



TROY M401 Printer and M401 Font Card Kit User's Guide

(For use with Hewlett-Packard LaserJet M400 Series Printers)

Acknowledgements

Some of the TROY products include cryptographic software written by Eric Young (ey@cryptsoft.com)
The Twofish encryption/decryption source code used in the TROY MICR Card is provided by Cryptopane.

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Preface

This manual is designed and formatted for use as an online document (viewed on your computer screen). The document can also be printed. For best results, use Adobe Acrobat Reader 7.0 or higher to view or print this document. Earlier versions of Adobe Acrobat Reader may not produce a properly formatted document on your computer screen. The latest version of Adobe Acrobat Reader is available as a free download from the Adobe web site at <http://www.adobe.com>.

Conventions

This User's Guide uses these conventions:

Bold indicates emphasis or a minor heading.

Italic refers to a document title or is used for emphasis.

COURIER type indicates text visible on a computer screen or keys on your computer keyboard.

The letter *l* is used in examples to distinguish the small letter l from the numeral 1 (one).

The character Ø is used in examples to distinguish the letter O from the numeral 0 (zero).

<Esc>, <CR>, <LF>, <FF>, etc. are control characters. Use a text editor to enter the equivalent of the character. For example, to get <Esc> using a DOS text editor, hold down the **Ctrl** key; and press the [(left square bracket) key. Other text editors may vary.

NOTE: **Notes contain important information set off from the text.**

CAUTION: **Caution messages appear before procedures, which, if not observed, could result in loss of data or in damage to equipment.**

WARNING: **Warning messages alert you to a specific procedure or practice, which, if not followed correctly, could cause serious personal injury.**

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Introduction

Thank you for purchasing your TROY M401 Printer or M401 Font Card Kit. You have chosen the highest quality MICR (Magnetic Ink Character Recognition) printing solution available today that offers convenience, flexibility, and precision for printing high-quality MICR documents.

The TROY M401 Printer includes the TROY Font Card, a custom formulated TROY MICR toner cartridge designed to meet or exceed all ANSI MICR printing standards, and a physical toner sensor to ensure all MICR documents are printed using MICR toner. The TROY Font Card features an enhanced collection of MICR, OCR (Optical Character Recognition), and security fonts designed for printing financial documents. The TROY Font Card is also offered as a kit (M401 Font Card Kit), which can be installed in a standard Hewlett Packard M401 printer to provide MICR printing capabilities. Refer to <http://www.troygroup.com/support> for information on installing the necessary TROY support files. Refer to the Appendix in this manual for information on installing the TROY Font Card into an HP M401 LaserJet printer.

TROY Security Fonts

Your TROY M401 Printer or M401 Font Card Kit includes a collection of high-quality MICR fonts (E13-B, CMC-7) and other security fonts programmed into the TROY Font Card. See Section 3 – *Using TROY Fonts* for more information. The TROY Security font collection includes the following fonts:

TROY Font	Description
E13-B MICR Font	Used to print the MICR line at the bottom of the check (United States and selected countries)
CMC-7 MICR Font	Used to print the MICR line at the bottom of the check (if your bank of deposit requires this font)
Enhanced Convenience Font	Used to print the convenience amount information on the check (this font is scalable)
Large Convenience Font	Used to print the convenience amount information on the check (this font is non-scalable)
Small Convenience Font	Used to print the convenience amount information on the check (this font is non-scalable)
TROY Reverse Helvetica Font	Used to print names and addresses on the back of transparent envelope windows for use in pressure-seal machines
British Pound and Euro Currency Symbols	Used as the British or European currency symbol for the respective country (replaces the U.S. dollar sign). These symbols can be selected to print in the audit reports.
TROY Barcode and POSTNET Fonts	Used to print several types of industry-standard barcodes for a variety of uses, and also includes a POSTNET font for printing the U.S. postal bar code that represents the 9-digit zip code printed below the postal address
TROY Security Font	Used to print the amount information on the check (English / Spanish) (this font is scalable)
TROY OCR Font (type A and B)	Used to print any information (names, addresses, amounts) that is to be read by automated readers using optical character recognition (this font is scalable)
International Convenience Fonts	Used to print the convenience amount on the check in any one of five languages (available on the web at http://www.troygroup.com/support)

Introduction

The TROY MICR E-13B and CMC-7 MICR fonts have been specifically engineered for your TROY Security Printing Solution to ensure the highest quality MICR printing in the industry. The TROY font collection provides seamless integration and security within your Windows-based check printing application. All TROY fonts are permanently programmed into the TROY Font Card to ensure consistent high-quality MICR printing and to prevent unauthorized use of these fonts on another printing system. Your TROY Security Printing Solution includes the following fonts:

- TROY MICR Font (E-13B and CMC-7)
- TROY Security Font (English and Spanish)
- TROY Convenience Fonts (Enhanced, Large and Small)
- TROY Reverse Helvetica Font
- TROY OCR Fonts (type A and B)
- British Pound and Euro symbols
- TROY POSTNET and Barcode Fonts (not available for TROY 2300 Font DIMM Kits)

Accessing and Using TROY Fonts

The following paragraphs provide some basic information for accessing and using the TROY fonts. It is important that these fonts are kept secure to prevent unauthorized use and that the fonts remain unaltered to ensure accurate rendering by your printer. All TROY fonts are permanently programmed into the TROY Font Card and cannot be directly accessed through external means.

Accessing TROY Fonts Using Windows Applications

To access the TROY fonts in a Windows environment, you must first install the Windows printer driver for your TROY M401 printer or HP M401 LaserJet printer if installing the TROY Font Card Kit. Instructions can be found at <http://www.troypgroup.com/support> to install the printer driver and Windows support files, enabling you to select these fonts from any Windows-based application. To print the TROY E13-B and CMC-7 MICR fonts, your printer must be set to MICR enabled mode, and a TROY MICR toner cartridge must be installed in the printer. Many commercial MICR check-printing applications are pre-programmed to access the TROY MICR fonts.

