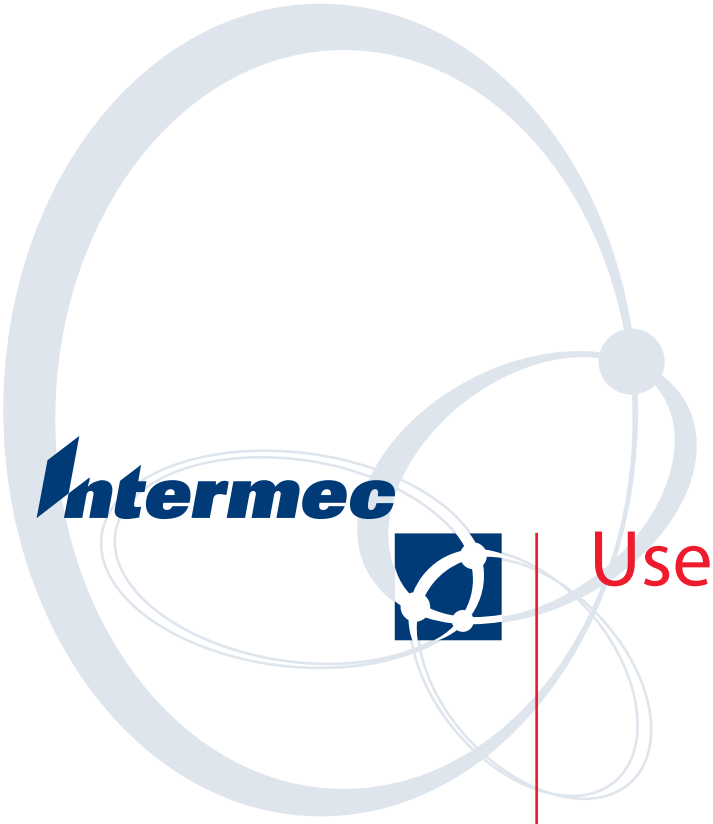


Intermec

User's Manual

9570 Wedge Reader

ADDENDUM

Date: August 1989

Manual Title: 9570 Wedge Reader User's Manual

Manual Part Number: 048520

The accompanying 9570 Wedge Reader User's Manual explains how to install, configure, and operate your wedge reader. This addendum contains additional information that you will need to enable or disable the decoding of Code 128. The Code 128 enhancement is standard on all 9570 readers with Option 03. Readers which have this option have 03 as the first two numeric characters in the configuration number on the bottom cover.

Configure the reader in the prompting mode, or when downloading from a host, use the format CH2 to select UCC 128 only.

UCC-128 Only

$+CH2$-

Place this addendum in your 9570 Wedge Reader User's Manual (Part Number 048520) just before the Table of Contents. Please mark the User's Manual inside title page with Rev. E.

Part No. 052977
Rev. A

The 9570 Operator Guide

The configuration commands for the B version wedge are somewhat different from the configuration commands for the A version wedge reader. Therefore, we have prepared a B version operator guide which contains the commands to configure your reader to work efficiently and smoothly in your environment.

A word of caution: If you have 9570 A wedge readers in your work place and are now introducing the 9570 B wedge readers, understand that the operator guides and their configuration commands are not compatible with both wedge reader types. Continue to use the A operator guide with the A wedges and use the B operator's guide and user's manual with the B wedges.

To determine if you have version A or version B of the 9570 wedge reader:

- The wedges are identified on the label on the bottom panel as A or B.

- The A version operator guide is part number 046854, Rev. A.

- The B version user's manual is part number 048520, Version D.
- The B version operator's guide is part number 050682, Version A.

For future reference, place this page in your wedge reader operator guide.

INTERMEC 9570 WEDGE READER

Congratulations! The 9570 Wedge Reader you purchased is the most advanced wedge reader in INTERMEC's line. This new wedge is identified as version B and contains the following enhancements:

- Connects to 23 computer workstations.

  12 IBM workstations
  1 AT&T workstation
  2 Memorex workstations
  5 Telex workstations
  3 Decision Data workstations

- Available in three options. Each option decodes the following bar code symbologies:

Option 1	**Option 2**	**Option 3**
CODE 39	CODE 39	CODE 39
Code 2 of 5	Code 2 of 5	Code 2 of 5
Code I 2 of 5	Code I 2 of 5	Code I 2 of 5
UPC/EAN	UPC/EAN	UPC/EAN
Code 11	Code 93	Code 128
Codabar		

- Allows you to redefine the wedge ASCII lookup tables to conform to your keyboard.

See the reverse side of this pamphlet for information about the operator guide.

9570 Wedge Reader

User's Manual

INTERMEC® Corporation
6001 36th Avenue West
P.O. Box 4280
Everett, Washington 98203-9280

INTERMEC Part No. 048520 Rev. E

INTERMEC®

Solutions for Data Collection

This equipment complies with the requirements for a Class A computing device listed in FCC Rules Part 15, Subpart J. Operation of this device in a residential area may cause harmful interference requiring the user to take whatever steps may be necessary to correct the interference.

WARRANTY INFORMATION

INTERMEC Corporation offers its customers a choice of warranty options. To receive a copy of the standard warranty provision for this product, contact your local INTERMEC sales organization and request the information. Refer to the Authorized Service Locations list which was shipped with this manual for the address and telephone number.

Upon request, customers who are residents of the USA and Puerto Rico will receive the INTERMEC Corporation Supplemental Statement of Warranty (Form 603876); customers residing outside the USA will receive a Statement of Warranty prepared and supported by their local INTERMEC distributor.

FULL ASCII

Binary[0]	Hex[1]	Dec[2]	C39[3]	Char[4]	Binary	Hex	Dec	C39	Char	Control Character Definitions[5]
00000000	00	00	%U	NUL	01000000	40	64	%V	@	NUL Null, or all zeroes
00000001	01	01	$A	SOH	01000001	41	65	A	A	SOH Start of Heading
00000010	02	02	$B	STX	01000010	42	66	B	B	STX Start of Text
00000011	03	03	$C	ETX	01000011	43	67	C	C	ETX End of Text
00000100	04	04	$D	EOT	01000100	44	68	D	D	EOT End of Transmission
00000101	05	05	$E	ENQ	01000101	45	69	E	E	ENQ Enquiry
00000110	06	06	$F	ACK	01000110	46	70	F	F	ACK Acknowledgement
00000111	07	07	$G	BEL	01000111	47	71	G	G	BEL Bell
00001000	08	08	$H	BS	01001000	48	72	H	H	BS Backspace
00001001	09	09	$I	HT	01001001	49	73	I	I	HT Horizontal Tab
00001010	0A	10	$J	LF	01001010	4A	74	J	J	LF Line Feed
00001011	0B	11	$K	VT	01001011	4B	75	K	K	VT Vertical Tab
00001100	0C	12	$L	FF	01001100	4C	76	L	L	FF Form Feed
00001101	0D	13	$M	CR	01001101	4D	77	M	M	CR Carriage Return
00001110	0E	14	$N	SO	01001110	4E	78	N	N	SO Shift Out
00001111	0F	15	$O	SI	01001111	4F	79	O	O	SI Shift In
00010000	10	16	$P	DLE	01010000	50	80	P	P	DLE Data Link Escape
00010001	11	17	$Q	DC1	01010001	51	81	Q	Q	DC1 Device Control 1 (XON)
00010010	12	18	$R	DC2	01010010	52	82	R	R	DC2 Device Control 2
00010011	13	19	$S	DC3	01010011	53	83	S	S	DC3 Device Control 3 (XOFF)
00010100	14	20	$T	DC4	01010100	54	84	T	T	DC4 Device Control 4
00010101	15	21	$U	NAK	01010101	55	85	U	U	NAK Negative Acknowledge
00010110	16	22	$V	SYN	01010110	56	86	V	V	SYN Synchronous Idle
00010111	17	23	$W	ETB	01010111	57	87	W	W	ETB End Transmission Block
00011000	18	24	$X	CAN	01011000	58	88	X	X	CAN Cancel
00011001	19	25	$Y	EM	01011001	59	89	Y	Y	EM End of Medium
00011010	1A	26	$Z	SUB	01011010	5A	90	Z	Z	SUB Substitute
00011011	1B	27	%A	ESC	01011011	5B	91	%K	[	ESC Escape
00011100	1C	28	%B	FS	01011100	5C	92	%L	\	FS File Separator
00011101	1D	29	%C	GS	01011101	5D	93	%M	]	GS Group Separator
00011110	1E	30	%D	RS	01011110	5E	94	%N	^	RS Record Separator
00011111	1F	31	%E	US	01011111	5F	95	%O	_	US Unit Separator
00100000	20	32	SP	SP[6]	01100000	60	96	%W	`	SP Space
00100001	21	33	/A	!	01100001	61	97	+A	a	DEL Delete
00100010	22	34	/B	"	01100010	62	98	+B	b	
00100011	23	35	/C	#	01100011	63	99	+C	c	
00100100	24	36	/D	$	01100100	64	100	+D	d	
00100101	25	37	/E	%	01100101	65	101	+E	e	
00100110	26	38	/F	&	01100110	66	102	+F	f	
00100111	27	39	/G	'	01100111	67	103	+G	g	
00101000	28	40	/H	(	01101000	68	104	+H	h	
00101001	29	41	/I	)	01101001	69	105	+I	i	
00101010	2A	42	/J	*	01101010	6A	106	+J	j	
00101011	2B	43	/K	+	01101011	6B	107	+K	k	
00101100	2C	44	/L	,	01101100	6C	108	+L	l	
00101101	2D	45	/M	-	01101101	6D	109	+M	m	
00101110	2E	46	/N	.	01101110	6E	110	+N	n	
00101111	2F	47	/O	/	01101111	6F	111	+O	o	
00110000	30	48	/P[7]	0	01110000	70	112	+P	p	
00110001	31	49	/Q	1	01110001	71	113	+Q	q	
00110010	32	50	/R	2	01110010	72	114	+R	r	
00110011	33	51	/S	3	01110011	73	115	+S	s	
00110100	34	52	/T	4	01110100	74	116	+T	t	
00110101	35	53	/U	5	01110101	75	117	+U	u	
00110110	36	54	/V	6	01110110	76	118	+V	v	
00110111	37	55	/W	7	01110111	77	119	+W	w	
00111000	38	58	/X	8	01111000	78	120	+X	x	
00111001	39	57	/Y	9	01111001	79	121	+Y	y	
00111010	3A	58	/Z	:	01111010	7A	122	+Z	z	
00111011	3B	59	%F	;	01111011	7B	123	%P	{	
00111100	3C	60	%G	<	01111100	7C	124	%Q	|	
00111101	3D	61	%H	=	01111101	7D	125	%R	}	
00111110	3E	62	%I	>	01111110	7E	126	%S	~	
00111111	3F	63	%J	?	01111111	7F	127	%T[8]	■[9]	

Notes

0 Bit positions are 76543210
1 Hexadecimal value
2 Decimal value
3 Code 39 character(s)
4 ASCII character
5 Hold down Control key and press key to left of definition
6 SP is the SPACE character
7 The Code 39 characters /P through /Y may be interchanged with the numbers 0 through 9
8 May be interchanged with %X or %Y or %Z
9 ■ is the DELETE character

"CODE-39"

March 1968

MANUAL CHANGE NOTICE

Date: May 1988

Manual: 9570 Wedge Reader User's Manual

Manual Part Number: 048520

This notice lists the changed sections of the 9570 Wedge Reader User's Manual, briefly describes the change, and notes the effect of the change on reader operation.

With the changes described below, the manual revision level is changed to Version D.

Please note that the manual title is changed from 9570 Wedge Reader Operator Guide to 9570 Wedge Reader User's Manual. In addition, a new operator's guide has been prepared titled 9570 Wedge Reader Operator's Guide, INTERMEC part number 050682.

- The operator's guide (050682) contains information necessary for daily operation of the wedge. An operator's guide is shipped with each wedge.

- The user's manual (048520) contains normal operator information plus scale and portable reader operation instructions. The user's manual must be specifically ordered and is shipped separately.

Page Number	Change and Effect
Table of Contents	All pages revised to reflect new and revised information. No effect on operation.
Section One	Information about IBM PS/2 workstations, Option 3 symbologies, and related INTERMEC manuals added. No effect on operation.
Section Two	Information about power supplies added, IBM PS/2 workstations listed, and new configuration labels added. No effect on operation.
Section Three	Option 3 added to Table 3-1 and 3-2, IBM PS/2 configuration labels added to Table 3-3, Code 128 configuration label added to Table 3-4. No effect on operation.
Section Four	Figure 4-2, Status Lights, revised. No effect on operation.
Section 5	9440 Trakker cable information added. No effect on operation.
Section 6	No change.
Appendix A	Table A-2, Configuration Command Summary, revised to include additional commands. No effect on operation.
Appendix B	No change.
Index	All pages revised to reflect the changes described above. No effect on operation.

TABLE OF CONTENTS

SECTION 1 READ THIS FIRST

SECTION 2 HARDWARE INSTALLATION

TABLE OF CONTENTS

SECTION 3 READER CONFIGURATION

SECTION 4 READER OPERATION

TABLE OF CONTENTS

SECTION 5 PORTABLE READER OPERATION

SECTION 6 SCALE OPERATION

TABLE OF CONTENTS

SECTION 6
(Continued)

APPENDIX A

APPENDIX B

INDEX

LIST OF FIGURES

LIST OF TABLES

LIST OF TABLES
(Continued)

SECTION 1

READ THIS FIRST

READER FEATURES

MANUAL FEATURES
Manual Conventions and Terminology
Related INTERMEC Manuals

WARRANTY INFORMATION

READ THIS FIRST

READER FEATURES

The 9570 Wedge Reader connects between the terminal and the keyboard of your workstation allowing you to enter information to your computer by scanning bar code labels.

Bar code data read by the wedge reader is transmitted to the terminal (and subsequently to the host) in the same format as if the data were manually entered from the keyboard. The reader translates all of the 128 ASCII characters into valid keystroke equivalents. These keystroke equivalents can be used from the default set-up, or modified for a specific installation, which eliminates the need for costly applications programming.

The wedge reader works with the following products:

IBM

- IBM 3180-1 (Both keyboards)
- IBM 3180-2 (Both keyboards)
- IBM 3179-1
- IBM 3179-2 (Both keyboards)
- IBM PC/AT
- IBM PS/2 30, 50, 60
- IBM 3178 (Models C1 - C4)
- IBM 5291-2
- IBM PC, PC XT
- IBM3191 (Both keyboards)
- IBM 3196 (Both keyboards)

AT&T

- PC 6300

Decision Data

- 3761 (Both Keyboards)
- 3781
- 3791 (Both keyboards)

Memorex

- 2178
- 2179 (122 key keyboards)

Telex

- 078 (Both keyboards)
- 080 (Both keyboards)
- 180 (Both keyboards)
- 079 (Both keyboards)
- 179 (Both keyboards)

You can enter data by scanning bar code labels with either a wand or a laser scanner, or you can continue to manually operate your terminal from the keyboard as you did before installing the reader. In addition, the wedge reader contains an auxiliary port that allows you to connect a small scale or a portable bar code reader to the wedge reader. Data from either device can then be transmitted to your IBM workstation via the wedge.

The reader supports three sets of symbologies with three program options. These are:

Program Option 01	Program Option 02	Program Option 03
CODE 39	CODE 39	CODE 39
Interleaved 2 of 5	Interleaved 2 of 5	Interleaved 2 of 5
Two of Five	Two of Five	Two of Five
UPC/EAN	UPC/EAN	UPC/EAN
Codabar	CODE 93	Code 128
CODE 11		

MANUAL FEATURES

This manual contains information required to install, configure, and operate the wedge reader. Appendix A contains reader specifications, ordering information, reader command summary, troubleshooting information, and a glossary. Appendix B contains the terminal keyboard equivalent charts. The index contains page references to the information. Warranty information is located after the index.

Please complete and return the Reader Reply Card which is located at the front of this manual. No postage is necessary if it is mailed within the United States.

Manual Conventions and Terminology

Throughout the manual, the 9570 Wedge Reader is referred to as the "wedge reader" or the "reader."

Data represented in bar code form is referred to as a "label."

Letters enclosed in square brackets [ ], refer to a single key on the terminal keyboard. Depending on the type of keyboard, the name of these keys may differ. This manual refers to the following types of keys:

Table 1-1
Referenced Terminal Keys

Key:	What It Means:
[RET]	RETURN. This key may be labeled as RETURN, RET, ENTER, or an arrow pointing left ↵.
[ESC]	ESCAPE. This key may be labeled ESC, Esc, or Escape.
[CNTL]	CONTROL. This key may be labeled Cntl, Control, or CONTROL.
[CNTL] [P]	Press the Control key and the letter P simultaneously.
[SP]	Spacebar. This key is usually not labeled.
[BKSP]	Backspace. This key maybe labeled Backspace, BACKSPACE, or an arrow pointing left .
[DEL]	Delete. This key maybe labeled Rub, Del, or DEL.

Related INTERMEC Manuals

For additional information to operate or maintain the wedge reader accessories (wands, scanners, or portable readers) refer to the INTERMEC manuals below.

