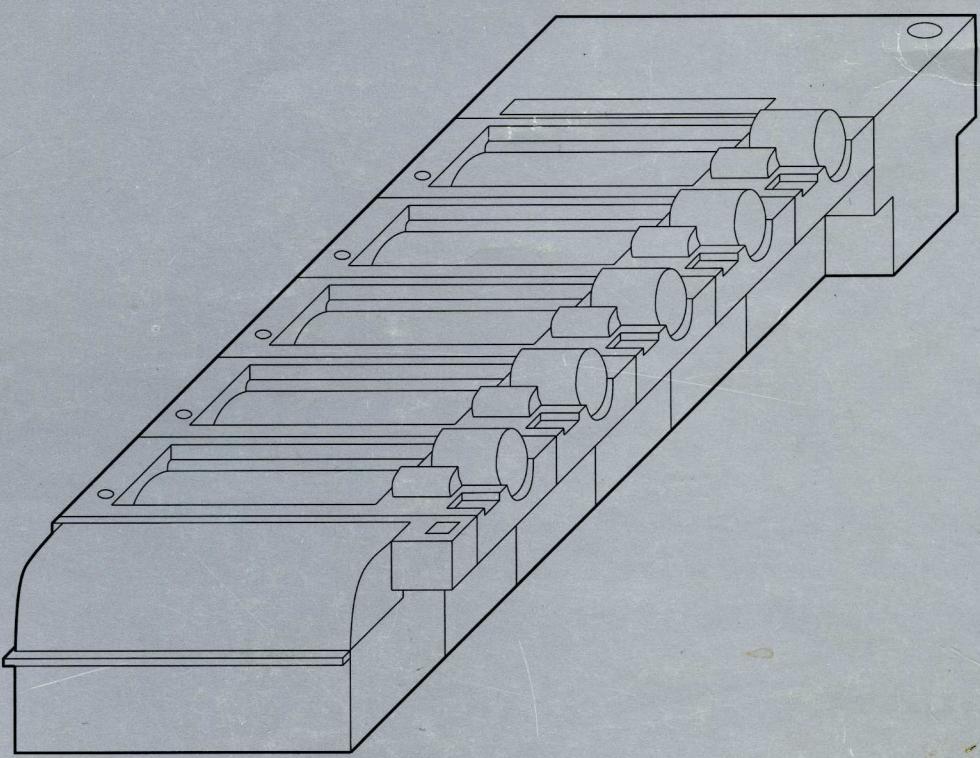


Users' manual
Manuel pour l'utilisateur
Manuale per l'utente
Manual para el usuario



Attention

Ektacolor RA4

Working with 110 V/60 cyc. gear
position on roller unit should be „3“
(nave towards outside)

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Allgemeine Sicherheitshinweise

- Machen Sie sich gründlich mit dem Gerät und dem Umgang mit Chemikalien vertraut.
- Die auf den Chemikalien-Packungen angegebenen Hinweise sind genau zu beachten.
- Sollten Chemikalien in die Augen gekommen sein, so ist sofort mit fließendem lauwarmen Wasser ca. 15 min. lang zu spülen und unmittelbar anschließend ein Arzt aufzusuchen. Der direkte Hautkontakt mit Chemikalien und das Einatmen von Chemiedämpfen ist zu vermeiden. Nichtbeachtung kann zu Ekzemen und Erkrankungen der Atemorgane führen.
- Bei allen Reinigungsarbeiten ist die Entwicklungsmaschine spannungsfrei zu schalten und gegen unbefugtes Wiedereinschalten zu sichern.
- Die Umweltbestimmungen bezüglich der Ablagerung gebrauchter Chemikalien sind gemäß den gesetzlichen Bestimmungen Ihres Landes zu beachten.

General safety points

- Familiarise yourself thoroughly with the unit and with handling of chemicals.
- Carefully note the instructions on the chemical packages.
- If you should get chemical solution splashes in your eyes, straightaway rinse the eyes with lukewarm running water for about 15 minutes. Consult a doctor immediately afterwards. Avoid direct contact of chemicals with your skin and do not breathe in chemical fumes. Failure to observe these safety measures could cause eczema and respiratory problems.
- During all cleaning operations switch off and disconnect the processor and ensure that it cannot be switched on inadvertently.
- Observe also local environmental regulations concerning the storage and disposal of waste chemicals.

Indications générales de sécurité

- Familiarisez-vous parfaitement avec la dévelopeuse et la manipulation des produits chimiques.
- Les prescriptions indiquées sur les emballages de produits chimiques doivent être respectées rigoureusement.
- Si des produits chimiques atteignent vos yeux, il faut les rincer immédiatement avec de l'eau courante tiède pendant 15 minutes environ, puis consulter immédiatement un médecin. Eviter tout contact direct des produits chimiques avec la peau, et, également, de respirer les vapeurs de ces produits. Négliger ces mesures de précaution risque d'entraîner des cas d'eczéma et des maladies des organes respiratoires.
- Pour tous les travaux de nettoyage, il faut mettre la dévelopeuse hors circuit et s'assurer qu'elle ne puisse pas être remise en circuit involontairement.
- Les prescriptions légales valables dans votre pays pour la protection de l'environnement, en ce qui concerne l'évacuation des produits chimiques usés, doivent être respectées.

Indicazioni generali sulle norme di sicurezza

- InformateVi a fondo sull'impiego dell'apparecchio e sull'uso delle varie soluzioni chimiche.
- Le indicazioni fornite sull'imballo dei prodotti chimici sono da osservare puntigliosamente.
- In caso di contatto dei chimici con gli occhi questi sono da sciacquare per circa 15 min. con dell'acqua tiepida: quindi rivolgeteVi immediatamente a un medico. Evitate il contatto diretto della pelle con i chimici e l'inalazione dei vapori da questi causati. La non osservanza di queste regole può portare alla formazione di eczemi e disturbi alle vie respiratorie.
- Per tutti i lavori di pulizia, staccate l'alimentazione elettrica e assicurateVi che questa non possa essere inavvertitamente riattivata.
- Osservate le norme vigenti di tutela dell'ambiente per quanto riguarda la conservazione e l'asporto dei chimici esauriti.