Accessing TROY Fonts Using Non-Windows Applications

If you are using a non-Windows application to print MICR documents, the escape sequence for each font must be programmed into your check-printing application in order to “call” each of the selected fonts. The <Esc> character is ASCII character number 27 (hexadecimal number 1B). Refer to the end of this section for each escape sequence (displayed above each character map) used to call each TROY font.

Using TROY MICR Fonts

The E-13B MICR font (TROY E-13B, TROY CMC-7) can be used for printing the MICR line in many countries, including the United States. In some European and Latin American countries, the CMC-7 MICR font is used instead. MICR document processing requires that the MICR characters be precise in size, shape, and spacing. For this reason, the TROY MICR font is supplied as a TrueType font; it must not be altered by scaling or other size manipulation. TROY can provide customer support for your MICR applications only if you use the supplied TROY MICR fonts.

Using the TROY OCR Fonts

The TROY OCR fonts (TROY OCR-A AND TROY OCR-B) are used to print any information (names, addresses, amounts) on the check that is to be read by automated readers using optical character recognition.

Using the Reverse Helvetica Font

The TROY Reverse Helvetica font is used to print names and addresses on the back of transparent envelope windows for use in pressure-seal machines.

Using the British Pound and Euro Symbols

The British Pound and European currency symbols are used in place of the U.S. dollar sign for the respective European country and can be selected to print in the audit reports.

MICR Font Guidelines

The TROY E-13B and CMC-7 MICR fonts were developed using strict specifications designed specifically for high-speed magnetic-read processing. To maintain these strict specifications, the TROY MICR fonts were designed as non-scalable fonts (fixed fonts) that are fixed in pitch (spacing) and point size (height). Because Windows TrueType™ technology allows fonts to be scalable by changing the point size, it is imperative to maintain the 12-point size of the MICR fonts installed in Windows. Selecting a point size other than 12-point for the MICR font in Windows will not visibly enlarge or reduce the size of the characters; however, the horizontal spacing will be affected. Any alteration to the spacing of the characters will result in incorrect placement of the MICR characters in the MICR line at the bottom of your checks, causing your financial documents to be rejected by the bank.

The Convenience Amount fonts were also designed as non-scalable fonts, but can be changed (increased or decreased) from the default point size to meet your check printing requirements. Changing the point size of a fixed font in Windows will only affect the horizontal spacing of the characters and not affect the vertical size of the characters. The TROY Enhanced Convenience Amount font and TROY Security font were designed as scalable fonts that can be changed (increased or decreased) from the default point size to meet your check printing requirements.

NOTE: It is highly recommended that you verify the MICR line at the bottom of your printed checks using the TROY MICR Document Template (p/n 54-17373-001) to verify the positioning of each character. Refer to the TROY MICR Basics Handbook for details (provided in PDF format found here <http://www.troygroup.com/support>.)

Font Character Mapping

Each character or symbol in a font set corresponds to a specific ASCII (American Standard Code for Information Interchange) number (e.g., the capital letter “A” = ASCII number 65). Pressing a key on your computer keyboard automatically generates the ASCII number (32 through 127) associated with the character or symbol displayed on the key. Likewise, any character or symbol not represented on your computer keyboard (ASCII numbers above 127) can be accessed by manually entering the associated ASCII number using the numeric keypad.

The fonts are found here <http://www.troygroup.com/support> and have each of the characters and symbols in each font set (shown on the following pages) “mapped” (associated) to standard computer keyboard characters using the corresponding ASCII number for each character and symbol on the keyboard.

For example, the transit symbol (one of the industry-standard symbols used in a MICR line at the bottom of a check) contained in the TROY E-13B MICR character table (shown on page 3-8) does not exist on a standard computer keyboard but has been “mapped” to the standard ASCII keyboard capital letter “A”, designated as ASCII number 65.

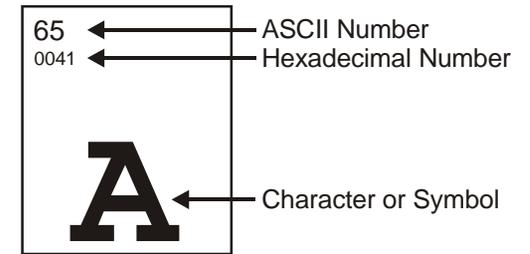
Therefore, after loading and then selecting the TROY E-13B MICR Font, typing the capital letter “A” on your computer keyboard will produce the MICR transit symbol instead of the capital letter “A”. The TROY E-13B MICR character table (shown on page 3-8) associates the transit symbol with ASCII number 65 (the same ASCII number used for the capital letter “A” if you had selected a standard ASCII font set instead of the TROY E-13B MICR font set).

Determining a Character Mapping

Accessing Unmapped Characters

To determine which key on your computer keyboard that a TROY character or symbol is “mapped” to, simply compare the ASCII number of the selected TROY character or symbol to the same ASCII number listed in the *Standard ASCII Character Map* (shown on the next page) to determine which keyboard key can be used to access the selected TROY character or symbol.

Some of the font sets provided on the Are found here <http://www.troygroup.com/support> contain more characters or symbols than can be “mapped” to the available keys on a standard computer keyboard. In this case, these characters can be accessed by manually entering the ASCII number (see example at right) designated for each character (refer to the character tables on the following pages). The hexadecimal number shown below the ASCII number is used for programming mainframe computers.



To access a character or symbol that is not “mapped” to one of the keys on your Windows computer keyboard, you can manually enter the ASCII number by holding down the **ALT** key on your keyboard, entering the associated ASCII number for the character you wish to access, and then releasing the **ALT** key.

