TITLE: Model 9900 Multi Optic Scanner/Scale
Support Planning Guide

SYNOPSIS:

This document is intended to supply sufficient information to country level service planners to enable them to plan for the introduction of the above product(s).

This SPG is the generic version, released by the product authority, Fujitsu Transaction Solutions (FTXS) - Sustaining Engineering.

This document details only the corporate philosophies, and does not seek to cover such subjects as additional services offered at the Dealer or VAR level, low level repairs, which service centers may be able to affect, or the local sourcing of components and consumable items.

The service descriptions in this document are guidelines, detailing the recommendations of the product authority. The information within this document has been reviewed for accuracy, but as with most documents, errors may be found and corrected in future revisions. Consequently, Fujitsu cannot be held liable for any inaccurate information found in this document.

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_____ _____
MGR Sustaining Engineering

_____ _____
Product Manager

_____ _____
Document Control

(Original signature copies of SPG's are maintained by Sustaining Engineering.)

INQUIRIES TO:
Sustaining Engineering
MS Exchange: Product Quality
Internet: productquality@ftxs.fujitsu.com
FAX: 7888x4781 (858-731-4781)
Mail: USA04, Sustaining Engineering

AUTHORITY:
R. Granche
Manager
Sustaining Engineering
FTXS, USA04
858-731-4479 (7888-4479)

0.0 DOCUMENT CONTROL

0.1 ISSUE LEVEL

This is the Second released issue of this document.

0.2 CHANGES FROM PREVIOUS ISSUE

- Minor changes from Issue 1.0 are in Bold. Following are changes and additions that are not in bold.
- Deleted all references to loopback tests
- 2.5.3 the parameter cloning procedure was corrected
- 2.5.4 the firmware download procedure was revised
- 4.1 updated the programming requirements prior to scale setup.
- 4.2 updated the programming requirements prior to scale calibration.
- Updated Appendix "A" to include the new programming titles.
- Added Appendix "B" Top Cover debris and panel film spacer installation

0.3 CHANGES FORECAST

No future Updates are anticipated.

0.4 TERMS AND ABBREVIATIONS

CLD	Confidence Level Diagnostic Software
CS	Customer Service
EAN	European Article Number (scannable product label)
EMI	Electromagnetic Interference
ESD	Electrostatic Discharge
FDD	Floppy Disk Drive
FPY	Failures Per Year
HDD	Hard Disk Drive
HHP	Handheld
HHS/SCL	**Handheld Scanner/Scale Port**
JAN	Japan Article Number (similar to EAN codes)
MDL	Multidrop Data Link sometimes referred to as SDL, Shielded Data Link)
MTBF	Mean Time Between Failures
MTTR	Mean Time To Repair
OPC	Open Peripheral Connect unit
ORU	Optimum Replaceable Unit
POS	Point Of Sales
POST	Point Of Sales Terminal
PSU	Power Supply Unit
SMT	Surface Mount Technology
SPG	Support Planning Guide (this document)
TeamPoS	FUJITSU TeamPoS Series of Terminals (TeamPoS Select, TeamPoS 5000, TeamPoS OPC8)
UPC	Universal Product Code (subset of EAN codes for North America)
VLD	Visual Laser Diode

0.5 REFERENCE DOCUMENTS

HCS/057	HCS Environmental and Regulatory Standard
PRD/RRV780024	Product Requirement Document (PRD)
12361-PDP0-0007	Product Development Plan (PDP)
A3CA05333-J001	Firmware Specification Document

1.0 OVERVIEW

The Model 9900 is a high performance multi-optic scanner with RS232 and IBM terminal interface capability **(The IBM Interface was not released)**. In addition, there is an optional scale available.

1.1 TARGET MARKET

The Model 9900 scanner is intended as the replacement for the ORION 9500 scanner. The Model 9900 scanner is positioned to be in the high performance range for the retail environment. The main competitive products are the NCR7875, the Magellan SL

1.1.1 RELEASE SCHEDULE

Initial Release: April, 2000
Included: RS232 Interface
Excluded: IBM Interface **(The IBM Interface was not released)**