Observaciones generales de las medidas de seguridad

- Familiaricese con el aparato y con la manipulación de las soluciones químicas!
- Ponga especial atención a las indicaciones de los fabricantes de los productos químicos.
- Si las soluciones químicas salpicaran los ojos, éstos deberían ser lavados rápidamente con agua corriente tibia por un espacio de aprox. 15 minutos e inmediatamente después se debería consultar a un médico. El contacto directo con la piel y la inhalación de vapores químicos deberán ser evitados. La no observancia de estas precauciones pueden conducir a ecemas y a enfermedades de los órganos respiratorios.
- Al realizar trabajos de limpieza, dejar la reveladora desenchufada y asegurarla contra nuevas conexiones.
- Para el depósito de los productos químicos usados, observar las leyes de anticontaminación del propio país.

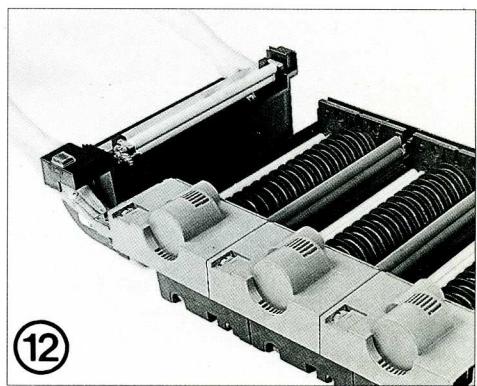
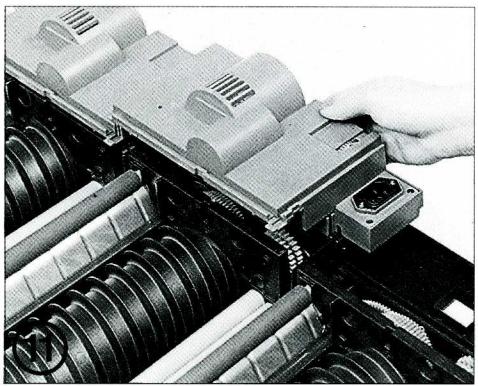
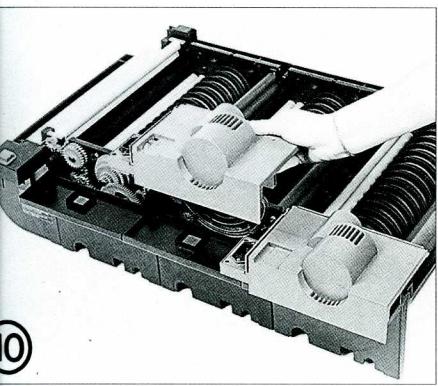
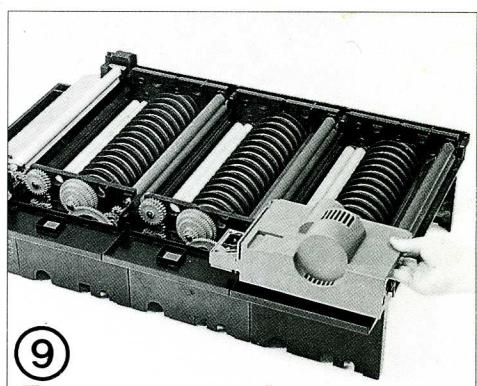
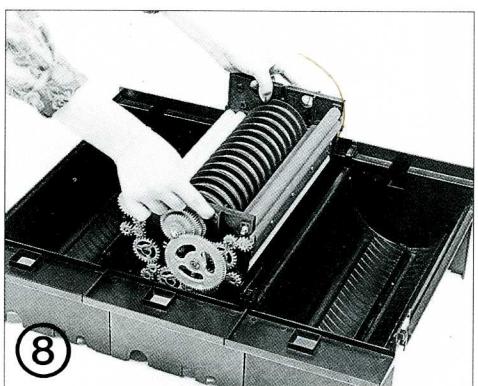
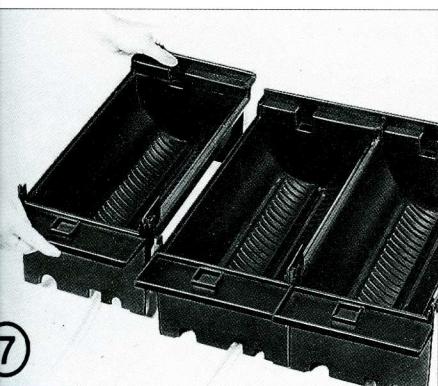
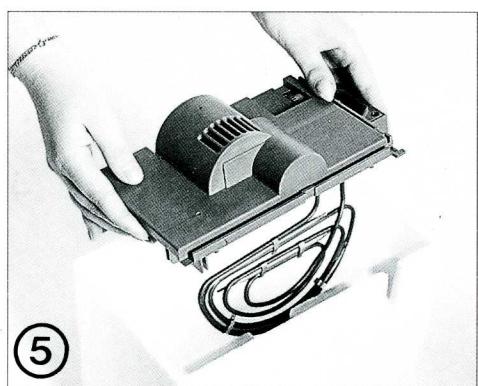
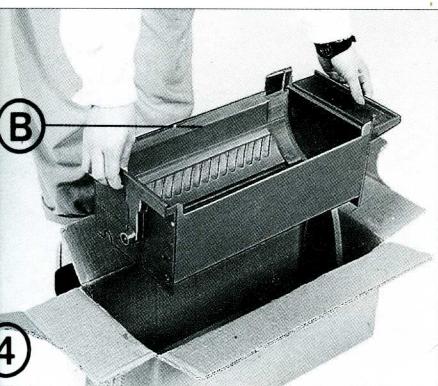
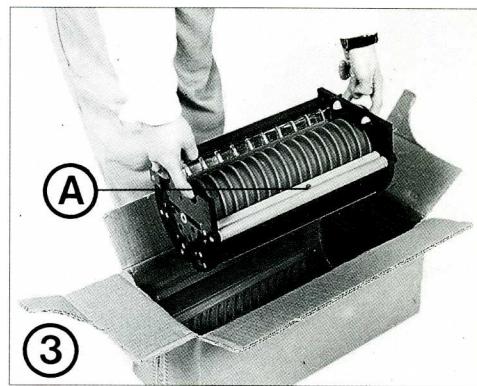
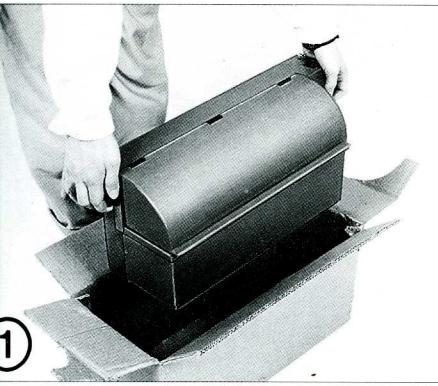
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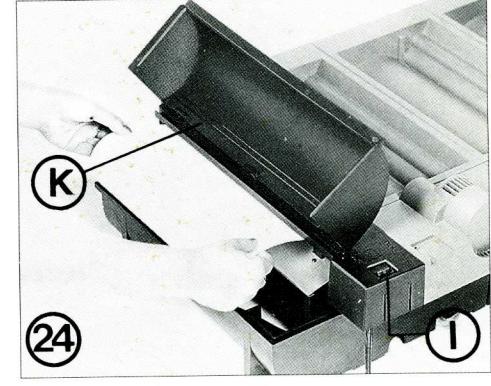
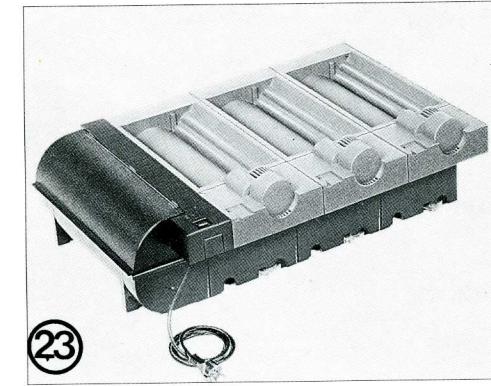
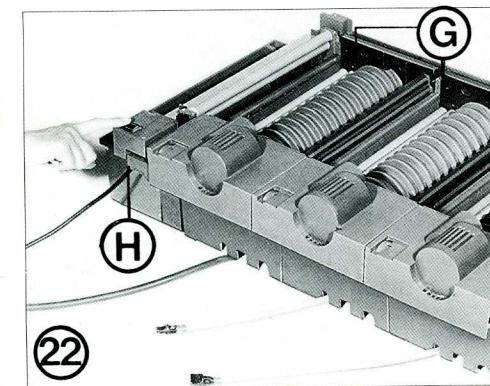
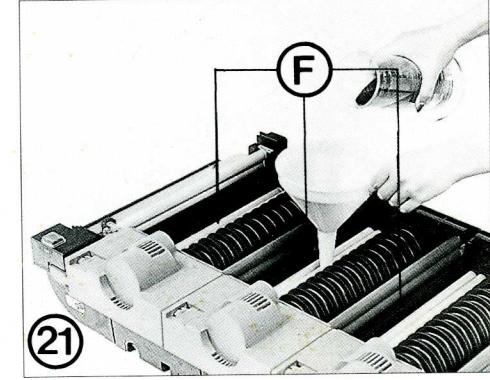
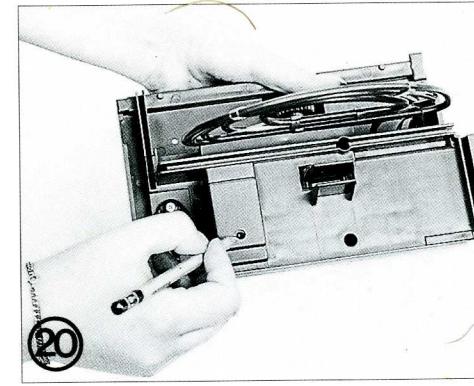
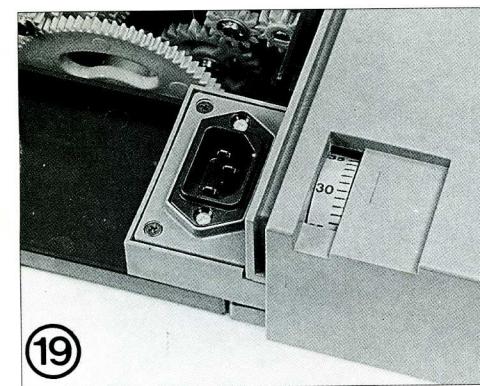
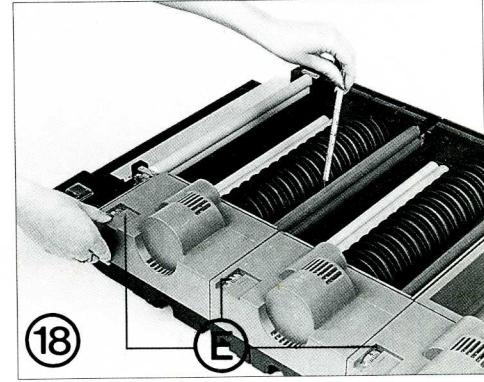