NOTE: You must use the numerical keypad on your keyboard to enter the ASCII number. The number keys along the top of the keyboard will not work for this application.

Section 2

Using TROY Fonts

Standard ASCII
Character Set
(reference only)

24	25	26	27	28	29	30	31	32 0020	33 0021	34 0022	35 0023
									!	"	#
36 0024	37 0025	38 0026	39 0027	40 0028	41 0029	42 002A	43 002B	44 002C	45 002D	46 002E	47 002F
\$	%	&	'	()	*	+	,	-	.	/
48 0030	49 0031	50 0032	51 0033	52 0034	53 0035	54 0036	55 0037	56 0038	57 0039	58 003A	59 003B
0	1	2	3	4	5	6	7	8	9	:	;
60 003C	61 003D	62 003E	63 003F	64 0040	65 0041	66 0042	67 0043	68 0044	69 0045	70 0046	71 0047
<	=	>	?	@	A	B	C	D	E	F	G
72 0048	73 0049	74 004A	75 004B	76 004C	77 004D	78 004E	79 004F	80 0050	81 0051	82 0052	83 0053
H	I	J	K	L	M	N	O	P	Q	R	S
84 0054	85 0055	86 0056	87 0057	88 0058	89 0059	90 005A	91 005B	92 005C	93 005D	94 005E	95 005F
T	U	V	W	X	Y	Z	[\]	^	
96 0060	97 0061	98 0062	99 0063	100 0064	101 0065	102 0066	103 0067	104 0068	105 0069	106 006A	107 006B
`	a	b	c	d	e	f	g	h	i	j	k
108 006C	109 006D	110 006E	111 006F	112 0070	113 0071	114 0072	115 0073	116 0074	117 0075	118 0076	119 0077
l	m	n	o	p	q	r	s	t	u	v	w
120 0078	121 0079	122 007A	123 007B	124 007C	125 007D	126 007E	127	128	129	130	131
x	y	z	{		}	~					



Section 2

Using TROY Fonts

TROY MICR E-13B 12-Point Font
(Troy E-13B)

<Esc> (ØQ<Esc> (slp12v0s0b0T

24	25	26	27	28	29	30	31	32 F020	33	34	35
36 F024	37	38 F026	39	40	41	42	43	44	45 F02D	46	47 F02F
48 F030	49 F031	50 F032	51 F033	52 F034	53 F035	54 F036	55 F037	56 F038	57 F039	58 F03A	59 F03B
60	61 F03D	62	63	64	65 F041	66 F042	67 F043	68 F044	69	70	71
72	73	74	75	76	77	78	79 F04F	80	81	82	83
84 F054	85	86	87	88	89	90	91	92	93	94	95
96	97	98	99	100	101	102	103	104	105	106	107
108	109	110	111 F06F	112	113	114	115	116 F074	117	118	119



Section 2

Using TROY Fonts

**TROY MICR
CMC-7 12-Point
Font
(Troy CMC7)**

<Esc>(ØQ<Esc>(slp12vØsØb1T

24	25	26	27	28	29	30	31	32 F020	33	34	35
36	37	38	39	40	41	42	43	44	45	46	47
48 F030	49 F031	50 F032	51 F033	52 F034	53 F035	54 F036	55 F037	56 F038	57 F039	58	59
60	61	62	63	64	65 F041	66 F042	67 F043	68 F044	69 F045	70	71

**TROY Enhanced
Convenience
Amount Font
(Troy ECF)**

<Esc>(3Q<Esc>(slp□vØsØb1ØT □ = desired point size

24	25	26	27	28	29	30	31	32 F020	33	34	35
36 F024	37	38	39	40	41	42 F02A	43	44 F02C	45	46 F02E	47
48 F030	49 F031	50 F032	51 F033	52 F034	53 F035	54 F036	55 F037	56 F038	57 F039	58	59
60	61	62	63	64	65 F041	66 F042	67 F043	68 F044	69 F045	70 F046	71 F047
72 F048	73 F049	74 F04A	75	76	77	78	79	80	81	82	83



Section 2

Using TROY Fonts

TROY Reverse Helvetica Font (Troy Helvetica (Rev))

32 20	33 21	34 22	35 23	36 24	37 25	38 26	39 27	40 28	41 29
	ı	„	#	ž	º	ø	ı	()
42 2A	43 2B	44 2C	45 2D	46 2E	47 2F	48 30	49 31	50 32	51 33
*	+	˙	-	·		o	↓	∫	3
52 34	53 35	54 36	55 37	56 38	57 39	58 3A	59 3B	60 3C	61 3D
∇	ρ	ϑ	∫	8	ə	:	:	<	=
62 3E	63 3F	64 40	65 41	66 42	67 43	68 44	69 45	70 46	71 47
>	ı	@	∇	B	C	D	E	E	Ɔ
72 48	73 49	74 4A	75 4B	76 4C	77 4D	78 4E	79 4F	80 50	81 51
H	I	ı	K	Γ	W	И	O	Ь	σ
82 52	83 53	84 54	85 55	86 56	87 57	88 58	89 59	90 5A	91 5B
B	2	ı	∩	∧	M	X	λ	Σ	ı
92 5C	93 5D	94 5E	95 5F	96 60	97 61	98 62	99 63	100 64	101 65
/]	˙	-	,	g	p	c	q	e
102 66	103 67	104 68	105 69	106 6A	107 6B	108 6C	109 6D	110 6E	111 6F
t	ä	μ	ı	ı	κ	ı	w	u	o
112 70	113 71	114 72	115 73	116 74	117 75	118 76	119 77	120 78	121 79
b	d	ı	2	f	n	∧	M	x	λ
122 7A	123 7B	124 7C	125 7D	126 7E	127 7F	128 80	129 81	130 82	131 83
z	{		}	-	□	□	□	□	□

Section 2

Using TROY Fonts

TROY OCR-A
(Troy OCR-A)

