DETECTO®

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Model 420 Series
Digital Precision Balance
Owner's Manual

TABLE OF CONTENTS

Serial Number _____

Date of Purchase _____

Purchased Form _____

_____

_____

RETAIN THIS INFORMATION FOR FUTURE USE

PRECAUTIONS

Before using this instrument, read this manual and pay special attention to all "WARNING" symbols:


IMPORTANT


ELECTRICAL WARNING

INTRODUCTION

Thank you for purchasing our Detecto Model 420 Series Digital Precision Balance. This manual will guide you through the installation and operation of your scale. Please read it thoroughly before attempting to operate this scale and keep it available for future reference.

This manual is for the following Model 420 Series Digital Precision Balances:

420-100, 420-600, 420-1200, 420-2000, and 420-3000

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Disclaimer

While every precaution has been taken in the preparation of this manual, the Seller assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein. All instructions and diagrams have been checked for accuracy and ease of application; however, success and safety in working with tools depend to a great extent upon individual accuracy, skill, and caution. For this reason, the Seller is not able to guarantee the result of any procedure contained herein. Nor can they assume responsibility for any damage to property or injury to persons occasioned from the procedures. Persons engaging the procedures do so entirely at their own risk.

FCC Compliance Statement

This equipment generates uses and can radiate radio frequency and if not installed and used in accordance with the instruction manual, may cause 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. The operation of this equipment in a residential area may cause interference in which case the user will be responsible to take whatever measures necessary to correct the interference.

You may find the booklet “How to Identify and Resolve Radio TV Interference Problems” prepared by the Federal Communications Commission helpful. It is available from the U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 001-000-00315-4.

Proper Disposal

When this device reaches the end of its useful life, it must be properly disposed of. It must not be disposed of as unsorted municipal waste. Within the European Union, this device should be returned to the distributor from where it was purchased for proper disposal. This is in accordance with EU Directive 2002/96/EC. Within North America, the device should be disposed of in accordance with the local laws regarding the disposal of waste electrical and electronic equipment.

It is everyone’s responsibility to help maintain the environment and to reduce the effects of hazardous substances contained in electrical and electronic equipment on human health. Please do your part by making certain that this device is properly disposed of. The symbol shown to the right indicates that this device must not be disposed of in unsorted municipal waste programs.

SPECIFICATIONS

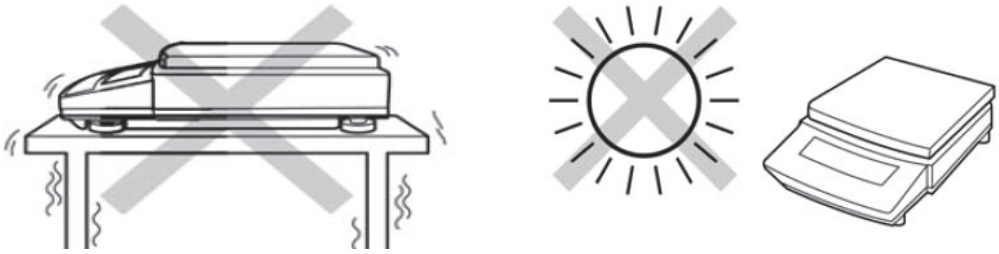
Model: 420-100 420-600 420-1200 420-2000 420-3000	Capacity and Division Value 100 g x 0.01 g 600 g x 0.01 g 1200 g x 0.02 g 2000 g x 0.02 g 3000 g x 0.05 g
Model: 420-600 420-1200 420-3000	Capacity x Verification Interval “e” / Division “d” 600 g x e = 0.1 g / d = 0.01 g 1200 g x e = 0.2 g / d = 0.02 g 3000 g x e = 0.5 g / d = 0.05 g
Weight Display:	Seven-digit, seven-segment LCD, 0.9-inch (23 mm) high digits with blue backlight
Functions:	Weight, Counting
Keys:	ON/OFF, TARE, ZERO, SMPL (Sample), CAL (Calibration), UNIT, and PRINT
Communication Interface:	RS232
Power Requirements:	Built-in rechargeable battery (6V DC/2.8 Ah) or 100 to 240V AC 50/60Hz 12V DC 1000 mA wall plug-in UL/CSA listed AC power adapter
Tare:	100% of scale capacity
Enclosure Type:	Polycarbonate body with SUS304 stainless steel tray
Shipping Weight:	6.8 lb (3.1 kg)
Dimensions:	8.6 in W x 11.5 in D x 3.2 in H (219 mm W x 292 mm D x 80 mm H)
Dimensions with Air Shield:	8.6 in W x 11.5 in D x 6.9 in H (219 mm W x 292 mm D x 176 mm H)
Tray Size: Model 420-3000 All Other Models	 7.4 in W x 5.8 in D (188 mm W x 148 mm D) 5.7 in W x 4.5 in D (145 mm W x 115 mm D)
Operating Environment:	Temperature Range: 50 to 104 ºF (10 ºC to 40 ºC), Humidity: 40 to 85%
Storage Environment:	Temperature Range: 50 ºF to 86 ºF (10 ºC to 30 ºC), Humidity: 0 to 95%
Approvals: 420-600 420-1200 420-3000	 NTEP – Certificate of Conformance No. 20-049 OIML – R76/2006-A-DK2-2020.09 EU Type Approval – 0200-NAWI-08686

