



# MEI VN2000 SERIES NOTE ACCEPTOR



## ENGINEERS HANDBOOK

**MEI VN2000 Series Note Acceptor Engineers Handbook**

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This document does not necessarily imply product availability.

**Note:** Your product may differ slightly from some of the illustrations in this document.

## DECLARATION OF COFORMITY

### National & International Standards Conformance

VN2000 Series products operate at Safety Extra Low Voltage Level (SELV) as defined in IEC335/EN60335 '*Safety of Household and Similar Appliances*'. They may be designed into equipment complying with IEC335/EN60335 or IEC950/EN60950 '*Safety of Information Technology Equipment*'. VN2000 Series products are of Class 3 construction.

### Rated Operating Voltage

The operating voltage of a VN2000 Series is stated on the label attached to the product. It must not be used with any power source other than that indicated.

### Dangerous Environments

The VN2000 Series must not be operated in the presence of flammable gasses, fumes or water. Ambient Operational Temperature range is Minimum: -15°C and Maximum: 60°C.

## ABOUT THIS HANDBOOK

The VN2000 fitted to your vending machine incorporates the very latest developments in automatic payment systems technology. It provides high standards of security and reliability that has become the hallmark of MEI products.

This Engineers Handbook compliments your product training and provides you with the information you need to support the day-to-day use of your VN2000.

The Handbook has six sections:

**Installation** – describes how the VN2000 should be installed and how to power up and set up your note acceptor.

**Hints on Change Giver side** – explains how to work when VN2000 is connected to a changer's MDB Peripheral.

**Coupon Configuration** – explains how to configure the VN using a Configuration Coupon.

**VN2000 Assemblies** – shows the general and specific Acceptor assemblies indicating the descriptions and part numbers of each part.

**Maintenance** – explains the routine cleaning requirements.

**Troubleshooting** – explains how to identify and decode the Status LED lights and also provides a check list of common problems and the possible corrective action you can take.

**Disassembly Instructions** – explains step by step and with the help of pictures how to disassemble a unit.



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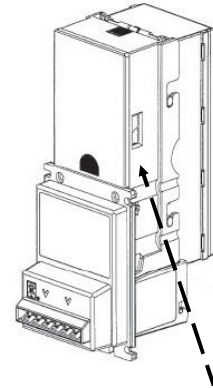
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# INSTALLATION

## 1. Set Note Acceptor option switches.

**NB: When you receive the product, all switches are off. This will automatically enable the options as follows:**

- Accept €5 and €10 Euro notes.
- Four way accept.
- High Security acceptance.
- 50ms on/50 ms off pulse (short pulse)
- One pulse per Euro
- Loom enable ON.
- Vending Interface.



Important NB: Placing any switch ON will override the above options, and the Note Acceptor will operate according to the switch settings label! (See Figure 2)

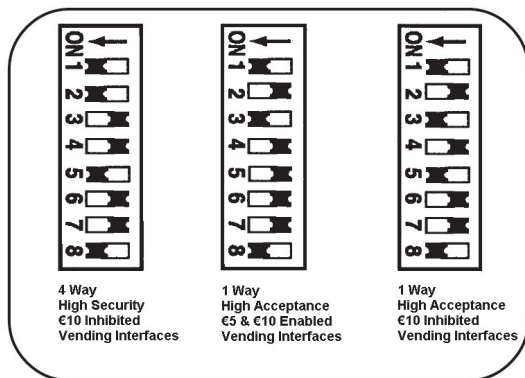


Figure 3  
(Typical Switch Settings)

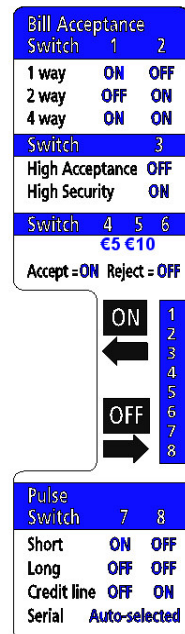


Figure 2

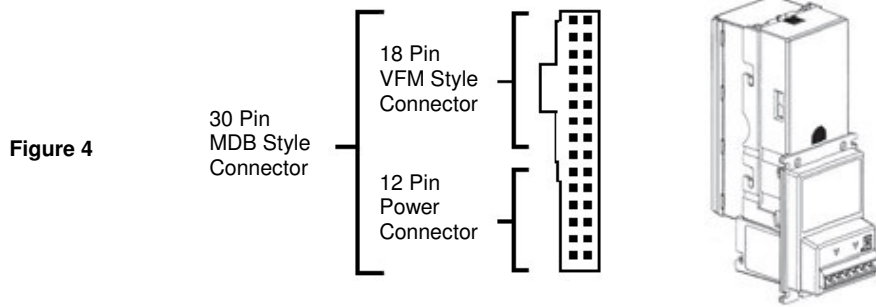
## 2. Remove power from the vending machine.

## 3. Reconnect the VN2600 to the appropriate interface looms.

(See Figure 4) Forcing loom(s) into Note Acceptor will cause pins to bend or break.

**DO NOT USE THE ARDAC T-ADAPTER CABLE!**

IMPORTANT NB: Dressing of loom wires around the front of the Note Acceptor stacker may be necessary in some machines to prevent the sharp edges of nearby assemblies from damaging loom casing and wires.

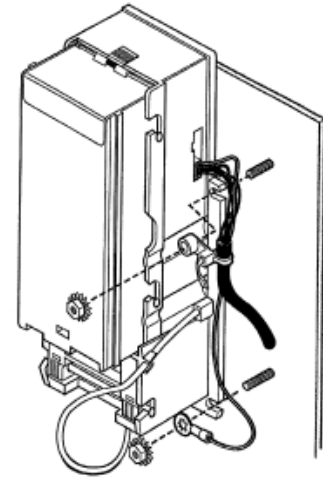


**4. Install the VN2600** onto the Note Acceptor mounting studs and through the mounting hole of the vending machine. Secure using the appropriate hardware (see Figure 5).

**5. Load the coin changer's coin tubes** with sufficient coins (at least ten each).

**6. Apply power to the vendor** and observe that the power indicator light on the back of the VN2600 is ON and NOT flashing. **NB:** If the light is flashing, refer to the label located on the back of the magazine for a description of the diagnostic codes and check the following:

- Power has been applied to the vending machine.
- The coin changer has adequate change.
- The machine has product.
- The vendor's display does not indicate that credit has been established.



**Figure 5**

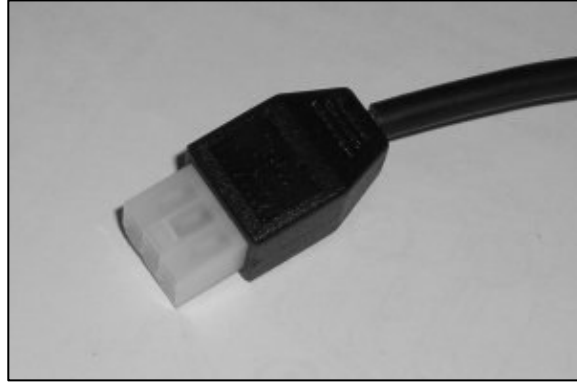
**7. Check operation of the VN2600:**

- Set vend price for under €5 (see vendor operation manual).
- Insert €5 note and observe that it is accepted and stacked.
- Make vend and verify proper amount of change is returned.
- Remove the note from the magazine (see instructions on the label located on the Note Acceptor magazine).

## HINTS ON CHANGE GIVER SIDE

Most of the Note Acceptors are fitted to a Change Giver's MDB Peripheral loom. These are some advices to set correctly the soft options.

### MDB Peripheral Loom



### Service Menu

On the Service Mode Menu there is a soft option to set the highest value of Banknote. This is under Banknote Configuration menu option. It is normally set at 20€.

### Software

Since Changer's software release V.1.18 the behaviour of a Note Acceptor connected to the MDB Peripheral loom is different. All the bills inserted will be hold in escrow, which means not stacked, until the user make a selection on the vending machine, then the bill will be stacked in the magazine and the user will get the selection and the change (in coins).

If the user inserts a note and presses the reject lever to get change, then the note will be returned. This is to prevent users empty changer's tubes without buying anything.

This option is configurable with STS tool and will be in the changer's menu in a near future.

### Payout

If you are going to use a Note Acceptor it can be recommended to change the payout of the Changer adding one tube of 1€ or 2€ depending on the needs of the site. CF7000 has a wide range of pre-programmed cassettes. Please contact your MEI technical support or representative for further information on this.

# COUPON CONFIGURATION

## All switches to OFF

**1. Carefully remove the coupon** from the Installation Guide. If possible, make copies of the coupon with a standard, carbon-based, non-colour copier.

Copies of the coupon are usable if cut to match the size of the attached coupon.

**2. Fill out the coupon** using a #2 or HB pencil to fill in the blocks for desired options.

For correct operation, all 5 sections must be completed. Fill in only one block per line. **Do not mark the back of the coupon.**

## COUPON

**Complete Section 1** to enable desired note direction. Enable 1 or 2 direction faceup, or 4 way acceptance (which allows acceptance in all directions)

**Complete Section 2** to enable desired note denominations. Fill in one block for each denomination. High Accept enables maximum note acceptance. High Security may be desired for locations where a higher level of discrimination is desired. OFF will reject notes of the selected denominations.

