User Manual

Color Card Printer

TOP-ino

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Contents

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1. Introduction

The **TOP-*ino*** is a high speed, reliable, compact, full color edge to edge printer for plastic cards. As an option the **TOP-*ino*** has a magnetic stripe encoder and/or a chip-module. The **TOP-*ino*** can works with any other personalising system by using Win 3.11, Win 95, Win 98 or NT 4.0 driver.

By keeping already known advantages of the **TOP** as print speed, precise mechanical engineering and compact design we succeeded in development of a new printer for a wide range of card printing applications.

The **TOP-*ino*** includes the features:

- Ultra fast 25 seconds full color, edge to edge printing
- Ease for operation

Front panel LCD for printer status
Internal diagnostic software
Easy access card cleaning
Fitting to a variety of ribbon types from monochrome to color
High precision mechanical assembly
“Please take your time to read this manual”

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2. Getting Started

2.1 Preparation of the place of installation

The installation area must be even and stable. Make sure that there is enough space:

- to be able to connect the cables,
- that air may circulate through the ventilation slits.

The printer must be applied according to application conditions concepted for it (see 8.).
The case or even the internal parts of the printer may never get in contact with any liquid.

2.2 Unpacking

After removing the packing material from the printer check the contents of the carton:

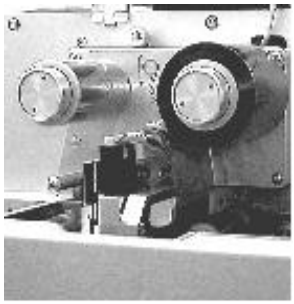
- Printer **TOP-*ino***
- Power Cable (DIN-standard)
- Centronics Cable
- Sublimation Ribbon (YMCKO for 250 cards) with an empty spool
- Card Support Weight
- 2 cleaning rolls
- Card Output Plate
- Spherical Typehead Screwdriver
- Operating Instructions
- Diskette with the printer software and the print head parameters
- Printer Driver (diskette) with installation manual

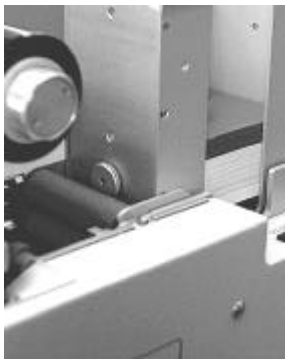
2.2 Connecting the power

On the backside of the **TOP-*ino*** are the connectors and the power switch.

1. Switch Off the power switch (“O“ must be switched down).
2. Connect the power cable (pay attention to a tight fitting) and only use a grounded wall outlet socket.
   The change of the power to 110 V is automatically.
3. Switch On the **TOP-*ino*** (“1“ must be switched down).

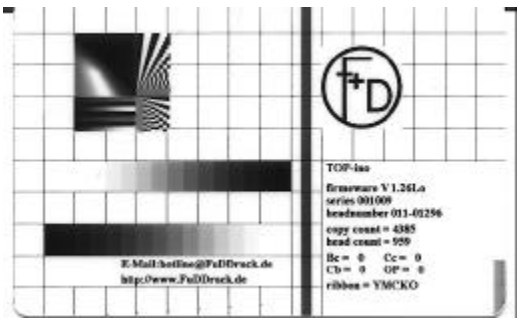
2.3 Loading the ribbon, cards and cleaning rolls





Open the cover.
In order to make the printer operable you must insert the sublimation ribbon (s.4.1).
Put the blank cards into the card feeder, which is at the right side. In order to guarantee an optimal color print you should only use color ribbons and card material recommended by the manufacturer.
Put the plastic cards that are to be printed into the card feeder. On top of the card stack put the card support weight (grey plastic part). At the left side hang on the card output plate. The gate of the card feeder is set for 0,76 thick cards.
Put in the two cleaning rolls (see Ill.).
Close the cover.
Note: *The quality of the printed cards depends on the quality of the blanks cards and how to handle the cards (Never touch the cards with your fingers). To guaranty the best quality order the ribbon and the cards from F+D Feinwerk- und Drucktechnik GmbH (see 7.).*

2.4 Running the self test



With the printing of the test card you will get your first experience with the **TOP-*ino***. This is the internal printer test. The test card shows you the print quality and the print speed.

