rough guide, figure about one second for every 100 ml to drain.

Graduates:

The 260 ml (8 oz.) graduates supplied with the processor have colored dots on them. These dots allow rapid identification. It is possible to set up your own code (such as developer in red, stop in yellow, etc.) Each graduate is then used for only one type of chemical. The graduates also may be used to temper rinse water.

Rotation Motor:

While processing, do not shut off the rotation motor. You may be tempted, especially if you are not yet skilled at mounting and dismounting the tanks or drums. Once you have introduced chemicals to a film tank, or turned a paper drum into a horizontal position, processing has started! You must start rotary motion as soon as possible to avoid streaking the film or paper.

Tempering Bath:

The CPA-2 and the CPP-2 Processors use warm water in contact with open air. Foreign organisms may grow in the water bath. One type is algae, and the other is airborne fungus. The open warm water bath provides ideal conditions for either organism to grow. To prevent the growth of these organisms, change the water frequently. A dilute non-chlorinated algaecide used in swimming pools also will work to control growth in the tempering bath. (There are many different brands of non-chlorinated algaecide available; all seem to work quite well.) Periodic use of Processor Clean II #4135 (4.7 lb.) or #4136 (4 oz.) will help prevent growths and remove chemical stains in the tempering bath. Drain the processor after use. Neither algae nor fungus grows well in the cool and dry environment of an empty water bath.

Replenishment:

JOBO tanks and drums require small quantities of chemicals and are well suited to 'one shot' use. However, it is possible to recover your used chemicals for replenishment and reuse, disposal, or for silver recovery. Follow the chemical manufacturers' recommendations if you replenish your chemicals.

Additional Reading:

You may want to subscribe to the ***JOBO Quarterly (JQ)***, a publication specifically designed for the JOBO processor user. Each issue is packed with the latest information on new equipment, tips, and processing techniques. Reviews and profiles of JOBO owners offer a varied perspective.

The JQ is available direct from JOBO and at select JOBO dealers.

3. Spare Parts

Starting in 1995, JOBO has modified both the CPA-2 and CPP-2 processors. Units obtained after this transition (serial number 22000 and greater for both models), use a different rotation motor, magnet or cog, and associated circuit boards. These processors can be identified by examining the rotation motor shaft. The newer units have a tapered shaft, threaded on the inside. Previous units have a cylindrical, non-tapered shaft that is not threaded. When replacing rotation motors or circuit boards, be sure to determine which version you have before obtaining these parts. The new motor magnet or motor cog is tapered to accommodate the tapered shaft. These motor magnets or cogs are secured with a hex-headed screw. (The older version of drive magnets and cogs are attached with a slot headed screw.) Both the magnets for the tanks and the cogs for the lids have not changed. No other components have been replaced with this modification. For clarity, the newer components are identified in the list below with a star '*'. (The star is not part of the part identification number or description.)

WARNING: If you are unsure as to the appropriate selection of replacement parts, contact JOBO for assistance. Use of inappropriate replacement parts may damage your processor or lessen the performance or life of the processor.

Parts for the Motor Head:

