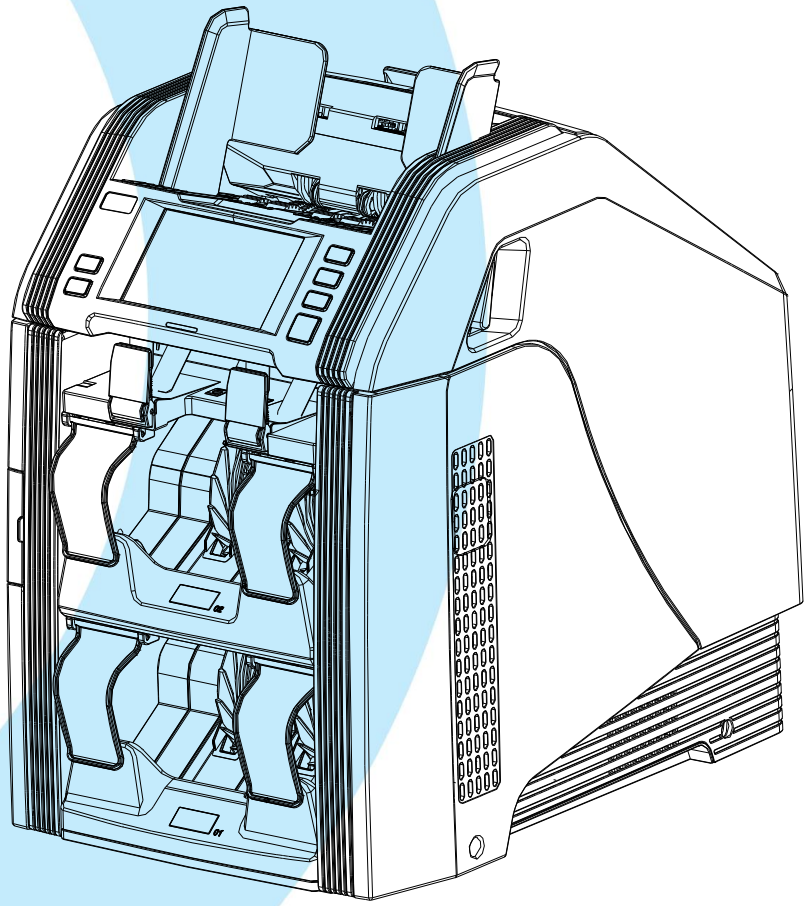
CM200V Maintenance Manual
(Primary)



GRG Banking Equipment Co., Ltd.

Document History

No. and name	Version	Date	Revision description	Personnel involved
CM200V Maintenance Manual	V1.0	12-12-2013	Created	Prepared by: Chen Yinglong Zhang Fu Approved by: Chen Baisong
				Prepared by: Approved by:
				Prepared by: Approved by:

Contents

1 Necessary Tools

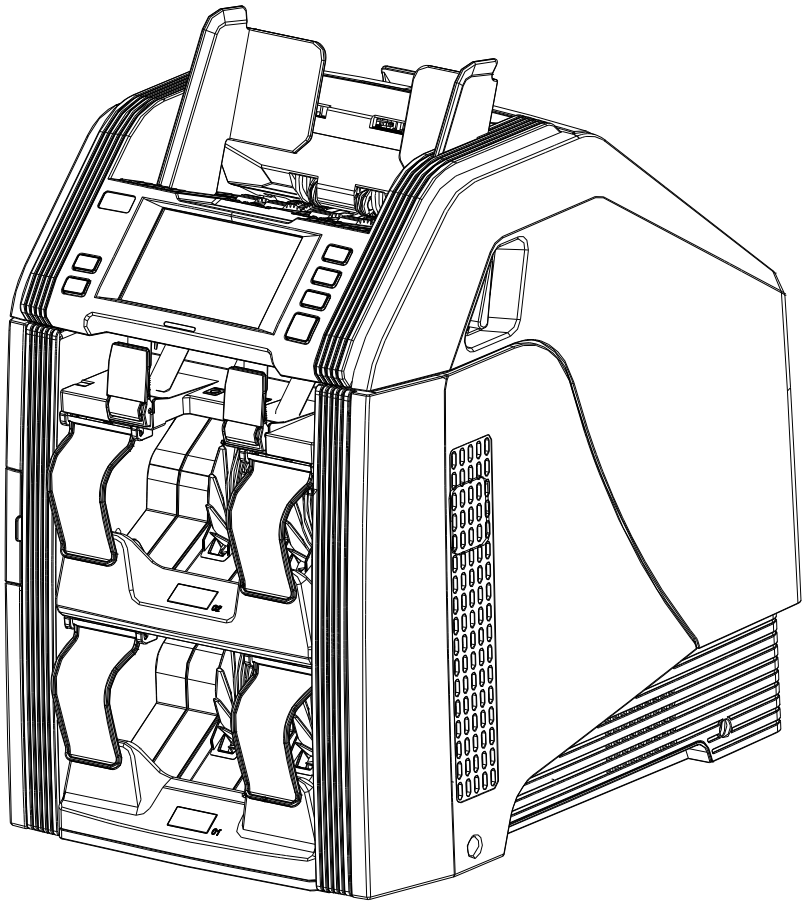
1.1 Standard dismounting and installation tools

Cross screwdrivers (long-handled and short-handled screwdrivers, one for each), nipper plier

1.2 Cleaning and maintenance tools

Cleaning and maintenance kit, alcohol

Overall Maintenance of CM200V



2 Dismounting and installation of ID Exterior Parts

Necessary tools: Cross and straight screwdrivers

2.1 Dismounting and installation of the NV housing

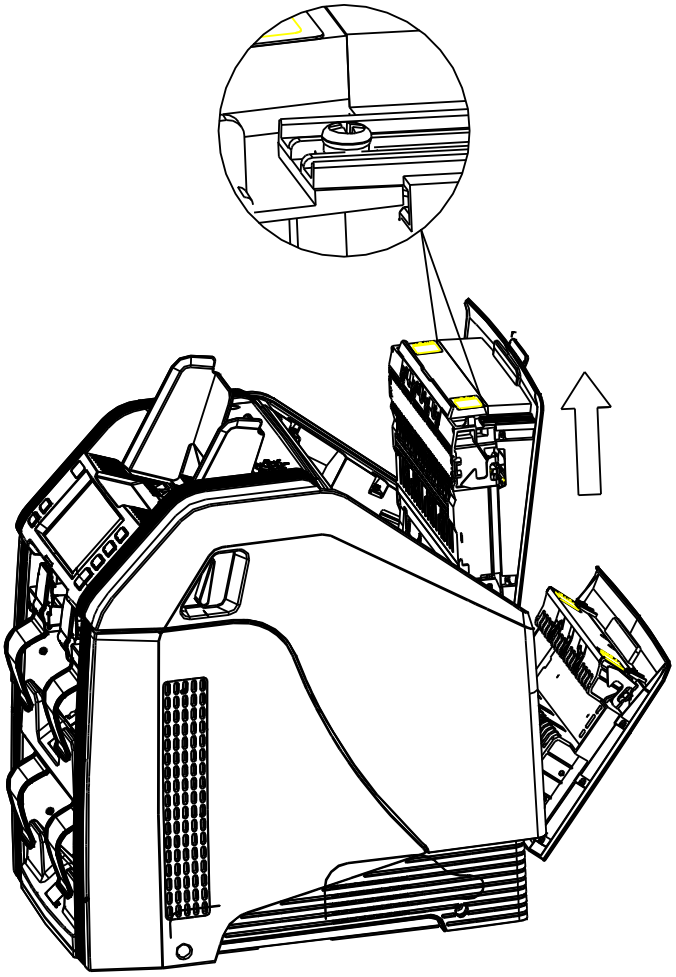
Dismounting steps:

Open the NV upper assembly and back assembly.

Remove the two M3X8 combination screws as shown in the figure with a cross screwdriver.

Hold the edges of the NV housing with both hands and push the housing in the arrows direction carefully so as to take it off when the buckles are disengaged.

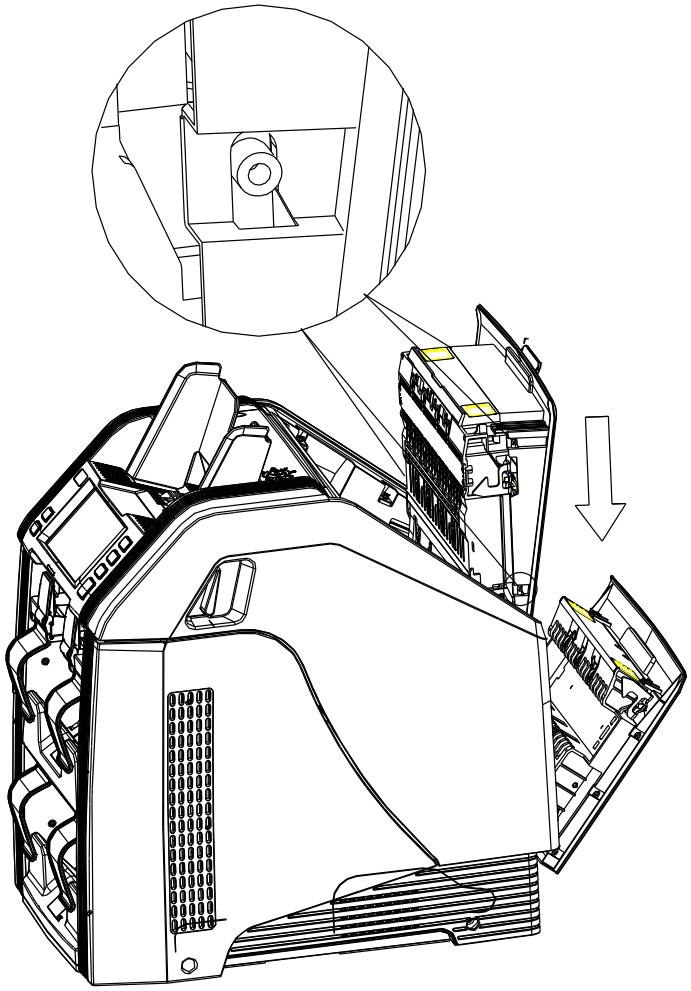
(It can be apparently observed whether the buckles are disengaged or not from the positions corresponding to two columns on the left and right sides separately).