1. Switch On the **TOP-*ino*** and wait for the initialisation.
2. Press the ***online/select*** key.
3. Press the ***print/menu*** key.
4. Press the ***print/menu*** or ***clear/ff*** key until on the LCD appears – print test card -. Press the key. Now is printing the testcard.
5. Back to the On-line mode. Press in the same time the keys ***print/menu*** and ***clear/ff***. After that press the ***online/select*** key.

On the card there are, among others, the Software applied in the printer (V 1.26lo), the cards printed before with the printer (copy count, head count), and the parameter (Bc,Cc,OP,Cb,ribbon), with which this card was printed.

2.5 Connecting the printer to your PC

When connecting the cables please pay attention, that all interface- and/or power cables are grounded properly and that they are in accordance with the electronically regulations.

The interface connections are located on the back side of the printer.

In order to connect the Centronics cable align the wide side of the plug to the wide side of the printer socket. Afterwards tighten the plug with the two screws in order to establish the electrical contact in a stable way.
Then connect the cable to the computer (corresponding parallel interface).

2.6 Printing a card from your PC

The target is to print a card from your PC. For this you must prepare the PC, that means install the software. Before printing install the **TOP-*ino*** printer-driver. (diskette).Start your windows-application to create a cardlayout (as a sample you can use WORD from Microsoft). Make the following: Install the windows-driver regarding to the installation manual.

1. Start the windows-application
2. Switch On the **TOP-*ino*** and wait for the initialisation (on the LCD appears –printer ready-)
3. Print from the application (before set the **TOP-*ino*** printer in the printer Setup)
4. Check the printed card.

2.7 Serial Interface

This serial interface is used for remote control.
Here it is possible to control and supervise the complete print technical process by using a terminal (i.e. Win 3.11, accessories, terminal, 9600 b/s or Win 95 with the hyperterminal). The main functions are password secured.

3. Operation

3.1 Operation Panel

Key functions

***online/select** key*

From the On-line Mode to the Off-line Mode
1. Confirmation of the selected menu-function
2. From the Off-line Mode to the On-line Mode

***print/menu** key*

Print the last card out of the memory
In the Off-line Mode start the menu
3. Going up in the Menu- , Parameter- and Setup- Mode.

***clear/ff** key*

1. Clear the any error messages
2. Form feed of a card
3. Going down in the Menu- , Parameter- and Setup-Mode.

All three keys

This is the ***Reset*** –function from all modes (hold the keys down until the red error LED is off).

print/menu key and ***clear/ff*** in the same time

1. From the Parameter-Mode in to the Menu-Mode
2. From the Menu-Mode in to the Off-line Mode

LEDs

error

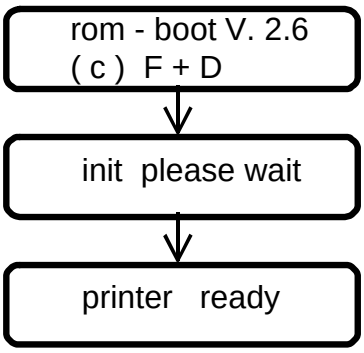
When the red error - LED is on or is blinking, than was an error. The error-message is on the LCD panel. Some errors can be cleared, when you are pushing down the ***clear/ff*** key.

online

When the green LED is on, than the **TOP-*ino*** is in the Online-Mode. After switch on the power switch the **TOP-*no*** is going in to the On-line Mode.

3.2 Operation

3.2.1 On-line Mode



After switching on the LCD panel of the **TOP-*ino*** appears the showed indication.
Note: *Only in this Mode you can print from your PC.*

Key functions:

online/select *key*

Press this key, then the **TOP-*ino*** is going to the Off-line Mode.

print/menu *key*

Press this key, then the last card from the **TOP-*ino*** memory is printing. When no card was printed from the TOP-ino before, no function of this key.

clear/ff *key*

Press this key, then the error will be cleared in some cases (end of the ribbon, torn ribbon).

3.2.2 Off-line Mode

From the On-line Mode you are going by pushing down the ***online/select*** key in the Off-line Mode.

After that on the LCD panel appears the indication.
Note: *In this Mode you can't print from your PC.*

Key functions:

online/select

From the Off-line Mode you are going back to the On-line Mode (s. 3.2.1).