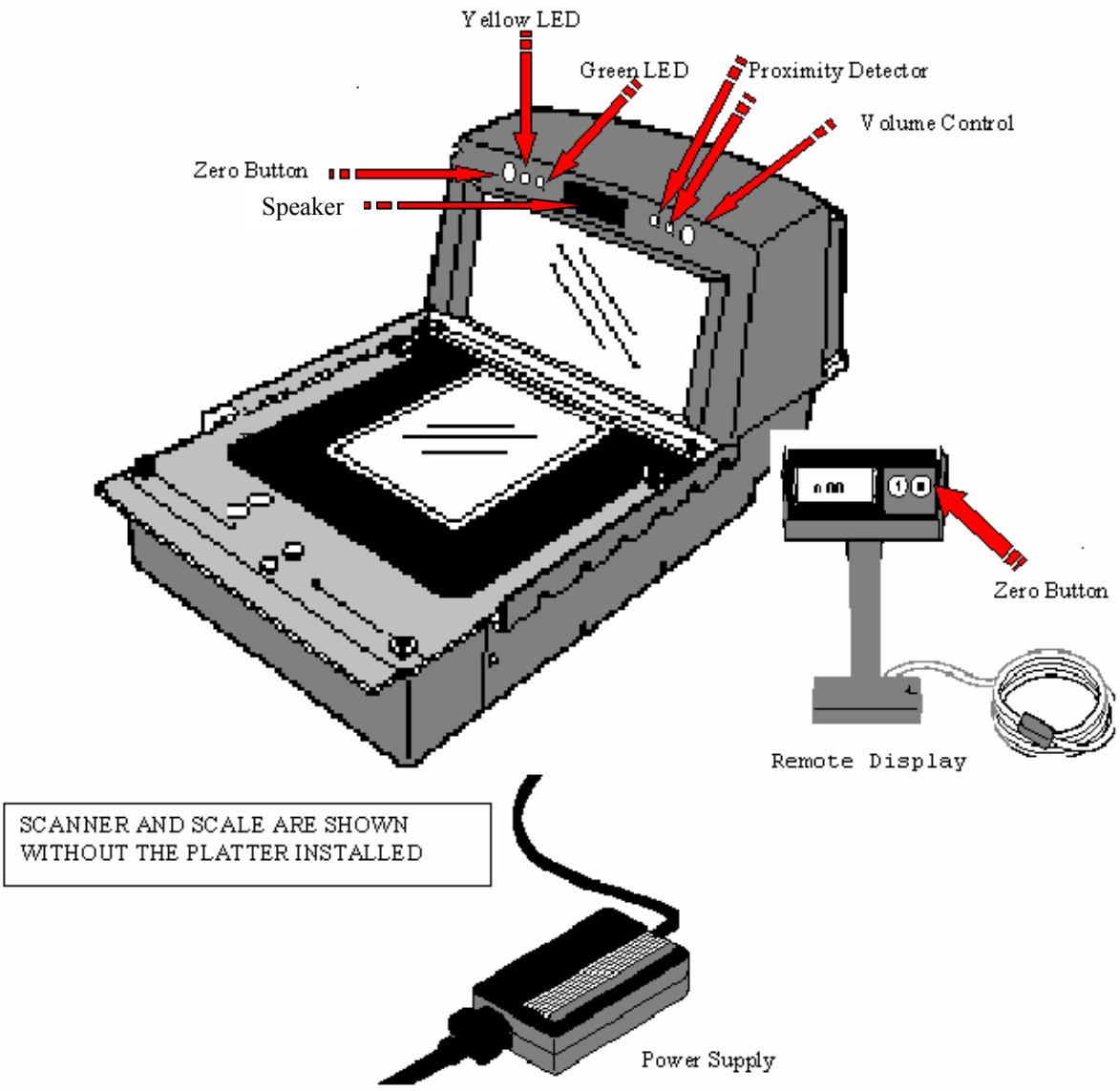
1.1.2 VOLUME FORECAST

For volume forecasts, please contact the Product Management, or your local sales channel.

1.2 PRODUCT DESCRIPTION

The FUJITSU Model 9900 is a multi-optic scanner with multiple terminal interface capabilities. The multi line scan pattern is produced with a single laser diode and is projected through two windows for horizontal and vertical reading of barcode labels. An optional weigh scale is also available, when installed the scale is within the scanner housing.

Note: Drawings of the Model 9900 are shown on the next page. (scanner/scale is shown without the platter installed)


Yellow LED
Green LED
Proximity Detector
Volume Control
Zero Button
Speaker
Zero Button
Remote Display
SCANNER AND SCALE ARE SHOWN
WITHOUT THE PLATTER INSTALLED
Power Supply

1.2.1 SOFTWARE PRODUCT DESCRIPTION

The Model 9900 Scanner/Scale is software compatible with applications using RS232 or IBM 46XX protocol **(The IBM Interface was not released).**

1.2.2 HARDWARE PRODUCT DESCRIPTION

The Model 9900 is a fixed mount, high performance multi-optic scanner. The Model 9900 provides connectivity to PoS terminal platforms utilizing RS-232 and IBM interface protocols **(The IBM Interface was not released).** An auxiliary port **(HHS/SCL)** for connection of a remote peripheral device (e.g., scale, handheld scanner, or Portable Handheld Terminal) is provided. This port will also be utilized for "cloning" program changes from one scanner to another and for downloading firmware from a PC or similar device (e.g., portable handheld terminal).

There is also a scale option. In the scanner/scale configuration the scale is contained within the scanner housing and extends the length of the scanner/scale housing by 2.5 inches (63.5 mm). The scanner/scale housing has a below counter depth of 3.54 inches (90 mm).

A dual or single cable interface configuration is available. The single cable configuration uses the RS232 port to transmit scanner and scale data to the terminal. In the dual cable configuration the scanner transmits data from the RS232 port and the handheld port **(HHS/SCL)** is used to transmit scale data. In the dual cable configuration the handheld port **(HHS/SCL)** is not available for a handheld scanner.

Without the scale, the short version scanner housing is shorter by 2.5 inches (63.5 mm). In the Scanner only configuration the depth below the counter remains the same as the scanner/scale configuration.

The scanner internal electronic hardware consists of the main PCB, a VLD, one pre-amp, and a polygon motor. The main PCB and the VLD can be replaced without opening the optic cavity.

1.3 PHYSICAL & ENVIRONMENTAL CONSIDERATIONS

1.3.1 PHYSICAL

There are two versions of the Model 9900. The long version can accommodate a scale and the short version is the scanner only.

Model 9900 Scanner/Scale Version	DIMENSIONS	
Height		
Above checkstand	147.0 mm	5.8 inches
Below checkstand	90.0 mm	3.5 inches
Width	292.0 mm	11.5 inches
Depth	499.3 mm	19.7 inches
Weight	8.9 kg	19.2 pounds
Checkstand cutout		
Width	296.0 mm	11.65 inches
Length	444.7 mm	17.5 inches
ICL 9900 Scanner Only (Short)		
Height		
Above checkstand	147.0 mm	5.8 inches
Below checkstand	90.0 mm	3.5 inches
Width	292.0 mm	11.5 inches
Depth	435.8 mm	17.2 inches
Weight	6.7 kg	14.6 pounds
Checkstand cutout		
Width	296.0 mm	11.65 inches)
Length	378.0 mm	14.9 inches)
External Power Supply		
Height	25.0 mm	1.0 inches
Width	64.0 mm	2.5 inches
Depth	106.0 mm	4.2 inches
Weight, without mains cable	0.2 kg	0.5 pounds
AC mains cable	3.0 m	10.0 feet
DC cable Length (attached)	1.3 m	4.2 feet
Optional Scale Display		
Height, with pole	272.0 mm	10.70 inches
Display Head		
Hight	70.0 mm	2.75 inches
Width	137.0 mm	5.39 inches
Depth	38.0 mm	1.50 inches
Display Base		
Width	41.0 mm	1.62 inches
Depth	114.0 mm	4.50 inches
Weight, with cable	1.0 kg	2.28 lbs

Cable Length	3.0 m	10.0 feet

1.3.2 ENVIRONMENTAL

Shock	
Scanner/Scale	
Operating	3.0 G's X 5 times maximum
Packaged	15.O G's X 5 times maximum
Acoustic Noise	50 db or less 1 meter (3.3 feet) from scanner
Ambient Light	5000 lux or less

1.3.3 TEMPERATURE & HUMIDITY

Operating		
Temperature		
Max. rate of change	0° to 40° C	32° to 104° F
Humidity		
Max. rate of change	20% to 80%	No Condensation

Storage		
Temperature		
Max. rate of change	-40° to 70° C	-4° to 140° F
Humidity		
Max. rate of change	10% to 90%	No Condensation

1.3.4 POWER

The main AC power supply is a dual voltage PSU that automatically compensates for different input voltages.