Installation steps:

Open the NV assembly and back assembly.

Hold the edges of the NV housing with both hands to close its assembly to the NV assembly. Observe the alignment of the 4 columns on both sides of the NV assembly and the buckle entrances in the NV housing, and then push the housing a little hard in the direction of arrow when they align. When the housing is fixed, all the 4 columns shall be inserted in the buckles. The bottom of screw ribs of buckles of NV housing shall close to the end faces of copper nuts. Readjust the housing position if any one of the buckles is not well installed.



Close the NV assembly and observe the uniformity of clearances between the NV

housing and housings of left and right sides. Gently move the NV housing left and right until the clearances are consistent if they are not uniform.

Fix the position of the NV housing, open the NV assembly, and tighten the two M3X8 combination screws with a cross screwdriver to complete the assembly.

2.2 Dismounting and installation of back housing

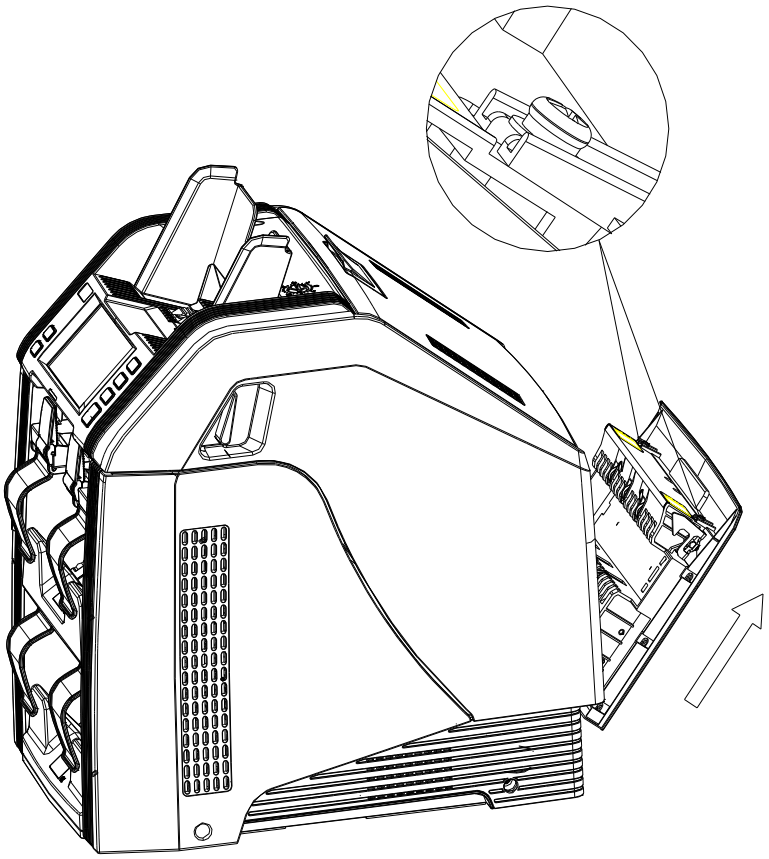
Dismounting steps:

Open the back assembly.

Remove the two M3X8 combination screws as shown in the figure with a cross screwdriver.

Hold the edges of the back housing with both hands and push the housing in the arrows direction carefully so as to take it off when the buckles are disengaged.

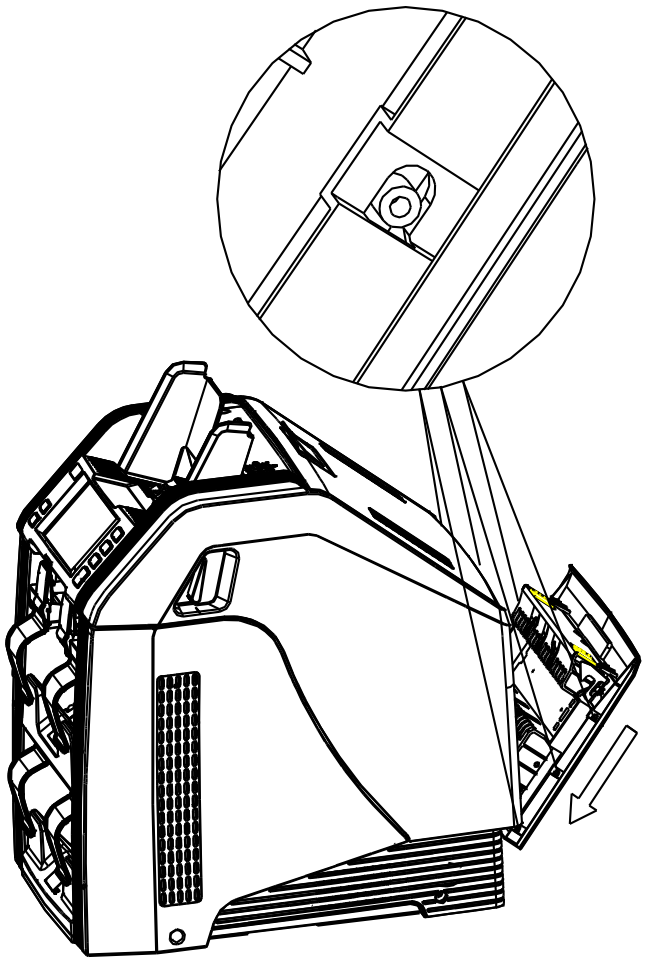
(It can be apparently observed whether the buckles are disengaged or not from the positions corresponding to three columns on the left and right sides separately).



Installation steps:

Open the back assembly.

Hold the edges of the back housing with both hands to close its assembly to the back assembly. Observe the alignment of the 6 columns on both sides of the back assembly and the buckle entrances in the back housing, and then push the housing a little hard in the arrows direction when they align. When the housing is fixed, all the 6 columns shall be inserted in the buckles. The bottom of screw ribs of buckles of back housing shall close to the end faces of copper nuts. Readjust the housing position if any one of the buckles is not well installed.



Close the back assembly and observe the uniformity of clearances between the back housing and

housing of left and right sides. Gently move the back housing left and right until the clearances are consistent if they are not uniform.

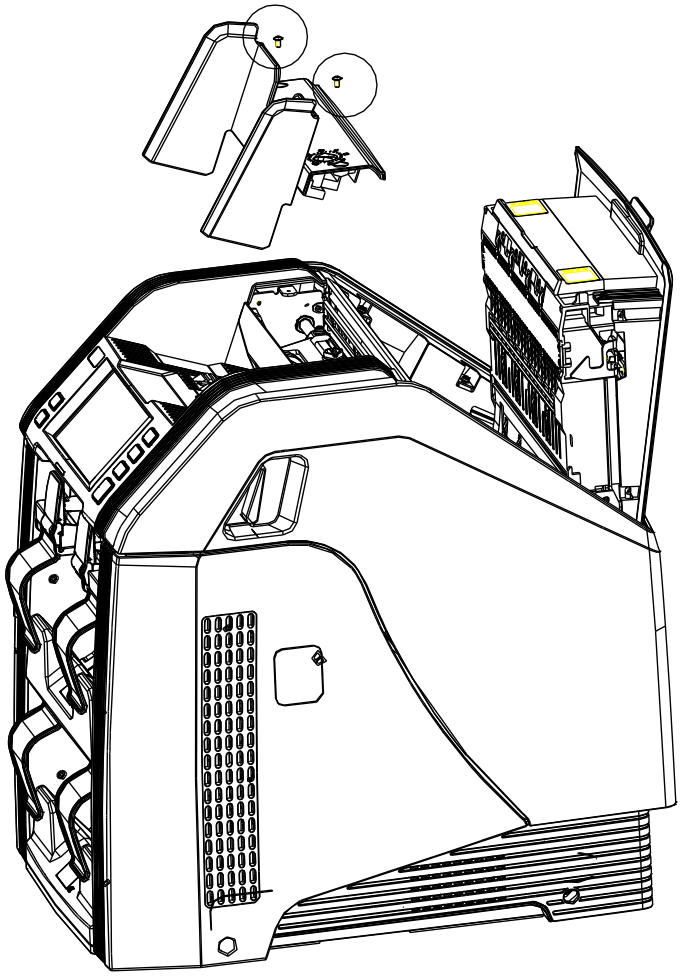
Fix the position of the back housing and open the back assembly. Tighten the two M3X8 combination screws with a cross screwdriver to complete the assembly.

2.3 Dismounting and installation of width adjustment assembly

Dismounting steps:

Open the NV assembly.

Remove the two M3X6 big flat head screws as shown in the figure on the right with a cross screwdriver to take the width adjustment assembly off upwards.



Installation steps:

Open the NV assembly.

Lay the width adjustment assembly in suitable position to observe the width adjustment upper housing runs parallel to the front end of note inlet upper plate and two screw via holes in the top surface align to the extruded tapped holes in metal plate. Then tighten the assembly with two M3X6 big flat head screws.

