

KEEPING PACE

A Monthly newsletter devoted to the art of Darkroom Photography

Volume 34 April 1990

Tabletop Processors. Are they adequate?

The various kinds of processors. What can they do? Are they worth the money?

These are questions that I receive from some of my subscribers and students. They want to know if I can recommend any specific processor.

I only know what I read, and from my personal experience with my own labs.

If you are a one or two man operation, then I would recommend the table top method.

If you are working as a hobbyist and only produce transparencies or prints for your own pleasure, then I would recommend a tubular system.

Let us examine this tubular method of processing prints and films. Beseler makes units for

processing prints that are very low in cost.

The lowest cost unit is a simple device with a built in reversible motor base that will accept various sized tubes.

These tubes are loaded with the material in the dark, then a light tight lid is placed on the open end and the room light can now be turned on. Chemicals are added to the tube when it is in a vertical position.

When the tube is placed onto the processing unit in a horizontal position, the chemicals release into tube and processing begins.

Even if you place the tube into a bucket of tempered water before starting the processing, there is very little hope of accuracy in maintaining the temperature of the chemistry.

The tube rotation has one

speed and the rest is up to you. You must dump each step of the chemistry and refill the tube in such a way that the timing is not adversely affected.

I would not recommend this kind of processing system if you have wide changes of temperature in your darkroom.

If you have a stable temperature and are able to work at room temperature, then this processor will work properly.

The tubes for this processor range from 8x10 to 16x20. The motorized base must be perfectly level.

There are a few companies that produce a similar product. The prices begin at about \$90. This does not include more than one drum or any bottles or water heaters or any of the rest of the equipment needed to maintain accuracy.

The next batch of processors are more professional than the first group.

These machines use tubes, are motor driven, and temperature controlled. The size of the unit usually conforms with the price. (CPE-2) costs around \$280 and is simply a motor driven tube that floats in it's own tempered water. The tube size is 8x10.

These processors get more sophisticated as they get larger.

I have used the **Jobo CPP-2** for the past 5 years. It fits my purpose because I can quickly convert this processor to accept E-6 chemistry and suddenly change over to

C-41, or EP-2, or Cibachrome -30, or P-3, or any other possible film or paper system you can name.

Jobo makes a completely automatic machine that will accurately process any material without you being in the room.

The best part about this unit is that you can program your own times for each chemical or washing stage. The price tag for this system (ATL-2) is around \$4,000.

If you are a weekend dark-room enthusiast and want to

use the processor for various materials, then this family of Jobo processors deserves looking into.

The next batch of processors are called table top processors.

I defy anyone to place these units on a kitchen table top. They will fit on a bench or commercial table. They do not take much room considering the amount of processing they can sustain.

These units are roller driven and most have variable speed controls as well as temperature variability and stability.

Durst makes a series of different sized systems. The low end of the totem pole is called the RCP-20. The price is around \$900. It will handle color or black and white prints up to 8x10. This unit is capable of processing 25 prints per hour.

The RCP-50 is a larger system that handles any kind of print up to 20x24 and costs about \$5000.

If you wish to complete the unit with a washer and dryer, add another \$2000 to the price.

Fujimoto has a small unit that will handle any photographic paper up to 11x14. It costs around \$2180. This unit is capable of automatic replenishment and has

variable speed controls. The newer unit CP-51 will handle any kind of paper up to 20x24. The cost for this unit is around \$5250. Modules that can expand the unit's versatility cost an additional \$2500.

These processors are available with different modules, depending on your needs. **Rick Warner** is the local representative in California for the Fujimoto line. Enclosed is a flyer that he supplied to me.

If you want to know more about the Fujimoto line call or write to:

Rick Warner
16254 Pasada Dr.
Whittier, CA 90603
213-947-6597

The next unit is produced by **Beseler**.

The Beseler-16. This too, is a table top unit. It handles paper up to 16x20 for about \$4000. If you want to process Cibachrome prints add another \$2700 to the price. This unit works in the same fashion as the previously mentioned machines.

If you only work with the Cibachrome process, the machines produced by Ilford are great. They make 2 different models.

The first is called a **CAP-40S**. It will process Cibachrome prints up to 16x20. The unit can be purchased for \$1700.

The more deluxe unit sells for \$3000. Replenishment is automatic. A washer and dryer unit sells for an additional \$2600.