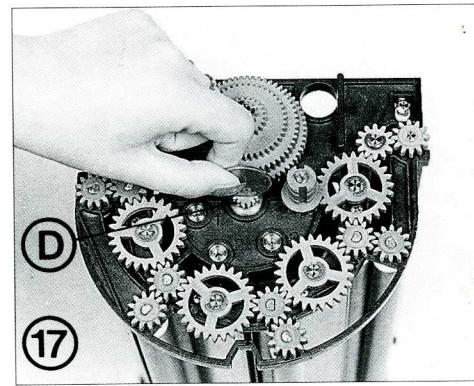
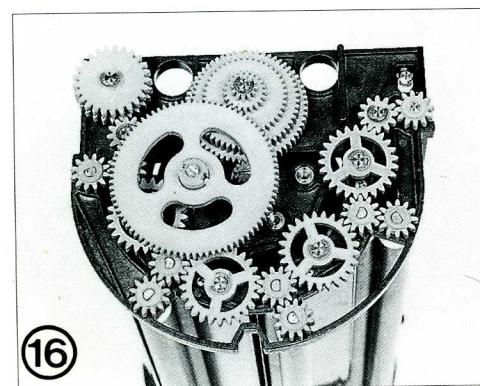
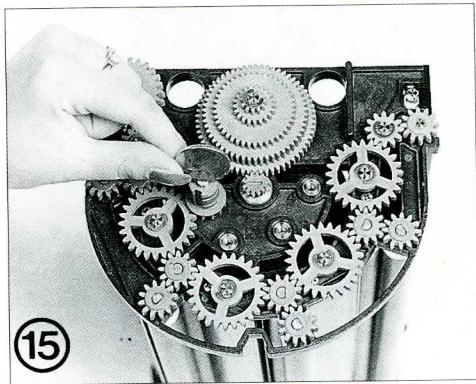
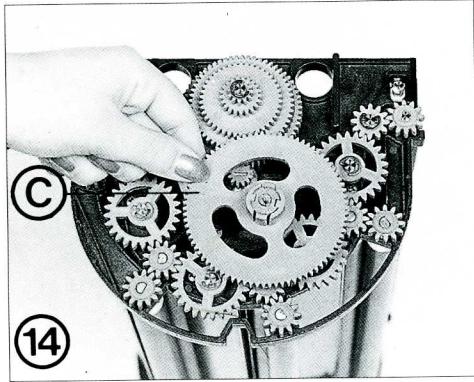
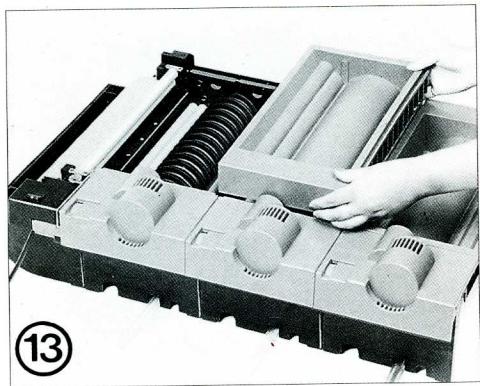
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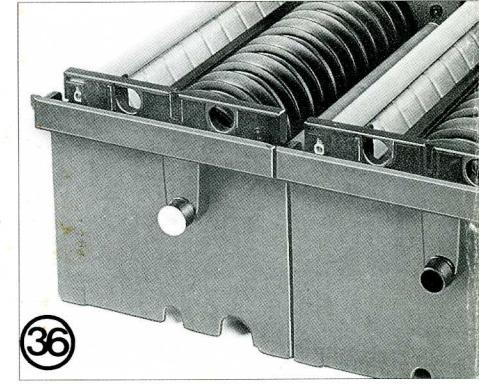
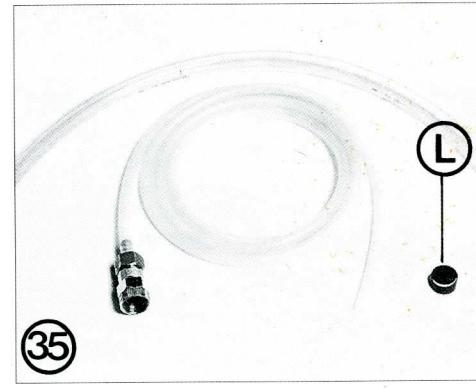
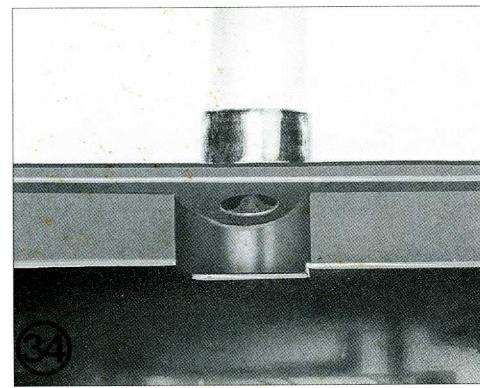
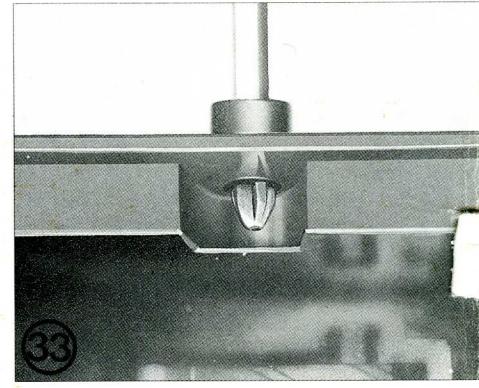
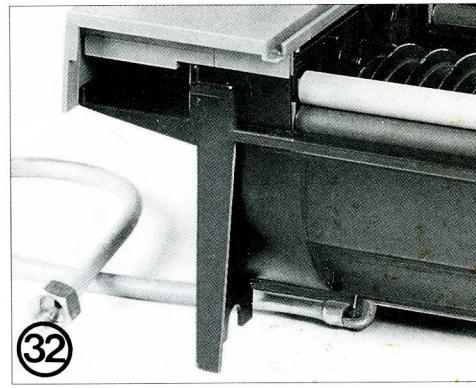
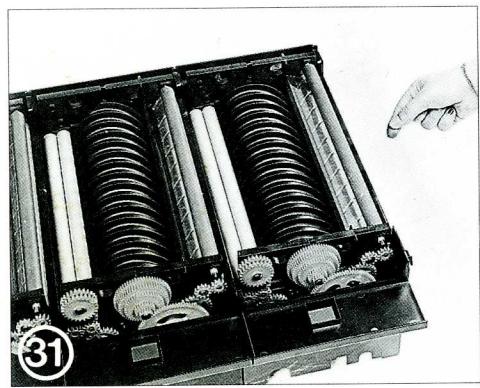
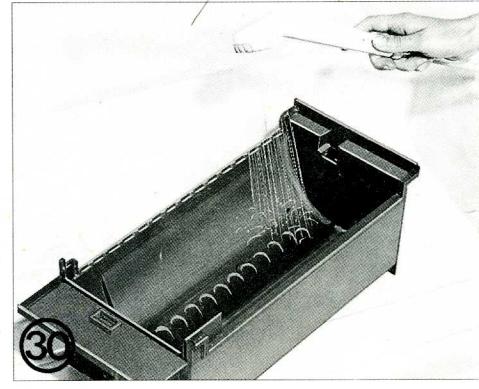
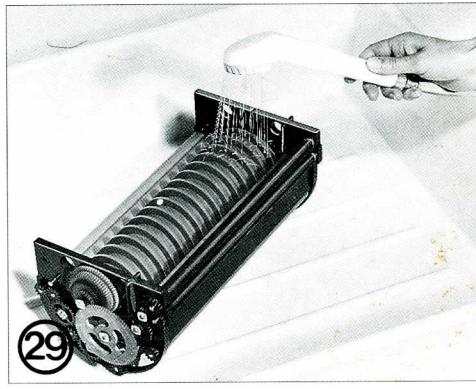
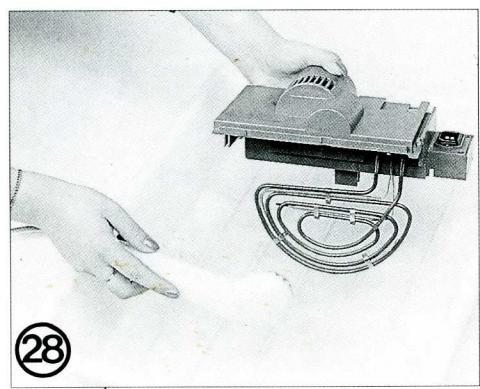
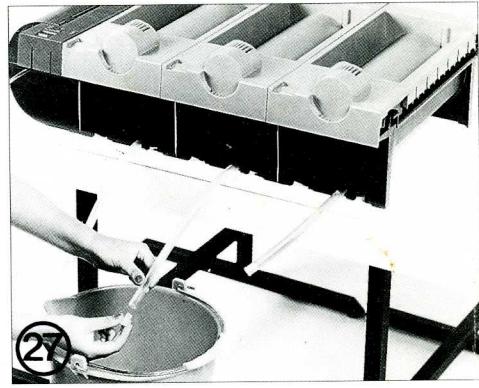
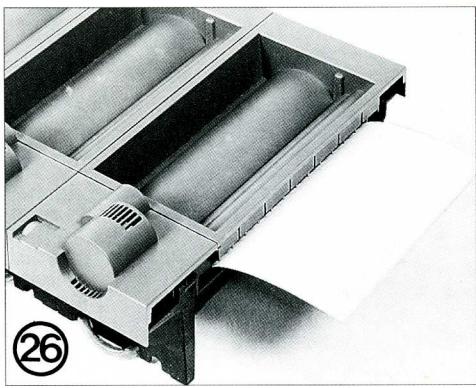
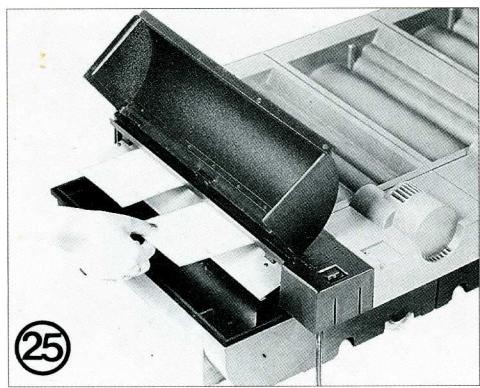
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INTRODUCTION

