US-5000 Ultra Scale Addendum

Setup, Operation and Parts Manual Addendum Version 3

Advanced Poly-Packaging, Inc.

1331 Emmitt Road • Akron, OH 44306 • 1-800-754-4403 • fax 330-785-4010 • www.advancedpoly.com

Acknowledgments

Written by: Jen Sprandel
Edited by: Annie Braddock
Reviewed by: Stuart Baker

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Limited Warranty and Disclaimer

Warranty period is 12 months or 1,000,000 cycles whichever comes first. The warranty commences on the date of delivery of the equipment to the Purchaser. Print head warranty period is 90 days (wear item). APPI warrants to the Purchaser that the equipment is free from defects in workmanship or material under normal use and service. During the warranty period, APPI agrees to repair or replace, at its sole option, without charge to Purchaser, any defective component part of the equipment. To obtain service, Purchaser must return the equipment or component to APPI or an authorized APPI distributor or service representative in an adequate container for shipping. Any shipping charges, insurance, or other fees must be paid by Purchaser and all risk for the equipment shall remain with Purchaser until such time as APPI takes receipt of the equipment. Upon receipt, APPI, the authorized distributor or service representative will promptly repair or replace the defective component and then return the equipment or component to Purchaser, shipping charges, insurance and additional fees prepaid. APPI may use reconditioned or like new parts or units, at its sole option, when repairing any component or equipment. Repaired products shall carry the same amount of outstanding warranty as from original purchase. Any claim under the warranty must include a dated proof of delivery. In any event, APPI's liability for defective components or equipment is limited to repairing or replacing the components. This warranty is contingent upon proper use of the equipment by Purchaser and does not cover: expendable component part such as Print Heads, thermocouple wire, heater cartridge, rollers, bushings, and the like; or if damage is due to accident, unusual physical, electrical or electromechanical stress, neglect, misuse, failure of electric power, water damage (from airlines), improper environmental conditions, transportation, tampering with or altering of the equipment, packaging of corrosive or contaminating products or other products damaging to components, and equipment or components not owned or in the possession of original Purchaser. APPI will not be liable for loss of production, profits, lost savings, special, incidental, consequential, indirect or other similar damages arising from breach of warranty, breach of contract, negligence, or their legal action even if APPI or its agent has been advised of the possibility of such damages or for any claim brought against the Purchaser by another party. This warranty allocates risks of equipment failure between Purchaser and APPI. APPI's pricing reflects this allocation of risk and the limitations of liability contained in this warranty. The warranty set forth above is in lieu of all other express warranties, whether oral or written. The agents, employees, distributors and dealers of APPI are not authorized to make modifications to this warranty, or additional warranties binding on APPI. Accordingly, additional statements such as dealer advertising or presentations, whether oral or written, do not constitute warranties by APPI and should not be relied upon. Warranty on equipment is considered void when outstanding balances become delinquent (over 30 days late – 60 days after ship date). Equipment Integration to other Equipment: APPI assumes no responsibility for the integration of its products to other products or within a system unless APPI performs the integration, testing and provides the results of the tests to the purchaser in writing. Furthermore, APPI assumes no responsibility for bag sizing whether suggested or recommended.

Table of Contents

Introduction

Welcome
Special Features
Available Options
Using This Manual
Warranty Registration

1. Welcome

The US-5000 is a perfect addition to your bagger, or as a complete bagging system if purchased with the bagger. Since the controls for the US-5000 are integrated with the T-1000 bagger, the bagger can be run stand-a-alone or with the scale. If you wish to operate the scale independently from the bagger, please contact APPI to purchase a separate control module.

This addendum is provided to provide operational information and parts identification for the scale only. For detailed information regarding the bagger or other system components, please refer to the manual for the systems.

2. Special Features

The US-5000 is equipped with the following standard features:

Preset Counter: Preset the US-5000 to stop after a predetermined number of cycles.

Totalizing Counter: Reset this counter at the beginning of each shift or day to record production over a period of time.

Maintenance Counter / Chart: Periodically check this counter (total machine cycles) to determine preventative maintenance and component inspection intervals.

Pass Code Protection: Setting screens can be protected from alteration by unauthorized individuals. Once turned on, this function acts as a "screen save" feature. After a preset amount of time, the pass code screen will be displayed from the Bagger Operation screen. Factory settings are protected by a Level 1 pass code and should only be accessed by authorized maintenance personnel.