Input Voltage	100 VAC to 240 VAC (Single Phase)
Input Voltage Fluctuation Range	90 VAC to 264 VAC
Output Voltage	12VDC 25 W
Input Frequency Range	47 Hz to 63 Hz
Power Consumption	14W during operation at 100 VAC 8 W during sleep mode at 100 VAC
Leakage current	0.5 mA at 100 VAC 0.75 mA at 240 VAC
Input Current	Maximum 1 Amp
Inrush Current	20 A Maximum (O-P)
AC Noise Resistance	1.2 KV maximum (0.1 to 1.0 μs)
Lighting Surge Resistance	1.2 KV (Lighting resistance 100Ω
ESD	Contact discharge up to 8.5 KV Indirect discharge up 10 KV
EMI	FCC Class A, EN55022 Class B AS/NZS 3548, VCCI Class A (CNS 13438)
Electrical and Structural Safety Standards	Conforms to the UL, CSA, and IEC standards

Scale Power Requirements	12 VDC at 100 ma (maximum) Supplied by the scanner

1.4 PRODUCT PERFORMANCE

Scanner	
Scan Lines	
Horizontal	32 lines 8 directions 4 lines, 2,667 lines/second
Vertical	24 lines 6 directions 4 lines, 2,000 lines/second
Laser	
Light Source	Visible Laser Diode (VLD) Wave length = 650 nm
Output Energy	Conforms to CDRH Class A and IEC Class 1
Polygon Motor	
Speed	5000 RPM
Mirrors	4 Sided rotating
Depth Of Field	
Horizontal	241 mm (9.5 inches)
Vertical	152 mm (6.0 inches)
Scanning Specifications	
Label Magnification	0.8 to 2.0 UPC STANDARD 1.0 Label
Label Contrast	0.6 Minimum
Scan Speed Per Second	2.5 M (8.2 feet)
Label Orientation	Rotation: Vertical (0° to 360°) Horizontal (0° to 360°)
	Pitch: Vertical (0° to 90°) Horizontal (0°) to 90°)
	Yaw: Vertical (0° to 360°) Horizontal (0° to 360°)
Scale	
Power Requirements	12 VDC at 100 ma (maximum) Supplied by the scanner
Max. Capacity	30 pounds/15kg capacity
Increment	Pound (Lb) = 0.01 Kilogram (kg) = 0.005
Settle Time	0 - 10 lbs/0 - 7.5 kg 0.5 sec. 10 - 30 lbs/7.5 - 15 kg 0.6 sec.

Zero Scale	Press the zero button on the scanner or the remote display. A command from the POS application
Non Zero Timeout	Settings of 30, 90, or 300 seconds (programmable)

Zero Cursor (Optional Remote Display Only)	This option can be enabled or disabled (programmable)
Interface	RS232 and IBM
Scale Data Beep	When weigh data is processed a beep will occur (Programmable)
Data Not Valid	Under zero, over capacity, out of zero capture range, non zero timeout
Power Up Zero Capture	If weight is + or – 10% of center of zero
Remote Weight Display	(Optional) Features a 6 digit display with a zero capture button.
Regulatory Standards	NIST Handbook 44, Canadian W&M. OIML R76 (EN45501) DTI Euro W&M
Warm Up Time	Minimum of 30 minutes
Note: Warm up is required before calibration or Weights & Measures sealing	

1.4.1 RELIABILITY

Top Level Assemblies	
Description:	Failure Rate
Scanner With PSU	30,000 hours
Scale	**15,938** hours

Lower Level Assemblies Scanner	
Description:	MTBF
Power Supply Unit	150,000 hours
Laser Diode Assembly	80,000 hours
Pre-Amp	900,000 hours
Scanner System Board	200,000 hours
Polygon Motor Assembly	150,000 hours
LED Assembly	3,000,000 hours
Speaker Assembly	3,000,000 hours

Lower Level Assemblies Scale		
Description:	MTBF	
Main PCB	34,000 hours	
Load Cell	30,000 hours	

1.4.2 LIFE EXPECTANCY

The design life expectancy for the Model 9900 is 7 years, if scanner is refurbished in the fifth year.

2.0 RESOURCES

This section estimates the needs for the CS, Logistics, and other resources required to support the Model 9900 Scanner.

Spares	Fujitsu
Repair Facility US	**Fresco TX** Logistic Center

2.1 SKILLS REQUIRED

Customer Service Representative:
A general understanding and experience with scanners and scales is required. Depending upon local Weights & Measures requirements, installing, repairing, or placing scales into service may require certification.

Consultant/Project Manager:
A good working knowledge of scanner protocol, computers, MS-DOS, OS/2, Windows, and specific application experience is assumed.

Repair Center Technician:
Experience with repairing and aligning VLD based high performance scanners is required. Experience with troubleshooting multi-layer PWA's, including surface mount technology (SMT) is also required. A good working knowledge of Confidence Level Diagnostics (CLD) and commercial off-the-shelf PC diagnostics is assumed.

2.2 TRAINING

CS training is under the discretion of each specific business unit. Sustaining Engineering will provide 'train the trainer' operations. The schedule and funding for the Model 9900 will be established on an individual case-by-case basis. All requests for training by Sustaining Engineering should be forwarded to the Sustaining Engineering Mailbox (reference the cover page).

Sustaining Engineering estimates that the Technical Publications listed are adequate for this product and additional training will not be necessary for CS personnel currently trained on similar Fujitsu products. The Model 9900 should be included in any future standard training provided to Fujitsu CS personnel.

2.3 TECHNICAL PUBLICATIONS

Description	Part Number	PIN Number

Programming Manual	N/A	45809/006
Programming Manual (New Release)	**900000788**	**900000788**
Reference Manual	C150-E134-02EN	N/A
Operators Guide	C150-E130-01EN	N/A

Note: Both programming manuals are applicable for the 9900 scanner.

2.4 SPARES

It is assumed that organizations will spare the Model 9900 at the ORU level. Some organizations (or customers), however, may choose to spare the Model 9900 at a major assembly level with the ORU repair performed at a central repair center or depot. The spare parts lists takes both of these methods into consideration.

Spares will be stocked at the North America Logistics Center (Fresco, Taxes).

The typical spares lead times from the supplier is 30 to 90 days.

2.4.1 SPARES LIST

The following parts list includes both ORU and Major Assembly levels.

DESCRIPTION	PART	PIN	North America Logistics P/N	FUJITSU OR OEM P/N.	COMMENTS
Scanner					
Scanner with RS232 I/F & PSU	80602371	PB600575		CA05333-B061	
Scanner with IBM I/F & PSU	80602372	PB600576		CA05333-B062	
PSU, 110/240V	80602234	N/A		CA01007-0540	
RS232 System PCA	N/A	N/A	USA0208753	CA05333-E061	
IBM System PCA	N/A	N/A	USA0208754	CA05333-E062	**Not Released**
Pre-Amp PCA	N/A	N/A	USA0208755	CA05333-E630	
Polygon/Motor Assembly	N/A	N/A	USA0208756	CA05333-E600	
VLD Assembly	N/A	N/A	USA0208757	CA05333-E500	
LED Assembly	N/A	N/A	USA0208758	CA05333-E642	
Speaker Assembly	N/A	N/A	USA0208759	**CA05333-F685**	
Side Window Bezel	N/A	N/A	USA0208760	CA05333-0221	
Side Window Glass	N/A	N/A	USA0208761	CA05333-0802	
Optical Unit	N/A	N/A	USA0208762	CA05333-D400	
Panel Film	N/A	N/A	USA0208763	CA05333-0231	
Panel Film Spacer	**N/A**	**N/A**		**CA05333-0235**	**For Spacer installation see Appendix "B"**
Panel Film Spacer	**N/A**	**N/A**		**CA05333-0236**	
Panel Film Spacer	**N/A**	**N/A**		**CA04141-0216**	
Top Cover Assembly	N/A	N/A		CA05333-E210	**Includes all components**
Top Cover Assembly	N/A	N/A		CA05333-F211	Includes debris rail and panel film
Debris Rail	**N/A**	**N/A**		**CA05333-0215**	
Metal Case Assembly	N/A	N/A	N/A	CA05333-E300	
PCA Cover	N/A	N/A	N/A	CA05333-0310	
Scale					
Scale Module (8219) North America	80602373	PB600577		8219-9900-900	
PCB 8219	N/A	N/A		15626600A	
Load cell 45kg 8219	N/A	N/A		15736100A	
Harness PCB 8219	N/A	N/A		15668400A	
Scale Firmware (Not Downloadable)	90000208	N/A		15855600A	