- # 13013 Motor Head Nut (black brass thumbnut)
- #13068 Brass Adapter (CPP-2 only, Cold-Water Solenoid Valve, 3/4" hose)
- #15157 Washer for Brass Adapter (CPP-2 only, Cold-Water Solenoid Valve, 3/4" hose)
- # 34116 Motor Housing Screw (small slotted or Phillips)
- # 34217 Motor Mount Screw (stainless, w/o lift only)
- # 34145 Motor Mount Screw (plastic, with lift only)
- # 70232 Motor Housing Seal Tape (black)
- # 06017 Pump Housing (with one support for ring)
- # 95081 Pump Shaft Assembly
- # 95368 Pump Motor 110 volt (with mounting hardware)
- # 93025 Rotation Motor (two bearing-old only)
- # 93026 * Rotation Motor (tapered shaft-new only)
- # 95001 Rotation Magnet (for motor w/o lift only - old only)
- # 95556 *Rotation Magnet (for motor w/o lift only - new only)
- # 95523 Cog Gear (black, for motor with lift only - old only)
- # 95555 * Cog Gear (black, for motor with lift only - new only)
- # 94003 Transformer Circuit Board for CPA-2, 110 volt (old only)
- # 94128 * Transformer Circuit Board for CPA-2, 110 volt (new only)
- # 94004 Transformer Circuit Board for CPP-2, 110 volt (old only)
- # 94135 * Transformer Circuit Board for CPP-2, 110 volt (new only)
- # 95071 Switch Circuit Board for CPA-2 (old only)
- # 94132 * Switch Circuit Board for CPA-2 (new only)
- # 95114 Switch Circuit Board for CPP-2 (old only)
- # 94136 * Switch Circuit Board for CPP-2 (new only)
- # 94008 Display Circuit Board for CPP-2 (with temperature probe - old and new)
- # 95066 Thermal Overload Reset (with probe)
- # 26003 Heat Indicator Lamp for CPA-2, 110 volt
- # 95178 Thermostat for CPA-2 (with probe)
- # 93034 Heating Element, 110 volt (with mounting hardware)
- # 27005 Fuse, 6.3 Amp, 250 Volt (rated), Type F (fast blow) for CPA-2 and CPP-2
- # 27017 Fuse, 1.25 Amp, 250 Volt (rated), Type T (slow blow) for CPA-2 and CPP-2 (some old only)
- # 27008 Fuse, 800 milli-amp, 250 Volt (rated), Type T (slow blow) for CPP-2
- # 27009 Fuse, 1.6 Amp, 250 Volt (rated), Type T (slow blow) for CPA-2 and CPP-2 (new only)

Parts for the Tempering Bath:

- # 3373 1000 ml Bottle, White
- # 3372 1000 ml Bottle, Black
- # 3381 1000 ml Bottle Set (4 white, 2 black)
- # 05042 Cap for 1000 ml Bottle
- # 3308 260 ml Graduate
- # 3318 Graduate Kit (four #3308 graduates)
- # 95520 Set of two Processor Leveling Wedges
- # 15012 Ceramic Spacer (bottom of lower trough)
- # 95322 Drain Valve Assembly
- # 3321 Color Thermometer (CPA-2 only)

Parts for the JOBO Lift

- # 07083 White Retaining Clip (old style lift only)
- # 92157 Black Retaining Clip Assembly (new style lift only)
- # 92158 Red Cap for Lift (new style lift only)
- # 07109 Lift Handle Attachment (hub only)
- # 95186 Lift Handle Assembly (includes hub, tube and cap)
- # 34200 Screw for the Lift Handle
- # 95200 Transfer Gear Set (2 sets)
- # 34901 Washer for Transfer Gear (old style lift only)
- # 95465 Grease Syringe (for lift gears)

Parts for the Roller Block

- # 95215 Roller Block Assembly for Lift Arm
- # 95183 Roller Block Assembly for Processor Trough
- # 07067 Roller Extensions (angled arms) for roller block
- # 07007 White Rollers for roller block
- # 92167 Black Rollers with stainless steel axle for Expert Drums (substitute for 07007)

Parts for JOBO Film Tanks and Print Drums

- # 03042 Funnel, light trap for 1500/2500 Film Tanks (2800 with stopper, lift only)
- # 03046 Red Cap, for lid of 1500/2500/2800 series
- # 03049 Beaker, for lid of 1500/2500/2800 Paper Drums
- # 04043 Center Core for single reel with base (1510, 1540)
- # 04044 Center Core for two reel with base (1520, 1526, 2521, 2523, 2551, 2553, 2563, 2583, 2593)
- # 04045 Center Core for three reel extension (1526, 1530, 1540, 2553, 2560, 2563, 2583, 2593)
- # 04073 Center Core for one reel extension (2563)
- # 91034 Inversion Lid With Ring for 1500 series (no funnel, beaker, or cap)
- # 91036 Inversion Lid With Ring for 2500/2800 series (no funnel, beaker, or cap)
- # 1505 Cog (converts inversion lid to cog lid for use on lift)
- # 07095 Cog Lid Washer (Red)
- # 15042 Cog Lid Stopper (makes funnel #03042 a light trap for prints, used with lift)
- # 1503 Cog Lid for 1500 series (with funnel)
- # 2503 Cog Lid for 2500/2800 series (with funnel and stopper)
- # 91033 Cog Lid for 3000 series (with permanently mounted funnel and stopper)

14. Fuse Replacement

[CPP-2]

If the processor does not function, or some of the systems do not operate, a fuse may be blown. If nothing at all works on the processor, first check that the power cord is plugged in, and the outlet it is plugged into is 'live.' If the only thing that does not work is the heating of the water bath, reset the thermal overload button. To check and replace fuses, use the procedure listed below.