If you are a professional lab, you probably have your processing units in place. If you are contemplating a move up the scale to a larger unit, there are many machines to look at.: Colenta, Hope, Kreonite, etc. to name a few.

Dye Transfer is a hands on process.

Every move is done with the use of your hands. This is a unique system where you are in charge of the entire process. In fact, you will have to "invent" your own special developing times for making masks, negatives, and matrices.

The units used for processing different kinds of paper or films are more suited to materials that have been produced by expert manufacturing and do not rely on your judgement for time and temperature standards that have been built in to the process.

The new book about the Cibachrome Process that I

am currently finishing will contain actual Ciba prints inserted into the pages of the book. I will make a few variations of each photograph.

These will all be produced on the professional Cibachrome-2 paper, and processed entirely in a the newer version of a CAP-40S processor.

Color enhancing.

When making a Dye Transfer print, the 3 primary additive colors are on separate sheets of film throughout the process. There are many places where one could use a mask or a dodging tool and make a color correction that could improve the print.

However, when making a Cibachrome print, all of the dyes and silver emulsions are "locked in" and you can't get at them in the same fashion.

There is a solution.

When you want to make a color brighter or purer when making a Cibachrome print, you must find a way to isolate the wanted color from then rest of the spectrum.

This "isolation" system was mentioned in an earlier "Keeping Pace" newsletter. It pertained to the making of Dye Transfer prints.

In order for this process to work with Cibachrome we must reverse and change the method of producing the litho masks that do the job. The object is to expose a strong litho image through a color filter, using Pan Litho film.

I have used Kodak Kodalith Pan film, but it has been discontinued. The replacement material is called Kodak, MP Pan SO 479

A similar film produced by Agfa is called P -911. These films are panchromatic films and must be used if you want to affect any kind of color correction.

The procedure is as follows:

Make 3 litho contact copies of the transparency through the 3 separation filters, namely, the red 29, green 61, and the blue 47b.

If made properly, and a red filter is used, all of the whites and light greys and most of the red color will revert to black on the litho film. This mask is an isolation of the green and blue areas in the original.

The same will happen to the green and blue exposures on the litho film. All of the colors used will produce density of that color plus the greys and whites.

In order to use this masking system we must first expose a "final" Ciba print on register pins on the easel. The print material is removed from the register easel and placed into a light tight box.

Just the contrast reducing mask is removed from the carrier and it is replaced by the litho mask made through the red filter.

The Ciba paper is replaced on the easel (on register pins) and the transparency is re-exposed through an opposite color (green or blue) in order to lighten and brighten that color in the print.

This a trial and repeat system. You must make tests to determine the correct color exposure.

The main problem here is to find the correct exposure for the litho masks.

Here is how this is done.

You begin with using two 21 step grey scales placed in opposing positions, mounted in a sheet of opaque material. Place this sheet on a contact platen or contact frame.

Make a series of short exposures through the red filter and find which set of grey scales looks correct.

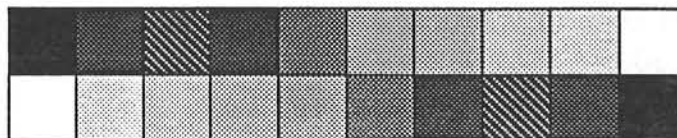
When the correct exposure

is found, do the same tests for the green and blue filters. Record these exposures and place the numbers in a convenient place.

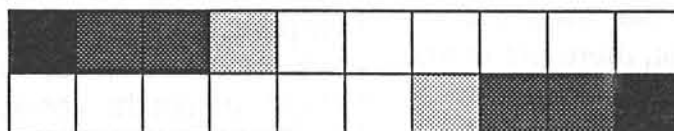
The next time you want to

isolate any color, use the opposing color to make the litho film mask.

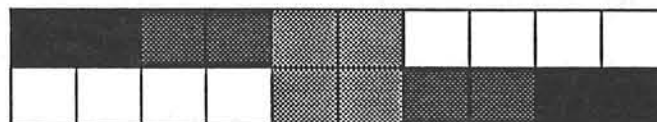
Then use the mask as a post exposure (bump) on Cibachrome paper.



This is the correct exposure



This represents underexposure



This represents overexposure

If the grey scale is exposed properly, the top example shows what it should look like.

This is a method to determine the correct exposure when making any kind of litho reverse. It is also the method used to establish the spread and choke system.

