MODEL TT TRAINING

PRODUCT OUTLINE

PURPOSE OF THIS SECTION

The model will be introduced.

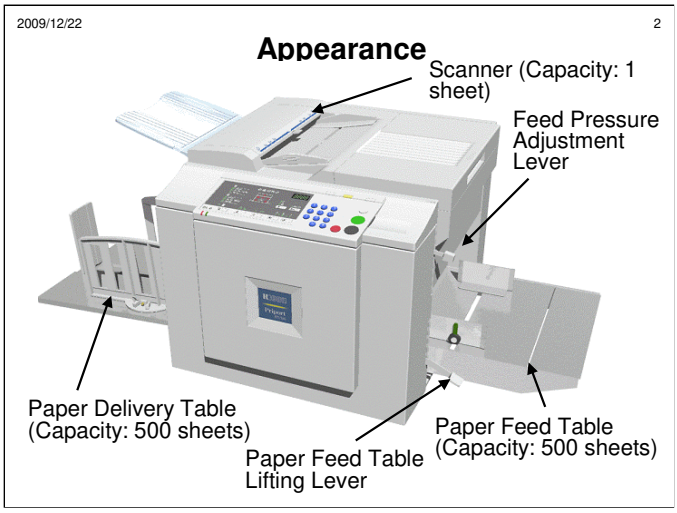
The optional peripherals will be introduced.

The product concept, sales points, and targets will be presented.

When you finish this section, you should know the answers to the following questions.

What are the main selling points for this machine?

What options are available for this machine?



Here is a view of the machine.

Note the following points.

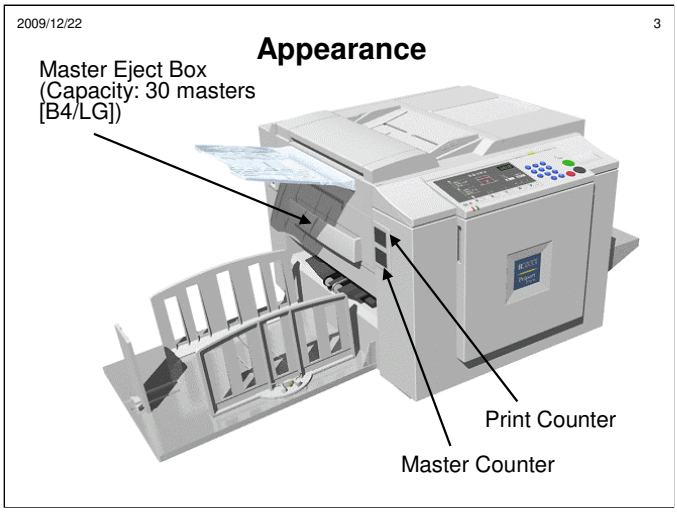
The paper delivery table and paper feed table are not built into the machine. They must be attached during the installation procedure. They cannot be folded away.

The scanner can only hold one sheet at a time.

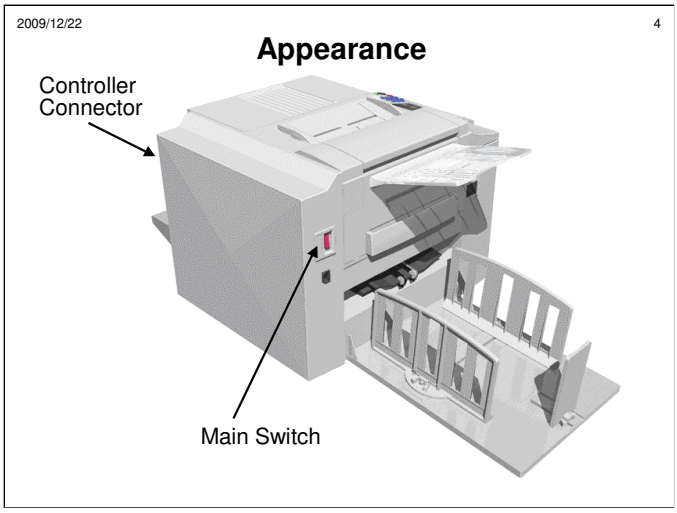
The paper feed table does not automatically lift itself to the feed position. The user must move the tray up with a lever after putting paper on the table.

The user can also adjust the paper feed and separation pressures. The technician has additional adjustments in case the user still has feed problems.

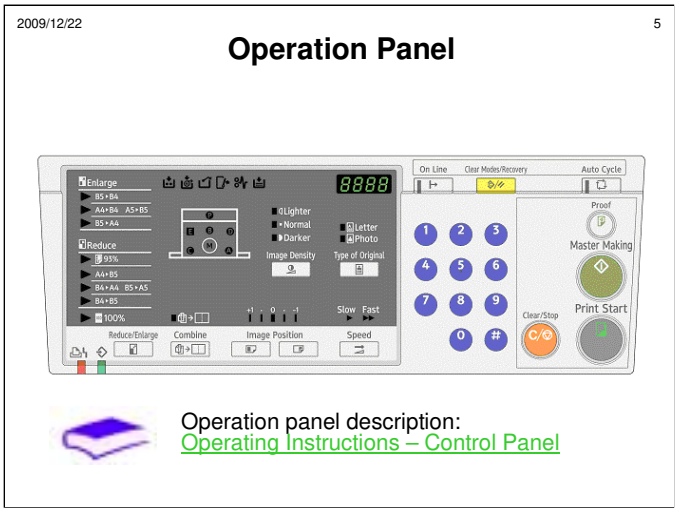
The separation pressure adjustment lever is not shown clearly in this photo. We will study it in more detail later.



Here is a view from a different angle.



Here is another view.
The controller connector is not clearly shown, but it is in the indicated area.

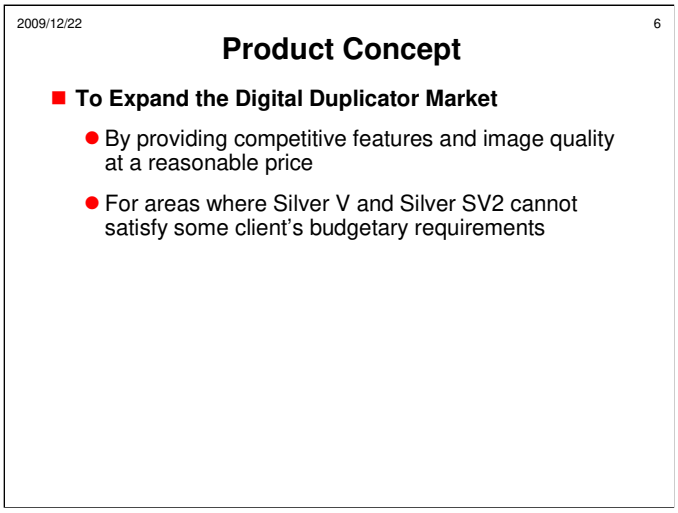


Here is a view of the operation panel (metric version).

It is different from earlier models in the Silver series. For details on what the various buttons and indicators do, click on the link at the bottom of the screen.

The two indicators at the bottom left are not described in the operation manual. These are only used when an optional printer controller is installed (from left to right, they are the line fail and incoming job indicators).

Note that the term ‘control panel’ is used in the operation manual, instead of ‘operation panel’. When the printer controller is installed, some customers may confuse this with the Windows Control Panel (printer driver settings vs operation panel settings).



Clients with limited budgets tend to use stencil duplicators, low-end analog copiers, or second hand copiers. Occasional high volume printing jobs, including spot color, must be made by third party printers and this is expensive. Model TT is targeted to such clients.

Replacement of electric stencil duplicators

A large number of these are still running worldwide (Latin America: 55,000/ India: 110,000/ Asia; 100,000 etc). Model TT is targeted to replace these. Model TT provides superior image quality, productivity, PC connectivity, spot color printing, etc.

