SC
Counting Scale
Service Manual

Declaration of conformity
Konformitätserklärung
Déclaration de conformité
Declaración de Conformidad
Verklaring de overeenstemming
Dichiarazione di conformitá

We/Wir/Nous/WIJ/Noi: **Mettler-Toledo, Inc.**
1150 Dearborn Drive
Worthington, Ohio 43085
USA

declare under our sole responsibility that the product,
erklären, in alleiniger Verantwortung, daß dieses Produkt,
déclarons sous notre seule responsabilité que le produit,
declaramos, bajo nuestra sola responsabilidad, que el producto,
verklaren onder onze verantwoordelijkheid, dat het product,
dichiariamo sotto nostra unica responsabilitá, che il prodotto,

Type: Mentor   (Parts Counting Scale)

Models: SCxx and BCxx   (where xx defines the capacity of the scale from 5 to 60 kg)

to which this declaration relates is in conformity with the following standard(s) or other normative document(s).
auf das sich diese Erklärung bezieht, mitder/den folgenden Norm(en) oder Richtlinie(n) übereinstimmt.
Auquel se réfère cette déclaration est conforme à la (aux) norme(s) ou au(x) document(s) normatif(s).
Al que se refiere esta declaración es conforme a la(s) norma(s) u otro(s) documento(s) normativo(s).
Waarnaar deze verklaring verwijst, aan de volende norm(en) of richtlijn(en) beantwoordt.
A cui si riferisce questa dichiarazione è conforme alla/e sequente/i norma/e o documento/i normativo/i.

CE Conformity / CE-Konformität / Conformité CE
90/384/EU Nonautomatic Balances and Scales / Nichteselbsttätige Waagen / Balances à Functionnement non automatique
   EN45501:1992   Adopted European Standard / Norme Européenne Adoptée / Angenommene Europäische Norm
89/336/EU EMC Directive / EMU-Richtlinie / Directive concernant la CEM
   EN55022, A 01.04.87   Emissions / Funkstörungen
   EN50081-1   Immunity
73/23/EU Low Voltage / Niederspannung / basse tension
   EN61010   el. Safety / el. Sicherheit / sécurité el.

Other Directives and Standards / Andere Richtlinien und Normen / Autres documents
corresponding to local requirements / entsprechend lokalen Anforderungen / correspondant aux exigences locales
   UL   1950   el. Safety / el. Sicherheit / sécurité el. (if UL mark is applied)
   CSA   C22.2 No. 950-M89 el. Safety / el. Sicherheit / sécurité el. (if cUL mark is applied)
   FCC   Part 15, class A   Emissions / Funkstörungen (if FCC mark is applied)

Darrell Flocken, Manager - Weights & Measures
Office of Weights and Measures
Worthington, Ohio USA
January, 1995
September, 1996   (revised to include NAWI and LV Directives compliance.)

according to EN45014

INTRODUCTION

This publication is provided solely as a guide for individuals who have received Technical Training in servicing this METTLER TOLEDO product.

Information regarding METTLER TOLEDO Technical Training may be obtained by writing to:

METTLER TOLEDO
1150 Dearborn Drive
Worthington, Ohio 43085
(614) 438-4511

WARNING!

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, i.e., in accordance with the instructions manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference which case the user at his own expense will be required to take whatever measures may be required to correct the interference.
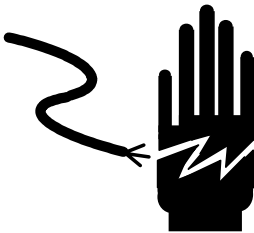
SOFTWARE VERSION

This manual properly describes the operation and functionality of the METTLER TOLEDO SC counting scale containing software part number F144258, version 2.0. The software version and part number are displayed during the power-up sequence of the scale.

METTLER TOLEDO RESERVES THE RIGHT TO MAKE REFINEMENTS OR CHANGES WITHOUT NOTICE.
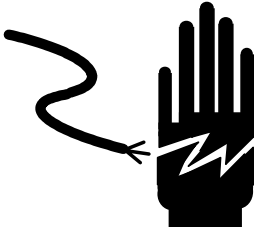
PRECAUTIONS

READ this manual BEFORE operating or servicing this equipment.

FOLLOW these instructions carefully.

SAVE this manual for future reference.

DO NOT allow untrained personnel to operate, clean, inspect, maintain, service, or tamper with this equipment.

ALWAYS DISCONNECT this equipment from the power source before cleaning or performing maintenance.

CALL METTLER TOLEDO for parts, information, and service.

⚡ **WARNING**

ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM.

⚡ **WARNING**

FOR CONTINUED PROTECTION AGAINST SHOCK HAZARD CONNECT TO PROPERLY GROUNDED OUTLET ONLY.
DO NOT REMOVE THE GROUND PRONG.

⚡ **WARNING**

DISCONNECT ALL POWER TO THIS UNIT BEFORE REMOVING THE FUSE OR SERVICING.

⚠ **CAUTION**

BEFORE CONNECTING/DISCONNECTING ANY INTERNAL ELECTRONIC COMPONENTS OR INTERCONNECTING WIRING BETWEEN ELECTRONIC EQUIPMENT ALWAYS REMOVE POWER AND WAIT AT LEAST THIRTY (30) SECONDS BEFORE ANY CONNECTIONS OR DISCONNECTIONS ARE MADE. FAILURE TO OBSERVE THESE PRECAUTIONS COULD RESULT IN DAMAGE TO OR DESTRUCTION OF THE EQUIPMENT OR BODILY HARM.

⚠ **CAUTION**

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

CONTENTS

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1 Introduction

Introduction

The SC counting scale is a high performance industrial counting scale that accurately and dependably counts parts of all shapes and sizes. Designed for use in normal industrial environments, it is particularly well suited to applications that require more than a simple operator interface.

This technical manual provides information for installing, servicing, and troubleshooting the SC counting scale. Detailed operating instructions are provided in the **SC Counting Scale User's Guide** (P/N A150313 00A). Please read it thoroughly and familiarize yourself with all safety requirements. Service procedures must be performed by authorized personnel only.

If you discover a problem with this documentation, please complete the **Publication Evaluation Form** found in the back. For additional information, please contact your authorized Mettler Toledo representative.

Model Identification

The SC scale is available in two sizes (small and large) and in four capacities, and is configured for the market in which it will be used at the time of ordering. Refer to the following chart to confirm the model number of the SC counting scale with which you are working. The example below shows a 30kg capacity scale with the battery option and remote analog second scale for the USA market.

Model Number Configuration

Scale Type	Capacity	Battery Option	Remote Scale Option	Market
SC	05 - 10 lb / 5 kg 15 - 37.5 lb / 15 kg 30 - 60 lb / 30 kg 60 - 120 lb / 60 kg	Blank - None B - Battery	Blank - None A - Analog Remote D - DigiTOL Remote	000 to 999 Market Code per Mettler Toledo Specifications

SC   30   B A   000

Specifications

The SC counting scale conforms to and operates best within the specifications that follow.

MODEL	SC05	SC15	SC30	SC60
Capacity/Division (kg)	5 x 0.0005	15 x 0.002	30 x 0.005	60 x 0.01
Capacity/Division (lb)	10 x 0.001	37.5 x 0.005	60 x 0.01	120 x 0.02
Scale Dimensions (W x D x H)	310 mm x 375 mm x 135 mm 12.2 in x 14.8 in x 5.3 in		350 mm x 300 mm x 135 mm 13.8 in x 11.8 in x 5.3 in	
Platter Dimensions (W x D)	305 mm x 215 mm 12.0 in x 8.5 in		350 mm x 300 mm 13.8 in x 11.8 in	
Actual Weight	5 kg/11 lb		11 kg/24 lb	
Shipping Weight	8 kg/17 lb		14 kg/30 lb	
Operating Temperature	10°C to 40°C (50°F to 104°F) 10 to 90% humidity, non-condensing			
Storage Temperature	-20°C to 70°C (-4°F to 158°F) 10 to 90% humidity, non-condensing			
Power	24 VDC @ 250mA - 120, 220, or 240 VAC adapter included			
Construction	Die cast aluminum base, high impact plastic cover			
Two Liquid Crystal Displays	Left - Seven 18 mm/0.7 in high seven-segment digits Right - Eight 13 mm/0.5 in high dot matrix characters			
Internal Resolution	1 million divisions at scale capacity			
Display Resolution	From 3,000d to 100,000d - selectable			
Weighing Units	Pounds, kilograms, and grams			
Serial Data I/O	Bi-directional RS2332C, 300 - 19,200 baud			

Power Requirements

An external 24 VDC, 250 mA (21.0 to 30 VDC, 150mA nominal) power supply provides power to the SC scale.

The SC scale can also be powered by a rechargeable NiCad, 7.2 VDC, 4.3 amp-hour battery pack battery for portable applications. An internal option board converts the battery voltage to a nominal 24 VDC (for the load cell), and charges the battery when using the appropriate 1.0 amp heavy duty AC power supply. The battery supports a minimum of 6.5 hours continuous stand alone operation and is capable of at lest 500 charge/discharge cycles.

Standards Compliance

AC Power Line Voltage Variation

The SC counting scale meets NIST HB-44, Canadian Gazette Part 1, and OIML-SP7/SP2 line voltage variation specifications as listed in the following table:

AC Power Line Voltages						
Line Voltage Variation Specification	AC Line Voltage			Line Frequency in Hz ($\pm$ 2%)		
	Minimum	Nominal	Maximum	Minimum	Nominal	Maximum
NIST HB-44	100	120	132	59.5	60	60.5
Canadian	108	120	132	58.8	60	61.2
OIML-SP7/SP2	102 187 204	120 220 240	132 242 264	58.8 49.0 49.0	60 50 50	61.2 51 51

RFI Susceptibility

The SC counting scale meets USA, Canadian, VDE 0871 Class A requirements for RFI susceptibility as listed in the following table with a maximum of one display increment of change when calibrated for recommended builds.

Radio Interference Frequency	Field Strength
26-1000 MHz	3 volts/meter

UL Listing

The SC counting scale is designed to meet UL specification E87297 (24 VDC 250 mA) for transformers.

CSA Certification

The SC counting scale is designed to meet CSA standard LR57562.

Weights and Measures Approval

The SC counting scale meets or exceeds requirements for Class III, 10,000e NTEP division accuracy requirements in accordance with the National Institute of Standards and Technology (NIST) Handbook 44. A certificate of conformance 98-026 has been issued under the National Type Evaluation Program (NTEP) of the National Conference on Weights and Measure.

The SC counting scale was submitted for approval to the Canadian Weights and Measures Laboratories in Canada. After evaluation, the SC counting scale was found to meet and/or exceed requirements for Class III, 10,000d rating and approval AM-5223 was issued by statutory authority of the Minister of Industry, Science and Technology of Canada.

The SC counting scale was submitted for approval to the Nederlands Meetindtituut (NMi) in The Netherlands. After evaluation, the SC counting scale was found to meet and/or exceed the requirements for a Class III, 6000 division weighing instrument. EC type-approval certificate T2850 was issued by the NMi in accordance to Council Directive 90/384/EEC on Non-Automatic Weighing Instruments.

Parts and Optional Equipment

When ordering parts, refer to the parts list in Chapter 7 of this manual. The following optional equipment may be factory-installed or ordered as a separate kit for installation at a later time. Detailed instructions are included with each kit for installation by qualified personnel. Please contact your local METTLER TOLEDO representative.

NiCad Battery Option (0919-0045 and 0919-0049)

Two battery options - one for the smaller and one for the larger SC counting scale, allow the SC counting scale to operate when not connected to an AC power outlet. Both use a "pack" of NiCad batteries, which allows multiple recharging, and are attached to the bottom of the scale. The battery pack provides 7.2 volts of power to operate the SC counting scale (without a remote second scale) up to 6.5 hours without recharging. To recharge the pack, plug the SC counting scale into an AC power source for approximately 14 hours.

Extra NiCad Battery (0919-0046)

This kit consists of the NiCad battery only. It can be installed to operate the SC counting scale while the original battery is being recharged externally.

Heavy Duty 1.0 Amp Power Supply (0919-0047)

The power supply is required when any electrical option is used with the SC counting scale. It supplies additional power to operate a remote scale or to recharge a battery via the scale. This power supply is designed for 120/240 VAC with U.S. line cord.

External Battery Charger (0919-0051)

This 120VAC charging device recharges a NiCad battery pack external to the scale while a fresh battery pack is installed for longer operating time.

Heavy Duty 1.0 Amp Power Supply (0919-0052)

This power supply is required when any electrical option is used with the SC scale. It supplies additional power to operate a remote scale or to recharge a battery via the scale. This power supply is designed for 120/240VAC input with U.K. line.

Heavy Duty 1.0 Amp Power Supply (0919-0053)

This power supply is required when any electrical option is used with the SC scale. It supplies additional power to operate a remote scale or to recharge a battery via the scale. This power supply is designed for 120/240VAC input with European line cord.

Heavy Duty 1.0 Amp Power Supply (0919-0054)

This power supply is required when any electrical option is used with the SC scale. It supplies additional power to operate a remote scale or to recharge a battery via the scale. This power supply is designed for 120/240VAC input with Australian line cord.

Analog Remote 2nd Scale (0901-0385)

The analog remote 2nd scale allows you to attach a remote analog scale base. A larger scale for counting large containers of parts or a lower capacity remote scale for sampling very small parts may be used.

DigiTOL Remote 2nd Scale (0901-0386)

The DigiTOL remote 2nd scale allows you to attach a remote DigiTOL scale base. A larger scale for counting large containers of parts may be used.

Keyboard/Display Stand (0992-0001)

This metal stand supports the keyboard/display of the SC30 or SC60 to make it easier to view and use in certain situations. It may be used alone or with the attachment bracket (0992-0002).

Stand Attachment Bracket (0992-0002)

The bracket attaches the keyboard/display stand (described above but not included) to the base of the SC30 and SC60 scale to make each an integral system that can be easily moved.

Sealing Kit (0992-0003)

The sealing kit contains all required hardware to prevent unauthorized access to the scale weighing parameters. This is only required when "sealing" the SC counting scale for approved applications. Hardware for both large and small models is included.

Software Upgrade Kit (0992-0004).

This kit contains new firmware for the SC to upgrade an older unit to the latest functionality. THIS KIT REQUIRES INSTALLATION BY A TRAINED SERVICE TECHNICIAN.

RS-232 Interface Cable (0900-0255)

This 20-foot (6 m) long cable provides bi-directional RS-232 interface between the SC counting scale and a serial device such as a printer that utilizes a 25 pin female serial connector.

RS-232 Interface Cable (0900-0278)

This 15-foot (5 m) long cable provides bi-directional RS-232 interface between the SC counting scale and a serial device such as a computer that utilizes a 9 pin male serial connector.

RS-232 Interface Cable (0900-0279)

This 15-foot (5 m) long cable provides bi-directional RS-232 interface between the SC counting scale and a serial device such as a computer that utilizes a 25 pin male serial connector.

Roller Ball Top Platter (0906-0161)

This platter contains 14 roller balls and is designed to allow the operator to easily move containers onto the base of the SC30 or SC60 scales.

2

Installation Procedures

Selecting the Proper Location

Before installing the SC counting scale, identify the best location for the equipment. The proper environment enhances the operation and longevity of the scale. Keep in mind the following sources of scale error:

- **Vibration**—Vibration diminishes the scale's ability to measure accurately. Electrical machinery can cause inaccurate, non-repeatable readings. The scale may read inaccurately if not balanced properly.

- **Air Currents**—Moving air can cause the scale to read an additional force (additional weight) and have the same affect as vibration.

- **Cold Circuitry**—Scales at temperatures lower than room temperature can read inaccurately as the scale measures the change in resistance of the strain gauges when weight is applied to the scale. Let the scale warm-up approximately 30 minutes before using it.

- **Electrical Influences**—Fluctuations in the electrical power supply can affect performance and possibly damage the load cell. The scale should be set apart from equipment that generates electrical noise. "Clean" power should be used at all times to avoid damage.

- **Friction**—A scale cannot measure accurately if an object is rubbing or pressing against the platter.

- **Moisture/Humidity**— Refer to the temperature and humidity specifications in the Appendix.

Inspection and Contents Verification

Inspect the package containing the SC counting scale before beginning installation. If the shipping container is damaged, check for internal damage and file a freight claim with the carrier if necessary.

Next, verify that all components are included. If any components are missing or damaged, please contact your authorized Mettler Toledo representative. Package contents for the SCO5 or SC15 include:

- Scale
- Scale Platter
- User's Guide

- Technical Manual
- Power Supply
- Packing Material
- Operator Card
- Allen Wrench (SCO5 models only)

Package contents for the large SC30 or SC60 include:

- SC Counting Scale Remote Keyboard/Display Unit
- Scale Base
- Scale Platter
- User's Guide
- Technical Manual
- Power Supply
- Packing Material
- Operator Card

Setup - SCO5/SC15

The SC counting scale is assembled at the factory according to ordering specifications. If you need to install components other than those installed at the factory, please refer to the instructions included with those options. To setup the SC counting scale:

1. IF you have not already done so, remove the SC counting scale from its container by grasping the bottom front and the back of the unit and pulling up out of the box. Remove the packing material from each side of the scale.

2. Set the unit on a sturdy, level surface and remove the platter (P/N 140826 00A). Remove the shipping insert under the platter and the piece of paper.

3. Remove the shipping screw (SCO5 only) using the allen wrench provided. Store the screw with the allen wrench for later use.
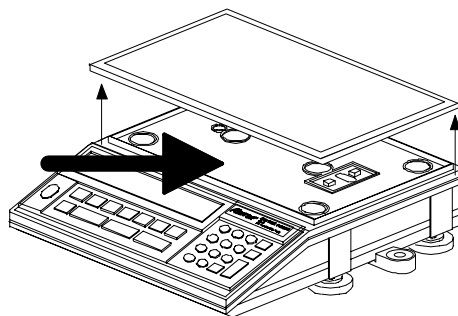
Figure 2-a: Shipping Screw

4. Level the scale by turning the adjustable feet on the bottom of the unit. The bubble indicator is centered in the circle when the SC counting scale is level (see figures 2-b and 2-c). The feet must be adjusted so the scale does not rock.

Fifth Foot

Leveling Feet
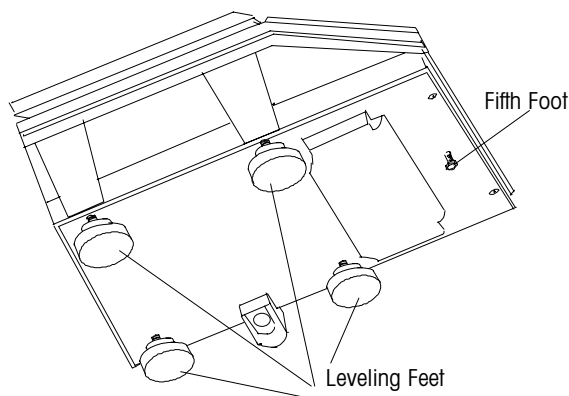
Figure 2-b: SC Feet (Bottom View)
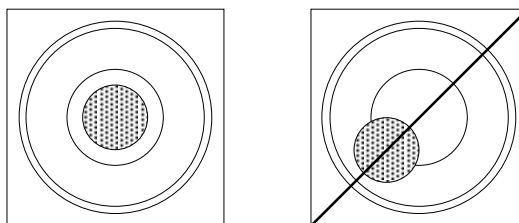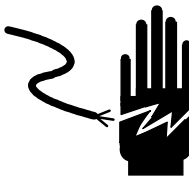
Figure 2-c: Level Indicator

5. When the SC counting scale is level, carefully unscrew the front (fifth) foot until it is resting evenly on the surface.

6. Unpack the power supply and plug it into the back of the scale. Plug the line cord into a **properly grounded** AC power outlet. You can press ON/OFF to power the scale down until you are ready to test or use it.

24 VDC

⚠️ **WARNING!**

AC power sources must have proper short circuit and over current protection in accordance with local and national electrical regulations. Failure to provide this may result in bodily injury.

⚠️ **CAUTION**

If the battery option has been installed, the larger 1.0 Amp DC power supply P/N 14605500A or A14664800A must be used. Do not use the standard 250mA DC power supply P/N 14083200A, 14806900A or 14912100A if options are installed.

Setup - SC30/SC60

1. If you have not already done so, remove the SC counting scale from the box and set it on a sturdy, level surface.

1. Insert the remote keyboard/display jack into the SC counting scale base at the location marked "KYBD."

Note the orientation of the connector, clip should be down

24 VDC   KYBD
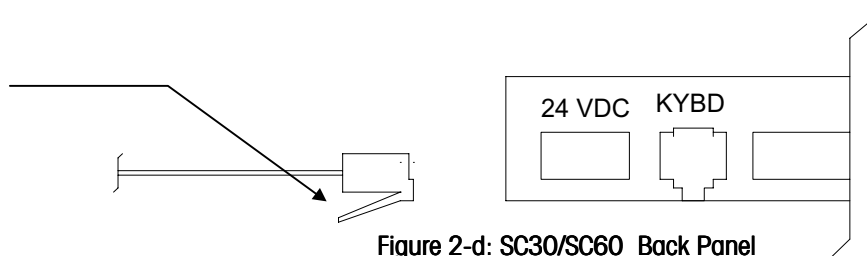
Figure 2-d: SC30/SC60 Back Panel

3. Level the scale by turning the adjustable feet on the bottom of base. The bubble indicator will be centered in the circle when the SC counting scale is level (see figures 2-e and 2-f). The feet must be adjusted so the scale base does not rock.
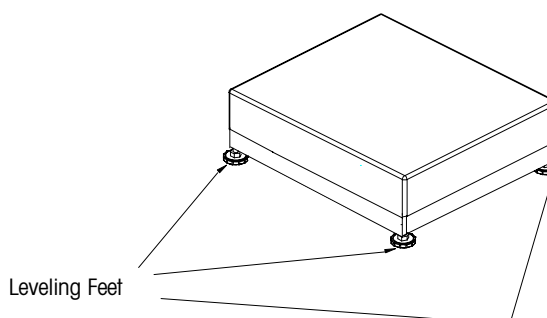
Leveling Feet

Figure 2-e: Large SC Leveling Feet
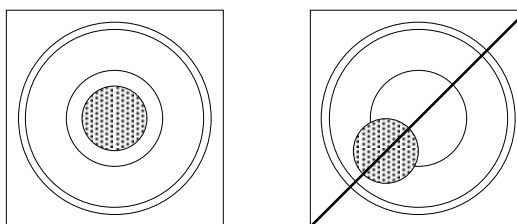
Figure 2-f: Level Indicator

4. Insert the AC wall power supply into the 24 VDC jack on the SC counting scale base. Plug the line cord into a **properly grounded** AC power outlet. You can press the ON/OFF key to power the scale down until you are ready to test or use it.

	⚠ **WARNING!**
	AC power sources must have proper short circuit and over current protection in accordance with local and national electrical regulations. Failure to provide this may result in bodily injury.

	⚠ **CAUTION**
	If the battery option has been installed, the larger 1.0 Amp DC power supply P/N 14605500A or A14664800A must be used. Do not use the standard 250mA DC power supply P/N 14083200A, 14806900A or 14912100A if options are installed.