If you have a transparency of a sail boat out in the harbor and the sky looks too grey, isolate that area and re-expose the sky through a blue filter and the sky will become brighter and more blue.

On the other hand, if you have a transparency of a clown in full make-up and you wish to brighten all of the colors, use all three masks, one at a time, and re-expose the transparency using all three color filters. This is called a "bump" exposure.

If you want to change any color, use one mask, but use two filters, one at a time, and the color will shift.

For instance:

If you "Bumped" the red filter first, then the green filter, the area would become less red and more orange.

Remember, the longer you expose, the lighter the area becomes.

This system will work with any reversal material, such as Type R or duplicate transparencies.

**Kodak and
Dye Transfer**

I recently had a discussion with Sally Robson, the marketing director for the Dye Transfer process at Eastman Kodak, in Rochester.

I asked her about the forthcoming book on the Dye Transfer process, and she felt that the book probably would not be completed.

Apparently, Kodak has been losing money with the Dye Transfer Process and recently had to raise the cost of most of the materials pertaining to the Dye Transfer Process.

She has promised to make a strong effort to find new markets for this prestigious and truly archival color process.

I wish her all the luck in the world.

I know how important this process has been and I personally feel that this completely controllable process should not be allowed to die.

The field of black and white has made a new emergence as quality advertising art work.

The reason is the high cost of using these new scanners and the cost of space in major magazines.

Making quality black and white prints from transparencies been a favorite subject of mine for many years.

I feel that I can get more information from a color transparency by make negatives via a separation negative technique and produce

a far better black and white negative than if a negative were shot in the camera, in the first place.

The reason for my attitude is this;

The black and white negative depends on the sensitivity of the film to the different colors in the spectrum.

After exposing and processing this one sheet, whatever you have on this negative is all you are going to get.

It can't be changed or even processed to the correct contrast range that your enlarger requires for a quality print.

You will be more than likely forced to use a Polycontrast paper.

This isn't wrong, but the only thing you can control is the overall contrast and density of the final print.

On the other hand, the transparency is a great starting place. By first using Pan Masking film to lower the contrast range of the transparency and then by using panchromatic negative film, you can produce a full negative with detail.

You will be able to produce a great negative by using filters alone or in combination, so that a more detailed image can be obtained.

You can control the color sensitivity of the black and white negative.

Try it. You will be amazed.

Using a Minolta Color Head when exposing Cibachrome prints.

The color head is actually three filtered pulsed xenon light sources in one unit. There is no reason why the enlarger couldn't be used for any stage in producing Type C prints or Typr R prints.

The image could be masked by contact and could then the sandwich of mask and transparency could be exposed through the pulsed xenon color tubes, all at the same time or individually.

Either way would work without any problems. The enlarger could even be used as a light source for exposing the masks using a contact frame.

Each color in the unit can be exposed separately so that once a color balance is derived by testing each color individually, a set of exposures could be made in the correct balance without any real deviation unless the material or chemistry is changed.

However, I understand that the kind of sharp cutting filtration needed for the complicated Dye Transfer process doesn't meet the requirements for making separation negatives. They will work, but not as accurately as using Kodak's 29,

61 and 47b filters.

What about using the Minolta Color Head for making Cibachrome prints?

The color head would work fine, except for the fact that it is rather slow.

From my experience with one of my students, we had such long exposures that the color tubes would burn out. They cost over \$18 ea. to replace.

The negative carrier in any enlarger would still have to be modified in order for all the pins systems to be used properly.

Some of my students have been using a dichroic color head for producing Cibachrome prints. Some of the exposures are quite long. If you don't mind the long exposures make sure that you keep in mind the reciprocity problems that you will encounter.

I would rather use a condenser enlarger so that I could make shorter exposures, but this is a personal decision.

Most of my students leave my lab with the knowledge that the speed of the enlarger is critical.

I won't rule out the use of a diffusion enlarger, but the speed has to be higher than the normal output.

I used to use a Pulsed Xenon light source made by Berkey Marketing, in New York City. This unit cost about \$1350 and was used with a 4x5 condenser model D-2 Omega.

I was able to make 30x40 prints from heavily masked 35mm transparencies with exposures within 30 seconds, stopped down to *f* 8.

I have not been able to find another light source like this. They have died the slow death of dinosaurs. Instead, I use a 250 watt lamp in a Condenser model of an Omega D-2.