<Esc>(Ø0<Esc>(slp□vøsløblø4T □ = desired point size

24	25	26	27	28	29	30	31	32 0020	33 0021	34 0022	35 0023
									!	"	#
36 0024	37 0025	38 0026	39 0027	40 0028	41 0029	42 002A	43 002B	44 002C	45 002D	46 002E	47 002F
¢	%	&	'	()	*	+	,	-	.	/
48 0030	49 0031	50 0032	51 0033	52 0034	53 0035	54 0036	55 0037	56 0038	57 0039	58 003A	59 003B
0	1	2	3	4	5	6	7	8	9	:	;
60 003C	61 003D	62 003E	63 003F	64 0040	65 0041	66 0042	67 0043	68 0044	69 0045	70 0046	71 0047
<	=	>	?	@	A	B	C	D	E	F	G
72 0048	73 0049	74 004A	75 004B	76 004C	77 004D	78 004E	79 004F	80 0050	81 0051	82 0052	83 0053
H	I	J	K	L	M	N	O	P	Q	R	S
84 0054	85 0055	86 0056	87 0057	88 0058	89 0059	90 005A	91 005B	92 005C	93 005D	94 005E	95 005F
T	U	V	W	X	Y	Z	[\]	^	Y
96 0060	97 0061	98 0062	99 0063	100 0064	101 0065	102 0066	103 0067	104 0068	105 0069	106 006A	107 006B
h	a	b	c	d	e	f	g	h	i	j	k
108 006C	109 006D	110 006E	111 006F	112 0070	113 0071	114 0072	115 0073	116 0074	117 0075	118 0076	119 0077
l	m	n	o	p	q	r	s	t	u	v	w
120 0078	121 0079	122 007A	123 007B	124 007C	125 007D	126 007E	127 007F	128 20AC	129	130	131
x	y	z	{		}	⌋	■	□			
132	133	134	135	136	137	138	139 2039	140	141	142	143
							<				
144	145 2018	146 2019	147 201C	148 201D	149	150 2013	151 2014	152	153	154	155 203A
	v	v	"	"		-	—				>



Section 2

Using TROY Fonts

TROY OCR-A (continued)

156	157	158	159	160 00A0	161	162 00A2	163 00A3	164	165 00A5	166	167
						€	£		¥		
168	169	170	171	172	173	174	175	176	177	178	179
180	181	182	183 00B7	184 00B8	185	186	187	188	189	190	191 00BF
			■	◻							?
192	193	194	195	196 00C4	197 00C5	198 00C6	199	200	201	202	203
				À	Á	Â					
204	205	206	207	208	209 00D1	210	211	212	213	214 00D6	215
					Ñ					Ö	
216 00DB	217	218	219	220 00DC	221	222	223	224	225	226	227
Ø				Ü							

NOTE: This OCR font must be used at the designated point size to ensure optical readability.

- Size I – must use 12-point size (upper and lower case characters can be used)
- Size III – must use 16-point size (only upper case characters can be used)
- Size IV – must use 20-point size (only upper case characters can be used)

Section 2

Using TROY Fonts

TROY OCR-B (Troy OCR-B)

<Esc>(10<Esc>(slp□v0s0b110T □ = desired point size

24	25	26	27	28	29	30	31	32 0020	33 0021	34 0022	35 0023
									!	"	#
36 0024	37 0025	38 0026	39 0027	40 0028	41 0029	42 002A	43 002B	44 002C	45 002D	46 002E	47 002F
\$	%	&	'	()	*	+	/	-	.	/
48 0030	49 0031	50 0032	51 0033	52 0034	53 0035	54 0036	55 0037	56 0038	57 0039	58 003A	59 003B
0	1	2	3	4	5	6	7	8	9	:	;
60 003C	61 003D	62 003E	63 003F	64 0040	65 0041	66 0042	67 0043	68 0044	69 0045	70 0046	71 0047
<	=	>	?	@	A	B	C	D	E	F	G
72 0048	73 0049	74 004A	75 004B	76 004C	77 004D	78 004E	79 004F	80 0050	81 0051	82 0052	83 0053
H	I	J	K	L	M	N	O	P	Q	R	S
84 0054	85 0055	86 0056	87 0057	88 0058	89 0059	90 005A	91 005B	92 005C	93 005D	94 005E	95 005F
T	U	V	W	X	Y	Z	[\]	^	
96 0060	97 0061	98 0062	99 0063	100 0064	101 0065	102 0066	103 0067	104 0068	105 0069	106 006A	107 006B
`	a	b	c	d	e	f	g	h	i	j	k
108 006C	109 006D	110 006E	111 006F	112 0070	113 0071	114 0072	115 0073	116 0074	117 0075	118 0076	119 0077
l	m	n	o	p	q	r	s	t	u	v	w
120 0078	121 0079	122 007A	123 007B	124 007C	125 007D	126 007E	127 007F	128	129	130 201A	131
x	y	z	{		}	~	■				
132 201E	133 2026	134 2020	135 2021	136 02C6	137 2030	138 0160	139 2039	140 0152	141	142 017D	143
//	...	†	‡	^	%	š	<	€		ž	
144	145 2018	146 2019	147 201C	148 201D	149 2022	150 2013	151 2014	152 02DC	153 2122	154 0161	155 203A
	/	/	//	//	•	-	-	~	m	š	>



Section 2

Using TROY Fonts

TROY OCR-B (continued)