SITE PREPARATION REQUIREMENTS

The Model 420 Series Digital Precision Balance is a precision weight indicating instrument. As with any precision instrument, it requires an acceptable environment to operate at peak reliability and performance. This section is provided to assist you in obtaining such an environment.

Environmental

Place the scale on a stable, vibration-free level surface away from direct sunlight, and to provide adequate air circulation to keep the area around the scale clear.



Do not place the scale in locations with excessive temperatures and humidity. For example, directly in front of a heating or cooling vent, a fan, window, or any location with a moving air source. Such a location will subject it to sudden temperature changes, which may result in unstable weight readings.

Electrical Power

The Model 420 Series Digital Precision Balance has been designed to operate from an included 100 to 240V AC 50/60Hz 12V DC 1000 mA wall plug-in UL/CSA listed AC power adapter with a US plug.

- The socket-outlet supplying power to the scale should be near the scale and should be easily accessible.
- Ensure that the scale has good, clean AC power and is properly grounded. In areas subject to lightning strikes, additional protection to minimize lightning damage, such as surge suppressors, should be installed.

Electrical Noise Interference

To prevent electrical noise interference, make certain all air conditioning and heating equipment, lighting, or other equipment with heavily inductive loads, are on circuits separate from the system. These sources of disturbances can affect the operation of the scale. Steps must be taken to prevent possible adverse effects on the scale. For example, using simple line filters, isolation transformers, power regulators, or uninterruptible power supplies.

INSTALLATION

Unpacking

Before beginning the installation of your Model 420 Series Digital Precision Balance, make certain the scale has been received in good condition. Carefully remove the scale from the shipping carton and inspect it for any evidence of damage (such as exterior dents or scratches) that may have taken place during shipment. Keep the carton and packing material for return shipment if it should become necessary. It is the responsibility of the purchaser to file all claims for any damages or losses incurred during transit.

NOTE: Due to the larger commodity tray of the Model 420-3000, the Trim Ring and Air Shield are not included.

Trim Ring Installation

1. Ensure the tray is tightened to the scale.
2. Install the stainless steel commodity tray.
3. Place the trim ring over the scale, aligning the pins on the trim ring with the holes in the top of the scale.

Step 1

Step 2

Step 3

4. Insert the pins of the trim ring into the holes in the top of the scale.
5. Press down on all corners of the trim ring to ensure it is completely down against the body of the scale.
6. The scale is ready to be used.

Step 4

Step 5

Step 6

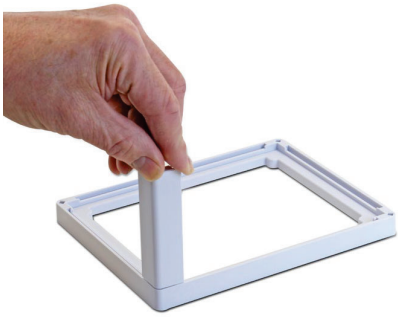
INSTALLATION, CONT.

Air Shield Assembly

1. Ensure the tray is tightened to the scale.
2. Install the stainless steel commodity tray.
3. Install the L-type supports to the bottom frame. Note that the frames are identical and can be used for the top or bottom.