Because I use condensers, I am aware of the dirt and scratch problems. As a result, I use an oil immersion system to keep the dirt and scratches out of the print.

My exposures are not very long, but some have been as long as for 4 minutes. The originals needed to be opened up.

If you are fortunate enough to own an 8x10 Durst, they have a dichroic color head that is extremely fast and can produce very smooth, clean, Cibachrome prints.

I constantly receive calls from subscribers about various things that pertain to the darkroom.

Some of the questions are repetitive. I will answer them and hope they might answer some of your questions as well.

How many Dye Transfer prints can be made from one set of matrices?

I don't really know.

In 1949, I made a set of separation negatives from a color transparency shot by Yosef Karsh, of the then current Pope.

Mr. Karsh asked me to get the separation negatives retouched by one of the leading negative retouchers in New York City.

Harriet Woolen was her name. She charged the exorbitant price of \$25 for the entire set. (3 negatives.)

The Pope had a problem with keeping his face clean shaven.,He shaved twice a day in order to look neat.

We made a very good set of matrices from this retouched set of negatives and ran an excellent print. The Pope looked like a young man.

Karsh didn't like the fact that he looked too young. He told us to wipe off the retouching and make a straight set of matrices.

We placed the first set of matrices in the garbage pail and placed them outside

ready to be picked by the garbage pick-up truck.

We washed the retouching off the negatives and made new matrices.

Remember, the first set of matrices was outside in the curb, waiting for the truck.

The new print looked great and really represented the Pope, heavy beard and all. However, when Karsh saw the new print, he said, "I don't like this look. lets use the first set".

I went out to the sidewalk and heard the approaching garbage truck in the distance.

I removed the mats from the rubbish pail, washed them, and then ran over 800 Dye Transfer prints from them. Luckily, they weren't damaged.

The only reason we stopped at 800 was because that's all he wanted.

This was before we knew that we could harden matrices.

Now that we know how to harden matrices, you could probably run thousands.

For those of you who don't know about hardening matrices, here is the formula.

Add 5cc of formaldehyde to one gallon of water .
Add 2 Or 3 drops of Kodak #

600 Photo Flow to the solution.

Soak a brand new matrix just out of the hot water rinse in this hardening solution for 2 minutes, one at a time, emulsion up, then hang to dry.

Believe me, it really hardens the matrices

Is it possible to make a soft hold out mask, then reverse it to make a soft burn in mask and make it work?

No. You cannot possibly get the two edges to fit properly. If you want a soft edge, it's better to place spacers or diffusion sheets between your sharp edged masks (friskets) and the negative or transparency.

Think about that answer for a minute. The soft edge cannot possibly be reversed accurately.

However, if you need a soft edge mask for silhouetting an image, a soft edge mask would work.

With the apparent slowing down in the use of Dye Transfer prints by the advertising agencies, does it make sense to want to learn about the process?

The answer is yes.

You might just as well ask if we should still be involved with photography.

Any image can almost be "invented" by a scanner technician. But I don't believe that the art of photography will ever be superseded by an electronic system.

Making the litho separations is another story.

I have seen what the scanner can do. It is an amazing invention, but the subtle skills of a photographer and the printmaker cannot be duplicated by anything electronic.

The need for prints by photographic art galleries is expanding.

Most of the galleries are exhibiting Type C prints and now finally, Cibachrome prints.

The need for the dye transfer print is still a very important part of "art" photography.

No other process has the controllability of the Dye Transfer process.

I know from experience. If you submit a Dye Transfer print to a gallery owner for consideration of an exhibit, the door will be wide open, unless the prints are mediocre and the subject matter is unappealing.

Most Dye Transfer labs that have the necessary skills will still find work from advertis-

ing agencies because of the cost factor.

Replenishing Kodak Dye Transfer Dyes.

This problem has existed since the days of the "Wash Off Relief" process.

As prints are "pulled" from a one gallon kit of freshly mixed dyes, the dye particles leave the liquid mixture that they are part of. This results in a weaker set of dyes.

In the box in which the dyes are packed, Kodak has placed a card that tells you how much concentrate dye to add to the mixed set after four prints, in order to bring the dyes back to their original strength.

Does this work?

Not on your life.

The reason this information doesn't work is because the amount of dye removed from each set of transfers is never the same in each set of matrices.