To gain new digital duplicator customers

There are still many potential customers who have been forced to use low speed copiers or outsourcing for large printing needs for budgetary reasons.

Attacking the Riso KS500C

Riso released the KS500C, targeting the duplicator market in China, and sold more than 3000 units despite initial quality problems. KS500C is already launched in Central America, Thailand and India. Compared to KS500C, model TT offers superior features and image quality by adopting the well-understood and stable Silver V engine.

Wining Tenders

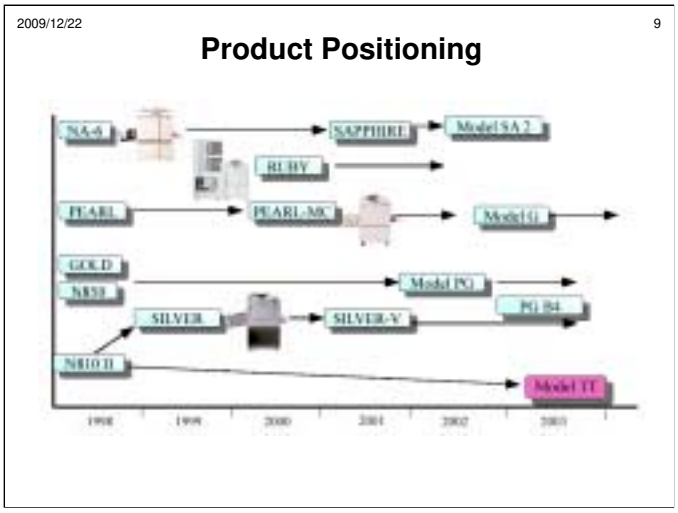
Where bid type purchasing is common, model TT is the best solution. It has better specifications and a lower price than the KS500C and is competitive with the CR1610/1630 when price is the most important factor.

Product Concept

- **Cost competitive low-end model with B4/Legal Sheet scanning/printing**
- **Simplified operation panel with LED for easier operation**
- **Easy maintenance for customers**
- **PC connectivity with UC-5 and UC-5e controllers**
  - The Riso KS500C does not have PC connectivity options.
- **Thin paper feed capability**
  - Especially needed for paper in China

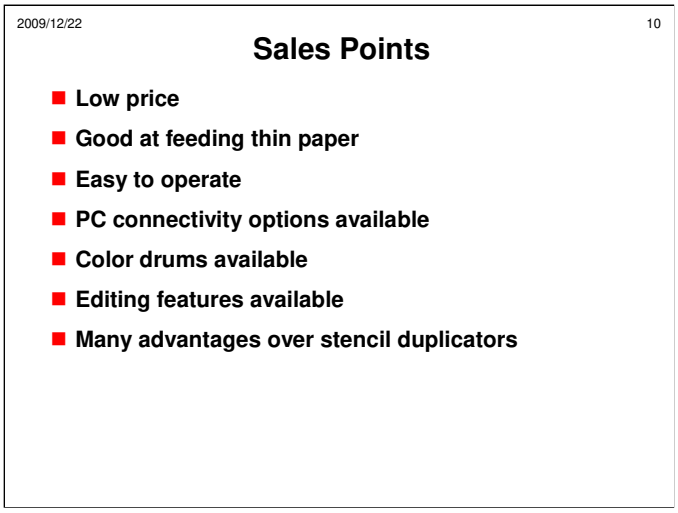
Targeted Users

- Primary and junior high schools
- Small churches
- Local government offices



This diagram shows the position of the new model (Model TT) in the range of digital duplicator products.

It is the lowest-priced model.



Paper feed

Model TT can feed thinner paper than the current models (minimum 35.0g/m2) to meet the needs in the target regions.

Model TT: 35.0 to 127.9 g/m2 (9.3 to 34.0 lb.)
Silver V2: 47.1 to 209.3 g/m2 (12.5 to 55.6 lb.)

Paper feed and separation pressure can be adjusted by the user if there are feed problems

The re-feeding mechanism from the Pink Gold series has been included in the model TT.

When a mis-feed is detected by the registration sensor, model TT tries to feed the paper again. This system is especially effective for thin and poor quality paper.

Color drums

The Riso KS500C does not have these.

Editing

The Model TT has the enlargement, reduction, and combine two originals features, so the original image can be edited to some extent without creating a second-generation original on a PPC.

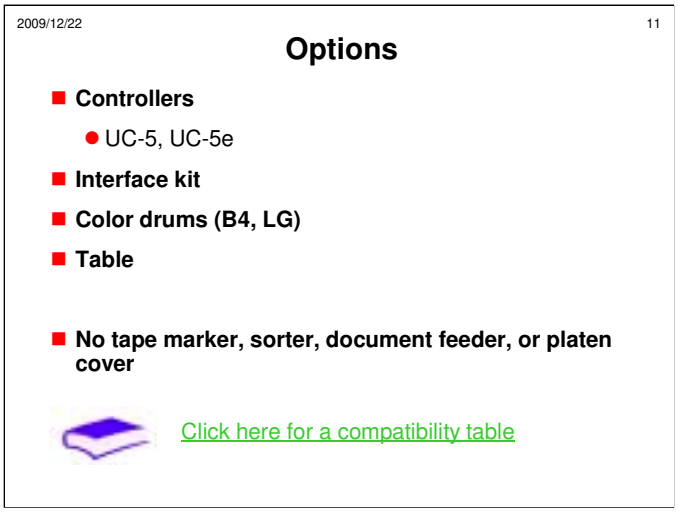
The Riso KS500C does not have these features.

Advantages over stencil duplicators

The model TT is expected to replace stencil duplicators in the field.

Stencil duplicators do not have a built-in master making unit. Masters have to be made in another machine and transferred to the duplicator. This is time-consuming, and is more likely to get ink on the user's hands.

Stencil duplicators also generally do not have PC connectivity, or spot color printing with optional color drums. In addition, operation is more complex, so a skilled operator may be needed.



This shows the options that are available for this model.

In addition, note the following points:

Interface Kit and Controllers

The UC5 and UC5e controllers require an interface kit to be installed. The interface kit goes inside the machine.

The UC5 controller also goes inside the machine, and is connected to the interface kit inside the machine.

The UC5e controller is connected externally; there is a connector on the side of the machine, which goes to the interface kit inside the machine.

Table

The Silver-V table procured locally can be used for Model TT.

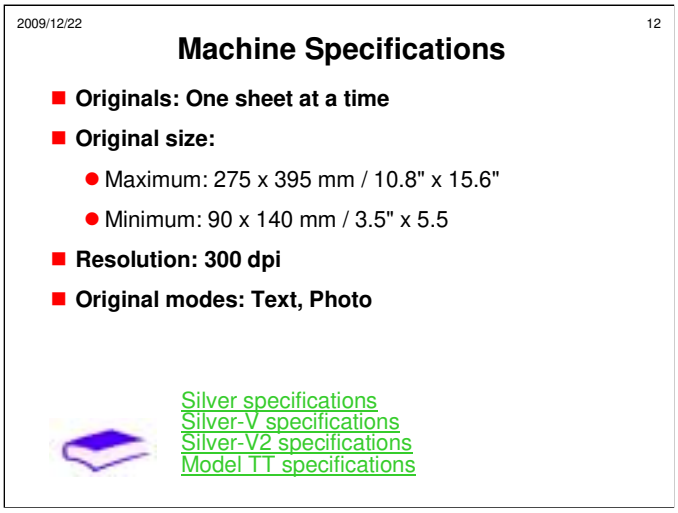
Model TT is designed to print smoothly even if it is not on a specially designed table.

However, the paper delivery table may not be aligned, depending on the type of table.

Color drums

The Silver-V color drums cannot be used for the model TT.

Click on the link at the bottom of the page for a table showing the compatibility of various options with this machine and other models in the product line-up.