You have acquired a modern automatic processor of modular design. It has a precision roller transport system and is adaptable to different development processes.

To assure reliable functioning of your processor, please follow carefully the assembly and operating instructions in this manual.

SETTING UP AND ASSEMBLY

Unpacking the unit

Follow the illustration sequence when unpacking the processor.

- Fig. 1 --> 2 --> 3 --> 4 --> 5

Cleaning the components

- Clean all components to get rid of packaging debris.
- Rinse the roller rack (A/Fig. 3) and trough (B/Fig. 4) in water and dry.
- Note: **Never** try to turn the rollers against the feed direction of the paper
 - that could damage the stripper plate on the lower squeegee roller.

Assembly

Assemble the processor by proceeding according to the sequence of illustrations below:

- Fig. 6 --> 7 --> 8 --> 9 --> 10 --> 11 --> 12 --> 13

When assembling the units always start with the **last solution module**; proceed in the reverse order to dismantle the processor.

Assemble the processor on a horizontal bench top, levelled in both directions.

Setting the processing times

By repositioning the gear wheel (C/Fig. 14) you can adjust the running speed in four stages. **Note that this has a left-handed thread.**

The right position is given in tab. 1 (page 18).

Proceed as indicated by the illustration sequence below:

- Fig. 14 --> 15 --> 16

Adjusting the speed of the endless screw

You can change the revolution speed of the recirculating screw by changing the gear wheel (D/Fig. 17).

The tab. 1 (page 18) shows required revolution speeds.

- Hold the recirculating screw while unscrewing the gear wheel with a coin.
Note that this has a left-handed thread.

Setting the processing temperature

First set the thermostat (E/Fig. 18) to the required processing temperature on the scale (Fig. 19).

For fine adjustment fill the processor with solution and check the temperature with a thermometer (Fig. 18).

Note: Briefly switch off the machine.

- For the correct processing temperature see the tab. 1 (page 18) or the data sheets of the chemistry supplier.