Platter (Long Version)	90000002	PB600592		N/A	
Platter (Short Version)	90000023	PB600593		N/A	
Scale Display, lb, with pole, NAD	80212340	52412/001		0264-1001-100	Same as 9000/9500
Scale Display, kg, with pole, NAD)	80212341	52412/002		0264-1001-110	Same as 9000/9500

DESCRIPTION	PART	PIN	LOGISTICS P/N	FUJITSU OR OEM P/N.	COMMENTS
W&M Label for CRT/Display 29.99lb	80328167	PB600029			Same as 9000/9500
W&M Label for CRT/Display 30.00lb	80328103	PB600558			Same as 9000/9500
Documentation					
Reference Manual	N/A	N/A		C150-E134-02EN	
Programming Manual	N/A	45809/006		N/A	
Programming Manual (New Release)	**N/A**	**90000788**		**N/A**	
Operators Guide	N/A	N/A		C150-E130-01EN	
Cables					
9520/150, TeamPoS Scanner RS232	80203983	52413/001		N/A	Same as 9000/9500
9520/150, TeamPoS Scale RS232 (For ICL Dual Cable Configuration)	90000070	90000070		CA05951-2590	
IBM Port 17	80303038	58483/001		N/A	Same as 9000/9500
IBM Port 9B	80303036	52240/001		N/A	Same as 9000/9500
EAS External Speaker Cable (Good Read)	90000071	90000071		CA05950-0223	
EAS Antenna Cable	90000072	90000072		CA05950-0192	
Programming (Cloning) Cable	80316790	PB000057			
Handheld Port Compatible Scanners					
SS12OO (H/H Scanner RS232 I/F)	80316309	PB600064		CA02792-B001	Same as 9500
OEM RS232 Compatible Handheld Scanners					
Scanner Firmware					
IBM CORE Firmware, version	**N/A**	**N/A**			**Not Released**
RS232 Firmware, version	**SIR1115L**	N/A		**SIR11_15**	

NOTE: The scanner firmware can be downloaded into a scanner from a PC or from another scanner using a RS232 program cable (P/N 80316790)(PIN Number PB000057). See Section 2.6.5 for details. The firmware files are available on the FTXS Internet FTP site (ftp://ftp.ftxs.fujitsu.com/pos/possustaining/Retail/Scanners/).

Scale Consumable Spares Hardware

Description	Qty	Size
Leveling Screws Cap Hex Head (self locking)	4	¼-20 NC 5/8" Long
Mounting Screws Tri-Lobe	2	M4X6 0.7 SEMS
Mounting Screws Tri-Lobe	4	M4X10 0.7 SEMS

NOTE: The consumable hardware required for installation comes with each new scale. For sparing purposes additional hardware can be

2.4.2 CONSUMABLE PARTS

There are no user consumable parts.

2.5 REPAIRS

North America Logistics Center (Frisco Texas) offer repair services for the items they consider to be repairable.

Prior to shipping failed units to repair center, Logistic and CS organizations should utilize their own services for testing units that are returned from the field. History has shown that not all units being returned from the field are actually faulty.

Logistics organizations may elect to have a lower level of repair service performed by their service center technicians, if parts and resources permit. However, this would be a local decision.

A Torx screwdriver tool is required for the screws that mount the scale to the scanner housing. The Torx screwdriver can be purchased from McMaster Carr, located on the Internet at www.mcmaster.com.

Many manufactures offer the Torx Screwdriver tool and they can be purchased at local hardware stores. Following are some examples of manufactures.

Manufacturer	Description	Size
McMaster Carr	Torx Driver	T20
Craftsman	Torx Driver	T20
Master Mechanic	Torx Driver	T20

2.5.1 REPAIR TIME

The following are time estimates for removing and replacing major assemblies. These time estimates do not include the time to diagnose the problem, gain clear access to the Model 9900, or perform any software reloading to return the unit to full customer functionality.

ORU	TIME
Scanner	10 min
Scanner Main PCB	6 min
VLD	5 min
External Power Supply	2 min
Side Window Bezel	2 min
Side Window Glass	2 min

ORU	TIME
Scale	10 min
Scale PCB	5 min
Ribbon Cable	13 min
Remote Display	2 min

Based upon these times, and adjusted by the probability of a specific component failing, the MTTR for the complete unit is <12 minutes.

2.5.2 SERVICE AIDS & DIAGNOSTICS

There are three levels of diagnostics available. In addition, there are several off-the-shelf software packages (Norton Utilities, QAPLUS, Procomm, Comshow, etc.) that are locally available for generic PC and peripheral diagnostics.