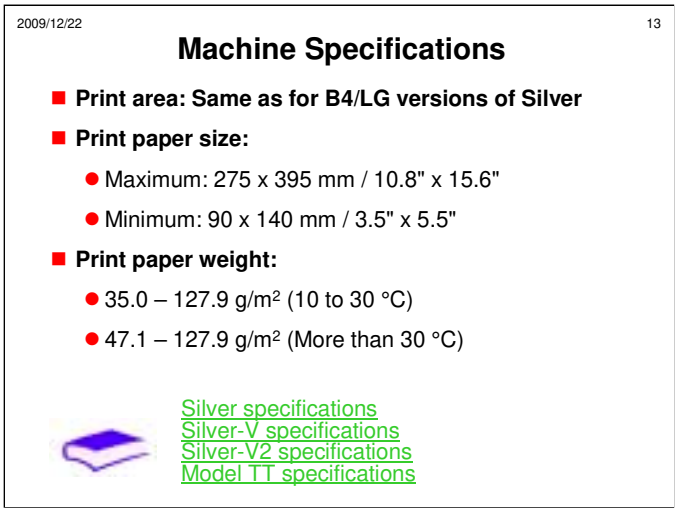
The next few slides list the most important specifications of the model TT. Compare the specifications of the new model with other models in the Silver series. Click on the links to see the specs for each model.

Note the following points:

The range of original sizes is larger than in the other models.

The resolution is the same as the other models in the Silver series.

There are only two original modes (no Letter/Photo, Fine, or Tint modes).

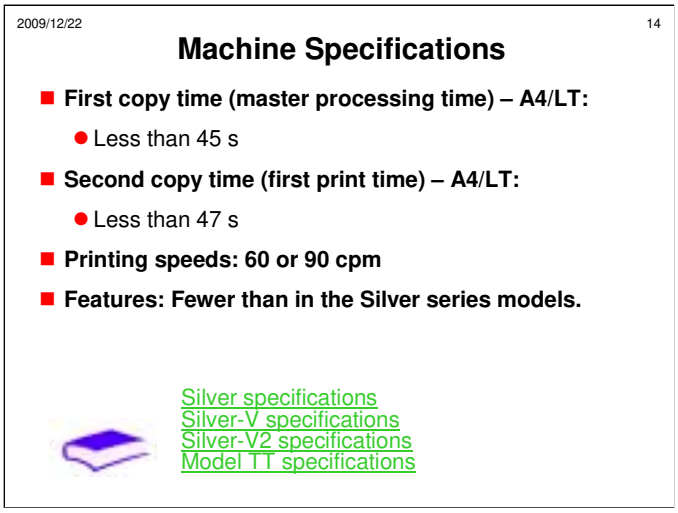


Note the following points:

Paper size: Similar to other models in the Silver series. Actually, the range is slightly larger.

Paper weight: The Silver-V can handle thicker paper. However, the main point of this machine is that much thinner paper can be handled. This is suitable for markets such as China, where users often use thin paper.

Note that thin paper curls at high temperatures, and cannot be fed properly. So paper less than 47.1 g/m^2 should not be fed if the room temperature is more than 30 °C.

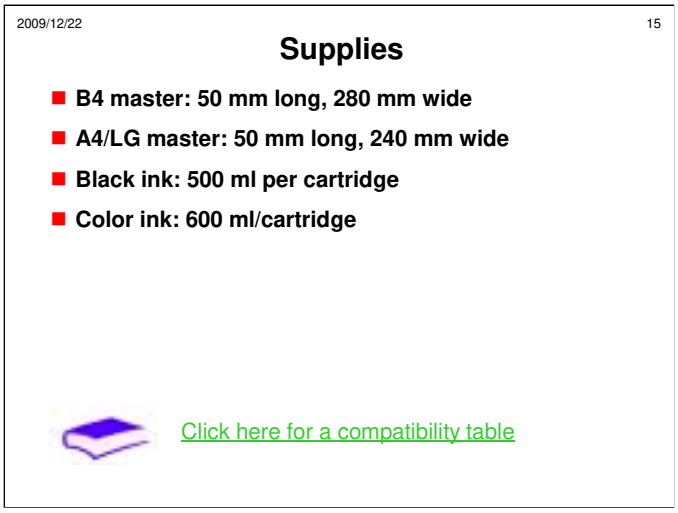


Note the following points:

The first and second copy times are considerably slower than other models in the Silver series.

The printing speeds are also slower than the Silver series models. The maximum speed for the Silver is 120 cpm (copies per minute).

Also note that there are not so many features for the user as the Silver series models. The following features are absent: Margin erase, Skip feed, Overlay, Economy mode, Security mode, Tint mode, Fine mode, Class/Memory mode, Program mode



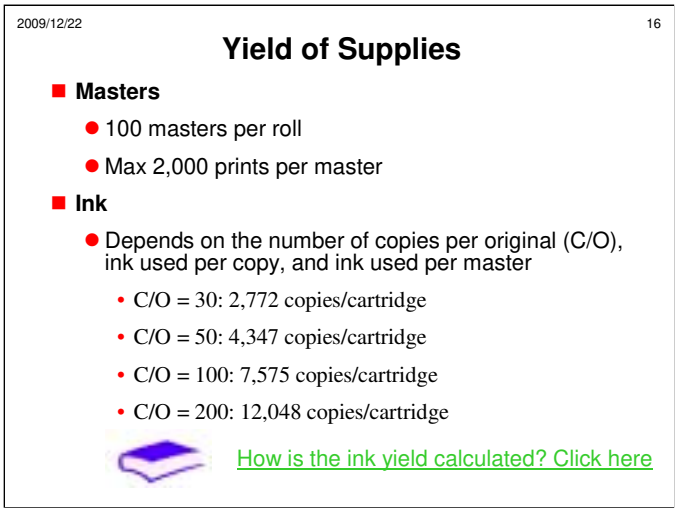
The masters are new for the model TT and not compatible with other models.

The black ink is new for the model TT and not compatible with other models.

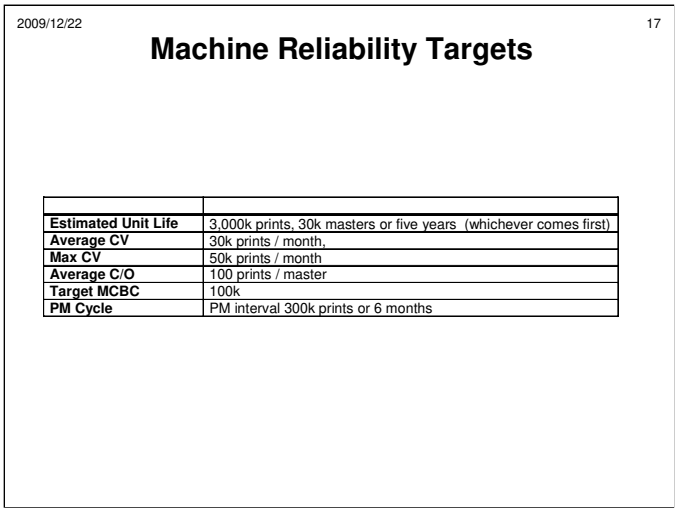
The color ink is the same as used with the Pink Gold and Silver series models.

The following colors are available: Red, Blue, Yellow, Violet, Navy, Maroon, Orange, Hunter green

For full details about the supplies and their compatibility with other products, click on the link at the bottom of the screen.



If you wish to see details of how the ink yield was calculated, click on the link at the bottom of the screen.



These are targets. The actual values achieved will depend on conditions in the field.