Power-up Sequence

The SC counting scale goes through a power-up sequence each time power is applied. The scale performs a diagnostic test on its ROM and RAM, then proceeds to normal operating mode. The power-up sequence is as follows:
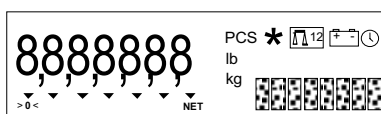
All segments lit.

The platter must be on the scale oat power-up to capture zero. If the platter is not on the scale or if there is weight on the scale, an error may be displayed.
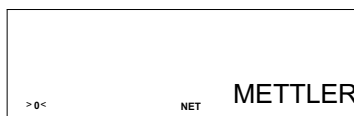
METTLER

Company name Mettler-Toledo is sequentially displayed.

TOLEDO

Model SC
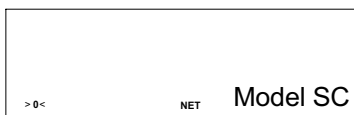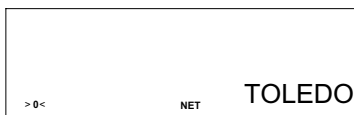
Model name is shown.

VEr 2.00

F144258
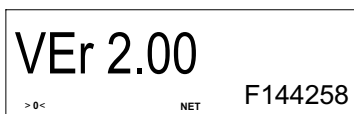
The software version and part number is shown.

0.000 lb

TARE ?
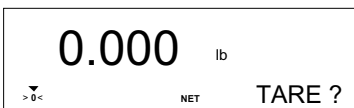
The power-up sequence is complete and the SC is ready for use.

Connecting a Remote Second Scale Base

The SC scale can support one remote scale base in addition to the built-in scale. It can be ordered with the optional second-scale option already installed, or the option may be ordered and installed after initial installation of the SC. There are two scale options, one for analog scale bases and one for DigiTOL scale bases. These options ARE NOT INTERCHANGEABLE. Only an analog scale base can be connected to an remote analog scale option. A DigiTOL option can only have a DigiTOL base connected.

Analog Remote Scale

The analog remote scale option provides power to operate from one to four load cells (350 ohms) in a remote base. This allows use of either a floor scale or a bench scale for full flexibility. The connection to the SC scale is made via a 9 pin female connector on the back panel. The port will be labeled I/O 4. Refer to the following drawings for port location. NOTE: If you are wiring a 4-wire load cell, you must install a jumper wire between pins 1 and 2 and also between pins 4 and 5.
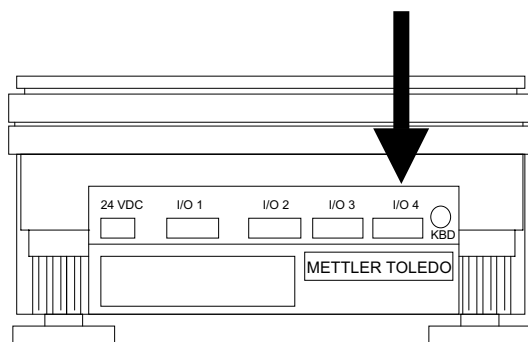
SC05, SC15
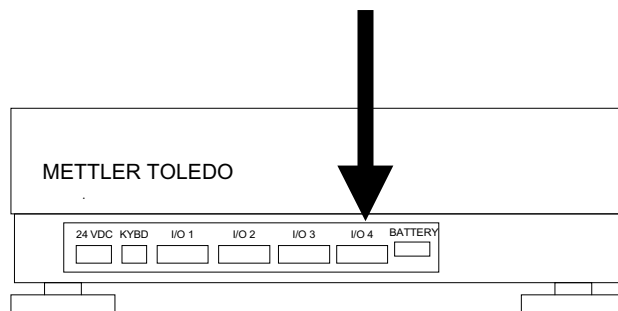
SC30, SC60

The pin designation for the I/O 4 analog scale port is:

Pin Number	Signal	Definition
1	+ Exc	Positive Excitation
2	+ Sense	Positive Sense
4	- Sense	Negative Sense
5	- Exc	Negative Excitation
6	Key	Plastic Key
7	+ Signal	Positive L/C Signal
8	- Signal	Negative L/C Signal
9	NC	No Connection

Shield of cable should be tied to chassis of the SC via metal shell of the I/O 4 connector.

DigiTOL Remote Scale

The DigiTOL remote scale option provides power to operate a DigiTOL remote base. This allows use of either an UltraRes or standard bench scale for full flexibility. The connection to the SC scale is made via a 9 pin female connector on the back panel. The port will be labeled I/O 3.

Refer to the following drawings for port location.
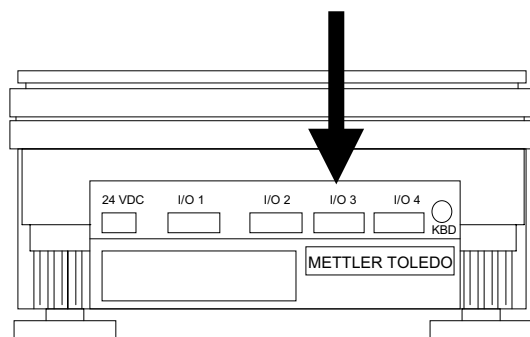
SC05, SC15
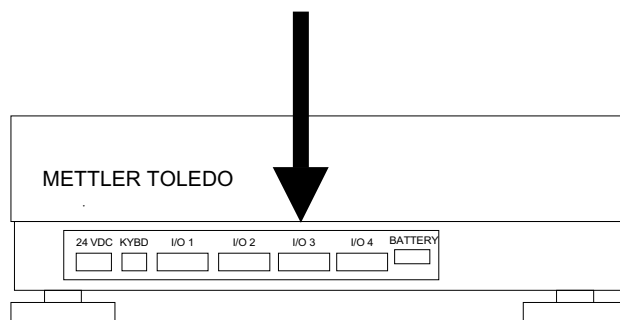
SC30, SC60

The pin designation for the I/O 3 DigiTOL scale port is:

Pin Number	Wire Color	Signal	Definition
1	Red	RxD - A	Receive RS-422 Data - A
3		Key	Plastic Key
4	NC	RxD - B	Receive RS-422 Data - B
5	Green	+ 20 VDC	Power Supply
6	Yellow	TxD - B	Transmit RS-422 Data - B
7	Blue	Gnd	Power Ground
8	Black	TxD - A	Transmit RS-422 Data - A
9		NC	No Connection

The shield of cable should be tied to the chassis of the SC scale via the metal shell of the I/O 3 connector.

3

Operating Information

The following discusses features of the SC scale needed to configure the system parameters in Service Mode and to set operating parameters in Master Mode.

Mode and Scale State Definitions

This manual refers to various scale modes and operating states. They differ depending on the scale function and/or setup procedure desired.

- **Master Mode**—Master Mode is the mode in which operating parameters (details pertaining to the scale functions such as selected weight units and audible beep configuration) are configured.

- **Service Mode**—Service Mode is the mode in which scale and system parameters are configured, and in which the SC counting scale is calibrated.

- **Weigh Mode**—In Weigh Mode, the scale can display gross weight (non-zero) or net weight (negative or positive). Negative net weight is displayed when a container is tared then removed from the scale.

- **Count Mode**—In Count Mode, the SC counting scale counts items on the platter.

- **Dependent Mode**—In Dependent Mode, counting and sampling actions are guided by prompts. You can configure the sequence in Master Mode.

- **Independent Mode**—In Independent Mode, counting and sampling actions are not guided by the SC counting scale. The specific counting sequence is determined by the user, providing greater application flexibility.

- **Home State**—In Independent mode, Home State is indicated by the scale displaying gross weight. In Dependent mode, home state is indicated by the scale displaying the first prompt in a defined sequence of prompts.

- **Prior State**—Prior State refers to the scale state immediately before the current scale state (outside of Master Mode and Service Mode). The **CLEAR** key returns you to the Prior State regardless of current state. For example, if you just tared a container (0.0 net weight and/or tare weight displayed), you can return to the previous state (gross weight) by pressing **CLEAR**.

- **Gross Weight**—The full weight on the scale which includes tare weight (a container or similar device) and net weight (weight of item or product only).

- **Tare Weight**—The weight of a container that is typically subtracted from the gross weight so an accurate net weight is displayed.

- **Net Weight**—The remaining weight on the scale after a tare value is subtracted from the gross weight.

SC Display Area

The SC counting scale has two display areas where scale data and operational messages are presented. These are pictured below:

Indicates recall mode or accumulation

Shows which scale (remote or local) is

Indicates a low battery condition

Legend icon for pieces, pounds, and kilograms

Indicates time or date is displayed

PCS   *   △△12
lb
kg

>0<   NET

Cursor indicates center of zero (>0<)

Seven-digit display

Indicates the SC is in the net mode

Eight-character alpha-numeric display on the right side (for operator prompting)

Sample DisplayError! Switch argument not specified.

The left display is comprised of seven characters with seven segments, and is used primarily for numbers. In Master Mode and Service Mode, alphanumeric prompts are displayed here. Because the left display area is confined to seven segments per character, alphanumeric prompts may appear with upper and lower case characters, or a character or prompt may not be displayed as expected. For example, the letter "m" appears as an "n", the letter "v" appears as "u", the letter "e" appears as "E". These occurrences are intentional. They do not indicate a display error or affect the operation of your SC counting scale.

The right display area is composed of eight dot matrix characters and is used primarily for alphanumeric prompts and responses.

In Master Mode or Service Mode, the left display area tells you where you are within the program block structure. The right display area indicates the current parameter. Triangular cursors at the bottom of the left display area indicate graphically your position within Master Mode or Service Mode:

- One Cursor—indicates a program block ▽
- Two Cursors—indicate a sub-block ▽▽
- Three Cursors—indicate a parameter within a sub-block ▽▽▽

For example, if the display reads **Master Tare**, you are in Master Mode and about to access the Tare program block. The SC counting scale displays one arrow when you access the program block. If the display reads **Tare Mode**, you are in the Tare program block and about to configure the Mode parameter. The SC counting scale displays two arrows indicating you have accessed the Tare sub-block.

A full description of the SC's program block structure is given in Chapter 4 (Service Mode) and Chapter 5 (Master Mode).

The left and right display areas are also used to provide feedback when an error occurs. For example, if you press **TARE** when that keystroke is not valid, the SC counting scale will display an error in the left area and a descriptive message such as "Bad Entry" in the right. Most errors clear automatically in 2 seconds. Others will require pressing the **CLEAR** key.

Display Symbols

The secondary display area contains special symbols to inform you of certain scale operational conditions. Descriptions of these symbols follow:
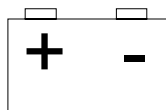
Battery—If the SC counting scale receives a low-battery signal, the unit beeps and flashes the battery annunciator. The annunciator flashes the warning for two minutes, then clears the display of all metrological data and displays Power Failure.

If it receives a low-battery signal on power-up, the unit goes directly to Sleep mode and flashes the battery annunciator. You must apply AC power and wait until the symbol stops flashing. When the annunciator is no longer flashing, you can press the **ON/OFF** key and operate the scale a while longer. The SC counting scale remains in Sleep mode as long as the battery annunciator is flashing regardless of whether you press *ON/OFF*.

If the battery symbol continues to flash more than five minutes, the battery may be damaged and require replacement. Remove the battery pack and operate the SC counting scale from a standard AC outlet.

Scale Select—The scale select symbol indicates which scale is active in a dual scale configuration.

Accumulator—The accumulator symbol flashes once when an addition or subtraction accumulation has been successfully completed. In Master Mode, the asterisk (same symbol) indicates a factory default selection. This symbol will also light during the recall mode.

Piece Count—The PCS legend indicates the current display is in piece count.

Weight Unit—The lb and kg legends indicate weight units. When you switch weight units, SC automatically lights the appropriate legends. If the selected weight unit is grams, the letter "g" is displayed in the right display area.
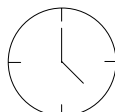
Time and Date— The clock symbol is shown while the time and date fields are being recalled to the display or during a power-up prompt for the operator to enter the time and date values.

SC Keypad
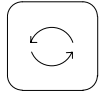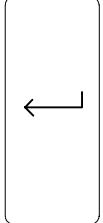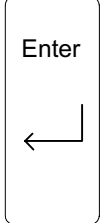
The English version of the SC counting scale comes with a standard 27-key keypad as shown below:
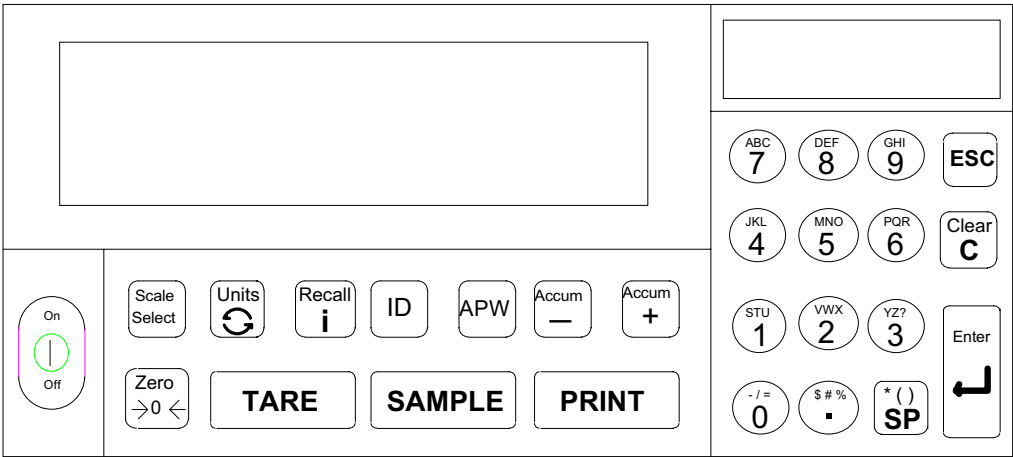
2

Function Keys

Some SC counting scale units may be equipped with an International (graphical) keypad. The following Function Key Descriptions illustrate both. The keypad consists of an ON/OFF key, 14 function keys, and 12 keys with numeric, alpha, and special characters.

International Version	English Version	Description
		The **ON/OFF** key turns the scale on and off (sleep mode).
		The **ZERO** key zeroes the scale.
T	TARE	The **TARE** key subtracts tare values and changes the SC counting scale from gross mode (no tare) to net mode.
	SAMPLE	The **SAMPLE** key enters sample quantities.
	PRINT	The **PRINT** key sends data to a printer.

The **SCALE SELECT** key is used when a remote second scale is connected to choose various combinations of sample and gross scales.

The **UNITS** key switches the scale from primary weight units to the alternate weight unit.

The **RECALL** key recalls various data to the display.

The **ID** key is used to enter an 8 character identification field.

The **APW** key is used for entering average piece weight values to calculate piece count.

The **ACCUM-** key subtracts data from the accumulators. It also is used to select alpha characters for ID fields.

The **ACCUM+** key adds data to the accumulators. It also is used to select alphas characters for ID fields.

The alpha-numeric keys are used to enter data fields.

The **ESC** (Escape) key is used to exit recall mode or count mode or to exit other sequences.

The **CLEAR** key clears data from the display and exits the count mode.

The **ENTER** key is used to terminate data entry sequences.

Alphanumeric Keys and Character Entry
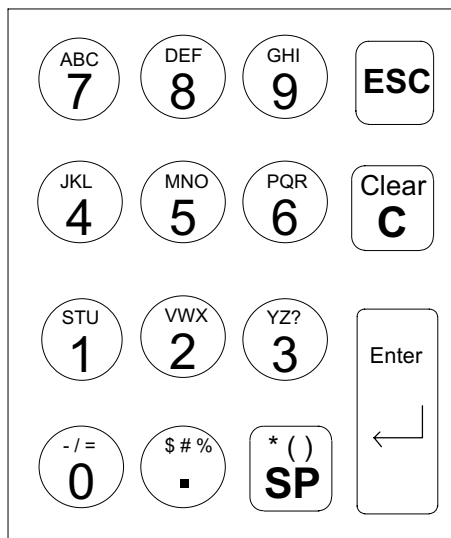
You can enter 0 - 9, the decimal point, and a space by pressing the appropriate key. To enter letters A-Z and special characters -, /, =, $, #, %, +, (,):

1. Press the numeric key containing the first letter you wish to enter.

2. Press the **Accum+** key to scroll forward through the three letters associated with that key, or press the Accum- key to scroll backward. Stop when the desired letter is displayed. Do not press **ENTER** to accept this letter.

3. Press the numeric key containing the second letter you wish to enter. Then scroll using the **Accum+** and **Accum**- keys until that letter is displayed.

4. Repeat until completed. Press **ENTER** to accept the entire response.

For example, to enter the name "TOM":

Key Press	Display Shows
1	1
Accum+	S
Accum+	T
5	T5
Accum-	TO
5	TO5
Accum+	TOM
ENTER	TOM

The **CLEAR** key can be used to delete a keypad entry (numeric or alphanumeric). Its destructive backspace deletes the last character entered and continues to delete to the left each time **CLEAR** is pressed.

Reset to Factory Defaults

As you are working in Master Mode, the factory default parameter selection is marked with an asterisk (* accumulator symbol).

To reset all Master Mode programming parameters to their original factory values:

- Enter Master Mode (Depress the Print Key for 7 seconds).
- Press **CLEAR**. The [END? —SAVE] prompt is displayed.
- Press **TARE** twice to display [END? —DEFAULT], then press **PRINT**.

The SC scale remains in Master Mode. You can return to any program block.

Motion Detection

If you attempt to perform a function command when the scale is in motion and tare interlock is enabled, the scale display becomes blank. The SC executes the function command only when a no-motion condition exists.

The SC counting scale prohibits some scale functions if motion is detected on the scale. If you attempt to perform a function command (tare, clear, sample, or transact) while the scale is in motion, the SC counting scale stores the command and executes it when a no-motion condition exists. With Tare Interlock OFF, the PCS, lb, and kg symbols blank to indicate motion on the scale. When the platter is stable, these indicators are illuminated.

Exiting Master Mode or Service Mode

The SC scale displays the message "Updating" upon exit even if you selected Abort.

You can exit Master or Service Mode at any time and save or abort the parameters. To exit:

1. Press **CLEAR**. The [End? —SAVE] prompt is displayed.

2. If desired, press **TARE** to display [End?, ABORT].

3. Press **PRINT** to select the appropriate action.

If you select:

- **Save**—the configuration parameters are saved before you exit.
- **Abort**—the parameters are not saved and revert to their previous values.

NOTES

4

Configuring Service Mode Parameters

Service mode lets you set the parameters for scale and system setup and calibration.

	⚠ WARNING!
	PERMIT ONLY QUALIFIED PERSONNEL TO PROGRAM OR SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY INJURY.

Accessing Service Mode

To access Service mode:

- Carefully remove the platter from the scale.

- Press the recessed service access button located slightly right of center (see figure 4-a and 4-b) with a non-conducting probe. Do not use a metal tool as it may damage sensitive components. Hold down the access button until the display shows [********] on the lower right display, then release.

Press the recessed service access button with a non-metallic object to enter Service Mode.

Remove the cover plate to access the service access button.
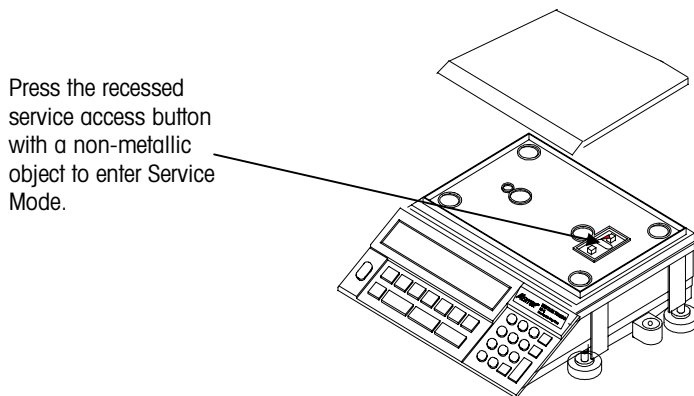
Figure 4-a
Service Mode Access -
Small SC
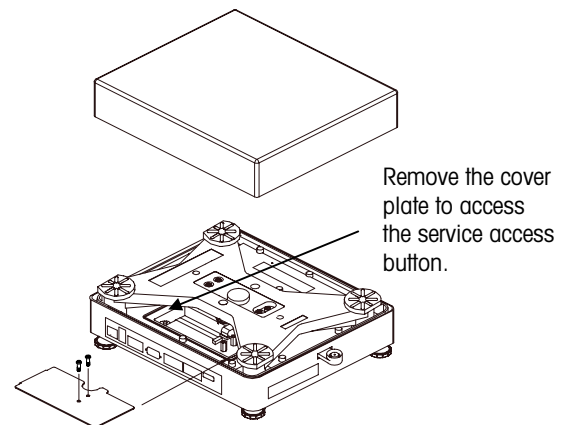
Figure 4-b
Service Mode Access -
Large SC

- When Service mode is accessed, the SC counting scale displays [Service] in the left display followed by [TEST] in the right display.

- Replace the platter.

Navigating in Service Mode

English   **International**

| TARE | T |

TARE—Advances you through a list of options (moves through to the right). Use the **TARE** key to scroll through program blocks, sub-blocks, and options within sub-blocks.

| PRINT | ⬜➡ |

PRINT—Accepts the displayed option (moves down through the various modes). Use **PRINT** to access program blocks and sub-blocks and to accept displayed options.

| Zero →0← | →0← |
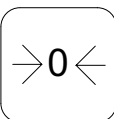
ZERO—Returns you to the beginning of a program block.

| SAMPLE | ⣀ |

SAMPLE—Returns you to the previous location. Use **SAMPLE** to back through items in a list, sub-blocks, or program blocks.