**Complete Section 3** to enable appropriate Credit function for pulse and credit line interfaces.

**Complete Section 4** to enable pulses per Euro. Most vendors use 1 pulse per Euro.

**Complete Section 5** to control the Bezel lights (Compact Bezel only).

Flashing or constantly on may be selected.

**3. Locate the service button** on the back of the unit (refer to Figure 6).

Depress the button once to enter coupon set-up mode.

Depressing again will exit the mode.

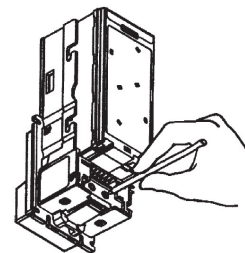


Figure 6

**4. Insert coupon and verify settings were accepted.**

**ACCEPTED:** Coupon returned immediately and LED flashes 10 times when coupon pulled out.

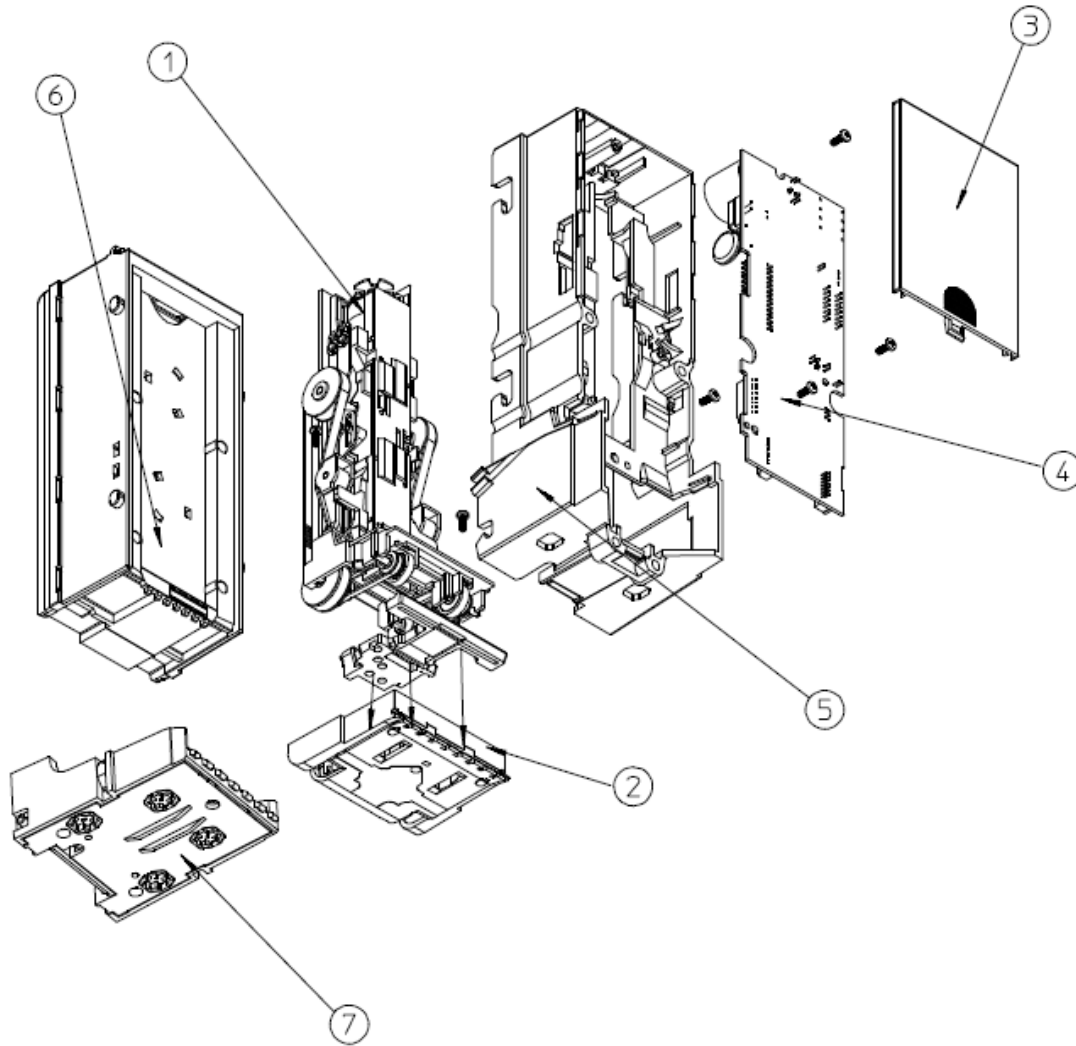
**REJECTED:** Coupon returned after ten seconds. LED flashes number of times corresponding to section improperly filled out.

Example: Six flashes for improper section six. If rejected, review instructions or try new coupon.

### Configuration Coupon

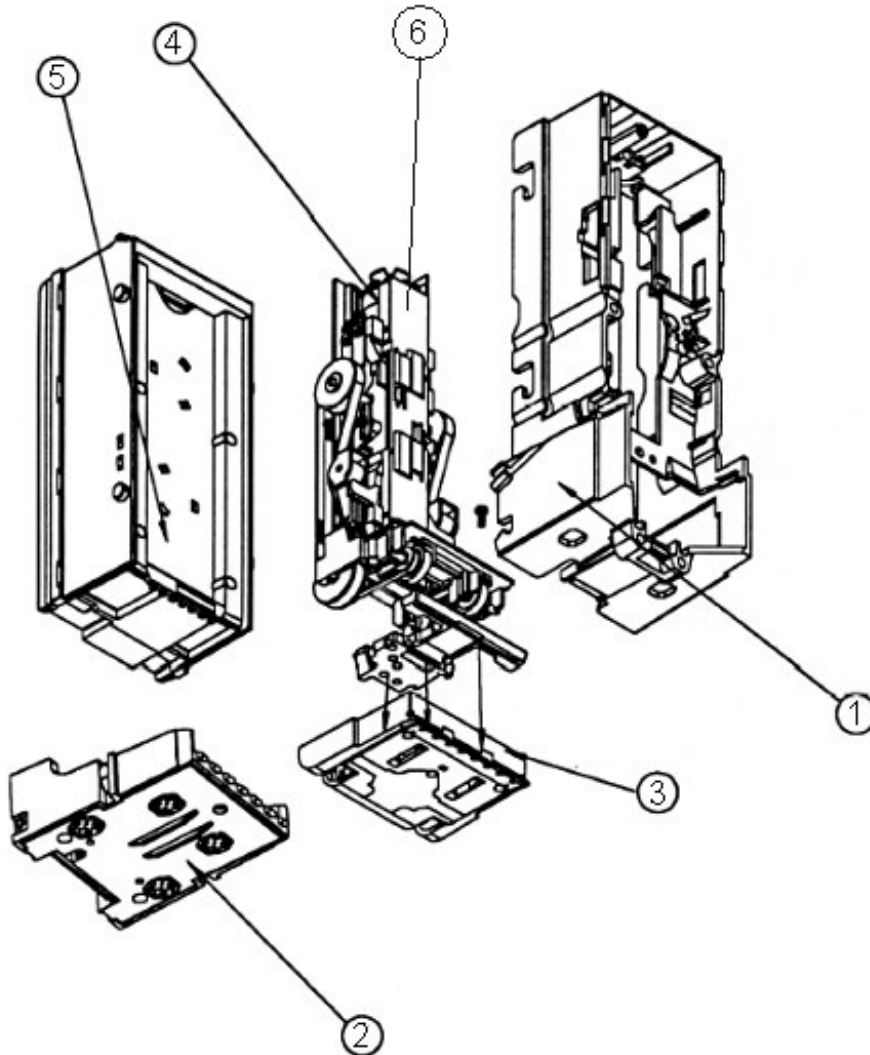
Electronic copies of this manual  
will not have the coupon  
included. Please contact MEI if  
you need a configuration coupon.