Service Targets

- **Mean time to repair**
  - 300 k PM: 15 minutes
  - 600 k PM: 30 minutes
  - EM: Less than 30 minutes
- **Time for installation: 30 minutes**
- **Parts Lifetime**
  - Drum cloth screen: 1200 k prints
  - Press roller: 1200 k prints
  - Paper feed roller: 600 k prints
  - Friction pad: 300 k prints

MODEL TT TRAINING

INSTALLATION

PURPOSE OF THE SECTION

You will learn the main differences between this product and the Silver, Silver-V, and Silver-V2 series models concerning installation.

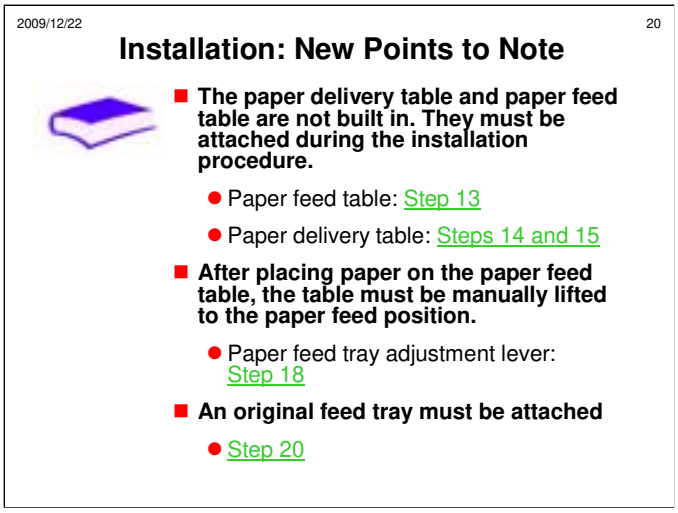
Service mode will be introduced.

Firmware upgrade will be covered.

When you finish this section, you should know the answers to the following questions.

What options can be installed?

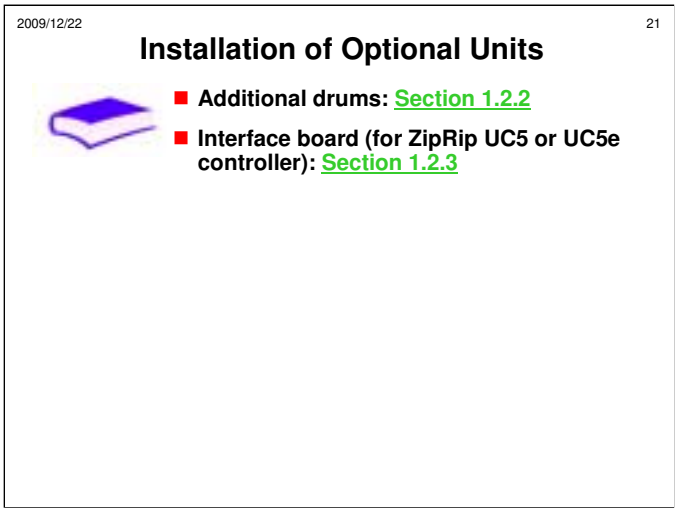
How do we upgrade the firmware?



This slide covers the main differences between installation for this machine and for models in the Silver, Silver-V, and Silver-V2 series.

Follow the links on the slide to see the related pages of the installation procedure in the service manual.

The Silver, Silver-V, and Silver-V2 series machines detected when paper was placed on the tray and automatically moved the paper tray up to the correct position for paper feed. This new model does not do this automatically. The user must move the tray up with a lever.

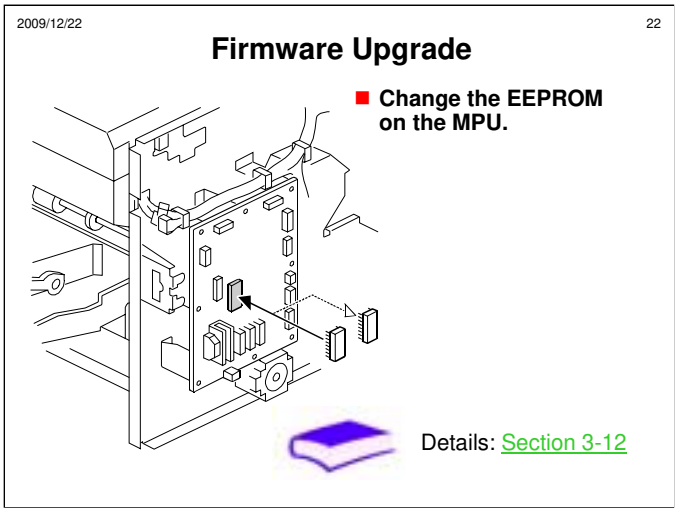


Note the installation procedures for optional items, as listed above. Take a quick look at them by following the links. The procedures are extracts from the service manual.

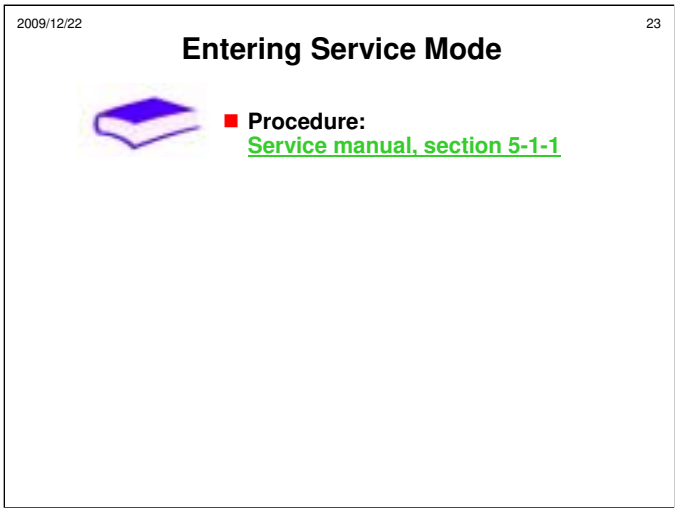
There is no optional document feeder.

There is no optional sorter.

There is no optional tape marker.



To change the firmware, change the EEPROM on the MPU board.
Now, take a look at the procedure in the service manual (section 3-12).



Follow the link to find out how to enter service mode. It is the same as with most other models.

MODEL TT TRAINING

MAINTENANCE

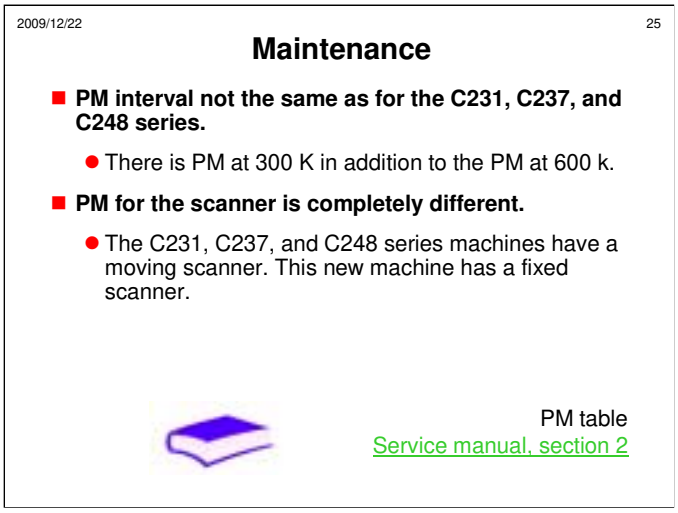
PURPOSE OF THIS SECTION

Maintenance will be covered briefly.

When you finish this section, you should know the answers to the following questions.

Are there any changes in the PM intervals from the Silver, Silver-V, and Silver-V2?

Are there any new parts to maintain?



Go over the points on the slide.