Step 1

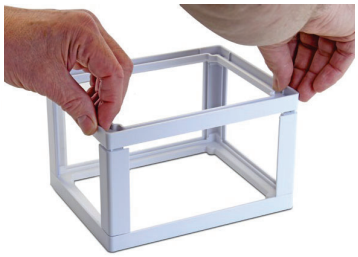
Step 2



Step 3

4. Install the organic glass panels into the groove of the L-type supports (left, right, front, and back.
5. Install the top frame and press down.
6. Place the top cap on the assembled frame.

Step 4



Step 5

Step 6

7. The air shield is ready to be installed on the scale.

NOTE: To install the air shield on the scale, the trim ring must be removed.

INSTALLATION, CONT.

Placement

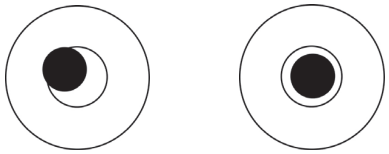
Place the scale on a stable, vibration-free table, stand, or cart. Make certain the AC adapter cord and peripheral cables are routed out of the way of normal traffic.

DO NOT place the scale on an unstable table, stand, or cart. The scale may fall causing injury to the operator, and seriously damage the unit, or proper operation of the scale may be inhibited.

Level Adjustment

Referring to the image below, observe the bubble level located in the center of the back of the scale to make certain the scale is level.

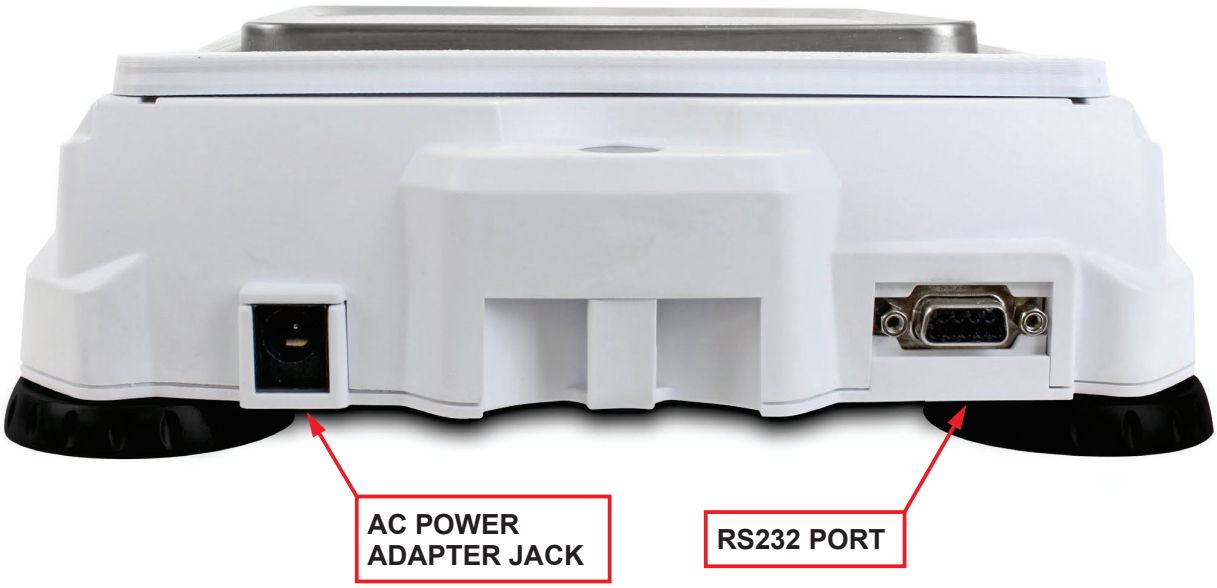
If the scale is not level (the bubble will not be centered), adjust all four (4) feet as required to center the bubble, and attain a level scale. See the images below.



Not Level **Level**

Screw foot in or out to level balance.

INSTALLATION, CONT.



AC Power Adapter

To apply power to the scale using the supplied 12V DC, 1000mA wall plug-in AC power adapter, insert the plug from the power adapter cable into the power jack on the back of the scale and then plug the AC power adapter into the proper electrical outlet. The scale is now ready for operation.

RS232 Port

The Model 420 Series Digital Precision Balance has an RS232 9-pin "D" connector port located on the back of the scale that may be used to send weight and associated data to a printer or other RS232 device. The port can be configured to send data continuously, send when a stable weight is obtained, or when the **PRINT** key is pressed.

Battery

The Model 420 Series Digital Precision Balance uses a 6V DC, 2.8 AH built-in rechargeable battery, and can operate for up to 20 hours of continuous use with a fully charged battery.