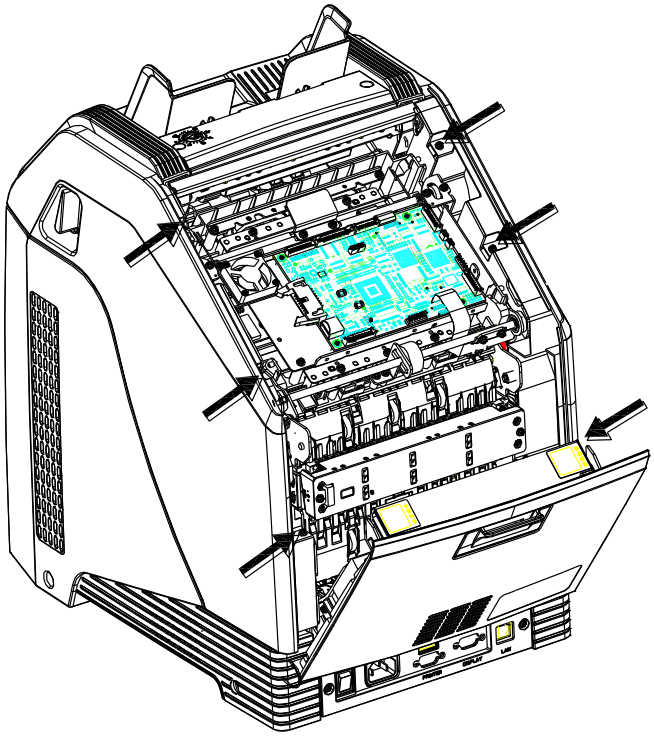
2.4 Dismounting and installation of left and right upper housings

Dismounting steps:

Open the back assembly.

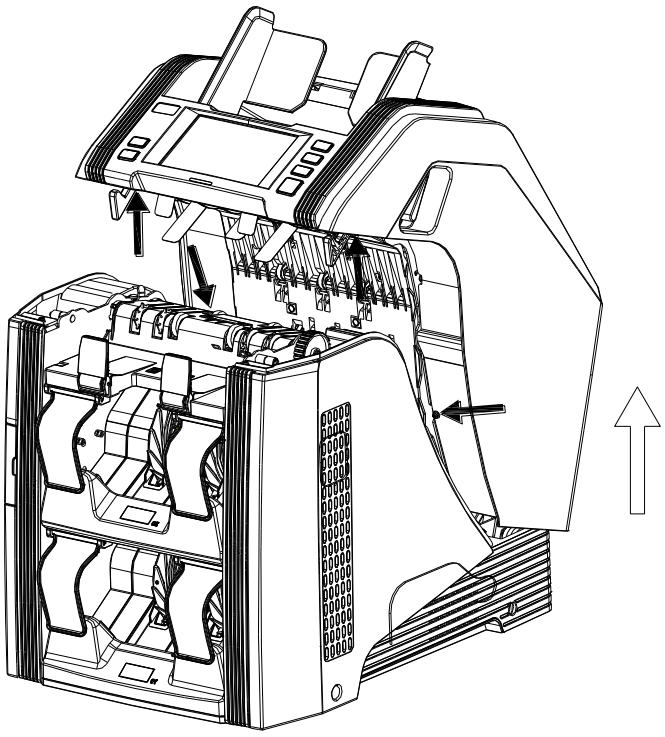
Remove the NV housing assembly.

Remove the six M3X8 combination screws indicated by solid arrows shown in the figure on the right with a cross screwdriver.



Open the upper part.

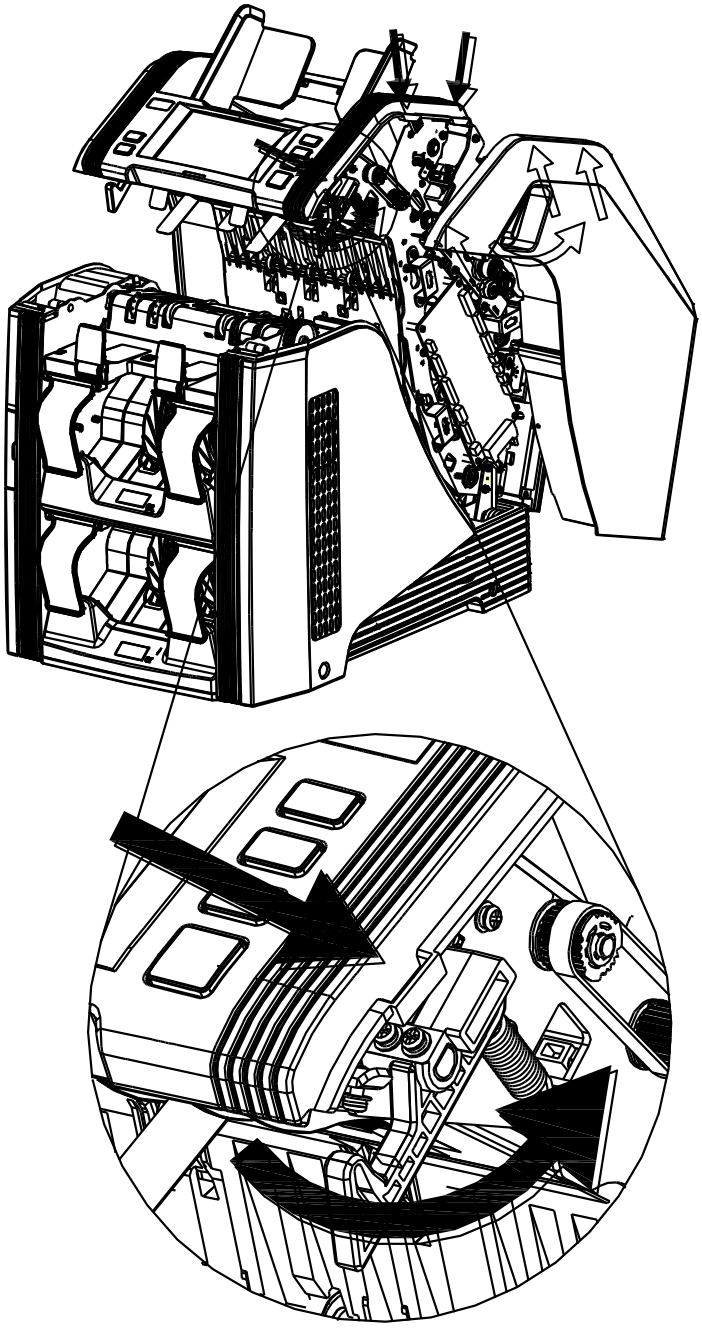
Remove the four M3X8 combination screws indicated by solid arrows shown in the figure on the right with a cross screwdriver.



Hold the edges of the housing with both hands and push the housing in the hollow arrows direction carefully so as to take off the left and right housings.

Note: The dismounting and

installation of left and right housings are separate without assembling relation.



Installation steps:

Installation of the upper right housing assembly:

Do not install the NV housing assembly.

Open the upper and back parts.

Move the blue handle of upper right housing assembly to the end in the direction of hollow rotating arrows shown in the figure.

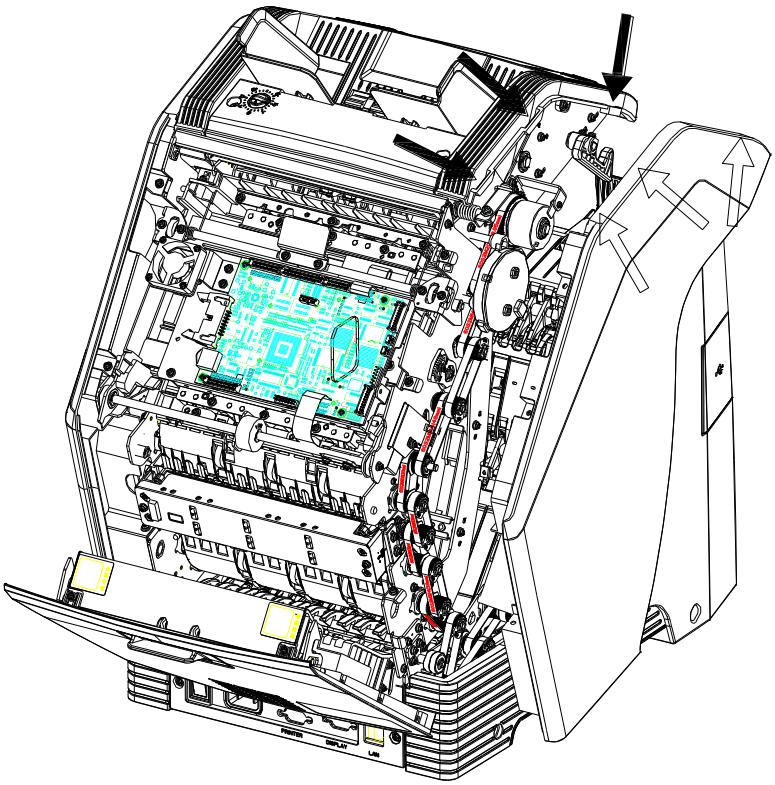
Close the right housing assembly to the machine unit.

Move the right medium hook to the end in the direction of solid rotating arrow.

Align the 3 hooks indicated by the solid arrows to the 3 buckles indicated by the

hollow arrows. Insert the buckles in place and then push the assembly downwards a little hard. Observe that the screw via holes in housing align to the threaded holes in metal plate to tighten the five M3X8 screws.

Note: The housing shall be pushed with hand when tighten the screws to keep the alignment of screw via holes and threaded holes because this side involves in cable space.



Installation of the upper left housing assembly:

Do not install the NV housing assembly.

Open the upper and back parts.

Close the left housing to the machine unit.

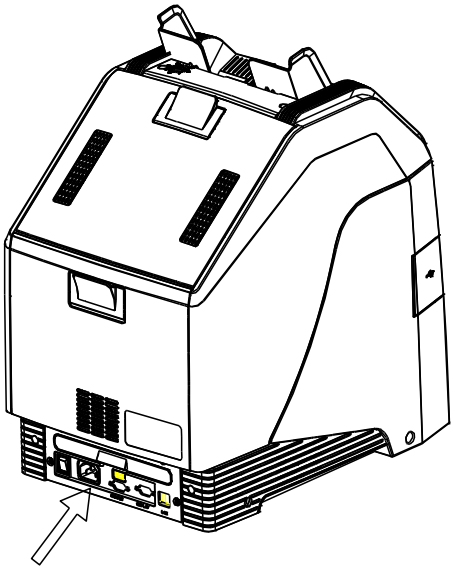
Align the 3 hooks indicated by the solid arrows to the

3 buckles indicated by the hollow arrows. Insert the buckles in place and then push the assembly downwards a little hard. Observe that the screw via holes in housing align to the threaded holes in metal plate to tighten the five M3X8 screws.