For instance:

If you are printing a set of mats of a girl in a red dress against a red background, then very little cyan dye will have been removed in comparison to the magenta and yellow.

Another set of mats may be a scene of a green forest against a blue sky. The proportion of dye particles that are removed from solution are totally different.

The only way to really determine the amount of concentrate dyes to add back to the mixed set, and to keep the dyes at their proper pH is to purchase two items.

A pH meter, and a colorimeter.

The pH meter will alert you when the proper pH of the dyes fall or rise above their original strength.

The colorimeter will tell you how much dye is removed after 4 prints, so that you will be able to add the correct amount of concentrate dyes every time.

Is all this fooling around really necessary?

I have never used an colorimeter because of the cost. I didn't use mixed dyes more than 2 jobs. Sometimes, only one.

Whenever I had to run many prints, I would start with 2 gallons of dye for each color. This allowed me to run many prints before there was any noticeable change in color balance.

I you want, or need, any of my published items; The book "The Art of Photo Composition" is still \$50. The back Issues of this newsletter are \$4. ea The newsletter is \$60 per year.

The Video Package on Dye Transfer is \$200. plus \$12 shipping. Thanks,

Bob Pace
13900 Trinidad Dr
Victorville CA 92392

DESK-TOP AUTO PROCESSOR

for RC paper upto 20 x 24 in.

fujimoto

The new Fujimoto Image Processor CP-51 is a table-top roller processor for RC papers from 3X4 in. to 20X24 in. Combining the main body with PP Module, the processor can do Cibachrome P-3 processing as well as other Pos/Pos processing in addition to a conventional RC paper and B/W processing.

Further the WD Module (Wash/Dry Module) complements the processor, turning into dry-to-dry operation system.

Ⓐ The Main Body can process RC color papers and B/W papers with a built-in microcomputer controlling the processing sequence with fully automatic replenishment.

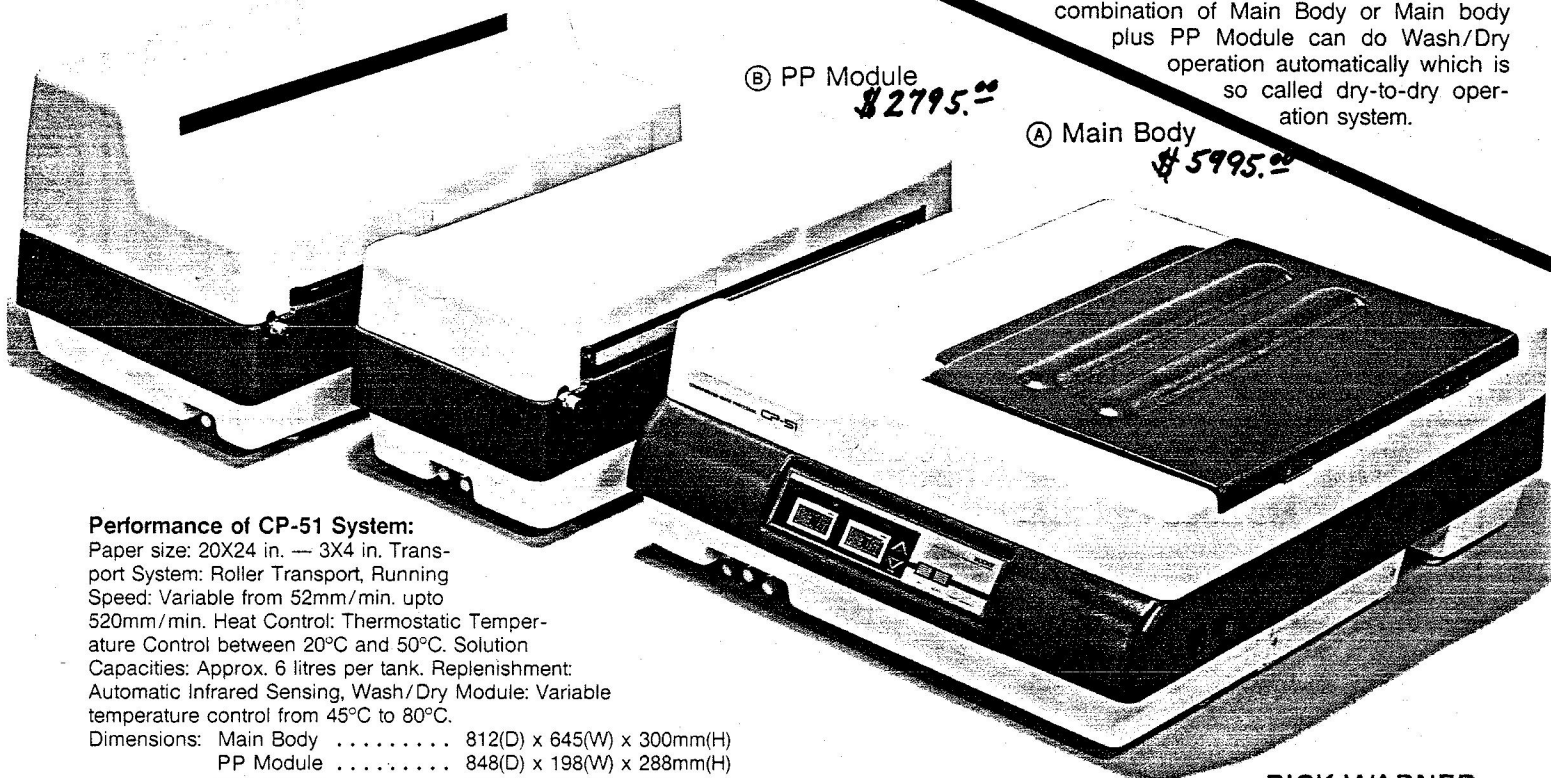
Ⓑ The PP Module (Pos/Pos Module) is exclusively designed for Cibachrome P-3 and other Pos/Pos type processing by linking the unit with the main body. Automatic replenishment mechanism also provided.