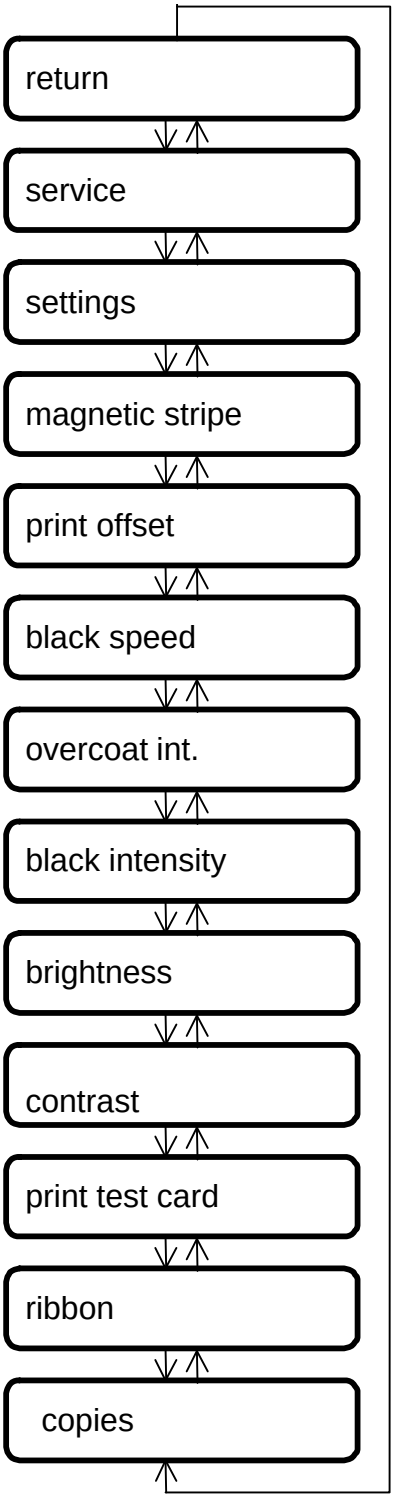
print/menu

From the Off-line Mode you are going by pushing down this key to the Menu-Mode (s. 3.2.3).

clear/ff *key*

Form feed of a card.

3.2.3 Menu-Mode



From the Off-line Mode (s. 3.2.2) to the Menu-Mode by pushing down the ***print/menu*** key.

Key Functions:

online/select

From the Menu-Mode to the Parameter-Mode (see 3.2.4).

print/menu

Show you the Menu parameters in the up direction.

clear/ff

Show you the Menu parameters in the down direction.

print/menu and ***clear/ff*** in the same time

Go back to the Off-line Mode (see 3.2.2).

3.2.4 Parameter-Mode

From the Menu - Mode (see 3.2.3) you are going by pushing down the ***online/select*** key to the Parameter Mode.

Key Functions:

online/select

Confirm the selected parameter.

print/menu

Show you the parameters in the up direction.

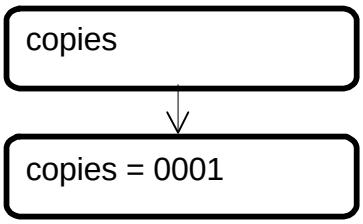
clear/ff

Show you the parameters in the down direction.

print/menu and ***clear/ff*** in the same time

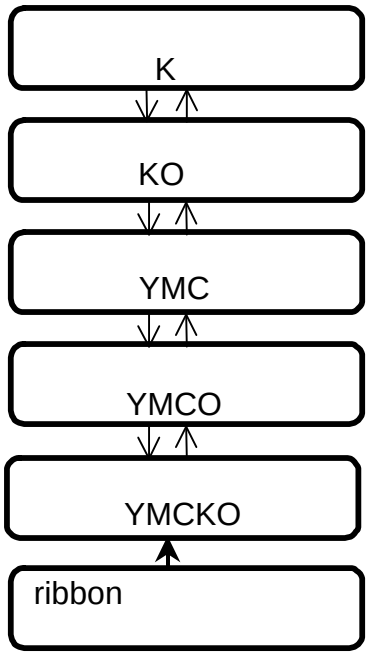
Go back to the Menu Mode (see 3.2.3).

3.2.5 Setup-Mode



1. Copies

Set the quantities of the to be printed cards (from the **TOP-*ino*** memory).
With the ***print/menu*** (up) key and ***clear/ff*** (down) key you set the quantities of the copies. After confirmation (***online/select*** key) go from the Parameter Mode to the Menu-Mode, then to the Off-line Mode and then to the On-line Mode and press the ***print/menu*** key.
Now the copies will be print.