The following diagram gives an overview of the program blocks and sub-blocks:

SC Menu Map- Service Mode

TEST Program Block	→	CALIBRATE Program Block	→	WEIGHTS & MEASURES Program Block	→	END Program Block
↓		↓		↓		↓
Load Cell		Local		Operator Access		Save / Abort
		↓		↓		
		Remote		Country		
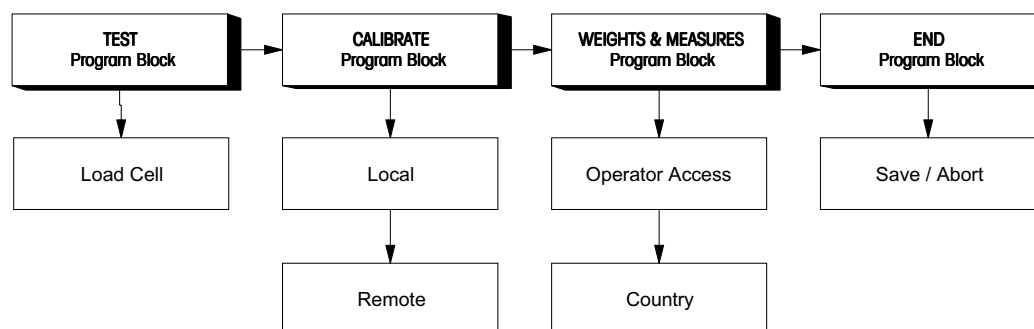
Test Program

The Test program block is used to view higher resolution of the SC scale. The following diagram describes this program block:

From the [TEST] prompt, press **PRINT** to access the program block.

```
                    ┌──────────────────┐
                    │      TEST         │
                    │  Program Block    │
                    └──────────────────┘
                             │
                             ▼
        ┌──────────────┐   ┌──────────────┐   ┌──────────────────┐
        │  Load cell   │──▶│    Form 1    │──▶│  Eprom Setting   │
        └──────────────┘   └──────────────┘   └──────────────────┘
                                  │
                                  ▼
                           ┌──────────────┐   ┌──────────────────┐
                           │    Form 2    │──▶│  Eprom Setting   │
                           └──────────────┘   └──────────────────┘
                                  │
                                  ▼
                           ┌──────────────┐   ┌──────────────────┐
                           │    Million   │──▶│  Eprom Setting   │
                           └──────────────┘   └──────────────────┘
                                  │
                                  ▼
                           ┌──────────────┐   ┌──────────────────┐
                           │   DLC ECHO   │──▶│  Eprom Setting   │
                           └──────────────┘   └──────────────────┘
```
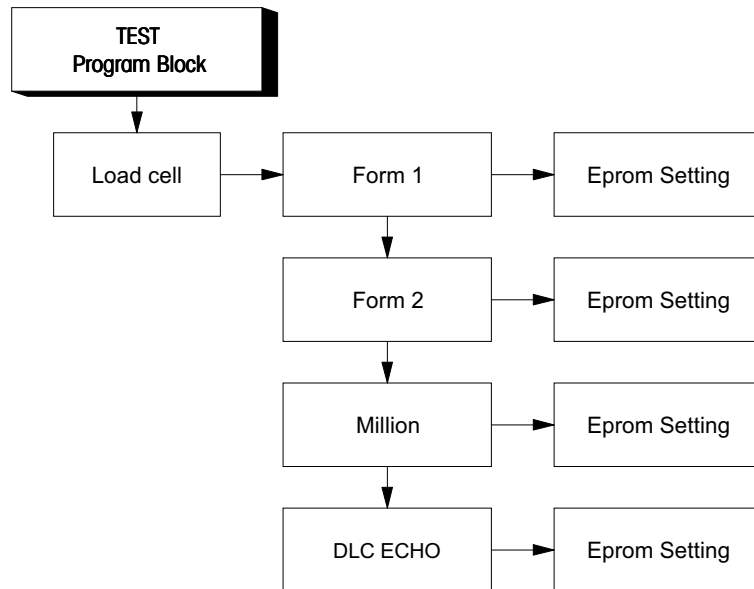
Load Cell Sub-block

There are four test modes available in the load cell sub-block. They are: Form 1 (compensated load cell counts), Form 2 (uncompensated raw load cell counts and compensation value), Million (scale capacity divided into one million and compensated load cell counts), and DLC ECHO (used for manufacturing purposes only - **DO NOT SELECT**).

Test Load cell Sub-block				
		Display		
Step Description	**Press Key**	**Left**	**Right**	**Comment**
		tESt	LOADCELL	
1. Access the load cell sub-block	PRINT Error! Switch argument not specified.	LoAdCEL	FORM 1	The first test mode is displayed at the right.

Test Load cell Sub-block				
		Display		
Step Description	**Press Key**	**Left**	**Right**	**Comment**

2. Display the desired load cell test mode to be viewed.	TARE	LoAdCEL	desired mode	Options include:
				    Form 1
				    Form 2
				    Million
				    DLC ECHO

3. Select the displayed test mode.	PRINT	EEProm	Setting	The load cell is set to the chosen format.
	Error! Switch argument not specified.	73091	FORM 1	After setting the load cell, the SC scale shows the chosen load cell data format.
4. When complete, press **CLEAR** to return to normal view mode in Service mode.	Clear **C**	EEProm	Reseting	The load cell will be reset back to the normal operating mode.
		LoAdCEL	FORM 1	The SC scale returns to the Form 1 sub-block.
5. Select another test mode by pressing **TARE** or exit test mode by pressing **ZERO** .	Zero →0←	tESt	LOADCELL	First press of ZERO returns the SC scale to the load cell sub-sub- block.
6. Press **ZERO** again to exit.	Zero →0←	SErViCE	TEST	The SC scale returns to first sub-block in Service mode.
7. Press **TARE** to proceed to the next sub-block.	TARE Er ror! Switch argument not specified.	SErViCE	CALIBRAT	The SC scale proceeds to the next parameter

Calibrate Program Block

The calibrate program block lets you calibrate your local SC unit and/or remote base. The following diagram describes this program block:

Error! Switch argument not specified.

From the [CALIBRAT] prompt, press **PRINT** to access the program block.
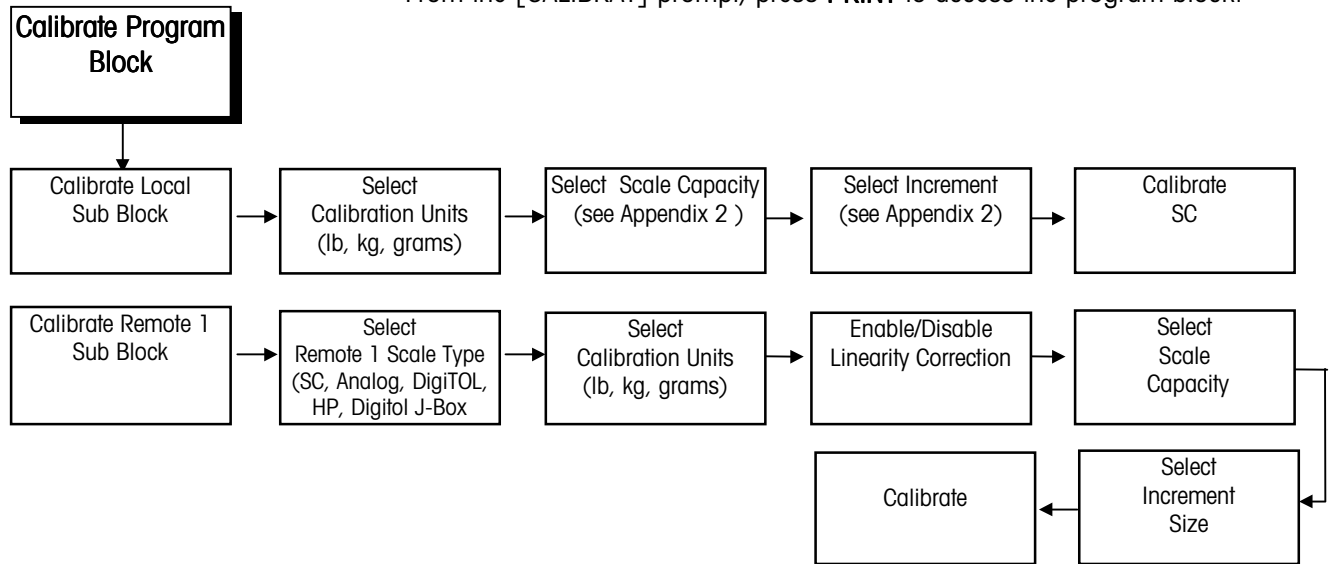
Local Sub-block

This sub-block lets you calibrate the SC counting scale.

Calibrate local sub-block				
Step Description	**Press Key**	**Display**		**Comment**
		Left	**Right**	
		CALIBRT	LOCAL	
1. Access local scale calibration sub-block	PRINT	LOCAL	UNITS	
2. Access the Units options	PRINT Error! Switch argument not specified.	UNITS	LB or currently selected unit	The calibration unit refers only to the unit of weight that you will use to calibrate the SC scale.
3. Display the desired calibration unit	TARE Error! Switch argument not specified.	UNIT	desired option	Options include: lb, kg, and gram
4. Select the displayed calibration unit	PRINT Error! Switch argument not specified.	CAPACITY	20 lb	The SC automatically proceeds to the next parameter

Calibrate local sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment

5. Display the appropriate scale capacity	TARE
	 Err
	 or! Switch argument not specified.
		CAPACITY	(desired capacity)	Options include:
				    lb gram kg
				   10 5000 5
				   15 6000 6
				   20 10000 10
				   30 12000 12
				 37.5 15000 15
				   60 30000 30
				 120 60000 60

6. Select the displayed capacity option	PRINT Er **ror! Switch argument not specified.**	**INCRMNT**	**0.0002** (or currently selected increment)	
7. Display the desired increment option	TARE Err **or! Switch argument not specified.**	**INCRMNT**	(desired increment)	Options are given based on the selected unit and capacity. Refer to Appendix 2
8. Select the displayed increment option	PRINT Er **ror! Switch argument not specified.**	**EMPTY**	**SCALE**	The SC scale now prompts you through the calibration process
9. Remove any residual weight on the platter	PRINT Er **ror! Switch argument not specified.** after all weight is removed	**ADD**	**WEIGHT**	
10. Place the test weight on the platter **	PRINT after test weight is added	**ENTER**	**WEIGHT**	
11. Enter a numeric value for the test weight on the platter	PRINT after value keyed	**blank**	**CAL DONE** when finished calibrating scale	Use the numeric keys to enter the test weight value
12. Continue to the Remote 1 Sub-block	PRINT	**REMOTE 1**	**TYPE**	

** Use test weight totaling at least 50% of rated scale capacity, 100% if possible.

Remote 1 Sub-block

Calibrating a remote base is similar to calibrating a local unit. This sub-block lets you configure parameters specific to remote units, then calibrate the remote base. If your SC base is not attached to a remote base, skip this program block by selecting "none" as the remote scale type.

		Display		Comment
Step Description	Press Key	Left	Right	
		REMOTE 1	TYPE	
1. Access the Type options	PRINT Error! Switch argument not specified.	TYPE	SC or selected type	
2. Display the desired Remote 1 scale type	TARE Error! Switch argument not specified.	TYPE	desired option	Options include: 　　*HP　　　*DigiTol J-Box 　　Analog　　*Mentor 　　DigiTOL 　　*P Series 　　None *Do not choose these selections.
3. Select the displayed scale type	PRINT Error! Switch argument not specified.	UNITS	LB or currently selected unit	
4. Display the desired calibration units	TARE Error! Switch argument not specified.	UNITS	desired calibration unit	Options include: 　　lb 　　kg 　　gram
5. Select the displayed calibration unit	PRINT Error! Switch argument not specified.	LINEAR	OFF	The SC scale automatically proceeds to the next parameter
6. Enable or disable linearity correction	TARE Error! Switch argument not specified.	LINEAR	desired option (On or Off)	Linearity correction compensates for non-linear performance of a load cell(s) or system
7. Select the displayed option	PRINT Error! Switch argument not	CAPACTY	0.000000 LB	

Remote 1 Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
	specified.			
8. Enter the appropriate scale capacity	Numeric Keys**Error! Switch argument not specified.**	CAPACTY	(desired capacity)	Refer to the data plate of the scale used.
9. Select the displayed capacity option	PRINT **Err or! Switch argument not specified.**	INCRMNT	0.002 (or currently selected increment)	
10. Display the desired increment option	TARE **Erro r! Switch argument not specified.**	INCRMNT	desired increment	Options are given based on the selected unit and capacity. Do not enter the increment size using the numeric keys of the SC. A calibration error will occur.
11. Select the displayed increment option	PRINT **Err or! Switch argument not specified.**	EMPTY	SCALE	The SC now prompts you through the calibration process
12. Remove any residual weight on the platter	PRINT **Err or! Switch argument not specified.** after weight is removed	ADD	WEIGHT	
13. Place the test weight on the platter	PRINT **Err or! Switch argument not specified.** after weight is added	ENTER	WEIGHT	
14. Enter a numeric value for the test weight on the platter	PRINT **Err or! Switch argument not specified.** after value keyed		**CAL DONE when finished calibrating**	Use the numeric keys to enter the test weight value

Weights and Measures Program Block

This program block lets you select the configure access to Master Mode parameters and the market area where the SC scale will be used. Weights and measures limitations are imposed depending on the country selected.
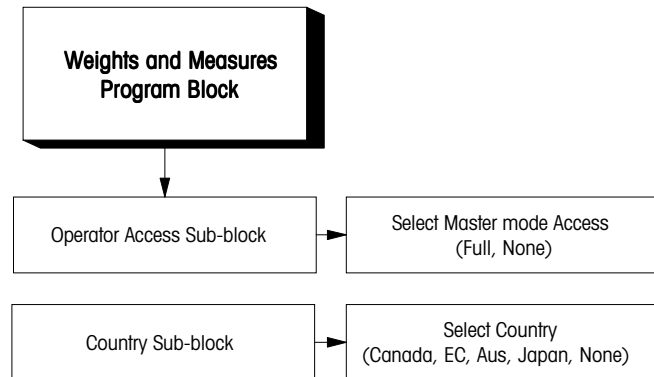
Operator Access Sub-block

Operator Access Sub-block				
		\<span\>Display\</span\>		
Step Description	**Press Key**	Left	Right	**Comment**
			OPACCESS	
1. Access the Operator Access Sub-block	PRINT E rror! Switch argument not specified.	OPACCES	FULL	[Full] gives access to Master mode [None] blocks access to Master mode from keyboard
2. Display the desired access level	TARE Er ror! Switch argument not specified.	OPACCES	Full or None	
3. Select the displayed operator access.	PRINT E rror! Switch argument not specified.		COUNTRY	

It is suggested that after that after programming the Master mode is complete that this step be programmed as [NONE]" to eliminate unintentional changes to the setup.

Country Sub-block

Error! Switch argument not specified.

Country Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
			COUNTRY	
1. Access the Country sub-block	PRINT E rror! Switch argument not specified.	COUNTRY	NONE	
2. Display the country or market area where the SC will be used	TARE Er ror! Switch argument not specified.	COUNTRY	country or market area	Options include: Canada EC Austral Japan None (USA)
3. Select the displayed country and continue to the END program block	PRINT E rror! Switch argument not specified.	END?	SAVE	

End Program Block

The End program block is used to exit Service mode. The End prompt is accessed when you reach the end of the Weights and Measures program block, or when you press **ESCAPE** from anywhere within Service mode. Once accessed, you have the following options before exiting Service mode:

- **Save**—retains your changes

- **Abort**—exits Master mode without saving the changes and retains the values previously set

The following diagram describes this program block:

```
          ┌──────────────┐
          │ End Program  │
          │    Block     │
          └──────────────┘
                 │
                 ▼
   ┌──────────────────┐      ┌──────────────┐
   │ Select Save to exit │─────▶│ Press PRINT │
   │ and retain changes  │      └──────────────┘
   └──────────────────┘
                 │
                 ▼
   ┌──────────────────┐      ┌──────────────┐
   │ Select Abort to exit │─────▶│ Press PRINT │
   │ without saving       │      └──────────────┘
   └──────────────────┘
```

Error! Switch argument not specified.

		Display		
Step Description	**Press Key**	**Left**	**Right**	**Comment**
		END?	SAVE	
1. Select the desired exit option	TARE Error! Switch argument not specified.	END?	SAVE or ABORT	If you select Abort, all changes made in current session will be lost
2. Confirm and exit	PRINT Error! Switch argument not specified.Error! Switch argument not specified.	END?	SAVE or ABORT	Press **PRINT** if you are saving your changes. SC updates the software

Table title: **End Sub-block**

5

Configuring Master Mode Parameters

Master Mode lets you set those parameters governing scale operation and customize the SC counting scale to your particular application.

Accessing Master Mode
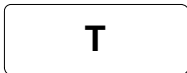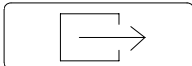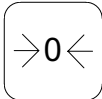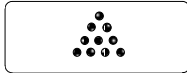
The Operator Access sub-block in Service Mode must be configured as [Full] to access the Master Mode parameters. Refer to Chapter 4 for more information.

To access Master Mode:

1. Press and hold the **PRINT** key for approximately 7 seconds until [*******] is displayed on the lower right display.

2. Release the **PRINT** key. The scale will briefly flash [Master] display, then advance to the User program block in Master Mode.

You can exit Master Mode at any time by pressing **CLEAR** to access the End program block. You can save your changes before exiting, abort Master Mode without saving the changes you made, or reset all parameters to factory values.

Navigating in Master Mode

International	English	
T	**TARE**	The **TARE** key advances through a list of options. Use the **TARE** key to scroll through program blocks, sub-blocks, and options within sub-blocks.
⇥	**PRINT**	The **PRINT** key accepts the displayed option. Use **PRINT** to access program blocks and sub-blocks and to accept displayed options.
→0←	Zero →0←	The **ZERO** key returns to the beginning of a program block.
⁞	**SAMPLE**	The **SAMPLE** key returns to the previous location. Use **SAMPLE** to back through items in a list, sub-blocks, or program blocks.

This diagram gives an overview of the program blocks and sub-blocks:

```
                    ┌─────────────┐
                    │     SC      │
                    │ Master Mode │
                    └──────┬──────┘
                           │
   ┌──────┬──────┬──────┬──┴───┬──────┬──────┬──────┐
┌──────┐┌──────┐┌──────┐┌──────┐┌──────┐┌──────┐┌──────────┐┌──────┐
│ User ││Scale ││ Tare ││Sample││Count ││ Data ││Interface ││ End? │
└──┬───┘└──┬───┘└──┬───┘└──┬───┘└──┬───┘└──┬───┘└────┬─────┘└──────┘
```

User	Scale	Tare	Sample	Count	Data	Interface	End?
Language	Units	Mode	Pcs Unit	Mode	Data Prg	Ports	
Beeper	Zero	Interlock	Mode	Sign	ID		
Sleep	Motion	Chain Tare	Min. Spl	Include Sample	Time		
	Filter	AutoClear	% Accy		Date		
		AutoTare	APW Enhance				
			AutoClear APW				
			Sample Tare				
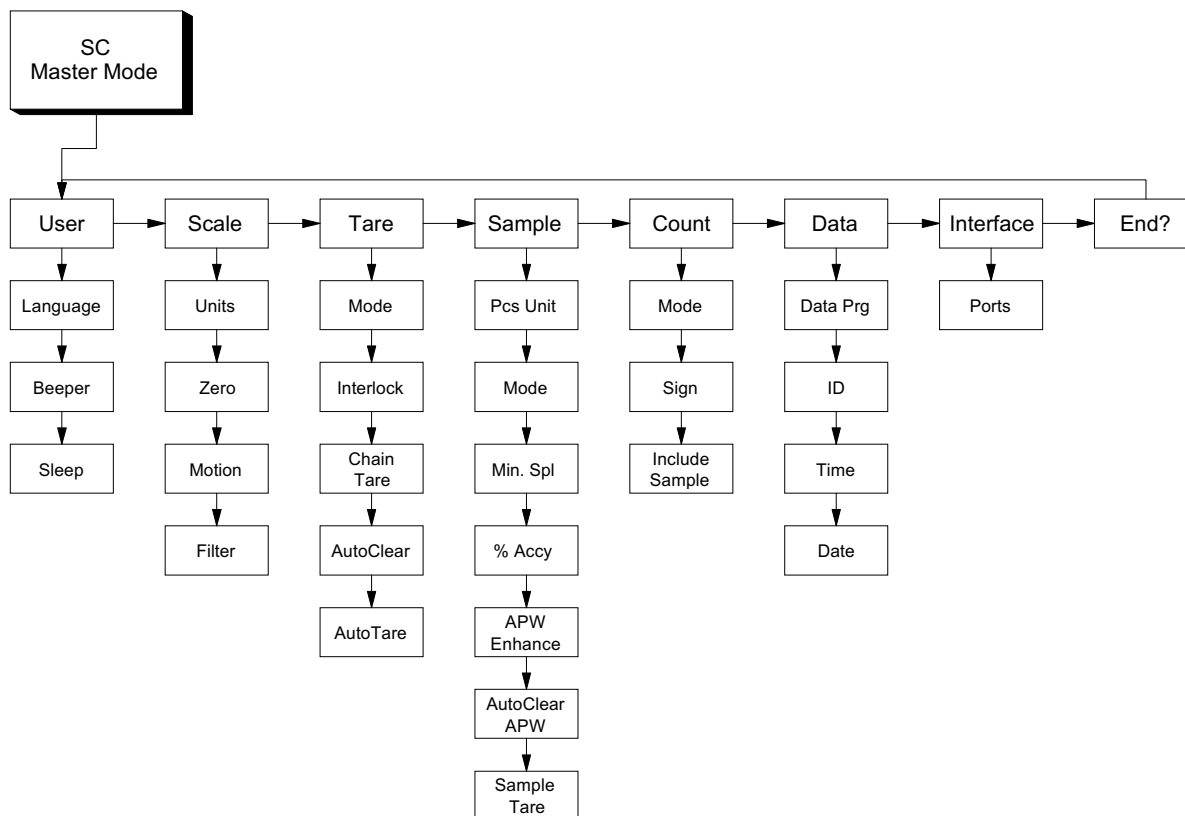
User Program Block

┌─────────────────────┐
│   User   │
│   Program Block   │
└─────────────────────┘

The User program block lets you configure the parameters related to operator/SC counting scale interaction (human interface). Parameter selections with an asterisk are default settings.

Language Sub-Block	→	Select Operating Language (Eng*, Ger, Span, Fr, Dutch, Ital, Swe)	
Beeper Sub-Block	→	Enable/Disable Key Beeper (On, Off*)	→ Enable/Disable Error Beeper (On*, Off)
Sleep Sub-Block	→	Select Sleep Timer Option (Off*, I min, 5 min, 10 min)	
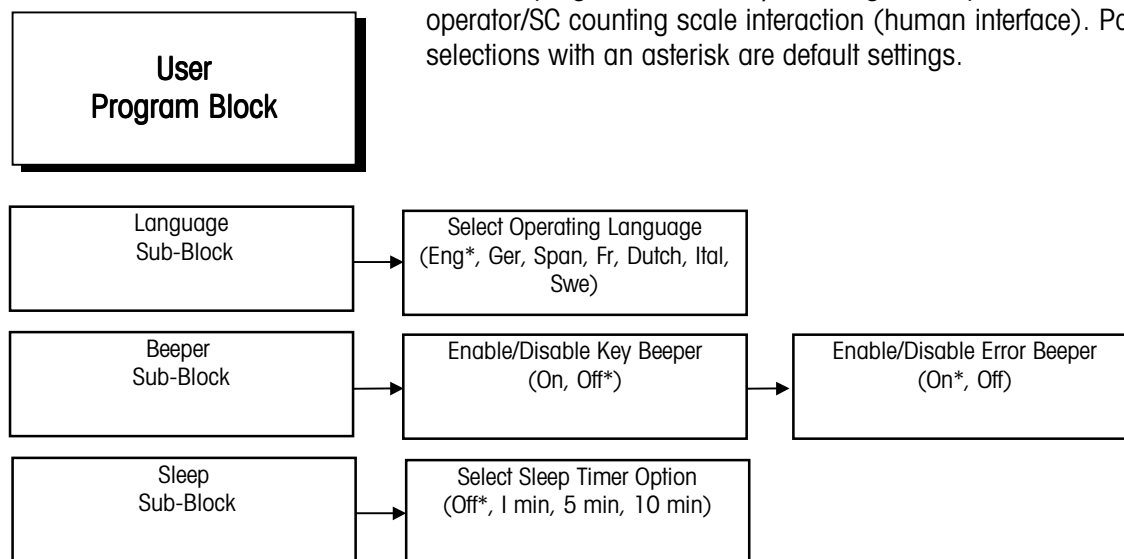
Error! Switch argument not specified.

To access the program block, press **PRINT** at the [USER] prompt.