2.5 Dismounting and installation of back cover plate of the lower housing

Dismounting steps:

Remove the four M3X8 combination screws with a cross screwdriver so as to take off the back cover plate of lower housing.



Installation steps:

Installation steps are reverse to dismounting steps.

2.6 Dismounting and installation of the left and right lower housings

Dismounting steps:

Dismounting of the right lower housing:

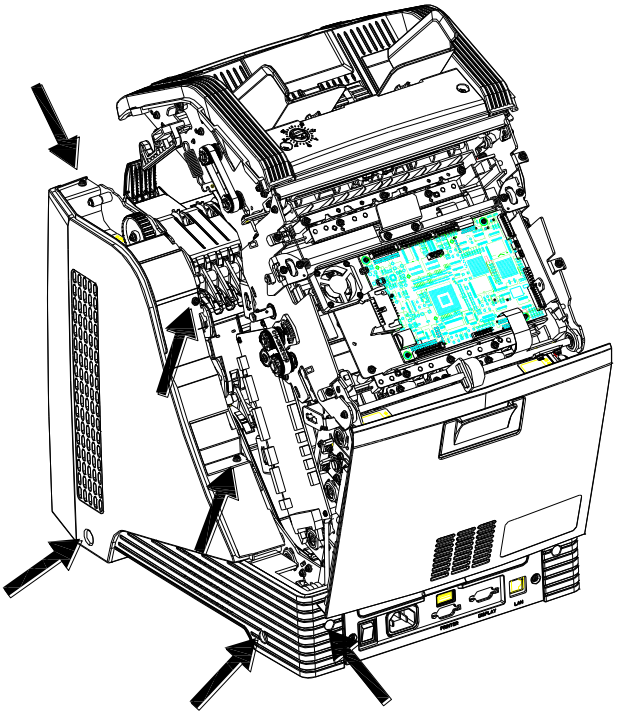
Open the upper part.

Remove the left and right upper housings.

Remove the four M3X8 combination screws with a cross screwdriver.

Remove the two M3X4 cross recessed flat head screws with a cross screwdriver.

Take off the housing.



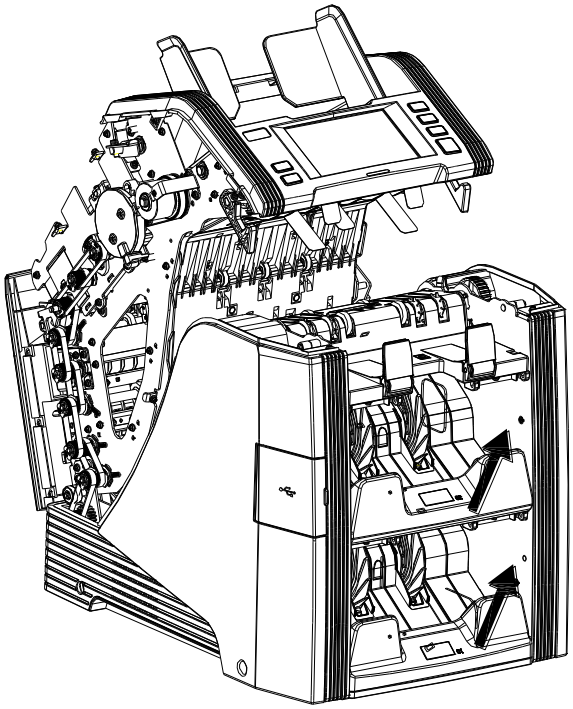
Dismounting of the left lower housing:

The process is the same as the Dismounting process of the right housing.

Installation steps:

Do not install the upper left or right housing.

Installation steps are reverse to dismounting steps.



3 Dismounting and Installation of Module

Note: Operations described in this section shall be under the premise that the machine is power-off.

3.1 Dismounting and installation of CM200V note validator (NV)

Dismounting steps:

Remove the upper housing.

Open the back part.

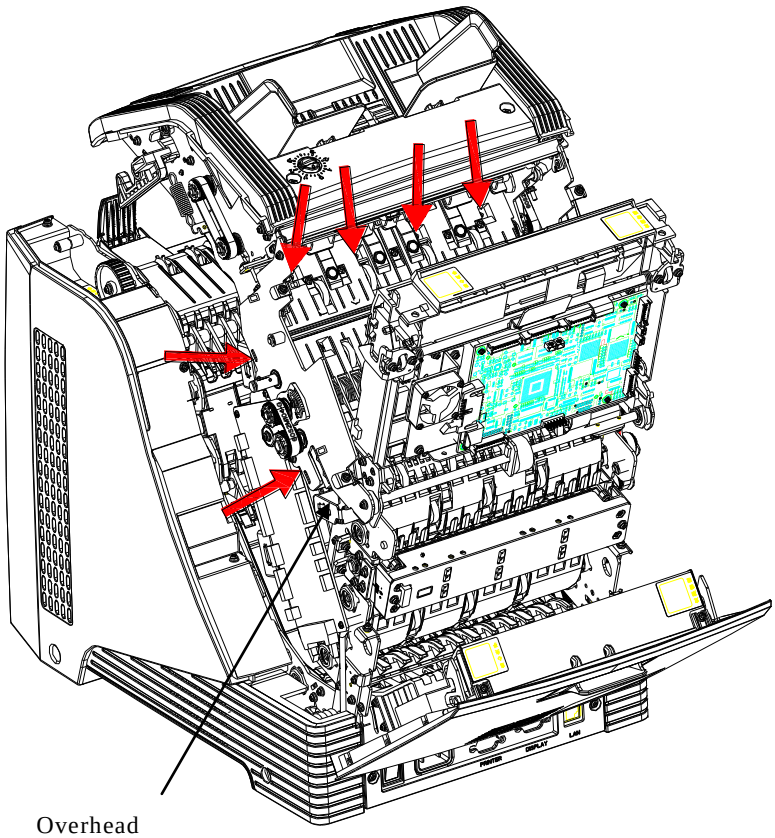
Dismount the overhead docking sockets as shown in the figure.

Pull out the cable plugs of NV and take the NV wiring harness out from the NV components.

Remove the overhead docking sockets, code disc and its inner and outer covers, and two M144 synchronous belts as shown in the figure.

Remove the eight M3X6 combination screws (including 2 screws on left and right sides separately and 4 on the front side of the NV lower plate) indicated by the solid arrows.

Take out the NV module.

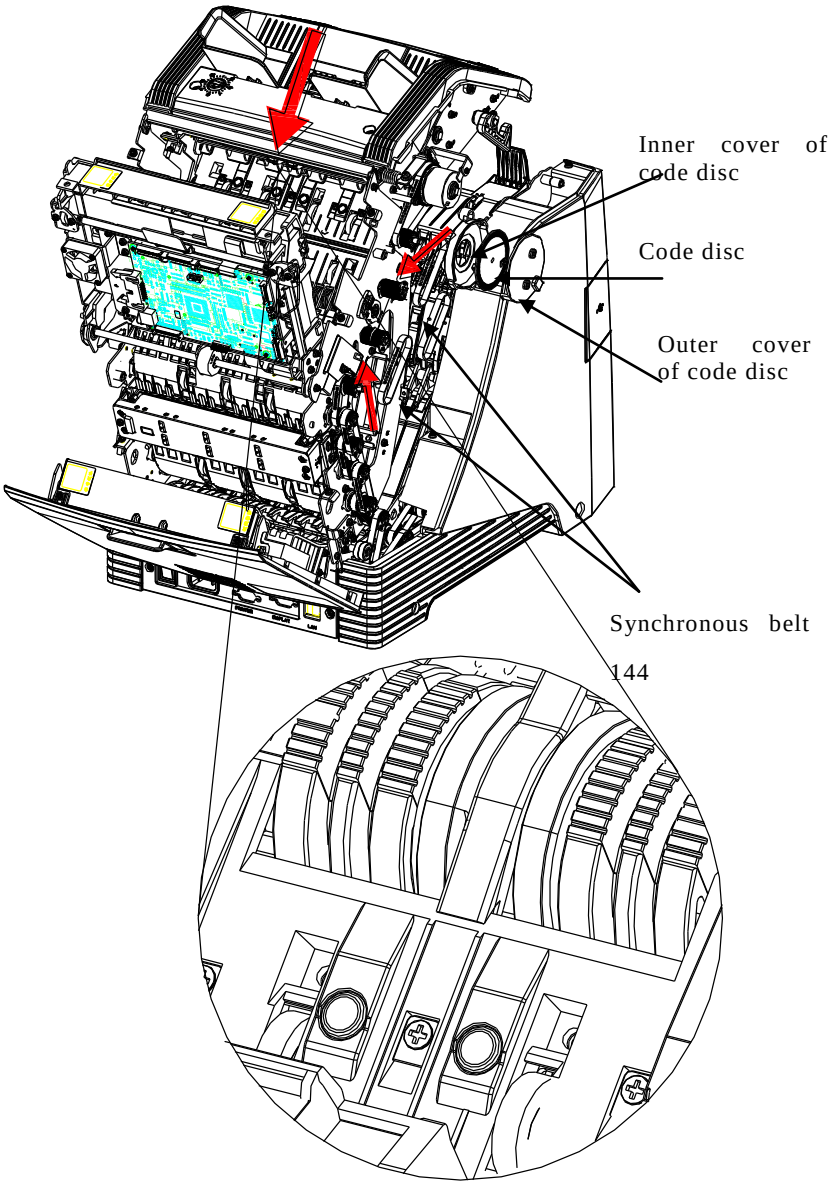


Overhead docking socket

Note*:*

1. Plug or pull out the NV cable plugs with average force to prevent plugs or pins damage.
2. When removing the

NV assembly, take the front end of lower transport plate of NV out of the bottom of note feeder upper plate. Do not damage the lower transport plate of NV.