Table 1-2
Related INTERMEC Manuals

Manual:	INTERMEC Part Number:
1260 Series Digital Wands Quick Reference Card	046855
1352 Slot Scanner Quick Reference Card	046856
1600 Laser Scanner Operator's Guide	044606
1620A Laser Scanner Operator's Guide	045205
1400 Series Contact Scanner Operator's Guide	045878
1420A Scanner Operator's Guide	046125
1500 Laser Scanner Operator's Guide	047626
9420 Portable Reader Operator's Manual	046796
9410B Portable Reader (with IRL) Operator's Manual	044181
Introduction to IRL Programming Manual	045025
IRL Programmer's Reference Manual	045000
Data Communications Manual	044737
9570 Wedge Reader Operator's Guide	050682

WARRANTY INFORMATION

INTERMEC Corporation offers its customers a choice of warranty options. To receive a copy of the standard warranty provision for this product, contact your local INTERMEC sales organization and request the information. Refer to the Authorized Service Locations list which was shipped with this manual for the address and telephone number.

Upon request, customers who are residents of the USA and Puerto Rico will receive the INTERMEC Corporation Supplemental Statement of Warranty (Form 603876); customers residing outside the USA will receive a Statement of Warranty prepared and supported by their local INTERMEC distributor.

SECTION 2

HARDWARE INSTALLATION

HARDWARE INSTALLATION

INSTALLATION PREPARATION

Reader Parts

The following parts are shipped with the 9570 Wedge Reader.

- 9570 Wedge Reader
- Operator Guide
- Full ASCII Chart
- Rubber Feet
- Velcro Strips
- Wand Holder
- Configuration Record Label

Unpack the shipping carton and verify the contents with the packing slip. Keep the packing box. It is the approved shipping container for the reader, and it should be used if it is ever necessary to return the unit to the factory.

System Parts

Locate and unpack the additional system parts:

- Wand or Scanner
- Adapter cable
- Power supply (if one is required) Refer to Table 1-1.

These items are shipped separately from the wedge reader.

See Figure 2-1 for an illustration of the wedge reader, its component locations, and its accessories.

If you intend to operate the reader with a scale or a portable reader, you can connect the wedge reader and input devices to your workstation by following the information given here. Refer to Section 5 for information about installing a portable reader and Section 6 for information about installing a scale.

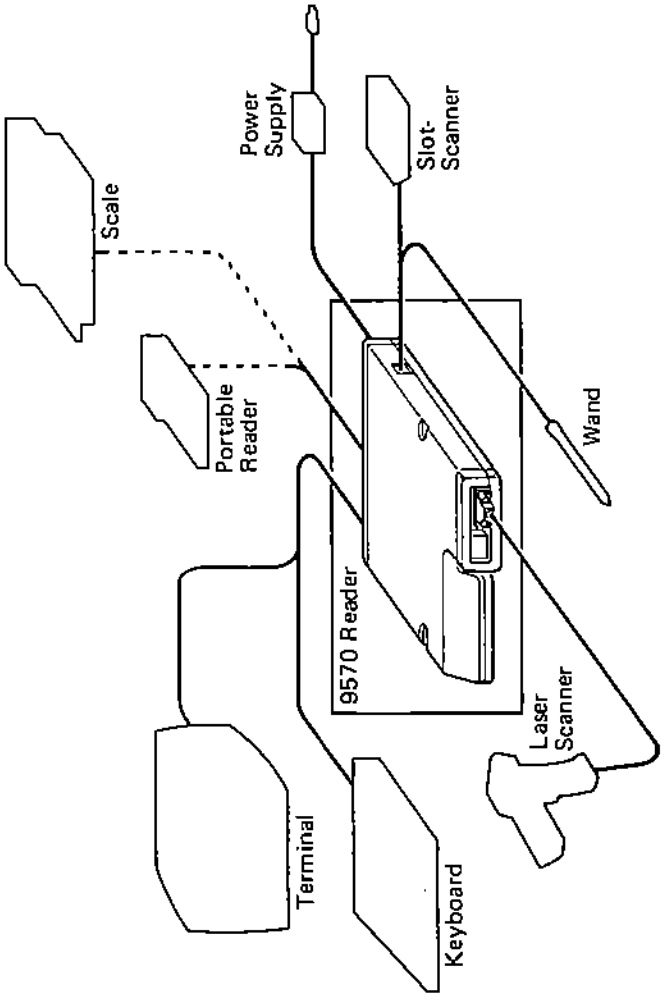


Figure 2-1
9570 Reader and Input Devices

CONNECT A WAND OR SLOT SCANNER TO THE READER

The wedge reader receives input from INTERMEC 1200-Series Digital Wands, or an INTERMEC 1352 Slot Scanner.

Use Figure 2-2 and the procedure below to connect a wand or a slot scanner to your wedge reader.

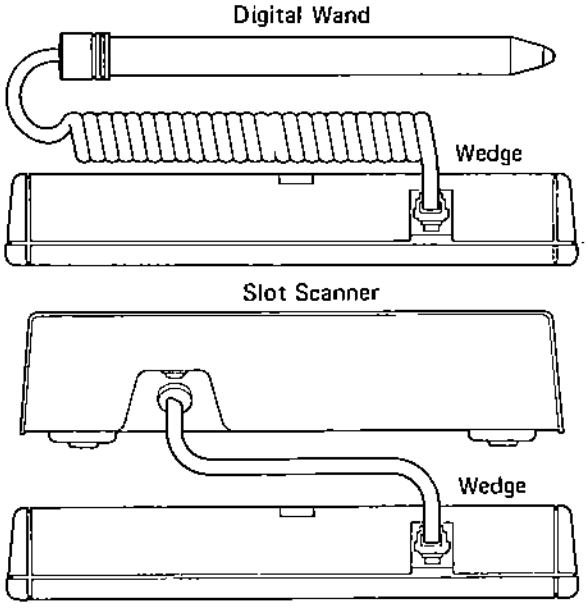


Figure 2-2
Connect a Wand or Slot Scanner

1. Locate the modular connector (Figure 2-2) on the side of the wedge reader.

2. Align the connector at the end of the wand or slot scanner cable with the modular connector on the wedge reader side panel.

3. Press the cable connector into the receptacle on the wedge reader side panel.

4. Ensure that the connector is secure.

Note: Using a slot scanner with a wedge requires additional power. Connect the Laser Power Supply to the wedge reader and an AC outlet. See Table 2-1 for more information.

CONNECT A LASER SCANNER TO THE READER

The wedge reader receives input from INTERMEC 1600-Series Laser Scanners, 1500 Laser Diode Scanners and 1400-Series Laser-compatible Hand-held Scanners.

Use the illustration and procedure below to connect a scanner to your wedge reader.

For cabling and configuration information for 1600-Series Laser Scanner remote triggering, see Appendix A.

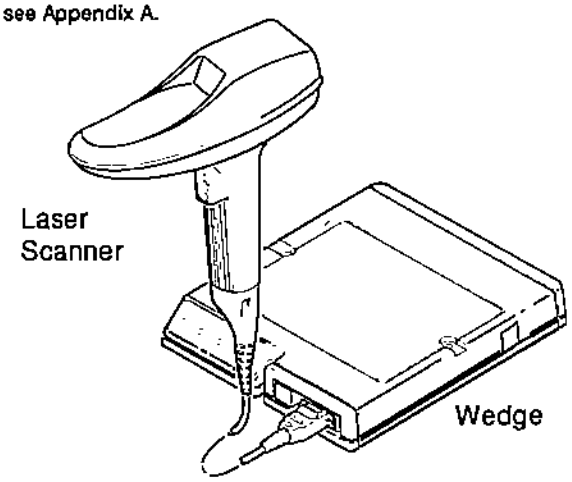


Figure 2-3
Connect a Laser Scanner

1. Locate the laser scanner connector (Figure 2-3) on the front panel of the wedge reader.

2. Align the pins on the cable connector with the sockets on the wedge reader front panel.

3. Press the cable connector into the scanner receptacle on the wedge reader front panel.

4. Secure the connector with the screws located on either side of the connector.

Note: When using a laser scanner with the wedge reader, additional power is required. Therefore, you must also connect the Laser Power Supply or the Wand Power Supply to the wedge reader and an AC outlet. See Table 2-1 for more information.

ADDITIONAL POWER SUPPLIES

The reader uses keyboard power for the 1260-Series wand operations and limited RS-232 communications. All other input devices and auxiliary port operations require additional external power.

Power Supplies Required

Two power supplies are available for use with the wedge reader when additional power is required. The table below lists the input device and the required power supply.

Table 2-1
Input Devices Requiring Power Supply

Input Devices	Wand Power Supply	Laser Power Supply	Power Supply Not Required
1200-Series			X †
1352 Slot Scanner	X		
1400-Series		X	
1500 Laser Scanner		X	
1600 Laser Scanner		X	
1620 Laser Scanner		X	
RS-232 Auxiliary Port Operation	X		

† Although these devices do not require an additional source of power, they will work with either power supply attached.

- 120VAC Wand Power Supply Part Number: 046791. The wand unit supplies ±8V of unregulated power for the slot scanner and the satellite.
- 120VAC Laser Power Supply Part Number: 046792. The laser unit supplies ±8V of unregulated power with an added +5V regulated power for the laser.

Note: The 9570 Wedge Reader is UL listed when used with INTERMEC power supplies, part numbers 046791 and 046792 (Multi-Products International, catalog number T57R-16500-x/2 and T66R-218500-x/2, and is CSA Certified.

These additional power supplies are available to support varying voltage requirements:

Wand Power Supply:

Voltage	Part Number
100VAC 50/60 HZ	046972
220VAC 50/60 HZ	046973
240VAC 50/60 HZ	046974

Laser Scanner Power Supply:

Voltage	Part Number
100VAC 50/60 HZ	046976
220VAC 50/60 HZ	046977
240VAC 50/60 HZ	046978

Connect Power Supply

A power supply is needed when using 1400-Series input devices, a laser scanner, or a slot scanner or when you require more than +5V on the RS-232 communication line.

Use the following illustration and procedure to connect the power supply to the wedge reader.

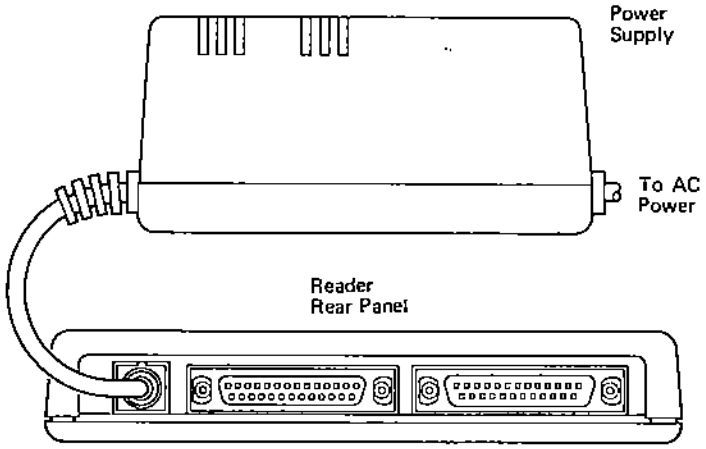


Figure 2-4
Connect a Power Supply

1. Locate the power supply connector (Figure 2-4) on rear panel of the wedge reader.

2. Insert the power supply connector into the wedge reader connector.

3. Do not plug the power supply into the wall outlet until you have connected the reader between the terminal and keyboard, and until you are ready to turn on the power to the computer.

See Section 6 for more information about using the wedge reader with a scale.

CONNECT THE READER TO THE WORKSTATION

The wedge reader electronically interfaces between the keyboard and the CRT. Bar code data is read and transmitted to the host and is formatted as if keyed from the terminal's keyboard. The wedge reader operates with the following workstations.

IBM

- IBM 3180-1 (Both keyboards)
- IBM 3180-2 (Both keyboards)
- IBM 3179-1
- IBM 3179-2 (Both keyboards)
- IBM PC/AT
- IBM PS/2 Models 30, 50, 60
- IBM 3178 (Models C1 - C4)
- IBM 5291-2
- IBM PC, PC XT
- IBM3191 (Both keyboards)
- IBM 3196 (Both keyboards)

AT&T

- PC 6300

Decision Data

- 3761 (Both Keyboards)
- 3781
- 3791 (Both keyboards)

Memorex

- 2178
- 2179 (122 key keyboards)

Telex

- 078 (Both keyboards)
- 080 (Both keyboards)
- 180 (Both keyboards)
- 079 (Both keyboards)
- 179 (Both keyboards)

Cable

Locate and unpack the appropriate cable adapter for your workstation. This cable adapter connects between the workstation keyboard and the wedge reader. The cable adapter has one DB25-P plug connector for the wedge reader and two connectors for the keyboard to terminal connection. See Figure 2-5.

Table 2-2 lists the cable adapter required for each workstation.

Table 2-2
Cable Adapters and Part Numbers

Workstation Model:	INTERMEC Cable Part Number:
IBM	
3179, 3180 (1,2)	046984
3178	046985
3191, 3196	048345
PC/XT/AT	046986
5291-2	046987
PS/2 Models 30, 50, 60	049492
AT&T	
PC 6300	048340
Decision Data	
3761, 3791	048341
3781	048342
Memorex	
2178	048343
2179	048344
Telex	
078, 079, 080, 179, 180	046986

Connect Wedge

After you have located the correct cable, use the illustration and procedure below to connect the wedge reader to the workstation.

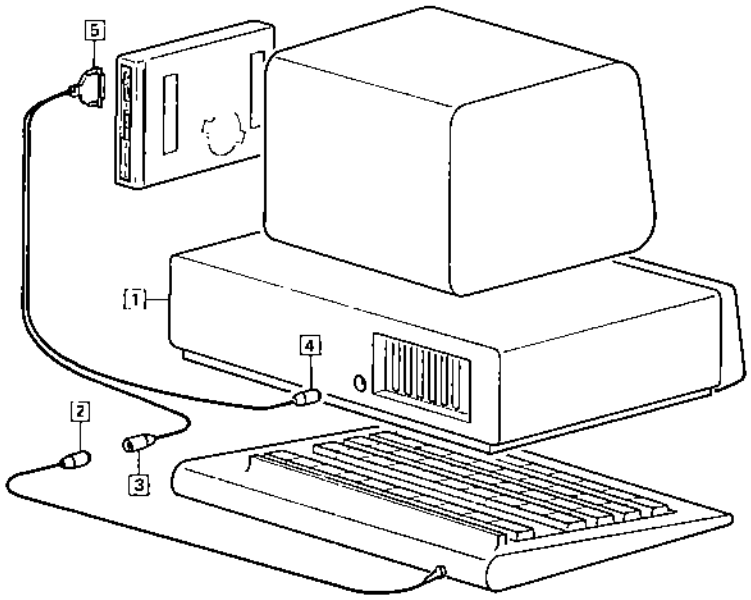


Figure 2-5
Connect Wedge to Workstation

1. Turn OFF power at the workstation.
2. Disconnect the keyboard from the workstation.
3. Insert and attach the cable connector marked "Terminal" into the keyboard connector on the terminal.
4. Attach the cable connector marked "Keyboard" to the end of the keyboard cable. The cable connections can only fit one way, so there is no danger of reversing the connection.
5. Connect the D-type 25-pin connector into the wedge.

Check Connection

At this point the following items should be connected:

- The wedge reader is connected between the workstation and the keyboard using the cable adapter.
- The wand or the scanner is connected to the wedge reader.
- A power supply, if required, is connected to the wedge reader.

Figure 2-6 shows the terminal, the keyboard, and the wedge reader and illustrates the steps to connect the wedge reader to your workstation.

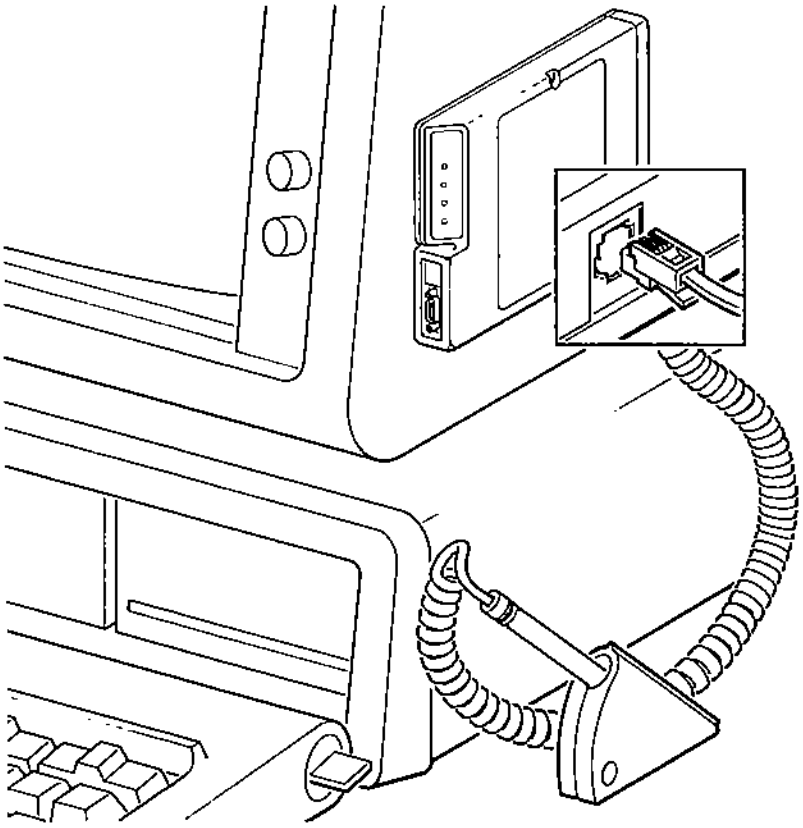


Figure 2-6
9570 Wedge Reader Connected to Workstation

Install Wand Holder

A wand holder is provided with your wedge reader. Secure the wand holder to a convenient place near the workstation. A desk top, a workbench, or some other horizontal surface is a suitable location.