1. Language Sub-block

The Language sub-block lets you select the operating language for the SC scale. All prompts, numbering conventions, and data entered from the keyboard will appear according to the selected language.

Language Sub-block				
Step Description	Press Key	Display		Comment
		Left	Right	
		USER	LANGUAGE	
1. Access the Language sub-block	PRINT	LANGUAGE	ENGLISH*	
2. Display the desired system language	TARE Error! Switch argument not specified.	LANGUAGE	(options)	Options include: English* Dutch German Italian Spanish Swedish French
3. Select the displayed option	PRINT Error! Switch argument not specified.	BEEPER	KYBD	SC scale continues to the next program block

2. Beeper Sub-block

The Beeper sub-block lets you configure the audible beeper on or off with each keystroke and error situation.

Beeper Sub-block				
Step Description	Press Key	Display		Comment
		Left	Right	
		BEEPER	KYBD	
1. Access beeper parameters	PRINT Error! Switch argument not specified.	BEEPER	KYBD	
2. Access keyboard beeper	PRINT Error! Switch argument not specified.	BD	OFF*	An asterisk indicates that the option is SC scale's default
3. Display desired keyboard beeper option	TARE Error! Switch argument not specified.	BD	ON or OFF*	If ON, SC scale beeps once each time a key is pressed
4. Select the displayed option	TARE Error! Switch argument not	BD	ON or OFF*	If ON, the SC scale beeps once each time a key is pressed

Beeper Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
	specified.			
5. Display desired error beeper option	**TARE** Error! Switch argument not specified.	ERROR	ON* or OFF	If ON, SC scale beeps twice to indicate an error
6. Select the displayed option	**PRINT** Err or! Switch argument not specified.	SLEEP	OFF*	SC scale continues to the next sub-block

3. Sleep Sub-block

The sleep sub-block lets you configure the SC counting scale's display power-down parameters. Mettler Toledo recommends using the sleep mode when a battery option is used to conserve power.

Sleep Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		SLEEP	OFF*	
1. Display the desired sleep option	**TARE** Er ror! Switch argument not specified.	SLEEP	(options)	Options include: OFF* 1 MIN 5 MIN 10 MIN
2. Select the displayed option	**PRINT** Er ror! Switch argument not specified.	SCALE	UNITS	SC counting scale continues to the next program block

Scale Program Block

The Scale program block lets you configure those parameters that affect weighing functions and weight display.

Scale Program Block

Units Sub-Block	→	Select Primary Display Unit (lb*, kg, gram)	→	Select Alternate Weight Unit (lb, kg*, gram, disabled)

Zero Sub-Block	→	Enable/Disable AZM (Gross*, Gross/Net, Off)	→	Select Auto Zero Capture (±2%, ±10%*, Off)	→	Select Pushbuttom Capture (±2%, ±10%, +20%/-2%, Off)
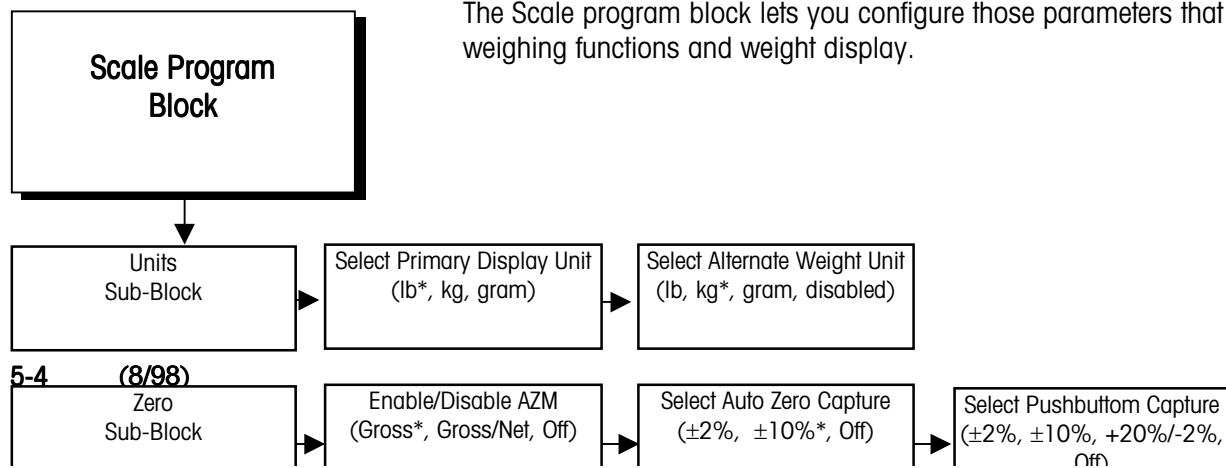
1. Units Sub-block

The Units sub-block lets you select the primary weight units that SC counting scale will display. You can also select an alternate weight unit that can be accessed by unit switching.

		Display		
Step Description	**Press Key**	**Left**	**Right**	**Comment**
		SCALE	UNITS	Units selected in Master Mode apply only to scale operation. Units selected in Service Mode apply only to calibration
1. Access the Units sub-block	**PRINT** Error! Switch argument not specified.	UNITS	DISPLAY	You can configure display and/or alternate weight units
2. Access the display units parameter	**PRINT** Error! Switch argument not specified.	DISPLAY	LB*	
3. Display the desired display unit	**TARE** rror! Switch argument not specified.	DISPLAY	(options)	Options include: lb* kg gram
4. Select the displayed unit	**PRINT** Error! Switch argument not specified.	ALT UNT	KG*	SC scale continues to the next parameter in the sub-block

Units Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment

5. Display the desired alternate weight unit	TARE |E rror! Switch argument not specified.	ALT UNT	(options)	Options include: kg*
				           gram
				           disabled
				           lb

6. Select the displayed alternate unit	PRINT |E rror! Switch argument not specified.	ZERO	AZM	SC scale continues to the next sub-block

2. Zero Sub-block

The Zero sub-block lets you set the zero reference parameters. You can configure any or all of the following options:

- **Auto Zero Maintenance (AZM)**—automatically compensates for small changes in zero resulting from small amounts of scale build-up or temperature fluctuations.

- **Auto Capture**—captures zero at power up through a specific increment range selected in Master Mode.

- **Pushbutton Capture**—captures zero when **ZERO** is pressed.

Zero capture increment ranges are based on the actual calibrated zero.
To configure the sub-block:

Zero Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		ZERO	AZM	
1. Access the AZM parameter	PRINT Error! Switch argument not specified.	AZM	GROSS*	
2. Select the desired AZM feature	TARE Error! Switch argument not specified.	AZM	GROSS	Options include: Gross* Gross /Net Off Selection of gross only allows the operator to take a tare (net mode) to disable AZM while sampling very small sample pieces that may be erased if AZM were tracking.
	PRINT Error! Switch argument not specified.	AUTOCAP	+10/-10%*	SC scale continues to the next parameter in the sub-block
4. Display the desired auto capture range	TARE Error! Switch argument not specified.	AUTOCAP	(options)	Options include: ±2% ±10% OFF
5. Select the displayed option	PRINT Error! Switch argument not specified.	PB CAP	+10/-10% *	SC scale continues to the next parameter in the sub-block
6. Display the desired pushbutton capture range	TARE Error! Switch argument not specified.	PB CAP	(options)	Options include: ±2% ±10% OFF
7. Select the displayed option	PRINT Error! Switch argument not specified.	MOTION	+/-0.1d*	SC scale continues to next sub-block

3. Motion Sub-block

The Motion sub-block lets you configure the SC counting scale's motion detection feature. The motion filter senses motion on the scale. The feature requires three successive readings to be within an "acceptable" amount of motion as measured in scale divisions before detecting "no motion". This ensures maximum accuracy. Motion on the scale disables tare, zero, sampling and printing. The lower the setting, the more sensitive the scale.

Motion Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		MOTION	+/-0.1d*	
1. Display the desired motion range	TARE Er ror! Switch argument not specified.	MOTION	(options)	Options include: +/-0.1d* +/-0.5d
2. Select the displayed option	PRINT E rror! Switch argument not specified.	FILTER	LIGHT*	SC scale continues to the next sub-block

4. Filter Sub-block

The filter feature compensates for environmental conditions such as vibration and noise. Heavier filtering increases the scale's settling time.

Filter Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		FILTER	LIGHT*	
1. Display the desired filter	TARE Er ror! Switch argument not specified.	FILTER	(options)	Options include: Light* Medium Heavy Off
2. Select the displayed filter option	PRINT Er ror! Switch argument not specified.	TARE	MODE	SC scale continues to the next program block

Tare Program Block

The Tare program block lets you configure various tare options.

Error Tare Program Block specified.

Mode Sub-Block	→	Select Tare Mode PB Only, PB Kybd*, Off
Tare Interlock Sub-Block	→	Enable/Disble Tare Interlock (On, Off*
Chain Tare Sub-Block	→	Enable/Disable Chain Tare (On*, Off)
Auto Clear Tare Sub-Block	→	Enable/Disable Auto Clear Tare (On, Off*)
Auto Tare Sub-Block	→	Enable/Disable Auto Tare (On, Off*)
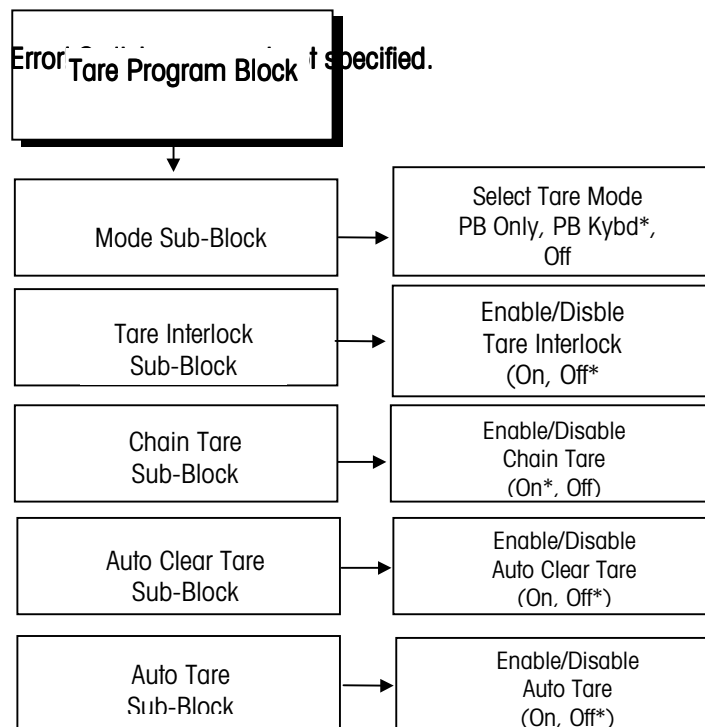
1. Tare Mode Sub-block

The Mode sub-block lets you select the type of tare to use or disable tare. Tare modes include:

Pushbutton. If enabled, pushbutton tare subtracts the weight of a load on the scale when **TARE** is pressed. The SC scale displays net weight when a load is placed on the tared platter.

Keyboard. If enabled, keyboard tare lets you key-in the known tare weight of a load, then press **TARE** or **ENTER** to subtract the tare weight and display net weight.

To configure the Mode sub-block:

Mode Sub-block				
Step Description	Press Key	Display Left	Right	Comment
		TARE	MODE	
1. Access the Mode sub-block	PRINT Error! Switch argument not specified.	MODE	PB Only*	
2. Display the desired tare capability	TARE Error! Switch argument not specified.	MODE	(options)	Options include: Off PB Only
3. Select the displayed option	PRINT Error! Switch argument not specified.	INTRLOC	OFF*	SC scale continues to the next sub-block

2. Tare Interlock Sub-block

This sub-block lets you enable or disable tare interlock which limits how tare values can be cleared or entered in legal-for-trade applications.

Tare Interlock Sub-block				
Step Description	Press Key	Display Left	Right	Comment
		INTRLOC	OFF*	
1. Enable or disable the tare interlock feature	TARE Error! Switch argument not specified.	INTRLOC	OFF* or ON	If ON: • Tare can only be taken or cleared after power-up zero or at gross zero (no motion) • Previous tares must be cleared. • Multiple tares are not accepted. • Tare interlock limits pushbutton zero to 2% of scale capacity
2. Accept the displayed option	PRINT Error! Switch argument not specified.	CHAIN TR	ON*	SC scale continues to the next sub-block. If tare interlock ON, SC scale does not allow access to chain tare sub-block

3. Chain Tare Sub-block

This sub-block lets you enable or disable the SC counting scale's multiple-tare-before-gross-zero function. Chain tares have a replacement

effect to the full capacity of the scale. This feature is applicable only if tare interlock is off. If tare interlock is on, the SC counting scale will not access this sub-block.

Chain Tare Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		CHAIN TR	ON*	
1. Enable or disable the chain tare feature	TARE Error! Switch argument not specified.	CHAIN TR	ON* or OFF	Chain tare permits multiple tares for each counting sequence.
2. Select the displayed option	PRINT E rror! Switch argument not specified.	AUTOCLR	TARE OFF*	SC scale continues to the next sub-block

4. Auto Clear Tare   Sub-block

This sub-block lets you enable or disable the auto clear tare feature. If auto clear tare is enabled, SC counting scale automatically clears tare when the scale exceeds 9 divisions and then returns to within 3 divisions of gross zero.

Auto Clear Tare Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		AUTOCLR	TARE OFF*	
1. Enable or disable the auto clear tare feature	TARE Error! Switch argument not specified.	AUTOCLR	TARE OFF* or ON	
2. Select the displayed option	PRINT E rror! Switch argument not specified.	AUTO TR	OFF*	SC scale continues to the next sub-block

5. Auto Tare Sub-block

This sub-block lets you enable or disable the auto tare feature. If auto tare is enabled, the SC scale tares the first load (above 10d) placed on the platter.

Auto Tare Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		AUTO TR	OFF*	

1. Enable or disable the auto tare feature	**TARE** **Error! Switch argument not specified.**	**AUTO TR** **OFF* or ON**	
2. Select the displayed option	**PRINT** E rror! Switch argument not specified.	**SAMPLE** **PCS UNIT**	SC scale continues to the next program block

Sample Program Block

The Sample program block lets you configure the parameters that affect sampling procedures.

The following diagram describes this program block:

Error! Switch argument not specified.

```
┌─────────────────────┐
│      Sample         │
│   Program block     │
└─────────────────────┘
         │
         ▼
┌─────────────────────┐    ┌──────────────────────────┐
│     PCS/Units       │───▶│  Weight per Piece/Number of │
│     Sub-Block       │    │   Pieces per Unit Weight    │
└─────────────────────┘    │     (Wgt/Pcs*, Pcs/Unt)     │
                           └──────────────────────────┘

┌─────────────────────┐    ┌──────────────────────────┐    ┌──────────────────────────┐
│       Mode          │───▶│ Enable/Disable Variable Sample │───▶│   Select Sample Quantity    │
│     Sub-Block       │    │        (On*, Off)          │    │ (5, 10*, 20, 50, 100, Custom) │
└─────────────────────┘    └──────────────────────────┘    └──────────────────────────┘

┌─────────────────────┐    ┌──────────────────────────┐
│    Minimum SPL      │───▶│  Select Minimum Sample (%)  │
│     Sub-Block       │    │   (0.02*, 0.05, 0.10, off)  │
└─────────────────────┘    └──────────────────────────┘

┌─────────────────────┐    ┌──────────────────────────┐
│  Percent Accuracy   │───▶│ Enable/Disable Percent Accuracy │
│     Sub-Block       │    │        (On, Off*)          │
└─────────────────────┘    └──────────────────────────┘

┌─────────────────────┐    ┌──────────────────────────┐
│  APW Enhancement    │───▶│ Select Type of APW Enhancement │
│     Sub-Block       │    │  (Automatic, Manual *, Off)  │
└─────────────────────┘    └──────────────────────────┘

┌─────────────────────┐    ┌──────────────────────────┐
│   Auto Clear APW    │───▶│  Enable/Disable Auto Clear  │
│     Sub-Block       │    │        (On, Off*)          │
└─────────────────────┘    └──────────────────────────┘

┌─────────────────────┐    ┌──────────────────────────┐
│    Sample Tare      │───▶│  Enable/Disable Tare on the │
│ (Second Scale Only) │    │       Sample Scale          │
└─────────────────────┘    │        (On, Off*)          │
                           └──────────────────────────┘
```

1. Pcs/Unit Sub-block

This sub-block lets you configure how the APW is presented: decimal weight per piece or how many pieces are in a lb or kg.

Pcs Unit Sub-block				
Step Description	Press Key	Display		Comment
		Left	Right	
		SAMPLE	PCS UNIT	
1. Access the Sample program block	PRINT Error! Switch argument not specified.	PCS UNT	WGT/PCS	
2. Display the desired indication option	TARE Error! Switch argument not specified.	PCS UNT	WGT/PCS* or PCS/UNT	Wgt/Pcs*—SC scale displays an average weight per piece (APW). Pcs/Unt—SC displays the number of pieces per weight unit (lb or kg).
3. Select the displayed option	PRINT Error! Switch argument not specified.	MODE	VAR SPL	SC scale continues to the next sub-block

2. Mode Sub-block

This sub-block lets you configure sample quantity identification parameters.

Mode Sub-block				
Step Description	Press Key	Display		Comment
		Left	Right	
		MODE	VAR SPL	
1. Access the variable sample feature	PRINT Error! Switch argument not specified.	VAR SPL	ON*	
2. Enable or disable the variable sample feature	TARE Error! Switch argument not specified.	VAR SPL	ON* or OFF	ON - you select a variable sample size directly at the terminal. OFF - SC scale uses only the sample quantity parameter (see below) as the sample size.

—

Mode Sub-block				
Step Description	**Press Key**	**Display**		**Comment**
		Left	**Right**	
3. Select the displayed option	PRINT **Error! Switch argument not specified.**	**SPL QTY**	**10***	SC scale continues to the next parameter in the sub-block
4. Display the desired sample quantity	TARE E **rror! Switch argument not specified.**	**SPL QTY**	**(options)**	Options include:5,10*,20,50,100,xxx xxx-(custom) enter the desired quantity and press the **PRINT** key.
5. Select the displayed option	PRINT E **rror! Switch argument not specified.**	**MIN SPL**	**0.02%***	SC scale continues to the next sub-block

3. Minimum Sample Sub-block

This sub-block lets you set the minimum sample requirement for average piece weight (measured as a percentage of scale capacity). Sample weight on the scale must exceed this percentage before an average piece weight will be determined.

		Display		Comment
Step Description	Press Key	Left	Right	
		MIN SPL	0.02%*	
1. Display the desired minimum sample percentage	TARE Error! Switch argument not specified.	MIN SPL	(options)	Options include: 0.02%* 0.05% 0.10% OFF
2. Select displayed option	PRINT Error! Switch argument not specified.	APW ENH	ON*	SC scale continues to the next sub-block

Minimum Sample Sub-block

4. Percent Accuracy Sub-block

This sub-block allows you to enable the calculation and display of a percent accuracy value in the right display of the SC scale. This results from a ratio comparison of the sample weight to the scale capacity. The larger the sample weight, the higher the percent accuracy value. This is one simple method to predict the scale influence on count accuracy.

		Display		Comment
Step Description	Press Key	Left	Right	
		ACCURCY	OFF*	
1. Enable or disable the percent accuracy feature	TARE	ACCURCY	OFF* or ON	If OFF, the percent accuracy value will not be calculated and displayed. If ON, the SC scale will calculate and display a percent accuracy value.
2. Select the displayed option	PRINT	APW ENH	MANUAL*	The SC scale continues to next sub-block.

Percent Accuracy Sub-block

5. Average Piece Weight Enhancement Sub-block

This sub-block selects the mode of APW enhancement to be used. If automatic mode is selected, when a no-motion condition exists after adding additional sample pieces, a new APW value will automatically be calculated. If manual mode is selected, in order to generate a new APW calculation after adding additional sample pieces, the **SAMPLE** key must be pressed. This allows the operator to decide if an APW enhancement cycle should be done or not depending upon the piece being counted. If automatic mode is selected, the enhancement occurs every time there is a motion/no-motion cycle.

The initial computed value of APW may not be accurate enough to count large numbers of small parts reliably. To compensate for this, the APW can be enhanced up to 4% of the scale capacity.

APW Enhancement Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		APW ENH	MANUAL*	
1. Display the desired selection for the APW enhancement feature	TARE rror! Switch argument not specified.	APW ENH	AUTO, MANUAL*, or OFF	
2. Select the displayed option	PRINT rror! Switch argument not specified.	AUTOCLR	APW OFF*	SC scale continues to the next sub-block

6. Auto Clear APW Sub-block

The Auto Clear APW sub-block lets you set the parameters determining whether the SC counting scale automatically clears APW when the scale returns to no-motion condition within ± 3 divisions of gross zero after being at least 10 increments above net zero.

Auto Clear APW Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		AUTOCLR	APW OFF*	
1. Enable or disable the APW auto clear feature	TARE Error! Switch argument not specified.	AUTOCLR	APW ON or OFF*	If off, the APW is cleared by resampling or pressing **CLEAR**

2. Select the displayed option	PRINT E rror! Switch argument not specified.	SPL TARE	OFF*	SC scale continues to the next program block

7. Sample Tare Sub-block

If enabled, sample tare allows tare to be taken on the sample scale in addition to the gross weight scale. This program block is displayed only if the SC scale is configured with a second scale. If a second scale is not configured, SC scale continues to the Count Program Block. Refer to the section entitled Remote 1 Sub-block in Chapter 4 for details on configuring a second scale (remote base).

Sample Tare Sub-block				
Step Description	Press Key	Display		Comment
		Left	Right	
		SPLTARE	OFF*	
1. Enable or disable sample tare feature	TARE Error! Switch argument not specified.	SPLTARE	ON or OFF*	
2. Select the displayed option	PRINT E rror! Switch argument not specified.	COUNT	MODE	SC scale continues to the next program block

Count Program Block

The Count program block lets you configure parameters related to the count mode. You can select independent count mode where the count sequence is not prompted, or you can select a count sequence for prompting in dependent count mode. You can also configure the sign for count-in and count-out operations. If a second scale is attached, this program block lets you determine whether to include the sample in the total piece count.

Error! Switch argument not specified.