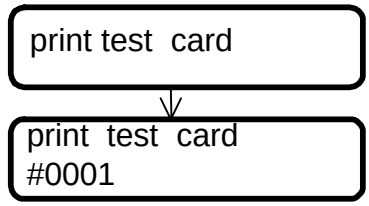


2. Changing the ribbon type

You can use different types of sublimation ribbon and a monochrome ribbon. In the factory the ribbon is set for the YMCKO-ribbon.
When you are using another type of ribbon, you have to set this type.

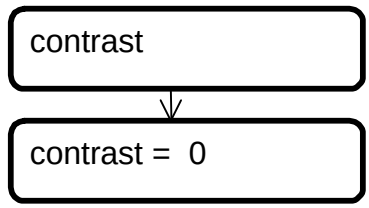
1. Switch Off the **TOP-*ino***
2. Change the ribbon (see 4.1)
3. Press the ***print/menu*** key and switch On the **TOP-*ino***. Hold these key down until on the LCD appears –printer ready-
4. Change the Mode. Go from the On-line Mode to the Off-line Mode and then to the Menu-Mode in the Parameter-Mode until on the LCD appears – ribbon-
5. Press the ***online/select*** key
   Select with the ***print/menu*** and ***clear/ff*** the ribbon type
5. Confirm the selected ribbon type with the ***online/select*** key
7. Now the **TOP-*ino*** will check the set ribbon type. Please wait. Go back to the On-line Mode, press all three keys together.

Note: *In the error case check the ribbon type in the* **TOP-*ino*** *and in the software.*



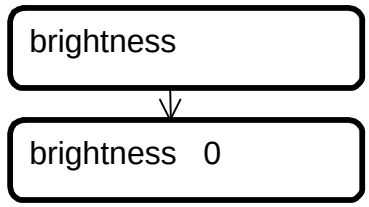
3. Print Test Card

Press ***online/select*** key. After that will be printed the internal testcard.



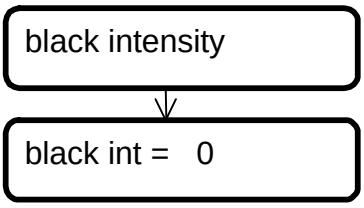
4. Contrast

Select the parameter with the ***print/menu*** and ***clear/ff*** keys.
Confirm the selected parameter with ***online/select*** key.
The range is from –5 to +5. A higher value means a higher color contrast.
This parameter will be temporary saved in the **TOP-*ino***, but will be also temporary overwrite every time from Windows™–Driver.



5. Brightness

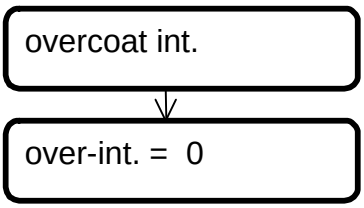
Select the parameter with the ***print/menu*** and ***clear/ff*** keys.
Confirm the selected parameter with ***online/select*** key.
The range is from –5 to +5. A higher value means a lighter picture on the card.
This parameter will be temporary saved in the **TOP-*ino***, but will be also temporary overwrite every time from Windows™–Driver.



6. Black intensity

Select the parameter with the ***print/menu*** and ***clear/ff*** keys.
Confirm the selected parameter with ***online/select*** key.
The range is from –5 to +5. A higher value means a higher contrast in the resin black.

This parameter will be temporary saved in the **TOP-*ino***, but will be also temporary overwrite every time from Windows™–Driver.

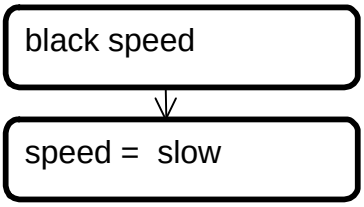


7. Intensity Overlay

Select the parameter with the ***print/menu*** and ***clear/ff*** keys.
Confirm the selected parameter with ***online/select*** key.
The range is from –5 to +5. A higher value means a higher intensity in the overlay.

This parameter will be temporary saved in the **TOP-*ino***, but will be also temporary overwrite every time from Windows™–Driver.

Note: *Check this parameter, print a testcard. The surface of the card should be shining.*

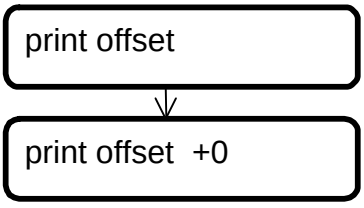


8. Speed resin black

Select the parameter with the ***print/menu*** and ***clear/ff*** keys.
Confirm the selected parameter with ***online/select*** key.
Slow: 21 mm/sec and High: 42 mm/sec.