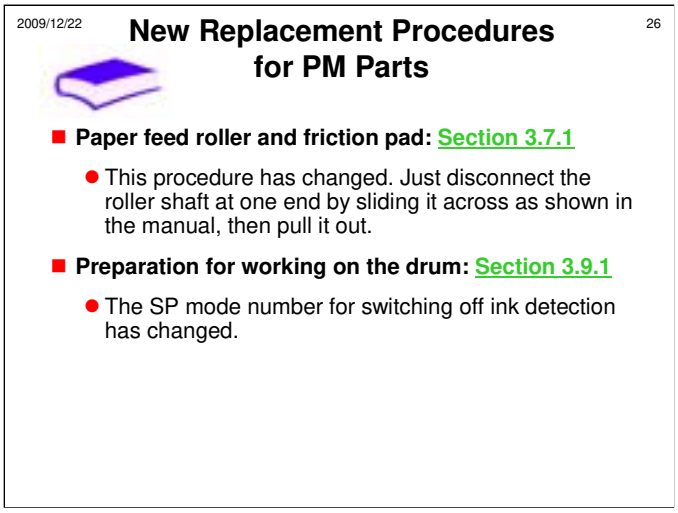
PM for the Silver series was at 600 K. However, some items for this new model require PM at 300 K.

The scanner mechanism is completely different from the C231, C237, and C248 series machines, so details of PM for the scanner are different.

Details of the scanner mechanism will be covered in the next section of the course.

All other PM is the same as for the the C231, C237, and C248 series.

The only counter is the mechanical counter on the side of the machine. There are no alarms or counters in memory.



The replacement procedures for the above PM parts have changed. Please look at these procedures now by following the links on the slide.

All links are for sections of the C252 service manual.

PM for the new scanner is only cleaning. There is no replacement at PM.

MODEL TT TRAINING

ENGINE

PURPOSE OF THIS SECTION

This section concentrates on changes to the engine.

We will go through each section of the machine, looking at the changes.

Then we will study the procedures that are new for this model, or changed significantly from the Silver, Silver-V, and Silver V2 models.

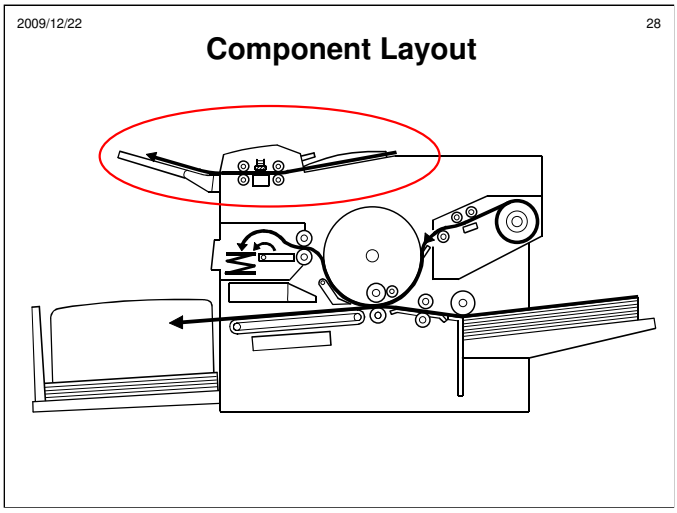
We will also look at changes to the SP modes.

When you finish this section, you should know the answers to the following questions.

What new components are there? Have any been removed?

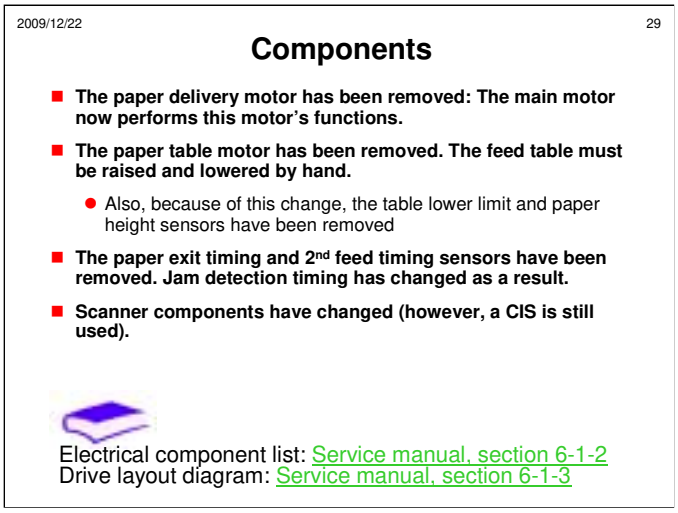
Have the functions of any of the components been changed?

What changes have been made to the adjustment procedures?



The only large component that is completely different from the Silver series is the scanner (circled in red).

There are some smaller changes throughout the machine, as we shall see.



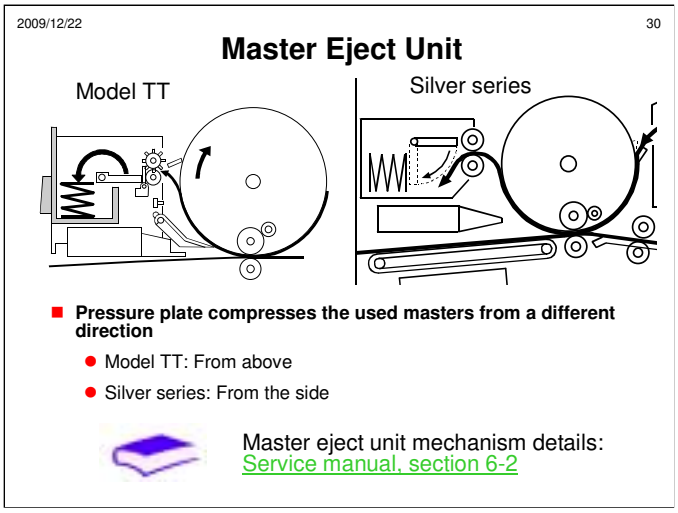
This machine is a simplified version of the Silver series, and some of the components have been removed. Details are listed above.

In addition, please note the following:

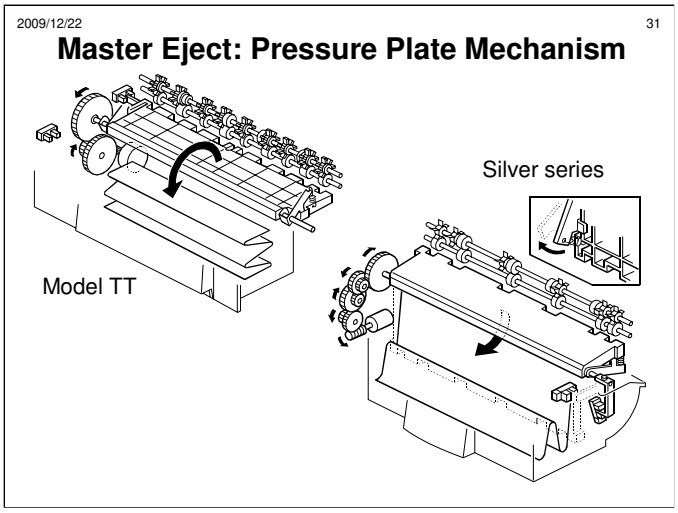
Master Making Unit Cover Safety Switch: This has been renamed the Right Side Cover Set Switch

Test Switch: Not included in this machine

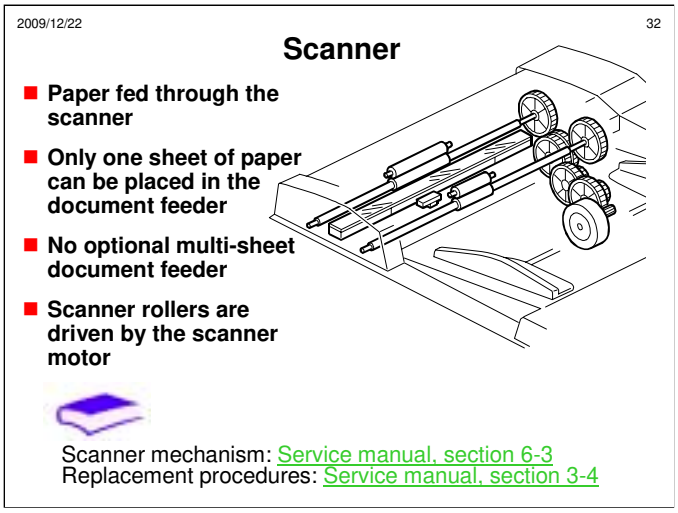
For a full list of electrical components and for a diagram of the drive layout, click on the above links.