# SERIES 2000 NOTE ACCEPTOR ASSEMBLY



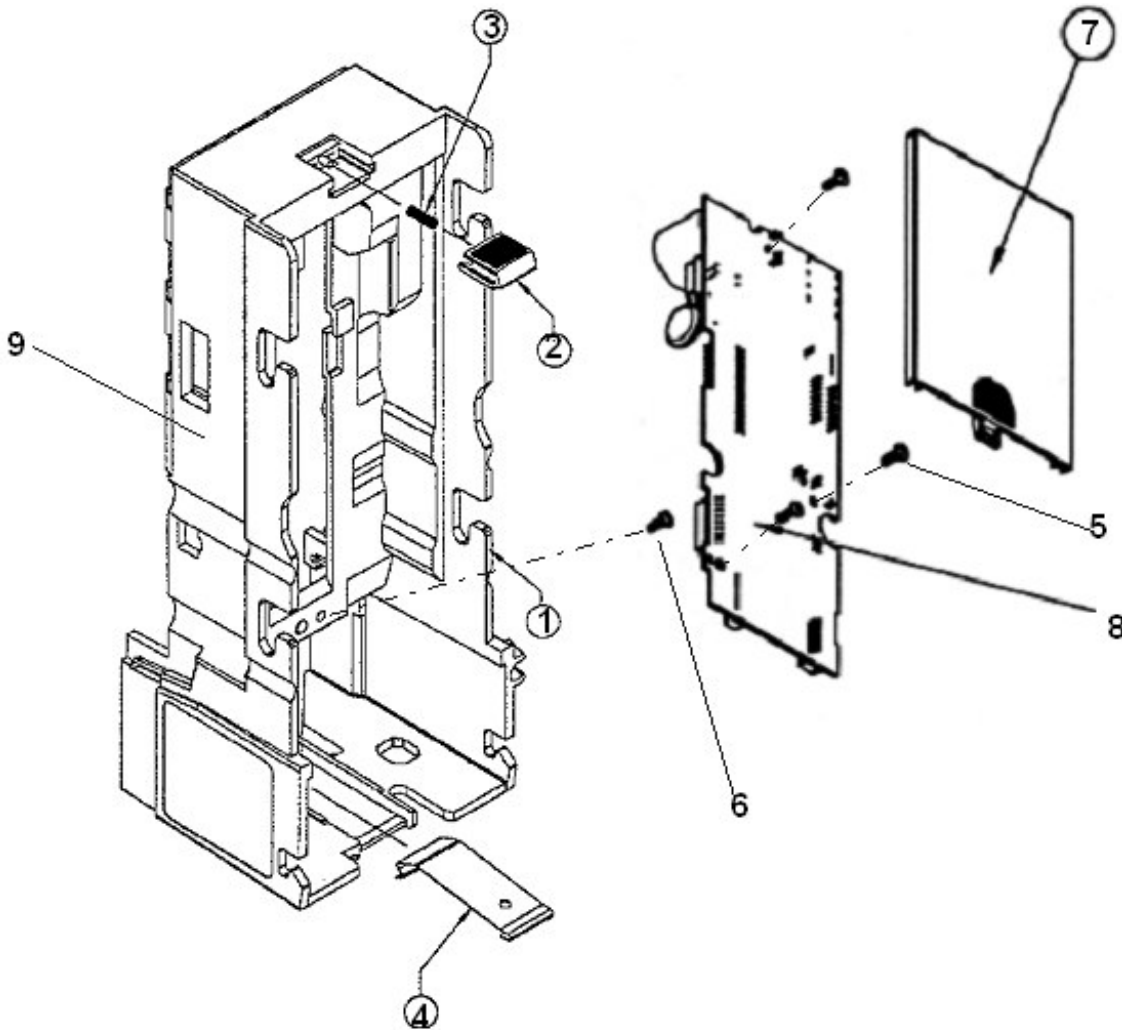
Ref Num	Description	Part Number
1	Stacker/Drive Assembly Kit	250064023
2	<b>Sensor Housing Assembly</b>	<b>Ref.</b>
3	Control Board Cover (MAIN)	250022040 Pack 25
4	<b>Series 2000 Control PC Board Assembly</b>	<b>Ref.</b>
5	Chassis	250027017
6	Magazine Assembly 200 BILL Kit 300 BILL Kit 500 BILL Kit 700 BILL Kit	250063015 250061016 250069017 250068021
7	<b>LED Housing Assembly</b>	<b>Ref.</b>
8	<b>Bezel Kits: ( NOT SHOWN )</b> VFM Style kit Compact Bezel kit Flat Bezel kit	250067013 250065014 250069012
9	<b>Cable Assembly: ( NOT SHOWN )</b> MDB 24 VAC	250071009

## VN2612 EXPLODED VIEWS



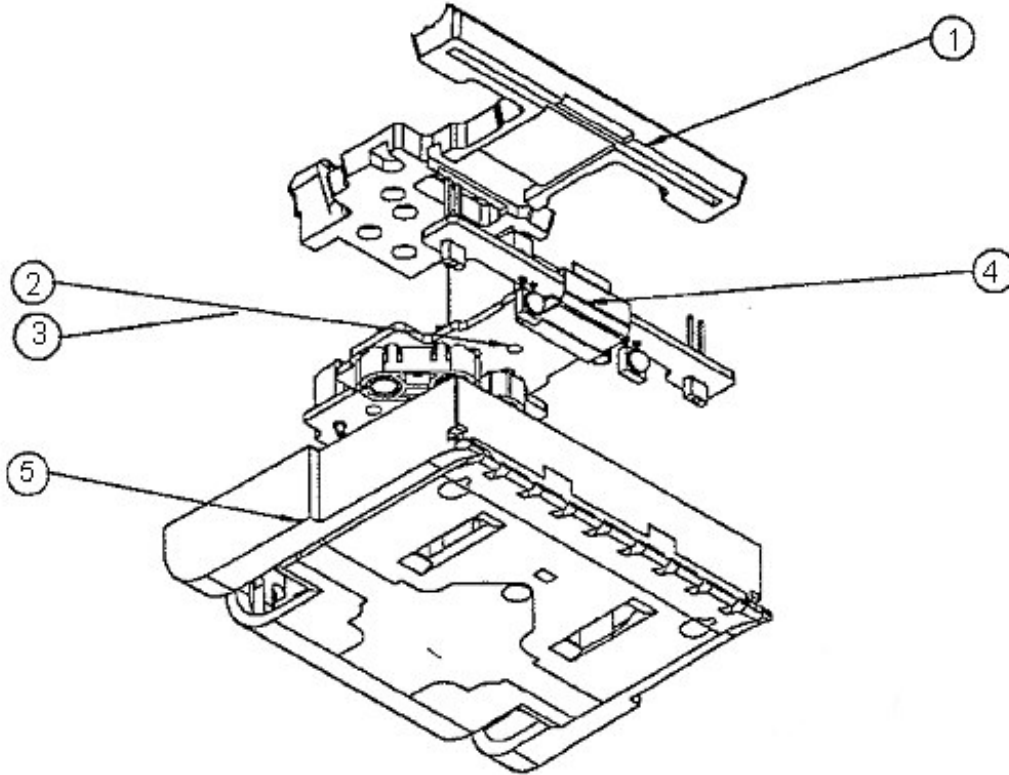
	Part Description
1	Chassis Assembly
2	LED Housing Assembly
3	Sensor Assembly
4	Stacker/Drive Assembly
5	Magazine Assembly
6	Gearbox Assembly

# CHASSIS ASSEMBLY



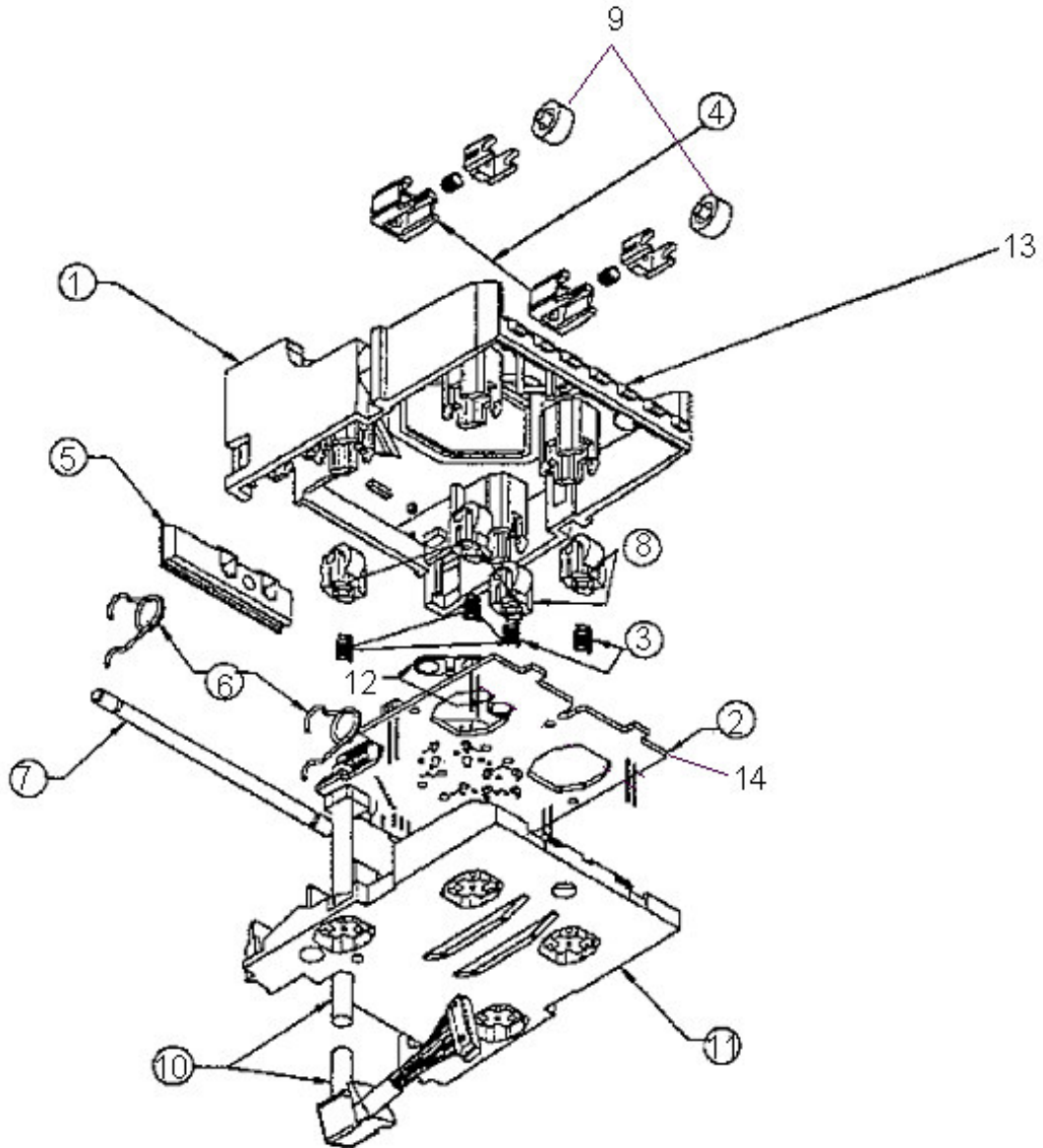
	Part Description	Part Number	Qty per Assembly	Qty per Pack
1	Chassis	250027017	1	1
2	Magazine Latch	250029099P	1	50
3	Spring, Magazine Latch	250044003P	1	100
4	Spring, Lift Led Housing	250046002P	1	75
5	Screw 4 x .38 Type 25	203732001P	3	100
6	Screw 4 x .50 Type 25	203729001P	1	100
7	Cover, Control PCB	250022040P	1	25
8	PK1ASSY S2K 24V AE2800 CTL BD	250061193	1	1
9	Dip Switch Label – English	250051322P	1	50
9	Dip Switch Label – Spanish	250053343P	1	50
9	Dip Switch Label – Italian	250055342P	1	50
9	Dip Switch Label – German	250057341P	1	50
9	Dip Switch Label – French	250059340P	1	50