Refer to Figure 2-7 and the procedure described below for directions to install the wand holder in a secure fashion.

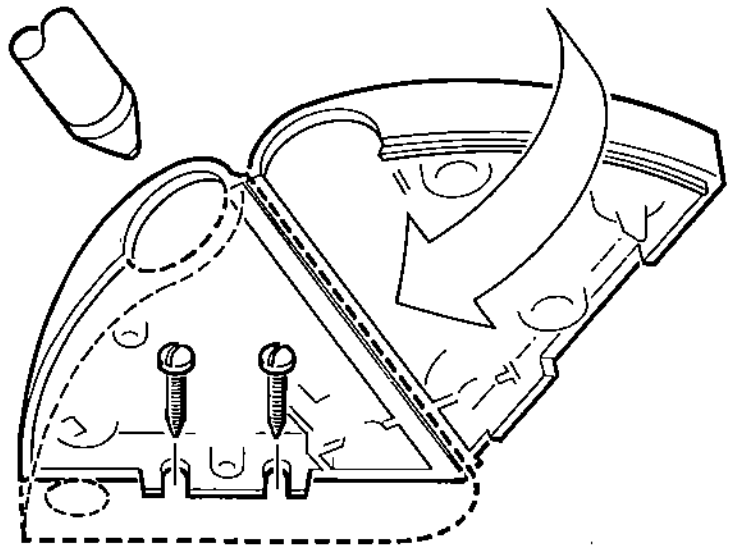


Figure 2-7
Wand Holder Installation

1. With the wand holder open, place the left bottom of the wand holder on the work surface.

2. Use a pencil to mark the position of the screws.

3. Drill screw holes in work surface.

4. Insert screws and partially screw into work surface.

5. With wand holder still open, place the left, bottom portion under the screw heads.

6. Continue to tighten the screws until the left portion of the wand holder is secure.

7. Close the wand holder.

8. Place wand in wand holder. The wand holder will protect the wand tip from damage and dirt. The wand will always be ready for use.

Supply Power

You are now ready to supply power to the system.

1. If you are using a power supply, plug it into an AC wall socket.

Note: If you are using a Memorex 2178 workstation, you must reset a jumper inside the wedge reader in addition to using a power supply. To reset the jumper:

- Remove and set aside the four screws in the bottom of the wedge.
- Remove and set aside the wedge cover.
- Locate jumper J11 on the PCB.
- Move the jumper from the 1-2 position to the 2-3 position.
- Replace the cover and screws.

2. Turn ON the workstation. At this point you will hear four quick low beeps indicating that the reader is ready to operate.

CHECK COMMUNICATION

Before you move on to configuring and operating your installed wedge reader, you can use the following bar code labels and Quick Reference Card to check communication and learn how your wedge reader and input device operates.

Identify Terminal Type

Before you operate the wedge reader with your workstation, it is very important that you configure the wedge reader for your particular workstation type. Table 2-3 contains a list of the workstations and CODE 39 labels. Scan the appropriate label to configure the wedge reader for your workstation.

Scan the appropriate label to cause the reader to take the following action.

1. Enter Configuration.
2. Enable the reader for your terminal type.
3. Place the parameter selection in memory.
4. Exit Configuration.
5. Beep once to indicate a good scan and beep four times to indicate configuration updated and exited.

Note: If you attempt to read labels before identifying your workstation model and terminal type, you will not be able to operate your reader. If this occurs, turn off the power to your workstation and scan the appropriate terminal type label.

After you have scanned the appropriate label, you will hear four low beeps from the reader. The beeps indicate that the reader has successfully completed the configuration and is ready to read labels.

Table 2-3
Workstation Identification

IBM Model:	Terminal Type:	Scan this label:
3178	Keyboard C1	*$+TA0$-*
	Keyboard C2	*$+TA1$-*
	Keyboard C3	*$+TA2$-*
	Keyboard C4	*$+TA3$-*
3179-1		*$+TA4$-*
3179-2	102 Key Keyboard	*$+TA5$-*
3179-2	122 Key Keyboard	*$+TA6$-*
3180-1	Typewriter Keyboard	*$+TA7$-*

Table 2-3 (Continued)
Workstation Identification

IBM Model:	Terminal Type:	Scan this label:
3180-1	Data Entry Keyboard	*$+TA8$-*
3180-2	Typewriter Keyboard	*$+TA9$-*
3180-2	Data Entry Keyboard	*$+TA10$-*
3191-2	102 Key Keyboard	*$+TA11$-*
3191-2	122 Key Keyboard	*$+TA12$-*
3196-2	102 Key Keyboard	*$+TA13$-*
3196-2	122 Key Keyboard	*$+TA14$-*
5291-2		*$+TA15$-*

Table 2-3 (Continued)
Workstation Identification

IBM Model:	Terminal Type:	Scan this label:
PC or PC/XT		*$+TA16$-*
PC/AT		*$+TA17$-* †
PS/2 Model 30		*$+TA36$-*
PS/2 Model 50, 60		*$+TA37$-*

AT&T:	Terminal Type:	Scan this label:
PC 6300		*$+TA18$-*

Decision Data:	Terminal Type:	Scan this label:
3761	83 Key Keyboard	*$+TA19$-*
3761	122 Key Keyboard	*$+TA20$-*

† Factory default setting

Table 2-3 (Continued)
Workstation Identification

Decision Data:	Terminal Type:	Scan this label:
3781		*$+TA21$-*
3791	83 Key Keyboard	*$+TA22$-*
3791	122 Key Keyboard	*$+TA23$-*

Memorex Model:	Terminal Type:	Scan this label:
2178		*$+TA24$-*
2179	122 Key Keyboard	*$+TA25$-*

Telex:	Terminal Type:	Scan this label:
078	88 Key Keyboard	*$+TA26$-*
078	122 Key Keyboard	*$+TA27$-*
079	88 Key Keyboard	*$+TA28$-*

Table 2-3 (Continued)
Workstation Identification

Telex:	Terminal Type:	Scan this label:
079	122 Key Keyboard	*$+TA29$-*
080	88 Key Keyboard	*$+TA30$-*
080	122 Key Keyboard	*$+TA31$-*
179	88 Key Keyboard	*$+TA32$-*
179	122 Key Keyboard	*$+TA33$-*
180	88 Key Keyboard	*$+TA34$-*
180	122 Key Keyboard	*$+TA35$-*

Test Communication

You are now ready to scan the test labels below to check the communication. Each time the reader successfully reads, translates, and transmits a label, you will hear one high beep. To facilitate testing, set up your workstation with a communication application screen.

1. Scan the test label below.

Test Label

TEST LABEL

When you scan this label you will hear one high beep which indicates that the reader has successfully read and transmitted the data.

Your CRT screen will display the TEST LABEL. The cursor remains placed immediately following the data.

2. Scan the test label below.

Test Label

123456789

When you scan this label you will hear one high beep which indicates that the reader has successfully read and transmitted the data.

Your CRT screen will display the information 123456789. The cursor remains placed immediately following the data.

3. Advance the cursor using the cursor control key or tab key on your keyboard. This will allow you to see the scanned and transmitted data more easily. Later, in the Operation Section, you will learn how to use the wedge reader to command the cursor to advance to a tab stop or the next line.

4. Scan the test label below.

Test Label

When you scan this label you will hear one high beep which indicates that the reader has successfully read and transmitted the data.

Your CRT screen will display the information 9570 READER. The cursor remains placed immediately following the data.

If you wish to further demonstrate or check the operation of the wedge reader, you can scan any of the labels on the Quick Reference Card shipped with your reader. These labels are in CODE 39. The wedge reader will interpret the data and transmit it to your CRT screen.

Having Trouble?

If you were unable to successfully transmit the test data, complete the following check.

1. Check terminal type. Scan the label for the correct terminal type again.

2. Check the cable connections between the workstation and the wedge reader and between reader and the input device.

3. Check power connection to reader and to outlet if you are using a power supply.

4. Review proper scanning techniques in wand or scanner operation guide.

Your 9570 wedge reader is now ready to configure for operation. Section 3 contains the information you need to configure the reader for your specific needs.

SECTION 3

READER CONFIGURATION

INTRODUCTION TO CONFIGURATION

READER FACTORY SETTING
Return to Factory Setting

CHANGE THE CONFIGURATION
Configuration Checklist
Configuration Parameters
- IBM Model
- AT&T Model
- Decision Data Model
- Memorex Model
- Telex Model
- Beeper Volume
- Preamble A Required
- Full ASCII
- Laser Scanner Timeout
- Laser Scanner Operation
- Laser Scanner Trigger Mode
- Intercharacter Delay
- Message Terminator
- RS-232 Mode
- CODE 39
- Code 11
- Interleaved 2 of 5
- Two of Five
- Codabar
- CODE 93
- Code 128
- UPC/EAN

INTRODUCTION TO CONFIGURATION

You can change the parameters of the wedge reader so that it operates effectively within your system. Parameter selections include identifying bar codes to be read, setting timeout and intercharacter delay lengths, selecting trigger modes, and setting beeper volume.

Configuration Mode allows you to access the stored parameters and make the necessary changes. The selected parameters are stored in non-volatile memory and remain in effect until you change them.

This section lists the factory set parameters, explains the parameters and options available, and describes the change procedure.

READER FACTORY SETTING

Table 3-1 lists the wedge reader parameters set at the factory.

Table 3-1
Wedge Reader Factory Setting

Parameter:	Setting:
IBM Terminal Type	PC/AT
Beeper Volume	Loud Beep
Preamble A Required	Not Required
Full ASCII	Enabled
Laser Scanner Timeout	No Timeout
Laser Scanner Operation	One Shot Mode
Laser Scanner Trigger Mode	Level
Intercharacter Delay	0 milliseconds
Message Terminator	None
RS-232 Mode	Transparent
Enter Key Equivalent	LF
Bar Code Symbologies:	
Program Option 01	•CODE 39 no check digit •Code 11 with 1 check digit •Interleaved 2/5 variable length •2 of 5 disabled •Codabar std/ABCD start/stop •UPC A and E; EAN 8 and 13; supplementals.

Table 3-1 (Continued)
Wedge Reader Factory Setting

Parameter:	Setting:
Program Option 02	•CODE 39 •CODE 93 •I 2/5 variable length •2 of 5 disabled •UPC A and E; EAN8 and 13; supplementals.
Program Option 03	•CODE 39 •Two of Five •UPC/EAN •Interleaved 2 of 5 •Code 128

Return to Factory Setting

When you scan the following label you will return your reader to the factory set parameters listed on the previous page.

Default Configuration

The default configuration setting selects the IBM PC/AT as the workstation type. If you have another type of workstation, you must scan the appropriate label in Table 3-3 to configure the wedge reader for your workstation type. If you do not, your reader will not function. If this should happen, turn off the power to the workstation, turn on the power, and scan the correct terminal type label.

CHANGE THE CONFIGURATION

You can change one parameter, some parameters, or all the parameters of the wedge reader. Bar code labels have been prepared for you to use. These labels contain the commands and data needed to enter the Configuration Mode, select and change the particular parameter, and update and exit the Configuration Mode.

Configuration Checklist

Table 3-2 contains a parameter configuration checklist. Use this to record your selections as you configure the reader. When you need to review the configuration of your reader, you can refer to this list.

In addition to noting the configuration selections on Table 3-2, you can record the selected configuration on the label that was shipped with your reader. You can place the label on the back or front of the reader, on the workstation, or in a record book.

Table 3-2
Parameter Configuration Checklist

Parameter:	Configuration:
Terminal Type	
Beeper Volume	
Preamble A Required	
Full ASCII	
Scanner Timeout	
Scanner Operation	
Trigger Mode	
Intercharacter Delay	
Message Terminator	
RS-232 Mode	

Bar Code Symbology

If you have Option 01

•CODE 39	
•UPC/EAN	
•2 of 5	
•I 2 of 5	
•Codabar	
•Code 11	

If you have Option 02

•CODE 39	
•UPC/EAN	
•2 of 5	
•I 2 of 5	
•CODE 93	

If you have Option 03

•CODE 39	
•UPC/EAN	
•2 of 5	
•I 2 of 5	
•Code 128	

Configuration Parameters

Tables 3-3, 3-4, and 3-5 contain the configurable parameters, the available options, and labels to scan for changing the parameter. In some cases, you will find step-by-step instructions with the labels.

Refer to the Glossary for more information about specific parameters and unfamiliar terms.

Table 3-3
Reader Parameters

IBM Model:	Terminal Type:	Scan this label:
3178	Keyboard C1	*$+TA0$-*
	Keyboard C2	*$+TA1$-*
	Keyboard C3	*$+TA2$-*
	Keyboard C4	*$+TA3$-*
3179-1		*$+TA4$-*
3179-2	102 Key Keyboard	*$+TA5$-*
3179-2	122 Key Keyboard	*$+TA6$-*
3180-1	Typewriter Keyboard	*$+TA7$-*

Table 3-3 (Continued)
Reader Parameters

IBM Model:	Terminal Type:	Scan this label:
3180-1	Data Entry Keyboard	*$+TA8$-*
3180-2	Typewriter Keyboard	*$+TA9$-*
3180-2	Data Entry Keyboard	*$+TA10$-*
3191-2	102 Key Keyboard	*$+TA11$-*
3191-2	122 Key Keyboard	*$+TA12$-*
3196-2	102 Key Keyboard	*$+TA13$-*
3196-2	122 Key Keyboard	*$+TA14$-*
5291-2		*$+TA15$-*

Table 3-3 (Continued)
Reader Parameters

IBM Model: Terminal Type:	Scan this label:
PC or PC/XT	*$+TA16$-*
PC/AT	*$+TA17$-* †
PS/2 Model 30	*$+TA36$-*
PS/2 Model 50, 60	*$+TA37$-*

† Factory default setting

Table 3-3 (Continued)
Reader Parameters

AT&T:	Terminal Type:	Scan this label:
PC 6300		*$+TA18$-*

Decision Data:	Terminal Type:	Scan this label:
3761	83 Key Keyboard	*$+TA19$-*
3761	122 Key Keyboard	*$+TA20$-*

Decision Data:	Terminal Type:	Scan this label:
3781		*$+TA21$-*
3791	83 Key Keyboard	*$+TA22$-*
3791	122 Key Keyboard	*$+TA23$-*

Memorex Model:	Terminal Type:	Scan this label:
2178		*$+TA24$-*
2179	122 Key Keyboard	*$+TA25$-*

Table 3-3 (Continued)
Reader Parameters

Telex:	Terminal Type:	Scan this label:
078	88 Key Keyboard	*$+TA26$-*
078	122 Key Keyboard	*$+TA27$-*
079	88 Key Keyboard	*$+TA28$-*
079	122 Key Keyboard	*$+TA29$-*
080	88 Key Keyboard	*$+TA30$-*
080	122 Key Keyboard	*$+TA31$-*
179	88 Key Keyboard	*$+TA32$-*
179	122 Key Keyboard	*$+TA33$-*

Table 3-3 (Continued)
Workstation Identification

Telex:	Terminal Type:	Scan this label:
180	88 Key Keyboard	*$+TA34$-*
180	122 Key Keyboard	*$+TA35$-*

Beeper Volume:	Set to:	Scan This Label:
	quiet	*$+BV3$-*
	loud	*$+BV7$-* †
	reduce volume	*$+BV8$-*
	raise volume	*$+BV9$-*

You can adjust the volume by repeatedly scanning the raise volume or reduce volume label until you achieve the desired tone.

† Factory default setting

Table 3-3 (Continued)
Reader Parameters

Preamble A Required:	Set to:	Scan This Label:
	not required	 *$+OA0$-* †
	required	 *$+OA1$-*

This parameter defines whether Preamble A is required. If Preamble A is required and one has not yet been defined, the reader will allow only a Preamble A definition to be input.

Full ASCII:	Set to:	Scan This Label:
	disabled	 *$+RB0$-*
	enabled	 *$+RB1$-* †

This parameter enables the interpretation of any CODE 39 label to its ASCII equivalent and allows keyboard operation of 128 key positions translated to the 128 character Full ASCII set.

† Factory default setting

Table 3-3 (Continued)
Reader Parameters

Laser Scanner Timeout:	Set to:	Scan This Label:
	no timeout	 *$+SA0$-* †
	variable length	Use the labels and directions below to define scanner timeout.
	1. enter	Accumulate/Enter Config  *+/$+*
	2. identify	Scanner Timeout  *SA*
	3. select time (seconds)	Scan a number between 1 and 60. Use the labels on the Quick Reference Card.
	4. enter data	Enter  **
	5. exit	Exit Configuration  *$-*

This parameter defines the maximum length of time that the laser scanner will stay on during a single triggering event. When you are in Data Entry Mode the scanner is turned off if you do not scan a label within the selected length of time.

† Factory default setting

Table 3-3 (Continued)
Reader Parameters

Laser Scanner Operation:	Set to:	Scan This Label:
	one shot	*$+SB0$-* †
	auto-trigger	*$+SB1$-*

One shot: The laser scanner will read one symbol per trigger event.

Auto-trigger: The laser scanner will read multiple symbols during a single trigger event, beep, and transmit them separately.

Laser Scanner Trigger:	Set to:	Scan This Label:
	level	*$+SC0$-* †
	edge	*$+SC1$-*

Level Triggering: Pull the trigger; the laser turns on and stays on until you release the trigger.

Edge Triggering: Pull the trigger; the laser turns on and stays on. Pull the trigger a second time; the laser turns off. Simply releasing the trigger does not turn off the laser. If the laser is on, the timeout and the number-of-decodes-per-trigger-event features operate to turn the laser off also. Edge triggering is most often used in remote triggering.