Turn off the processor and unplug the power cord. Remove the JOBO Lift (if attached). Remove the two large slot-headed screws in the upper motor housing (already removed if the lift has been removed). Do not remove the third (lowest, below motor shaft) large slot headed screw. Carefully remove all knobs (4 on CPA-2 and 6 on CPP-2). Remove the four motor head thumbnuts located on the bottom corners of the motor head. Lift the motor head straight up from the trough. Let all the water drain from the pump housing into the trough.

Place the motor head upside-down on a firm surface. Remove the magnet or cog from the motor shaft. Carefully remove the sealing tape (#70232) from around the motor shaft opening area. (You may need to slit the tape to clear the three finger reversal mechanism. If this is done carefully, it should be possible to reuse the tape seal.) Remove the six small slot-headed screws located on the four corners and middle of the long sides of the motor housing. Turn the motor housing on its left side (side opposite the motor shaft). Gently remove the top cover of the motor head, being careful to not stress the switch shafts. Set the top cover aside. (The CPA-2 heat indicator light is attached to the top cover and will limit how far the lid may be placed from the bottom section.)

Locate the fuse. (See below for location, function and specifications of the fuses.) Verify that the power cord is unplugged. Carefully remove the fuse from its holder. (You may use a small screw driver or needle-nose pliers.) Replace the fuse with the designated replacement. Do not substitute a differently rated fuse! Verify complete seating of the new fuse. Reverse the disassembly procedure listed above to reassemble motor head. Test the function of the reassembled motor head. If your processor blows another fuse, contact JOBO for repair assistance.

WARNING: Always unplug the power cord before opening the motor head. Make sure that water does not get into the motor head. If there is any water (or chemicals) inside the motor head, do not plug in power cord, contact JOBO for repair assistance. Never replace a fuse with a different rating. If the processor continues to blow fuses, or there is any function not working correctly, contact JOBO for repair assistance. Do not use the processor if it is not functioning properly.

WARNING: Both CPA-2 and CPP-2 processors made since mid 1995 have different rotation motors and circuit boards. To identify which board, and the appropriate fuse for the board you have.

WARNING: If there is a label beside the fuse indicating a different value (other than what is listed below) for the fuse, contact JOBO for assistance.

Note:

Do not attempt to open the top cover by removing the face plate under the knobs. This access is sealed to prevent moisture from getting into the motor head.

The screws holding the upper circuit board(s) to the bottom of the motor head are not turned down all the way. They are left loose (the circuit board can move) to prevent the switches from being damaged when the cover is installed or removed. Do not over-tighten these screws.

Visual inspection of a fuse is not a reliable method for determining if the fuse is good. Use a 'continuity checker', or 'Ohm meter' to verify fuse condition. If you do not have access to a checker or meter, replace the suspect fuse with a new, same rated fuse.

All the fuses for the CPA-2 and CPP-2 are rated at 250 Volts. 250 Volt fuses work with any voltage less than or equal to 250 Volts. You do not need '110 Volt fuses' for processors using 110 Volt power sources.

Main Circuit Fuse

- **Type:** 6.3 Amp 250 Volt (rated) Type F (fast blow), JOBO part #27005
- **Processor:** CPA-2 and CPP-2
- **Protection:** All electrical circuits
- **Failure Symptoms:** Nothing works
- **Location:** Top circuit board, near the On/Off switch

Rotation Motor Circuit Fuse

- **Type:** 1.25 Amp 250 Volt (rated) Type T (slow blow), JOBO part #27017 (older models only)
- 1.6 Amp, 250 Volt (rated), Type T (slow blow) JOBO part #27009 (newer models only)
- **Processor:** CPA-2 and CPP-2
- **Protection:** The rotation motor circuit
- **Failure Symptoms:** Rotation motor will not turn
- **Location, CPA-2:** Bottom circuit board, rear, near the rotation motor
- **Location, CPP-2:** Bottom circuit board, rear, near the rotation motor, closer to front of two fuses