Installation steps:

Do not install the upper housing.

Installation steps are reverse to dismounting steps.

Note:

1. When putting the NV components on the up machine unit, the upper edge of the NV lower plate must be inserted in the middle of the split of OP panel (i.e. the edge of the NV lower plate is clamped at the split of the OP panel). See the enlarged view for details.
2. Tie the NV cables together on the rotating shaft to prevent cables scattering and transport interference during installation.

3.2 Dismounting and installation of the thickness module of CM200V

Dismounting steps:

Remove the upper housing.

Open the back part.

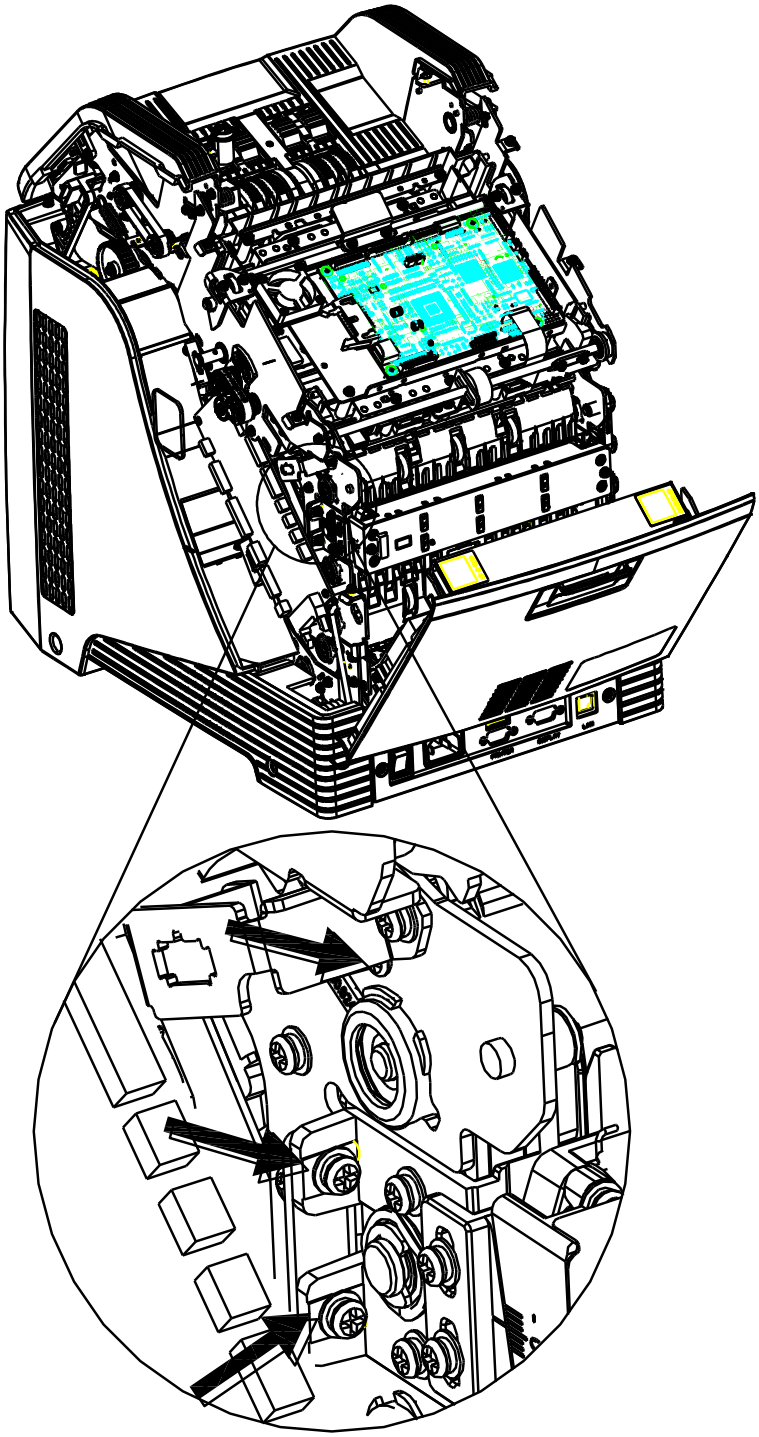
Pull out the cable plugs of the thickness plate and then remove the cables.

Remove two M110 synchronous belts and a M124 synchronous belt as shown in the figure.

Remove the two M3X6 cross recessed round head screws from the both-side limits of thickness module inner transport plate.

Remove the four M3X6 combination screws (2 for left and right sides) indicated by the solid arrows.

Take off the thickness assembly to complete the dismounting.



Installation steps:

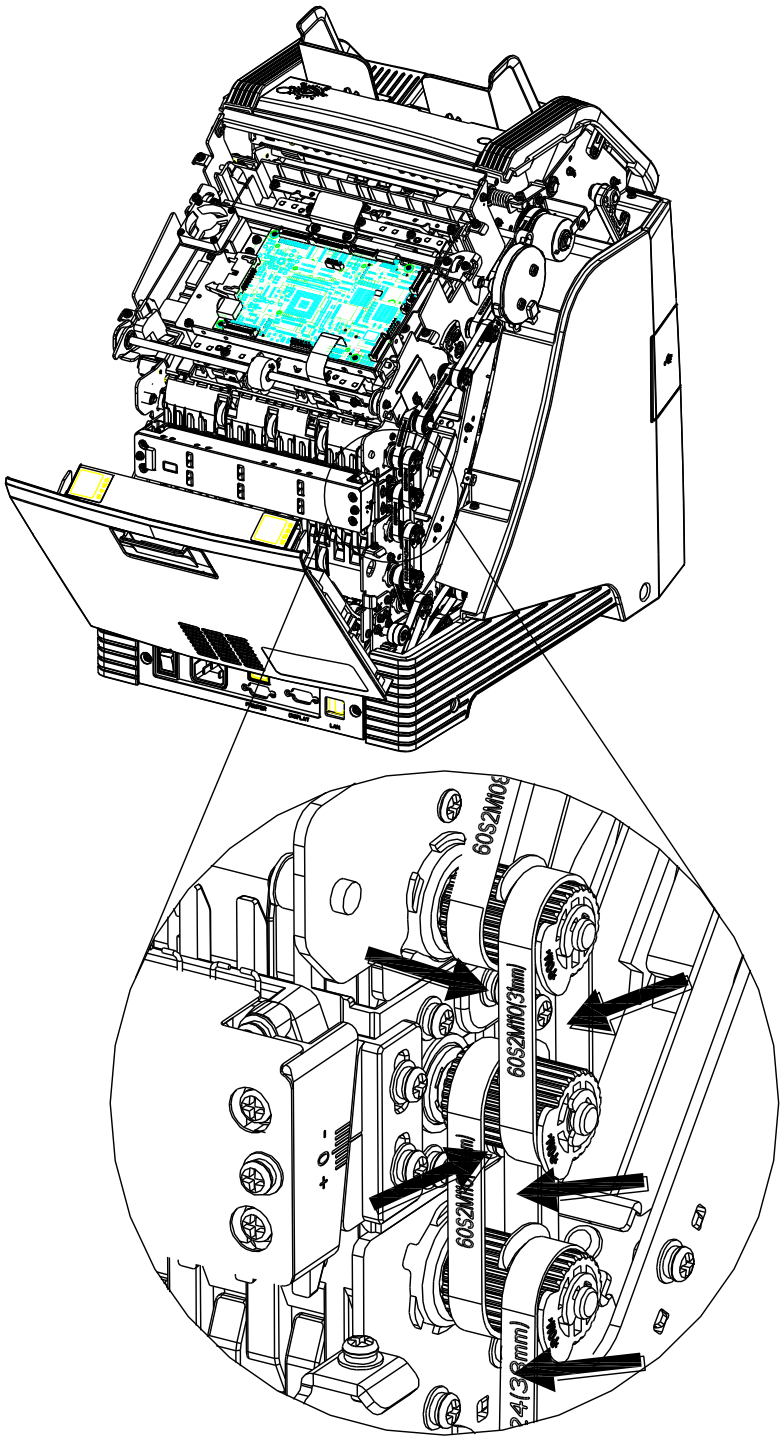
Do not install the upper housing.

Open the back part.

Installation steps are reverse to dismounting steps.

Note:

1. Keep the cables on the inner side of the supporting column of main control board during installation. Prevent the cable interference in the installation of upper right housing.
2. When installing MTS, push the MTS inwards to right place, tightening the two screws on the left side prior to those two on the right.
3. Tighten two stop screws (one for left and right sides) on the MTS inner transport plate during installation.



3.3 Dismounting and installation of the CM200V up machine unit

Dismounting steps:

Remove the housing.

Remove the NV components.