† Factory default setting

Table 3-3 (Continued)
Reader Parameters

Intercharacter Delay:	Set to:	Scan This Label:
	0 msec	*$+ID0$-* †
	5 msec	*$+ID1$-*
	10 msec	*$+ID2$-*
	20 msec	*$+ID3$-*
	50 msec	*$+ID4$-*
	100 msec	*$+ID5$-*
	200 msec	*$+ID6$-*
	500 msec	*$+ID7$-*

Intercharacter delay inserts a time delay between characters coming from the wedge reader to the workstation.

† Factory default setting

Table 3-3 (Continued)
Reader Parameters

Message Term.:	Set to:	Scan This Label:
	1. enter	Accumulate/Enter Config  *+/$+*
	2. define	Define Terminator  *WT*
	3. select	Select the desired terminator from the Equivalent Tables in Appendix B. Scan that character from the Full ASCII Chart. Only one character is allowed.
	4. enter data	Enter  **
	5. exit	Exit Configuration  *$-*

This procedure defines the terminator that will be appended to the data transmitted to the terminal. The terminator follows postamble C, if one has been selected. Default setting defines no terminator.

Table 3-3 (Continued)
Reader Parameters

RS-232:	Set to:	Scan This Label:
	Window	 *$+WH1$-*
	Transparent	 *$+WH0$-* †

Window Mode is designed for use with scales. Transparent Mode is designed for all other operations including portable readers. Section 6 describes Window Mode.

† Factory default setting

Table 3-4
Select Bar Code Symbology

CODE 39:	Set to:	Scan This Label:
	disabled	 *$+CB0$-*
	without check digit	 *$+CB1$-* †
	with check digit not transmitted	 *$+CB20$-*
	with check digit transmitted	 *$+CB21$-*
	HIBC transmit check digit	 *$+CB31$-*

Refer to Glossary for HIBC definition.

† Factory default setting

Table 3-4 (Continued)
Select Bar Code Symbology

Code 11: Available with Option 01 only	Set to:	Scan This Label:
	disabled	 *$+CG0$-*
	one check digit	 *$+CG1$-* †
	two check digits	 *$+CG2$-*

Interleaved 2 of 5 Code:	Set to:	Scan This Label:
	disabled	 *$+CA0$-*
	case code (6 or 14 digits)	 *$+CA98$-*
	variable length modulus 10 check digit	 *$+CA99$-* †

† Factory default setting

Table 3-4 (Continued)
Select Bar Code Symbology

Interleaved 2 of 5 Code (Cont'd):	Set to:	Scan this label:
	specify length	Use the labels and directions below to configure the reader for I 2 of 5 Code of a specified length (2 - 32 digits -even increments).
	1. enter	Accumulate/Enter Config  *+/$+*
	2. identify	I 2 of 5  *CA*
	3. select length	Scan a number from the Full ASCII Chart. Must be even number.
	4. enter data	Enter  **
	5. exit	Exit Configuration  *$-*

Enabling Interleaved 2 of 5 Code automatically disables 2 of 5 Code.
Interleaved 2 of 5 Code continued on next page.

Table 3-4 (Continued)
Select Bar Code Symbology

Two of Five Code:	Set to:	Scan This Label:
	disabled	 *$+CC00$-* †
	3 bar start/stop	Use the labels and directions below to configure the reader for 2 of 5 Code with 3 bar start/stop pattern.
	1. enter	Accumulate/Enter Config  *+/$+*
	2. identify	2 of 5  *CC0*
	3. select length	Scan a number from the Full ASCII Chart.
	4. enter data	Enter  **
	5. exit	Exit Configuration  *$-*

† Factory default setting

Table 3-4 (Continued)
Select Bar Code Symbology

Two of Five Code (Cont'd):	Set to:	Scan This Label:
	2 bar start/stop	Use the labels and directions below to configure the reader for 2 of 5 Code with 2 bar start/stop pattern (2-32 digits, even increments).
	1. enter	Accumulate/Enter Config  *+/$+*
	2. identify	2 of 5  *CC1*
	3. select length	Scan a number from the Full ASCII Chart.
	4. enter data	Enter  **
	5. exit	Exit Configuration  *$-*

Enabling 2 of 5 Code automatically disables Interleaved 2 of 5 Code.

Table 3-4 (Continued)
Select Bar Code Symbology

Codabar: Available with Option 01 only	Set to:	Scan This Label:
	disabled	*$+CD00$-*
	ABC with ABCD start/stop code	
	ABC with DC1 DC4 start stop code	*$+CD12$-*
	standard with no start/stop code	*$+CD20$-*
	standard with ABCD start/stop code	*$+CD21$-* †
	standard with DC1-DC4 start/ stop code	*$+CD22$-*

† Factory default setting

Table 3-4 (Continued)
Select Bar Code Symbology

Codabar (Cont'd):	Set to:	Scan This Label:
	concatenated with no start/ stop code	*$+CD30$-*
	concatenated with ABCD start/ stop code	*$+CD31$-*
	concatenated with DC1-DC4 start stop code	*$+CD32$-*
CODE 93: Available with Option 02	**Set to:**	**Scan This Label:**
	Disabled	*$+CF0$-*
	Enabled	*$+CF1$-*
Code 128: Available with Option 03	**Set to:**	**Scan This Label:**
	Disabled	*$+CH0$-*
	Enabled	*$+CH1$-*

Table 3-4 (Continued)
Select Bar Code Symbology

UPC/EAN: Set to:	Scan This Label:

For specific UPC/EAN combinations not found in the labels below, see Table 3-5.

To disable all UPC/EAN codes

$+CE0000$-

To enable all UPC/EAN codes

$+CE1111$- †

To enable only UPC A/EAN 13

$+CE1000$-

To enable only UPC E

$+CE0100$-

To enable only EAN 8

$+CE0010$-

UPC/EAN continued on next page.

† Factory default setting

Table 3-4 (Continued)
Select Bar Code Symbology

UPC/EAN: Set to:	Scan This Label:
To enable UPC A with supplementals	 *$+CE1001$-*
To enable UPC A, disable all EAN, with supplementals	 *$+CE2001$-*
To enable UPC A, EAN E, with supplementals	 *$+CE2101$-*

To use UPC/EAN in combinations not offered in the previous table, follow the procedure in Table 3-5. You must enter a series of four digits (0, 1, 2) to indicate the versions of UPC/EAN you wish enabled. You must enable or disable all four combinations every time you configure this parameter.

To Enable/Disable Code:	Enter Digit in Position:			
	1	2	3	4
UPC A/EAN E disabled	0			
UPC A/ EAN E enabled	1			
UPC A enabled/EAN (all versions) disabled	2			
UPC E disabled		0		
UPC E enabled		1		
EAN 8 disabled			0	
EAN 8 enabled			1	
Supplementals not allowed				0
Supplementals allowed				1

Table 3-5
Select Specific UPC/EAN Combination

UPC/EAN:	Scan:		
1. enter configuration	Accumulate/Enter Configuration  *+/$+*		
2. Identify UPC/EAN	UPC/EAN  *CE*		
3. select codes	Scan a combination of 0, 1, 2 to indicate UPC and EAN codes enabled or disabled.		
	to enable:	to disable:	special:
UPC A EAN 13	 *1*	 *0*	 *2* †
UPC E	 *1*	 *0*	
EAN 8	 *1*	 *0*	
Supplementals	 *1*	 *0*	

† Enables UPC A; disables all EAN codes.

Table 3-5 (Continued)
Select Specific UPC/EAN Combination

UPC/EAN:	Scan:
4. enter data	Enter 
5. exit configuration	Exit Configuration 

Your reader is now configured for operation. Section 4 describes the operating procedures, and Section 5 describes the wedge reader and portable reader operation, and Section 6 describes the wedge reader and scale operation.

SECTION 4

READER OPERATION

OPERATING MODES

DATA ENTRY OPERATION

TYPES OF LABELS
Regular Labels
Multiple-Read Labels

SPECIAL OPERATING FUNCTIONS

DATA ENTRY MODE COMMANDS
Enter Data
Change Operation

CUSTOMIZE ASCII TO KEYBOARD EQUIVALENTS
Customizing Procedure

RS-232 AUXILIARY PORT OPERATION

RESET THE CONFIGURATION TO FACTORY SETTING

STATUS BEEPS

STATUS LIGHTS

READER OPERATION

OPERATING MODES

The wedge reader has two basic operating modes:

- Configuration Mode is used to configure the reader for operation. You have already operated the reader in Configuration Mode if you have completed any of the tasks in Section 3.

- Data Entry/Edit Mode is used for transmitting scanned data to the terminal.

Section 4 describes the modes of operation in Data Entry/Edit Mode, the commands to use, and the procedures to follow to operate the reader in Data Entry/Edit Mode.

DATA ENTRY OPERATION

Immediately after turning on the workstation, the reader is in Data Entry Mode. In Data Entry Mode you can do the following:

•Scan labels to enter data;
•Enable the reader to read and decode CODE 39 labels as ASCII characters;
•Enable the reader to accumulate scanned labels into one record;
•Command the reader to transmit data;
•Command the reader to transmit data and clear the buffer;
•Scan labels to build a record or command;
•Reset the reader to the factory configuration;
•Enable an automatic trigger mode for the laser scanner;
•Command the reader to delete a record or character;
•Enter Configuration Mode.
•Modify the table used to covert from ASCII data to keystrokes.

Note: Do not scan labels when the workstation keyboard Caps Lock key is enabled. The scanned data will be incorrect. Always release Caps Lock key before scanning labels with a 9570.

TYPES OF LABELS

The wedge reader is easy to operate; you scan bar code information to enter data. The scanned data appears on your CRT screen just as if you had entered it from your keyboard.

There are two types of bar code labels: regular and multiple-read.

Regular Labels

A regular label always takes the form *data* and will typically be transmitted as soon as it is scanned. The *'s are the start and stop codes and will not be transmitted or appear on your CRT screen. They are used by the reader, and they indicate the beginning and the ending points of a label containing data. Example: *TB123*

Multiple-read Labels

Multiple-read labels take the form *Spacedata* where Space is an encoded space and data is the information you want to enter. Multiple-read labels will not be transmitted to the CRT screen immediately but will be held in the reader's buffer until a command is received to transmit. Multiple-read labels allow you to build a record or a command from individual labels. Example: * TB123*

SPECIAL OPERATING FUNCTIONS

Data Entry Mode. Upon power-up or when exiting any of the special operating modes, the reader enters regular data entry mode. When you are operating in this mode the reader will record labels as soon as they are scanned and display them on your CRT screen.

Within the Data Entry/Edit Mode are two functions you can enable: Accumulate and Full ASCII. You can choose to enable one or both of these functions by scanning the appropriate label.

Enable Accumulate. Scanning the Enter Accumulate label directs the reader to store all scanned labels as multiple-read labels regardless of whether they are regular or multiple-read labels. All the labels are stored in a single record and are not sent to the CRT screen until the command to transmit is received.

Enable Full ASCII. When Full ASCII is enabled the reader records each CODE 39 label you scan as its ASCII equivalent. This means that a *$M* label will be interpreted as the ASCII command CR or carriage return. When not operating in full ASCII, a *$M* will be interpreted as the CODE 39 components $ and M. You can enable Full ASCII two ways:

- You can select Full ASCII function in Configuration Mode. Full ASCII operation will always function until you either change the configuration of the reader or scan the End Full ASCII command. The Full ASCII function selected in configuration is not lost when changing modes or turning the power off.

- If you have configured the reader to operate with Full ASCII disabled, you can scan the command label Enter Full ASCII while in Data Entry Mode. This command will temporarily configure the reader to interpret the CODE 39 data into its ASCII equivalent. This function will remain enabled until you leave Data Entry Mode or turn the power off. When power to the unit is restored, the unit will default to the configured parameter set in EEPROM.

DATA ENTRY MODE COMMANDS

You can use the following labels to command the wedge reader to operate according to your needs. Each command causes the reader to take some action. You enter the command by scanning the appropriate label or labels.

Enter Data

The following commands are used to record and transmit scanned labels containing data.

Enter Record:

Purpose: Causes the reader to transmit the record. If no data exists, then nothing will be transmitted and three low beeps will be generated. If you are in Configuration Mode, scan this label to complete the building of a command. This command will also exit from the preamble or postamble entry modes.

Scan: Enter Record

Transmit:

Purpose: The reader will transmit the current record without clearing it from the buffer and will not exit the Accumulate Mode if it has been selected.

Scan: Transmit (No Clear)

Clear:

Purpose: This command clears the current record when in Accumulate Mode. Two low beeps will sound if the buffer is not empty and three low beeps will sound if it is empty.

Scan: Clear

Reset:

Purpose: This command causes the reader to go through the Power On sequence. All conditions apply as with Power On.

Scan: Reset

Destructive Backspace:

Purpose: This command backspaces and deletes one character in the current record. If there is no data in the buffer, the reader will sound three low beeps.

Scan: Destructive Backspace

Command:

Purpose: This command is used with Accumulate Mode. When this label is scanned, the reader attempts to interpret any characters temporarily stored in the accumulate buffer as a command. If the characters do not translate to a valid command, the characters are treated as data. This allows you to build commands from the Full ASCII Bar Code Chart.

Example (In Accumulate Mode): Scan the <$>,the <+>, and the <Command> labels from the Full ASCII Bar Code Chart; the reader will enter Configuration Mode. Scan the <$>, the <+>, and the <Enter> labels; the reader will transmit a $ + to the CRT screen.

Scan: Command

Change Operation

The following labels allow you to change the operation of the reader.

Preambles/Postamble: Preambles are typically used to identify the origin of the transmission (that is a work station, an employee number, or a warehouse), and postambles are typically used to place the cursor, or to satisfy the system requirements of your workstation. Preambles and postambles can be disabled, defined, and changed.

When the preamble is used as an employee number, employees scan the multiple-read preamble label, scan their employee number (typically encoded on their badge in CODE 39), and scan the Enter label. This sequence permanently defines the preamble which will be sent with each record until disabled, redefined, or power is recycled on the workstation. The data portion of each preamble or postamble can contain no more than 25 characters. If more than 25 characters are entered, only the first 25 will be accepted and an error beep will sound.

To define a preamble or postamble, complete the following procedure:

1. Scan the Alter Preamble or Postamble label. This label contains the command to Enter Accumulate Mode. This makes it possible to scan information form the Full ASCII chart or other bar code label to complete the preamble or postamble.
2. Scan data information (from the Full ASCII chart or other label).
3. Scan the Enter or Transmit label.

The preamble or postamble will remain defined until you redefine it or turn off power to the workstation.

Preamble A:

Purpose:	Disable preamble A.
Scan:	Preamble A  *+.*
Purpose:	Define preamble A
Scan:	Alter preamble A  *+.*
Scan:	Data from the Full ASCII Chart.
Scan:	Enter  **

Preamble B:

Purpose: Disable preamble B.

Scan: Preamble B

+ +
+ +
+ +

Purpose: Define preamble B

Scan: Alter Preamble B

*+ + *

Scan: Data from the Full ASCII Chart

Scan: Enter

**

Postamble C:

Purpose: Disable postamble C.

Scan: Postamble C

+%

Purpose: Define postamble C.

*+% *

Scan: Enter

**

Defining the preamble or postamble causes the reader to complete one of the following actions if:

- There is no data portion, then the Preamble/Postamble buffer will be cleared. The effect of this command is to disable a preamble or postamble. If you have configured the reader to require a Preamble A and it has not been defined, the reader will not function until you either change the parameter or define the preamble.
- The data portion consists of a single space, then all subsequent data will be entered into the Preamble/Postamble buffer until another command is received or an overflow occurs. The effect of this data is to create a multiple-read label.
- The data portion contains data, then the preamble or postamble will be redefined accordingly.

Enter/Exit Accumulate Mode:

Purpose: The Enter Accumulate Mode command will cause all subsequent decoded data labels to be added to the current data buffer until the record count exceeds 128 characters or a Transmit label is scanned. If the record count exceeds 128 characters, an error beep will sound and the last label read will be rejected. Scanning the End Accumulate label exits the Accumulate Mode, transmits, and clears the current data record.

Scan: Enter Accumulate

+/

Scan: End Accumulate and Transmit

-/

READER OPERATION

Full ASCII:

Purpose: Enabling this feature allows the reader to decode CODE 39 as its ASCII character equivalent. Exiting this feature returns the reader to regular data entry operation defined in Configuration Mode.

Scan: Enter Full ASCII

Scan: Exit Full ASCII

Enter/Exit Configuration Mode:

Purpose: When the reader is in Configuration Mode the operating parameters are selected. After scanning the Exit Configuration Mode the parameters are stored in EEPROM and the reader is returned to regular data entry mode.

Scan: Enter Config Mode

Scan: Exit Config Mode

Auto Trigger Mode:

Purpose: This command causes the laser to remain on after a good read until the laser trigger is released. Entering this command a second time returns the laser to normal control. This overrides any configuration parameter stored in EEPROM until the wedge's power is turned Off or Default Configuration label is scanned.

Scan: Enter/Exit Auto Trigger Mode

CUSTOMIZE ASCII TO KEYBOARD EQUIVALENTS

The reader is shipped with default keyboard keystroke settings. These keystrokes are invoked by their corresponding ASCII characters. These keyboard settings fall into several categories, and are provided in Appendix B.

The ASCII to keystroke settings can be customized for your installation by changing the defaults to other keyboard characters. Up to twelve alterations of the default table can be stored in EEPROM.