Tab. 1 - MACHINE SETTINGS FOR DIFFERENT PROCESSES

Process	Minimum No. of solutions	Process temperature	Screw pump speed, rpm*	Gear position on roller unit	Run-through time per solution	Usable paper types
Ektaprint 2	Dev./Blix	33 °C (91 °F)	Dev. 30 rpm Blix 60 rpm	4***	3 1/2 min	Ektacolor 78, Ektacolor Plus, Agfacolor Type 8, Tetenal, Fuji, Konica, Labaphot, Tura etc.
Ektaprint 200	Dev./Blix	38 °C (100 °F)	Dev. 30 rpm Blix 60 rpm	1***	2 min	As for Ektaprint 2
Ektacolor RA 4	Dev./Blix	35 °C (95 °F)	Blix 60 rpm Dev. 60 rpm	2**	45 sec	Ektacolor 2001
Agfacolor Process 92	Dev./Blix	33 °C (91 °F)	Dev. 30 rpm Blix 60 rpm	4***	3 1/2 min	As for Ektaprint 2
Tetenal Process PK	Dev./Blix	35 °C (95 °F)	Dev. 30 rpm Blix 60 rpm	1***	2 min	Ektacolor 78, Tetenalcolor, Agfacolor Typ 8, Labaphot, Turacolor, Fuji, Konica
Tetenal Colorprint 45	Dev./Blix	36 °C	Dev. 60 rpm Blix 60 rpm	3**	1.0 min.	Agfacolor Type 8, Tetenal Color, TT Speed Color Type III, Fuji, Konicacolor
Ilfospeed 2000 B&W	Dev./Fix	30 °C (86 °F)	Dev. 60 rpm Fix 60 rpm	2**	45 sec	All standard resin-coated B&W papers
Agfa Agetol B&W	Dev./Fix.	29 °C (84 °F)	Dev. 60 rpm Fix 60 rpm	2**	45 sec	All standard resin-coated B&W papers
Tetenal Eukoprint 2 B&W process	Dev./Fix.	30 °C (86 °F)	Dev. 60 rpm Fix 60 rpm	2**	45 sec	All standard resin-coated B&W papers
Tura Turanol B&W process	Dev./Fix.	30 °C (86 °F)	Dev. 60 rpm Fix 60 rpm	2**	45 sec	All standard resin-coated B&W papers
Cibachrome P 30	Dev./Blix.	29 °C (84 °F)	Dev. 30 rpm Bleach 30 rpm Fix 60 rpm	1***	2 min	Cibachrome A-II, CRCA and CPSA
Tetenal UK - 3 Reversal process	First developer • Running water rinse Colour developer Bleach-fix	25 °C 20-25 °C 40.5 °C 35 °C	First dev. 30 rpm • 60 rpm Col. dev. 30 rpm Bleach-fix 60 rpm	4***	3 1/2 min	Kodak-Ektachrome 21 N, Ektachrome 22 F, Tetenal TT-Speed Color reversal paper, Labachrome and other compatible papers.
Kodak-R-3000 Reversal process	First developer • Running water rinse Colour developer Bleach-fix	25 °C 20-25 °C 40.5 °C 35 °C	First dev. 30 rpm • 60 rpm Col. dev. 30 rpm Bleach-fix 60 rpm	4***	3 1/2 min	Ektachrome 21 N Ektachrome 22 F

* 30 rpm = large gear wheel
60 rpm = small gear wheel

** Nave towards outside

*** Nave towards inside

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Filling the tanks

Assemble the processor. Set the processing time, the revolution speed of the endless screw and the approximate temperature as described in sections "Assembly", "Setting the processing times", "Adjusting the speed of the endless screw" and "Setting the processing temperature".

Wear protective goggles when pouring in or emptying the developer. Set up the processor in a well-ventilated room.

- Use a measure or a funnel to pour the solutions - 2.5 litres of each - into the tanks. At the correct level the liquid should be about 3-4 mm (1/8 in.) above the top of the feed rollers (F/Fig. 21) and reach the edge of the overflow (G/Fig. 22).
- Start by pouring in the last solution (bleach-fix or fixer) and avoid any splashes, especially into the developer tank. Even minute traces of fixer can ruin the developer.
- To reduce the risk of contamination in case of insufficient cleaning preferably use always the same solution module for the same solution - e.g. one module always for developer, another exclusively for fixer etc.
- Connect the unit to your AC mains supply (H, Fig. 22) and switch on with the ON/OFF switch. Check that the recirculating screw pump and the rollers are running correctly. Then fit all tank lids, starting with the last solution module (Fig. 13).
- Once the solutions have warmed up, fine tune the processing temperature:
 - Lift off the developer tank lid.
 - Briefly switch off the machine and insert a long thermometer in one of the grooves of the screw pump (Fig. 18).
 - If the temperature differs from the set value, readjust the thermostat accordingly.
- The unit is now ready for operation (Fig. 23) and you can start processing.

OPERATION

- Switch on the unit with the main switch (I/Fig. 24).
- To feed in a print, open the cover (K/Fig. 24), place the **print emulsion side down** on the feed plate and push it straight into the feed rollers (Fig. 25).
- Close the cover; the print is now automatically drawn in and processed (Fig. 26).

IMPORTANT NOTE:

To avoid moisture condensation on the feed rollers, open the cover of the feed module once the processed print has emerged from the processor.

- Depending on configuration, the print emerges rinsed and dry. With the basic version you have to rinse and dry it separately.
- The drive and heater module has a thermal safety switch which cuts out if the heating coil gets too hot. To reset the safety cutout, press the switch in the underside of the drive module (Fig. 20).

CLEANING

- Switch off the processor and remove the feed module.
- Remove the cover of the solution modules (starting with the first tank) and rinse in water.