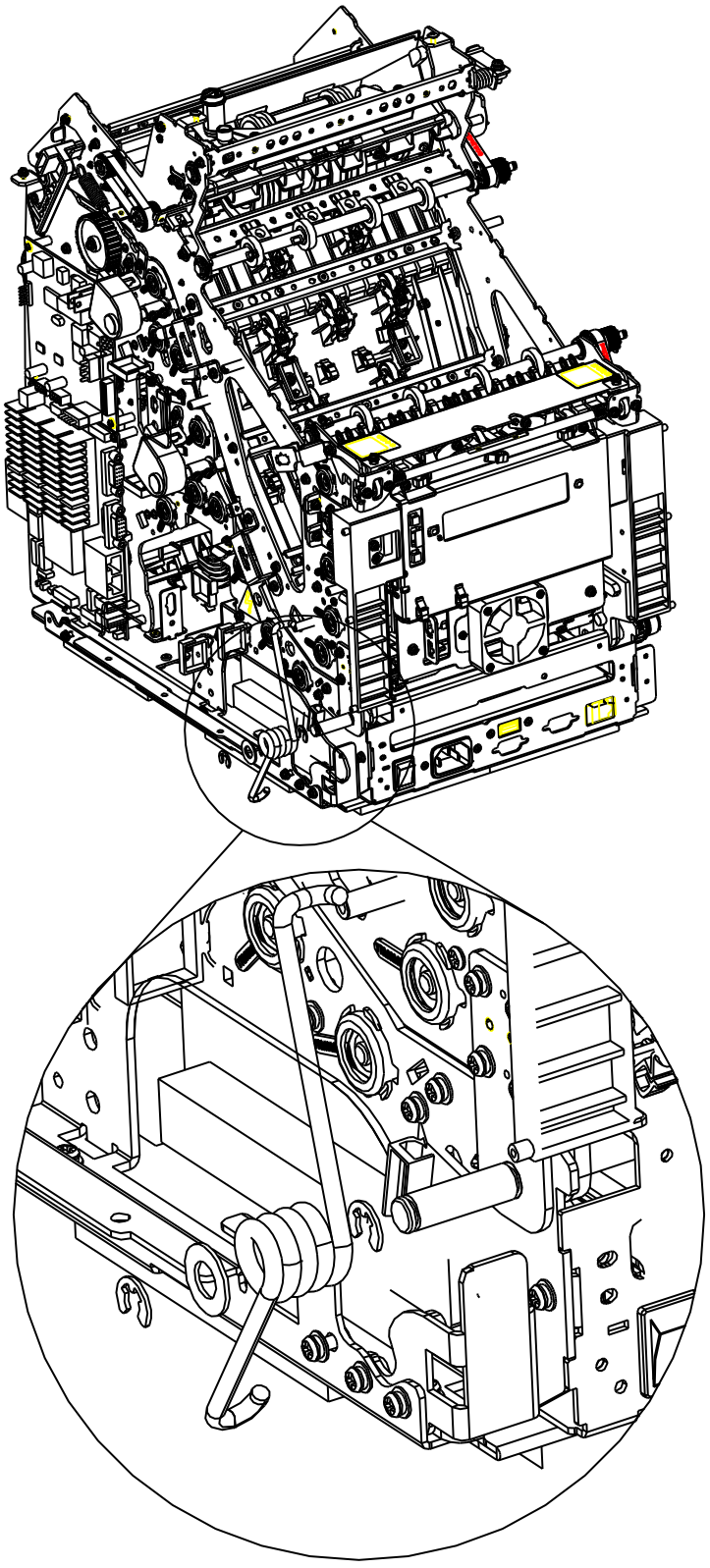
Remove the width adjustment assembly.

Remove the OP panel assembly.

Remove the main control board.

Remove the cables connecting to the upper part.

Remove the E-type circlip and flat washer beside the upper rotating torsional spring on the right side of machine shown in the figure.



Open the upper part, hold it with one hand and remove the bottom of upper rotating torsional spring shown in the figure from the metal plate hooks with nipper plier controlled by the other hand.

Close the upper assembly gently.

Remove the upper rotating torsional spring.

Remove the components on the left side of the machine shown in the figure, including the

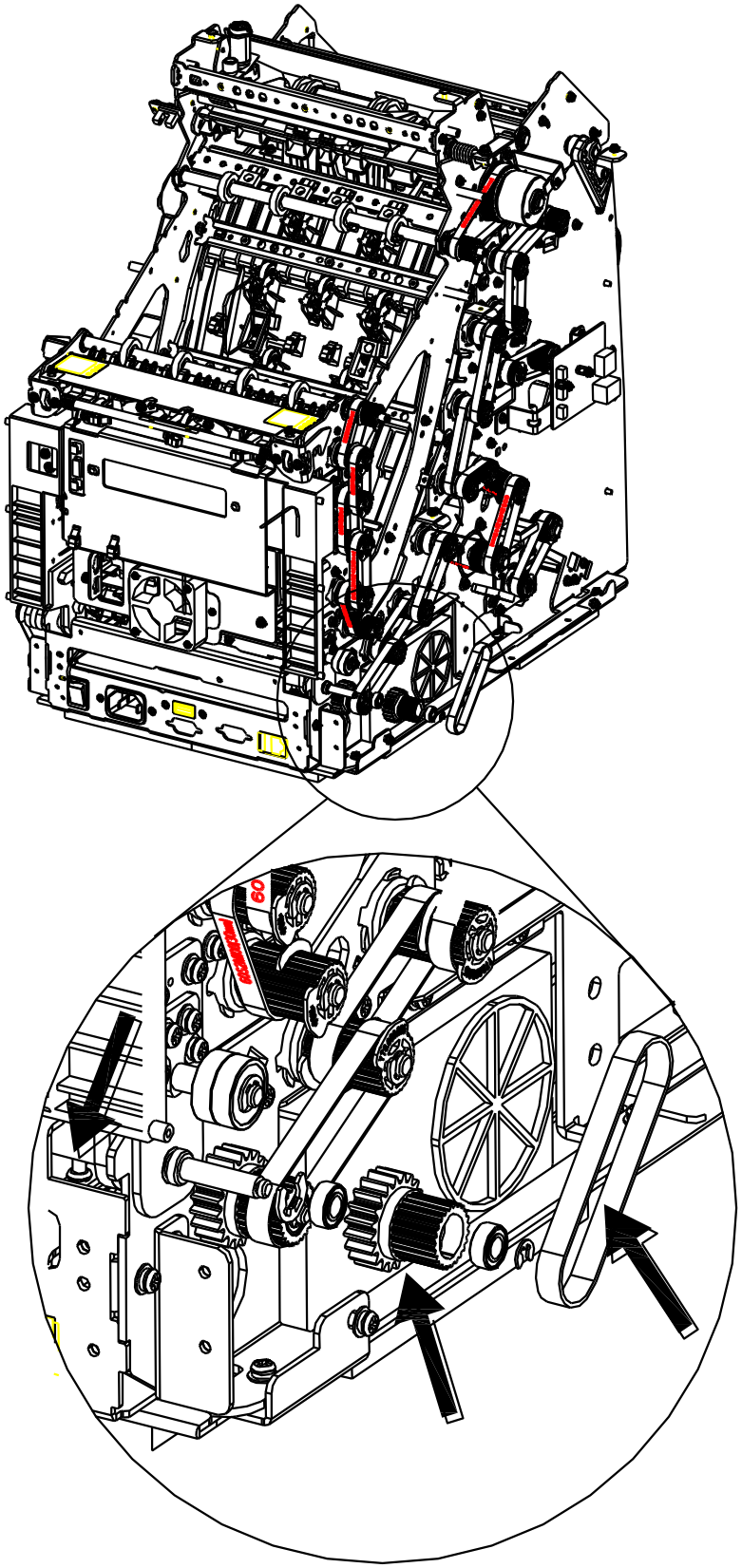
synchronous belt and gears.

Remove the M3X6 cross recessed round head screws indicated by solid arrows in the figure with a cross screwdriver.

Remove the E-type circlips on the left and right sides of upper and lower rotating shafts.

Remove the upper and lower rotating shafts.

Then take the up machine unit and back assembly off from the overall machine to complete the dismounting.



Installation steps:

Do not install accessories including housing, NV components, width adjustment assembly, OP panel assembly, main control board and upper connecting cables.

Installation steps are reverse to dismounting steps.

Note:

1. When removing the upper rotating torsional spring, open the upper module of the machine maximally and hold it in case someone injured by falling

upper module.

2. Pay attention to checking the correctness of cable plugging.

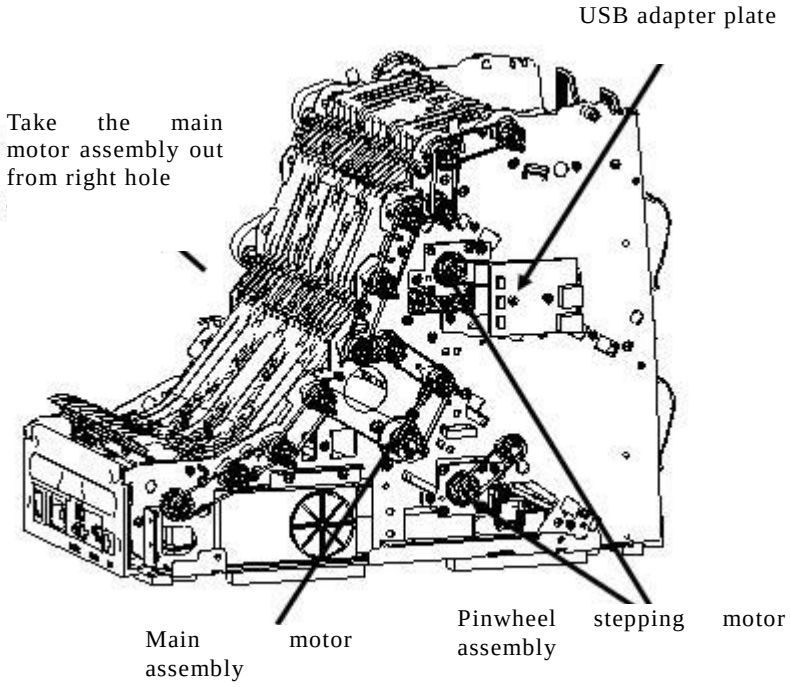
4 Dismounting and Installation of Assemblies, Components and Parts

Note: Operations described in this section shall be under the premise that the machine is power-off.

4.1 Dismounting and installation of pinwheel stepping motor, main motor and USB adapter plate assemblies

Dismounting steps:

1. Remove the left and right housings of the low machine unit as described in 2.6.
2. Remove the fixing screws of fixed pinwheel stepping motor, main motor and USB adapter plate assemblies separately, remove the connecting belts on the motors and pull out the plugs of connecting cables, then take off these 3 assemblies successfully.