Battery Charging

To recharge the battery, the AC power adapter must be connected to an AC power outlet and plugged into the scale. It will take approximately 8 hours to fully recharge the battery in the scale. While the battery is charging the scale can still be operated.

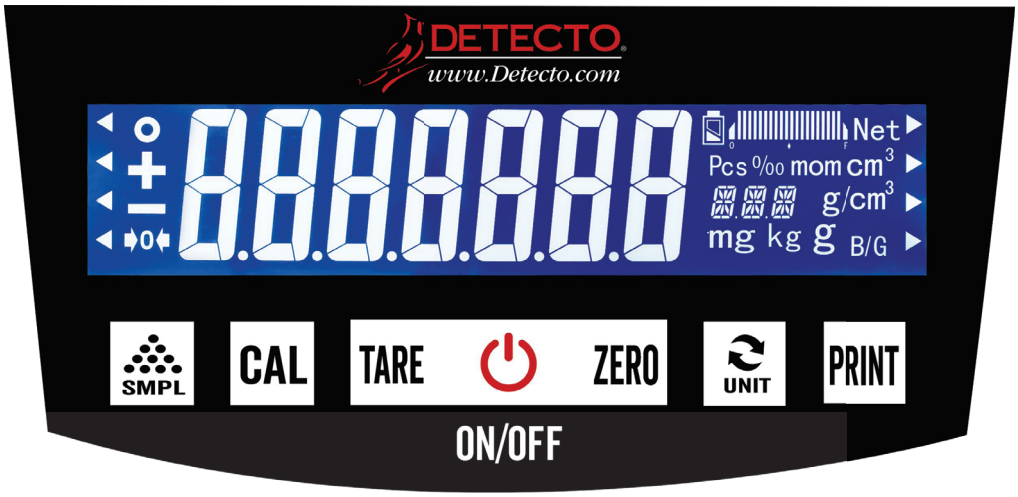
Charging the battery for more than 8 hours *will not* damage it. Note that if the AC power adapter is disconnected before the 8 hours, the scale will continue to charge the battery when the AC power adapter is plugged back in.

Low Battery

When the rechargeable battery voltage drops too low for accurate weighing, the scale will automatically shut off and you will be unable to turn it back on. When this occurs, the operator should plug-in the AC power adapter to charge the battery.

DISPLAY SYMBOLS

The display symbols are turned on to indicate that the scale is in the mode corresponding to the symbol or that the status indicated by the symbol is active.



➡0⬅
This symbol is turned on to indicate that the weight display is at center-of-zero.

○
This symbol is turned on when the weight display is stable.

This symbol is turned on to indicate that the scale is powered by the rechargeable battery.

Load Bars
This symbol provides an easy-to-read indication of the remaining capacity of the scale when weighing items. The load bar range displayed is from empty (0) to full (F) load.

Net
The Net symbol is turned on to indicate that the weight shown on the display is net weight and not gross or scale weight. Net weight is determined by subtracting the weight of a container from the gross or scale weight.

Pcs, ‰, 8.8.8., kg, g, and B/G
These symbols are turned on to indicate that the displayed weight or operation mode of the scale is in one of the following:

g	gram
kg	kilogram
ct	MET.CARAT
dr	AVOIRDUPOIS DRAM
oz	AVORIRDUPOIS OUNCE
lb	AVORIRDUPOIS POUND

GN	GRAIN
dwt	PENNY WEIGHT
PCS	Piece Count
%	
‰	
B/G	

KEY FUNCTIONS

⏻ ON/OFF

This is the **ON/OFF** key. Pressing this key will apply power to the scale and turn it on. The scale will perform a display test and then change to the weight display.

If the scale is already on, pressing this key will display oFF, and then turn it off.

SMPL

This key is used when performing a counting operation. Pressing the **SMPL** key starts the counting operation by prompting with the initial sample size (5). Repeatedly pressing the **ZERO** key allows selecting a different sample size (10, 20, 50, 100, 200, 500, or 1000) if required. Placing the sample on the scale and pressing the **SMPL** key again, sets the sample size. The scale is now ready to add additional items to count.

NOTE: To perform a counting operation, the scale must be in the PCS, %, or ‰ operation mode. Refer to the **UNIT** key for details on how to change operation modes.

CAL

This key is used when calibrating the scale. Note that the Model 420 Series Digital Precision Balance was calibrated at the factory and should not require adjustment.