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- Drain the solutions (Fig. 27).
- Starting with the first tank, remove the drive and heating module. To remove the drive module, push out the retaining piece in the tank module base while lifting the drive module. Carefully rinse just the heating coil with water (Fig. 28), then dry with a cloth.
- Remove the roller racks and thoroughly rinse in water (Fig. 29). Periodically rub the rollers carefully with a soft rag soaked in methylated spirits.
- Dismantle the tanks and thoroughly rinse in water (Fig. 30).

Never use abrasive cleaner on your processor, nor hard or sharp objects.

Note: After cleaning and drying, the soft squeegee rollers eventually tend to stick together. If you intend to store the machine for longer than 2-3 days, preferably insert a sheet of plastic between the two rollers (Fig. 31).

CARE AND MAINTENANCE

Before starting

- Check the solution levels in the tanks.
- Check the processing temperature.
- Clean the feed plate and feed rollers.
- Run one sheet of 30 cm or 12 inch wide printing paper through the processor to pick up any dirt on the rollers.
- If you are using a rinse module fill this with fresh water.

After finishing

- Switch off the unit and open the cover at the feed module.
- If the solutions are exhausted (see Table 3 on page 23 for working capacity), drain them and clean the processor.
- If the chemistry is not fully used up, the solutions can remain in the processor for up to 2 days. For longer breaks drain the solutions and keep them in bottles with the air expelled, then clean the processor.
- If you are using a rinse module, always drain the water at the end of a processing session.

CONNECTING THE RINSE MODULE

If you want to add a rinse module (consisting of a tank, roller rack, drive module, cover, supply and drain hoses, and a flow limiting valve) to your basic processor proceed as follows:

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- Fit the flow limiting valve to your supply tap or faucet.
- Connect the feed hose to the solution module (underneath) in place of the drain hose (Fig. 32).
- Break out the drain opening at the solution overflow (Fig. 33).
- Connect the drain hose to the solution module and lead to your drain (Fig. 34).
- Open the water tap whenever you feed prints into the processor.
- At the end of a processing session empty the rinse module via the drain hose.

Note:

If you should need to see the rinse module as a solution module for another process (e.g. Cibachrome), close the broken-out drain opening with the stopper (L/Fig. 35/Fig. 36) supplied.

IMPORTANT NOTE:

To wash the chemicals completely out of the emulsion the hardness of the wash water should be 6 - 15 degrees. If the water is harder it may be treated with e. g. Calgon Foto or alternatively filtered with a 25 micron filter.

SOLUTION REPLISHMENT

You can manually replenish the solutions. Drain off part of the used solutions and replace by fresh solution. Note the recommended replenishment rates of the chemistry supplier.

- An automatically controlled replenishment system called Printo NO-VOCHEM will be available from October 1989. The instruction manual enclosed with this contains full details of setting up and operation.

DRYING THE PRINTS

See separate manual.

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TROUBLE SHOOTING

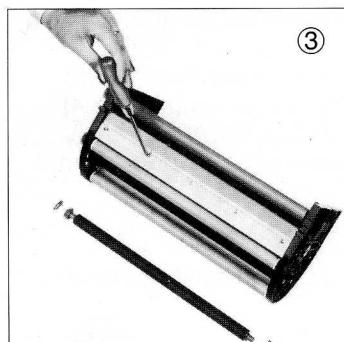
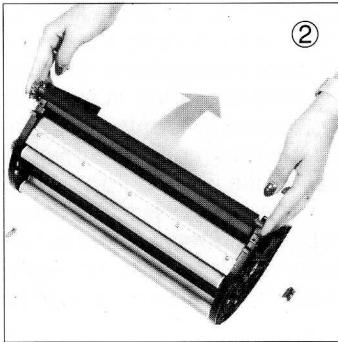
Problem	Possible cause and remedy
Unit won't run	<ul style="list-style-type: none">Check mains supply plug, connections and supply voltage.
Paper jams, print transport inoperative	<ul style="list-style-type: none">Check that gear wheels engage roller racks and that all are set to the same speed.Check operation of drive motor.
Streaks on prints	<ul style="list-style-type: none">Check speed of endless screw.Check squeegee action, especially where prints leave developer.Check stripper plate.Check for condensation in feed module or on feed rollers.Check solution levels.
Unit does not warm to set temperature	<ul style="list-style-type: none">Check thermostat setting.Faulty thermostat.
Scratches on prints	<ul style="list-style-type: none">Dirty rollers.Grit or sand in the water supply or in the chemistry.Damaged print guide elements.
Prints too light overall, poor maximum density and/or colour saturation	<ul style="list-style-type: none">Solutions too cold.Run-through time too short.Exposure time too short.Exhausted or excessively diluted developer.
Prints too dark overall, muddy whites	<ul style="list-style-type: none">Solutions too warm.Run-through time too long.Exposure time too long.With fresh chemistry (some processes): failure to add starter.
Colour fogging in whites	<ul style="list-style-type: none">Developer contaminated.Developer too warm.
Yellow fog	<ul style="list-style-type: none">Prints insufficiently rinsed.Contaminated drier rollers.Stale paper.
Black tarry deposit in developer trough and on rollers	<ul style="list-style-type: none">Oxidation deposits of developer.Developer left in processor too long.Remove with cotton wool soaked in alcohol, then rinse in water.
Tarry or oily matter on developer solution surface	<ul style="list-style-type: none">Failure to observe instructions in making up solution.Must mix fresh solution.
White spots on prints, deposit of chalk in wash tank	<ul style="list-style-type: none">Wash water too hard.Reduce water hardness with e. g. Calgon Foto to 6 - 15 degrees.Use 25 micron filter.
Layers of glossy paper split (e. g. Cibachrome) at front of print	<ul style="list-style-type: none">Wash water too hard.Reduce water hardness with e. g. Calgon Foto to 6 - 15 degrees.Use wetting agent.Spray wash tank with e. g. Teflon spray.

Note:

Process chemistry and paper types are subject to frequent modifications, so the table needs periodic updating.

Printo

Additional sheet



Cleaning the components

Water with differing degrees of hardness may be the cause of wear on the bottom squeegee roller. In order to prevent this from happening, we suggest to remove the skimmer plate from the rack whenever a Printo tank is being used as a rinse module. This will increase the roller's working life substantially, whilst print quality is going to be the same.