Temperature Circuit Fuse

- **Type:** 800 Milli-amp 250 Volt (rated) Type T (slow blow), JOBO part #27008
- **Processor:** CPP-2 only
- **Protection:** The temperature control circuit
- **Failure Symptoms:** Display LED's will not light (rotation motor turns)
- **Location:** Bottom circuit board, rear, near the rotation motor, closer to back of two fuses

Cogs and Magnets

Introduction

To use a tank or drum on the processor (without the JOBO Lift attached) a magnet must be mounted on its bottom. You must have a cog installed on a tank or drum lid to allow coupling with the accessory JOBO Lift or Autolab processor.

Some tanks and drums come with a magnet or cog already installed, some do not. At least one of these mounting systems must be present to use a tank or drum on the processor. See the instructions below to determine if you need to obtain a magnet or cog for the tanks or drums you own, or intend to purchase.

The mounting procedures below will prepare your tank or drum for use on your JOBO rotary processor.

Mounting a Magnet On a Tank or Drum

To use a tank or drum on a manual processor (without the JOBO Lift attached), a magnet must be mounted on its bottom. A magnet is not required for any of the Autolabs.

The Magnet, part number 1504, will allow you to use 1500, 2500, and 2800 series tanks or drums on a magnet drive processor. (The 3000 series drums are too large in diameter to use a magnet coupling.) This magnet is permanently attached to the tank or drum in the following sequence. You will need one magnet for each tank or drum you wish to use.

1. Remove the lid from the tank or drum.
2. Note the location of the four pins on the magnet. Note also the four short raised tubes on the bottom of the tank or drum.
3. Place the tank or drum upside down on a smooth, hard surface.
4. Align the four pins with the raised tubes, and press the magnet down vigorously.
5. Check that there is no gap between the magnet and the bottom of the tank or drum.

When the magnet is properly mounted, it should not come off. If the magnet does not stay securely on the tank or drum, follow this procedure. After doing the above steps, turn the tank or drum right side up. Place a piece of wood (such as a 2x4") slightly longer than the depth of the tank or drum, into the bottom of the tank. Center the piece of wood in the tank. Rap the top end of the wood with a hammer. Inspect the mounted magnet for gaps. Repeat if necessary.

WARNING: Do not try and mount the magnet on the tank by pounding on the magnet. This will likely damage the magnet or split the tank.

To use a magnet-equipped tank or drum on a JOBO Lift equipped processor or Autolab, simply add a Cog (#1505) to the lid. Do not remove the magnet when using the tank or drum on the JOBO Lift or Autolab.

If you are purchasing a tank or drum, note its four-digit part number. If the part number ends in '1' (such as 2521 or 2551, etc.), it already has a magnet attached. All other tanks and drums do not come equipped with a magnet. Tanks that have the last number of '3', have cog type lids. These lids would have to be replaced to use them with a magnet drive processor. Replacement lids (without cap, funnel, or beaker) are available as parts from JOBO. The 1500 series requires #91034, and both the

2500 and the 2800 series require a #91036 lid. (There is no non-cog lid available for the 3000 series drums.) The #03046 membrane cap is needed by all three series lids.

Back to Top

Mounting a Cog On a Lid

You must have a cog installed on a tank or drum lid to allow coupling with the JOBO Lift or Autolab. Some tanks come with the cog already installed. If you are purchasing a tank, check the JOBO part number of the tank. If the first or last digit of the four digit code is a '3' (3010, 2523, etc.), then there is already a cog installed in the lid. If the first or last digit is not a '3', then you will need to purchase a Cog (#1505) for the tank or drum.

One cog for each tank or drum is required, as they are permanently mounted into the lid, and cannot be removed. If you wish to keep the lid for hand or magnet processing, get a replacement cog lid. The JOBO part number for the replacement cog lid in the 1500 series is #1503. Both the 2500 series and the 2800 series use the same replacement lid, #2503. This replacement lid comes with a funnel and a stopper. (The stopper is placed in the funnel only when replacing the beaker. The stoppered funnel is used exclusively for print processing with a lift.) The 3000 series of drums cannot be used with the magnet drive. 3000 series lids are always supplied with a cog.