Calibrating the scale requires certified test weights, breaking the calibration seal, and changing the setting of the calibration switch. To maintain a high degree of accuracy, only a qualified technician should calibrate the scale.

TARE

1. The **TARE** key is used to tare (zero) the weight of a container (e.g. a pan or a box) up to the full capacity of the scale.
2. During Configuration, the **TARE** key is used to move to the next digit position.

ZERO

1. The **ZERO** key is used to zero the weight display if the scale is not at zero. Note that up to a maximum of 4% of the scale capacity can be zeroed.
2. During Configuration, the **ZERO** key is used to change to the next setting value.
3. In the Counting operation, the **ZERO** key is pressed repeatedly to advance through the available sample sizes (5, 10, 20, 50, 100, 200, 500, or 1000). Note that the default sample size is 5.

UNIT

This key is used to change the operation mode or weighing units of the scale (if selected during Configuration). Press the **UNIT** key repeatedly to step through and select the desired operation mode or weighing units.

PRINT

This key is used to send weight and associated data to a printer, computer, or other RS232 devices.

OPERATING INSTRUCTIONS

The membrane keypad is not to be operated with pointed objects (pencils, pens, fingernails, etc.). Damage to the keypad resulting from this practice will *NOT* be covered under warranty.

Turning the Scale On and Off

Press the ⏻ **ON/OFF** key to turn the scale on. The scale will perform a display test (turn on all segments and symbols, display 9999999 down to 1111111 with the beeper sounding), show the software version, and then the scale capacity momentarily, and finally changes to the weight display.

To turn the scale off, press the ⏻ **ON/OFF** key. The display will show OFF momentarily and the scale will turn off.

Basic Weighing Operation

Place the item to be weighed on the tray, wait a moment for the display to stabilize, and then read the weight.

Zero the Weight Display

If the scale is not showing zero weight on the display, press the **ZERO** key. The weight display will return to zero with the ➡**0**⬅ (ZERO) and ○ (STABLE) symbols turned on to indicate a stable, center-of-zero weight condition.

NOTE: The scale will zero the weight display until 4% of the scale capacity is reached.

Tare Operation

Place the container (e.g. a pan or a box) on the tray, allow the scale to stabilize, and then press the **TARE** key. The Net symbol will turn on and the load symbol will show bars based on the weight. Note that when removing the container from the tray, the scale will display negative weight.

Clear Tare Weight

To clear a tare weight, press the **TARE** key with the tray empty. This will reset the weight display to zero.

Change the Weighing Unit or Operation Mode

Press the **UNIT** key to select a different weighing unit or operation mode. Pressing the **UNIT** key repeatedly will step through the enabled weighing units or operation modes.

NOTE: Multiple weighing units and operation modes must be enabled during Configuration for this function to be operational.

OPERATING INSTRUCTIONS, CONT.

Counting Mode (PCS, %, or ‰ Operation Mode)

1. Press the **UNIT** key to select the PCS, %, or ‰ operation mode.
2. Place the container (e.g. a pan or a box) on the tray, allow the scale to stabilize, and then press the **TARE** key.
3. Press the **SMPL** key.
4. The scale display will change to show 5 (the initial sample size).
5. If a different sample size is required, press the **ZERO** key repeatedly to select the sample size (10, 20, 50, 100, 200, 500, or 1000).
6. Place the sample on the tray, and then press the **SMPL** key.
7. Add additional items to the tray to complete the counting operation.

Sample settings are saved until the **SMPL** key is pressed again to establish a new sample size, or the **UNIT** key is pressed to change units (modes).

Counting Mode (B/G Operation Mode)

1. Press the **UNIT** key to change to the B/G mode.
2. Press the **SMPL** key.
3. The scale display will change to show 1888888 (proportion value).
4. Press the **ZERO** key to set the numerical value of the first digit.
5. Press the **TARE** key to move to the next digit position.
6. Repeat steps 4 and 5 for each digit until the proportion value has been changed.
7. Press the **SMPL** key to confirm the setting.

CONFIGURATION

Setting the Date and Time

1. Press the ⏻ **ON/OFF** key to turn the scale on.
2. After the scale has completed the display test and is showing the weight display, press and hold the **ZERO** key for approximately 3 seconds.
3. When the display shows rtC-SEt (RTC-SET), release the key. The display will change to show YEAr (Year) and the current year setting.