If more than twelve alterations are made, the additional ones are not permanently stored, and the original, unmodified settings reappear after a power cycle.

When alterations are stored in EEPROM the reader sounds one high tone. When the EEPROM capacity is reached (12 alterations), subsequent changes are stored with a high-low tone to warn you that these are temporary and are deleted at the next power cycle.

Only single digit ASCII characters can be entered. Characters entered with a shift, ctrl, cmd, or alt are considered single characters.

If a replacement key character is used that is already associated with another ASCII character, that character is active in both places. For example, if you bind the letter S to the Spacebar, the letter S appears on the screen when either a space or an S is read.

READER OPERATION

Customizing Procedure

Use the procedure below to customize the ASCII character set for your system.

1. Scan — Modify Lookup Table

*.$/ *

2. Enter Data — Scan the ASCII character you wish to redefine using the Full ASCII Chart.

3. Enter new key — Press the keyboard character which replaces the old key stroke character.

To undo the new keystroke equivalents and return to the default equivalents, reconfigure the wedge for your terminal type. Scan the appropriate configuration type from Table 2-3 or Table 3-3 to reset the ASCII key equivalents to the original settings.

RS-232 AUXILIARY PORT OPERATION

Additional operating commands used to communicate with a portable reader or scale are contained in Sections 5 and 6 of this manual.

RESET THE CONFIGURATION TO FACTORY SETTING

The reader's parameters can be configured several different ways. If you choose, you can return the reader to the original factory setting by scanning the Default Configuration label. This scan resets all the parameters to the factory settings. See Section 3, Reader Configuration, for a list of the default settings.

Default Configuration

.+

After you scan this label, the reader will return to the factory default settings. You then must define your terminal type. Scan one of the configuration labels in Table 2-3 or Table 3-3 to identify the correct terminal type.

STATUS BEEPS

The reader speaker will sound one or more beeps to indicate one of several conditions. The beeps will have either a high or a low tone and will be from one to four beeps in succession. The following illustration explains the beeps:

STATUS BEEPS

The reader sounds high or low beeps to indicate status conditions. To adjust the beeper volume, scan the Raise or Lower Beeper Volume label below.

Lower Beeper Volume

$+BV8$-

Raise Beeper Volume

$+BV9$-

Beep:	Reader sounds after:
♩♩♩♩	Power on or reset with good RAM and ROM; exit Configuration Mode
♩♪♩♪	Power on or reset with bad RAM or ROM
♪♩♪	I/O error
♩	• Reading a valid multiple-read label • Reading a valid label in Accumulate Mode
♩♩	Reading a clear label (*--*)
♩♩♩	Reading an invalid command label
♪	Completing a record (Regular or Enter label)

♪ = high beep ♩ = low beep

Figure 4-1
Beeper Identification

READER OPERATION

STATUS LIGHTS

The four status lights on the front of the wedge reader indicate the following conditions:

1. **Read:** A scan has been decoded. Light turns off after a scan fails to decode.
2. **Fault:** A fault condition exists in the reader. Consult the system programmer for assistance.
3. **Config:** Reader is in configuration mode.
4. **Power:** Reader power is on. LED flickers during a scan by a wand or a scanner.

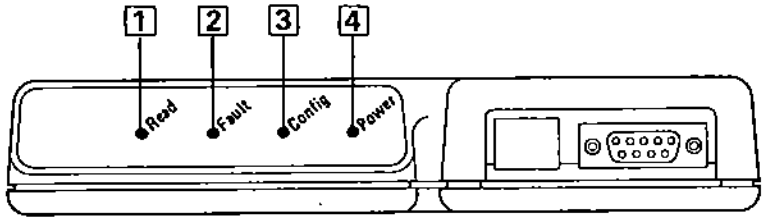


Figure 4-2
Status Lights

SECTION 5

PORTABLE READER OPERATION

PORTABLE READER OPERATION

AUXILIARY PORT

You can connect a portable reader to the wedge reader at the auxiliary port and transmit the collected data to your workstation. This port is located on the rear panel of the wedge reader and is labeled Modem. See Figure 5-1 for location of auxiliary port.

[1] **Power Supply Connector:**
Use to connect either the wand power supply (046791) or laser power supply (046792).

[2] **Modem Connector:** (25-pin socket)
Use to connect a computer to the reader.

[3] **Terminal Connector:** (25-pin plug)
Use to connect a CRT terminal to the reader.

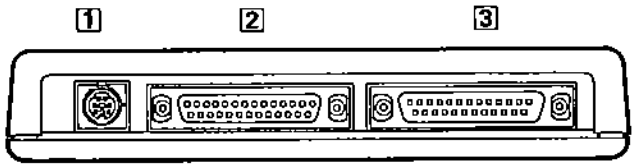


Figure 5-1
9570 Rear Panel

The auxiliary port is designed to receive data using point to point protocol and RS-232 interface. Point to point protocol includes Request-to-Send (RTS) and Clear-to-Send (CTS). If you need more information, point to point and other INTERMEC protocols are described fully in the INTERMEC Data Communications Manual.

Even though RTS and CTS are employed, care must be taken when transmitting data from a portable reader to ensure data integrity in all operations. By carefully programming and monitoring the portable reader and by using the wedge reader parameters available in configuration, you can successfully control the transmission of portable reader data through the wedge to the workstation.

PORTABLE READER OPERATION

INTERMEC PORTABLE READERS

You can connect the following INTERMEC portable readers to the wedge:

- INTERMEC 9410B Portable Reader with IRL
- INTERMEC 9420 Portable Reader
- INTERMEC 9440 Trakker

These readers must be programmed with IRL programs to control the collection and transmission of data. This section contains an IRL program which is intended to be used as an example only. However, if you see that it may be useful, you can edit the program and incorporate it into your system. In any case, read the program comments and the operator instructions before using or editing the program. Pay specific attention to the transmit routine; to ensure data integrity, the operator must initiate the transmission of each record.

ADDITIONAL INTERMEC MANUALS

The following INTERMEC manuals will help you understand the portable reader, IRL programming, and INTERMEC protocol.

Table 5-1
INTERMEC Manuals

INTERMEC Manual:	Part Number:
9410B w/IRL Operator's Manual	044181
9420 Operator's Manual	046796
9440 Trakker Operator's Manual	048402
9440 Trakker System Manual	048403
INTERMEC Introduction to IRL Programming Manual This manual is a tutorial in IRL programming and contains several sample IRL programs.	045025
INTERMEC IRL Programmer's Reference Manual This manual describes IRL program commands in detail; it does not contain IRL program samples. This manual assumes that you have had considerable programming experience.	045000
Data Communications Manual The manual describes INTERMEC protocols.	044737

FLOW CONTROL

The wedge reader can be configured to operate in two modes: Transparent Mode and Window Mode. Transparent Mode allows the reader to accept data from an INTERMEC portable reader and transmit it directly to the workstation. Window mode allows the wedge reader to accept information from a scale. For more information about operating the wedge reader with a scale, see Section 6.

The wedge employs Clear-to-Send (CTS) when accepting data transmission from a portable reader over the RS-232 interface. CTS will always be used when in Transparent Mode.

Characters received by the wedge when in Transparent Mode will be held in the buffer until one of the following conditions occurs:

- 240 characters have been received
- no characters have been received in 5 seconds
- an Enter Key or equivalent is received

Transmission Flow

When one of the three conditions (240 characters, 5 seconds, Enter or equivalent) is met, the wedge halts transmission of the data from the portable reader by holding the CTS line false. The contents of the buffer is then transmitted to the workstation. The RS-232 communication is suspended (CTS is false) until the buffered data has been sent to the terminal.

Default Enter Key

The default Enter Key Equivalent is an ASCII <LF>. On terminals, this transmits the Enter keystroke. An ASCII character other than the default Enter key equivalent (condition three above) can be accepted by the wedge reader if it is explicitly defined. Follow the procedure outlined below and in Table 5-2.

Set the Enter Command Equivalent

An optional step to influence the data transmission from a scale or portable device, is to assign an equivalent to the Enter command. With this character, you can predetermine the amount of data transmitted in one block. (An additional method of influencing the transmission flow is to slow the transmission rate, described next.)

To assign an Enter command equivalent, follow the instructions in Table 5-2.

Table 5-2
Assign Enter Key Equivalent

Enter Key Equivalent:	Scan these labels:
1.Enter:	Accumulate/Enter Configuration  *+/$+*
2.Identify:	Enter Key Equivalent  *WP*
3.Select replacement	Select the desired replacement character, using the Equivalent Tables in Appendix B. Scan that character from the Full ASCII Chart. †
4.Enter data	Enter  **
5.Exit	Exit Configuration  *$-*

† Default is <LF>

PORTABLE READER OPERATION

Keyboard Inhibited

Because the wedge does not recognize when keyboard entry is inhibited, any IRL program you write must contain a transmit routine that will allow an operator to control or attend the transmission of data from the portable reader to the workstation.

Transmission Rate

To slow the transmission of the data so that the workstation has ample time to process the data and return the keyboard to a ready- to-receive condition, you can include wait statements in the IRL program. These statements cause the portable reader to pause before sending the next record to the wedge. This may provide enough turnaround time so that the workstation is ready to receive data from the wedge before the wedge is ready to transmit the next record.

OPERATING INSTRUCTIONS

When transmitting data from the portable reader to the workstation via the wedge reader, the following tasks must be completed and the following cautions must be observed.

Prepare Workstation

Connect the wedge to your workstation. Refer to Section 2 for instructions.

Prepare Wedge Reader

After connecting the wedge reader to the workstation, select the operating and auxiliary port parameters in Configuration Mode.

Configuration: The wedge parameters have been divided into two categories. The operating parameters, which are described in Section 3, are the parameters required to operate the wedge with the workstation. The auxiliary port parameters, which are described in this section are required to operate the wedge with a portable reader.

Table 5-3 contains the auxiliary port parameters that require configuration. The bar code labels in the table contain the command to enter configuration mode, the parameter code, the value to select the parameter setting, and the command to exit configuration mode. After scanning the bar code, you will hear four low beeps signifying that the configuration is complete and is stored in memory.

Table 5-3
Auxiliary Port Configuration

Baud Rate:	Set to:	Scan this label:
	110	*$+IA0$-*
	300	*$+IA1$-*
	600	*$+IA2$-*
	1200	*$+IA3$-*
	2400	*$+IA4$-*
	4800	*$+IA5$-*
	9600	*$+IA6$-*

Table 5-3 (Continued)
Auxiliary Port Configuration

Parity:	Set to:	Scan this label:
	disabled	*$+IB0$-*
	even	*$+IB1$-* †
	odd	*$+IB2$-*

Parity continued on the next page.

† Factory default setting

To achieve the equivalent of **Mark Parity** set the reader to the following:

Parity Disabled
Seven Data Bits
Two Stop Bits

To achieve the equivalent of **Space Parity** set the reader to the following:

Parity Disabled
Eight Data Bits
One Stop Bit

Table 5-3 (Continued)

Auxillary Port Configuration

Number of Data Bits:	Set to:	Scan this label:	
	7	 *$+II7$-*	†
	8	 *$+II8$-*	

Number of Stop Bits:	Set to:	Scan this label:	
	1	 *$+IC1$-*	†
	2	 *$+IC2$-*	

† Factory default setting

Table 5-3 (Continued)

Auxiliary Port Configuration

RS-232 Mode:	Set to:	Scan this label:
	Window	*$+WH1$-*
	Transparent	*$+WH0$-* †

† Factory default setting

Window Mode is designed for use with scales. Transparent Mode is designed for all other operations including portable readers. In Transparent Mode, the wedge reader will:

- Send all characters (including control data characters) received by the auxiliary port to the workstation.
- Accept the entire ASCII character set, but only characters that have a keystroke equivalent will be transmitted to the screen.
- Strip DLE characters for compatibility with the INTERMEC portable readers.
- Append defined preamble, postamble, and message terminators to the portable reader data and transmit data to CRT screen.
- Check for ASCII Enter Key Equivalent to employ Clear-to-send (CTS) to prevent buffer overflow.

Workstation Cursor Control: If you are sending data to the workstation to fill a pre-designed screen with information, you may want to add characters to control the cursor.

Postamble C and Message Terminator can be configured to append several characters to any record prior to transmission to the workstation. Typically the appended data is a carriage return, a line feed, or a horizontal tab. These parameters are discussed in Section 3.

In addition to configuring the wedge to control the cursor, you can define the protocol of the portable reader to append data to a record prior to transmission to the wedge. An IRL program can contain a routine to append data to a record prior to transmission to the wedge also.

Prepare Portable Reader

You must prepare the portable reader to operate with the wedge and workstation by configuring and programming appropriately.

Configuration: Configure the portable reader for baud rate, parity, number of data bits, and number of stop bits. These parameters must match the configuration of the wedge before data can be transmitted.

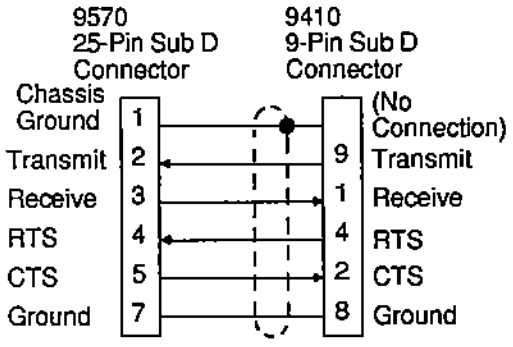
PORTABLE READER OPERATION

Programming: Program the portable reader and prepare for data collection. The IRL program provided at the end of this section is an **example only.** However, it can be used if it is suitable for your system. You may enter the program into the portable reader, edit the program to fit your system, or write a new program. Read the program comments at the end of the program to understand how it works with the auxiliary port features.

The program provided at the end of this section is intended to serve as a sample for you to follow when you write an IRL program for your portable reader. In addition to this manual, you will need the operator and programming guides for the INTERMEC portable reader and the IRL manuals. Refer to "Additional INTERMEC Manuals" in this section for titles and part numbers.

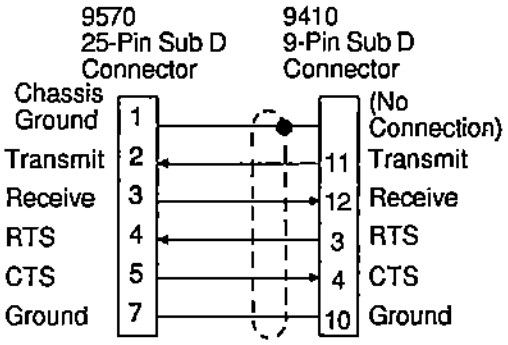
Data Collection: If you use the program provided in this manual to collect and transmit the data, follow the operator instruction for data collection and transmission.

Cable Connection: Connect the portable reader to the wedge at the connection located on the rear panel of the wedge labeled Modem. RS-232 cable connector pin assignments are shown in Figures 5-2, 5-3 and 5-4.



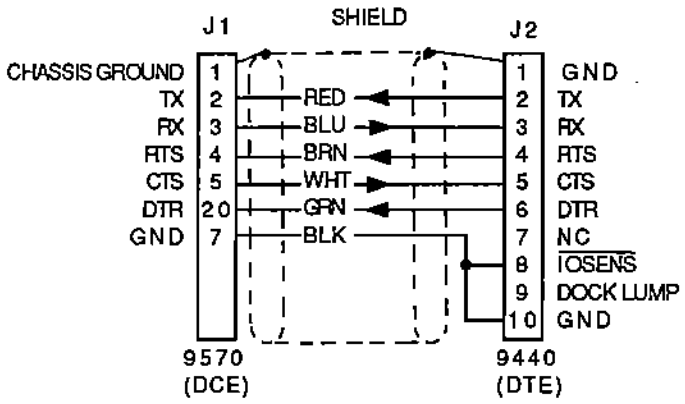
INTERMEC Cable Part Number: 047478

Figure 5-2
9410 Portable Reader Cable Connectors



INTERMEC Cable Part Number: 047477

Figure 5-3
9420 Portable Reader Cable Connectors



INTERMEC Cable Part Number: 048864

Figure 5-4
9440 Portable Reader Cable Connectors

Data Transmission: Before you can transmit data from an INTERMEC portable reader, you must be in an acceptable screen format on your workstation.

Do not scan information or enter data from the keyboard when you are transmitting data from the portable reader. To do so will interfere with the transmission and data may be lost or altered.

INTERACTIVE READER LANGUAGE (IRL) PROGRAM

Before using the sample IRL program included in this section, it is important that you have a complete understanding of the portable reader and the Interactive Reader Language (IRL). Refer to Other INTERMEC Manuals in this section for titles and part numbers.

For additional information about programming a portable reader for use with your wedge reader, request Application Note Number 11 from your local INTERMEC distributor.

Sample IRL Program

This program is written for the 9410B INTERMEC Portable Reader. It allows you to collect and transmit data using an operator attended transmit routine. It prompts the operator to scan bar code labels after each record to command the next transmission.

Note: Line numbers are not included when entering the program into the portable reader. Line numbers are provided for reference only.

```
1   OA(100,25)
2   .START
3   PCOLLECT DATA?
4   D$0=""
5   A1
6   G$0="Y".COLLECT
7   .UPROMPT
8   PUPLOAD DATA?
9   D$0=""
10  A1
11  G$0="Y".UPLOAD
12  G.START
13  .COLLECT
14  P""
15  D#1=0
```

```
16  .CLOOP
17  D$0=""
18  A
19  G$0="END".UPROMPT
20  DA(#1)=$0
21  D#1=#1+1
22  G.CLOOP
23  .UPLOAD
24  D$0=""
25  PENTER 1 OR 2 CHAR. RECORD TERMINATOR
26  A
27  D$1=$0
28  D#1=0
29  P"'END' TO XMIT A RECORD"
```

(Note:Line 29 contains a quotation mark followed by an apostrophe.)

```
30  .ULOOP
31  A
32  D$0=A(#1)
33  P$0
34  XMN,$0
35  XMN,$1
36  D#1=#1+1
37  G.ULOOP
```

Sample IRL Program Comments

The sample IRL Program was written for the 9410B Portable Reader to collect and transmit data using an operator attended routine. It is important to follow the operator instructions exactly.