156 0153	157	158 017E	159 0178	160 00A0	161 00A1	162 00A2	163 00A3	164 00A4	165 00A5	166 00A6	167 00A7
æ		ž	ÿ		ı	ç	£	¤	¥	ı	§
168 00AB	169	170 00AA	171 00AB	172 00AC	173 00AD	174	175 00AF	176 00B0	177 00B1	178	179
“		ˆ	«	—	—		—	ıı	±		
180 00B4	181 00B5	182	183 00B7	184 00B8	185	186 00BA	187 00BB	188	189	190	191 00BF
·	µ		•	,		ij	»				¿
192 00C0	193 00C1	194 00C2	195 00C3	196 00C4	197 00C5	198 00C6	199 00C7	200 00C8	201 00C9	202 00CA	203 00CB
À	Á	Â	Ã	Ä	Å	Æ	Ç	È	É	Ê	Ë
204 00CC	205 00CD	206 00CE	207 00CF	208 00D0	209 00D1	210 00D2	211 00D3	212 00D4	213 00D5	214 00D6	215 00D7
Ì	Í	Î	Ï	Ð	Ñ	Ò	Ó	Ô	Õ	Ö	×
216 00D8	217 00D9	218 00DA	219 00DB	220 00DC	221 00DD	222 00DE	223 00DF	224 00E0	225 00E1	226 00E2	227 00E3
Ø	Ù	Ú	Û	Ü	Ý	Þ	ß	à	á	â	ã
228 00E4	229 00E5	230 00E6	231 00E7	232 00E8	233 00E9	234 00EA	235 00EB	236 00EC	237 00ED	238 00EE	239 00EF
ä	å	æ	ç	è	é	ê	ë	ì	í	î	ï
240 00F0	241 00F1	242 00F2	243 00F3	244 00F4	245 00F5	246 00F6	247 00F7	248 00F8	249 00F9	250 00FA	251 00FB
ð	ñ	ò	ó	ô	õ	ö	÷	ø	ù	ú	û
252 00FC	253 00FD	254 00FE	255 00FF	256 E000	257 E001	258 E002					
ü	ý	þ	ÿ								

NOTE: This OCR font must be used at the designated point size to ensure optical readability.

- Size I – must use 10-point size (upper and lower case characters can be used)
- Size III – (not supported)
- Size IV – must use 16-point size (upper and lower case characters can be used)

Section 2

Using TROY Fonts

TROY UPC-A Barcode

<Esc>(8Y<Esc>(slp□vøsb246øøT □ = desired height

32	20	33	21	34	22	35	23	36	24	37	25	38	26	39	27	40	28	41	29
42	2A	43	2B	44	2C	45	2D	46	2E	47	2F	48	30	49	31	50	32	51	33
												 0	 1	 2	 3				
52	34	53	35	54	36	55	37	56	38	57	39	58	3A	59	3B	60	3C	61	3D
 4	 5	 6	 7	 8	 9														
62	3E	63	3F	64	40	65	41	66	42	67	43	68	44	69	45	70	46	71	47
				 0	 1	 2	 3	 4	 5	 6									
72	48	73	49	74	4A	75	4B	76	4C	77	4D	78	4E	79	4F	80	50	81	51
 7	 8	 9																	
82	52	83	53	84	54	85	55	86	56	87	57	88	58	89	59	90	5A	91	5B
92	5C	93	5D	94	5E	95	5F	96	60	97	61	98	62	99	63	100	64	101	65
								 0	 1	 2	 3	 4	 5	 6	 7	 8	 9		
102	66	103	67	104	68	105	69	106	6A	107	6B	108	6C	109	6D	110	6E	111	6F
 5	 6	 7	 8	 9								 0	 1	 2	 3	 4	 5	 6	 7
112	70	113	71	114	72	115	73	116	74	117	75	118	76	119	77	120	78	121	79
 2	 3	 4	 5	 6	 7	 8	 9												
122	7A	123	7B	124	7C	125	7D	126	7E	127	7F	128	80	129	81	130	82	131	83
132	84	133	85	134	86	135	87	136	88	137	89	138	8A	139	8B	140	8C	141	8D
142	8E	143	8F	144	90	145	91	146	92	147	93	148	94	149	95	150	96	151	97
152	98	153	99	154	9A	155	9B	156	9C	157	9D	158	9E	159	9F	160	A0	161	A1
162	A2	163	A3	164	A4	165	A5	166	A6	167	A7	168	A8	169	A9	170	AA	171	AB
172	AC	173	AD	174	AE	175	AF	176	B0	177	B1	178	B2	179	B3	180	B4	181	B5
182	B6	183	B7	184	B8	185	B9	186	BA	187	BB	188	BC	189	BD	190	BE	191	BF



Section 2

Using TROY Fonts

TROY UPC-E Barcode

<Esc>(8Y<Esc>(slp□vøsoB2461ØT □ = desired height

32	20	33	21	34	22	35	23	36	24	37	25	38	26	39	27	40	28	41	29
42	2A	43	2B	44	2C	45	2D	46	2E	47	2F	48	30	49	31	50	32	51	33
52	34	53	35	54	36	55	37	56	38	57	39	58	3A	59	3B	60	3C	61	3D
62	3E	63	3F	64	40	65	41	66	42	67	43	68	44	69	45	70	46	71	47
72	48	73	49	74	4A	75	4B	76	4C	77	4D	78	4E	79	4F	80	50	81	51
82	52	83	53	84	54	85	55	86	56	87	57	88	58	89	59	90	5A	91	5B
92	5C	93	5D	94	5E	95	5F	96	60	97	61	98	62	99	63	100	64	101	65
102	66	103	67	104	68	105	69	106	6A	107	6B	108	6C	109	6D	110	6E	111	6F
112	70	113	71	114	72	115	73	116	74	117	75	118	76	119	77	120	78	121	79
122	7A	123	7B	124	7C	125	7D	126	7E	127	7F	128	80	129	81	130	82	131	83
132	84	133	85	134	86	135	87	136	88	137	89	138	8A	139	8B	140	8C	141	8D
142	8E	143	8F	144	90	145	91	146	92	147	93	148	94	149	95	150	96	151	97
152	98	153	99	154	9A	155	9B	156	9C	157	9D	158	9E	159	9F	160	A0	161	A1
162	A2	163	A3	164	A4	165	A5	166	A6	167	A7	168	A8	169	A9	170	AA	171	AB
172	AC	173	AD	174	AE	175	AF	176	B0	177	B1	178	B2	179	B3	180	B4	181	B5
182	B6	183	B7	184	B8	185	B9	186	BA	187	BB	188	BC	189	BD	190	BE	191	BF