This parameter will be temporary saved in the **TOP-*ino***, but will be also temporary overwrite every time from Windows™–Driver.

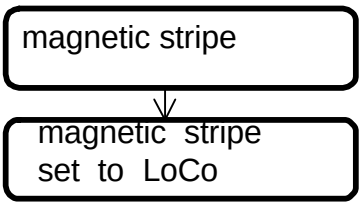
Note: *When your are setting this parameter from slow to high, you have also to increase the black intensity.*



9. Print Offset

Select the parameter with the ***print/menu*** and ***clear/ff*** keys.
Confirm the selected parameter with ***online/select*** key.
The range is from –9 to +9. 1 step means 1/12 mm.
This value will be saved as a default.

Note: *Check the print position and print a testcard.*

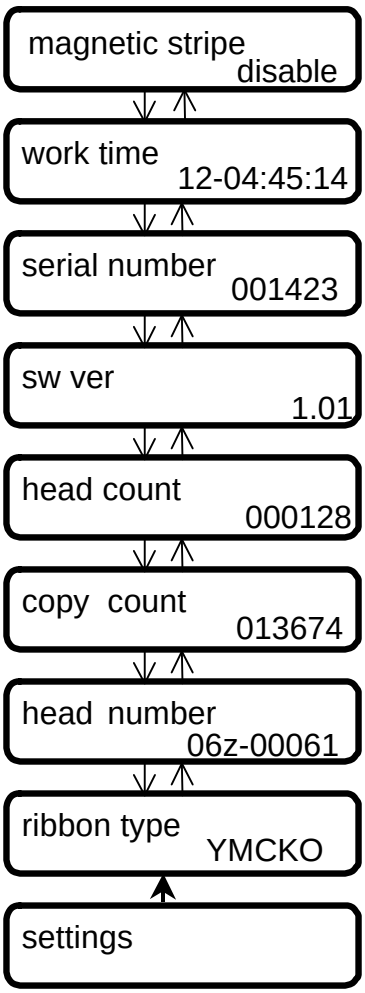


10. Magnetic Stripe Encoder

Select the parameter with the ***print/menu*** and ***clear/ff*** keys.
Confirm the selected parameter with the ***online/select*** key.

The parameter will be saved in the **TOP-*ino***.
You can set HiCo or LoCo.

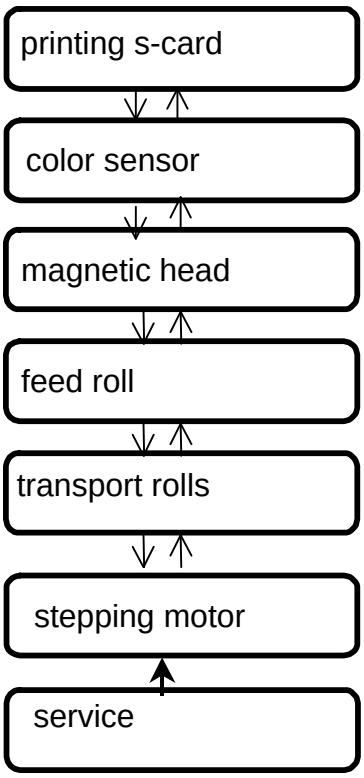
Note: *Your* **TOP-*ino*** *must be prepared for this settings.(swichtable magnetic head).*



11. Settings

Select with the ***print/menu*** and ***clear/ff*** keys the value.
Here is the printer status. You can't change anything.

Ribbon type:	Which ribbon type is set
Head number:	Serial number of the thermal head
copy count:	Counter of the general printed cards
Head count:	Counter of the printed cards with the current print head
SW Ver.:	Software Version (firmware)
Serial number:	Serial number of the **TOP-*ino***
Work time:	Working time (Days - Hours : Minutes : Seconds)
Magnetic stripe:	Option

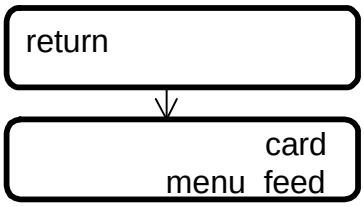


12. Service

Select the value with the keys ***print/menu*** and ***clear/ff***.
Confirm the value with the key ***online/select***.
The software will test the selected parameters.