You may use the lift with a tank or drum having a magnet attached on the bottom. The daylight loading tank #2400, or the discontinued series 1000, 2000, and 4000 tanks or drums cannot be equipped with a cog.

The procedure for mounting a cog is the same for all tank or drum lids.

1. Remove the lid from the tank or drum. Remove the red membrane cap and funnel or beaker.
2. Place the lid, red ring down, on a hard and smooth surface.
3. Place the cog, wide side down, into the opening for the cap, at a slight angle.
4. Press the cog down with your hands. (You may find it helpful to lean towards the lid to apply a firm pressure.)
5. Examine the seam between the cog and the lid for gaps. When seated correctly, there will be no gap between the cog and lid. (If you can place a fingernail between them, the cog is not seated fully.)

If you cannot seat the cog fully, by hand, use this procedure. Seat the cog as far as you can by hand. Place a flat piece of wood, on top of the cog. Rap the board smartly (centered over the cog) with a hammer. Repeat as necessary until the cog is fully seated.

If the cog comes off the lid during processing, it was not completely seated. Re-seat the cog.

The cog has a small (1 1/2" or 35 mm) red ring that functions as a washer and seal between the lid and lift. It is located just inside the gear ring. This ring will wear with long, heavy use, and may need replacement. If you find the washer is staying on the lift when you remove the tank or drum, replace it. The cog lid washer's part number is #07095. The tank lids that come with the ATL-1000 processor do not have a washer installed in the lid. If you wish to use one of these lids, be sure to place a washer in the lid. If you use a lid without a washer, the junction of the JOBO Lift and tank will leak.

Never try to remove an installed cog from its lid, as you will break either the cog or the lid.

Instructions for the CPA-2 and CPP-2 JOBO Lift #4072

Introduction

The JOBO Lift (Part #4072) for both the CPA-2 and the CPP-2 Processors simplifies processing. It eliminates the need to remove the tank or drum during the process. Filling and draining of chemicals and rinse water from the tank or drum is done with the JOBO Lift. This enhancement ends wet hands and messy counter tops, improves timing accuracy, and gives better chemical distribution. The JOBO Lift can be added to the CPA-2 or CPP-2 Processors at any time with a minimum of effort.

Note:

These directions augment those of the *CPA-2 and CPP-2 Instruction Manual*. Please read both sets of instructions before operating your processor with the JOBO Lift accessory attached.

Back to Top

Index

- *Introduction*
- *Index*
- *Compatibility*
- *Improvements*
- *Installing the Lift*
  - *Mounting the Drive Cog*
  - *Mounting the Lift Handle*
  - *Mounting the Lift on the Motor Head*
- *Adjusting the Lift for the Tank or Drum to be Used*
  - *Adjusting the Roller Block*
  - *Setting the Coupler*
- *Operating the Lift*
- *Lift Care, Tips and Maintenance*
- *Other Instructional Pages*

Back to Top

Compatibility

The CPA-2 and CPP-2 JOBO lift can be used with any 1500 or 2500 series film tank, 2800 or 3000 series print drum, and any of the Expert Drums (3000 series). Older, discontinued tank or drum models cannot be upgraded to work with the JOBO Lift system, as they used screw type lids that are not suitable for lift coupling.

For more details on making a tank or drum usable with the JOBO lift, see the page: *Cogs and Magnets*

Back to Top

Improvements

The latest version of the lift has improvements in the tank coupling system. You can identify the version you have by examining the tank retention clips (they hold the lid's cog gear to the lift). The current version has black, horizontally aligned clips. The earlier version has white, vertically aligned clips. Both versions work well in holding the tank to the lift. The newer version allows an easier method of replacement for these clips, in the event of a failure.

[New Style Lift] **[Pins on Older Lift]**

In addition to the clips design, the method of tank coupling selection has been changed. The earlier version used a sliding set of pins, that traveled in a diagonal slot, to change from the upper and lower coupling position. The newer version has a red, bell shaped cap, that is transferred from one coupling position to the other instead of the sliding pins.

Other than these two changes, the instructions below are applicable to all JOBO Lifts for the CPA-2 and CPP-2.