Count Program Block

Mode Sub-block

Select Count Mode (Independent, Tare/Spl*, Tare/APW)

→

Sign Sub-block	▶	Select Count-In Sign (Pos*, Neg)	▶	Select Count-Out Sign (Pos, Neg*)

Include Sample Sub-block (Second Scale Only)	Enable/Disable Include Sample (On, Off*)
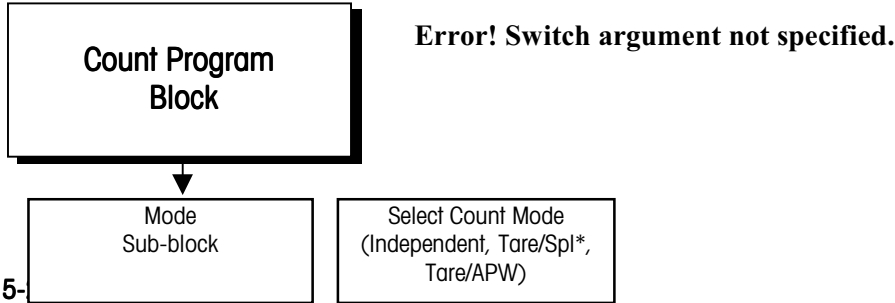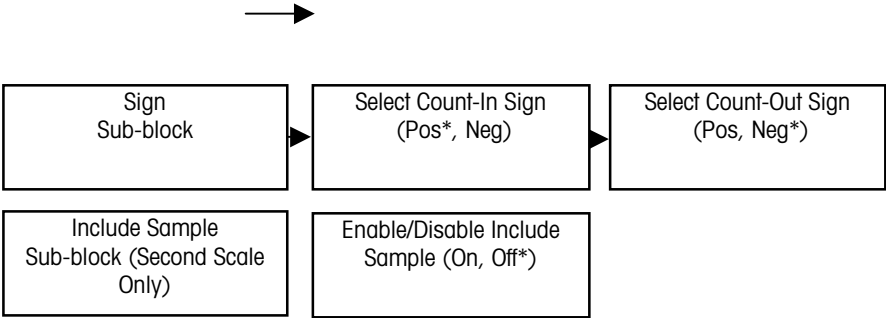
1. Mode Sub-block

This sub-block lets you determine the counting mode. The dependent mode (Tare, Spl), and Independent modes determine how you perform a counting operation. Dependent mode prompt you through the procedure. Independent does not provide prompts but does provide full flexibility of operator sequencing and may speed up the counting process.

Mode Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		COUNT	MODE	
1. Access the Count program block	PRINT Error! Switch argument not specified.	MODE	TARE, SPL*	
2. Display the desired sample mode option	TARE Error! Switch argument not specified.	MODE	(options)	Options include: Independent Tare, Spl* Tare, APW
3. Select the displayed option	PRINT |Error! Switch argument not specified.	SIGN	CNT IN	SC scale continues to the next sub-block

2. Sign Sub-block

This sub-block lets you indicate the appropriate sign for count-in and count-out operations. Count-in operations are usually displayed as positive values; count-out operations are usually negative. This sub-block allows you to change these signs if desired.

Step Description	Press Key	Display Left	Display Right	Comment
		SIGN	CNT IN	
1. Access the count-in sign feature	PRINT Error! Switch argument not specified.	CNT IN	POS*	
2. Display the desired count-in sign	TARE Error! Switch argument not specified.	CNT IN	POS* or NEG	
3. Select the displayed option	PRINT Error! Switch argument not specified.	CNT OUT	NEG*	SC scale continues to the next parameter in the sub-block
4. Display the desired count-out sign	TARE Error! Switch argument not specified.	CNT OUT	NEG* or POS	
5. Select the displayed option	PRINT Error! Switch argument not specified.	INC SPL or DATA	OFF* or DATA PRG	SC scale continues to the next sub-block. [INC SPL] is displayed only if a second scale is configured.

3. Include Sample Sub-Block

This sub-block lets you include the sample weight and count sample on a sample scale in a two scale counting system in the total count and weight. This program block is displayed only if the SC scale is configured with a second scale. If a second scale is not configured, the SC scale continues to the next program block. Refer to the section entitled **Remote 1 Sub-block** in Chapter 4 for details on configuring a second scale (remote base).

| | | Display | | |
Step Description	Press Key	Left	Right	Comment
		INC SPL	OFF*	
1. Enable or disable the include sample feature	TARE **Error! Switch argument not specified.**	INC SPL	OFF* or ON	
2. Select the displayed option	PRINT	DATA	DATA PRG	SC continues to the next program block

Data Program Block

The Data program block lets you configure the parameters associated with accumulators, ID prompting, and auto clear ID capability. Access to the time and date format is also in the Data program block

```
┌─────────────────┐
│  Data Program   │
│     Block       │
│                 │
│                 │
└────────┬────────┘
         │
         ▼
```

| Data Program Sub-Block | → | Enable/Disable Count Accum. (On*, Off) | → | Enable/Disable Gross Accum. (On*, Off) | → | Enable/Disable Net Accum. (On*, Off) |

Clear Accumulators (On, Off*)

| ID Program Sub-Block | → | Enable/Disable ID Prompting (On, Off*) | → | Enable/Disable ID Auto Clear (On, Off*) |

| Time Sub-Block | → | Select Format/Disable Tare (Off*, 12 Hr, 24 Hr) | → | Enter Time Adjustment (0*-59 seconds) | → | Adjustment Direction (Pos*, Neg) |

| Date Sub-Block | → | Select Format/Disable Date (Off*, MMDDYY, DDMMYY |

1. Data Program Sub-block

The SC counting scale's accumulation data are configured in this sub-block. You can enable or disable count accumulation, gross weight accumulation, and/or net weight accumulation. You can also configure the SC scale to clear accumulators automatically. The accumulator totals may always be cleared from the keyboard. During the recall sequence, when the desired accumulator is displayed, press **ZERO** twice to clear totals value.

Data Program Sub-block				
Step Description	Press Key	Display		Comment
		Left	Right	
		DATA	DATA PRG	
1. Access the Data Program sub-block	PRINT Error! Switch argument not specified.	DATAPRG	ACCUM	
2. Access the accumulators parameter	PRINT E rror! Switch argument not specified.	ACCUM	ACC CNT	You can enable the count, gross, and net accumulator parameters in any combination
3. Access the count parameter	PRINT Error! Switch argument not specified.	ACC CNT	ON*	
4. Enable or disable the count accumulator	TARE Error! Switch argument not specified.	ACC CNT	ON* or OFF	
5. Select the displayed option	PRINT Error! Switch argument not specified.	ACC GRS	ON*	SC continues to the next parameter in the sub-block
6. Enable or disable the gross accumulator	TARE Error! Switch argument not specified.	ACC GRS	ON* or OFF	
7. Select the displayed option	PRINT Error! Switch argument not specified.	ACC NET	ON*	SC continues to the next parameter in the sub-block
8. Enable or disable the net accumulator	TARE Error! Switch argument not specified.	ACC NET	ON* or OFF	
9. Select the displayed option	PRINT	CLR ACC	OFF*	SC continues to the next parameter in the sub-block
10. Enable or disable accumulator clearing	TARE	CLR ACC	ON or OFF*	If enabled, all accumulations will be cleared when **CLEAR** is

Data Program Sub-block				
Step Description	Press Key	Display		Comment
		Left	Right	
				pressed at the end of a transaction.
11. Select the displayed option	PRINT E **rror! Switch argument not specified.**	**ID PRG**	**TRANS ID**	SC continues to the next sub-block

2. ID Program Sub-block

This sub-block lets you enable the SC's ID (part numbers) prompting in dependent counting mode and enable or disable the transaction ID auto clear function. The ID's are used only for printing or transmission to a host - not storage of tare and APW values.

ID Program Sub-block				
Step Description	Press Key	Display		Comment
		Left	Right	
		ID PRG	TRANS ID	
1. Access the ID Program sub-block	PRINT Error! Switch argument not specified.	TRANS ID	OFF*	
2. Enable or disable the ID prompting feature	TARE Error! Switch argument not specified.	TRANS ID	OFF* or ON	If ON, SC accept a transaction ID. If OFF, SC does not accept an ID
3. Select the displayed option	PRINT Error! Switch argument not specified.	AUTOCLR	ID OFF*	SC continues to the next sub-block
4. Enable or disable the auto clear feature	TARE Error! Switch argument not specified.	AUTOCLR	ID OFF* or ON	If enabled, SC automatically clears the ID when you have removed the load on the scale and a no-motion condition exists. Appropriate data must be entered for the next transaction.
5. Select the displayed option	PRINT Error! Switch argument not specified.	TIME	OFF*	SC continues to the next program block

3. Time Sub-block

This sub-block enables or disables the time feature in the SC. If enabled, either a 12 hour or 24 hour format may be selected. The time field can be recalled to the display and also printed. There is no battery backup for the time. If power is removed, the current time will be lost and the scale will prompt the operator to enter the correct time when power is re-applied. The time is not lost if the On/Off key is pressed since the scale still has power applied to it.

There is also an adjustment feature for the time. If the clock does not keep correct time, a number of seconds can be selected to either be added or subtracted from the clock at midnight each day. Normally, the time is kept very accurately so there is no need for an adjustment.

Time Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		TIME	OFF*	
1. Disable or select the format for the time feature	TARE	TIME	OFF*, 12 Hr or 24 Hr	If OFF, time will not be prompted at power-up and cannot be printed. If 12 Hr, the SC will prompt and print a 12 hour format including AM or PM. If 24 Hr, the SC will prompt and print a 24 hour format.
2. Select the displayed option	PRINT	ADJUST	0	SC continues to the next parameter in the sub-block
3. Enter an adjustment value (in seconds) to be adjusted every day.	Numeric Keys	ADJUST	desired adjustment value	
4. Enter the adjustment value	PRINT	ADJ DIR	POS*	SC continues to the next parameter in the sub-block
5. Display the desired adjustment direction	TARE	ADJ DIR	POS* or NEG	This determines if the above adjustment value will be added (POS) or subtracted (NEG) to the clock at the end of each day.
6. Select the displayed option	PRINT	DATE	OFF*	The SC continues to the next sub-block.

4. Date Sub-block

This sub-block disables or selects the format for the date. The date field can be recalled to the display and printed. If enabled, the format can be selected as either U.S. (Month-Day-Year) or international (Day-Month-Year). There is no battery backup for the date. If power is removed, the current date will be lost and the scale will prompt the operator to enter the correct date when power is re-applied. The date is not lost if the On/Off key is pressed since the scale has power applied to it.

Date Sub-block				
		Display		
Step Description	Press Key	Left	Right	Comment
		DATE	OFF*	
1. Disable or select the format for the date feature	TARE	DATE	OFF* or MMDDYY or DDMMYY	If OFF, date will not be prompted at power-up and cannot be printed. If either other format is chosen, the date will be prompted at power-up.
2. Select the displayed option	PRINT	I-FACE	PORTS	The SC continues to the next sub-block.

Interface Program Block

The Interface program block lets you configure the SC counting scale's communication port. You can select the device connected to the port and set the protocol parameters for that port.
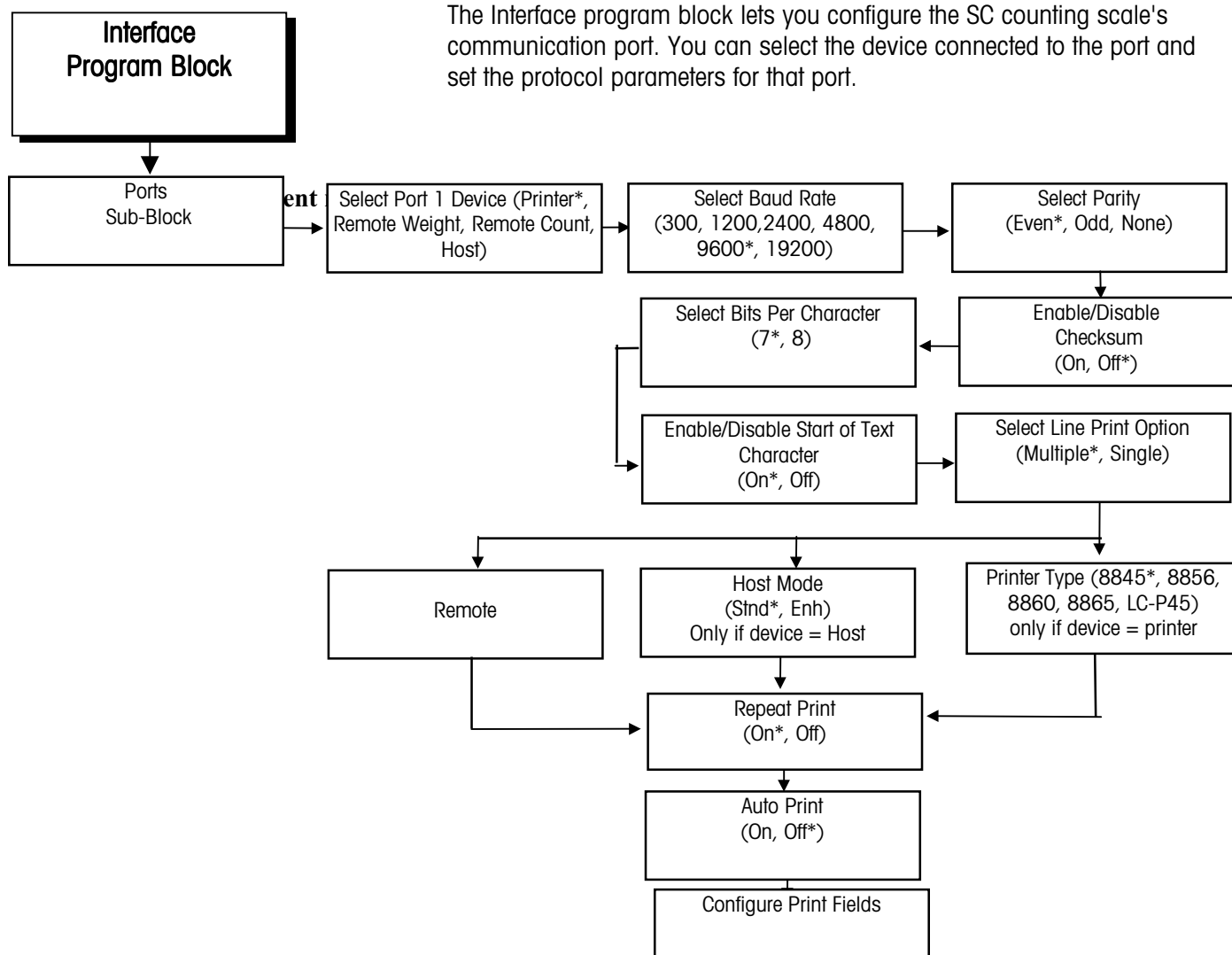
1. Ports Sub-block

This sub-block lets you configure SC scale's communication port.

		Display		
Step Description	**Press Key**	**Left**	**Right**	**Comment**
		I-FACE	PORTS	
1. Access the Ports sub-block	PRINT Error! Switch argument not specified.	PORTS	PORT 1	
2. Access port 1 parameters	PRINT Error! Switch argument not specified.	PORT 1	DEVICE	
3. Access device options	PRINT Error! Switch argument not specified.	DEVICE	PRINTER*	
4. Display the desired device type.	TARE Error! Switch argument not specified.	DEVICE	(options)	Options include: Printer* Remote Weight Remote Count Host
5. Access the Protol Baud section.	PRINT Error! Switch argument not specified.	PROTOCL	BAUD	
6. Select the displayed option	PRINT PRINT	BAUD	9600*	SC scale continues to the protocol parameters
7. Display the desired baud rate	TARE Error! Switch argument not specified.	BAUD	(options)	Options include: 9600* 1200 19200 2400 300 4800
8. Select the displayed baud rate	PRINT Error! Switch argument not specified.	PARITY	EVEN*	SC scale continues to the next parameter in the sub-block
9. Display the desired parity protocol	TARE Error! Switch argument not	PARITY	(options)	Options include: Even* None Odd

Ports Sub-block				
Step Description	Press Key	Display Left	Right	Comment
10. Select the displayed parity option	PRINT Error! Switch argument not specified.	CHC SUM	OFF*	SC scale continues to the next parameter
11. Enable or disable the checksum feature	TARE Error! Switch argument not specified.	CHC SUM	OFF* or ON	Checksum is a method of checking each line of data by encoding a character at the end of each data string. The receiving device must be able to decode and verify the checksum digit.
12. Select the displayed option	PRINT Error! Switch argument not specified.	BITSCHR	7 BITS*	SC continues to the next parameter
13. Display the desired bits per character option	TARE Error! Switch argument not specified.	BITSCHR	7* or 8	Bits per character is the number of bits that make up an ASCII character. Most Mettler Toledo equipment communicates using seven data bits.
14. Select the displayed option	PRINT Error! Switch argument not specified.	ST CHAR	ON*	SC continues to the next parameter
15. Enable or disable the start of text character	TARE Error! Switch argument not specified.	ST CHAR	ON* or OFF	STX character is an ASCII character indicating the start of text. If enabled, an STX will be transmitted as the first character of data output.
16. Select the displayed option	PRINT Error! Switch argument not specified.	PRTLINE	MULTIPLE*	SC scale continues to the parameter
17. Display the desired line print option	TARE Error! Switch argument not specified.	PRTLINE	(options)	Options include: Multiple* Single
18. Select the displayed option	PRINT Error! Switch argument not specified.	PRTTYPE	8845	SC scale continues to the next parameter in the sub-block

Ports Sub-block				
		Display		
Step Description	**Press Key**	**Left**	**Right**	**Comment**
19. Display the desired printer type	TARE Error! Switch argument not specified.	PRTTYPE	(options)	Options include: 8845* 8865 8856 LC-P45 8860 If a printer other than the ones listed will be used, select the model 8845.
20. Access the repeat print parameter	PRINT	RPT PRT	ON*	
21. Enable or disable repeat print	TARE	RPT PRT	ON* or OFF	OFF requires return to gross zero before the next print command can be executed. ON enables you to issue multiple print commands without returning to gross zero.
22. Select the displayed option	PRINT	AUTO PR	OFF*	SC continues to the next parameter
23. Enable or disable auto print	TARE	AUTO PR	OFF* or ON	If enabled, printing will occur automatically once a piece count is reached above 3 increments. Weight must return to zero before another automatic print will occur.
24. Select the displayed option	PRINT Error! Switch argument not specified.	FIELDS	FIELD 1	SC continues to the next parameter
25. Access the parameters for field 1 data	PRINT Error! Switch argument not specified.	FIELD 1	GRS WGT*	
26. Display the desired data type for field 1	TARE Error! Switch argument not specified.	FIELD 1	(options)	You can insert information from one of 12 data fields. These fields follow this table
27. Select the displayed option	PRINT Error! Switch argument not specified.	EP F1	OFF*	
28. Enable or disable the expanded print feature	TARE Error! Switch argument not specified.	EP F1	OFF* or ON	EP stands for expanded print. If enabled, an ASCII <so> (shift out) character is added before the field, and an ASCII <si> (shift in) follows the field. This allows the field to print expanded (larger) on most Mettler Toledo printers.

Ports Sub-block				
		Display		
Step Description	**Press Key**	**Left**	**Right**	**Comment**
29. Select the displayed option	PRINT ⎯Error! Switch argument not specified.	FIELD 2	NET WGT*	SC continues to the next data field parameter
30. Repeat steps 25 through 28 for data fields 2 through 7				Field options are the same as for Field 1 and EP 1. No defaults are assigned for fields 4 through 7.

Data type options for fields 1 through 7 include:

- Gross Weight
- Tare Weight
- Net Weight
- Sample Quantity
- APW or Pcs/Wt
- Pieces
- Percent Accuracy

- Time and Date
- Gross Accumulation
- Piece Accumulation
- Net Accumulation
- Blank
- Scale ID (Host)
- Transaction ID

Field default data are:

- Field 1 Gross Weight
- Field 2 Net Weight
- Field 3 Pieces
- Field 4 Blank

- Field 5 Blank
- Field 6 Blank
- Field 7 Blank

End Program Block

The End program block is used to exit Master Mode. The End prompt is accessed when you reach the end of the Print sub-block in the Interface program block, or when you press **CLEAR** from anywhere within Master Mode. Once accessed, you have the following options before exiting:

- **Save**—retains your changes

- **Abort**—exits Master Mode without saving the changes and retains the values previously set

- **Default**—Resets all parameters to factory default values
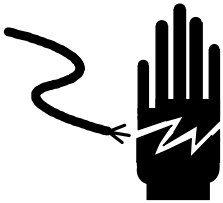
End Program Block	
Select [Save] to exit and retain changes	Press **PRINT**
Select [Abort] to exit without saving changes	Press **PRINT**
Select [Default] to revert to factory defaults	Press **PRINT**

Error! Switch argument not specified.

To exit Master Mode:

End Sub-block				
Step Description	Press Key	Display		Comment
		Left	Right	
		END?	SAVE	
1. Select the desired exit option	TARE Error! Switch argument not specified.	END?	SAVE, ABORT, or DEFAULT	If you select [Abort], all changes made in the current session will be lost. [Defaults] returns all values to the factory default values
2. Confirm and exit	PRINT Error! Switch argument not specified.Error! Switch argument not specified.	END?	SAVE, ABORT, or DEFAULT	Press **PRINT**. The Save or Abort option causes the SC scale to update the software and return to Normal Operating Mode. The Defaults option does not exit Master Mode.
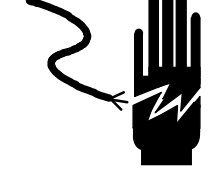
6 Service and Maintenance

The SC counting scale is a reliable scale and parts counter. However, like any precision equipment, it requires regular maintenance.

	⚠ **WARNING**
	ONLY PERMIT QUALIFIED PERSONNEL TO SERVICE THIS EQUIPMENT. EXERCISE CARE WHEN MAKING CHECKS, TESTS AND ADJUSTMENTS THAT MUST BE MADE WITH POWER ON. FAILING TO OBSERVE THESE PRECAUTIONS CAN RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

Cleaning and Regular Maintenance

	⚠ **WARNING**
	DISCONNECT ALL POWER TO THIS UNIT BEFORE INSTALLING, SERVICING, CLEANING OR REMOVING THE FUSE. FAILURE TO DO SO COULD RESULT IN BODILY HARM AND/OR PROPERTY DAMAGE.

You may wipe the display area and weighing platter with a clean, soft cloth that has been dampened with a mild cleaner. Do not use any type of industrial solvents. These may damage the display and platter finish. The rubber tactile keypad with keys that protrude from the face cover requires little cleaning. If debris falls between the keys, brush it away or use a small vacuum designed for computer keyboards to remove dirt and lint. Do not use an industrial solvent on the keys.

Regular maintenance inspections by a qualified service technician are recommended.

Troubleshooting

The following table lists the SC counting scale's error messages and corrective actions.

Display and Error Messages

DISPLAY MESSAGE	DESCRIPTION	ACTION
Adding	**ACCUM+** key was pressed and current scale values are being accumulated.	No action required.
Cal Done	The calibration procedure has been completed and accepted.	No action required.
Replaced	**ACCUM+** key was replaced and current scale values are replacing the previously stored values in the accumulators.	No action required. If a second accumulation was desired, make sure the scale returns to zero between accumulations.
Subtract	Indicates that the **ACCUM-** key was pressed and the current scale values are being subtracted from the accumulators.	No action required.
Too Many	Too many pieces added to the platter during an APW enhancement process.	Remove some pieces from the scale platter until the error does not reoccur. After an enhancement occurs, more pieces may be added.
⌐ ‾ ‾ ‾ ‾ ‾ ¬ OutOfRng	Scale turned on with weight on the scale exceeding the programmed power up zero capture range.	Remove extra weight. A larger power up zero capture range may be required in Master Mode. Be sure shipping screw is removed from the 5 kg unit. Recalibrate. Inspect load cell for damage
∟ - - - - - ⌡ OutOfRng	Scale turned on with weight on the scale below the programmed power up zero capture range.	Add weight to the scale. Platter may be off. A larger power up zero capture range may be required in Master Mode.
⌐ ‾ ‾ ‾ ‾ ‾ ¬ Over Cap	Weight on the scale has exceeded the calibrated capacity.	Remove weight from the platter until the error disappears and weight is shown. (Switching units may move the over cap limit. See scale builds.)
∟ - - - - - ⌡ UnderCap	Weight on the scale is below zero more than 5 increments.	Press **ZERO**. If zero cannot be captured, service may be required. Platter or accessory may have been removed.
- - - - - - -	Tare interlock is enabled and there is motion on the scale.	The message automatically clears when weight on the scale becomes stable. Disable tare interlock in Master Mode to show weight values during motion.
CLEAr APW>Cap	An APW greater than the calibrated capacity of the SC scale has been entered.	Data entry error. Press **CLEAR** or **ESCAPE**.