Ⓒ The WD Module (Wash/Dry Module) with a combination of Main Body or Main body plus PP Module can do Wash/Dry operation automatically which is so called dry-to-dry operation system.

Ⓒ WD Module
\$ 3795.00

Ⓑ PP Module
\$ 2795.00

Ⓐ Main Body
\$ 5995.00



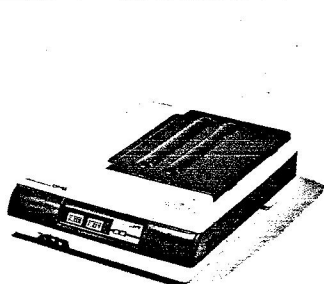
Performance of CP-51 System:

Paper size: 20X24 in. — 3X4 in. Transport System: Roller Transport, Running Speed: Variable from 52mm/min. upto 520mm/min. Heat Control: Thermostatic Temperature Control between 20°C and 50°C. Solution Capacities: Approx. 6 litres per tank. Replenishment: Automatic Infrared Sensing, Wash/Dry Module: Variable temperature control from 45°C to 80°C.

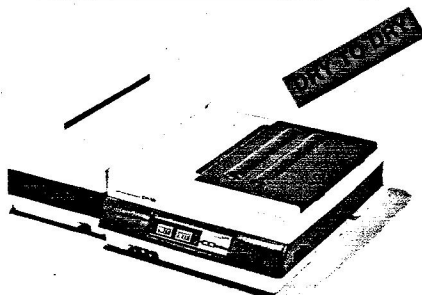
Dimensions: Main Body 812(D) x 645(W) x 300mm(H)
PP Module 848(D) x 198(W) x 288mm(H)
WD Module 767(D) x 480(W) x 405mm(H)

IMAGE PROCESSOR CP-51

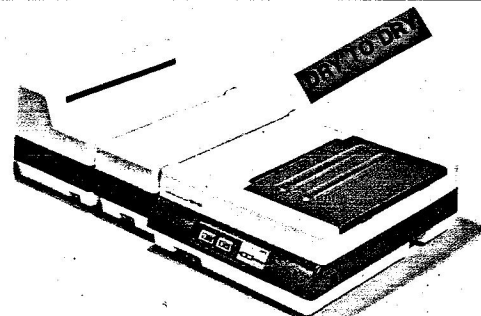
RICK WARNER
16254 PASADA DRIVE
WHITTIER, CA 90603
(213) 947-6597



Ⓐ Main Body:
Neg/Pos Color and B/W paper processing are available in this unit.



Ⓐ Main Body + Ⓒ WD Module:
This combination permits Dry-to-Dry work.