Note:

The later version of the lift has two molded holes for the Transfer Gear Set (#95200). Only one set of gears, towards the back of the processor (or right side, if looking towards the motor head) set is installed. The other molded hole is not supplied with a gear set. The lift is not "missing" a set of gears. Do not install another set of gears in this position. The lift will not function correctly with two sets of transfer gears installed. (The same arm piece molding is used with the Auotolab series processors, which do require both sets, to work properly.) For more information about this, go to: *Why does my JOBO Lift look like it is missing a transfer gear?*

Back to Top

Installing the Lift

Please follow all these steps to safely and easily install your lift on either the CPA-2 or CPP-2 processors.

Caution:

Turn off and unplug your processor before proceeding with the installation procedures listed below.

Mounting the Drive Cog

To install the drive cog, first unscrew the drive magnet. Replace the drive magnet with the correct drive cog (see below) and tighten the screw securely.

Notes:

- There are two different versions of the drive cog to correspond to the two versions of rotation motors used in both the CPA-2 and CPP-2. Earlier rotation motors have a straight shaft, and the drive cog (or drive magnet) is attached with a slot headed screw. Later motors have a tapered shaft, and the drive cog (or drive magnet) is attached with a hex headed screw. You cannot use a tapered shaft cog with a straight shaft motor (or vice-versa).

- New lifts come supplied with the tapered shaft drive cog. If you want to install a new lift on an older processor with the straight shaft motor, contact *JOBO* to obtain the correct drive cog.

- The drive cogs on earlier versions of the processors were white. The current version drive cogs are black. The newer black drive cogs are used with all versions of the processors.

Caution:

You must replace the white drive cog, supplied with the earlier version of the JOBO Lift, with the current black drive cog, when installing a new style lift on a processor that had the earlier style lift previously installed. Old lifts will work with the black drive cog or white drive cog, but the newer lifts must use the black drive cog. **Do not use the newer lift with the original white drive cog on the processor, replace the white drive cog with the newer black drive cog.**

- Use part number #95523, a black drive cog, for the straight rotation motor shaft. Tapered shaft rotation motors require a black drive cog, part number #95555.

Mounting the Lift Handle

Note the dimple in the end of the metal tube on the end opposite of the knurled cap. Match this dimple to the slot molded in the back side of the handle hub piece. Slide the metal tube fully onto the handle hub and rotate the tube clockwise until resistance is felt. It should not be necessary to force the mounting or the turning of the handle, if they are aligned properly.

Caution:

The black, cone shaped piece (about 16mm or 1/2" in size, mounted on the near side of the lift, at the same height as the hub and closer to the drain hose), is a stop used to prevent the puling of the lift handle too far counterclockwise. Do not use this cone as a 'locking' or 'holding' device. Pulling the handle beyond the stop point may break the handle or internal mechanisms.

Mounting the Lift on the Motor Head

Remove the two large upper stainless steel screws located just above the motor drive shaft on the motor head. Do not remove the lower stainless steel screw. If there are washers glued to the motor head under the screws, do not remove them.

Locate the clip on the lower drain side of the lift. This clip snaps over the left side of the motor head and secures the left side of the lift to the motor housing.

[Clip]

Place the lift on top of the motor housing. be sure the clip on the left side of the lift is engaged under the lip of the motor housing.

Raise the right side of the lift slightly, and place the smaller washers in the screw holes left when you removed the stainless steel screws. If there are already are washers on the screw holes, do not remove them. Use these washers instead of the ones supplied with the lift. Releasing the lift will put a small amount of tension on the washers, holding them in place.

Put the lager washers onto the threads of the black plastic screws. Place the black plastic screws into the lift mounting holes. Put the screw closer to you in place first. The further screw should be started at an upward angle. This second screw will work its way to

horizontal as it is screwed in place. The slight amount of tension created by this downward securing of the screw will help to keep the lift in place securely.

Caution:

Do not over-tighten these screws. The black plastic screws are designed to hold the lift securely in place, yet break if they are over-tightened. This prevents the serious damage to the lift, that would result from over-tightening the stainless steel screws, if used instead.

Back to Top

Adjusting the Lift for the Tank or Drum to be Used

Adjusting the Roller Block

[1500 Series]

[2500 and 2800 Series]

[3000 Series]

Slide the roller block along the tubular rails on the lower portion of the Lift. Position it so the black body of the tank being used rests on the rollers as far to the right under the tank as possible. Do not allow the tank to rotate on the Tank lid or module's red ring, or 3000 series drum joints.