The mechanism is very similar to the Silver, except for the point noted above. For details of all mechanisms in the master eject unit, click on the link at the bottom of the slide.



Here is another pair of diagrams to compare the mechanisms in the new and old models.



This shows the scanner mechanism.

The scanner remains below the exposure glass, and does not move by timing belt and wires like the Silver series models do.

The machine feeds the paper through the scanner like an auto document feeder, but only one sheet can be placed in the original feed tray at one time.

For details on the scanner mechanism, click on the first of the two links at the bottom of the slide.

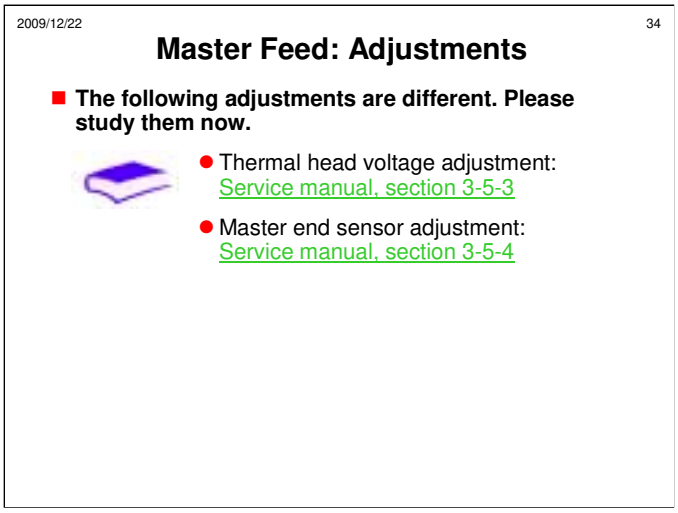
The replacement procedures for the scanner mechanism are different. Click on the second link to look at these new procedures.

Master Making and Master Feed: Mechanism

- **Basically the same as the Silver series models.**

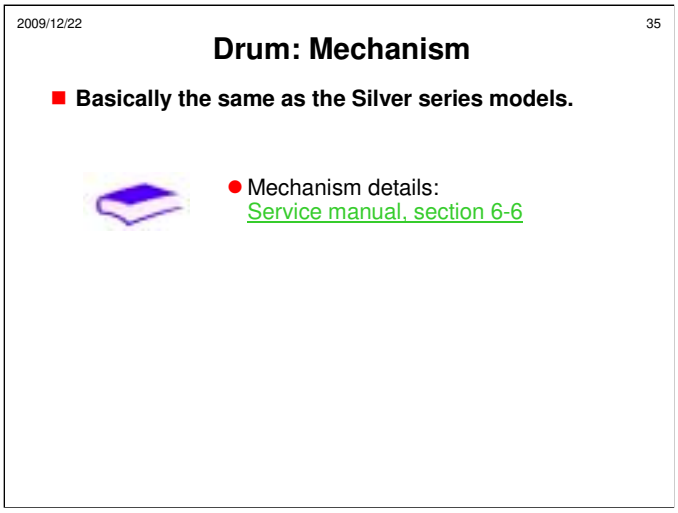
- Mechanism details:
  Service manual, section 6-5

The next slide will explain the differences between this model and the Silver series models.



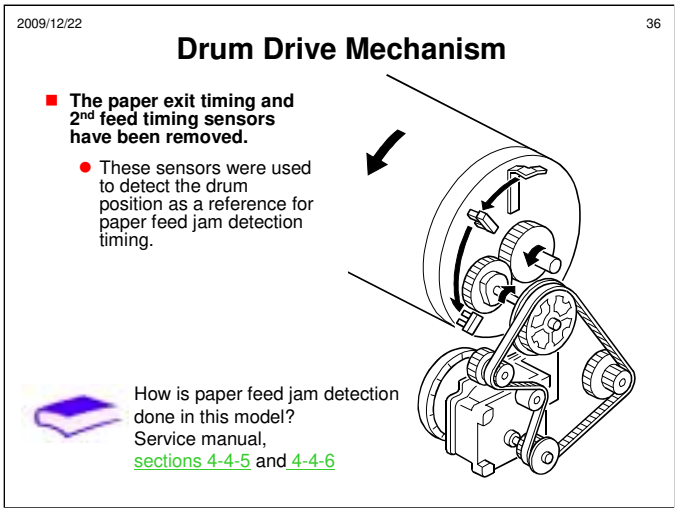
Follow the instructions on the slide.

Don’t forget that the thermal head voltage must be adjusted after installing a new thermal head or a new PSU board.



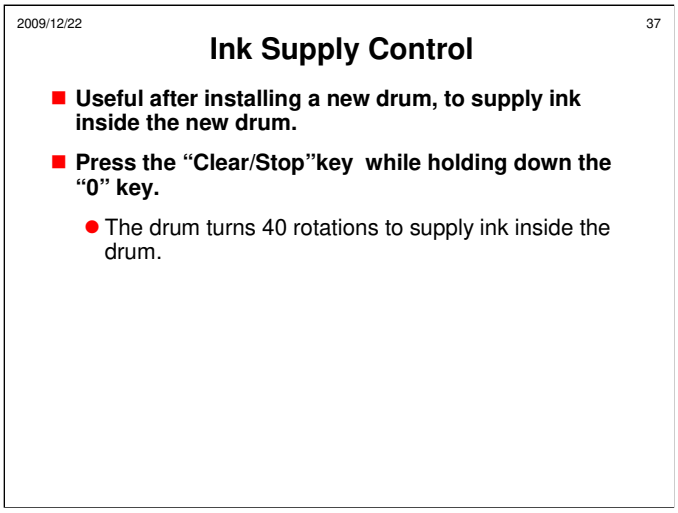
The next few slides will explain the differences between this model and the Silver series models.

The mechanisms inside the drum are the same as for the Silver series. However, the drums are not interchangeable.



The only difference is the removal of these two sensors.

Jam detection is done by counting main motor encoder pulses, as in the Silver, and this can be done without the two sensors.



This mode is the same as for the Silver series models. However, the keys that you must press are different.

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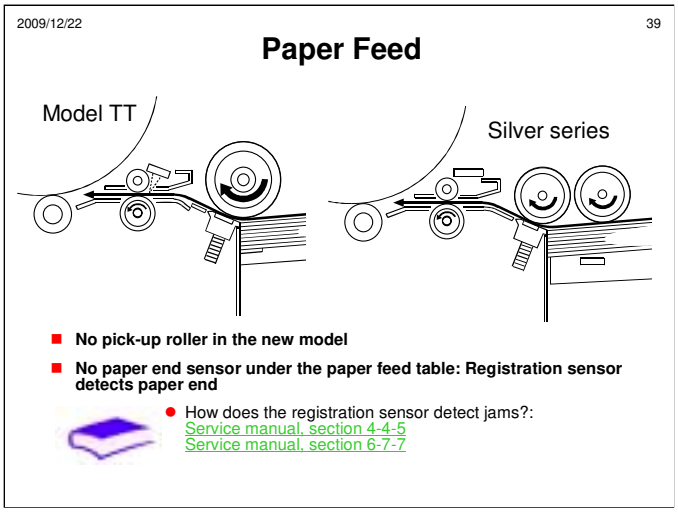
Drum: Replacement and Adjustment

- **Differences from the Silver series:**

- Preparing to remove the drum (section 3-9-1): SP mode number changed for removing the ink from the ink roller
- Ink pump plunger adjustment (section 3-9-4): New procedure
- Doctor roller gap adjustment (section 3-9-5): SP mode number changed for removing the ink from the ink roller
- Ink detection adjustment (section 3-9-6): SP number change, slight change in procedure
- Main drive adjustments (section 3-11): Slight changes in procedure

Take a quick look at the new procedures. They are mostly very similar to the old ones.