# SENSOR ASSEMBLY



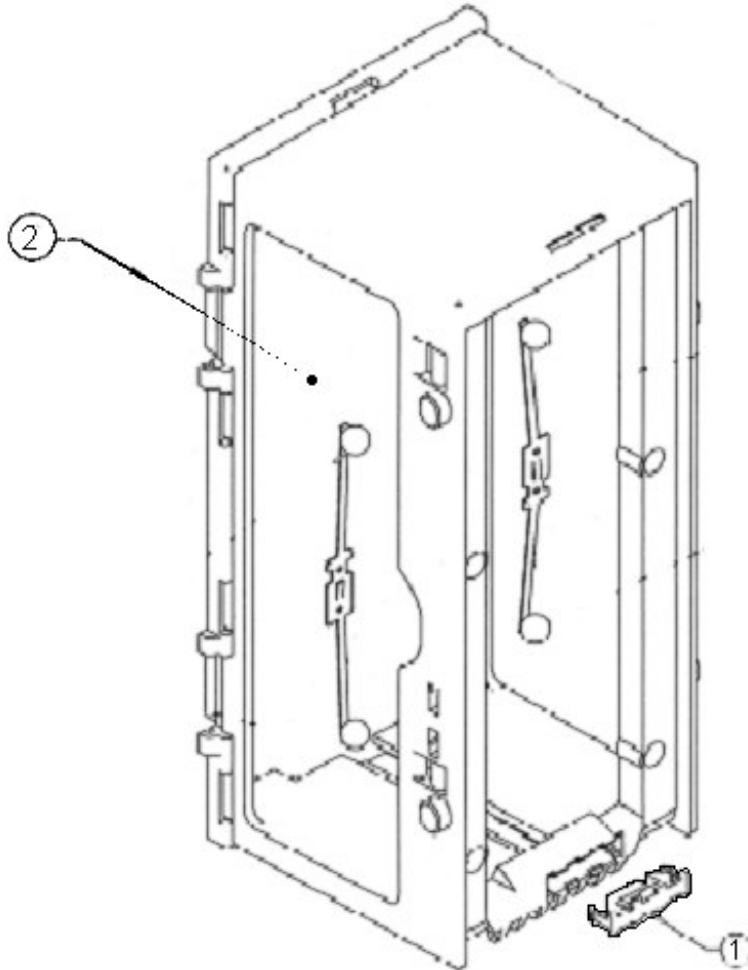
	Part Description	Part Number	Qty per Assembly	Qty per Pack
1	Gasket, Sensor Housing	250065156P	1	5
2	Sensor Board – Euro/Saudi	250063191	1	1
3	Sensor Board – Russia	250060047	1	1
4	Loom, Control PCA to Sensor PCA	250078053P	1	10
5	Sensor Housing (Complete)	250027056P	1	25

# LED HOUSING ASSEMBLY



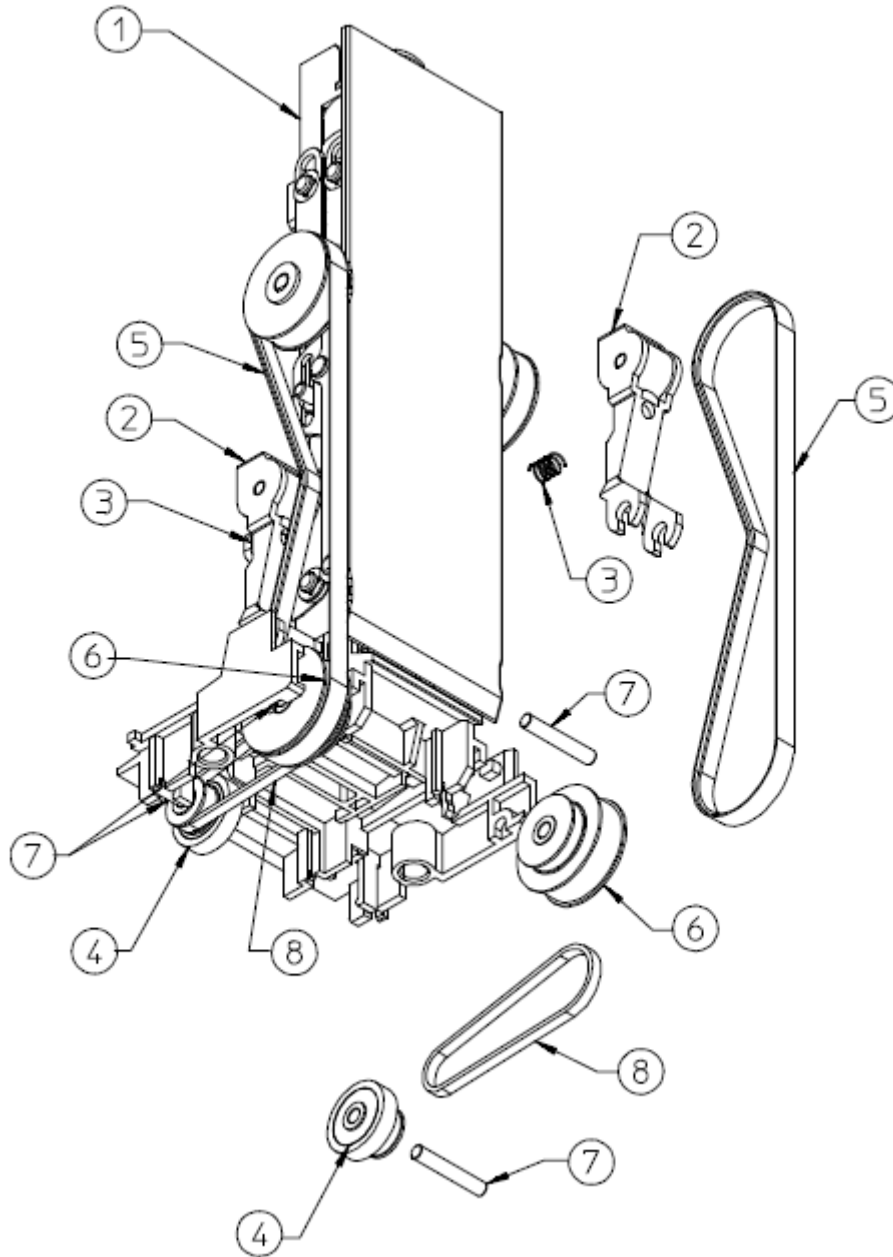
	Part Description	Part Number	Qty per Assembly	Qty per Pack
1	<b>LED Housing – Euro</b>	250028209P	1	10
2	TRI-LED Board – Euro/Saudi	250065190	1	1
3	Spring, Pinch Roller	250040005P	6	100
4	Pinch Roller Housing	250025030P	2	75
5	Seal, LED Housing	250028069P	1	10
6	Torsion Spring	250048006P	2	75
7	Shaft, Cartridge Latch	250037005P	1	25
8	Pinch Roller Assembly	250015020P	6	75
9	Pinch Roller	250029011P	6	25
10	Loom Control PCA – LED PCA	250073003P	1	10
11	Cover, LED Housing	250023031P	2	25
12	Lens, LED – Euro	250028204P	2	15
12	Lens, LED – Russia/Saudi	250029033P	1	15
13	LED Housing – Russia/Saudi	250023195P	1	10
14	TRI-LED Board - Russia	250062063	1	1