Section 2

Using TROY Fonts

TROY
POSTNET

<Esc>(15Y<Esc>(slp□vøšøb2477øT □ = desired height

32	20	33	21	34	22	35	23	36	24	37	25	38	26	39	27	40	28	41	29
42	2A	43	2B	44	2C	45	2D	46	2E	47	2F	48	30	49	31	50	32	51	33
52	34	53	35	54	36	55	37	56	38	57	39	58	3A	59	3B	60	3C	61	3D
62	3E	63	3F	64	40	65	41	66	42	67	43	68	44	69	45	70	46	71	47
72	48	73	49	74	4A	75	4B	76	4C	77	4D	78	4E	79	4F	80	50	81	51
82	52	83	53	84	54	85	55	86	56	87	57	88	58	89	59	90	5A	91	5B
92	5C	93	5D	94	5E	95	5F	96	60	97	61	98	62	99	63	100	64	101	65
102	66	103	67	104	68	105	69	106	6A	107	6B	108	6C	109	6D	110	6E	111	6F
112	70	113	71	114	72	115	73	116	74	117	75	118	76	119	77	120	78	121	79
122	7A	123	7B	124	7C	125	7D	126	7E	127	7F	128	80	129	81	130	82	131	83
132	84	133	85	134	86	135	87	136	88	137	89	138	8A	139	8B	140	8C	141	8D
142	8E	143	8F	144	90	145	91	146	92	147	93	148	94	149	95	150	96	151	97
152	98	153	99	154	9A	155	9B	156	9C	157	9D	158	9E	159	9F	160	A0	161	A1
162	A2	163	A3	164	A4	165	A5	166	A6	167	A7	168	A8	169	A9	170	AA	171	AB
172	AC	173	AD	174	AE	175	AF	176	B0	177	B1	178	B2	179	B3	180	B4	181	B5
182	B6	183	B7	184	B8	185	B9	186	BA	187	BB	188	BC	189	BD	190	BE	191	BF

Section 2

Using TROY Fonts

**TROY
POSTNET
Reverse
(optional)**

<Esc>(15Y<Esc>(slp□vøS33b2477ØT □ = desired height

32	20	33	21	34	22	35	23	36	24	37	25	38	26	39	27	40	28	41	29
42	2A	43	2B	44	2C	45	2D	46	2E	47	2F	48	30	49	31	50	32	51	33
52	34	53	35	54	36	55	37	56	38	57	39	58	3A	59	3B	60	3C	61	3D
62	3E	63	3F	64	40	65	41	66	42	67	43	68	44	69	45	70	46	71	47
72	48	73	49	74	4A	75	4B	76	4C	77	4D	78	4E	79	4F	80	50	81	51
82	52	83	53	84	54	85	55	86	56	87	57	88	58	89	59	90	5A	91	5B
92	5C	93	5D	94	5E	95	5F	96	60	97	61	98	62	99	63	100	64	101	65
102	66	103	67	104	68	105	69	106	6A	107	6B	108	6C	109	6D	110	6E	111	6F
112	70	113	71	114	72	115	73	116	74	117	75	118	76	119	77	120	78	121	79
122	7A	123	7B	124	7C	125	7D	126	7E	127	7F	128	80	129	81	130	82	131	83
132	84	133	85	134	86	135	87	136	88	137	89	138	8A	139	8B	140	8C	141	8D
142	8E	143	8F	144	90	145	91	146	92	147	93	148	94	149	95	150	96	151	97
152	98	153	99	154	9A	155	9B	156	9C	157	9D	158	9E	159	9F	160	A0	161	A1
162	A2	163	A3	164	A4	165	A5	166	A6	167	A7	168	A8	169	A9	170	AA	171	AB
172	AC	173	AD	174	AE	175	AF	176	B0	177	B1	178	B2	179	B3	180	B4	181	B5
182	B6	183	B7	184	B8	185	B9	186	BA	187	BB	188	BC	189	BD	190	BE	191	BF

PCL Font Collection

In addition to the TROY Security Printing fonts contained on the TROY Font Card, an extensive collection of PCL fonts have been included on the TROY Font Card as a value-added convenience to suit a wide variety of printing needs. Print the PCL font lists from printer for examples.

Trouble-shooting by Symptom

The following troubleshooting table provides solutions to the most common MICR printing problems. Some of the messages may not apply to your TROY Security Printing Solution. Visually inspect your MICR documents using the *TROY MICR Document Template* where appropriate.

NOTE: This table does not cover all of the ANSI and banking specifications that MICR-encoded documents must meet. Refer to the *TROY MICR Basics Handbook* for more information on MICR specifications and check design.

Condition	Possible Cause	Solution
Incorrect data in MICR line (account #, bank #, etc.).	Error typing in the account #, etc.	Re-enter the correct data.
Incorrect format of fields in MICR line (according to your bank's specifications).	Error typing in the field information.	Re-enter the correct data. Ask your bank for its specification sheet or copy the field format from your old checks, including any spaces.
Vertical streaking or smearing throughout document.	Problem with the Hewlett-Packard printer or TROY MICR toner cartridge.	Refer to the troubleshooting section in the printer user's manual.
Horizontal streaking in MICR clear band during document processing.	Problem with the reader/sorter machine.	The reader/sorter machine must be cleaned and checked or adjusted.

Trouble-shooting by Symptom (cont.)