The ink roller unit removal procedure was omitted from the service manual. It is about the same as the procedure for the Silver.

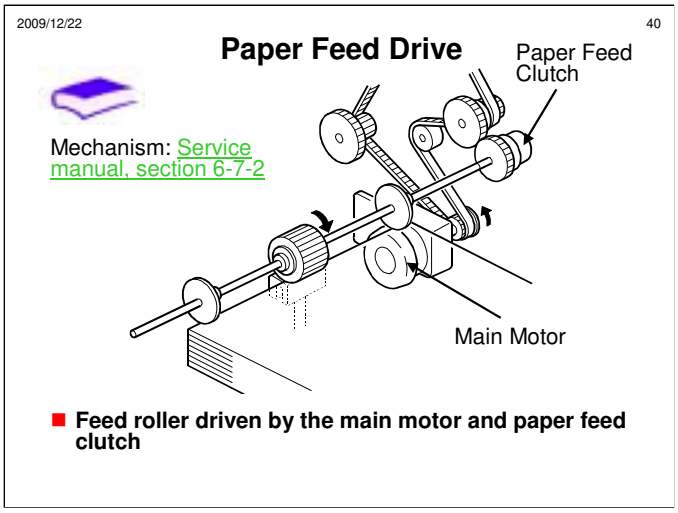


Note these two differences.

The ‘re-feed’ mechanism described in sections 4-4-5 and 6-7-7 is new for the Silver series. It has been used in the Pink Gold.

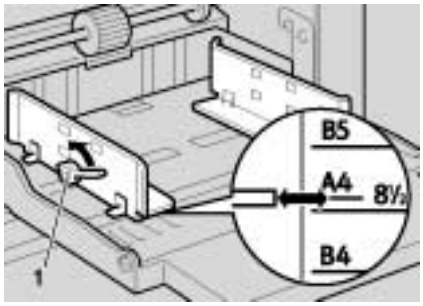
Note that the machine behaviour when paper runs out is exactly the same as when there is a jam at the feed entrance (location A – paper not reaching the registration sensor). This is because there is no paper end sensor in the paper feed table; paper end is detected by the registration sensor.

The machine does not know whether there is a jam or whether paper has run out. The A jam indicator, the paper jam indicator, and add paper indicator all light. The user should check both for a jam at the feed entrance and for paper end.



This is very similar to the Silver series.

Side Fence Lock Mechanism



- The user must move the side fences to the correct paper size and lock them in position.

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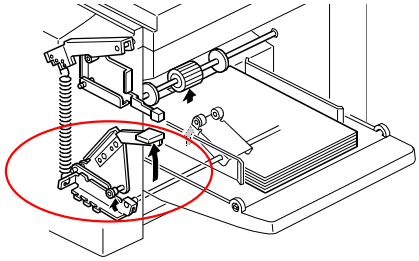
Paper Table Height Adjustment

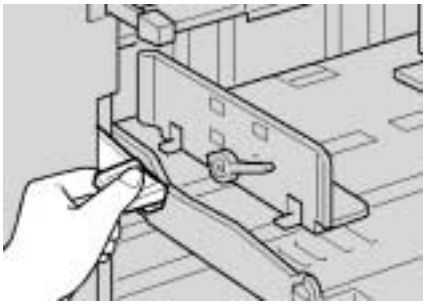


- **The user must move the paper table up to the feed position at the start of the job.**
- **No automatic table lifting in this model.**

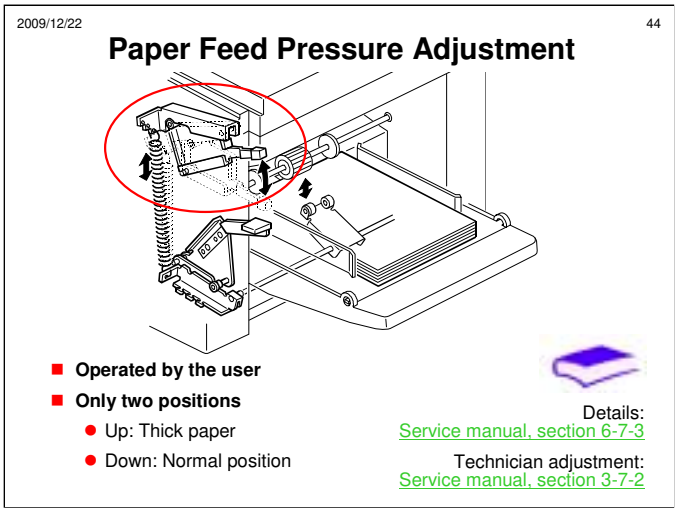
Details: Service manual, section 6-7-8

Note the two levers on the left side of the feed table.
The upper lever adjusts the paper feed pressure.
The lower lever lifts and lowers the paper feed table.

Paper Table Height Adjustment

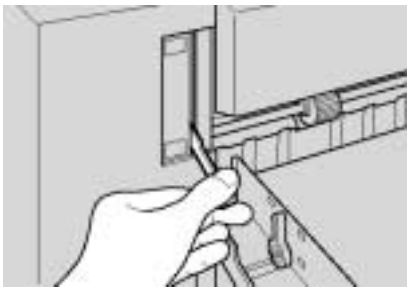


- This is how the user operates this lever.

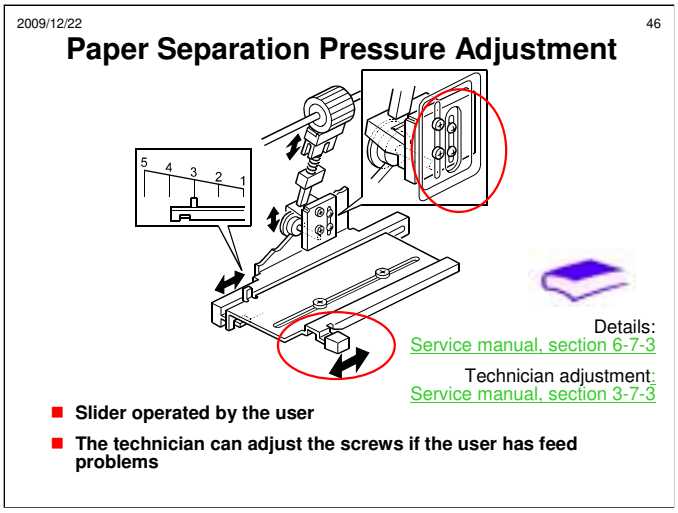


The technician can move the spring if the user is having problems with very thin or very thick paper.

Paper Feed Pressure Adjustment



- This is how the user operates this lever.



If the user has non-feed or multi-feed problems, they can adjust the lever position (the default position is 3).

If the user still has problems, the technician can adjust the screws indicated in the diagram.