# MAGAZINE ASSEMBLY



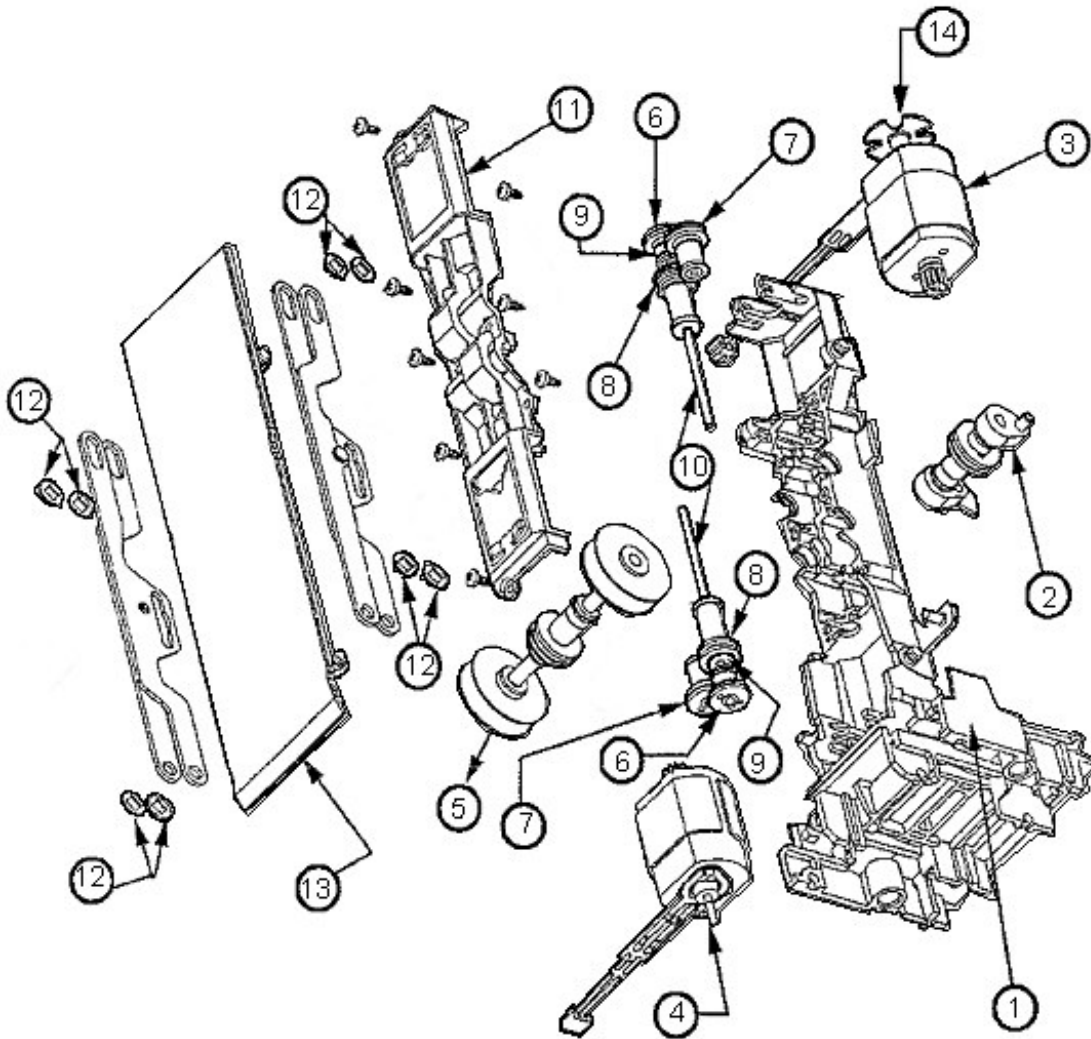
	Part Description	Part Number	Qty per Assembly	Qty per Pack
1	Magazine Prism	250027176P	1	5
2	Magazine Label - German	250050331P	1	25
2	Magazine Label - Spanish	250052330P	1	25
2	Magazine Label - French	250057329P	1	25
2	Magazine Label - Italian	250058332P	1	25
2	Magazine Label - English	250059328P	1	25

# STACKER / DRIVE BELTS ASSEMBLY



	Part Description	Part Number	Qty per Assembly	Qty per Pack
1	Stacker/Drive Assembly	250010195P	1	1
2	Tensioner Assembly	250064067	2	10
3	Spring, Tensioner	250045016P	2	100
4	Pulley, Wheel	250021010P	2	25
5	Timing Belt 143T	250028162P	2	100
6	Pulley, Compound	250026009P	2	25
7	Shaft, Pulley	250033002P	2	100
8	Timing Belt 56T	250023014P	2	100
9	Tire(ORC)	250025013P	2	100

# GEARBOX ASSEMBLY



	Part Description	Part Number	Qty per Assembly	Qty per Pack
1	Housing, Gearbox	250023019P	1	5
2	Stacker Shaft Assembly	250018015P	1	10
3	Transport Motor Kit	250085012P	1	5
4	Stacker Motor Kit	250087011P	1	5
5	Transport Shaft Assembly	250010019P	1	5
6	Compound Gear 48DP	250020002P	2	50
7	Compound Gear 38/48DP	250028003P	2	50
8	Worm 32DPN/13T	250026004P	2	50
9	Thrust Washer	250032011P	2	100
10	Shaft Gear	250035001P	2	50
11	Cover, Gearbox	250028020P	1	25
12	Push Ring	250029016P	8	100
13	Pusher Plate (Russia/Saudi)	250020024P	1	10
13	Friction Pusher Plate (Euro)	250028221P	1	10
14	Tach Disk	250020080P	1	25

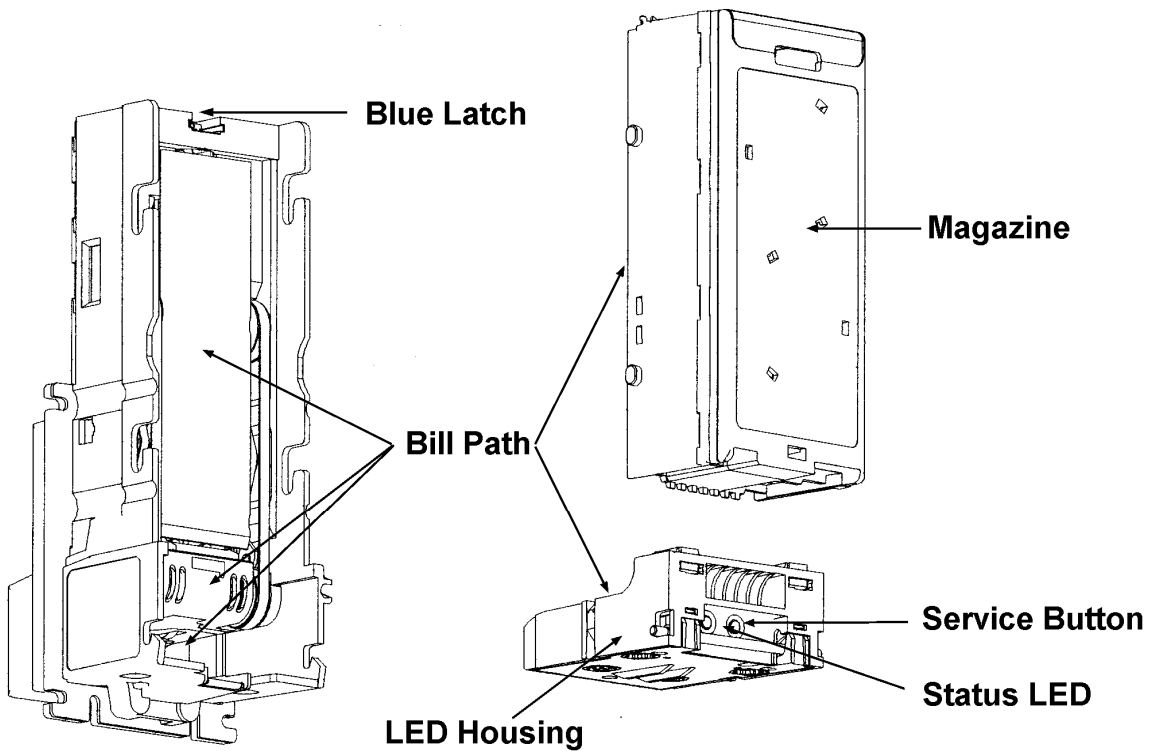
# MAINTENANCE

## CLEANING

The VN2600 series will not need cleaning as often as magnetic sensing Note Acceptors. If cleaning is required, use a soft cloth moistened with mild, non-abrasive detergent. Maintenance should be performed by a properly trained service technician.

You can clean the note acceptor while it is still mounted in the machine (refer to Figure below).

1. Remove power from the machine.
2. Unlatch the magazine by pushing the blue latch (located on the top of the unit) toward the front of the unit.
3. Unhook and remove the magazine by holding the latch and lifting up and then back on the magazine.
4. Unlatch the LED Housing by lifting up on the metal bar (located below the Status LED).
5. Remove the LED Housing by holding the metal bar and pulling back on the LED Housing.
6. Clean the note path with a soft cloth. You may use mild, non-abrasive, non-petroleum **based cleaners if sprayed on the cloth.**



# TROUBLESHOOTING


## FLASH CODES

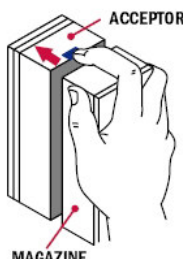
### Status LED

The Status LED provides assistance in diagnosing the condition of the 2000 Series. The following is a description of the LED codes, their meanings and suggested remedial actions.