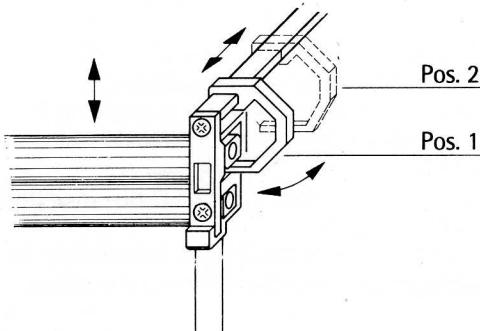
The skimmer plate is not to be removed if Printo tanks are used as processing or fix bath modules. In these cases there won't be any wear on the roller because of the chemistry's effect as lubricant.

To remove the skimmer plate, proceed as follows:

- After undoing screws, remove the squeegee roller (ill. 1/2)
- Loosen the five screws holding the skimmer plate (ill. 3) in place and pull same out of its support (ill. 4).
- Then tighten the five screws once more.
- Refit squeegee roller and secure it with the aid of screws.

Note

Starting with serial no. A 6173 the skimmer plate is no longer available.



Assembly

Connect the machine to the mains only when it is full.

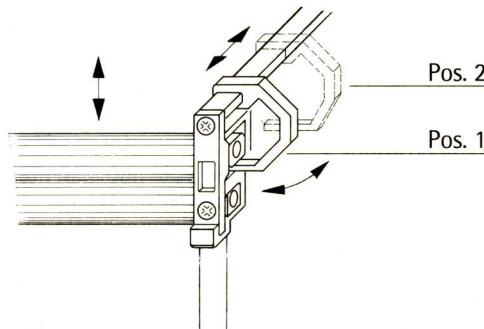
Before putting the machine into operation, move the roller spacers from position 1 to position 2.

When work is finished, move the spacers back to position 1. To do so, lift the upper roller slightly and push the spacer underneath the bearing bush as illustrated.

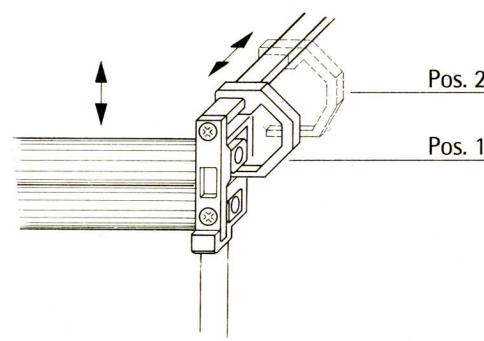
Now check to see that the roller rotates freely. This prevents the possibility of the rollers sticking together.

Machine settings for different processes

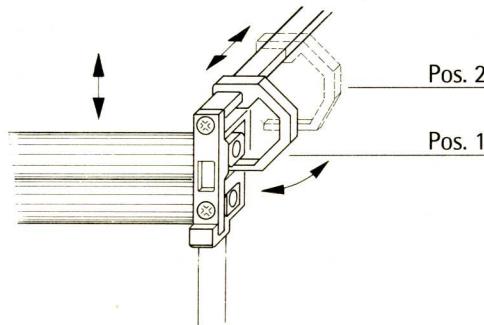
Process	Process temperature	Screw pump speed, rpm	Run-through time per solution
Photocolor Printmaster EP 2	Dev. = 31 °C Blix = 31 °C	Dev. = 60 Blix = 60	position 1 = 2 min
Tetenal Mono PK - EP 2	Dev. = 25 °C Blix = 25 °C	Dev. = 60 Blix = 60	position 1 = 2 min
Tetenal Mono PK - RA 4	Dev. = 27 °C Blix = 35 °C	Dev. = 60 Blix = 60	position 3 = 1 min
Tetenal Professional - RA 4	Dev. = 35 °C Blix = 35 °C	Dev. = 60 Blix = 60	position 2 = 45 sec
Diluprint-4 RA 4	Dev. = 25 °C Blix = 25 °C	Dev. = 60 Blix = 60	position 2 = 45 sec
Photocolor Chrome „R“ Reversal process	First developer = 33 °C Running water rinse = 20-30 °C Colour developer = 39 °C Bleach-fix = 27 °C	First developer = 30 Running water rinse = 60 Colour developer = 30 Bleach-fix = 60	position 4 = 3 1/2 min



Achtung
 Nur gefülltes Gerät mit Stromnetz verbinden.
 Vor Inbetriebnahme der Maschine die
 Walzen-Abstandhalter von Position 1 in
 Position 2 bringen.
 Nach Beendigung der Arbeit die Walzen-
 Abstandhalter wieder in Position 1 bringen.
 Heben Sie dabei die obere Walze an und
 schieben Sie den Abstandhalter unter die
 Lagerbüchse.
 Prüfen Sie anschließend, ob sich die Walze
 frei dreht. Auf diese Weise wird das eventuelle
 Zusammenkleben der Walzen verhindert.



Note
 Connect the machine to the mains only when
 it is full.
 Before putting the machine into operation,
 move the roller spacers from position 1 to
 position 2.
 When work is finished, move the spacers
 back to position 1.
 To do so, lift the upper roller slightly and
 push the spacer underneath the bearing bush
 as illustrated.
 Now check to see that the roller rotates
 freely. This prevents the possibility of the
 rollers sticking together.



Attention
 Mise en service de la Printo uniquement avec
 des cuves (tank) remplies.
 Avant la mise en route de la machine, faire
 passer les dispositifs d'écartement des rou-
 leaux de la position 1 à la position 2.
 A la fin de l'utilisation, remettre les dispositifs
 d'écartement des rouleaux en position 1.
 Pour cela, soulever le rouleau supérieur et
 placer le dispositif d'écartement sous le coussi-
 net.
 Enfin, assurez-vous que le rouleau tourne
 librement. De cette manière, on évite un éven-
 tuel collage des rouleaux.