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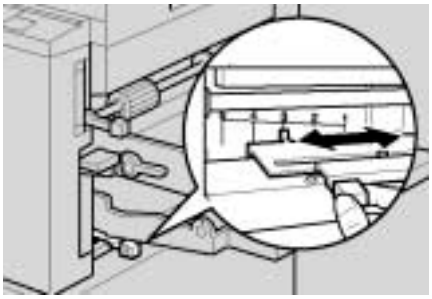
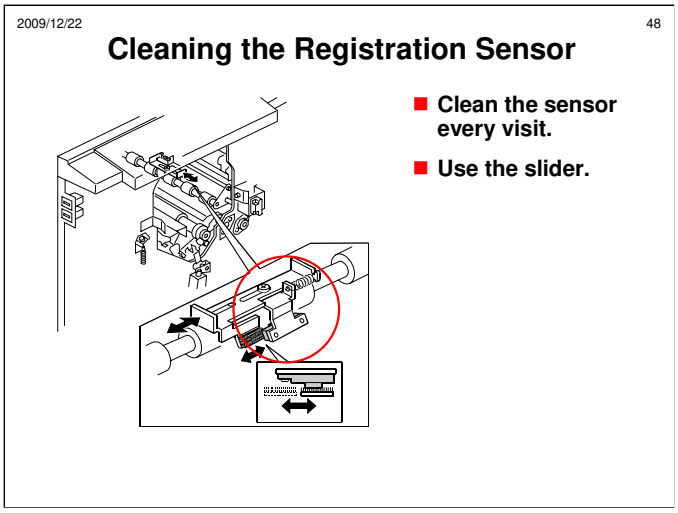
Paper Separation Pressure Adjustment



- **This is how the user operates the slider.**

The slider is below the paper feed table.

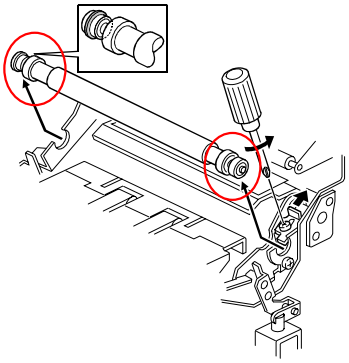


Some types of paper generate a lot of dust, which can lead to registration sensor errors.

To prevent this, clean the sensor every time you visit the customer.

The customer cannot do this job.

Press Roller Replacement



- **Make sure that you put the roller back in the correct way around.**

Procedure:
Service manual, section 3-8-1

Follow the instructions in the service manual.

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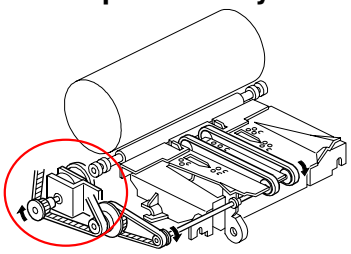
Paper Delivery



- **Similar to the Silver**
- **Driven by the main motor**
  - The independent motor for driving the transport belts has been removed
- **No exit pawl air pump (this pump was added for the China version of the Silver-V)**

The slide lists the main points.

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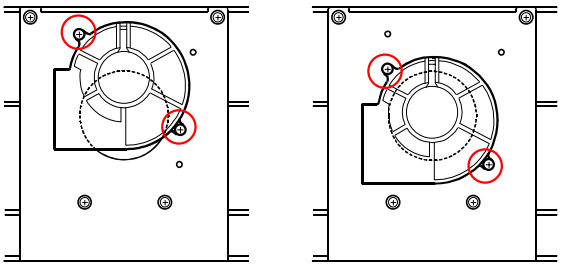
Paper Delivery Unit: Replacement

- Paper delivery unit: Section 3-10-1
- Delivery belts and paper end sensor: Section 3-10-2
- Vacuum fan motor position: Section 3-10-3
  - Also see the next slide for details about the fan position adjustment

These are all different from the Silver series. Take a quick look at these procedures in the service manual.

Fan Motor Positioning



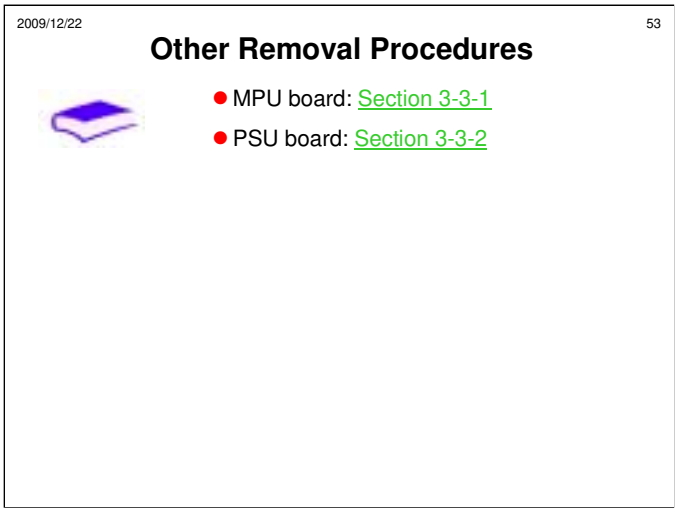
China Other areas

- **The fan is held by the two screws circled in red.**

In the upper position (China), the fan does not pull the paper against the transport belts so strongly.

Paper in China is thinner than other regions, and may be damaged if suction is too strong.

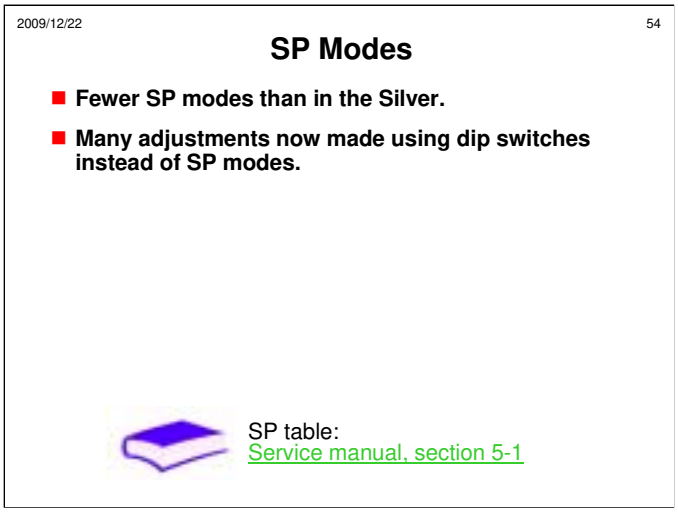
If users in other areas are complaining that their paper is being damaged, try moving the fan to the upper (China) position.



Take a quick look at these procedures in the service manual.

Before installing a new MPU, make sure that the dip switch settings on the new MPU board are the same as the settings on the old board.

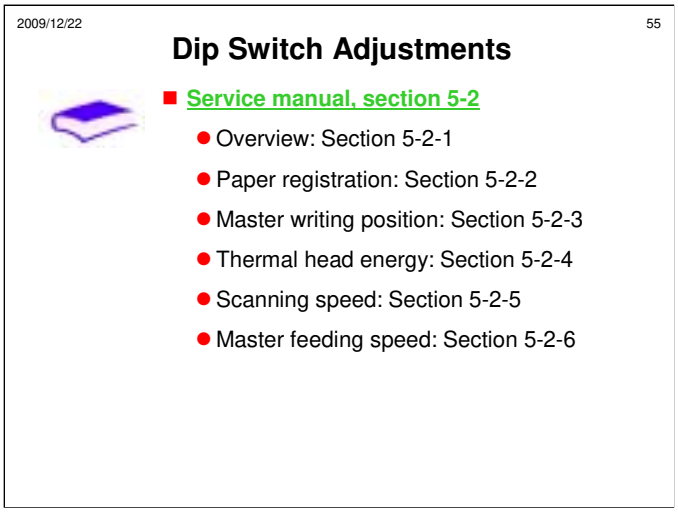
Make sure that the EPROM on the new board contains the correct firmware. If necessary, move the EPROM from the old MPU to the new one.



Take a quick look at the SP table.

Some adjustments have been changed from SP modes to dip switches. This is because there is not enough NVRAM space in this machine for all adjustments to be kept in memory.

Note that SP 1-71 to 1-94 can be used to read the current status of the dip switches on the MPU board without having to take the cover off. However, the settings cannot be changed in SP mode.



Have a look at these adjustments. For each adjustment, study how to change the settings using the dip switches.