Signal	Meaning	Solution
<b>LED ON</b>	Indicates that the unit is enabled and ready to accept a note.	No action necessary.
<b>LED OFF</b>	Indicates that no power has been applied to the unit.	Check to ensure that power is applied.
<b>1 Flash</b>	Indicates that something is obstructing the note path.	Remove the magazine and LED housing; inspect for foreign material.
<b>2 Flashes</b>	Indicates that the unit is not enabled.	Verify configuration. Check the coin tube levels in the coin changer. Check the option switches in the coin changer. <b>Note:</b> Many machines disable the note acceptor if the machine door is open and the door switch is not activated or if the machine is out of product.
<b>3 Flashes</b>	Indicates that the note path needs cleaning for optimum performance.	Remove the magazine and LED housing and follow cleaning instructions (page 18) to clean the note path.
<b>4 Flashes</b>	Indicates that something is obstructing the note path.	Remove the LED housing and look at the note path on the housing and inside the unit for foreign material; clean as necessary.
<b>5 Flashes</b>	Indicates that the magazine is removed (the unit will not accept without the magazine attached).	Reinstall the magazine.
<b>Continuous Slow</b>	Unit is defective.	Replace the unit.
<b>Continuous Fast</b>	The magazine is full of money	Remove the money from the magazine.

This is the Flash Codes label included in the Note Acceptor box which can be stuck at the rear of the magazine. LED is under the magazine.



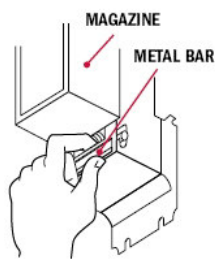


**REMOVING MAGAZINE**  
Push latch on acceptor forward. Slide magazine toward latch and pull away from acceptor.

**COUPON SETUP**  
Coupon recognition requires all switches to be OFF. Press ● on rear of LED cartridge to enter coupon mode. Insert completed coupon. LED will flash 10 times upon successful completion.

Diagnosis (RED LED LOCATED ON REAR OF LED CARTRIDGE)	
LED ON = OK	LED OFF = power off
# FLASHES	STATUS
1	bill path jammed
2	disabled from system
3	needs cleaning
4	cross channel blocked
5	magazine removed
continuous, slow	unit failure; replace unit
continuous, fast	stacker full

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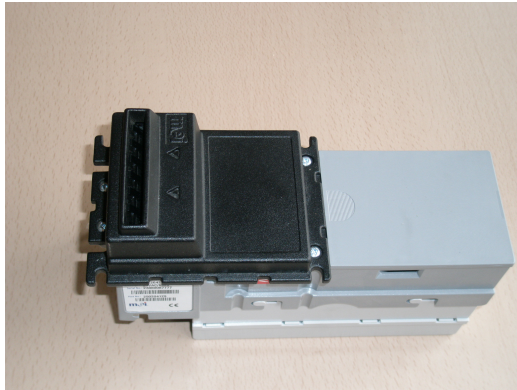


**CLEANING THE BILL PATH**  
Squeeze the metal bar and pull back. Remove both LED cartridge and magazine for full bill path access.

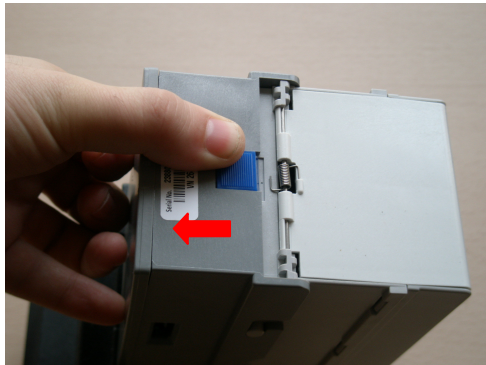
**CHECK LIST**

<b>If a problem occurs</b>	<b>Please check the following</b>
Unit dead (won't power up).	<ol style="list-style-type: none"> <li>1. Loom(s) may be loose, not properly connected, or bent pins.</li> <li>2. If Ardac T-adapter cable has been used at power up, the unit is defective.</li> <li>3. Check source voltage to ensure that power is being supplied to the note acceptor.</li> </ol>
Red message light flashing twice (disabled from coin mech).  <b>NB:</b> If flashing other than twice refer to label located on back of the magazine.	<ol style="list-style-type: none"> <li>1. Make sure coin mech has enough change to cover all lower coin tube sensors.</li> <li>2. Check settings on both the controller and note acceptor to ensure that proper interface options are being used. For more information on interface options check the machine manufacturer service guide.</li> <li>3. On controller applications make sure that the door switch is closed. Then vend one time using coins only.</li> </ol>
Unit takes note, but won't credit.	<ol style="list-style-type: none"> <li>1. Check interface switch on coin mech to see if correct interface option is being used. Single price applications could be in either low level or high level interface mode.</li> </ol>
Note is not properly taken.	<ol style="list-style-type: none"> <li>1. Check Belts and Transport Motor.</li> </ol>
Note is not correctly stacked, there are jams at Stacker entry.	<ol style="list-style-type: none"> <li>1. Check Stacker Motor. Check Gearbox assemblies.</li> </ol>

# DISASSEMBLY INSTRUCTIONS



These are the instructions to disassemble and assemble the Note Acceptor.

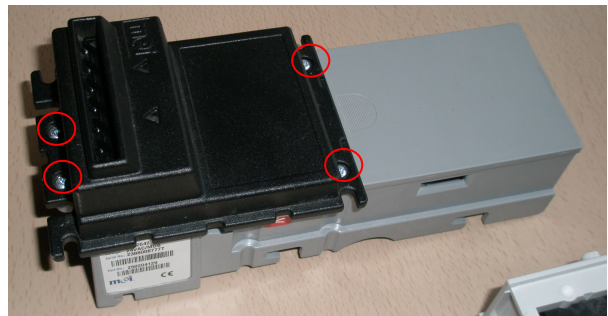


Unlatch the magazine by pushing the blue latch.

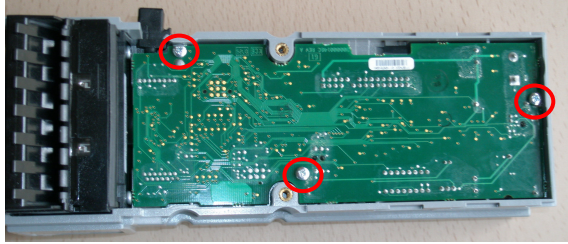


Unhook and remove the magazine by holding the latch and lifting up and then back on the magazine.

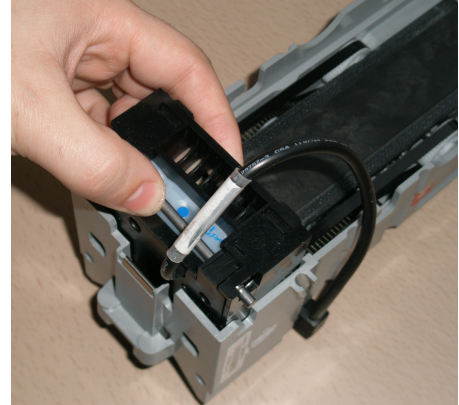
Unscrew the four philips screws of the bezel to remove it.



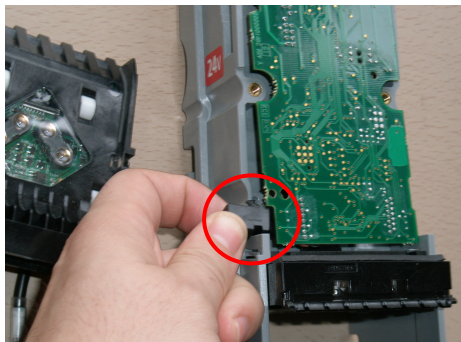
Slide the control board cover as it's shown in the picture.



Unscrew the control board screws.

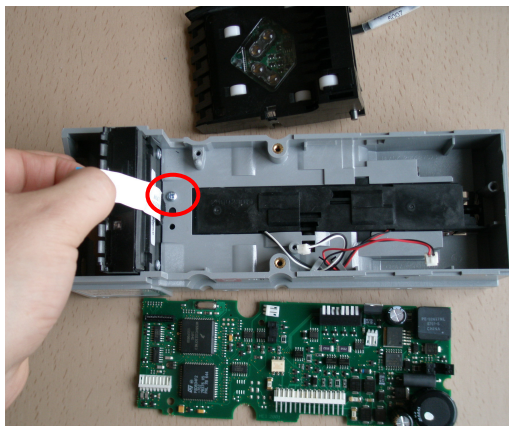
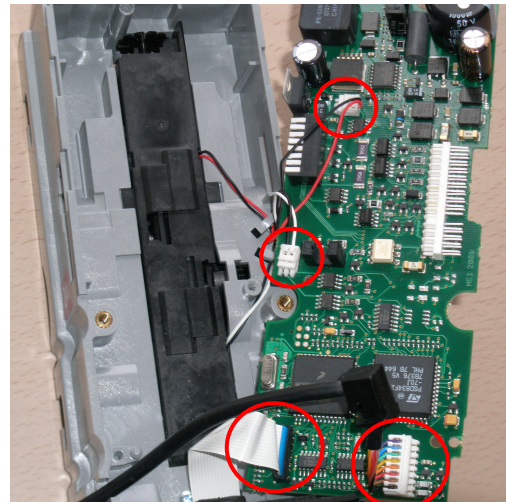


Unlatch the LED Housing by lifting up on the metal bar (located below the Status LED).