Stepping motor:	Stepping motor on/off
Transport rolls:	Move the transport rolls up/down
Feed roll:	Move the feed roll up/down
Magnetic head:	Move the magnetic head up/down
Color sensor:	Indicate the color sensor value for different color ribbon panel
Printing s-card:	Print the service card

Note: *The parameter – stepping motor – is helpful for the cleaning the transport rolls.*



13. Return

Confirm with the ***online/select*** key. Now you are in the Off-line Mode.

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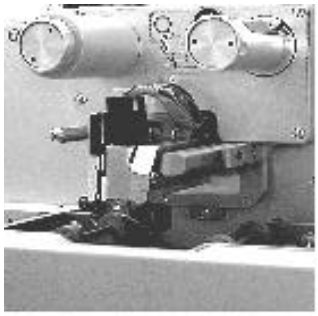
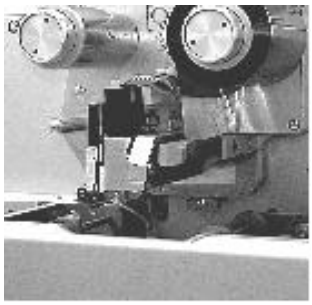
4. Service

4.1 Changing the ribbon





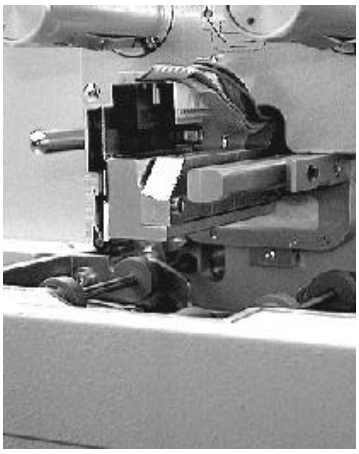
1. Disconnect the printer from the power.
2. Unlock the thermal head.
   To do so, move the release lever to the left and push the thermal head up.
3. Fasten the thermal head in the upper position (Ill.)
   The release lever must be moved back to the right.
4. Remove the wind- and unwind spools
   Pull the wind- and unwind spools off to the front.
5. Insert the empty wind up spool (you may use the old unwind spool for this, Ill.).
6. Insert a new color ribbon spool serving as unwind spool.
7. Mount the color ribbon according to the drawing (Ill.).

Note: *Doing this, pay attention that the two color ribbon spools both are pushed back until to be fixed to the buffer.*

8. By three complete rotations you achieve a fixation of the color ribbon on the wind up spool.
9. Unlock the thermal head.
   To do so, move the release lever to the left and push the thermal head slightly down.
10. Fasten the thermal head in the lower position.
    The release lever must be moved back to the right (Ill.).
11. Switch the printer back on by using the power switch.
12. Print a test card and check the print quality.

Note: *Pay attention that the ribbon is fixed according to the drawing in the printer).*

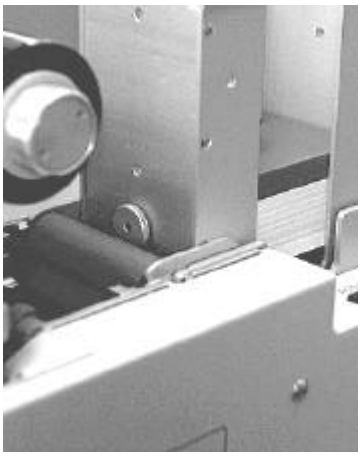
4.2 Changing the thermal head



1. Follow the steps 1. to 4. of changing the color ribbon.
2. Release the cable connection to the thermal head (pull up and off).
3. Remove the two screws on the mounting of the thermal head (Ill.).
4. Pull the thermal head with heat sink off to the front.
5. Insert the new thermal head very carefully.
6. Tightened the two fastening screws.
7. Re-establish the cable connection to the thermal head, doing so, you must assure of a stable connection.
8. Follow the steps 5 to 11 of changing the color ribbon.
8. Connect the Centronics cable. Switch on the **TOP-*ino*** and wait for initialisation.
10. Insert the diskette to the floppy drive of the PC.
11. Start the program setuppre.exe under MS-DOS®. Check the head number and the port (Normal LPT1). It takes around 1min time.
12. Switch off the **TOP-*ino***.
13. Switch on the **TOP-*ino***.
14. Print a testcard.

Note: *On the testcard must be the new headnumber and the head count = 0.*
With this software we are setting the voltage of the thermal head and loading the correction table for every dot of the head.

4.3 Changing the cleaning rolls



1. Switch the printer off.
2. Pull the two cleaning rolls up and off (Ill.).
3. Insert new, i.e. cleaned and dry rolls. To do so, insert the rolls from the top and push them down.
4. Switch the printer on again.