DISPLAY MESSAGE	DESCRIPTION	ACTION
CLEAr Calb Err	The calibration procedure has not been completed or accepted.	Press **CLEAR** to clear the error, check the Service Mode setup, for proper capacity and increment selection. Also may be invalid calibration test weights entered.
CLEAr Illegal	Sequence of operation out of order.	Press **CLEAR**. Reenter the operation in correct sequence.
CLEAr Too High	The count data to be displayed is greater than 9,999,999 pieces.	Remove some pieces, press **CLEAR** key.
Error BadEntry	Data type not correct or invalid data entered. Incorrect key sequence.	Enter an integer for sample size (no decimal) or number for weight (no alpha). Follow the correct key sequence.
Error FullAccm	The accumulator is full.	Clear accumulators by recalling the accumulator to be cleared using the **RECALL** key. When the desired accumulator is displayed, press **ZERO** key twice.
Error InRecall	Function being attempted cannot be completed while SC in recall mode.	Error will automatically clear in 2 seconds. Press **CLEAR** to exit Information mode, then retry the function.
Error Max Entry	Data exceeds the maximum allowable fields (8 characters).	Press **CLEAR** or **ESCAPE** and re-enter the data.
Error No Add	An addition (**ACCUM+)** was attempted without meeting the accumulation requirements or ACCUM+ pressed out of sequence.	Make sure weight is more than 3 increments from gross and net zero before accumulating. Accumulators may be disabled in Master mode.
Error No Chain	Multiple tares attempted while chain tare is disabled in Master Mode.	Enable chain tare in Master mode or clear out of a count transaction and begin a new transaction.
Error No Kybd	A pushbutton or keyboard tare has failed because it is disabled in Master Mode.	Enable both pushbutton and keyboard tare in Master Mode and re-try the sequence.
Error No Print	Print sequence attempted with gross weight below 20 increments or repeat print is disabled.	Add additional weight then re-try the print or enable repeat print in the Master mode.
Error NoRemote	The remote second scale is not configured and/or installed properly.	Enable the second scale in Service mode and verify second scale installation.
Error No Sub	A subtraction (**ACCUM-)** was attempted without meeting the accumulation requirements or ACCUM- pressed out of sequence.	Make sure weight is more than 3 increments from gross and net zero before accumulating.
Error NoSwitch	Trying to switch units while the alternate weight unit disabled in Master Mode.	Do not switch units or enable an alternate weight unit in Master mode.

DISPLAY MESSAGE	DESCRIPTION	ACTION
Error No Tare	Occurs if tare is disabled and a pushbutton tare is attempted.	Do not attempt a tare or enable the tare feature in Master mode.
Error No Var	A variable sample entry was attempted while only fixed sample size is enabled in Master Mode.	Use only the selected fixed sample quantity or enable the variable sample selection in Master mode.
Error Spl Low	The total weight of the sample is not 2 display increments or has not met the minimum sample % selected in the Master Mode.	Error will automatically clear after 2 seconds. Add additional sample pieces and resample.
Error Tr>Limit	A tare value greater than scale capacity has been entered.	Retry the tare entry using a correct tare value.
PouuEr Failure	Indicates a low battery condition exists. Further use of the scale is not permitted.	Battery must be recharged. Turn battery switch off and plug scale into AC outlet. Display will show [SLEEP] and battery symbol will blink for a few minutes. After the symbol stops blinking, press On/Off key to turn scale on.
SLEEP Waking	Indicates the scale is powering up from the sleep mode after the on/off key was pressed.	Display will automatically clear after approximately 5 seconds.
SLEEP	Shows that the scale is "off" and is "sleeping". At power-up, this may indicate a low battery condition or a damaged or failed battery pack.	Press the **On/Off** key. The SC should complete a power-up cycle. If a low battery condition exists, turn the battery switch off and plug the scale into an AC power source. After a few minutes, press the **On/Off** key.

Replacing the SC05/SC15 Load Cell

This section describes how to replace the load cell in models SC05 and SC15. Obtain the correct replacement load cell kit before proceeding:

- SC05—11 kg replacement load cell kit (part number 153815 00A)
- SC15—22 kg replacement load cell kit (part number 153816 00A)

As you replace the load cell, you will need the following tools:

- #15 Torx screwdriver
- #20 Torx screwdriver
- Torque wrench, 200 inch pound minimum with a 6mm allen socket
- Feeler gauge, 0.008 in. (0.204 mm)
- Three 5 kg, Class 3 test weights or equivalent
- Electrostatic discharge (ESD) strap

⚠ CAUTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

Removing the Load Cell
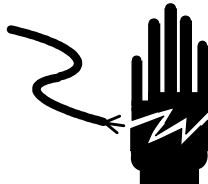
	⚠ WARNING
	DISCONNECT ALL POWER TO THIS UNIT BEFORE SERVICING.

1. Remove the weighing platter.
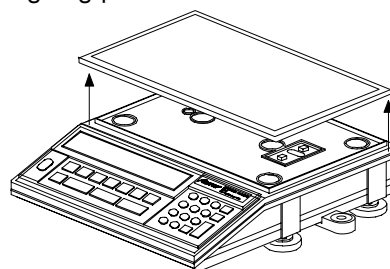
2. Remove the two #15 Torx screws under the keyboard section and the two #20 Torx screws in the wells on top of the unit.

Tornx Screws
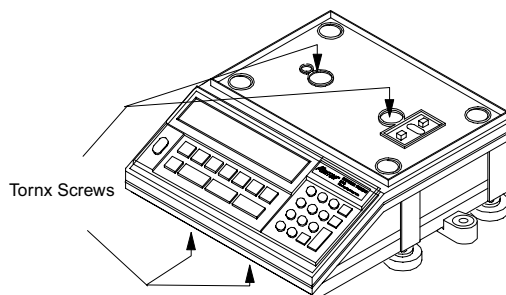
3. Lift the cover straight up. Tilt it forward (key pad side). Disconnect the display harness from J1 connector on the Logic PCB. Set the cover aside.

Unplug Harness

<div style="border">
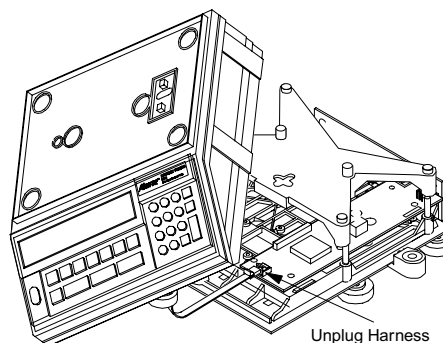
⚠ **CAUTION**

REMOVE THE COVER SLOWLY AND GENTLY. DO NOT JERK THE COVER FROM THE UNIT. DOING SO CAN BREAK THE CONNECTOR JACK FROM THE PCB.

</div>

To avoid damage to the spider assembly, hold the assembly with one hand while loosening the bolts.

4. Remove the spider assembly by removing the two 6 mm allen bolts that attach the assembly to the live end of the load cell.

6 mm allen bolts

Unplug the ribbon harness on J2 connector

Center overload stop
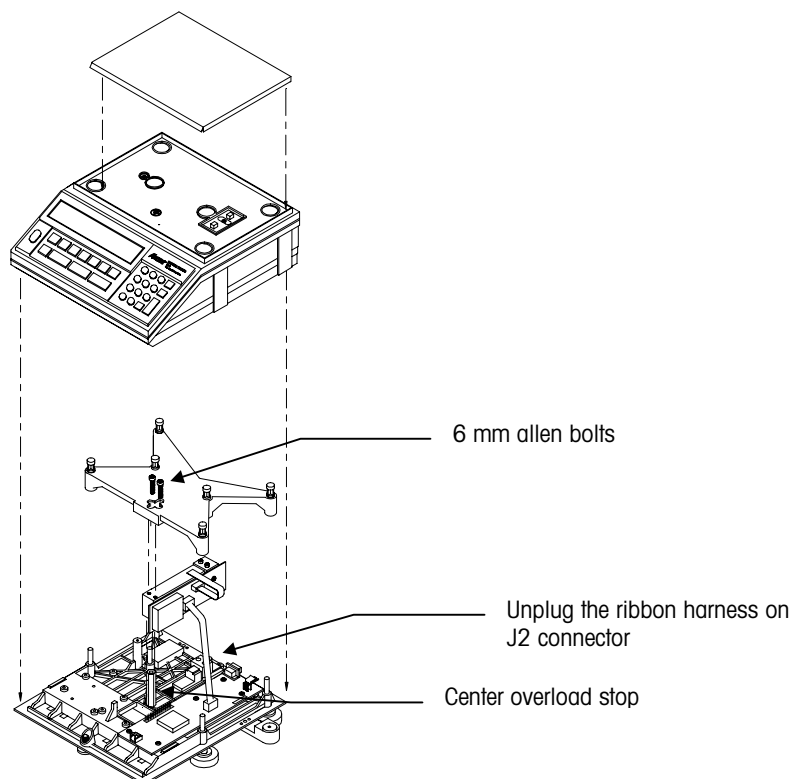
5. Unplug the ribbon cable from the J2 connector on the Digital Load Cell board. Do not remove the board from the load cell.

6. Turn the base on its side. Do not lay it upside down on the load cell. Remove the two 6 mm allen bolts that attach the load cell to the base. Set the load cell aside.

Installing the Load Cell

1. Position the new load cell where the old load cell was (parallel to the ribs on the base).

2. Hold the base on its side and insert the two bolts through the base into the end of the load cell where the PCB is attached.

3. Attach the ribbon cable from the main Logic PCB to the J2 connector on the DLC board.

4. With the load cell aligned parallel to the ribs in the base, tighten the load cell bolts to 125 inch pounds ($\pm$ 5 inch pounds).

⚠ **WARNING**

DO NOT HOLD THE LIVE END OF THE LOAD CELL WHILE TIGHTENING THE BOLTS.

Reassembling the Unit

1. Replace the two bolts from the spider assembly through the spider and into the load cell. Do not tighten the bolts yet.

2. Carefully align the overload plungers (on the spider assembly) with the overload stops (on the base).

3. Hold the spider assembly with one hand and torque the bolts to 125 inch pounds ($\pm$ 5 inch pounds).

⚠ **WARNING**

TO AVOID DAMAGE TO THE LOAD CELL, DO NOT HOLD THE BASE WHILE TIGHTENING THE SPIDER BOLTS AS THE FORCE IS TRANSFERRED THROUGH THE BEAMS OF THE LOAD CELL.

4. Set the gap on the center overload stop to 0.008 in. using a feeler gauge. Turn the overload stop clockwise to open the gap.

5. Replace the cover. Holding the keyboard down, attach the display cable to the J1 connector on the main Logic PCB. Rotate the cover into place

6. Power up the unit and calibrate using a test weight greater than half the capacity of the scale.

7. Verify that the unit can weigh full capacity off center loads at the shift positions as shown.

```
        A


  D           B
        C
```
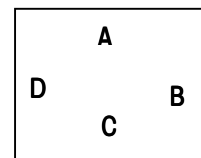
8. Install the two #20 Torx screws in the wells on top, then install the two #15 Torx screws under the keyboard.

Replacing the SC30 and SC60 Load Cell

This section describes how to replace the load cell in models SC30 and SC60. The SC30 uses a 45 kg load cell kit (part number 15381700A). Obtain the correct replacement load cell kit before proceeding.

On SC60 models with date code previous to YY, a mechanical modification must be done before using the 15381800A load cell kit. These instructions are included with the kit.

As you replace the load cell, you will need the following tools:

- Torque wrench, 200 inch pound minimum with a 6mm allen socket
- Six10 kg, Class 3 test weights or equivalent
- 7 mm wrench
- Phillips screw driver
- Electrostatic discharge (ESD) strap

	⚠ **WARNING**
	DISCONNECT ALL POWER TO THIS UNIT BEFORE SERVICING.

Removing the Load Cell

1. Remove the weighing platter.

2. Turn the scale over so it rests on the spider assembly, then remove the four rubber leveling feet.

3. Remove the four Phillips screws that secure the lower cover to the base and gently lift the cover.

4. Unplug the ribbon cable from connector J4 on the main Logic board.
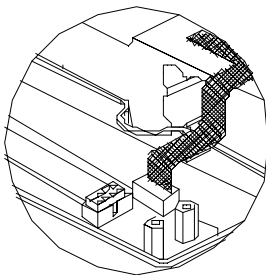
5. If the battery option is installed, unplug the cable from connector J1 on the Battery board. Set the lower cover aside.

6. Turn the scale so the spider assembly is up. Holding the spider assembly with one hand, loosen the two load cell bolts. Remove the assembly and the spacer underneath.

7. Remove the two 7 mm bolts and the cover on the DLC board. Unplug the load cell flex cable from connector J3 on the DLC board. The cable locking mechanism is released by lifting the tabs on either side of the connector.

8. Peel the flex tail from the foam tape that holds the cable to the base. Remove any tape residue from the base.

9. Turn the base on its side. Remove the two 6 mm allen load cell bolts that secure the load cell. Set the load cell aside, but keep the spacer.

Installing the Load Cell

1. With the base on its side, insert the two load cell bolts through the holes in the base. Place the space on the bolts from the top side.

2. Position the new load cell on top of the spacer. Screw the bolts into the load cell but do not tighten them.

3. Center the load cell in the cavity and tighten the bolts to 150 inch pounds ($\pm$ 5 inch pounds).

⚠ WARNING

DO NOT HOLD THE LIVE END OF THE LOAD CELL WHILE TIGHTENING THE BOLTS.

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4. Attach the foam tape squarely to the base directly below the load cell flex cable. Plug the flex cable into connector J3 on the DLC board. Press the latching mechanism straight down. Verify that the flex cable is secured in the connector.

5. From the load cell end, bend the cable downward then outward and attach it to the foam tape. Do not fold or crimp the flex cable.

6mm allen bolts
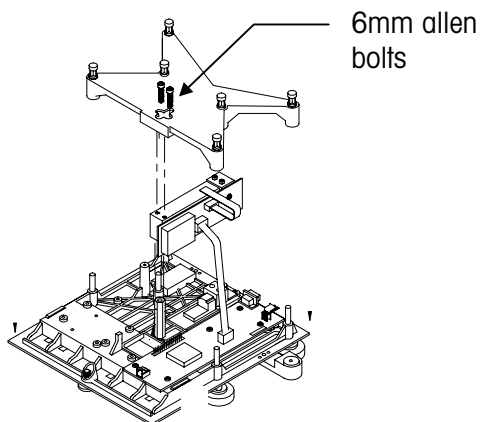
6. Replace the cover on the DLC board.

Reassembling the Unit

1. Place the spacer on top of the load cell, then place the spider assembly on top of the spacer and insert the two retaining bolts.

2. Holding the spider assembly with one hand, tighten the bolts to150 inch pounds ($\pm$ 5 inch pounds). Be sure that the load cell flex cable does not touch the spider assembly.

3. Turn the scale over so it rests on the spider assembly. Replace the bottom cover on the base.

4. Plug the ribbon cable into connector J2 on the Logic board.

5. If the battery option is installed, plug the battery cable into connector J1 on the Battery board.

6. Install the four Phillips screws. Replace the four rubber leveling feet.

7. Attach the remote keyboard, then power up the unit. Calibrate without the platter with a test weight equal to half the scale's capacity.

8. From the top of the scale, insert an Allen wrench into the one of the outside (longitudinal) overload stops. Slowly turn the Allen screw clockwise until the scale indicates "Under Capacity". { It should only take about 1/2 turn to contact the stop.} Turn the screw counterclockwise until the scale again reads weight. Note the position of the Allen wrench. Turn it exactly 1/2 turn counterclockwise from this point.

9. Repeat step 8 for the other longitudinal overload stop.

10. Proceed to the inner (transverse) overload stops. Use the same procedure as in step 8 but set the stops at 3/8 turn.

11. Replace weighing platter and re-calibrate.

12. Verify the unit can weigh full capacity off center loads at the shift positions as shown. A drop of loctite may be placed on each overload stop, but this is optional.
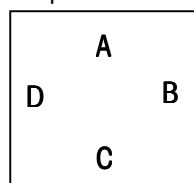
Installing a Second Scale in the SC05 and SC15

Mettler Toledo offers Scale 2 kits for the SC05 and SC15 (DigiTOL Scale 2 Kit 0901-0386; Analog Scale 2 Kit 0901-0385). The kit contains:

Part Number	Description	QTY

(*)144633 00A	PCB Assembly. Second Scale (Digital)	1
	or	
(*)143877 00A	PCB Assembly, Second Scale (Analog)	1
(*)144634 00A	Harness Assembly, Second Scale	1
(*)144762 00A	Standoff	4
RO5147 00A	Screw	4
(*)11759900B	DB9 Connector-DigiTOL	1
or		
(*)11759900C	DB9 Connector-Analog	
(*)12538400A	Shell for DB9 connector	1
(*)14274700A	Ferrite	1

You will need the following tools to install a second scale:

- #15 Torx
- #20 Torx
- 6 mm allen socket
- Torque wrench
- Solder iron
- Ground strap
- Small screwdriver

WARNING

DISCONNECT ALL POWER TO THIS UNIT BEFORE SERVICING.
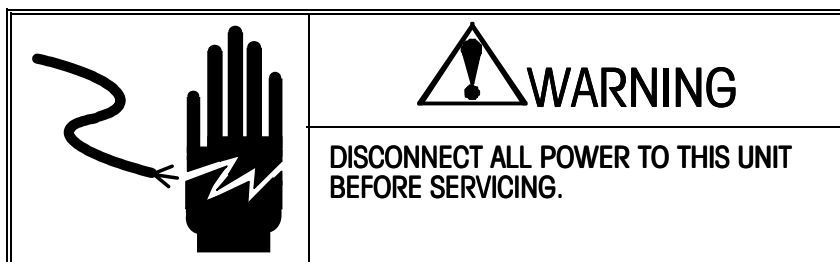
To install the second scale:

1. Disconnect the AC power cord from the outlet before proceeding.

2. Remove the weighing platter.

3. Remove the cover. Using a #20 Torx driver, remove the retaining screws found in the recesses near the center. Also, remove the two screws in front from the underside using a #15 Torx driver.

4. Gently lift the cover straight up, then tilt the cover forward (keypad size) and discount the display harness from the Logic PCB. Set the cover aside.

5. Remove the spider assembly using a 6mm allen wrench. Hold the assembly with one hand while removing the bolts.

6. Remove the cover from the rear panel over the hole marked "I/O 4" on the Analog kit or "I/O 3" on the DigiTOL kit.

NOTE: If you are wiring a 4-wire load cell, you must install a jumper between pins 1 and 2 and between pins

NOTE: Cable can appear to plug onto connectors when out of alignment by one pin.

7. Install the four standoffs in the base of the scale to the left of the load cell.

8. To install the PCB, insert the DB9 connector in the appropriate hole in the rear panel.

9. Secure the PCB to the standoffs using the four screws provided.

10. Install the harness between J1 of the Second Scale PCB and J2 of the Logic PCB. Carefully align pin 1 of the harness with the two connectors.

11. Re-install the spider, cover, and platter. Place the spacer on top of the load cell, then place the spider assembly on top of the spacer and insert the two retaining bolts. While holding the spider assembly with one hand, tighten the bolts to 125 inch pounds ($\pm$ 5 inch pounds).

12. Connect the load cell cable of the Second Scale as shown below using the DB9 connector provided. Refer to the service manual of your analog base for the correct wire color code.

Analog DB9 Connector (I/O 4)

1	+EXE
2	+SEN
3	NC
4	−SEN
5	−EXE
6	KEY
7	+SIGNAL
8	−SIGNAL
9	NC

The shield of cable should be tied to the chassis of the SC scale via the metal shell of the DB9 connector.

DigiTOL DB9 Connector (I/O 3)

Pin		Signal Name	DigiTOL Wire Color Code
	1	RXDA (422)	Red
	2	Do Not Use	---
	3	KEY	---
	4	RXDB (422)	---
	5	+20 VDC (DLC)	Green
	6	TXDB (422)	Yellow
	7	GND	Blue
	8	TXDA (422)	Black
	9	Do Not Use	---

The shield of cable should be tied to the chassis of the SC scale via the metal shell of the DB9 connector.

Installing a Second Scale in the SC30 and SC60

Mettler Toledo offers Scale 2 kits for the SC30 and SC60 (DigiTOL Scale 2 Kit 0901-0386; Analog Scale 2 Kit 0901-0385). The kit contains the following components:

Part Number	Description	QTY
(*)144633 00A	PCB Assembly, Second Scale (Digital) or	1
(*)143877 00A	PCB Assembly, Second Scale (Analog)	1
(*)144634 00A	Harness Assembly, Second Scale	1
(*)144762 00A	Standoff*[1]	4
R0514700A	Screw	4
(*)11759900B or (*)11759900C	DB9 Connector DigiTOL DB9 Connector Analog	1
(*)12538400A	Shell for DB9 connectors	1
(*)14274700A	Ferrite	1

[1]*Not required for installation in SC30 and SC60 scales.

You will need the following tools to install a second scale:

- Solder iron
- Ground strap
- Small slotted screwdriver

⚡🖐	⚠️WARNING
	DISCONNECT ALL POWER TO THIS UNIT BEFORE SERVICING.
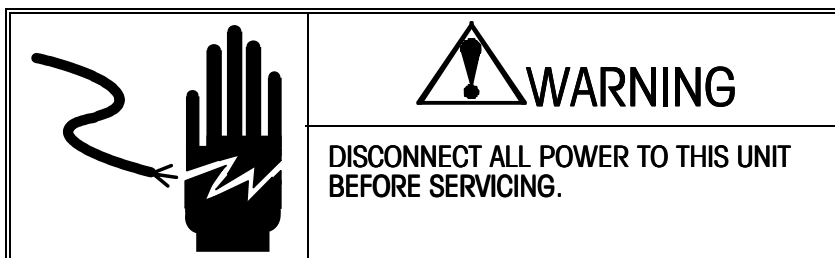
To install the second scale:

1. Disconnect the AC power cord from the outlet.

2. Turn the scale base over and remove the two scale feet closest to the bottom cover.

3. Remove the four screws that secure the bottom cover and remove the cover from the bottom of the scale.

4. Disconnect the load cell harness at J4 of the Logic PCB and set the cover on a suitable flat surface.

5. Mount the Second Scale PCB in the bracket next to the Logic PCB using the four screws provided (DB9 connector should be adjacent and parallel to the DB9 connector of the Logic PCB).

NOTE: Cable can appear to plug onto connectors when out of alignment by one pin.

6. Install the harness between J1 of the Second Scale PCB and J2 of the Logic PCB. Carefully align pin 1 of the harness with both connectors.