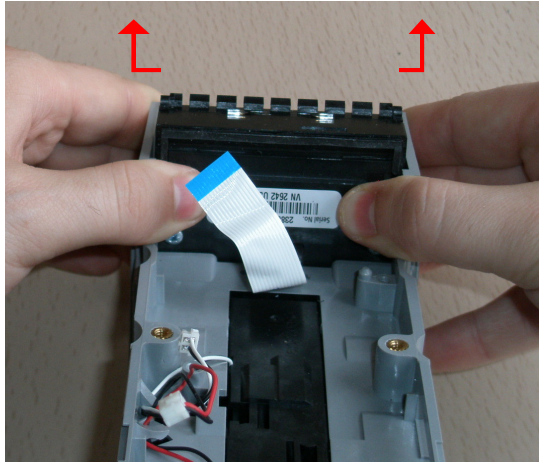


Lift up the LED Housing cable gasket in the Chassis Assembly. The Control Board will be lifted at the same time.

Disconnect the cables of the Control Board: LED board, Sensor board, Transport Motor and Stacker Motor.

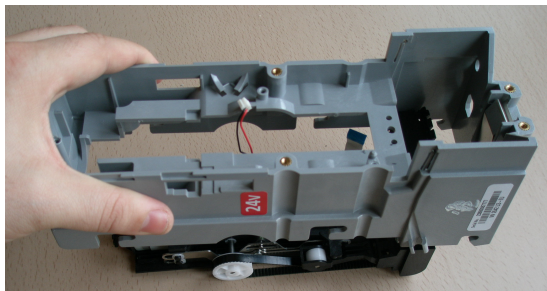
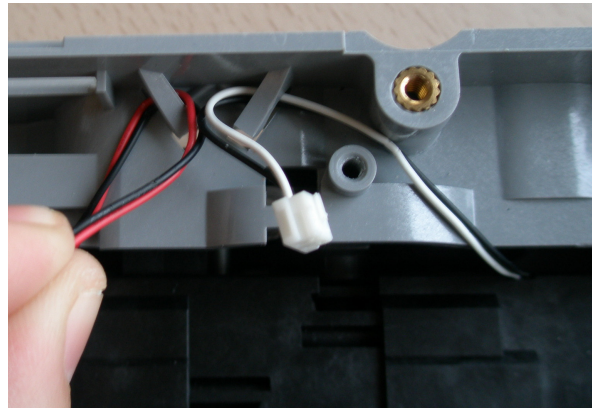


Unscrew the Gearbox Chassis screw.



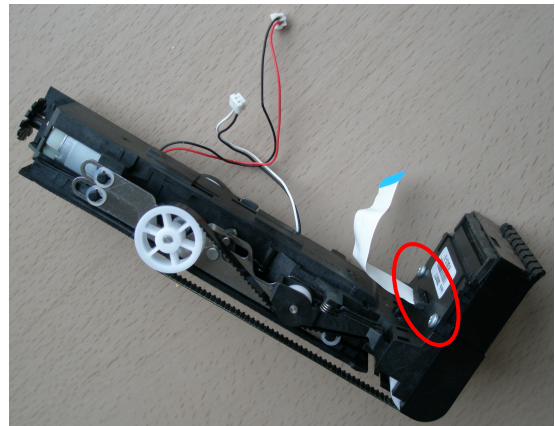
Unclip the Sensor Housing by pushing the Chassis laterals then push the housing as the picture arrows show.

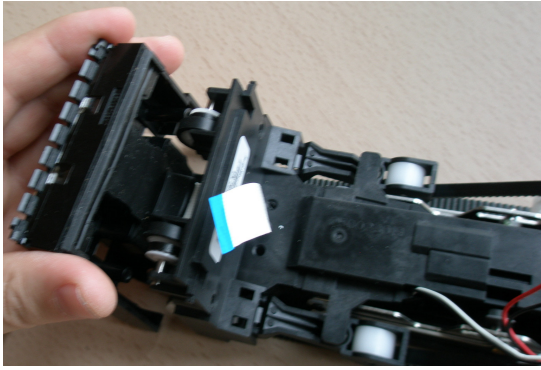
Unclip the Motor cables from Chassis clips.



Lift the Chassis separating it from the Gearbox.

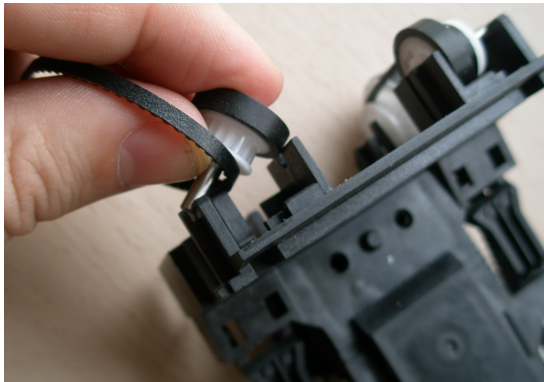
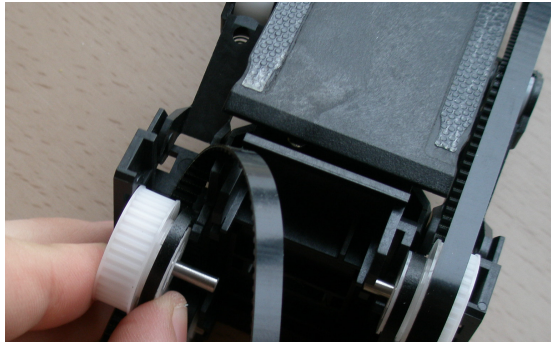
Unscrew the Sensor Housing screws.



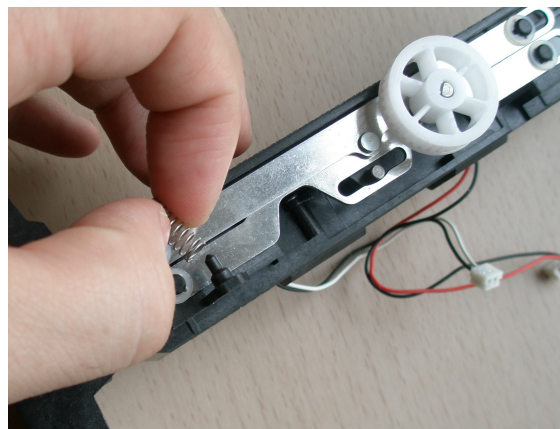


Pull Sensor Housing out from Gearbox Assembly.

Remove Belts from wheels.



Remove the Tensioner springs.

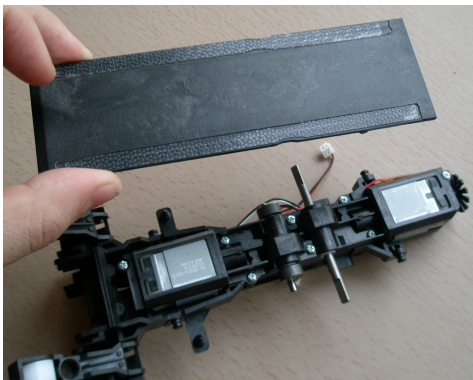
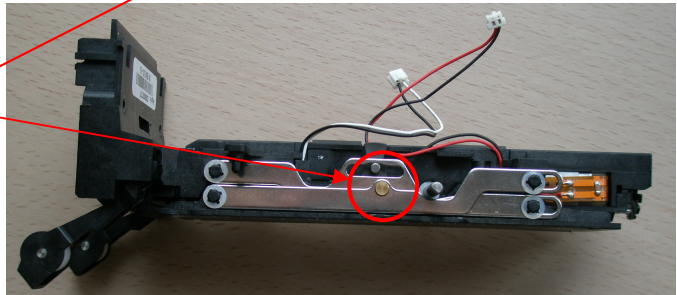
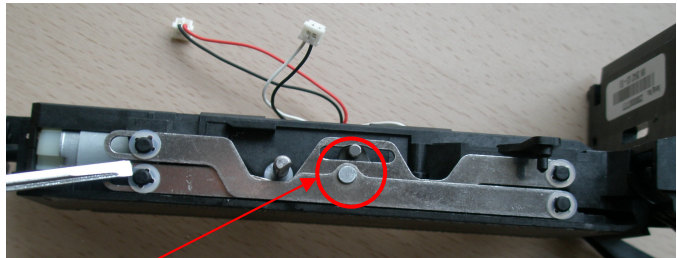




Remove wheels of both sides of Gearbox.

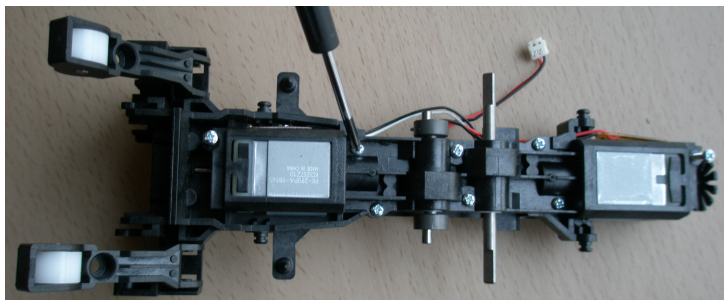
Remove the eight plastic Push Rings on both sides of Gearbox then remove the metals that move the Pusher Plate.