Note:

You may use the trough roller block that came with the processor in addition to the one mounted on the lift. Although its use is not required, additional support for longer tanks and drums is provided with the second set of rollers. Be sure to adjust the second set the same as the first. (The trough roller block will remain mounted in the upper trough, and is not raised when the lift is raised.)

Setting the Coupler

Select the correct chemical/wash outlet (on the lift arm, looks like two horizontal nozzles one above the other) by plugging the unused outlet with the bell-shaped red cap. (The upper outlet is only used for 3000 series drums; all others use the lower outlet.) Be sure to press the cap firmly in place. If the cap is too loose, it will rub against the tank lid, and may cause the tank to de-couple from the lift.

Note:

[Pins on Older Lift]

The earlier version of the JOBO Lift uses a different mechanism to set the selected tank position. No red cap is used. There is a diagonal slot on the side of the lift arm between the two coupling positions. A set of pins project out of this slot. The pins are pulled up for the 3000 series drums, and pulled down for all other tanks and drums. A small white stick protrudes from the position between the couplers. As the pins move, the stick moves in the opposite direction. This stick prevents the mounting of a tank or drum on the unselected coupler. The pins lock into place with quite a lot of pressure. It may take two hands to change positions.

Back to Top

Operating the Lift

[Funnel]

Tanks and drums are filled immediately by pouring liquids into the built-in funnel in the top of the JOBO Lift. Liquids are drained from the tank or drum by moving the lever of the JOBO Lift counterclockwise to allow the liquid to flow out the hose on the left side of the JOBO Lift.

Practice mounting and removing a tank or drum on the JOBO Lift, before you start actual processing.

Note:

The retention clips may snap loudly when removing the tank or drum. This sound is normal. When lowering the lift, the cog gear will mesh with the transfer gear. They may make a 'thunk' noise as they engage. This sound is normal too.

Check that the correct chemical/wash outlet (on the lift arm, looks like two horizontal nozzles one above the other) has been selected by plugging the unused outlet with the bell-shaped red cap. (The upper outlet is only used for 3000 series drums; all others use the lower outlet.)

Set the roller block assembly and rollers in the proper position, for the tank or drum being used. Make sure the rollers are not under the red locking ring (or black bands on the 3000 series) of the tank or drum.

Note:

Special black rollers with stainless steel shafts (#92167) are available to reduce friction and wear. They are recommended for Expert Drum use, and are suitable for use with any 3000 or 1500 tank or drum.

To mount a tank or drum, push the lid assembly straight into the outlet on the JOBO Lift. The retention clips will snap the lid into place.

To remove the tank or drum, grasp the bottom end of the tank or drum and pull up and toward you. The retention clip will release the lid with a snap.

Note:

Expert Drums should then be tilted vertically over the upper trough, before leaving the processor, to drain the water from the bottom tempering slots.

Back to Top

Lift Care, Tips and Maintenance

Be sure to level the processor before processing. Use a level such as the JOBO Spirit Level (#4502) and place it on top of the tank or drum. Adjust the height of the processor corners as necessary. Level the tank or drum, even of this makes the processor itself slightly off level. An unleveled tank or drum may not produce even development.

[JOBO Spirit Level]

The final rinse of a process should have at least the first three cycles of rinsing done with the JOBO Lift, even if you are planning to finish the rinse off the processor. This action rinses the JOBO Lift and leaves it prepared for the next process run. At the end of a processing session, or when switching processes, flush the interior of the JOBO Lift by pouring about a liter (quart) of clean water into the funnel on the top of the lift (with a large empty tank attached) and drain the tank.

When raising and lowering the JOBO Lift, do not stop the rotation motor.

When raising and lowering the JOBO Lift with a heavy tank or drum, use a two handed procedure. Support the tank or drum with your right hand, while operating the lift handle with your left hand.

Running the processor without water, but with a tank or drum, will cause excessive wear on the roller block assembly.

When pouring liquids into the JOBO Lift funnel, pour steadily so liquid does not overflow the built-in funnel. Pouring too rapidly can cause some liquid to flow out the drain, or leak into the motor unit, causing damage. It is normal for a few drops of chemicals to flow out the drain hose of the JOBO Lift when pouring in chemicals. Always place the end of the hose into a drain or container when pouring into the JOBO Lift.