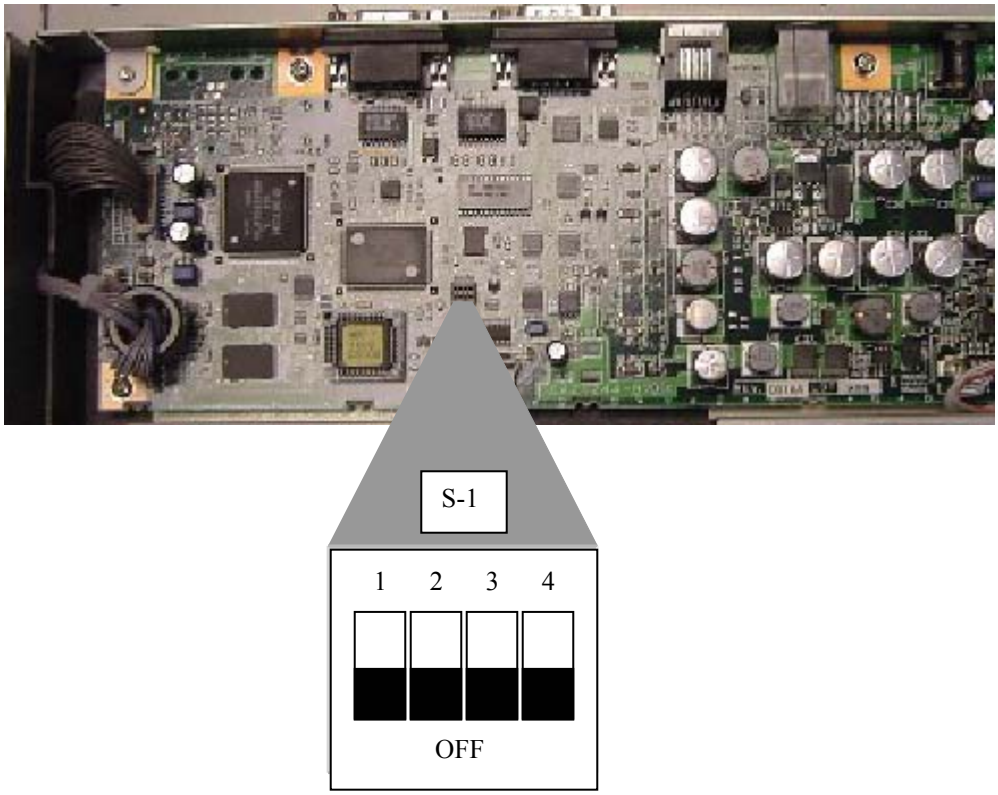
Power Up Diagnostics	An automatic diagnostic facility executed during the power up process. Tests all critical components or the Model 9900 Scanner.
Confidence Level (CLD)	A user oriented, menu driven, privileged set of test and diagnostic functions which test the following: Controller, Keyboard, Display, Printer, Battery, Configuration Data, Cash Drawer, Scanner, Scale, MSR, Serial Ports, and other peripherals.
Programmable Scanner Diagnostics	The scanner has programmable diagnostics that can be entered by scanning program labels that are in Section One of the Programming Manual (45809/006). Diagnostics can be entered by scanning just the programmable diagnostic labels; there is no need to use the Enter The Programming Mode label. To exit the diagnostics test the scanner must be powered down. Following is a list of programmable diagnostics.
Autobreak (Both)	Scan zone test. While a scan label is in the scan field a continuous beep will occur.
Demo Mode	Each time a label is passed through the scan zone a good beep will occur.
Proximity Detector	Each time something is passed between the proximity detector and the light source the green LED will come on.

ERROR MESSAGES		
No	DESCRIPTION	LED's
1	Motor Fail	Y&G YYYYYG
2	Laser Fail 1	Y&G YYYGYG
3	ROM Error (Core or main PCB)	Y&G YGYYYY
4	EEProm Error (Core or Main PCB)(See Note 1)	Y&G YGYGYY
5	EXT RAM Error (Core or Main PCB)	Y&G YGYYGY
6	INT RAM Error (Core or Main PCB)	Y&G YGYYYG
7	ASCII Error (Core or Main PCB)	Y&G YGYYGG
11	Scale Hardware Error	Y&G YYY
12	Scale Display Error or No Response From Scale	Y&G GGG

NOTE 1: If an EEprom error occurs perform the following procedure.

Switch 1 is located on the main PCB near reference designation R48. See illustration below for location.

		1	2	3	4
1.	With the power off Set Switch 1 on	**ON**	OFF	OFF	**OFF**
2.	Apply power to the scanner the green LED will come on				
3.	Remove power from the scanner				
4.	Set Switch 1 to Off. (Ensure that switches 1 through 4 are off)				
5.	Power up the scanner the laser will come on the scanner will beep.				



2.5.3 CLONING PARAMETERS AND FIRMWARE

Clone Programmed Parameters (Scanner)	During an installation or unit replacement, the program parameters of a scanner can be cloned from the source scanner to the target scanner. (The Enter The Clone Programming Mode label is in Appendix "A".
Prerequisites and precautions when performing the Scanner Parameter Cloning Procedure	1 The firmware must be at the same revision level in both scanners. 2 During the programming of the source scanner, the handheld port (HHS/SCL) can be configured as a handheld scanner port (HHP) or as a scale port (SCL). 3 When the source scanner is programmed for the scanner only or scanner/scale single cable configurations the handheld port (HHS/SCL) is configured as a handheld port (HHP) 4 When the source scanner is programmed for the scanner/scale dual cable configuration the handheld port (HHS/SCL) is configured as a scale port (SCL) 5 When performing the cloning procedure, the events that occur will change depending on the handheld port (HHS/SCL) configuration.
Scanner Parameter Cloning Procedure (HHS/SCL port configured as a handheld port)	1 Apply power and program the source scanner with the desired programming labels. If the source scanner has been previously programmed disregard this step. 2 Scan a UPC barcode until a bad scan beep occurs. This loads the scanner buffer. 3 Apply power and restore all defaults on the target scanner 4 Connect the Programming/Cloning cable (P/N 80316790 PIN No PB000057) between the handheld (HHS/SCL) ports of the source and target scanners. 5 Scan the Enter Clone Programming Mode Label (43300C) on the source scanner. 6 On the source scanner, the yellow LED will come on solid and turn off 7 On the target scanner, the yellow LED will come on solid and turn off. 8 On the target scanner, the green LED will come on solid and the scanner will emit a low tone. 9 On the source scanner, the green LED will come on solid 10 Reset power on both scanners 11 Test the target scanner to ensure programmed parameters have been transferred.

Scanner Parameter Cloning Procedure (HHS/SCL port configured as a scale port)	1 Apply power and program the source scanner with the desired programming labels, including Dual Cable Configuration RS232 Scanner/Scale (68307C). If the source scanner has been previously programmed disregard this step. 2 Scan a UPC barcode until a bad scan beep occurs. This loads the scanner buffer. 3 Apply power and restore all defaults on the target scanner 4 Connect the Programming/Cloning cable (P/N 80316790 PIN No PB000057) between the handheld (HHS/SCL) ports of the source and target scanners. (A warble may occur) 5 Scan the Enter Clone Programming Mode Label (43300C) on the source scanner. 6 On the source scanner, the yellow LED will come on solid and turn off 7 On the target scanner, the yellow LED will come on solid and turn off. 8 On the target scanner, the green LED will come on solid and the scanner will emit a low tone. 9 The source scanner will warble and the green LED will flash 10 Reset power on both scanners 11 Test the target scanner to ensure programmed parameters have been transferred

Clone Firmware (Scanner)	The firmware can be cloned (downloaded) from a source scanner to a target scanner. (The Enter The Firmware Cloning Mode label is in Appendix "A".
Firmware Cloning Procedure	1 Connect the Programming/Cloning cable (P/N 80316790 PIN No PB000057) from the handheld (HHS/SCL) port of the source scanner to the handheld (HHS/SCL) port of the target scanner. 2 Power on the source and target scanners (A warble may occur 3 On the source scanner, Scan the Clone Firmware label (70009C). The source scanner will beep a low tone and the yellow and green LED's will come on blinking. The target scanner's green LED will come on solid. 4 When complete the source scanners green and yellow LED's will come on solid and the target scanner will emit a good beep. 5 Reset power on both scanners