<p>600 dpi MICR font not used in MICR line (an incorrect font such as Courier or Times Roman was used instead).</p>	<p>No MICR font installed.</p> <p>MICR mode disabled and an attempt was made to use a TROY MICR font.</p> <p>Software error.</p> <p>MICR font requested orientation (portrait or landscape) not installed in the printer.</p> <p>Non-TROY MICR font was used.</p> <p>Font escape sequence coding error.</p>	<p>Install the TROY Font Card and reprint the document.</p> <p>Consult your software dealer.</p> <p>Enable MICR mode by issuing the appropriate escape sequence via your check writing software.</p> <p>Install the correct orientation of MICR font via system Card.</p> <p>Use the TROY MICR font or consult the non-TROY MICR font manufacturer for assistance.</p> <p>Verify the escape sequence accuracy.</p>
<p>MICR clear band has magnetically chargeable printing besides the MICR line on front or backside of document.</p>	<p>Border, signature, or other printing extends into MICR clear band on front or back.</p> <p>Laser-printed items extend into MICR clear band on backside of the check.</p>	<p>Reformat your document design to ensure nothing besides the MICR line appears in the MICR clear band.</p> <p>Reformat your document design or other laser-printed items so that there is no MICR information in the clear band on the backside of the check.</p>

Trouble-shooting by Symptom (cont.)

<p>MICR clear band has extra printing (such as toner splatter) besides the MICR line on front or backside of document.</p>	<p>Printer density setting is too dark.</p> <p>Printer fusing unit is contaminated.</p> <p>Faulty MICR toner cartridge.</p> <p>Use of non-TROY MICR toner cartridge.</p>	<p>Use TROY MICR defaults.</p> <p>Refer to printer user's manual for cleaning instructions.</p> <p>Try another TROY MICR toner cartridge. If cartridge is faulty, return to the dealer.</p> <p>Use a TROY MICR toner cartridge, or consult TROY Technical Support for assistance.</p>
<p>MICR line is skewed on document.</p>	<p>Your MICR paper was cut or perforated inaccurately (lower edge of paper is not perpendicular to the right and left edges of paper).</p> <p>Your MICR paper has changed properties due to environmental conditions in storage or handling.</p> <p>Paper incorrectly loaded.</p> <p>Faulty paper transport system in printer.</p>	<p>Measure your MICR paper and/or perforation lines to ensure your MICR-encoded documents fall within ANSI specifications for document size. Ask your paper vendor for correctly sized MICR paper.</p> <p>Measure your MICR paper and/or perforation lines to ensure your MICR-encoded documents fall within ANSI specifications for document size.</p> <p>If using MP tray, paper width guide should lightly touch right side of paper stack.</p> <p>Try non-MICR paper to verify the problem. Contact TROY Technical Support if problem is verified on non-MICR paper.</p>

Trouble-shooting by Symptom (cont.)

<p>MICR line not positioned correctly on the document (vertically and horizontally).</p>	<p>Your MICR paper was cut or perforated inaccurately (paper is too short/long or narrow/wide).</p> <p>Software registration is off (software is positioning data incorrectly on the printed page).</p> <p>Printer registration discrepancies (small inconsistencies in positioning of the image on the printed page)</p> <p>Faulty paper transport system in printer.</p>	<p>Measure your MICR paper and/or perforation lines to ensure your MICR-encoded documents fall within ANSI specifications for document size. Ask your paper vendor for correctly sized MICR paper.</p> <p>Make adjustments in your software application to adjust the positioning of the MICR line. Use the TROY MICR Document Template to verify all adjustments to the MICR line.</p> <p>Small errors in the printer's registration can change the position of the MICR line, which is most noticeable on the trailing edge of the printed page. If the MICR line on your checks is positioned on trailing edge of the page (the edge of the page that exits the printer last), try using the TROY printer's Auto-Rotate feature to place the MICR line on the leading edge of the page to avoid any small registration errors that would significantly change the position of the MICR on your printed checks.</p> <p>Measure your MICR paper. If cut to correct size, consult your software vendor for assistance.</p> <p>Try non-MICR paper to verify the problem. Consult the printer user's manual or TROY Technical support if problem is verified on non-MICR paper.</p>
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Trouble-shooting by Symptom (cont.)

<p>MICR characters are too thick or too thin.</p>	<p>Printer density setting is too dark or too light.</p> <p>Your MICR toner cartridge is nearly empty.</p> <p>Your MICR paper is out of specification so that toner does not adhere properly to the paper.</p> <p>Faulty MICR toner cartridge.</p> <p>Use of Non-TROY MICR toner or font.</p>	<p>Use TROY MICR defaults.</p> <p>TROY MICR toner cartridge should not be used if any print fading is visible across the document.</p> <p>Refer to TROY MICR paper specifications elsewhere in this guide and consult your paper vendor to ensure you have the correct paper (including correctly preprinted background areas). Also, check to ensure your paper has not altered due to environmental conditions during storage and handling.</p> <p>Try another TROY MICR toner cartridge. If the cartridge is faulty, contact TROY Technical Support for assistance.</p> <p>Use TROY MICR toner or font, or consult TROY Technical Support for assistance.</p>
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Trouble-shooting by Symptom (cont.)