7. Remove the cover from the base over the hole marked "I/O 4" on Analog kits or "I/O 3" on DigiTOL kits.

I/O 3 or I/O 4

METTLER TOLEDO

| 24 VDC | KYBD | I/O 1 | I/O 2 | I/O 3 | I/O 4 | BATTERY |
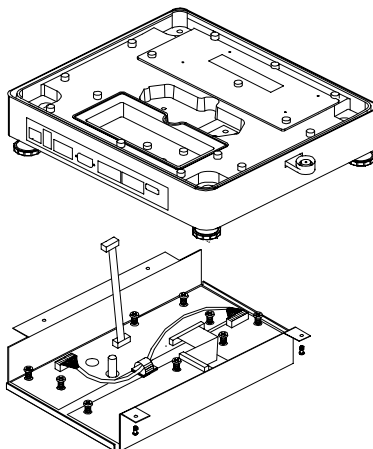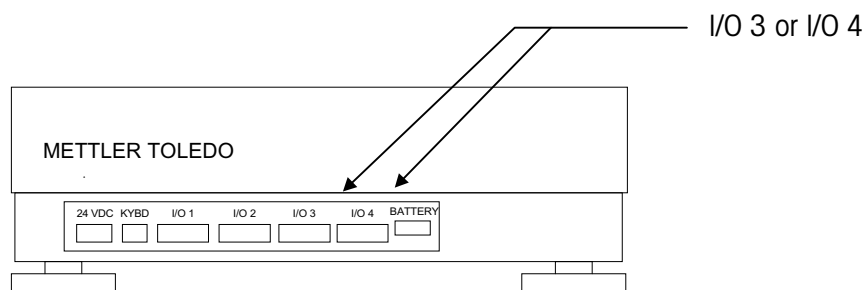
8. Re-connect the load cell harness at J4 of the Logic PCB.

9. Feed the DB9 connector of the Second Scale PCB through the appropriate hole marked and secure the cover to the bottom of the scale.

10. Re-install the scale feet.

11. Connect the load cell cable of the Second Scale as shown below using the DB9 connector provided. Refer to the technical manual of your analog base for the correct wire color code.

Analog DB9 Connector (I/O 4)

1	+EXE
2	+SEN
3	NC
4	–SEN
5	–EXE
6	KEY
7	+SIGNAL
8	–SIGNAL
9	NC

If you are wiring a 4-wire load cell, you must install a jumper between pins 1 and 2 and between pins 3 and 4.

The shield of cable should be tied to chassis of the SC via the metal shell of DB9 connector.

DigiTOL DB9 Connector (I/O 3)

Pin		Signal Name	DigiTOL Wire Color Code
	1	RXDA (422)	Red
	2	Do Not Use	---
	3	KEY	---
	4	RXDB (422)	---
	5	+20 VDC (DLC)	Green
	6	TXDB (422)	Yellow
	7	GND	Blue
	8	TXDA (422)	Black
	9	Do Not Use	---

The shield of cable should be tied to chassis of the SC scale via the metal shell of the DB9 connector.

SC05/SC15 Wiring Diagram

SC30/SC60 Wiring Diagram
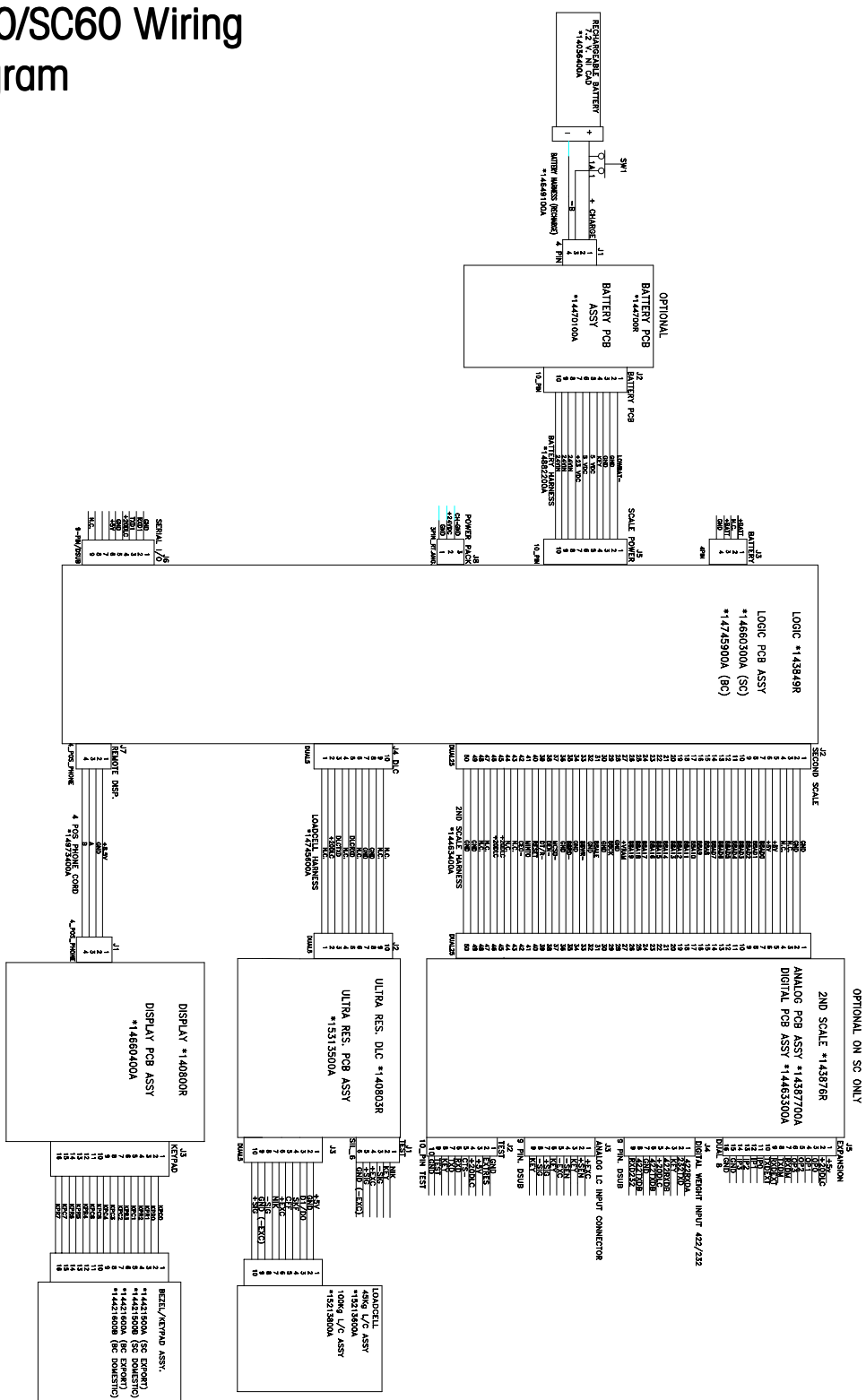
7

Parts and Accessories

Please refer the diagrams and charts on the following pages when ordering parts for the SC counting scale.

SCO5/SC15
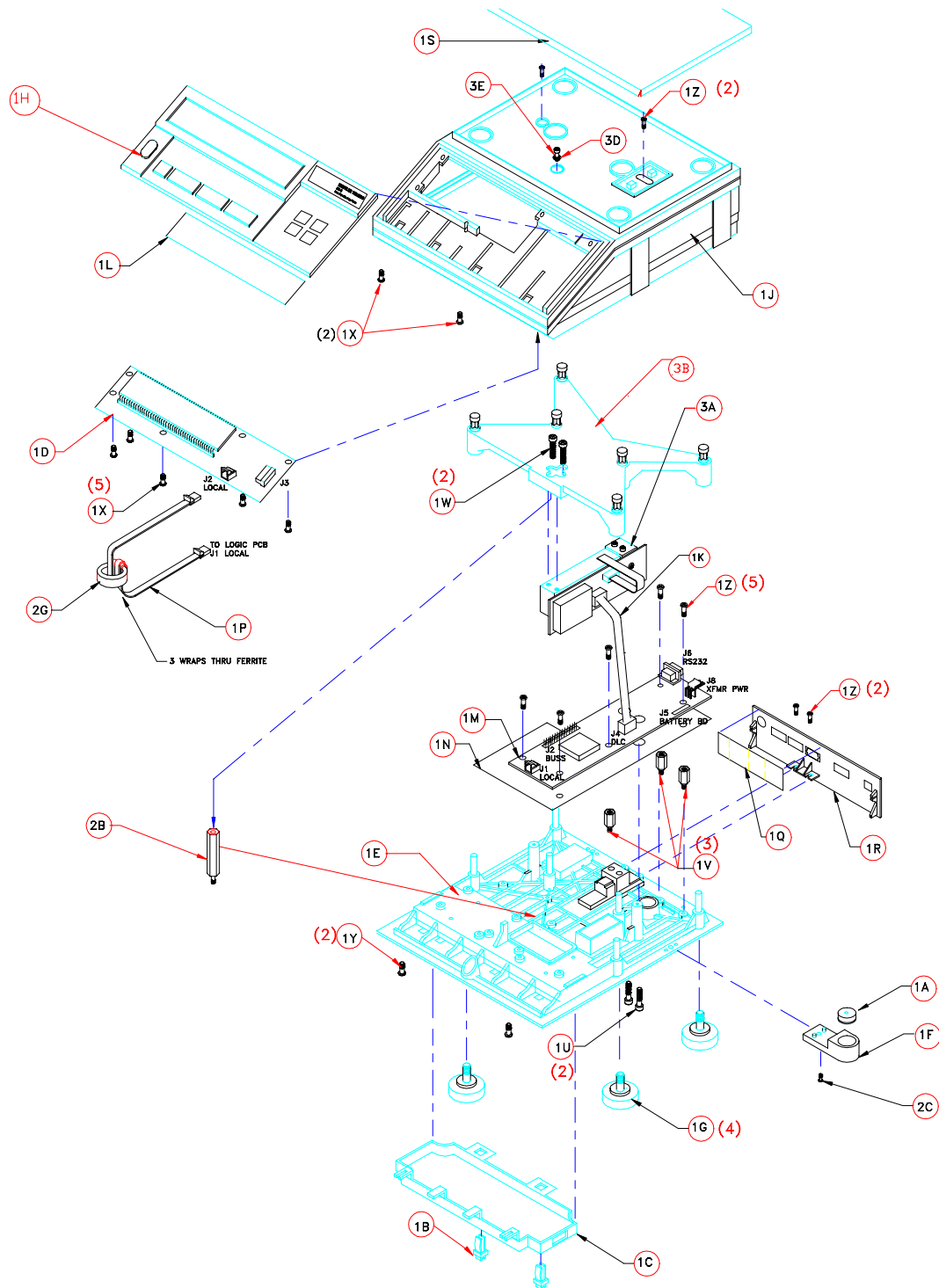
Consists of Common Parts SC05/SC15 Counting Scale			
Symbol	Quantity	Part Number	Description
1A	1	(*)10268900A	Level
1B	2	(*)12051300A	1/4 Turn Fastener
1C	1	(*)13912500A	Battery Cover*
1D	1	(*)15056300A	Display PCB Kit
1E	1	(*)14081000A	Base
1F	1	(*)14081300A	Level Support
1G	5	(*)14100500A	Foot
1H	1	(*)15056100A	International Keyboard Kit①
1H	1	(*)15056200A	English Keyboard Kit①
1J	1	(*)14081700A	Cover
1K	1	(*)14081800A	Load Cell Harness
1L	1	(*)14081500A	Display Lens①
1M	1	(*)14387100A	Logic PCB
1N	1	(*)14603200A	PCB Insulator
1P	1	(*)14389200A	Display/Logic Harness②
1Q	1	(*)14424200A	Rear Decal
1R**	1	(*)14082300A	Rear Panel
1S	1	(*)14639700A	Platter
1U	2	(*)R0408800A	M8 x 30 Hex Socket Hd
1V	3	(*)14476200A	M4 x 20mm Hex Post
1W	2	R0517600A	M8 x 30 Cap Screw
1X	7	R0518300A	M3 x 10 PH Screw
1Y	2	R0513500A	#6-19 x 3/8 PH Torx
1Z	9	R0513100A	M4 x 10 PH Screw
2B	1	(*)14514500A	10-32 Standoff
2C	1	R01913020	10-32 x 3/8 One Way Screw
2G	1	(*)14528700A	Ferrite Core
3A	1	(*)15381500A	11 kg Load Cell (SC05)
3A	1	(*)15381600A	22 kg Load Cell (SC15)
3B	1	(*)14532400A	Spider Assb. (SC05)
3B	1	(*)14854300A	Spider Assb. (SC15)
3D	1	R0271600A	Cap Screw 10-32 x 1
3E	1	R0383100A	O-ring
Not Shown	1	(*)14083200A	Standard Power Supply
Not Shown	1	(*)14664800A	1.0 Amp Power Supply
Not Shown	1	(*)10386700A	Line Cord (USA)
Not Shown	1	(*)13894600A	Line Cord (UK)
Not Shown	1	(*)13902200A	Line Cord (Europe)
Not Shown	1	(*)14235700A	Line Cord (Australia)

**If the rear panel is replaced, the serial data plate from the original unit must be retained and
attached to the new rear panel.

SC30/SC60 Counting Scale
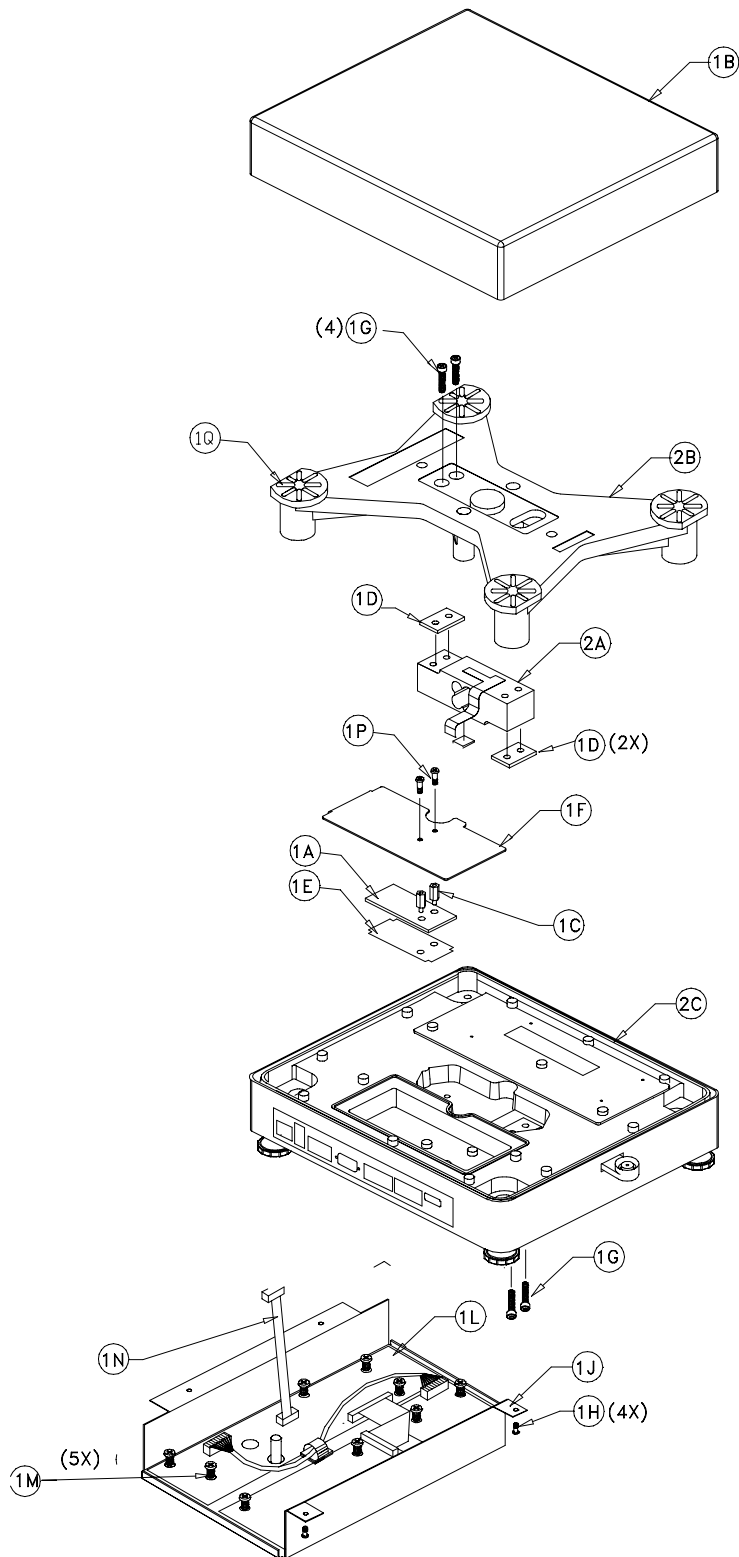
Consists of Common Parts SC30/SC60			
Symbol	Quantity	Part Number	Description
1A**	1	(*)15313500A	DigiTOL Load Cell PCB
1B	1	15083400A	Platter
1C	2	(*)14497000A	Standoff Hex, 4M/F.16MM Brass
1D	2	(*)14647700A	Spacer Block
1E	1	(*)14647900A	Insulator Logic
1F	1	(*)14648800A	Cover Plate
1G	4	R0517600A	M8 x 30 Cap Screw
1H	4	R0369800A	#8 x 5/8 Tap Screw
1J	1	(*)14649200A	Cover, Bottom
1L	1	(*)14660300A	Large SC Logic PCB
1M	5	R0514700A	M-0.7 x 6PH Torx/Slot Screw
1N	1	(*)14745600A	Load Cell Harness
1P	2	R0514600A	M40-0.7 x 8 Hex Drilled Screw
1Q	4	(*)15083900A	Platter Pad
2A***	1	(*)15213600A	45 kg Load Cell Assb.
2A***	1	(*)15213800A	100 kg Load Cell Assb.
2B	1	(*)14544100B	Spider Assb.
2C	1	(*)14749300A	Scale Enclosure Assb. (30/60 kg)
Not Shown	1	(*)140364000A	Large BC NiCad Battery
Not Shown	1	(*)14083200A	Standard Power Supply
Not Shown	1	(*)14664800A	1.0 Amp Power Supply
Not Shown	1	(*)10386700A	Line Cord (USA)
Not Shown	1	(*)13894600A	Line Cord (UK)
Not Shown	1	(*)13902200A	Line Cord (Europe)
Not Shown	1	(*)14235700A	Line Cord (Australia)

Note: 30 kg scale bases have screws that attach from the bottom of the base
** This new style PCB should only be used to replace a PCB with the same part number. If the existing PCB is part number A14080400A, both the load cell (item 2A) and the PCB (item 1A) must be replaced together. The kit with both the load cell and PCB together are:

SC30   153817 00A   (45 kg)
SC60   153818 00A   (100 kg)

*** This new style load cell should only be used to replace a load cell with the same part number. If the existing load cell is part number 14647500A (45kg) or 14647600A (100kg), both the load cell (item 2A) and the PCB (item 1A) must be replaced. The kit with both the load cell and PCB together are:

SC30   153817 00A   (45kg)
SC60   153818 00A   (100kg)

SC30/SC60 Counting
Scale Chassis
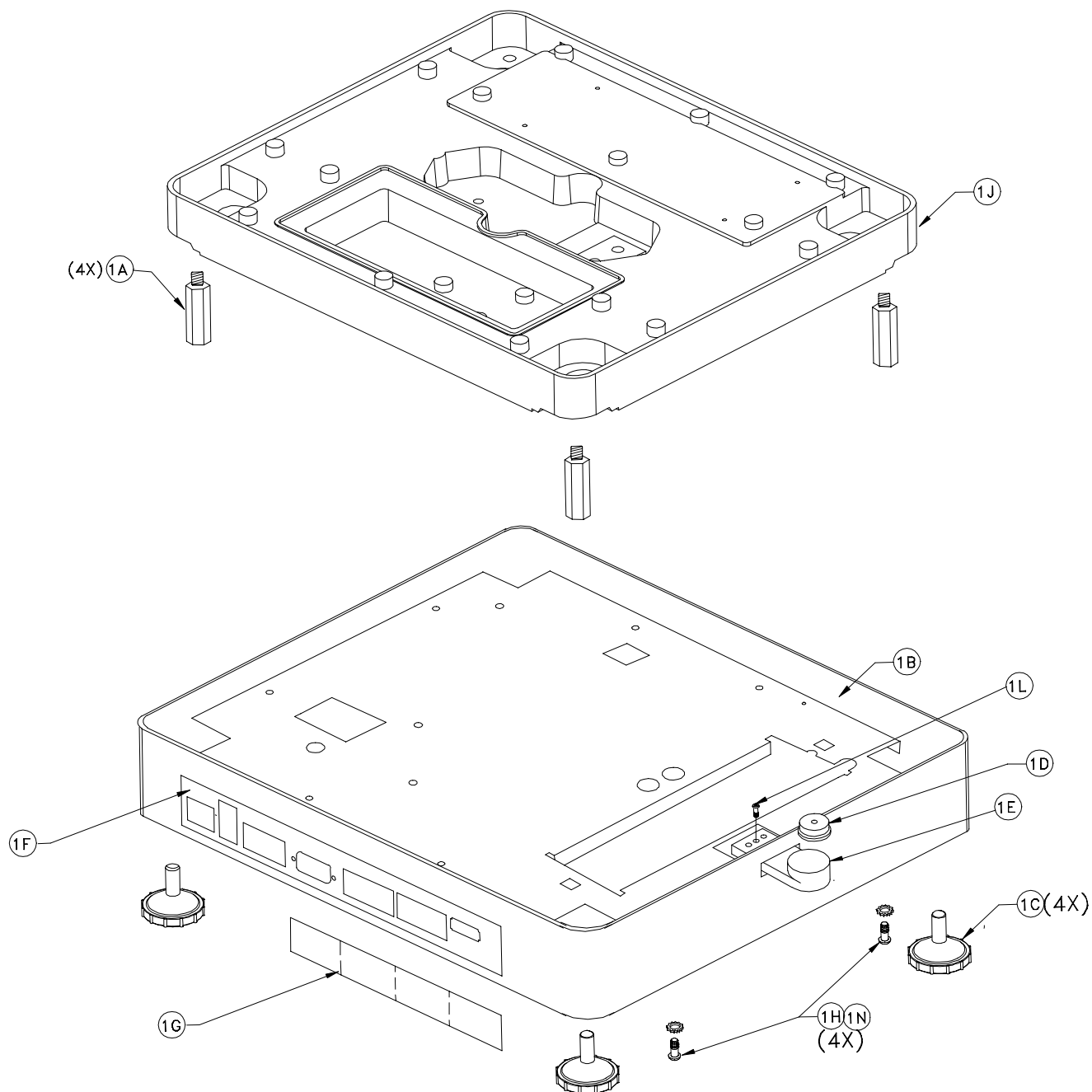
Consists of Common Parts Large SC Chassis			
Symbol	Quantity	Part Number	Description
1A	4	(*)14648300A	5/16 - 8 x1.50 Hex Post, M/F
1B*	1	(*)14663800A	Skirt, Weldment
1C	4	(*)14100500A	Foot
1D	1	(*)10268900A	Level
1E	1	(*)14664000A	Holder, Level Plastic
1F	1	(*)14663900A	Bezel, Connector
1G	1	(*)14664300A	Decal, Rear, Large SC
1H	4	R0513100A	M4-0.7 x 10 Pan HD TT Torx/Slot
1J	1	(*)14543100A	Base, Machined
1L	1	R02180050	Screw, PH Pan HD,8-32 x 0.38
1N	4	R00589130	Washer #8 I.T. Lock

*If the weldment skirt is replaced, the serial data plate from the original unit must be retained and attached to the new skirt. This should be done by shearing the section of the old skirt containing the data plate and riveting it to the new skirt.