2.5.4 SCANNER FIRMWARE DOWNLOAD

- Install the download program 1200dnld and the firmware file on a floppy or on the hard drive in the same folder.
- The download must be executed from a DOS prompt. It cannot be executed from the Windows environment. When running Windows 95 or 98 restart the computer in the MS DOS mode.
- The download program cannot be executed from Windows 2000. When running Windows 2000 use a bootable floppy to execute the download program from a DOS prompt.
- Connect the program cable (P/N 80316790 PIN No PB000057) between com port 1 on the PC and the handheld port of the scanner. If the programming cable is not available a null modem cable can be used.
- The pin assignments for the programming cable are listed on page 20 of this document.
- Power up the scanner
- Type in the download file name at the DOS Prompt (1200DNLD)
- Ensure CTS is highlighted. If CTS is not highlighted restore all defaults on the scanner by scanning programming labels Enter The Programming Mode, Restore All Defaults, Exit Save and Reset. Then restart the download program.
- Following is the first screen

```
ICL SS1200 Scanner Firmware Download
--1200DNLD.EXE --rev 3 comport = 1
```

```
>>>Hit "q" to exit program.
 Step (1): Connect the SS1200 scanner to comm1 port of a PC.
           Power on SS1200 scanner and wait for a scanner beep. Confirm that
           the "cts" signal is active (inverse video) at bottom of CRT.
 Step (2): Hit [SPACE BAR] to ENABLE download at 38400 bps.

                    DTR RTS cts dsr ri dcd 9600 E81
```

- Press the space bar
- If only the HEX characters 24 30 32 36 are shown on the second screen, restore all defaults and restart the download program.
- The second screen data should be similar to the data shown below.

```
Data String Sent -> Scanner
Waiting for Scanner data
```

```
O K .   C h a n g e   Y o u r     C
O n f i g r a t i o n       B o u d
R a t e = 3 8 . 4 K B ,     D A T A = 8
b I t s       S t o p = 1   b i t s ,
P a r i t y = N O N   a n d   s n e d
  t a r g e t   f i l e .
```

- Press the space bar
- Following is the third screen

```
ICL SS1200 Scanner Firmware Download
--1200DNLD.EXE --rev 3 comport = 1

>>>Hit "q" to exit program.
 Step (3): Select firmware download file.
 Hit [ENTER] to select firmware download file.
 Hit [F1] to download the same file again.
 Hit [F2] to view.HEX files in this directory (8 max).

                    DTR RTS cts dsr ri dcd 9600 E81
```

- Press F2
- Highlight the firmware file to be downloaded. If more than one firmware file is in the folder use the arrow down key to select the correct firmware file.
- Press the enter key to start the download
- HEX data will be shown on the monitor and the scanner green and yellow LED'S will be active.
- When the download is completed the following will be displayed on the forth screen

```
Waiting for scanner data
```

```
R O M  V e r =   0 0 2 0 4 1 0 X 1 4
S u m = 5 4 0 0     C o m p l e t e d
D o w n     L o a d     P r o g r a m
```

```
Please wait for scanner to beep
```

NOTE: On the first line of this screen the **X** indicates the unique Rom version, which is the firmware revision level.

- Press the space bar
- Press Q to quit

2.5.5 9900 PROGRAMMING/CLONING CABLE

PIN Number PB000057
Part Number 80316790

DB9 FEMALE HANDHELD PORT			DB9FEMALE P/C COMM PORT	
FROM	SIGNAL		TO	SIGNAL
P1-2	RXD	→	P2-3	TXD
P1-3	TXD	→	P2-2	RXD
P1-5	SIG. GRND	→	P2-5	SIG GRND.
P1-7	RTS	→	P2-8	CTS
P1-8	CTS	→	P2-7	RTS
	Shield Grnd.	→		Shield Grnd.

3.0 SERVICE PROFILES

3.1 PREVENTATIVE MAINTENANCE

Beyond general cleaning of the Model 9900, there is no scheduled preventative maintenance required.

General cleaning of the scanner and windows are required on a regular basis and are the responsibility of the end user. The frequency of this cleaning will depend upon the environment. Lack of this cleaning can reduce scanner performance and reliability.

To achieve the MTBF estimates for the Model 9900, clean the scan glass with a non-abrasive solution and a soft cloth. Do not use abrasive solutions.

3.2 CORRECTIVE MAINTENANCE

In the event of a failure the customer should be expected to confirm the malfunction by carrying out his or her own internal problem resolution procedures. If their procedures are unable to resolve the problem, they should contact their local Service/Support organization.

Service/Support organizations should provide support whereby customers can telephone for advice before logging a service request. If telephone assistance is unable to resolve the problem, the local Service/Support organization may send a representative to assist, depending upon the customer's maintenance agreement.

Service/Support may make on-site repairs to the ORU level recommended by their Service/Logistics management.

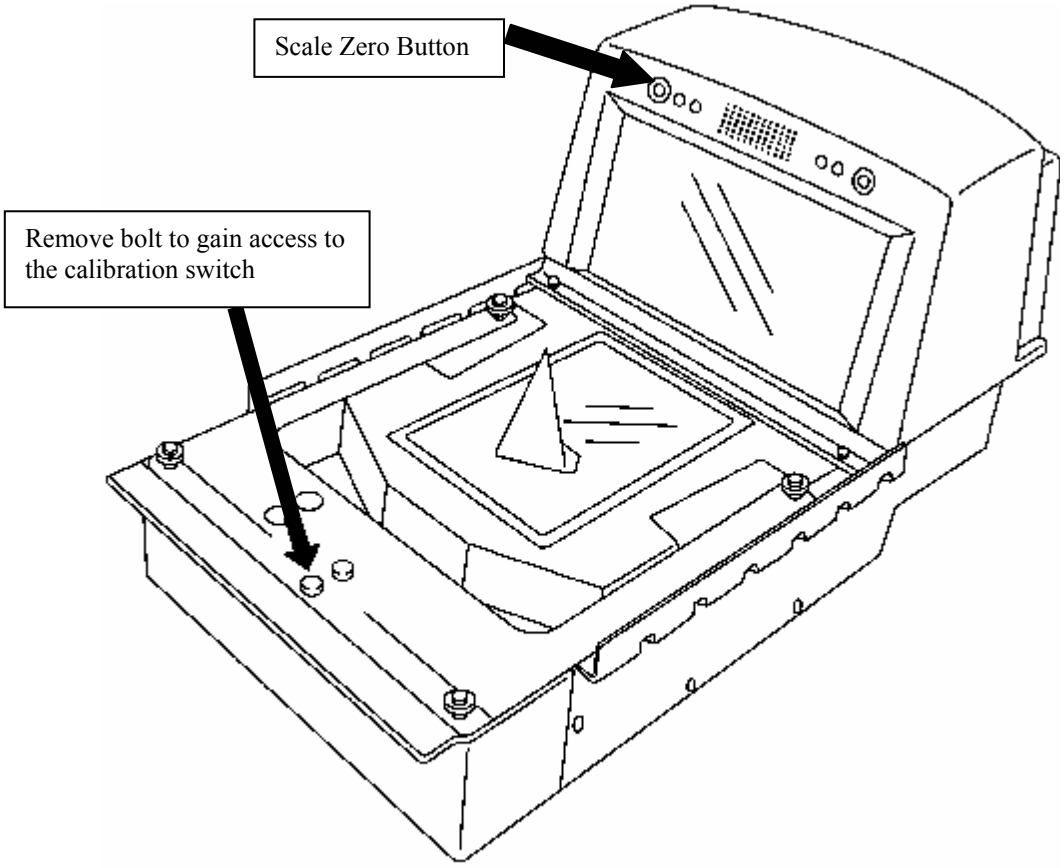
3.3 ESCALATION PROCEDURES

The escalation of product error reports or requests for assistance should take place in the following order:

Customer's Internal Service	First Line Support
Service Organization	First/Second Line Support
Technical Support Organization	Second/Third Line Support
FTXS, Sustaining Engineering	Fourth Line Support

Product reports raised on FTXS products or general inquiries, should be sent to the Sustaining Engineering/Product Quality mailbox (reference the cover page).

4.0 SCALE SETUP AND CALIBRATION



The location of the bolt covering the calibration switch and the zero button for the scale

4.1 SCALE SETUP PROCEDURE

Prior to entering the Set Up mode the scanner/scale must be programmed for one of following configurations Dual Cable Configuration RS232 Scanner/Scale (Programming Label 68307C), 8200/8500 RS232 Single Cable Configuration (Programming Label 68301C), or 78XX Emulation Scanner/Scale Single Cable Configuration (Programming Label 68302C). Appendix "A" contains the labels required for programming the scanner/scale. (Calibration is required following these scale setup functions)

Action:	Comment:
Remove the scale platter	
Remove the bolt covering the calibration button	Set the bolt aside, it must be replaced following set up changes
Depress and hold the Calibration button	Use a nonconductive tool
Scan the Enter Set-up Mode label	The speaker will "Beep" (low tone), the green LED will turn on solid and "Set up" will be displayed in the remote scale display
Scan the selected function label(s)	
1) Zero Cursor on or off 2) Expanded Mode, 3) Normal Mode, 4) 30 LB (capacity), 5) 15 KG (capacity),	The zero cursor can be turned on or off Diagnostic mode Normal operating mode } Options for scale
	The speaker will "Beep" The Yellow LED will flash and the green LED will come back on solid after each function label is scanned
	NOTE: If a "Warble" tone from the speaker occurs, it means the Program Label value is already set in scale ROM
Scan the Complete label	The speaker will "Beep" the green LED will turn off and the yellow LED will come on "done" will be displayed in the remote display and the yellow LED will turn off.
Recalibrate the scale using the Calibration Procedure on Page 25.	Weights and Measures Standards require the scale to be calibrated following any weight capacity changes or if the Weights and Measures seal has been broken.

NOTE: If the function change fails, the speaker will beep, the yellow and green LED's will blink, and "ABORT" will be displayed on the remote weight display.

(Calibration is not required following these setup functions)

Action:	Comment:
Scan the Set-up label	The speaker will "Beep" (low tone), the green LED will turn on solid and "Set up" will be displayed in the remote scale display
Scan the Scale Function change label(s)	
1) Normal Filter (vibration immunity) 2) Medium Filter (vibration immunity) 3) Heavy Filter (vibration immunity)	Filter Settings
4) Disable Non-zero timeout 5) 30 second timer on non-zero timeout 6) 90 second timer on non-zero timeout 7) 300 sec. timer on non-zero timeout	Non-Zero Timeout Settings
	The speaker will "Beep", the yellow LED will flash and the green LED will stay on solid
	Note: If a "Warble" tone from the speaker occurs, it means the Program Label value is already set in the scale ROM
Scan the Complete label	The speaker will "Beep", The green LED will turn off and the yellow LED will come on briefly and turn off.

NOTE: If the scale function change fails the speaker will beep, the yellow and green LED's will blink, and "ABORT" will be displayed on the remote weight display.

4.2 SCALE CALIBRATION PORCEDURE

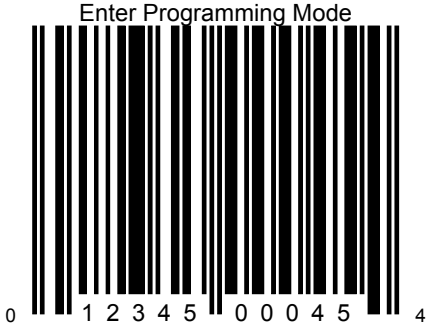
Prior to entering the Calibration Mode the scanner/scale must be programmed for one of following configurations Dual Cable Configuration RS232 Scanner/Scale (Programming Label 68307C), 8200/8500 RS232 Single Cable Configuration (Programming Label 68301C), or 78XX Emulation Scanner/Scale Single Cable Configuration (Programming Label 68302C). Appendix "A" contains the labels required for programming the scanner/scale.

Action:	Comment:
Remove the scale platter	
Remove the bolt covering the calibration switch See page 22 for the location of calibration bolt.	Set the bolt aside, it must be replaced when calibration is completed
Depress and hold the Calibration button (Use a Non conductive tool). Scan the Enter the Calibrate Mode label. After the low tone, release the calibration switch.	The speaker will "Beep" (low tone) The yellow LED will come on "Start" will be displayed in the remote scale display
Replace the scale platter	
Depress the "0" button on the scanner (Do not press the "0" button on the remote scale display)	The speaker will "Beep", the green LED will come on and "Empty" will be displayed in the remote scale display
Depress the "0" button on the scanner	The speaker will "Beep" and the LED's will blink indicating one of the following 1. Yellow & Green for 20 lb, 2. Yellow for 10 kg,
	The Remote scale display will show: 1. ADD 20 (lb), 2. ADD 10 (kg)
Place the appropriate test weights on scale platter	
Depress the "0" button on scanner	The speaker will "Beep", The yellow & green LEDs will light and "Done" will be displayed in the remote scale display
Remove the weights from scale platter	The weights must be removed within 10 seconds after the previous step
Depress the "0" button on the scanner	Calibration is completed
Remove the platter and replace the bolt that covers the calibration button.	Follow the local Weights and Measures requirements when sealing the scale.

NOTE: If calibration fails the speaker will beep, the yellow and green LED's will blink, and ABORT will be displayed in the remote weight display.