The following keys are used when setting date and time:

- Press the **ZERO** key to change the flashing digit value.
- Press the **TARE** key to move to the next digit position.
- Press the **SMPL** key to save the setting and advance to the next prompt.

YEAr (Year)

If the current setting for YEAr (Year) is acceptable, press the **SMPL** key to save it and proceed to the Month prompt. Otherwise, use the **ZERO** and **TARE** keys to select a new setting and then press the **SMPL** key to save it and proceed to the Month prompt.

Mon (Month)

If the current setting for Mon (Month) is acceptable, press the **SMPL** key to save it and proceed to the Day prompt. Otherwise, use the **ZERO** and **TARE** keys to select a new setting and then press the **SMPL** key to save it and proceed to the Day prompt.

dAY (Day)

If the current setting for dAY (Day) is acceptable, press the **SMPL** key to save it and proceed to the Hour prompt. Otherwise, use the **ZERO** and **TARE** keys to select a new setting and then press the **SMPL** key to save it and proceed to the Hour prompt.

hour (Hour)

If the current setting for hour (Hour) is acceptable, press the **SMPL** key to save it and proceed to the Minute prompt. Otherwise, use the **ZERO** and **TARE** keys to select a new setting and then press the **SMPL** key to save it and proceed to the Minute prompt.

Min (Minute)

If the current setting for Min (Minute) is acceptable, press the **SMPL** key to save it and return to the weight display. Otherwise, use the **ZERO** and **TARE** keys to select a new setting and then press the **SMPL** key to save it and return to the weight display.

CONFIGURATION, CONT.

Selecting the Weighing Units and Operation Modes

The following keys are used when selecting the weighing units and operation modes to use:

- Press the **UNIT** key to step through the weighing units and operation modes.
- Press the **PRINT** key to toggle the unit selection or operating mode on or off.
- Press the **SMPL** key to save the settings.

1. Press the ⏻ **ON/OFF** key to turn the scale on.
2. After the scale has completed the display test and is showing the weight display, press and hold the **UNIT** key for approximately 3 seconds.
3. When the display shows UNITSET (UNITSET), release the key. The display will change to show on with the **"g"** (gram) symbol turned on.
4. If the current setting for g (gram) is acceptable, press the **UNIT** key to save it and proceed to the next unit prompt. Otherwise, use the **PRINT** key to toggle the setting and then press the **UNIT** key to save it and proceed to the unit prompt.
5. Repeat this procedure for each weighing unit or operation mode desired. Refer to the Table of Weighing Units and Operation Modes below.
6. When all desired weighing units and operation modes have been selected, press the **SMPL** key to save all the settings and return to the weight display.

NOTE: The weighing unit or operation mode displayed when the **SMPL** key is pressed to save the settings, will be the default weighing unit or operation mode when the scale is powered on.

Table of Weighing Units and Operation Modes

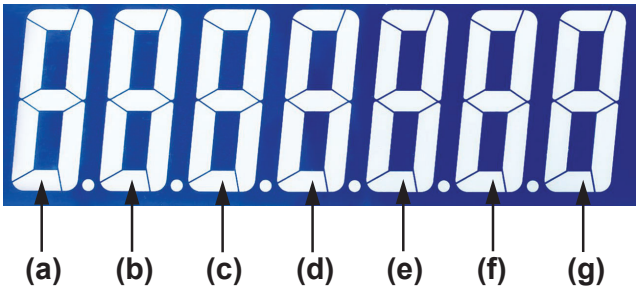
g	gram
kg	kilogram
ct	MET.CARAT
dr	AVOIRDUPOIS DRAM
oz	AVORIRDUPOIS OUNCE
lb	AVORIRDUPOIS POUND

GN	GRAIN
dwt	PENNY WEIGHT
PCS	Piece Count
%	
‰	
B/G	

CONFIGURATION, CONT.

Setting the RS232 Port

1. Press the ⏻ **ON/OFF** key to turn the scale on.
2. After the scale has completed the display test and is showing the weight display, press and hold the **PRINT** key for approximately 3 seconds.
3. When the display shows rS--SEt (RS--SET), release the key. The display will change to show a seven-digit number representing the current settings with the digit in position (g) flashing.



NOTE: Refer to the chart below for selecting the RS232 port settings.

