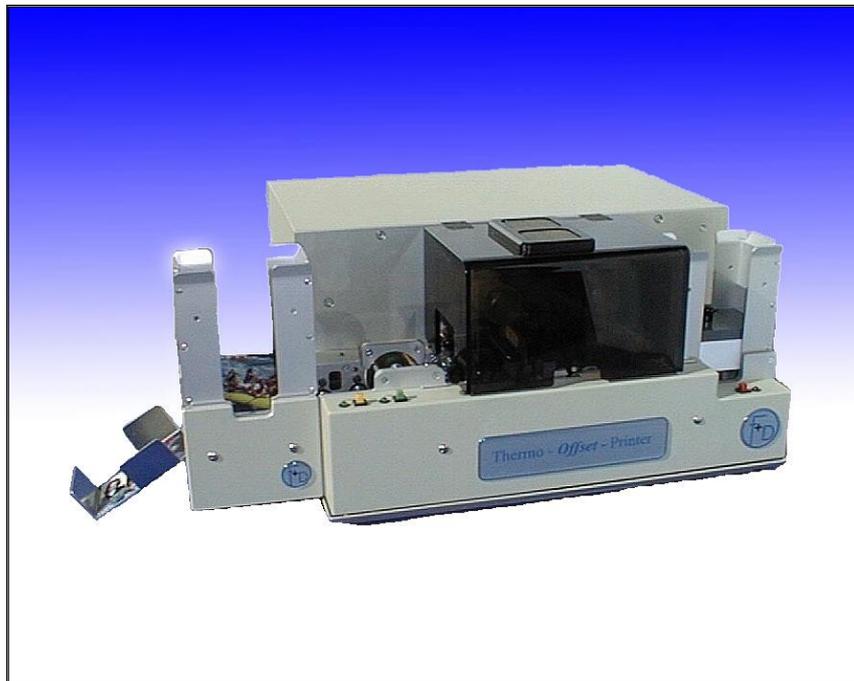


User Manual

Color Card Printer

TOP



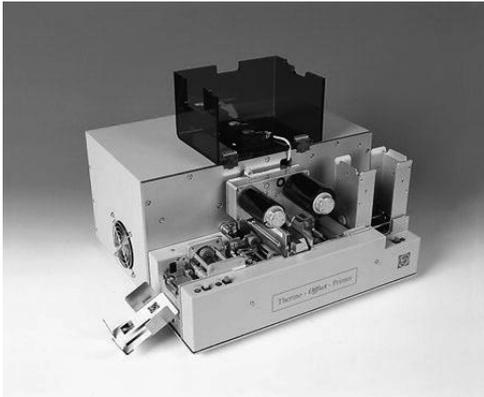
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1. Introduction



The **TOP** is a high speed, reliable, compact, full color edge to edge printer for plastic cards for industrial applications

As features the **TOP** has

- Magnetic Stripe Encoder
- Chip-Modul
- SCSI-Bus
- Automatic Output Hopper
- Flip-Over Module
- Laminator Unit.

The **TOP** can also works with any other personalising system by using Win 3.11, Win 95, Win 98 or NT 4.0 driver.

The **TOP** includes the features:

- Ultra fast 25 seconds full color, edge to edge printing
- Ribbon Saving Possibility
- Ease for operation
- Internal diagnostic software
- Ease 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”



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 conceived for it.

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**
- 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 (only for archiving)
- Printer Driver (diskette) with installation manual

2.3 Connecting the power



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

1. Switch Off the power switch ("O" must be seen on the switch).
2. Connect the power cable (pay attention to a tight fitting) and only use a grounded wall outlet socket.

Note: The voltage of your electricity must be same then in the **TOP**. Otherwise change it in the **TOP**. See the next illustrations.

3. Switch On the **TOP** ("1" must be seen on the switch).

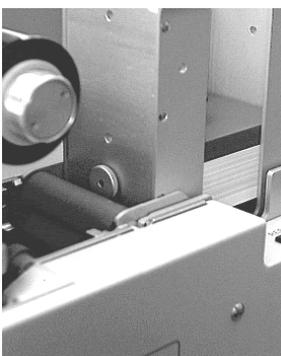
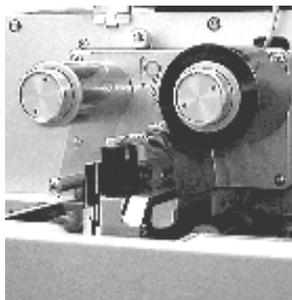




The change of the power to 110 V is demonstrated by III. After opening the cover the corresponding voltage may be set by turning it. At the same time the power fuse is accessible and has to be exchanged. The cover then has to be closed again.