The cleaning rolls may be cleaned again with tab water and put them dry back. Cleaning should take place according to contamination.

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4.4 Cleaning the thermal head

1. Take the thermal print head out (s.4.2)
2. Clean the head with a cleaning pen or spirit.
3. Put the head back (s. 4.2)

Note: *The thermal print head is a very sensitive electronic and mechanical part.*

4.5 Update of the Printer Software

For the updating of the printer software you need the printer connected to the PC and the new firmware on the diskette.
Before switching the **TOP-*ino*** On press the on/select and print/menu in the same time down and hold for a short time.
Load the new firmware by the commando string.

copy /b Filename lpt1

After the loading the **TOP-*ino*** is automatically initialised and then is ready for further operations.
Note: *This takes around 1 minute time. Only work in the DOS-mode.*
The latest firmware you can get from the web-site.

4.6 Cleaning of the transport rolls

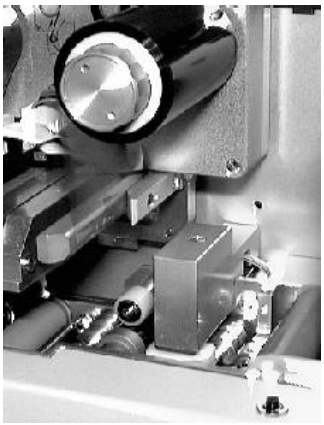
Regularly clean the transport rolls (at least after 500 cards). In the parameter setup 3.2.5 - point 21 Stepping. Push down the button Up. Now the transport rolls are moving. With the help of a moisture cloth (spirit or Isopropanol) touch it very strong to the moving rolls. Clean all 4 rolls. After that push down the Down-button.
The moving of the transport rolls stops.

5. Modifications

5.1 Magnetic Stripe Encoder

This is a option for the **TOP-*ino***.
You have the possibility to encode LoCo or HiCo –cards (see Menu-Mode).
After writing the magnetic stripe is a verify. If the verify is Ok, than the card will be printed. If there is an error, than the printer takes the next cards out of the feeder and make the same procedure again. After three cards with an error the printer send an error message and stops.
Note: *Use only HiCo or LoCo cards according to the printer settings. Set to HiCo- use only HiCo – cards. Set to LoCo – use only LoCo cards.*

5.2 Chip-Module



This is an additional option for the **TOP-*ino***.
You need your own special electronic board for programming the chip.
The instructions, how to operate with the chip-module are in the software manual.

9 pin Chip Interface (external connector)

Pin	Contact
1	5
2	7
3	1
4	3
5	n.c.
6	6
7	8
8	2
9	4

Chip

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6. Troubleshooting

6.1 General Troubleshooting

Error Description	**Possible Error Cause**	**Solution**
Incorrect print, transmission error	Cable defect or not contact, wrong cable	Check the cable and connection
No print	Cover not closed Printer not switched On Fuse defect Power or Centronics cable are not connected Thermal Print Head not connected Printer Off-line End of the ribbon Ribbon torn Cover open	Close the cover Switch the printer On Change fuse Check the cables and connections Connect the print head Set the printer ON-line Insert a new ribbon Rewind the ribbon, check the parameters in the driver and the card material **Clean the transport rolls** Close the cover
No ribbon synchronisation	Ribbon inserted incorrectly	Insert the ribbon according to the drawing an the ribbon type
Card stops during printing	No card transportation	Clean the transport rolls
Ribbon stops during the initialisation	Insert not the right ribbon type	Change the ribbon or change the settings in the firmware
Card feeding error	No card in the feeder Card feeder gate to small or to large	Insert new cards Change the card feeder gate
Card isn‘t print parallel	Card feeder isn’t parallel to the print head	OEM support
Magnetic Stripe encoding error	No magstripe on the card Wrong position of the magstripe Wrong magstripe card	Insert magstripe cards Insert in the correct position Insert HiCo or LoCo cards

6.2 Improvement of the print quality

1. Print too light or rich in contrast
In order to guarantee a constant quality in printing only sublimation ribbon recommended by the manufacturer should be used.
The corresponding parameter may be set in the printer driver.
Read the operation manual for the printer driver

2. Individual Small Areas of not Printed or Printed Incorrectly in Color
This deals with dirt particles which were not removed from the cleaning rolls or the card material is uneven.
The cleaning rolls have to be cleaned immediately.