Position	Meaning	Available Settings
a	Baud Rate	0 = 9600 1 = 19200
b	Output Mode	0 = Continuous Output 1 = Output on Stable Weight 2 = Press **PRINT** key
c	Date and Time	0 = None 1 = Output Date and Time
d	ITEM	0 = None 1 = Output ITEM
e	Device Selected	0 = PC work 1 = Print by Tag Paper (Labels) 2 = Print by Continuous Paper 3 = Micro Printer
f	Not applicable	Always 0
g	Not applicable	Always 0

4. With the digit in position (g) flashing, press the **TARE** key twice to proceed to the digit position (e). *Note that digit position (f) and (g) are not used*.
5. If the current flashing setting for digit position (e) is acceptable, press the **TARE** key to save it and proceed to digit position (d). Otherwise, use the **ZERO** key to select a new setting, and then press the **TARE** key to save it and proceed to digit position (d).
6. If the current flashing setting for digit position (d) is acceptable, press the **TARE** key to save it and proceed to digit position (c). Otherwise, use the **ZERO** key to select a new setting, and then press the **TARE** key to save it and proceed to digit position (c).

CONFIGURATION, CONT.

Setting the RS232 Port, Cont.

7. If the current flashing setting for digit position (c) is acceptable, press the **TARE** key to save it and proceed to digit position (b). Otherwise, use the **ZERO** key to select a new setting, and then press the **TARE** key to save it and proceed to digit position (b).
8. If the current flashing setting for digit position (b) is acceptable, press the **TARE** key to save it and proceed to digit position (a). Otherwise, use the **ZERO** key to select a new setting, and then press the **TARE** key to save it and proceed to digit position (a).
9. If the current flashing setting for digit position (a) is acceptable, press the **SMPL** key to save all the settings and return to the weight display. Otherwise, use the **ZERO** key to select a new setting, and then press the **SMPL** key to save all the settings and return to the weight display.

Item Setting

Item setting is used for managing a product (item) number, clause, logo, or print data set by the scale operator.

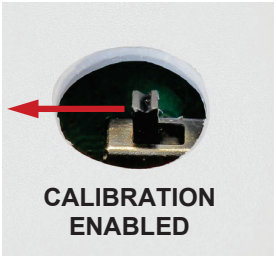
1. Press the ⏻ **ON/OFF** key to turn the scale on.
2. After the scale has completed the display test and is showing the weight display, press and hold the **TARE** key for approximately 3 seconds.
3. When the display shows ITEMSET (ITEMSET), release the key. The display will change to show a seven-digit number 1234567 representing the current settings with the digit on the right flashing.
4. If the current setting for the flashing digit position is acceptable, press the **TARE** key to save it and proceed left to the next digit. Otherwise, use the **ZERO** key to select a new setting, and then press the **TARE** key to save it and proceed left to the next digit.
5. Repeat the above step until all seven digits have the desired setting, and then press the **SMPL** key to save all the settings and return to the weight display.

SCALE CALIBRATION

Your Model 420 Series Digital Precision Balance was calibrated at the factory and should not require adjustment. If the scale should need re-calibration, the following describes the calibration procedure. To maintain the high degree of accuracy of the scale, a qualified technician should perform this function.

IMPORTANT! Scale calibration requires breaking (cutting open) the calibration seal (between the front feet) to change the calibration switch setting. Refer to the image below for the location of the calibration seal.

1. Turn the scale over so that the feet are facing up, locate the calibration seal between the front feet, and break (cut open) the calibration seal.
2. Move the calibration switch to the left as shown in the image to the right.
3. Return the scale to the upright position, and then press the ⏻ **ON/OFF** key to turn the scale on.
4. The scale will perform a display test and when completed, change to the weight display.



Allow the scale 20 to 30 minutes to warm-up before beginning calibration.

5. After the scale has been allowed to warm-up, press and hold the **CAL** key for approximately 3 seconds.
6. The display will change to show CAL 0 momentarily, change to - - - - - - (dashes) momentarily, and then flash the amount of test weight to be used. For example, the Model 420-600 will flash 200 for 200 grams.
7. If a different test weight is to be used, press the **CAL** key repeatedly until the amount of test weight to be used is shown. Again, using the Model 420-600 as an example, the available amounts for test weights are 200, 400, or 600 grams.
8. Verify that the amount selected is the same as the test weight amount, and then place the test weight on the scale tray, making sure it does not touch the scale body.
9. The display will change to change to - - - - - - (dashes) for 10 to 12 seconds and then change to the weight display showing the test weight amount.
10. Remove the test weight from the tray.
11. The display will return to zero weight indicating calibration is complete.