Note:

1. Take the main motor assembly off from the right hole of machine.
2. Operation can be applied with up machine unit remained.

Installation steps:

1. Install the fixed pinwheel stepping motor, main motor

and USB adapter plate assemblies in turn according to the dismounting process.

2. Install the left and right housings of low machine unit as described in 2.6.

Parts involved:

YT4.853.6485 stepping motor cable

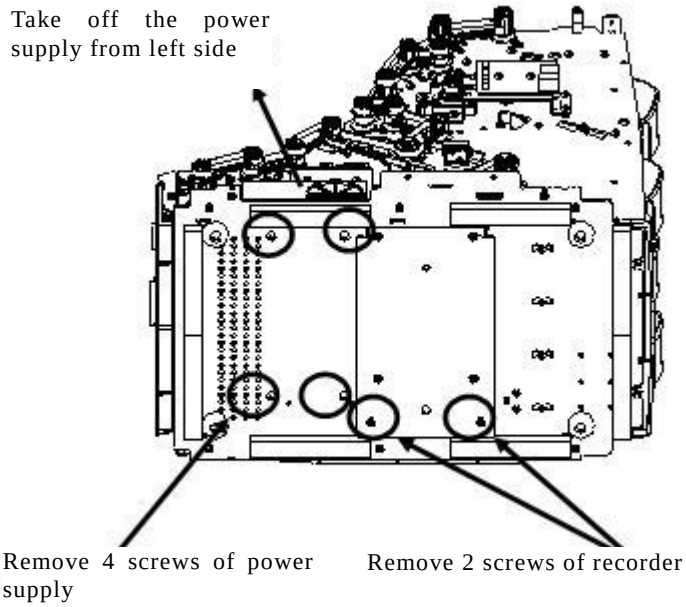
YT4.853.6488 brush motor cable

YT3.691.065 CM200V USB signal conversion plate

4.2 Dismounting and installation of NV image recorder and power supply assemblies

Dismounting steps:

1. Remove the left and right housings of the low machine unit as described in 2.6.
2. Turn the machine to the side.
3. Remove the fixing screws of NV image recorder and power supply separately and unplug the connecting cables to take off these two assemblies successfully.



Note:

1. Take the NV image recorder off from the bottom of the machine.
2. Operation can be applied with up machine unit remained.

Installation steps:

1. Install the NV image recorder and power supply assemblies in turn according to the dismounting process.
2. Install the left and right housings of low machine unit as described in 2.6.

Parts involved:

S.0190541RS NV image recorder

S.0072286RS switching power supply

SWS300A-24/GRB Japan TDK

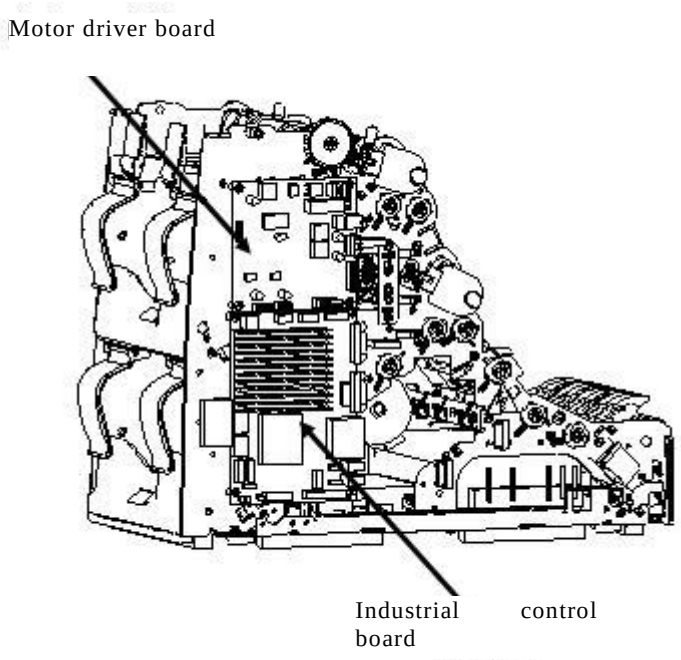
4.3 Dismounting and installation of the control circuit board

Dismounting steps:

1. Remove the right housings of the low machine unit as described in 2.6.
2. Unplug the related connecting cables, dismounting the 4 fixing screws in the motor driver board and industrial control board separately for replacing.

Note:

1. Operation shall be under the premise that the machine is power-off.
2. Operation can be applied with up machine unit remained



Installation steps:

1. Install the motor driver board and industrial control board separately in turn according to the dismounting process.
2. Install the right housing of low machine unit as described in 2.6.

Parts involved:

YT2.503.286 CM200V motor driver board

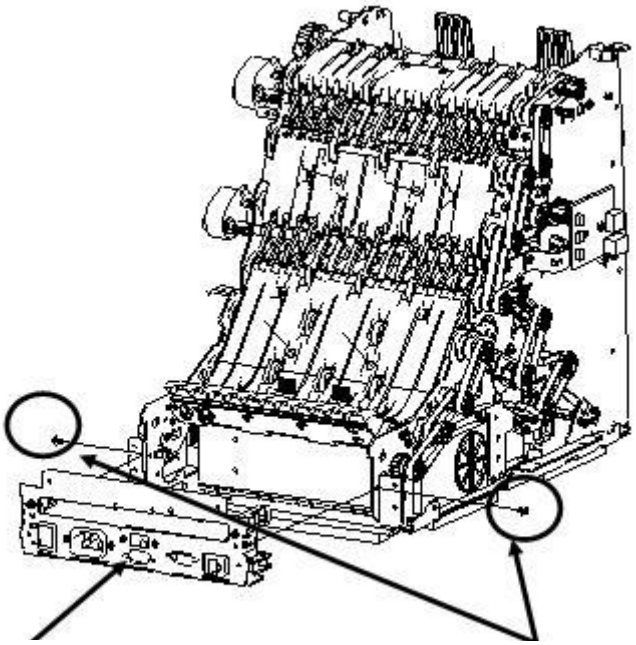
S.0071040RS industrial control board PCM-9363N-S6A1E+1G DDR3 memory + 4GCF card

4.4 Dismounting and installation of power switch assembly

Dismounting steps:

1. Remove the left and right housings of low machine unit and back cover plate of lower housing as described in 2.5 and 2.6.
2. Remove 2 fixing screws shown in the figure to move the power switch assembly backwards.
3. Unplug the cables related to the power control panel for replacing.

Note: Operation can be applied with up machine unit remained.



Installation steps:

1. Install the power switch assembly in turn according to the dismounting process.
2. Install the left and right housings of low machine unit and back cover plate of lower housing as described in 2.5 and 2.6.

Parts involved:

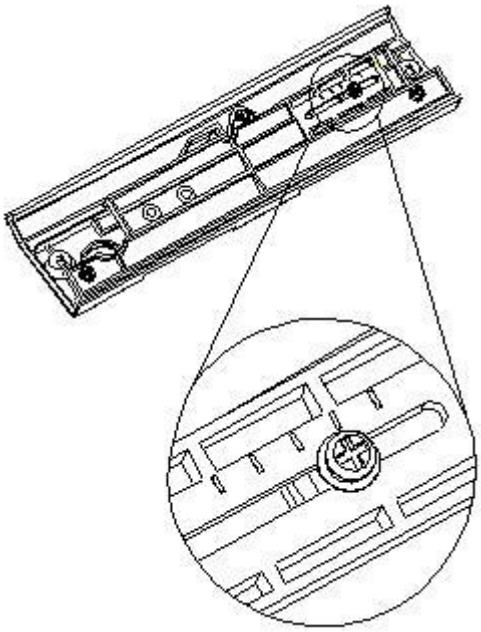
YT2.503.281 CM200V power control panel

5 Overall Adjustment of Sorter

5.1 Width adjustment of note inlet

1. Adjust the maximum width of note inlet limit baffle

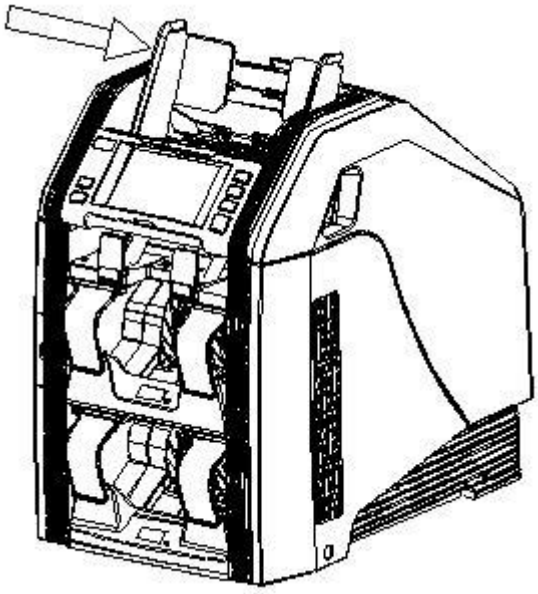
Loosen screws on the adjusting knob and move the adjusting knob to the desired position. For width, the scale mark on the base may be referenced. The default width is applicable to Renminbi with a denomination of 100 yuan (the middle of the adjusting knob is dead against the second mark on the right).



Note: There is no need to totally remove the screw on the adjusting knob when loosening it. Just loosen to such extent that it is possible to move the adjusting knob.

2. Adjust the width of note inlet limit baffle

When sorting notes of small denomination (small size), please adjust the note inlet limit baffle to such width that suits such notes. Just slightly push the baffle on one side inwards.



Note: The width between left and right baffles shall be wider than the width of notes to be sorted by 5~6mm.