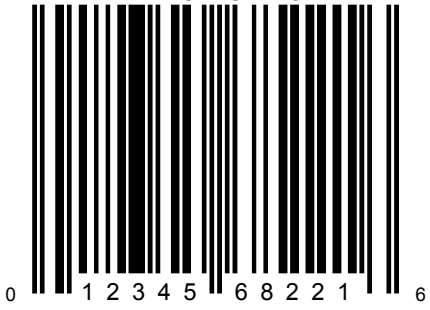
APPENDIX “A” SCALE PROGRAMMING LABELS

Enter Programming Mode

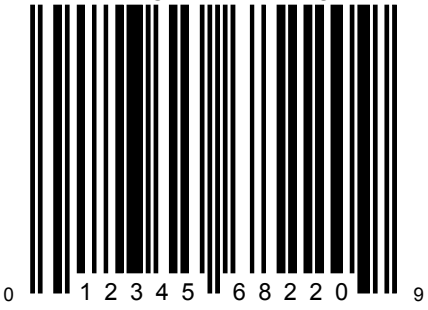


EXIT SAVE AND RESET

ENTER SETUP MODE



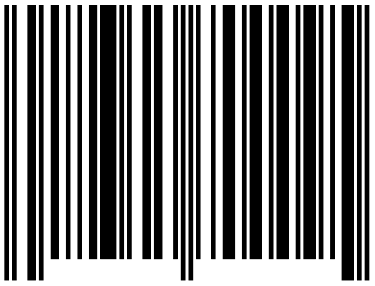
ENTER CALIBRATE MODE



COMPLETE

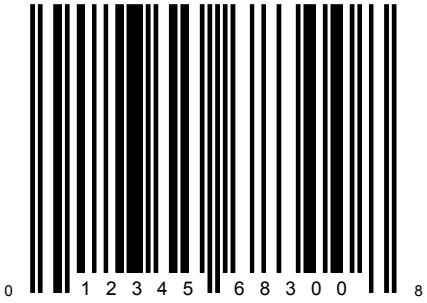
RESTORE ALL DEFAULTS

Enter The Firmware Cloning Mode
70009C



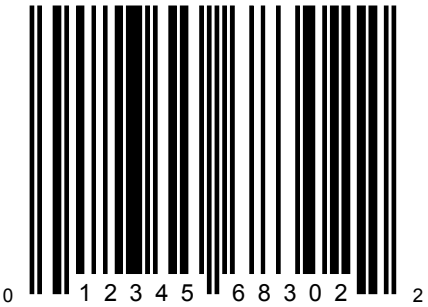
Enter Clone Programming Mode

RS232 SINGLE CABLE
CONFIGURATION

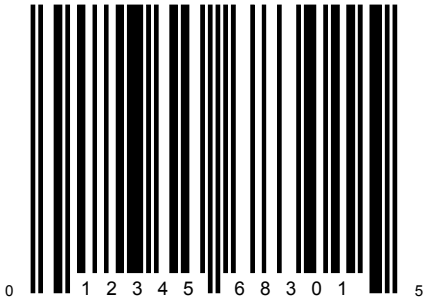


DUAL CABLE CONFIGRUATION
RS232 SCANNER/SCALE

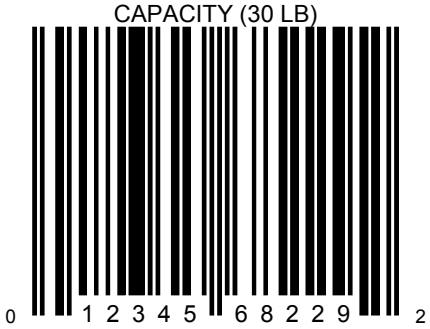
78XX EMULATION RS232
SCANNER SCALE SINGLE
CABLE CONFIGURATION



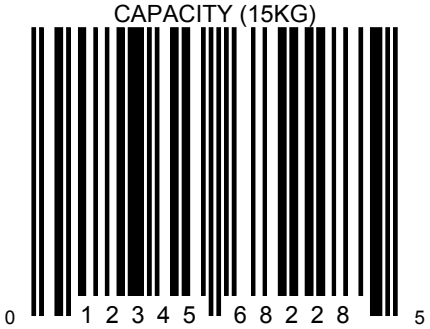
8200/8500 RS232 SINGLE
CABLE CONFIGURATION



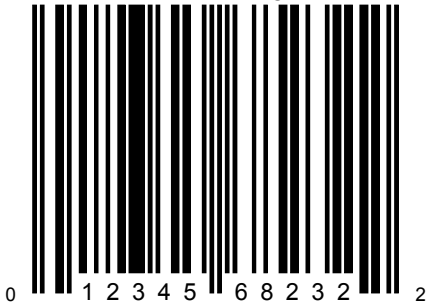
CAPACITY (30 LB)



CAPACITY (15KG)



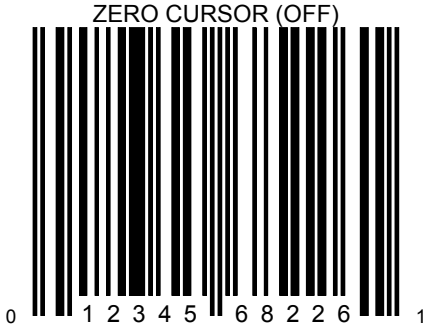
EXPANDED MODE



NORMAL MODE

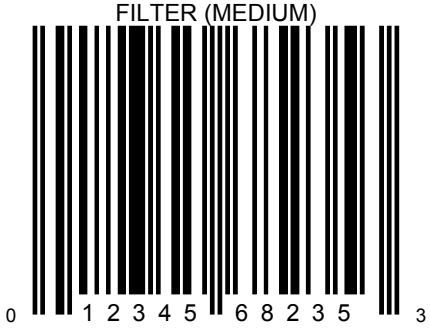
ZERO CURSOR (ON)

ZERO CURSOR (OFF)



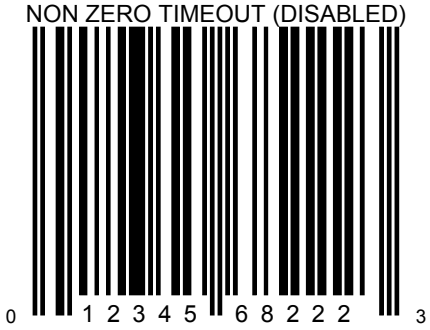
FILTER (LIGHT)

FILTER (MEDIUM)



FILTER (HEAVY)

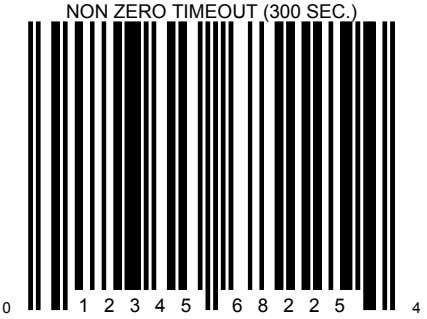
NON ZERO TIMEOUT (DISABLED)



NON ZERO TIMEOUT (30 SEC.)

NON ZERO TIMEOUT (90 SEC.)

NON ZERO TIMEOUT (300 SEC.)



APPENDIX B TOP COVER SPACER AND DEBRIS RAIL INSTALLATION