Prepare the wedge reader and workstation and the portable reader as previously directed.

Operator Instructions for Sample IRL Program

The information contained in braces { } indicate labels on the reader's barboard.

1. At the prompt START, scan {CNTL}{B}.
2. The portable reader will display the prompt COLLECT DATA?
3. Scan {Y} and {END} to indicate you are ready to collect data.
4. The portable reader will display EXECUTING.
5. Scan the labels you wish to collect in the portable reader's memory. Be sure to end each record with an END character by scanning the {END} label if your are scanning multiple-read labels.

6. When you have finished collecting the data, scan {E}{N}{D}{END}.
7. The portable reader will display UPLOAD DATA?
8. At this point wait to answer this prompt until you have returned to your work station and have connected the portable reader to the wedge.
9. Connect the portable reader to the wedge.
10. At the prompt UPLOAD DATA? scan {Y}{END} labels to indicate that you are ready to transmit the data.
11. The portable reader will prompt you to enter one or two ASCII characters as record terminators. If you select two characters be sure to put the portable reader into Accumulate Mode before you scan the characters. Then scan {END}.
12. The portable reader will display the prompt 'END' TO XMIT A RECORD.
13. Each record must be sent to the terminal individually by scanning the {END} label. This will ensure that the data is transmitted completely and correctly.
14. When all the stored records in the portable's memory have been transmitted, the screen will display EXECUTING.
15. Scan a {CNTL}{E} to exit the program and return the portable to START condition.

SECTION 6

SCALE OPERATION

AUXILIARY PORT OPERATION
Auxiliary Port Features
Scale Installation
Power Supplies

AUXILIARY PORT CONFIGURATION
Configuration Parameters
Configuration Checklist
Configuration

SOLICITED DATA
Define Solicitation Message
Transmit Solicitation Commands

EXAMPLE
Scale Message Format
Window Data
Calculations
Transmit Commands

ADDITIONAL INFORMATION

AUXILIARY PORT OPERATION

You can connect a counting or weighing scale to the wedge reader at the RS-232 auxiliary port. With a scale connected, you can transmit scale data to your workstation through the wedge reader. Operating with a scale will not change your workstation operation or the operation of the accessories you have connected to the wedge reader.

Auxiliary Port Features

The RS-232 auxiliary port has several special features that control the solicitation, reception, interpretation, and transmission of scale data through the wedge to your workstation.

Window Mode: Window Mode is tailored for use with most scales, especially small parts counting scales. Scales can send several types of information like count, weight, gross weight, tare weight, and date. Since scales usually send their data to printers, the message contains non-printing control characters; these characters are stripped out before the data is sent to the screen.

In Window Mode the wedge reader will:

- Search the incoming scale message for the pre-defined data.
- Strip control characters, status words, and checksums from the scale message.
- Append pre-defined preamble, postamble, and message terminator characters to window data (if desired).
- Transmit the data and appended characters to the workstation.

Methods of Transmission: There are three ways to command the scale to send data through the RS-232 line:

- The operator presses a key on the scale (PRINT).
- A switch, external to the scale but wired to it, closes.
- The scale receives a command through the RS-232 serial line from the wedge.

The operator causes the scale to send the data with methods 1 and 2. In method 3 the wedge reader solicits the scale requesting transmission of data. You must define the solicitation command and transmit the message to the scale.

Windows: By defining the start and end positions of a section of data within the incoming scale message, the wedge is able to strip away the remaining characters so that only desired data is sent to the CRT screen. The section containing the desired data is called a window. Although only one window per message is allowed, you may define two windows.

The start of the window is determined by counting the characters from the beginning of the message; the end of the window is determined by counting the characters from the end of the message. An example will explain:

You have a scale that sends out weight data in the following format:

{SOH}{NUL}{status1}{status2}{7 digit weight}{cksm1}{cksm2}{CR}

The data that you want sent to the screen is the 7 digit weight. Therefore, the window start is 5, and the window end is 4.

Data will be entered into window two only if solicitation message two was transmitted to the scale. All other incoming data is entered into window one. Data received by the wedge from the scale initiated by depressing the PRINT pushbutton on the scale is considered to be unsolicited data; all unsolicited transmissions are entered into window one.

End of Message (EOM) Characters: Every message from the scale will have the same character in the last position. Typically the EOM character is a CR (carriage return) or a LF (line feed). If the scale transmits both a CR and a LF, only define the last character as the EOM character.

The wedge reader will search the transmission for this character as a check for a complete transmission and use the data to calculate the end position of the window.

See your scale manual or inspect the scale transmission in transparent mode to identify the EOM character. In transparent mode, the wedge will append any defined postambles or message terminators to the scale transmission before sending it to the workstation CRT.

Instructions for defining the EOM character for the wedge are included in this section under Configuration.

SCALE OPERATION

Solicitation Messages: A solicitation message is a message sent from the wedge to the scale at any time. The solicitation message commands the scale to transmit data through the RS-232 interface to the wedge. Your scale service manual contains a list of the commands with the ASCII character equivalent.

The wedge reader can solicit two messages from the scale, therefore, there are two solicitation messages that can be defined. Many scales transmit several pieces of data in a single record; these may be net weight, gross weight, tare weight, date, or time. Each solicitation message corresponds to its window. Solicitation message one requests data in window one; solicitation message two requests data in window two.

These solicitation messages are stored in EEPROM and remain defined until you change them. The maximum message length is 15 characters each.

Unsolicited Messages: You can initiate transmission of the scale data by pressing the PRINT pushbutton on the scale or by closing an external switch at the scale. This data is unsolicited by the wedge and it always treated as window one data.

You must transmit solicitation message two to the scale to receive data in window two.

Flow Control: Clear-to-Send (CTS) will always be true when in Window Mode, except when the buffer is in danger of overflowing. It will then go false until enough characters have been sent from the buffer to the CRT screen so more data can be received from the sending device.

Timeout: The timeout will prevent the wedge reader from getting out of synchronization with the scales messages.

The message timeout is enabled with the receipt of the first character in the message. When the timeout expires, the buffer count (the count of the incoming message) will be reset to zero.

If data stops arriving before an EOM character is received, the wedge reader will wait for the specified timeout period before indicating a fault. When the wedge reader receives the EOM, the window data will be sent to the screen. If not enough data is received to fill the window, the error beep will sound and the fault status light will illuminate. No data will be transmitted.

Scale Installation

Before you connect the scale to the wedge reader, it is necessary to connect the wedge to the workstation. Section 2 contains wedge reader installation information. You must also configure the wedge operating parameters. Section 3 contains configuring information.

Table 6-1 describes the pin assignment for the 25-pin Sub D connector for the wedge reader RS-232 auxiliary port. Refer to your scale manufacturer installation and operation manuals for specific information about the type of connector needed to operate your scale with RS-232 interface.

Table 6-1
9570 Wedge Reader Connector

Pin:	Assignment:	Signal Direction:
Pin 2	Transmit	To reader
Pin 3	Receive	From reader
Pin 4	RTS	To reader
Pin 5	CTS	From reader
Pin 7	Ground	
Pin 18*	External RS-232 Negative Supply	To reader
Pin 25*	External RS-232 Positive Supply	To reader

*Pins 18 and 25 are required for user-provided external power supplies.

Power Supplies

The wedge is set at the factory for internally supplied ±5 volts power. However, you RS-232 interface may require a higher voltage. You can select from two INTERMEC power supplies or provide your own power supply.

INTERMEC Power Supply

INTERMEC Power Supplies supply ±12 volts of power to the reader for accessories. The power supplies are equipped with connectors which are compatible with the reader rear panel connectors. The power supplies supply ±12 volts unregulated power for RS-232 and +5 volts regulated power for reader accessories.

INTERMEC Power Supply 046791 is 20 Watts and INTERMEC Power Supply 046792 is 45 Watts.

SCALE OPERATION

When using an INTERMEC Power Supply for increased voltage, jumpers inside the reader must be reset:

1. Disconnect reader from workstation and power.
2. Remove reader cover and locate jumpers J6 and J9 on PCB.
3. Reset reader jumpers J6 and J9 to position 2-3.
4. Replace reader cover.
5. Connect power supply to reader and AC power.
6. Turn on workstation to power reader.

User-Provided External Power Supply
If you choose to provide your own source of external power, connections are made to the RS-232 subminiature connector on the rear of the reader. Connector pin assignment is listed in Table 6-1. Reset reader jumpers, prepare the connector, and observe reader power limits.

Jumpers
1. Disconnect reader from workstation and power.
2. Remove reader cover and locate jumpers J6 and J9 on PCB.
3. Reset jumpers J6 and J9 to position 2-1.
4. Replace reader cover.

Power Supply Cable and Connector
5. Refer to Table 6-1 for connector pin assignments for pins 18 and 25. Pin 18 is located at jumper J9; pin 25 is located at jumper J6.

Power Supply
6. External power must not exceed ±12 volts.
7. Connect external power supply to reader and AC power.
8. Connect reader to workstation.
9. Turn on workstation to power reader.

After you have located the cable and connectors, connect the scale to the reader.

AUXILIARY PORT CONFIGURATION

Configuration Parameters

The following wedge reader parameters must be enabled or defined.

- Required Interface parameters:
- Baud rate
- Parity
- Number of data bits
- Number of stop bits

Required Scale communication parameters:
- Window Mode enabled
- Start and End of Window One defined
- Window One EOM defined
- Message Timeout defined

Optional Scale communication parameters:
- Window One Solicitation defined
- Start and End of Window Two defined
- Window Two EOM defined
- Window Two Solicitation defined

Follow the configuration steps in Table 6-3 incorporating the same functional changes you have already accomplished in Section 3. Definitions, directions, and labels are contained in the table.

Configuration Checklist

Table 6-2 below contains a parameter configuration checklist. Use this to record your selections as you configure the RS-232 auxiliary port. When you need to review the configuration of the auxiliary port, you can refer to this list.

Table 6-2
RS-232 Auxiliary Port Configuration Checklist

Parameter:		Configuration:
Baud Rate		
Parity		
Data Bits		
Stop Bits		
RS-232 Mode		
Message Timeout		
Window One	Start	
	End	
	EOM	
Window Two	Start	
	End	
	EOM	

Configuration

Table 6-3 contains the parameter, selection, labels, and in some cases, directions needed to configure the wedge reader to operate with a portable reader or a scale connected to the RS-232 auxiliary port.

Table 6-3
RS-232 Auxiliary Port Parameters

Baud Rate	Set to:	Scan this label:
	110	 *$+IA0$-*
	300	 *$+IA1$-*
	600	 *$+IA2$-*
	1200	 *$+IA3$-*
	2400	 *$+IA4$-*
	4800	 *$+IA5$-*
	9600	 *$+IA6$-* †

† Factory default setting

Table 6-3 (Continued)
RS-232 Auxiliary Port Parameters

Parity:	Set to:	Scan this label:
	disabled	*$+IB0$-*
	even	*$+IB1$-* †
	odd	*$+IB2$-*

To achieve the equivalent of **Mark Parity** set the reader to the following:
Parity Disabled
Seven Data Bits
Two Stop Bits

To achieve the equivalent of **Space Parity** set the reader to the following:
Parity Disabled
Eight Data Bits
One Stop Bit

Number of Data Bits:	Set to:	Scan this label:
	7	*$+II7$-* †
	8	*$+II8$-*

† Factory default setting

Table 6-3 (Continued)
RS-232 Auxiliary Port Parameters

Number of Stop Bits:	Set to:	Scan this label:
	1	*$+IC1$-*
	2	*$+IC2$-*

RS-232 Mode Set to:	Scan this label:
Window	*$+WH1$-*
Transparent	*$+WH0$-* †

† Factory default setting.

Window Mode is designed for use with scales. Transparent Mode is designed for all other operations including portable readers.

Table 6-3 (Continued)
RS-232 Auxiliary Port Parameters

Message Time-out Defined:	Set to:	Scan this label:
	None	*$+WG0$-*
	50 ms	*$+WG1$-*
	100 ms	*$+WG2$-*
	500 ms	*$+WG3$-*
	1 sec	*$+WG4$-* †
	3 sec	*$+WG5$-*
	6 sec	*$+WG6$-*
	10 sec	*$+WG7$-*

Once the message starts being received, the timeout is enabled. If data stops arriving before an EOM character is seen, the wedge will wait for this timeout before indicating a fault. Any legal operation will allow transmission to resume and eliminate the fault light.

† Factory default setting

Table 6-3 (Continued)
RS-232 Auxiliary Port Parameters

Define Start of Window One:	Scan these labels:
1. enter configuration	Accumulate/Enter Configuration Mode  *+/$+*
2. identify window one start	Start of Window One  *WB*
3. select position	Now scan a number from the Full ASCII chart to define the start position of window one.
4. enter data	Enter  **
5. exit configuration	Exit Configuration  *$-*

The default position for start of window one is 1.

Table 6-3 (Continued)
RS-232 Auxiliary Port Parameters

Define End of Window 1	Scan these labels:
1. enter configuration	Accumulate/Enter Configuration Mode  *+/$+*
2. identify window one end	End of Window One  *WC*
3. select position	Now scan a number from the Full ASCII chart to define the end position of window one.
4. enter data	Enter  **
5. exit configuration	Exit Configuration  *$-*

The default position for end of window one is 1.

Table 6-3 (Continued)
RS-232 Auxiliary Port Parameters

Define Message One EOM Character:	Scan these labels:
1.enter configuration	Accumulate/Enter Configuration Mode  *+/$+*
2. Identify window one EOM	Window One EOM  *WA*
3. select character	Scan a character from the Full ASCII chart to define window one EOM. Usually CR or LF. Only one character allowed.
4. enter data	Enter  **
5. exit configuration	Exit Configuration  *$-*

The default EOM character is a CR (carriage return).

Table 6-3 (Continued)
RS-232 Auxiliary Port Parameters

Define Start of Window Two:	Scan these labels:
1. enter configuration	Accumulate/Enter Configuration Mode  *+/$+*
2. identify window two start	Start of Window Two  *WE*
3. select position	Now scan a number from the Full ASCII chart to define the start position of window two.
4. enter data	Enter  **
5. exit configuration	Exit Configuration  *$-*

The default position for start of window two is 1.

Table 6-3 (Continued)
RS-232 Auxiliary Port Parameters

Define End of Window Two:	Scan these labels:
1.enter configuration	Accumulate/Enter Configuration Mode  *+/$+*
2. identify window two end	End of Window Two  *WF*
3. select position	Now scan a number from the Full ASCII chart to define the end position of window two.
4. enter data	Enter  **
5. exit configuration	Exit Configuration  *$-*

The default position for end of window two is 1.

Table 6-3 (Continued)
RS-232 Auxiliary Port Parameters

Define Message Two EOM Character:	**Scan these labels:**
1. enter configuration	Accumulate/Enter Configuration Mode  *+/$+*
2. Identify window two EOM	Window Two EOM  *WD*
3. select character	Scan a character from the Full ASCII chart to define window two EOM. Usually CR or LF. Only one character allowed.
4. enter data	Enter  *#
5. exit configuration	Exit Configuration  *$-*

The default EOM character is a CR (carriage return).

See page 6-3 for EOM character definition.

SOLICITED DATA

To solicit the scale to transmit data, send a pre-defined message to the scale. This solicitation message will be understood by the scale as a command to transmit. Typically this is a command to print or read.

An alternative method of transmitting data from the scale is to initiate the transmission from the scale by pressing the PRINT pushbutton or closing an external switch on the scale. This data is treated as unsolicited data and is always entered into window one.

Define Solicitation Message

To define the solicitation messages, follow the steps in Table 6-4. The defined solicitation messages are stored in EEPROM; they remain defined until changed. The solicitation message is limited to a maximum of 15 characters. After the solicitation messages are defined and stored in EEPROM, you must command the wedge to transmit the message. These commands are explained in Transmit Data in this section.

Table 6-4
Define Solicitation Messages

Define Solicitation Message One:	**Scan these labels:**
1. Enable Accumulate/ Full ASCII	*+/+$*
2. Solicitation Message One Defined	*..$% *
3. Scan characters on Full ASCII chart to define string; minimum of 2 characters and maximum of 15 characters.	
4. Scan enter	Enter **

Table 6-4 (Continued)
Define Solicitation Messages

Define Solicitation Message 2:	Scan these labels:
1. Enable Accumulate/ Full ASCII	*+/+$*
2. Solicitation Message Two Defined	*..$$ *
3. Scan characters on Full ASCII chart to define string; minimum of 2 characters and maximum of 15 characters.	
4. Enter data	Enter **

Transmit Solicitation Commands

You are ready to solicit data from the scale after you have defined the following:

- Baud rate, parity, number of stop bits and data bits
- Window Begin and End positions
- End of Message (EOM) character
- Solicitation Message

To solicit data from the scale, scan the Transmit Solicitation Message One bar code label below. This commands the wedge to transmit the data defined in Solicitation Message One.