SC30/SC60 Keyboard
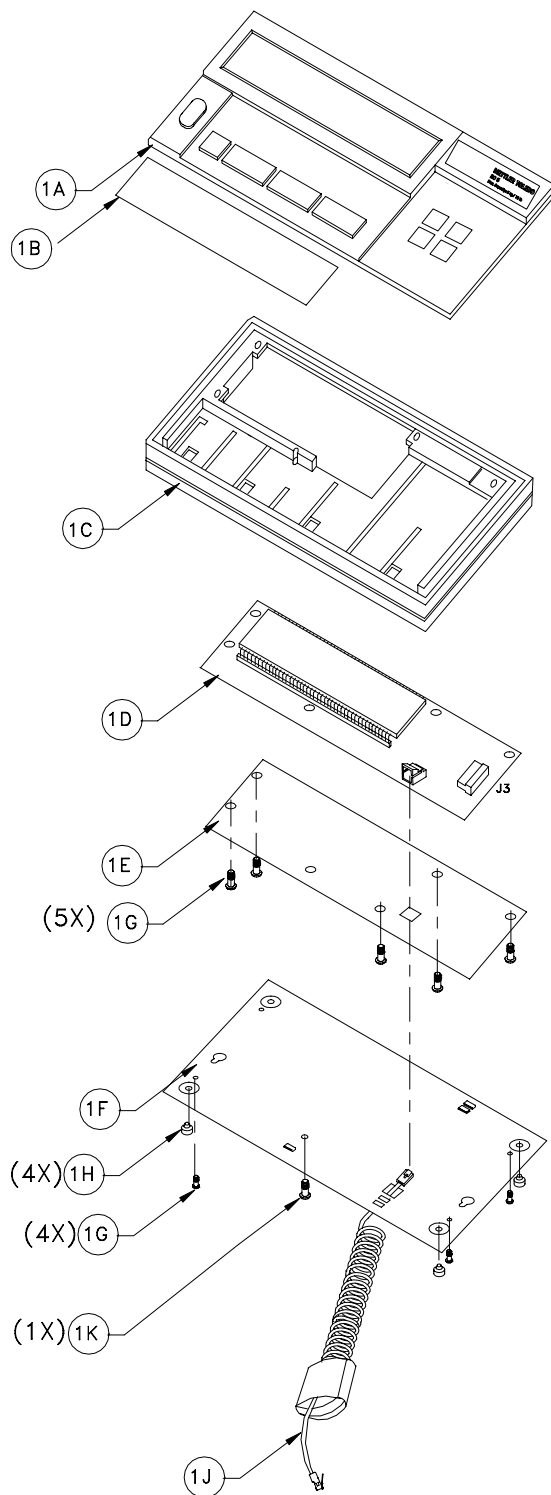
Consists of Parts for the SC30/SC60 Keyboard			
Symbol	Quantity	Part Number	Description
1A	1	(*)15056000A	English Keyboard Kit
1A	1	(*)15055900A	International Keyboard Kit
1B	1	(*)14081500A	Display Lens*
1C	1	(*)14647000A	Top Keyboard Cover
1D	1	(*)15056400A	Display PCB Kit
1E	1	(*)14663500A	Keyboard Insulator
1F	1	(*)14647100A	Bottom Plate Cover
1G	9	R0518300A	M3X10 PH Screw
1H	4	(*)14664700A	Bumper (feet)
1J	1	(*)14973400A	Keyboard Cable
1K	1	R0513100A	M0.7x10 Pan HD Torx

* Display lens included in the replacement keyboard kit.

Optional Accessories

Battery Kit SCO5/SC15

1A,1E: Battery cover is not shown

14915900A /09190045000 Consists of Parts for SC05/SC15 Battery Kit			
Symbol	Quantity	Part Number	Description
1A	2	(*)12051300A	1/4 Turn Fastener
1B	1	(*)14036400A	7.2V 4.3 AH NiCad Battery
1C	1	(*)14036500A	Battery Bracket
1D	1	(*)14309900A	Harness/Battery to Main PCB
1E*	1	(*)13912500A	Battery Cover
1F	1	(*)14034500A	Battery Harness
1G	1	(*)14470100A	Battery PCB
1H*	4	R0514700A	M40.7 x 6 Torx Screw
1J*	4	R0513200A	M3-0.5 x 8 Torx Screw

* Not shown on the diagram on page 7-8. See page 7-2 for graphic.

Battery Kit SC30/SC60

14915700A/09190049000 Consists of Parts for SC30/SC60 Battery Kit			
Symbol	Quantity	Part Number	Description
1A	2	(*)12051300A	1/4 Turn Fastener
1B	1	(*)14036400A	7.2V 43 AH NiCad Battery
1C	1	(*)14649100A	Battery Harness
1D	1	(*)14663400A	Battery Cover
1E	1	(*)14882200A	Harness/Battery to Main PCB
1F	1	(*)14470100A	Battery PCB
1G	3	R0514700A	M40.7x6 Torx Screw

Optional Accessories

Factory Number	Part Number	Description
0900-0255	14995900A	RS-232 Interface Cable 6'/2M (DB25M Connector)
0900-0278	13604900A	RS-232 Interface Cable 15'/5M (DB9F Connector)
0900-0279	13605000A	RS-232 Host Interface 15'/5M (DB25F Connector)
0901-0385	14629100A	Analog Remote Second Scale Kit
0901-0386	14629200A	DigiTOL Remote Second Scale Kit
0906-0161	14947100A	Roller Ball-TOP Platter (SC30 and SC60)
0919-0045	14615900A	NiCad Battery Option SC05, SC15
0919-0046	14744700A	Extra NiCad Battery
0919-0047	14753600A	1 Amp Power Supply w/ (USA) Line Cord
0919-0049	14915700A	NiCad Battery Option SC30, SC60
0919-0051	15055800A	External Battery Charger
0919-0052	15056500A	1 Amp Power Supply w/ (UK) Line Cord
0919-0053	15056600A	1 Amp Power Supply w/ (European) Line Cord
0919-0054	15056700A	1 Amp Power Supply w/ (Australia) Line Cord
0992-0001	15056900A	Keyboard/Display Stand SC30, SC60
0992-0002	15010700A	Stand Attachment Bracket
0992-0003	15057100A	W&M Sealing Kit
0992-0004	15090300A	Software Upgrade Kit

8   Appendices

Appendix 1: Data Interface

The SC counting scale has a bi-directional asynchronous serial port which can be programmed for one of four different functions. The functions are "printer", "host," "remote weight," or "remote count". The SC scale provides different capabilities depending upon this selection.

Printer - This selection allows the serial port to transmit data when the **PRINT** key is pressed or automatically if the autoprint feature has been enabled and certain parameters have been met. The SC scale is not able to receive any ASCII commands when programmed for printer mode.

- Scale motion will delay printer output until after motion has ceased.
- Repeat print parameter allows multiple prints per transaction.
- Data output format can be single or multiple line.
- Autoprint feature will transmit data automatically when motion settles.
- All scale data fields are available to print.

Host - This selection provides bi-directional communication with a computer or similar device. Eleven different commands are recognized by the SC scale and a corresponding action will be initiated when received. Some commands only function when the SC scale is programmed for the independent mode of operation.

- Only the standard mode of host interface should be used.
- Communication errors will be transmitted to the host when detected.
- The **PRINT** key does not function.

Remote Weight or Remote Count - This selection provides a continuous serial output of either weight data or count data to an external device. Several Mettler Toledo devices (such as the 8624 remote display and 8625 analog output module) are available for use with the continuous output. Bi-directional communication is limited to the C, T, and Z commands when the SC scale is programmed for either remote mode.

The serial port parameters such as baud rate, parity, checksum, data bits, and use of an STX (Start of Text) character are selectable in the Master mode. The baud rate is selectable for 300, 1200, 2400, 4800, 9600, or 19200. Parity settings include even, odd or none and is used for outgoing data only. Refer to chapter 5 for complete details for programming the data interface parameters.

Data Format - Print Mode

Note: for both single and multiline formats, if checksum is enabled, the checksum of each line would be placed between the <CR> and <LF>. (in other words the <LF> character is treated as the first character of each line. Checksum is defined as the 2's complement of the binary sum of the bits 0-6 of all characters on that line preceding the checksum character.

Note: The < and > characters are used for clarity only and are not transmitted.

I/O 1 Port - 9 pin female   Computer or Printer

Logic Gnd	1
Receive	2
Transmit	3
+20V*	4
Logic Gnd	5
+5V*	6
Reserved*	7
Reserved*	8
Reserved*	9

Transmit
Receive
Logic Gnd

* When making connections to the scale, these pins must NOT be used.
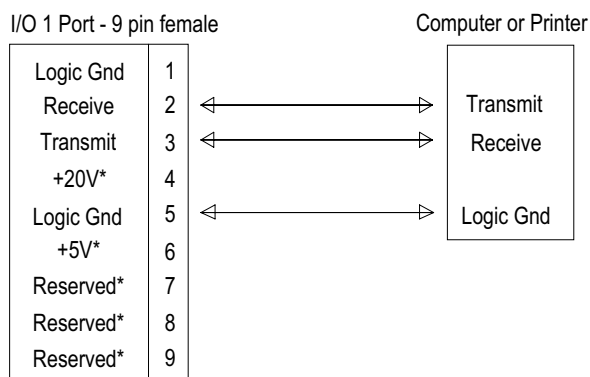
In Master mode, an ASCII <SO> (shift out) character may be added before any field to indicate to a printer that this field should print in a larger font. An ASCII <SI> (shift in) character will automatically be added at the end of the field to return the printer to normal print mode.

Single Line Output

When printing single line data, each field transmitted will be separated by five spaces. Blank fields will be printed as an additional five spaces. The transmission will be terminated with <CR> and <LF> characters.

Single Line Format Example:

<STX>**GROSS**<sp><sp><sp><sp>**1.114**<sp>**lb**<sp><sp><sp><sp><sp><sp><sp><sp>
NET<sp><sp><sp><sp><sp>**0.114**<sp>**lb**<sp><sp><sp><sp><sp><sp><sp><sp>
PCS<sp><sp><sp><sp><sp><sp><sp><sp><sp>**50**<sp><sp><sp><sp><sp><sp><sp>
<sp><sp><sp><sp>
<sp><sp><sp><sp><sp>
<sp><sp><sp><sp><sp>
<sp><sp><sp><sp><sp>
<sp><sp><sp><sp><sp><CR><LF>

Multiple Line Output

Each line in the multiple line format contains <CR><LF> characters at the end of the line. Blank fields are represented by just the <CR><LF> characters. A field description is automatically included at the beginning of each field. The field descriptions are:

GROSS	gross weight	PCS	piece count
TARE	tare weight	GRS ACC	gross accumulator total
NET	net weight	NET ACC	net accumulator total
SPL	sample quantity	PCS ACC	piece accumulator total
APW	average piece weight	% ACCY	percent accuracy

Multi Line Format Example:

<STX>**GROSS**<sp><sp><sp><sp>**1.114**<sp>**lb**<sp><sp><sp>><CR><LF>
NET<sp><sp><sp><sp><sp><sp>**0.114**<sp>**lb**<sp><sp><sp><CR><LF>
PCS<sp><sp><sp><sp><sp><sp><sp><sp><sp>**50**<sp><sp><sp><sp><sp><sp><CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>
<CR><LF>

Data Format - Host Mode

A command set is provided to support key scale functions. The following commands may be transmitted to the scale from a host via the serial I/O port. When the SC scale has been programmed as serial device = host.

Command	Description
<T><CR>*	Tare the weight on the scale.
<T><xx.xxxxx><CR>*	Tare xx.xxxxx from the scale weight, variable length field.
<A><xx.xxxxx><CR>*	Enter APW xx.xxxxx, (variable length field).
<H><CR>	Clear accumulators.
<C><CR>	Clear scale to gross mode.
<Z><CR>	Zero the scale, if within range, when no-motion condition exists.
<P><CR>	Print. Send data as specified.
<S><xxxxx><CR>*	Enter xxxxx (up to 5 digits) as the sample quantity.
<K><CR> or <U > <CR>	Switch displayed weight units.
<+><CR>	Accumulate selected value(s).

* These commands may only be used when the scale is programmed for the independent mode of operation. All other commands work in both dependent and independent modes.

To facilitate interface with a computer, a time delay clears a command or data entry if the <CR> or ASCII carriage return character is not received within 10 seconds after the command is received.

The Repeat Print feature allows only one "P" command to be accepted per count transaction when function enabled.

The scale automatically rounds off data so that the least significant digit entered need not be the same as the display increment. For example, if tare data is sent as a variable length field, .1, 0.1, and 0.100 all represent 0.1 lb tare.

The < and > characters are shown to separate characters and must not be transmitted.

Errors Codes

General error responses are:

ET   An error has occurred during transmission. This normally occurs when the checksum is incorrect.

ES   A syntax error has occurred. This normally occurs when the message is improperly formatted.

EL   A logic error has occurred. This normally occurs when a legal action is attempting to take place at the wrong time or in an invalid sequence, such as trying to sample when you are already in the counting state.

EF   A function error has occurred. This is an internal error. A function was requested that has an error in execution on the SC scale.

EI   An implementation error has occurred. The function requested has not been fully implemented.

Data Format - Remote Weight and Remote Count Mode

The continuous output format is shown below:

Character		Status[2]			Field 1 [3]						Field 2 [4]							
	1[1]	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17[5]	18[6]
Data	STX	SWA	SWB	SWC	MSD	—	—	—	—	LSD	MSD	—	—	—	—	LSD	CR	CHK

Table Notes: MSD Most significant digit
LSD Least significant digit

1. STX: ASCII start of text character, hex value 02.
2. SWA, SWB, and SWC: Status Words A, B, and C. See below.
3. Field 1: In weight mode, this will be six digits of displayed weight data including leading zeroes. No decimal point in field. In count mode, this will be six digits of count (no leading zeroes) when the scale is in the count mode or six spaces if not in the count mode.
4. Field 2: In weight mode, this will be six digits of tare weight data including leading zeroes. No decimal point in field. In count mode, this will always be six zeroes.
5. CR: ASCII carriage return, hex value 0D.
6. CHK: Optional checksum character defined as the 2's compliment of the low 7 order bits of the binary sum of all characters preceding the checksum.

Status Word A Bit Definitions (N/A = not applicable)								
		Status Bit						
Function	Selection	6	5	4	3	2	1	0
Decimal Point or Dummy Zero	X00	0	1	N/A	N/A	0	0	0
	X0					0	0	1
	X					0	1	0
	0.X					0	1	1
	0.0X					1	0	0
	0.00X					1	0	1
	0.000X					1	1	0
	0.0000X					1	1	1
Display Increment Size	X1			0	1	N/A	N/A	N/A
	X2			1	0			
	X5			1	1			

Status Word B Bit Definitions	
Function/Value	Bit
Gross/Net: Net = 1	0
Negative = 1	1
Over Capacity = 1	2
Motion = 1	3
Lb/Kg: Kg = 1	4
1	5
Powerup = 1	6

Status Word C Bit Definitions	
Function/Value	Bit
0	0
0	1
0	2
Print Request = 1	3
Expanded Weight Mode = 1	4
1	5
Manual Tare Kg Only = 1	6

Appendix 2: Scale Build Determination

SC capacities when calibrated in pounds

MODEL	CALIBRATED CAPACITY	SWITCHABLE CAPACITY	DISPLAY DIVISIONS
SC05	10 x 0.002 lb	5 x 0.001 kg	5,000
	10 x 0.001 lb	5 x 0.0005 kg	10,000
	10 x 0.0005 lb	4 x 0.0002 kg	20,000
	10 x 0.0002 lb	5 x 0.0001 kg	50,000
	10 x 0.0001 lb	5 x 0.00005 kg	100,000
	15 x 0.005 lb	6 x 0.002 kg	3,000
	15 x 0.002 lb	7.5 x 0.001 kg	7,500
	15 x 0.001 lb	7.5 x 0.0005 kg	15,000
	15 x 0.0005 lb	6 x 0.0002 kg	30,000
	15 x 0.0002 lb	7.5 x 0.0001 kg	75,000
SC15	20 x 0.005 lb	8 x 0.002 kg	4,000
	20 x 0.002 lb	10 x 0.001 kg	10,000
	20 x 0.001 lb	10 x 0.0005 kg	20,000
	20 x 0.0005 lb	8 x 0.0002 kg	40,000
	20 x 0.0002 lb	10 x 0.0001 kg	100,000
	30 x 0.01 lb	15 x 0.005 kg	3,000
	30 x 0.005 lb	12 x 0.002 kg	6,000
	30 x 0.002 lb	15 x 0.001 kg	15,000
	30 x 0.001 lb	15 x 0.0005 kg	30,000
	30 x 0.0005 lb	12 x 0.0002 kg	60,000
	37.5 x 0.005 lb	15 x 0.002 kg	7,500
	37.5 x 0.0005 lb	15 x 0.0002 kg	75,000
SC30	60 x 0.02 lb	30 x 0.01 kg	3,000
	60 x 0.01 lb	30 x 0.005 kg	6,000
	60 x 0.005 lb	24 x 0.002 kg	12,000
	60 x 0.002 lb	30 x 0.001 kg	30,000
	60 x 0.001 lb	30 x 0.0005 kg	60,000
SC60	120 x 0.05 lb	48 x 0.02 kg	2,400
	120 x 0.02 lb	60 x 0.01 kg	6,000
	120 x 0.01 lb	60 x 0.005 kg	12,000
	120 x 0.005 lb	48 x 0.002 kg	24,000
	120 x 0.002 lb	60 x 0.001 kg	60,000

Table 2-a

Note: If grams is selected as a weight unit, the capacity and increment will be similar to the kilogram values shown except with the decimal point shifted three places to the right. Gram weight units are indicated with the letter [g] at the beginning of the right A/N display.

SC capacities when calibrated in kilograms

MODEL	CALIBRATED CAPACITY	SWITCHABLE CAPACITY	DISPLAY DIVISIONS
SC05	5 x 0.001 kg	10 x 0.002 lb	5,000
	5 x 0.0005 kg	10 x 0.001 lb	10,000
	5 x 0.0002 kg	12.5 x 0.0005 lb	25,000
	5 x 0.0001 kg	10 x 0.0002 lb	50,000
	5 x 0.00005 kg	10 x 0.0001 lb	100,000
	6 x 0.002 kg	15 x 0.005 lb	3,000
	6 x 0.001 kg	12 x 0.002 lb	6,000
	6 x 0.0005 kg	12 x 0.001 lb	12,000
	6 x 0.0002 kg	15 x 0.0005 lb	30,000
	6 x 0.0001 kg	12 x 0.0002 lb	60,000
SC15	10 x 0.002 kg	25 x 0.005 lb	5,000
	10 x 0.001 kg	20 x 0.002 lb	10,000
	10 x 0.0005 kg	20 x 0.001 lb	20,000
	10 x 0.0002 kg	25 x 0.0005 lb	50,000
	10 x 0.0001 kg	20 x 0.0002 lb	100,000
	12 x 0.005 kg	24 x 0.01 lb	2,400
	12 x 0.002 kg	30 x 0.005 lb	6,000
	12 x 0.001 kg	24 x 0.002 lb	12,000
	12 x 0.0005 kg	24 x 0.001 lb	24,000
	12 x 0.0002 kg	30 x 0.0005 lb	60,000
	15 x 0.005 kg	30 x 0.01 lb	3,000
	15 x 0.002 kg	37.5 x 0.005 lb	7,500
	15 x 0.001 kg	30 x 0.002 lb	15,000
	15 x 0.0005 kg	30 x 0.001 lb	30,000
	15 x 0.0002 kg	37.5 x 0.0005 lb	75,000
SC30	30 x 0.01 kg	60 x 0.02 lb	3,000
	30 x 0.005 kg	60 x 0.01 lb	6,000
	30 x 0.002 kg	75 x 0.005 lb	15,000
	30 x 0.001 kg	60 x 0.002 lb	30,000
	30 x 0.0005 kg	60 x 0.001 lb	60,000
SC60	60 x 0.02 kg	150 x 0.05 lb	3,000
	60 x 0.01 kg	120 x 0.02 lb	6,000
	60 x 0.005 kg	120 x 0.01 lb	12,000
	60 x 0.002 kg	150 x 0.005 lb	30,000
	60 x 0.001 kg	120 x 0.002 lb	60,000

Table 2-b

Note: If grams is selected as a weight unit, the capacity and increment will be similar to the kilogram values shown except with the decimal point shifted three places to the right. Gram weight units are indicated with the letter [g] at the beginning of the right A/N display.

Appendix 3: Master Mode Default Values

The following table lists the factory default values for each parameter in Master Mode. Use the **As Configured** column to record your actual setup configuration. Factory defaults are not set for Service Mode parameters.

MASTER MODE DEFAULT VALUES			
DEFAULT	AS CONFIGURED	DEFAULT	AS CONFIGURED
User Program Block		**Sample Program Block**	
Language - English		Pcs/Unit - Wgt/Pcs	
Beeper		Mode	
Keyboard - OFF		Variable Sample - ON	
Error - ON		Sample Quantity - 10	
Sleep - OFF		Minimum APW - 0.02%	
		Percent Accuracy - OFF	
Scale Program Block		APW Enhancement - MANUAL	
Units		Auto Clear APW - OFF	
Display - lb		Sample Tare - OFF	
Alternate Unit - kg			
Zero		**Count Program Block**	
AZM - Gross		Mode - Tare, Spl	
Auto Capture - ±10%		Sign	
PB Capture - ±10%		Count-in - Pos	
Motion Range - ± 0.1d		Count-out - Neg	
Filter - Light		Include Sample - OFF	
Tare Program Block		**Data Program Block**	
Mode - PB Only		Data Program	
Tare Interlock - OFF		Count Accumulator - ON	
Chain Tare - ON		Gross Accumulator - ON	
Auto Clear Tare - OFF		Net Accumulator - ON	
Auto Tare - OFF		Clear Accumulator - OFF	
		Trans ID - OFF	
		Time - OFF	
		Adjust - 0	
		Direction - Pos	
		Date - OFF	

DEFAULT	AS CONFIGURED
Interface Program Block	
Port 1 Device - Printer	
Protocol	
Baud Rate - 9600	
Parity - Even	
Checksum - OFF	
Character Bits - 7	
STX Character - ON	
Print Lines - Multiple	
Printer Type -8845	
Repeat Print - ON	
Auto Print - OFF	
Print	
Field 1 - Gross Weight	
EP F1 - OFF	
Field 2 - Net Weight	
EP F2 - OFF	
Field 3 - Pieces	
EP F3 - OFF	
Field 4 - Blank	
EP F4 - OFF	
Field 5 - Blank	
EP F5 - OFF	
Field 6 - Blank	
EP F6 - OFF	
Field 7 - Blank	
EP F7 - OFF	

NOTES

METTLER TOLEDO

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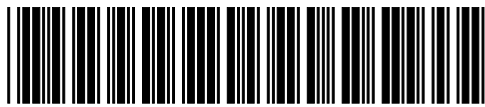
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