If the Drum or Tank Floats While Processing...

Lower water level in tempering trough by turning the level control dial.

Check for the proper roller block arrangement, for the tank or drum used. For 2500 and 2800 system tanks or drums use the lower setup. For 1500 series tanks use the higher setup, facing each other. For 3000 system drums the rollers on their supports face away from each other.

If the Rotation Motor Slows When Lowering the Lift, or Adding Chemicals...

A slight slowing of the rotation speed is normal when lowering the lift, or when adding chemicals or rinse water to a lift equipped processor. If the slowdown is significant, you are probably using more than the recommended amount of chemicals or rinse water. The maximum recommended volume to be used is 1000 ml (34 oz.) with the CPA-2 and CPP-2. If the volume is not excessive, check the positioning of the tank or drum on the roller block. The lid or locking ring should not ride on the rollers. Check that the supports are set correctly for the series tank or drum in use. Be sure that the correct coupling position is selected. Be sure that the trough level is not set too high. If the Transfer Gear shaft is worn, it may slow down the rotation in one direction more than the other - replace the Transfer Gear (#95200).

Clean all chemical spills immediately to prevent staining the lift, contamination of the tempering bath, and possible introduction of corrosive chemicals into the control unit.

The JOBO Lift is made of chemical resistant plastics, however, periodic cleaning is recommended. The outside of the lift can be cleaned by simply wiping it with a damp cloth. Do not use any solvent based or abrasive cleaners on your JOBO Lift.

If the gear mechanism squeaks during rotation, you may lubricate it. Use the #95465 Grease Syringe or petroleum jelly (like Vaseline) sparingly on the drive cog and the transfer gear. Be sure to avoid placing the lubricant where it may get into the mouth of the tank or drum. Do not use oil or a lithium grease, as they will cause rapid wear or deterioration of the moving parts.

If a tank or drum lid is not sealing securely to the lift coupler, replace the small red washer (#07095) located within the cog gearing of the tank or drum lid.

Parts for the JOBO Lift

- # 07083 White Retaining Clip (old style lift only)
- # 92157 Black Retaining Clip Assembly (new style lift only)
- # 92158 Red Cap for Lift (new style lift only)
- # 07109 Lift Handle Attachment (hub only)
- # 95186 Lift Handle Assembly (includes hub, tube and cap)
- # 34200 Screw for the Lift Handle
- # 95200 Transfer Gear Set (2 sets)
- # 34901 Washer for Transfer Gear (old style lift only)
- # 95465 Grease Syringe (for lift gears)

Parts for the Roller Block

- # 95215 Roller Block Assembly for Lift Arm
- # 95183 Roller Block Assembly for Processor Trough
- # 07067 Roller Extensions (angled arms) for roller block
- # 07007 White Rollers for roller block
- # 92167 Black Rollers with stainless steel axle for Expert Drums (substitute for 07007)

Caution:

Do not open the lift housing. There are no user serviceable parts inside the lift housing. The internal gearing is factory calibrated, lubricated and sealed. Any attempts to "adjust" these settings will likely cause damage to internals seals and thus cause leakage that could damage the electronics in the processor motor head. If the lift is too stiff or too loose in raising and lowering, or you suspect other problems inside the lift, contact JOBO for repair assistance.

Other Instructional Pages

Instruction Manuals

- For instructions on the CPA-2 or CPP-2 Processors: *Instruction Manual for the CPA-2 and CPP-2 Processors*
- A general guide: *Processing Using the JOBO Lift Accessory*
- Process specific information: *Processing Instructions With the JOBO Lift Accessory*
- For more details on making a tank or drum usable with the JOBO lift: *Cogs and Magnets*

FAQ's

1. Answer the question: "*Why does my JOBO Lift look like it is missing a transfer gear?*"
2. How to contact *JOBO*

Bulletins

- For instructions on replacing the Transfer Gear Set: *Bulletin B004*
- For instructions on replacing the Black Retaining Clips (newer lift): *Bulletin B020*
- For instructions on replacing the White Retaining Clips (older lift): *Bulletin B003*