The scale responds by sending the data. The wedge inspects the incoming data, locates window one, strips characters not in window one, and transmits the remaining data to the workstation CRT.

To command the scale to transmit the data in window two, define Solicitation Message Two and scan the Transmit Solicitation Message Two bar code label.

Transmit Solicitation Message One to Scale This command will send the predefined message to the scale. The wedge reader is asking for a response. The response will be treated as window one data.

Transmit Solicitation Message One

Transmit Solicitation Message Two to Scale This command will send the predefined message to the scale. The wedge reader is asking for a response. The response will be treated as window two data.

Transmit Solicitation Message Two

EXAMPLE

The following example illustrates the process to calculate the window positions, locate the EOM character, and determine the solicitation messages for wedge reader configuration.

Scale Message Format

Refer to the scale service manual for information about scale message format. The scale in this example sends out data in the following format:

{SOH}{NUL}{status 1}{7 digit net weight}{7 digit gross weight}{CR}

Window Data

The desired data is the 7 digit net weight and the 7 digit gross weight. The net weight will be window one data and the gross weight will be window two data.

Calculations

The example scale message format above was used to make the following calculations.

SCALE OPERATION

Window One: The beginning position is calculated by counting the characters from the beginning of the record. Therefore, the begin position is 4. The ending position is calculated by counting the characters from the end of the record. Therefore, the end position is 9.

End of Message Character: CR (carriage return)

Solicitation Message One: The scale service manual lists the commands. The scale will transmit the data after receiving the ASCII character P which is the command to print data. Define solicitation message one as P.

Window Two: The beginning position is calculated by counting the characters from the beginning of the record. Therefore, the beginning position is 11. The ending position is calculated by counting the characters from the end of the record. Therefore, the end position is 2.

End of Message Character: CR (carriage return)

Solicitation Message Two: This message is define as the ASCII character P which us the scale command to print data. In this example the two solicitation message are the same; however, this is not required. The solicitation messages can contain different commands.

Transmit Commands

After the parameters have been defined in the wedge, scanning one of the two command labels (Transmit Solicitation One or Transmit Solicitation Two) will cause the wedge to solicit data from the scale.

ADDITIONAL INFORMATION

For additional information about using a scale with your wedge reader, request Application Note Number 10 from your local INTERMEC distributor.

APPENDIX A
SPECIFICATIONS

PRODUCT DESCRIPTION

MAINTENANCE

TROUBLESHOOTING PROBLEMS

COMMAND SUMMARY

GLOSSARY

ASCII CONTROL CHARACTERS

APPENDIX A

PRODUCT DESCRIPTION

Physical Characteristics:
Contained in an injection molded plastic top and bottom housing. The bottom housing contains the electronics. The package is spill resistant but not waterproof. The interior of both housings is sprayed with conductive paint for shielding.

Operator Feedback:
Status lights and an audible speaker.

Status Lights:
Four status lights on the front panel. The power light is ON when the reader receives +5 volts; flickers when reading bar code with a scanner.

Audible Speaker:
Speaker on the base of the unit sounds to indicate a good read and other reader conditions. The volume is programmable by a configuration parameter. The laser scanner is also connected to this speaker line and will sound beeps with the reader.

Dimensions:

Height: 1.4 in (3.5 cm)

Width: 6.5 in (16.5 cm)

Length: 7.5 in (19.1 cm)

Environmental:
The reader will operate in ambient temperatures from 0°C to +50°C and can be stored from -10°C to +60°C. The reader will operate from 10% to 90% relative humidity (non-condensing).

Compatible Input Devices:

These input devices are compatible with the wedge reader:

Model:	Description:	Power Supplies:
1260 1261 1266	Digital Wands	Not required
1352	Digital Slot Scanner	INTERMEC Part No. 046791 or INTERMEC Part No. 046792
1403 1404 1405 1420 1421	Hand-held Scanners	INTERMEC Part No. 046792
1500	Laser Scanner	INTERMEC Part No. 046792
1600 1620	Laser Scanners	INTERMEC Part No. 046792

Power Supply INTERMEC Part No. 046791 (Wand)–Supplies ±8 volts unregulated for RS-232 and +5 volts regulated for the reader and other accessories. 20 Watts.

Power Supply INTERMEC Part No. 046792(Laser)–Supplies an additional +5 volts regulated line for the lasers. 45 Watts.

Remote Triggering

If you will be using the reader in an environment where a scanner is on a fixed mount and labels are passing at irregular intervals, you can leave the laser unattended and use the remote trigger function.

To enable remote triggering, jumper J10 by shorting pins 1 and 2. This allows you to trigger a 1600-Series Scanner by pulling pin 11 of the modem port to either chassis ground (pin 1) or ground (pin 7).

When using this function, you should set the wedge trigger mode to level and define a scanner timeout. See Section 3, "Configuration" for instructions.

APPENDIX A

MAINTENANCE

The reader is easy to maintain. For years of trouble-free operation:

- Wipe dust and dirt from the reader with a soft cloth and a **non-abrasive** cleaner. **Do not** allow cleaning fluid to get into the reader.
- The reader is **not** waterproof. Make sure that liquids are not spilled on the reader.
- Periodically check the wand's tip. Make sure there is no dirt, adhesive from labels, or other foreign matter on the tip. If the wand tip becomes dirty, clean it with alcohol and a non-abrasive cloth.

TROUBLESHOOTING PROBLEMS

The following section will help you locate and correct problems you may be having with your wedge reader.

If you are having trouble operating the wedge or scanning labels check the possible solutions suggested in the following table. If the reader still does not operate properly, contact your local INTERMEC representative.

Symptom:	Possible problem:	Try this:
Reader won't read bar code	Loss of power	Check power connection to reader and to outlet
	Not using proper power supply	Make sure part number on power supply matches specification.
	Input device not properly connected	Check connection of scanner, wand, terminal, etc., to reader.
	Faulty input device	Read bar code with another device.
	Reader can't accept that type of code	Check reader configuration.

Troubleshooting Problems

Symptom:	Possible problem:	Try this:
Reader won't read bar code	Poor quality bar code	Read bar code with another input device.
	Bad scanning technique	Review proper scanning procedures.
Fault LED lights	With the power supply	Check power supply connection, type, or failure.
	With the system	If LED stays lit, notify the system programmer.
Config LED lights (when it shouldn't)	Reader accidentally entered Configuration Mode	Consult the system programmer immediately. Any further action may change reader configuration.
Reader will not transmit	Incorrect terminal type	Select terminal type in Configuration Mode.

APPENDIX A

Table A-1
Data Entry Command Summary

Data Entry Command:	Code:
Alter Preamble A	+. <data>
Alter Preamble B	++ <data>
Alter Postamble C	+% <data>
Customize ASCII to Keystroke Equivalents	..$/<data>
Enter Record	**
Transmit No Clear	+-
Enter Accumulate	+/
Exit Accumulate and Transmit	-/
Enter Full ASCII	+$
Exit Full ASCII	-$
Clear	–
Reset	-.
Destructive Backspace	-+
Enter Configuration Mode	$+
Exit Configuration Mode	$-
Enter/Exit Auto Trigger Mode	$/
Command	-%
Default Configuration	.+

Table A-2
Configuration Command Summary

Configuration Command:	Code
Transmit Message One	..$+
Transmit Message Two	..$-
Define Message One	..$%<data>
Define Message Two	..$$<data>
Define Terminal	TypeTA<data>
Set Beeper Volume	BV<data>
Define Intercharacter Delay	ID<data>
Preamble Required	OA<data>
Define Message Terminator	WT<data>
Enable Full ASCII	RB<data>
Select RS-232 Mode	WH<data>
Laser Scanner Only	
Define Scanner Timeout	SA<data>
Define Scanner Operation	SB<data>
Define Trigger Mode	SC<data>
Symbologies	
Read I 2 of 5	CA<data>
Read CODE 39	CB<data>
Read Two of Five	CC<data>
Read Codabar *	CD<data>

* Option 01 only.

Table A-2
Configuration Command Summary

Configuration Command:	Code:
Read UPC/EAN	CE<data>
Read Code 93*	CF<data>
Read Code 11**	CG<data>
Read Code 128***	CH<data>
RS-232 Auxiliary Port	
Baud Rate	IA<data>
Parity Selection	IB<data>
Define Stop Bits	IC<data>
Define Data Bits	II<data>
Define Enter Key Equivalent	WP<data>
Window Mode Only	
Define Message I EOM	WA<data>
Define Window One Begin	WB<data>
Define Window One End	WC<data>
Define Message Two EOM	WD<data>
Define Window Two Begin	WE<data>
Define Window Two End	WF<data>
Define Message Timeout	WG<data>

* Option 02 only. *** Option 03 only.
** Option 01 only.

GLOSSARY

The following terms are defined here to help you understand bar codes, bar code labels, and terms and acronyms commonly used in the bar code industry. If you are new to bar code, you may want to read through the entire list; if you are familiar with bar code, you may want to refer only to specific terms.

Accumulate Mode: Enabled in Data Entry Mode. Reader will store scanned labels in buffer until transmit command is received.

Alphanumeric: The character set which contains letters, numbers and usually other characters such as punctuation.

ASCII: The character set and code described in American Standard Code for Information Interchange. Each ASCII character is encoded with 7-bits (8-bits including parity check). The ASCII character set is used for information interchange between data processing systems, communication systems and associated equipment. The ASCII set consists of both control and printing characters. Refer to the end of this section for definition of ASCII Control Characters.

Bar: The darker element of a bar code.

Bar code: An automatic identification technology which encodes information into an array of varying width parallel rectangular bars and spaces in a predetermined pattern.

Bar Code Symbol: A graphic (printed or photographically reproduced) bar code composed of parallel bars and spaces of various widths. A bar code symbol contains a quiet zone, a start character, one or more data characters including in some cases a check character, a stop character, and a trailing quiet zone.

APPENDIX A

Bisync: Binary synchronous protocol. A byte-controlled, serial protocol that sets the line to an idle condition if no data is being sent. To signal the start of a message, the transmitter sends two or more previously agreed upon "sync" ASCII characters. The receiver uses these to synchronize its clock with that of the transmitter.

Character:
1. A single group of bars and spaces which represent an individual number, letter, punctuation mark or other symbol.
2. A graphic shape representing a letter, numeral or symbol.
3. A letter, digit,or other symbol that is used as part of the organization, control, or representation of data.

Character Set: Those characters available for encodation in a particular automatic identification technology.

Check Digit: A character included within a message whose value is used for the purpose of performing a mathematical check to ensure the accuracy of that message.

Codabar: This code is variable length, discrete, and self checking. The character set is limited to 16 data characters.

Code 11: Developed to satisfy specialized requirements for a very high density discrete numeric bar code. Character set includes 10 digits and the dash symbol. This code is not self checking; data security is obtained by using one or two check digits.

CODE 39: CODE 39 is an alpha-numeric bar code. The complete character set includes a start/stop character, 10 digits, 26 letters of the alphabet, space and six symbols. The full ASCII characters can be represented by using the alphanumeric characters combined with the six symbols. This code is discrete, variable length, and self checking.

Code 93: A code developed by INTERMEC that includes a character set identical to Code 39. Each character is constructed from nine modules arranged into three bars with adjacent spaces. Nominal bar code density is 13.9 characters per inch.

Code 128: A code that encodes the full ASCII character set of 128 characters. Each character is represented by 11 modules and four bar widths.

Concatenated Code: A subset of Codabar symbology. Two bar code labels are read as one where the stop code of the first label matches the start code of the second label.

Configuration: The selected parameters to determine the operation of the wedge reader.

Configuration Mode: One of two modes available in the wedge reader. The mode used to select the parameters of the wedge reader.

Continuous Code: A bar code symbology where all spaces within the symbol are parts of characters. This is no intercharacter gap in a continuous code. Opposite of discrete.

Discrete Code: A bar code symbol in which the intercharacter space (or gap) is not part of the code and is allowed to vary dimensionally within wide tolerance limits. Opposite of continuous.

EOM: End of Message character. Typically it is a carriage return or a LF(Line Feed).

EEPROM: Electrically Erasable Programmable Read Only Memory.

EPROM: Erasable Programmable Read Only Memory.

HIBC: Health Industry Bar Code standard. This code set has 43 characters, utilizes the Modulus 43 check character, is a modified version of CODE 39, and reserves some character combinations for special usage.

Intercharacter Gap: The space between the last element of one character and the first element of the adjacent character of a discrete bar code symbol.

Interleaved 2 of 5 Code: Interleaved Two of Five (I 2 of 5) Code encoding technique is the same as for Two of Five Code except that both bars and spaces are coded. The odd numbered digits are represented in the bars while the even numbered digits are represented in the spaces. This code is continuous, self checking, variable length, and must contain an even number of digits and a modulus 10 check digit.

Multiple-read label: A bar code label that takes the form of <start code space data stop code>. Multiple-read labels are stored in the reader's buffer until a command to transmit is received or until a regular label is scanned.

Preamble: Predefined data that is automatically appended to the beginning of transmitted data.

Postamble: Predefined data that is automatically appended to the end of transmitted data.

Regular Label: A bar code label that takes the form of <start code data stop code>. Regular labels are transmitted as soon as scanned.

Scanner: An electronic device that electro-optically converts optical information into electrical signals.

Space: The lighter element of a bar code usually formed by the background between bars.

Start and Stop Characters: Distinct characters used at the beginning and end of each bar code symbol which provide direction of read information to the decoding logic.

Terminator: A single character, defined by the user, that is automatically appended to the end of transmitted data and postamble.

Two of Five Code:	Information is contained in the width of bars with the spaces only separating individual bars. This code is discrete and self-checking.
UPC and EAN Codes:	Universal Product Code (and European Article Numbering) was established for the supermarket industry. Seldom recommended or used outside of the retail applications.
Quiet Zone:	The area immediately preceding the start character and following the stop character which contains no markings.

APPENDIX A

ASCII CONTROL CHARACTERS

NUL	Null character. This character is a non-printing time delay or filler character.
SOH	Start of Heading. Used in Bisync data streams to denote the start of a message heading data block.
STX	Start of Text. Signals the end of heading data and the beginning of information data.
ETX	End of Text. Informs the receive that all information data have been transmitted.
EOT	End of Transmission. Indicates the end of transmission of all data associated with a message.
ENQ	Enquiry. Request a response.
ACK	Acknowledgement. Used to verify proper communication between transmitter and receiver.
BEL	Bell. Signals a situation that requires human intervention.
BS	Backspace. Used to control the active print position of the cursor and a printer.
HT	Horizontal Tab. Causes the cursor to move to the next predetermined position before printing.
LF	Line Feed. Causes the cursor to advance to the same column position in the next line.
VT	Vertical Tab. Causes the cursor position to advance to the same column a predetermined number of lines down from the present line.
FF	Form Feed. Used to advance a print head to the next logical top of form or to a predetermined line of the next form or page.

ASCII Control Characters

CR	Carriage Return. Used to advance the active print or display position to the first column of the same line. Unless the carriage return is followed by a line feed, the characters that follow the carriage return will overstrike characters already printed on the line.
SO	Shift Out. Extends the standard graphics character set.
SI	Shift In. Resets to the Standard ASCII character set.
DLE	Data Link Escape. Used to modify the meaning of a limited number of subsequent characters.
DC1	Device Control 1. An electronic toggle switch. This character is often designated as XON and is used to re-initiate the listing of a file that was temporarily halted by a DC3 character.
DC2	Device Control 2. An electronic toggle switch. Varies with vendor applications.
DC3	Device Control 3. An electronic toggle switch. This character is often designated as XOFF and is used to temporarily halt the listing of a file.
DC4	Device Control 4. An electronic toggle switch. Varies with vendor applications.
NAK	Negative Acknowledgement. Used to indicate improper communication between a transmitter and a receiver.
SYN	Synchronous Idle. Used in the Bisync protocol to initiate or maintain communication synchronization when no data are being transmitted.
ETB	End of Transmission Block. Used to indicate the end of a particular block of transmitted data.

CAN	Cancel. Varies with vendor application, but is generally used to denote an error in data transfer.
EM	End of Medium. Used to indicate either the physical end of a data medium or the end of a portion of data medium containing desired data.
SUB	Substitute. Used for data communication accuracy control.
ESC	Escape. Used for communications with printers.
FS	File Separator. Is an information separator control characters used to mark a logical boundary between files being transferred.
GS	Group Separator. Is an information separator character used to mark logical boundaries between groups of transmitted data.
RS	Record Separator. Is an information separator character used to mark logical boundaries between records.
US	Unit Separator. The final information separator character.
DEL	Delete. No actually a character but is used to erase or obliterate characters.
SP	Space.