<p>MICR characters are broken, there are voids in characters or toner rubs off.</p>	<p>Your MICR paper is out of specification so that toner does not adhere properly to the paper.</p> <p>Faulty MICR toner cartridge.</p> <p>Use of Non-TROY MICR toner cartridge.</p> <p>Printer fusing unit is faulty.</p>	<p>Refer to the TROY MICR paper specifications and consult your paper vendor to ensure you have the correct paper (including correctly preprinted background areas). Also, check to ensure your paper has not altered due to environmental conditions during storage and handling.</p> <p>Try another TROY MICR toner cartridge. If cartridge is faulty, return to dealer.</p> <p>Use a TROY MICR toner cartridge, or consult TROY Technical Support for assistance.</p> <p>Confirm by verifying with a non-MICR application. Contact TROY Technical Support for instructions.</p>
<p>Voids in characters in MICR line or other text.</p>	<p>Transfer roller wear (check for page count of greater than 100,000).</p>	<p>Replace transfer roller.</p>
<p>MICR character spacing and positioning is not correct.</p>	<p>Error in typing MICR line information.</p> <p>Software placement of characters is incorrect.</p>	<p>Re-enter correct data. (Do not forget to enter the correct number of spaces where required.) If using TROY MICR fonts in Windows, ensure the point size is set to 12 pt.</p> <p>Consult your software dealer.</p>

Trouble-shooting by Symptom (cont.)

<p>Your bank reports a high reject rate when processing your TROY MICR-printed documents.</p> <p>NOTE: This section covers conditions not addressed above. You should also investigate all of the items described above as possible causes of bank rejects as well as the other ANSI MICR specifications not covered in this table.</p>	<p>A Non-TROY MICR toner was used.</p> <p>The bank-of-deposit made a typing or imprinting error when they encoded the check AMOUNT onto the right end of the MICR line.</p> <p>Your MICR paper is out of specification so that your documents tend to jam or tear inside bank processing equipment.</p> <p>Documents were folded, spindled, or otherwise roughly handled before they reached the bank-of-deposit.</p> <p>Your bank's reader/sorter equipment is out of adjustment.</p>	<p>Print test documents using TROY MICR toner or consult the non-TROY manufacturer for assistance.</p> <p>Ask your bank or one of the document testing facilities in the list following this table to determine if the MICR line error is in the TROY MICR-printed portion of the bank-encoded portion (many errors are bank induced).</p> <p>Observe the condition of your processed checks. Refer to this guide for information on TROY and ANSI MICR paper specifications. Your paper vendor or bank may also provide assistance.</p> <p>Consider sturdier MICR paper or improved check-handling processes with your regular recipients.</p> <p>Ask your bank for assistance in determining the cause of your rejects.</p>
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Trouble-shooting by Symptom (cont.)

<p>MICR characters appear smeared after processing by a bank.</p>	<p>A Non-TROY MICR toner was used.</p> <p>Your MICR paper is out of specification so that toner does not adhere properly to the paper.</p> <p>Your bank's reader/sorter equipment is out of adjustment.</p>	<p>Print test documents using TROY MICR toner or consult the non-TROY manufacturer for assistance.</p> <p>Refer to TROY MICR paper specifications and consult your paper vendor to ensure you have the correct paper (including correctly preprinted background areas). Also, check to ensure your paper has not altered due to environmental conditions before printing the checks.</p> <p>Ask your bank for assistance in determining the cause of your rejects.</p>
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Software Uninstall Procedures

Uninstall the TROY Screen Fonts

In the event you wish to reinstall or permanently remove the TROY Security Printing Solution support files and utilities use the following procedures to properly uninstall (remove) all TROY software from your computer.

1. Close all applications before uninstalling the TROY screen fonts.
2. From the **Start** menu, click on **Settings**, and then click on **Control Panel**.
3. Double-click on the **Fonts** folder icon. Locate the TROY screen font installed (refer to the MICR font facsimile example on the previous page for font names).
4. Right-click on the TROY screen font to be uninstalled, and then click on **Delete** from the pull-down menu. A confirmation window will appear with the prompt, "**Are you sure you want to delete these fonts?**". Click on **YES** to confirm the deletion. The TrueType™ MICR screen font will be removed.
5. Repeat steps two and three for each TROY screen font to be uninstalled.
6. Close the **Fonts Folder** and **Control Panel**.
7. If removing all the TROY support files, proceed to the next section for removing all the TROY support files for Microsoft® Windows™.

Uninstall the TROY Support Files

1. Close all applications before uninstalling the TROY support files.
2. From the **Start** menu, click on **Settings**, and then click on **Printers**.
3. Right-click on the **Hewlett Packard LaserJet UPD PCL 5e** (or renamed TROY printer) printer icon, and then click on **Properties** from the pull-down menu.
4. Click on the **Configure** tab located at the top of the **Properties** window.
5. Click on the **More** button located within the **Other Options** category.
6. Click on the **Configure...** button located within the **Fonts** category.
7. Within the **Configure Font Cards** window, locate the section labeled **Installed Cards**. Click on **TROY Security Font Collection** listed under **Installed Cards** (**TROY International Security Font Collection** for international support). Click on **Remove** to uninstall the TROY support files. The entry will be deleted from the **Installed Cards** list.
8. Close all remaining open windows. All the TROY support files have been removed.

Installing the TROY Font Card

IMPORTANT: Ensure the printer power is switched OFF, and then disconnect the printer power cord from the printer.

1. Ensure the printer power is switched OFF. Never install or remove the Card when the printer power is ON.
2. Open the Card access door at the left side of the printer using your finger to press and unlatch the door .
3. Detach the Card access door from the printer by fully opening the door and then unhooking the two hinge tabs from the printer panel.
4. Remove the TROY Font Card from the protective anti-static bag.

IMPORTANT: To prevent static discharge from damaging the TROY Font Card, handle the Card by the edges .

5. Insert the Card into the Card slot by aligning the notch on back of Card. The Card can only be inserted in one orientation.
6. Ensure the Card is fully inserted into the Card socket, and then carefully press on top and bottom of the Card.
7. Replace the access door by aligning the hinge tabs with the notches in the printer panel, and then push the access door closed until it snaps into place.
8. Reconnect the printer power cord, and then switch the printer power ON.

9. Refer to the installation instructions found at <http://www.troygroup.com/support> for installing the TROY support files on your computer. If assistance is required, call TROY Technical Support at (855) 889-1109. Customers outside the United States, please call (304) 232-0899.