5.2 Rough adjustment of the feeder roller clearance

Necessary tools

Cross screwdriver, socket head screw wrench (M4)

Adjusting steps

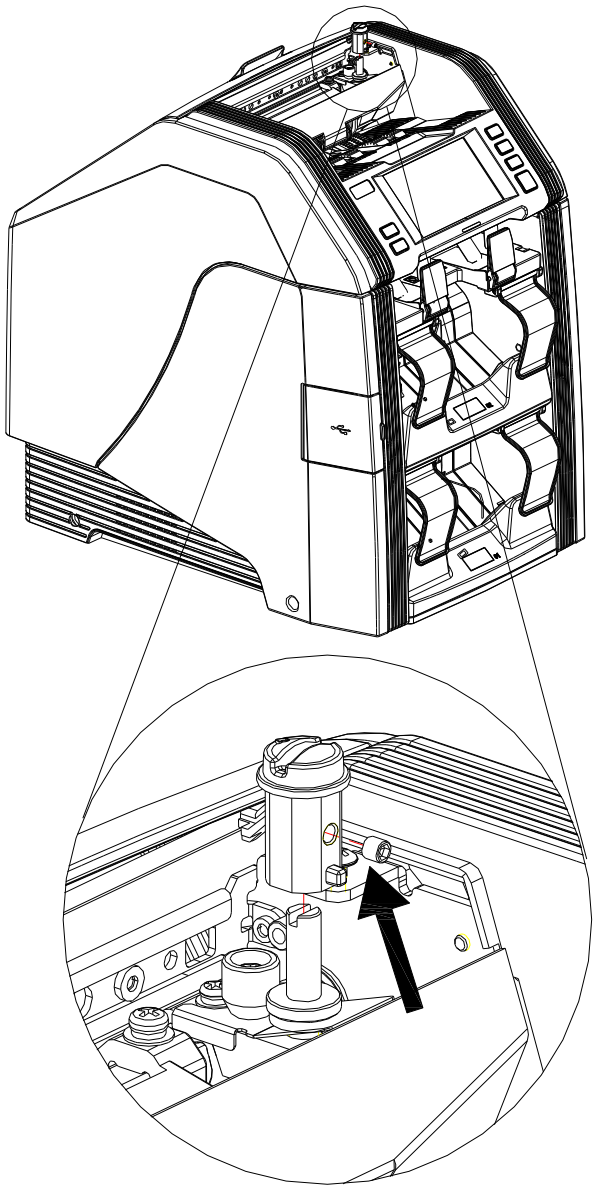
Remove the width adjustment assembly.

Remove the M4 socket head cap screw indicated by the solid arrows shown in the figure with a socket head screw wrench. Take out the clearance adjusting sleeve. Side adjusting screw allows to be rotated to any angle for rough adjustment of feeder roller clearance.

For adjustment process, please refer to “radial feeder roller clearance adjustment” in *Specification for Debugging of Structural Components*.

Note**:**

After adjustment, when assembling "clearance adjusting sleeve", take care to align the point indicated by the arrows to "zero".



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5.3 Adjustment of commutation block position

Necessary tools

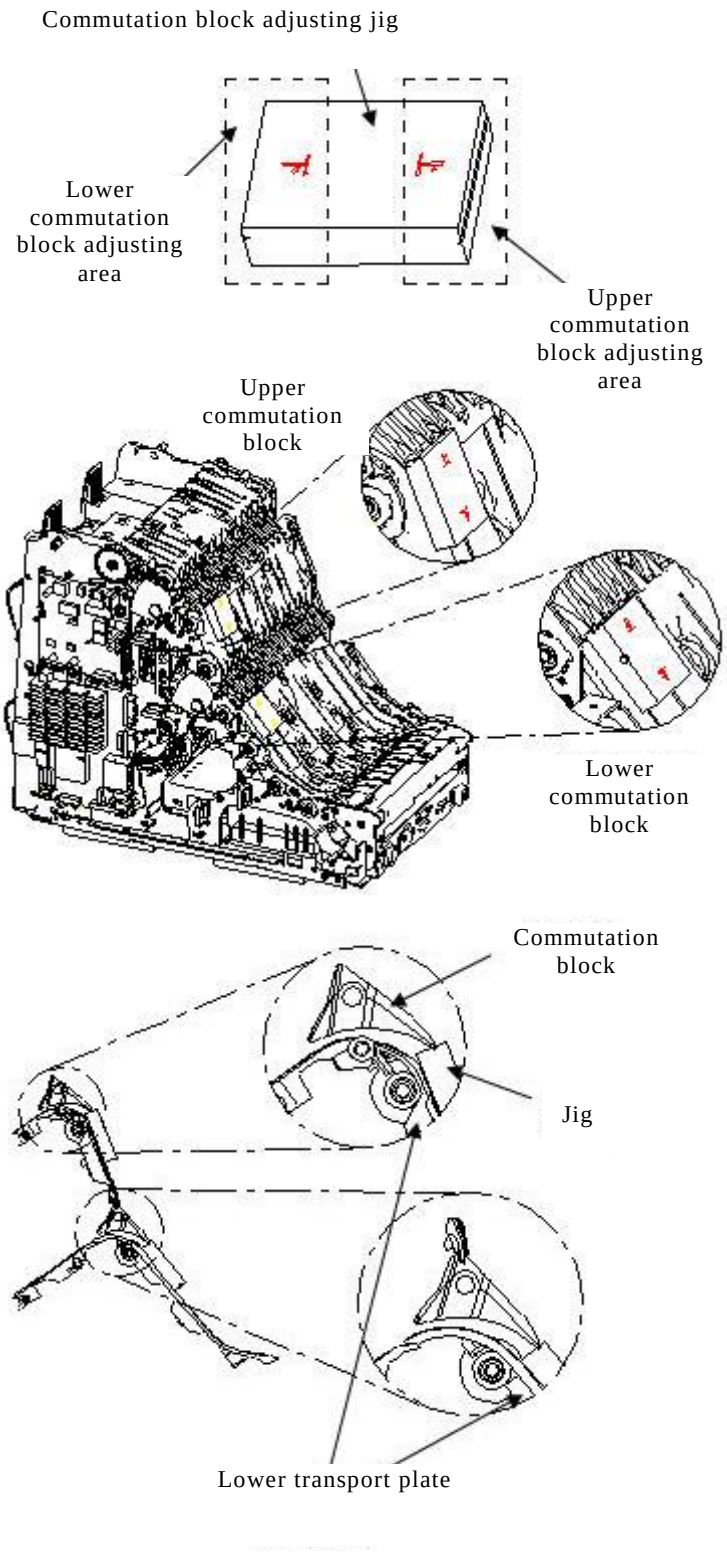
Cross screwdriver, commutation block adjusting jig

Adjusting steps

2. Loosen the commutator retainer with the cross screwdriver, keeping the commutator in "open" state. Close the jig to the lower transport plate and push it to the commutation block. Insert the tip of commutation block into the notch of jig to locate it.
3. Fixing the position of jig, lock the retainer and take off the jig. Open and close the commutator once to check for smoothness. The commutation block can't knock on the upper and lower transport plates.

Note:

1. Keep the jig closing to the transport plate throughout the process.
2. When tightening the screws, push the jig with hand to ensure that the jig is in place.



Check the position again with jig upon tightening the screws.

6 General Fault Handling Methods

1). Read and view the log record of the machine.

2). Define the cause of fault primarily according to the error code in the machine log.

3). Clean the dust accumulated within the machine if necessary, especially dust on the reflection sensor.

4). If the fault is due to software, please check the software for installation, version and parameters setting, to verify that the software works normally.

5). If the fault is due to hardware, please check whether those relevant components and parts causing such fault are damaged.

6). If components and parts are damaged, please dismount and replace them in reference to relevant steps and precautions as described in this manual.

7). Please maintain and clean components and parts of the machine regularly if necessary;

8). Integrate the replacing components and parts with the machine. Connect to cables. Energize and test by test program.

9). It's recommended genuine notes be used as the final testing notes for testing relevant functions of the machine.

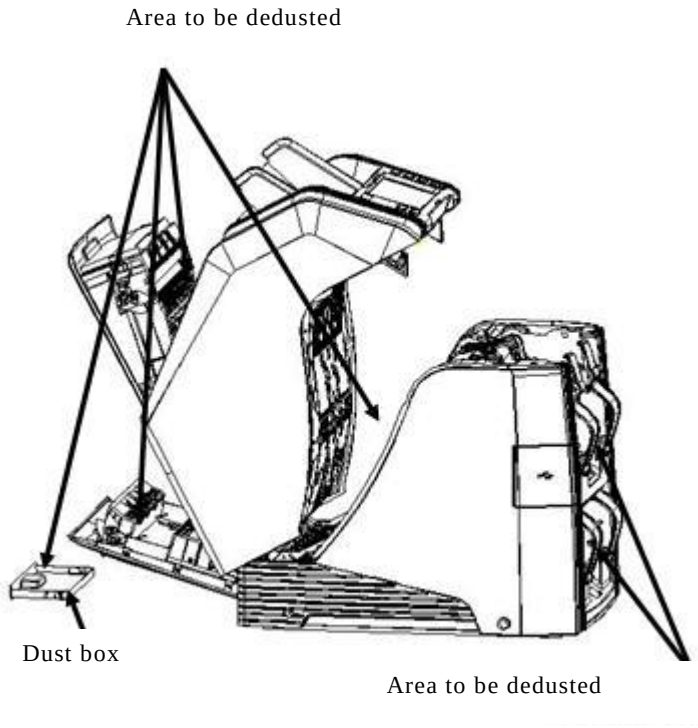
7 Regular Maintenance Items

7.1 Overall dedusting

Routine maintenance item

Based on the transaction volume, etc., it is recommended to clean up the machine every day for big volume and once a week for small volume.

As shown in the figure, open the open-able parts of the machine separately, and then clean the area to be dedusted with tools, such as cleaning and maintenance kit.



CM200V Maintenance Manual (Primary)

GRG Banking Equipment Co., Ltd.