2.4 Loading the ribbon, cards and cleaning rolls



In order to make the printer operable you must insert the sublimation ribbon (s.4.1).

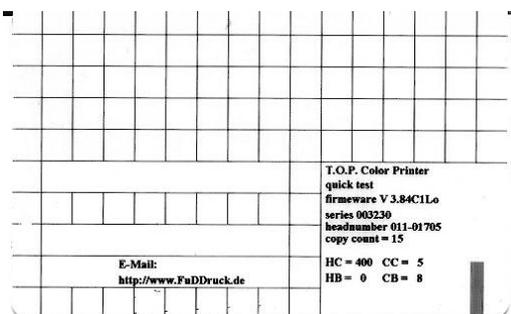
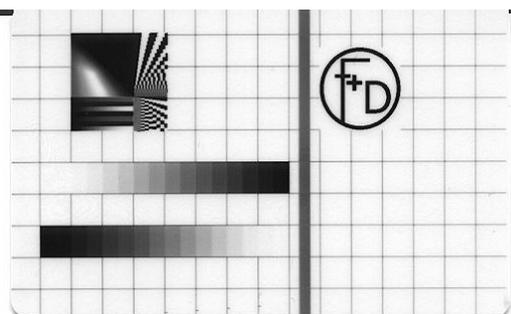
Put the blank cards into the card feeder, which is at the right side. In order to guarantee an optimal color print you should only use color ribbons and card material recommended by the manufacturer.

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 mm thick cards.

Put in the two cleaning rolls (see III.).

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 (see 7.).*

2.5 Running the self test



In order to print a test card out from the printer the following tasks are necessary:

1. Press the ON key so that the printer is in off-line mode (ON-LED off)
2. Press the ON-key again until the LED is blinking.
3. Press the PRN -key briefly.

After about 3 sec. the card illustrated in III. is being printed.

Should this not be the case repeat the initial operation completely in the instructed sequence.

On the card there are, among others, the Software applied in the printer (V 3.54C1Lo), the cards printed before with the printer (copy count), and the parameter (HC,CC,BH,CB), with which this card was printed.



2.6 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).

2.7 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** 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** and wait for the initialisation (the On-LED must be lighting)
3. Print from the application (before set the **TOP** printer in the printer Setup)
4. Check the printed card.

2.8 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

The three keys arranged on the front side of the printer are used for operation of the printer.

3.1 PRN - Key

Pressing this key effects a print function.

Application: 1. Print

Printing of the contents of the printer storage. To do so the printer must be set on off-line. This may be achieved by briefly pressing the ON-key (ON - LED off).

Afterwards you must briefly press the PRN-key. This way, the data contained in the printer storage will be printed.

2. Test Print

Serves for the off-line test of the printer. This way, all functions are being tested. See 2.5.

3. Card Output

To do so, you must press both keys ON and PRN simultaneously for about 2 sec.

3.2 ON

Serves for indication of the operation readiness of the printer. If the LED shines the printer is in on-line mode. This always occurs automatically after switching on the printer. By pressing the ON-key the printer goes into the off-line mode (LED off). Pressing this key again puts the printer back into the on-line mode.

In order to print from the PC this LED must always be on.

3.3 RESET

Application: In case an error occurs during operation (RESET - LED off) this key has to be pressed for debugging.

Pressing the key longer (more than 2 sec.) results in a software reset of the printer.

In case the LED is blinking a debugging (i.e. no more card in the feeder) is possible without starting the printer all over again. By briefly pressing the key the error message is cleared and the program proceeds at the same spot. Before you must clear the error (i.e. insert new cards).



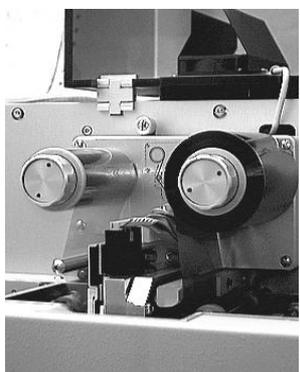
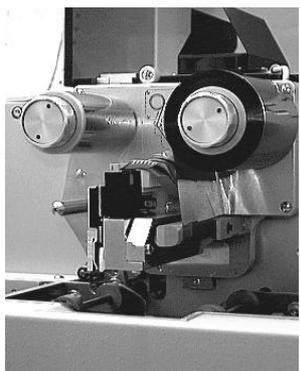
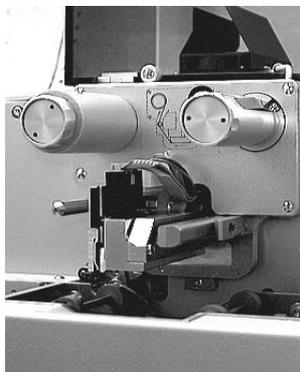
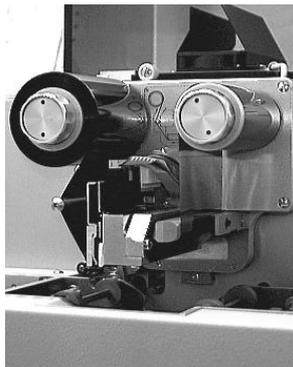
Functions of the Display Elements:

Key	LED	Description
ON	On Off Blinks	Printer switched on, On-line Printer Off-line Test image generating
PRN	On Blinks	Printing process running Data transmission running
RESET	On Blinks	Error message (Hardware-Reset necessary) Error message (Error-debuggable)



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 (III.)
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, III.).
6. Insert a new color ribbon spool serving as unwind spool.
7. Mount the color ribbon according to the drawing (III.).

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 (III.).
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 ribbon is fixed according to the drawing in the printer).



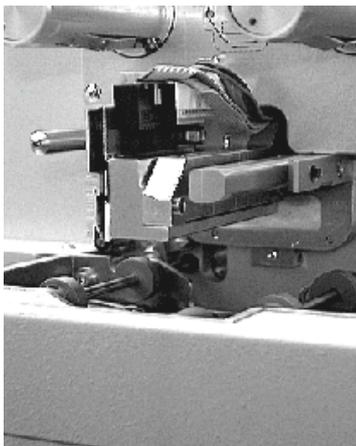
4.2 Change of ribbon type

To change the type of ribbon, please observe the following points:

1. Switch off the printer
2. Remove the old ribbon and load the new one.
3. Push the green button of the printer and switch on the printer (the green button must be pushed until all LEDs of the printer do not blink).
4. Let go the green button and, if necessary, push it again so that the green LED is lightened (ON).
5. In the printer data dialog (File $\hat{=}$ Printer Setup $\hat{=}$ Options), *Ribbon Type*, define the loaded ribbon.

YMCKO	for	5 segments ribbon
YMC	for	3 segments ribbon
X	for	monochrome ribbon
KO	for	Sublimation black/Overlay-ribbon
6. End the dialog with OK and print a card from your application. Before printing the card, the printer initializes itself according to the new ribbon type.
7. The new settings are also maintained after switching on/off the printer.

4.3 Changing the thermal head

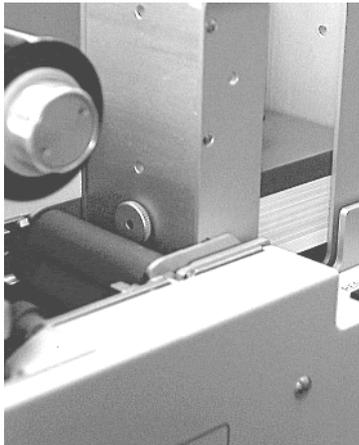


1. Follow the steps 1. to 4. of changing the color ribbon.
2. Release the cable connection to the thermal head (pull up and off).
3. Remove the two screws on the mounting of the thermal head (Ill. 3.5).
4. Pull the thermal head with heat sink off to the front.
5. Insert the new thermal head very carefully.
6. Tightened the two fastening screws (Ill. 3.5).
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.
9. Connect the Centronics cable. Switch on the **TOP** 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**.
13. Switch on the **TOP**.
14. Print a testcard.

Note: On the testcard must be the new headnumber.



4.4 Changing the cleaning rolls



1. Switch the printer off.
2. Pull the two cleaning rolls up and off (III.).
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 tap water and put them dry back. Cleaning should take place according to contamination.

4.5 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.*

4.6 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** On press PRN button and hold it until the green LED is blinking. Load the new firmware by the commando string.

copy /b Filename lpt1
(copy/b top384c1.prn lpt1)

After the loading the **TOP** is automatically initialised and then is ready for further operations. Wait this time.

Note: *This takes around 1 minute time. Only work in the DOS-mode*



4.7 Cleaning the transport rolls

Regularly clean the grey transport rolls (at least after 500 cards). Push down the Reset-button and switch the power on. Only hold the Reset-button down until the transport rolls are moving. Now you can clean the transport rolls. 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 Reset-button down again. The moving of the transport rolls stops.



5. Modifications

5.1 Magnetic Stripe Encoder

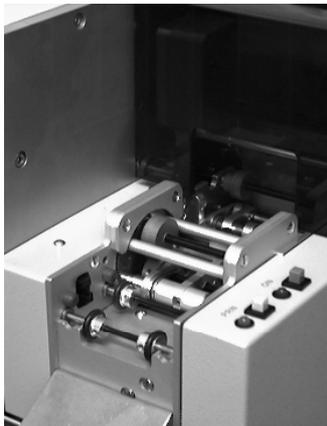


This is an option for the **TOP**.