3. The Card Edges are not being Printed Evenly
There is a “Ridge“ on the card edges.
You should insert different cards or not print all the way to the edge.
Note: *The „Ridge“ normally is only on one side. Change the front- and backside)*

4. Change in Print Quality after Change the Sublimation Ribbon
After insertion of a new color ribbon (according to the specification of the manufacturer) the contrast decreases while printing.
-The ribbon is outdated
-The print parameter must be changed.

5. Horizontal Lines
White or black lines straight through appear, individual dots are not printed. Should the error re-appear after cleaning the thermal head , thus the thermal head is defect and must be exchanged.

6. Vertical Streaks
If it deals with two light streaks in the distance of 3 mm the cleaning rolls should be cleaned before you are starting to work.

7. After Changing the Card Material the Print Quality Changes.
The printer parameter must be installed according to the card material. Only use card material recommended by
F+ O.

8. Printer Offset
When printing the test card an offset of the color lines is observed (Y,M,C). please clean the transport rolls by spirit.

6.3 Printing Time

The **TOP-*ino*** is an ultra high speed color printer. To be use this speed you need a fast data transfer from the PC to the **TOP-*ino***. During the printing the **TOP-*ino*** doesn't wait for the data's.

1. Works only with Win 95
2. Set in the BIOS of PCs the ECP-Mode with a DMA-Channel (before read the PC manual)
3. Check all settings under Win 95
   Settings
   Control Panel
   System
   Device Manager
   Ports (COM and LPT)
   Printer Ports ECP (LPT1)
   Resources – here must be a DMA-channel

7. Accessories

Color Ribbon:	YMCKO	Order-No.: 100 136
	YMC	Order-No.: 100 138
	KO	Order-No.: 100 170
Monochrome Ribbon:	Black	Order-No.: 100 102
Plastic Cards:	White	Order-No.: 100 533
	White with Magstripe (LoCo)	Order-No.: 100 134
	White with Magstripe (HiCo)	Order-No.: 100 222
Thermal Print Head:		Order-No.: 100 167

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8. Technical Specifications

Printing Method:	Dye-sublimation (YMCKO, YMCO, YMC, KO) and Resin/wax thermal transfer monochrome)
Printing Time:	normal speed: max 27 sec hight speed: 19 sec (YMCKO, without data transmission, edge to edge)
Printing Area:	Full Bleed
Print Resolution:	300 dpi
Color Resolution:	8 bit per color (16,7 Mill. colors)
Operation:	Front panel LCD
Interface:	Centronics for PC Serial for service purposes
Controller:	32 bit RISC
Basic Storage:	4 MBytes
Power Supply:	230 / 115 V 0,4 / 0,9 A 50 / 60 Hz stand by 15 W Fuse M2
Dimensions:	H x B x D 220mm x 300mm x 320mm
Weight:	13,5 kg
Card Feeder:	max. 120 cards (0,76 mm)
Card Material:	PVC, ABS, PE, PET
Card Dimensions:	54 mm x 85,6 mm (ISO 7810)
Card Thickness:	0,5 mm up to 1,2 mm
Cleaning Rolls:	Cleaning plastic cards before printing
Operating-temperature:	+10° C up to +35° C
Humidity:	20 - 80 % (no condensing)
Service:	Diagnostic Software
Temperature-Stability:	Fan, Software
optional:	
Magnetic Stripe-Encoder:	ISO 7811, HiCo or LoCo
Chip-Module	

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EG-Konformitätserklärung

Für das nachfolgend bezeichnete Erzeugnis

TOP-*ino*

wird hiermit bestätigt, daß es den Anforderungen entspricht, die in der Richtlinie des Rates zur Angleichung der Rechtsvorschriften der Mitgliedsstaaten über die elektromagnetische Verträglichkeit (89/336/EWG) und der Niederspannungsrichtlinie (73/23/EWG) festgelegt sind.
Durch nicht mit uns abgestimmte Änderungen verliert diese Erklärung ihre Gültigkeit.
Zur Beurteilung des Erzeugnisses hinsichtlich der elektromagnetischen Verträglichkeit und der Niederspannungsrichtlinie wurden folgende Normen herangezogen:

EN 55022 (VDE 0878 Teil 3 / 11.89), Klasse B
EN 60950 (VDE 0805 / 11.93, IEC 950:1991)

Diese Erklärung wird verantwortlich für den Hersteller

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abgegeben durch

U. Stanitz
Geschäftsführer
Neckarsteinach, den 14.09.1998

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