Ⓐ Main Body + Ⓑ PP Module + Ⓒ WD Module:
Cibachrome P-3 process and other Pos/Pos type processing is done as Dry-to-Dry system.

"FUJIMOTO" IMAGE PROCESSOR, CP-51 MAIN BODY SPECIFICATIONS

Print Size:	Minimum: 76mm x 100mm (3" x 4") Maximum: 510mm x 610mm (20" x 24")	Recirculation:	Automatic Recirculation (with Chemical Filter) by Magnet Pumps.
Transport:	Roller Transport	Replenishment:	The 6 IR-sensors detecting the area of a paper fed through enable the replenishment amount automatically. It is possible to adjust the solution amount individually on the first and the second bath.
Process Time:	30 sec. to 50 min. (Time passing through each bath)	Dimensions:	812mm(D) x 645mm(W) x 300mm(H)
Paper Transport Speed:	Variable from 52 to 520 mm/min. with 3-digit LED display	Weight:	36 kgs.
Process Capacity:	RC Color Paper 35 prints/H (Print Size 10" x 12") B/W Paper 109 prints/H (Print Size 10" x 12")	Others:	One solution is drained independently from another solution. Ventilation Fan is incorporated. Standby function is built-in. (A roller and a pump is rotated for 3 sec. every 15 sec. even while the machine is idle as far as the power is on. This function serves to prevent the rollers from getting stuck each other and the solutions from deterioration.) Solution Anti-Oxidation Structure.
Power Source:	AC 230V/115V/100V	Safety Device:	Excessive Heat Prevention Circuit is incorporated with Temperature Control Heater.
Power Consumption:	Approx. 680W	Optional Module:	1) Pos/Pos Module: for CIBA-CHROME A(P3 Chemical) 2) Pos/Pos Module: for Ektachrome 22(R3 Chemical) 3) Wash/Dry Module
Number of Bath:	2 Baths		
Capacity of Bath:	No. 1 Bath 6 liters for Dev. No. 2 Bath 6 liters for BL or BL./Fix.		
Temperature Control:	Micro-Computer controlled 3-digit LCD. Display in Celsius or Fahrenheit scale. "Heater-On" marking. Warning Lamp when the solution temp. is over a set temp. Push-On Temp. Setting every 0.1°C scale. Temp Setting up to 50°C with deviation of ± 0.1°C.		

"FUJIMOTO" IMAGE PROCESSOR, CP-51 POS/POS MODULE SPECIFICATIONS POS/POS MODULE for CIBACHROME A Paper (P3 Chemical)

Print Size:	Same as those of main body	Recirculation:	Automatic Recirculation (with Chemical Filter) of the solution.
Transport:	Same as that of main body	Replenishment:	Automatic Replenishment by paper sensor. Replenishment Amount is same as the first bath's in the main body.
Process Capacity:	CIBACHROME Paper: 27 Prints/H (Print Size 10" x 12")	Dimensions:	848mm(D) x 198mm(W) x 288mm(H)
Power Consumption:	320W	Weight:	15 kgs.
Number of Bath and Capacity:	One Bath and 6 liters	Others:	The drive and power supply utilize those of CP-51 Main Body.
Temperature Control:	By Heater and Thermostat incorporated with Bath, Temperature is set variable between 20°C and 40°C with deviation of ±0.2°C.		

"FUJIMOTO" IMAGE PROCESSOR, CP-51 WASH/DRY MODULE SPECIFICATIONS

Transport:	Same as that of main body	Weight:	30 kgs.
Capacity of Washing Tank:	No. 1 Wash Bath 5.2 liters No. 2 Wash Bath 5.4 liters	Power Source:	AC 220 — 240V
Paper Size:	Same as those of main body	Power Consumption:	1,800W
Washing Water Amount:	Approx. 1.5 liters min.	Safety Device:	Excessive Heat Prevention Circuit is incorporated with Dry Heater.
Washing Temperature:	More than 25°C of warm water supplied from outside.	Others:	Built-in Flow Control Valve. The drive supply utilize from CP-51 Main Body or Pos/Pos Module. Optional Waterless Process Drying Module. Standby function linking with the signal from a main body.
Drying Temperature:	Variable between 45°C — 80°C (113 — 176 F)		
Dimensions:	767mm(D) x 480mm(W) x 405mm(H)		