You have the possibility to encode LoCo or HiCo –cards . 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.

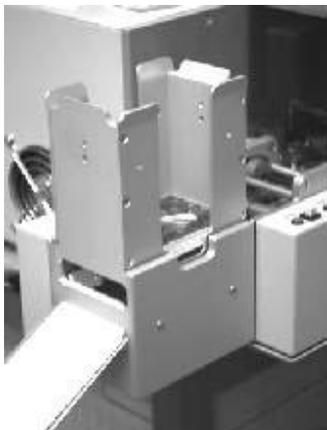
Note: Use only HiCo or LoCo cards according to the printer settings. Set to HiCo- use only HiCo – cards. Set to LoCo – use only LoCo cards.

5.2 Flip-Over Station



Factory setting is for cards with 0,76 mm thickness.
The Flip-Over Station is generic with *Flip-over*.

5.3 Output Hopper



The automatic card hopper additionally offers the function of sorting out in case the magnetic stripe could not be properly written (this way the card is not printed). The printed cards are being dispensed in the hopper (first in - first top).



5.4 SCSI-Interface

This communication system facilitates a fast, standardised, and bi-directional data transmission between PC and **TOP**. The corresponding cable and the terminator are being delivered along. Please obtain the installation instructions from the description of the Windows-Driver. Supported will the SCSI-1 standard.

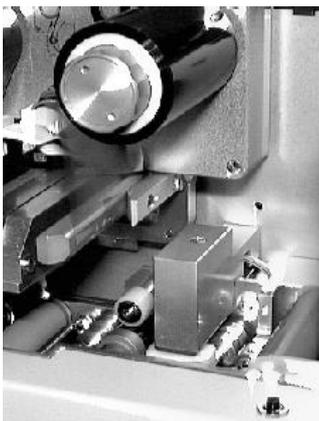
5.5 Laminator



The operation of the laminator unit is described in a special manual.

5.6 Chip-Module

The terminals of the chipcontacts are led out via 9-pin-port at the back of the printer. The chip-module is driven by <esc>-commands and by external programming electronics.



Pinning of DB9-socket

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

Chip



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	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
No ribbon synchronisation	Ribbon inserted incorrectly	Insert the ribbon according to the drawing
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 move correctly	Transport rolls dirty	Clean the transport rolls
Card isn't print parallel	Card feeder isn't parallel to the print head	OEM support
Card is not being flipped over	check software installation	set flip-over, if it repeats contact the printer manufacturer
Chip reader read/write error	read/write error on chip or bad contacts	repeat trying to insert new card with corresponding chip
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. 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+ D.

7. 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** is an ultra high speed color printer. To be use this speed you need a fast data transfer from the PC to the **TOP**.

During the printing the **TOP** 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



8. Technical Specifications

Printing Method:	Dye-sublimation (YMCKO, YMCO, YMC, KO) and Resin/Wax thermal transfer (monochrome)
Printing Time:	max 27 sec (YMCKO, edge to edge, without data transmission)
Print Resolution:	300 dpi
Color Resolution:	8 bit per color (corresponds to 16,7 Mill. colors)
Operation:	3 Buttons and 3 LEDs
Interface:	Centronics for PC Serial for service purposes
Controller:	32 bit RISC
Basic Storage:	4 Mbytes
Power Supply:	230 V / 115 V 1,7 / 3,4 A 50 / 60 Hz stand by 25 W Fuse T 4 / 5 A
Dimensions:	H x B x T 195 mm x 390 mm x 365 mm
Weight:	18,5 kg
Card Feeder:	max. 120 cards (0,76 mm thickness)
Card Material:	PVC, ABS, PE and 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 print
Operating temperature:	+10° C up to +35° C
Humidity:	20 - 80 % (no condensing)
Service:	Connection possibility Modem (T2), by protocolling the total print procedure a distance control is possible.
Temperature Stability:	Fan, Software
Software:	- WinEpicc- Card-layout-Software (<i>optional</i>) - Driver for Win 3.11/95/98 or Win NT 4.0 - ESC-sequences of the printer
Basic Model:	- Magnetic Stripe Encoder: ISO 7811, HiCo or LoCo - Flip-Over Station
Options:	- Chip-Modul - SCSI-Interface - Output Hopper - Laminator



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EG-Konformitätserklärung

Für das nachfolgend bezeichnete Erzeugnis

TOP

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

F+D Feinwerk- und Drucktechnik GmbH
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D-69239 Neckarsteinach

abgegeben durch



U. Stanitz
Geschäftsführer
Neckarsteinach, den 14.09.1998





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