ERROR AND OPERATION DISPLAYS

The Model 420 Series Digital Precision Balance is equipped with diagnostic software that tests various portions of the scale's circuitry and verifies proper operation. Should a problem be detected, an error or status message will be displayed. The following lists these messages and their meaning.

Display	Possible Cause	Solution
Err 1	The weight on the scale is less than -20d.	An item that weight was zeroed off has been removed from the tray. Press the **ZERO** key to zero the scale.
oUEr	The load on the scale exceeds the capacity of the scale.	Remove the excess load on the scale.

BEFORE YOU CALL FOR SERVICE

The Model 420 Series Digital Precision Balance has been designed to provide you with years of trouble-free operation. However, should you experience a problem, please refer to the troubleshooting guide below before you call for service. The following describes several types of symptoms along with suggested remedies.

Problem	Possible Solution
The scale does not turn on	AC Operation • Is the AC power adapter cord fully inserted into the power jack on the back of the scale? • Is the AC power adapter fully inserted into the wall receptacle? • Check wall receptacle for proper AC power. Try another electrical appliance in the same receptacle. Does it work? • Check the circuit breaker. • Has there been a power failure? Battery Operation • The battery is discharged. Plug-in the AC power adapter to charge the battery. Scale can be used while the battery is charging.
Incorrect weight is displayed	• Make sure nothing is touching the scale tray or if using a container, it is not touching an adjacent object. • Has the scale been placed on an unstable table, stand, or cart? • Make sure the scale is not near a cooling or heating vent, a fan, window, or in a location with a moving air source. • Have the proper operation procedures been followed? • Has the scale been calibrated?
Cannot calibrate the scale	• Make sure the test weights are not touching the scale body. • Make sure the scale is on a stable, vibration-free table, stand or cart. • Make sure the scale is not near a cooling or heating vent, a fan, window, or in a location with a moving air source. • Have the proper calibration procedures been followed?

STATEMENT OF LIMITED WARRANTY

Detecto Scale warrants its equipment to be free from defects in material and workmanship as follows: Detecto warrants to the original purchaser only that it will repair or replace any part of equipment which is defective in material or workmanship for a period of two **(2) years from date of shipment**. Detecto shall be the sole judge of what constitutes a defect.

During the **first ninety (90) days** Detecto may choose to replace the product at no charge to the buyer upon inspection of the returned item.

After the first ninety (90) days, upon inspection of the returned item, Detecto will repair or replace it with a remanufactured product. The customer is responsible for paying for the freight both ways.

This warranty does not apply to peripheral equipment not manufactured by Detecto; this equipment will be covered by certain manufacturer's warranty only.

This warranty does not include replacement of expendable or consumable parts. This does not apply to any item which has deteriorated or damaged due to wear, accident, misuse, abuse, improper line voltage, overloading, theft, lightning, fire, water or acts of God, or due to extended storage or exposure while in purchaser's possession. This warranty does not apply to maintenance service. Purchased parts will have a ninety (90) day repair or replacement warranty only.

Detecto may require the suspect product to be returned to the factory; item(s) must be properly packed and shipping charges prepaid. A return authorization number must be obtained for all returns and marked on the outside of all returned packages. Detecto accepts no responsibility for loss or damage in transit.

STATEMENT OF LIMITED WARRANTY

Conditions Which Void Limited Warranty

This warranty shall not apply to equipment which:

A.) Has been tampered with, defaced, mishandled or has had repairs and modifications not authorized by Detecto.

B.) Has had serial number altered, defaced, or removed.

C.) Has not been grounded according to Detecto's recommended procedure.

Freight Carrier Damage

Claims for equipment damaged in transit must be referred to the freight carrier in accordance with freight carrier regulations.

This warranty sets forth the extent of our liability for breach of any warranty or deficiency in connection with the sale or use of the product. Detecto will not be liable for consequential damages of any nature, including but not limited to, loss of profit, delays or expenses, whether based on tort or contract. Detecto reserves the right to incorporate improvements in material and design without notice and is not obligated to incorporate improvements in equipment previously manufactured.

The foregoing is in lieu of all other warranties, express or implied including any warranty that extends beyond the description of the product including any warranty of merchantability or fitness for a particular purpose. This warranty covers only those Detecto products installed in the forty-eight (48) contiguous continental United States.

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