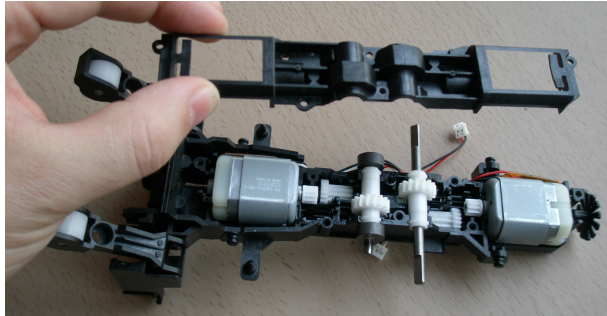
**Note that each metal has its position when assembly (silver and golden).**



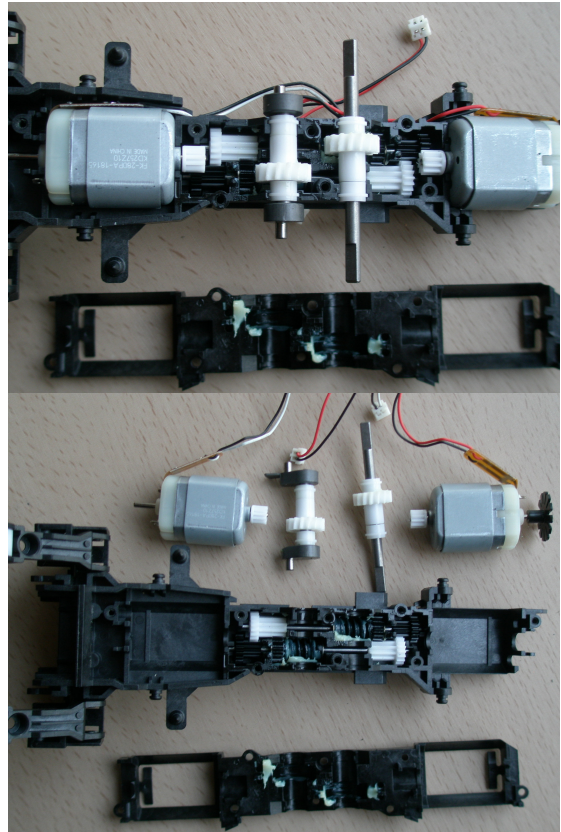
Remove the Pusher Plate.

Unscrew the Gearbox cover screw.

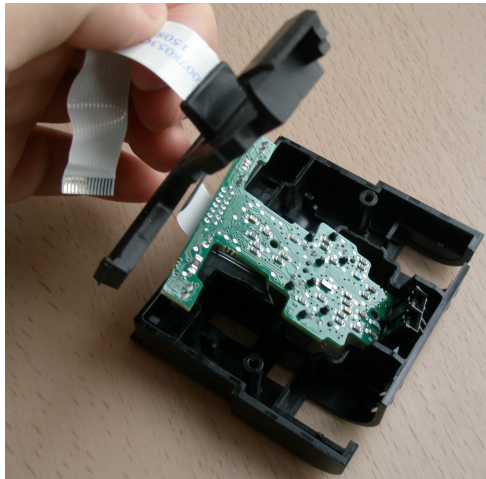




Lift and remove the Gearbox cover.

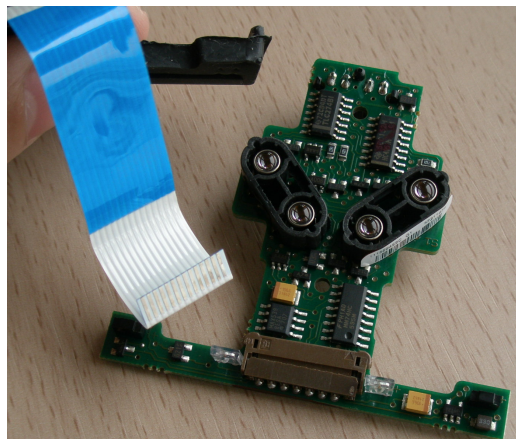


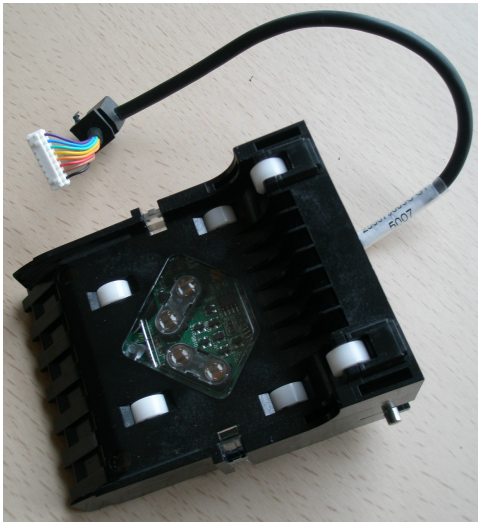
It is now possible to remove the Motor kits, the Transport Shaft, Stacker Shaft and the different gears.



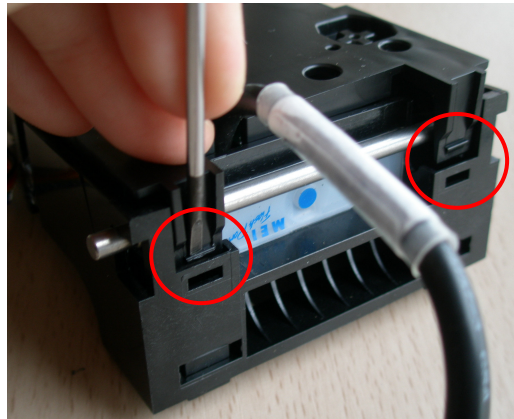
Remove the Sensor housing gasket by pulling the cable to reach the sensor board.

It is now possible to access to the board and disconnect the sensor cable.

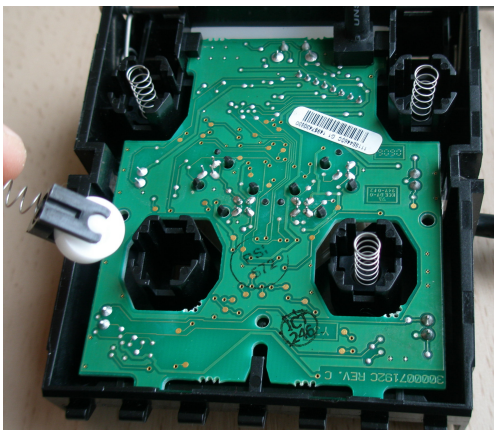
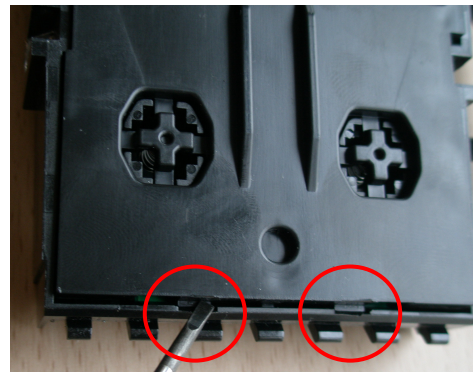




To open the LED Housing, follow the next steps.

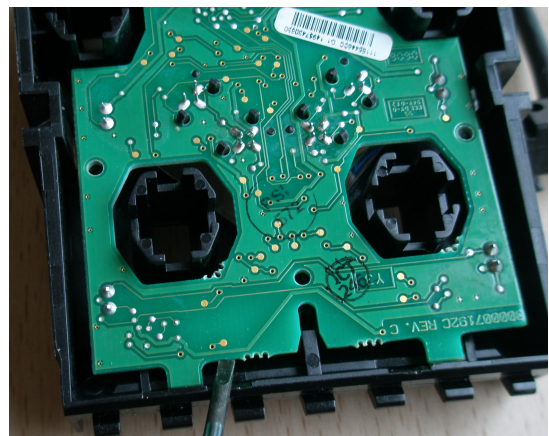


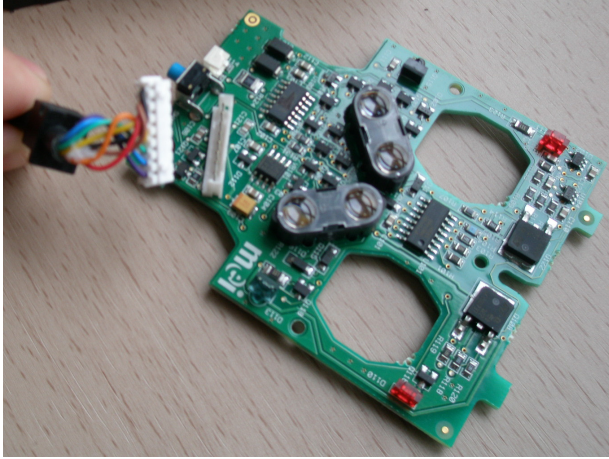
Unclip the cover on both sides as the pictures show.



Remove the 4 springs with the wheels.

Lift the board from below to remove it.





It is now possible to disconnect the cable from the LED board.

## PRODUCT SUPPORT

In addition to the MEI offices around the world an international network of Distributors and Approved Service Centres can offer you technical support and other services as well.

These services include repairs, re-programming of your MEI products with new coinsets, billsets, replacing damaged modules, and the supply of a range of spare parts.

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