APPENDIX B

KEYBOARD EQUIVALENT TABLES

APPENDIX B

Table B-1
IBM Model 3179, 3180-1, 3191,
Memorex 2178, 2179
Telex 078, 079, 080, 179, 180

ASCII Character:	CODE 39 Equivalent:	Keystroke:
NUL	%U	PF17
SOH	$A	PF18
STX	$B	PF19
ETX	$C	PF20
EOT	$D	PF21
ENQ	$E	PF22
ACK	$F	PF23
BEL	$G	PF24
BS	$H	PA1
HT	$I	→| (tab)
LF	$J	ENTER
VT	$K	|← (tab)
FF	$L	ALT
CR	$M	↵(carriage return)
SO	$N	PA2
SI	$O	1 (shiftkey)
DLE	$P	PF1
DC1	$Q	PF2
DC2	$R	PF3
DC3	$S	PF4
DC4	$T	PF5
NAK	$U	PF6
SYN	$V	PF7
ETB	$W	PF8
CAN	$X	PF9
EM	$Y	PF10
SUB	$Z	PF11
ESC	%A	PF12
FS	%B	PF13
GS	%C	PF14

Table B-1 (Continued)
IBM Model 3179, 3180-1, 3191,
Memorex 2178, 2179
Telex 078, 079, 080, 179, 180

ASCII Character:	CODE 39 Equivalent:	Keystroke:
RS	%D	PF15
US	%E	PF16
SP	Space	Spacebar
!	/A	!
"	/B	" (quote)
#	/C	#
$	/D	$
%	/E	%
&	/F	&
'	/G	' (apostrophe)
(	/H	(
)	/I	)
*	/J	*
+	/K	+
,	/L	, (comma)
-	-	- (dash)
.	.	. (period)
/	/O	/
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
:	/Z	:
;	%F	;

Table B-1 (Continued)
IBM Model 3179, 3180-1, 3191,
Memorex 2178, 2179
Telex 078, 079, 080, 179, 180

ASCII Character:	CODE 39 Equivalent:	Keystroke:
<	%G	<
=	%H	=
>	%I	>
?	%J	?
@	%V	@
A	A	A
B	B	B
C	C	C
D	D	D
E	E	E
F	F	F
G	G	G
H	H	H
I	I	I
J	J	J
K	K	K
L	L	L
M	M	M
N	N	N
O	O	O
P	P	P
Q	Q	Q
R	R	R
S	S	S
T	T	T
U	U	U
V	V	V
W	W	W
X	X	X
Y	Y	Y

Table B-1 (Continued)
IBM Model 3179, 3180-1, 3191,
Memorex 2178, 2179
Telex 078, 079, 080, 179, 180

ASCII Character:	CODE 39 Equivalent:	Keystroke:
Z	Z	Z
[	%K	↑ (up cursor)
\	%L	\
]	%M	↓ (down cursor)
^	%N	Play †
_	%O	_ (underline)
'	%W	' (accent)
a	+A	a
b	+B	b
c	+C	c
d	+D	d
e	+E	e
f	+F	f
g	+G	g
h	+H	h
i	+I	i
j	+J	j
k	+K	k
l	+L	l
m	+M	m
n	+N	n
o	+O	o
p	+P	p
q	+Q	q
r	+R	r
s	+S	s
t	+T	t
u	+U	u
v	+V	v

† Not available on all keyboards.

Table B-1 (Continued)
IBM Model 3179, 3180-1, 3191,
Memorex 2178, 2179
Telex 078, 079, 080, 179, 180

ASCII Character:	CODE 39 Equivalent:	Keystroke:
w	+W	w
x	+X	x
y	+Y	y
z	+Z	z
{	%P	ATTN
|	%Q	ERASE/EOF
}	%R	RESET
~	%S	DUP
DEL	%T	← (backspace delete) †

† CODE 39 equivalent could also be %X, %Y, or %Z.

Note: IBM Model 3180-1 Data Entry keyboard has no lower case alphabet available. Lower case alphabet bar code symbology will be translated into upper case.

Table B-2
IBM Model 3180-2, 3179-2, 3196
Decision Data 3761, 3781, 3791

ASCII Character:	CODE 39 Equivalent:	Keystroke:
NUL	%U	CMD17
SOH	$A	CMD18
STX	$B	CMD19
ETX	$C	CMD20
EOT	$D	CMD21
ENQ	$E	CMD22
ACK	$F	CMD23
BEL	$G	CMD24
BS	$H	FIELD +
HT	$I	→| (tab)
LF	$J	ENTER
VT	$K	|← (tab)
FF	$L	ALT
CR	$M	↵(carriage return)
SO	$N	FIELD EXIT
SI	$O	↑ (shiftkey)
DLE	$P	CMD1
DC1	$Q	CMD2
DC2	$R	CMD3
DC3	$S	CMD4
DC4	$T	CMD5
NAK	$U	CMD6
SYN	$V	CMD7
ETB	$W	CMD8
CAN	$X	CMD9
EM	$Y	CMD10
SUB	$Z	CMD11
ESC	%A	CMD12
FS	%B	CMD13
GS	%C	CMD14

Table B-2 (Continued)
IBM Model 3180-2, 3179-2, 3196
Decision Data 3761, 3781, 3791

ASCII Character:	CODE 39 Equivalent:	Keystroke:
RS	%D	CMD15
US	%E	CMD16
SP	Space	Spacebar
!	/A	!
"	/B	" (quote)
#	/C	#
$	/D	$
%	/E	%
&	/F	&
'	/G	' (apostrophe)
(	/H	(
)	/I	)
*	/J	*
+	/K	+
,	/L	, (comma)
-	-	- (dash)
.	.	. (period)
/	/O	/
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
:	/Z	:
;	%F	;
<	%G	<

Table B-2 (Continued)
IBM Model 3180-2, 3179-2, 3196
Decision Data 3761, 3781, 3791

ASCII Character:	CODE 39 Equivalent:	Keystroke:
=	%H	=
>	%I	>
?	%J	?
@	%V	@
A	A	A
B	B	B
C	C	C
D	D	D
E	E	E
F	F	F
G	G	G
H	H	H
I	I	I
J	J	J
K	K	K
L	L	L
M	M	M
N	N	N
O	O	O
P	P	P
Q	Q	Q
R	R	R
S	S	S
T	T	T
U	U	U
V	V	V
W	W	W
X	X	X
Y	Y	Y
Z	Z	Z
[	%K	↑(up cursor)

Table B-2 (Continued)
IBM Model 3180-2, 3179-2, 3196
Decision Data 3761, 3781, 3791

ASCII Character:	CODE 39 Equivalent:	Keystroke:
\	%L	\
]	%M	↓ (down cursor)
^	%N	Play
_	%O	_ (underline)
`	%W	` (accent)
a	+A	a
b	+B	b
c	+C	c
d	+D	d
e	+E	e
f	+F	f
g	+G	g
h	+H	h
i	+I	i
j	+J	j
k	+K	k
l	+L	l
m	+M	m
n	+N	n
o	+O	o
p	+P	p
q	+Q	q
r	+R	r
s	+S	s
t	+T	t
u	+U	u
v	+V	v
w	+W	w
x	+X	x
y	+Y	y
z	+Z	z

Table B-2 (Continued)
IBM Model 3180-2, 3179-2, 3196
Decision Data 3761, 3781, 3791

ASCII Character:	CODE 39 Equivalent:	Keystroke:
{	%P	ATTN
|	%Q	ERASE/INPUT
}	%R	RESET
~	%S	DUP
DEL	%T	← (backspace delete) †

† CODE 39 equivalent could also be %X, %Y, or %Z.

APPENDIX B

Table B-3
IBM Model 3178 Terminal
(Keyboards C1 through C4)

ASCII Character:	CODE 39 Equivalent:	Keystroke:
NUL	%U	PF17
SOH	$A	PF18
STX	$B	PF19
ETX	$C	PF20†
EOT	$D	PF21
ENQ	$E	PF22
ACK	$F	PF23
BEL	$G	PF24
BS	$H	PA1
HT	$I	→| (tab)
LF	$J	ENTER
VT	$K	|← (tab)
FF	$L	ALT
CR	$M	↵ (carriage return)
SO	$N	PA2
SI	$O	† (shift key)
DLE	$P	PF1
DC1	$Q	PF2
DC2	$R	PF3
DC3	$S	PF4
DC4	$T	PF5
NAK	$U	PF6
SYN	$V	PF7
ETB	$W	PF8
CAN	$X	PF9
EM	$Y	PF10
SUB	$Z	PF11
ESC	%A	PF12 †
FS	%B	PF13
GS	%C	PF14

† Not available on C1 keyboard.

Table B-3 (Continued)
IBM Model 3178 Terminal
(Keyboards C1 through C4)

ASCII Character:	CODE 39 Equivalent:	Keystroke:
RS	%D	PF15
RS	%D	PF15
US	%E	PF16
SP	Space	Spacebar
!	/A	!
"	/B	" (quote)
#	/C	#
$	/D	$
%	/E	%
&	/F	&
'	/G	' (apostrophe)
(	/H	(
)	/I	)
*	/J	*
+	/K	+
,	/L	, (comma)
-	-	- (dash)
.	.	. (period)
/	/O	/
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
:	/Z	:
;	%F	;

Table B-3 (Continued)
IBM Model 3178 Terminal
(Keyboards C1 through C4)

ASCII Character:	CODE 39 Equivalent:	Keystroke:
<	%G	<
=	%H	=
>	%I	>
?	%J	?
@	%V	@
A	A	A
B	B	B
C	C	C
D	D	D
E	E	E
F	F	F
G	G	G
H	H	H
I	I	I
J	J	J
K	K	K
L	L	L
M	M	M
N	N	N
O	O	O
P	P	P
Q	Q	Q
R	R	R
S	S	S
T	T	T
U	U	U
V	V	V
W	W	W
X	X	X
Y	Y	Y
Z	Z	Z

Table B-3 (Continued)
IBM Model 3178 Terminal
(Keyboards C1 through C4)

ASCII Character:	CODE 39 Equivalent:	Keystroke:	
[	%K	N/A	
\	%L	\	
]	%M	N/A	
^	%N	N/A	
_	%O	_ (underline)	
`	%W	` (accent) †	
a	+A	a	
b	+B	b	
c	+C	c	
d	+D	d	
e	+E	e	
f	+F	f	
g	+G	g	
h	+H	h	
i	+I	i	
j	+J	j	
k	+K	k	
l	+L	l	† †
m	+M	m	
n	+N	n	
o	+O	o	
p	+P	p	
q	+Q	q	
r	+R	r	
s	+S	s	
t	+T	t	
u	+U	u	

† Not available on C1 keyboard.

† † Lower case alphabet not available on C1 keyboard; lower case bar code symbology translated into upper case.

Table B-3 (Continued)
IBM Model 3178 Terminal
(Keyboards C1 through C4)

ASCII Character:	CODE 39 Equivalent:	Keystroke:
v	+V	v ┐
w	+W	w
x	+X	x ├ † †
y	+Y	y
z	+Z	z ┘
{	%	ATTN
|	%Q	ERASE/EOF
}	%R	RESET
~	%S	DUP
DEL	%T	← (backspace delete) †

† CODE 39 equivalent could also be %X, %Y, or %Z.
† † Lower case alphabet not available on C1 keyboard; lower case bar code symbology translated into upper case.

Table B-4
IBM Model 5291

ASCII Character:	CODE 39 Equivalent:	Keystroke:
NUL	%U	CMD17
SOH	$A	CMD18
STX	$B	CMD19
ETX	$C	CMD20
EOT	$D	CMD21
ENQ	$E	CMD22
ACK	$F	CMD23
BEL	$G	CMD24
BS	$H	FIELD +
HT	$I	→| (tab)
LF	$J	ENTER
VT	$K	|← (tab)
FF	$L	CMD
CR	$M	↵ (carriage return)
SO	$N	FIELD EXIT
SI	$O	↑ (shiftkey)
DLE	$P	CMD1
DC1	$Q	CMD2
DC2	$R	CMD3
DC3	$S	CMD4
DC4	$T	CMD5
NAK	$U	CMD6
SYN	$V	CMD7
ETB	$W	CMD8
CAN	$X	CDM9
EM	$Y	CMD10
SUB	$Z	CMD11
ESC	%A	CMD12
FS	%B	CMD13
GS	%C	CMD14
RS	%D	CMD15
US	%E	CMD16

Table B-4 (Continued)
IBM Model 5291

ASCII Character:	CODE 39 Equivalent:	Keystroke:
SP	Space	Spacebar
!	/A	!
"	/B	" (quote)
#	/C	#
$	/D	$
%	/E	%
&	/F	&
'	/G	' (apostrophe)
(	/H	(
)	/I	)
*	/J	*
+	/K	+
,	/L	, (comma)
-	-	- (dash)
.	.	. (period)
/	/O	/
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
:	/Z	:
;	%F	;
<	%G	<
=	%H	=
>	%I	>

Table B-4 (Continued)
IBM Model 5291

ASCII Character:	CODE 39 Equivalent:	Keystroke:
?	%J	?
@	%V	@
A	A	A
B	B	B
C	C	C
D	D	D
E	E	E
F	F	F
G	G	G
H	H	H
I	I	I
J	J	J
K	K	K
L	L	L
M	M	M
N	N	N
O	O	O
P	P	P
Q	Q	Q
R	R	R
S	S	S
T	T	T
U	U	U
V	V	V
W	W	W
X	X	X
Y	Y	Y
Z	Z	Z
[	%K	N/A
\	%L	\
]	%MA	N/A

Table B-4 (Continued)
IBM Model 5291

ASCII Character:	CODE 39 Equivalent:	Keystroke:
^	%N	N/A
-	%O	-
'	%W	' (accent)
a	+A	a
b	+B	b
c	+C	c
d	+D	d
e	+E	e
f	+F	f
g	+G	g
h	+H	h
i	+I	i
j	+J	j
k	+K	k
l	+L	l
m	+M	m
n	+N	n
o	+O	o
p	+P	p
q	+Q	q
r	+R	r
s	+S	s
t	+T	t
u	+U	u
v	+V	v
w	+W	w
x	+X	x
y	+Y	y
z	+Z	z
{	%P	ATTN
|	%Q	ERASE/INPUT

Table B-4 (Continued)
IBM Model 5291

ASCII Character:	CODE 39 Equivalent:	Keystroke:
}	%R	ERROR/RESET
~	%S	DUP
DEL	%T	← (Backspace Delete) †

† CODE 39 equivalent could also be %X, %Y, or %Z.

Table B-5
IBM Model PC/XT/AT, PS/2 Models 30, 50, 60
AT&T PC 6300

ASCII Character:	CODE 39 Equivalent:	Keystroke:
NUL	%U	+ (Number Keypad)
SOH	$A	Num Lock
STX	$B	Scroll Lock
ETX	$C	- (Number Keypad)
EOT	$D	Ins
ENQ	$E	Del
ACK	$F	Sys Req †
BEL	$G	N/A
BS	$H	N/A
HT	$I	→| (tab)
LF	$J	Caps Lock
VT	$K	|← (tab)
FF	$L	Alt
CR	$M	↵ (carriage return)
SO	$N	Ctrl
SI	$O	↑ (shiftkey)
DLE	$P	F1
DC1	$Q	F2
DC2	$R	F3
DC3	$S	F4
DC4	$T	F5
NAK	$U	F6
SYN	$V	F7
ETB	$W	F8
CAN	$X	F9
EM	$Y	F10
SUB	$Z	Home
ESC	%A	Esc
FS	%B	PgUp
GS	%C	PgDn

† Not available on PC or XT.

Table B-5 (Continued)
IBM Model PC/XT/AT, PS/2 Models 30, 50, 60
AT&T PC 6300

ASCIICODE 39 Character:	Equivalent:	Keystroke:
RS	%D	PrtSc*
US	%E	End
SP	Space	Spacebar
!	/A	!
"	/B	" (quote)
#	/C	#
$	/D	$
%	/E	%
&	/F	&
'	/G	' (apostrophe)
(	/H	(
)	/I	)
*	/J	*
+	/K	+
,	/L	, (comma)
-	-	- (dash)
.	.	. (period)
/	/O	/
0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
:	/Z	:
;	%F	;

Table B-5 (Continued)
IBM Model PC/XT/AT, PS/2 Models 30, 50, 60
AT&T PC 6300

ASCII Character:	CODE 39 Equivalent:	Keystroke:
<	%G	<
=	%H	=
>	%I	>
?	%J	?
@	%V	@
A	A	A
B	B	B
C	C	C
D	D	D
E	E	E
F	F	F
G	G	G
H	H	H
I	I	I
J	J	J
K	K	K
L	L	L
M	M	M
N	N	N
O	O	O
P	P	P
Q	Q	Q
R	R	R
S	S	S
T	T	T
U	U	U
V	V	V
W	W	W

Table B-5 (Continued)
IBM Model PC/XT/AT, PS/2 Models 30, 50, 60
AT&T PC 6300

ASCIICODE 39 Character:	Equivalent:	Keystroke:
X	X	X
Y	Y	Y
Z	Z	Z
[	%K	[
\	%L	\
]	%MA	]
^	%N	^
-	%O	-
`	%W	` (accent)
a	+A	a
b	+B	b
c	+C	c
d	+D	d
e	+E	e
f	+F	f
g	+G	g
h	+H	h
i	+I	i
j	+J	j
k	+K	k
l	+L	l
m	+M	m
n	+N	n
o	+O	o
p	+P	p
q	+Q	q
r	+R	r
s	+S	s
t	+T	t
u	+U	u

Table B-5 (Continued)
IBM Model PC/XT/AT, PS/2 Models 30, 50, 60
AT&T PC 6300

ASCIICODE 39 Character:	Equivalent:	Keystroke:
v	+V	v
w	+W	w
x	+X	x
y	+Y	y
z	+Z	z
{	%P	↑ (cursor control)
|	%Q	↓ (cursor control)
}	%R	← (cursor control)
~	%S	→ (cursor control)
DEL	%T	← (backspace delete) †

† CODE 39 equivalent could also be %X, %Y, or %Z.

INDEX

A

B

INDEX

C

C (Continued)

D

E

F

G, H, I

J, K, L

M, N

O

P

P (Continued)

Q, R

R (Continued)

S

S (Continued)

T

U, V

W, X, Y, Z

Intermec

Corporate Headquarters
6001 36th Avenue West
Everett, Washington 98203
U.S.A.

tel 425.348.2600

fax 425.355.9551

www.intermec.com

9570 Wedge Reader User's Manual

P/N 048520