3. Available Options

Although the US-5000 is equipped with many "built-in" options, various auxiliary options and equipment can easily be added for special purpose packaging. The following options may be purchased from Advanced Poly-Packaging, Inc:

Recipe Management System: The US-5000 allows for recipe management, a system that allows the operator to create, manage and store "recipes" of past jobs settings from multiple machines operating in a system. These recipes can be saved and applied to future jobs to make operation faster and easier.

Partitions: The US-5000 table can be equipped with multiple sorting partitions that allow operators to divide and sort different types of product into a single bag.

Partition Tray Options: The US-5000 partition tray has two available configurations: 1) the sort and weigh configuration and 2) the weigh configuration. With the sort and weigh configuration, the partition tray allows operators to push product to the scale to be weighed and to push product straight to the bagger. With the weigh configuration, the partition tray blocks access to the bagger so the operator can only push product to the scale.

4. Using This Manual

The following manual conventions are frequently used to assist in understanding important information, to alert the operator of potentially dangerous or damaging practices and to describe the normal functions of the machines:

- Text Normal text
- *Italics* Used for emphasis
- **BOLDFACE** Used to identify heading names and touch screen buttons.
- ***CAUTION*:** Warning messages. To avoid physical harm, damage to equipment or damage to the product, be sure to read these messages carefully.
- *NOTE:* Identifies important information.

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5. Warranty Registration

This section must be completed and returned to Advanced Poly-Packaging, Inc. to register the printer for Warranty Protection.

Serial Number:

_____

(Serial Number located on the back panel)

Company Name and Address	Contact Name(s) / Title(s) / Phone Number
_____	_____
_____	_____
_____	_____

Please fax or mail this page to:

Service Manager
Advanced Poly-Packaging, Inc.
1331 Emmitt Road
Akron, OH 44306
USA

Fax # (USA) 330-785-4010
Or email the information above to: sales@advancedpoly.com

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Touch Screen Operations

US-5000 Operation Screen
US-5000 Settings Screen
Piece Count Setup Screen
Cycle Log
US-5000 Factory Settings
Load Cell Calibration
Recipe Management / Search

To access settings and operation screens that pertain to the US-5000, press the **US-5000** button on the Bagger Options Menu.

1. US-5000 Operation Screen

The US-5000 Operation screen allows the operator to run the scale, view the current and total count and weight of the product and observe the status of the scale. See Figure A-1

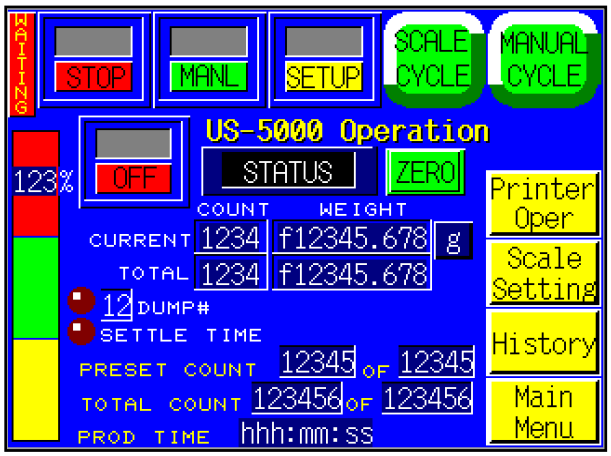


Figure A- 1

ON / OFF button: This toggle button turns the scale on and off.

Scale Cycle: Press the **Scale Cycle** button to manually cycle the scale.

Status Display: When the scale is in the zero range, the Status display will display "STATUS," which indicates that the scale is idle. If over the zero range, "UNDER" will be displayed. If the scale is in the acceptable weight range, then "ACCEPT" will be displayed. If the weight/count has exceeded the acceptable weight, then "OVER" will be displayed. When the scale is in the OVER status, the scale must be cycled using the **Scale Cycle** button.

Current Count / Weight: Displays the quantity and weight of the product in the tray. If no product is in the tray and the weight is not zero, press the **Zero** button to zero the scale.

Total Count / Weight: Displays the total, preset weight and quantity of the batch.

Dump LED: Illuminates when the scale drops weighed or counted product to the auxiliary equipment (i.e. bagger)

Settle Time LED: Illuminates when the product is settled in the tray

A bar graph is provided on the left side of the screen to illustrate the status of the scale. This graph shows the percentage of parts in the scale compared to the preset value.

2. US-5000 Settings Screen

The US-5000 Settings screen contains the weight value settings used to control the operation of the scale. The current and total weight is also displayed on this screen. See Figure A-2.

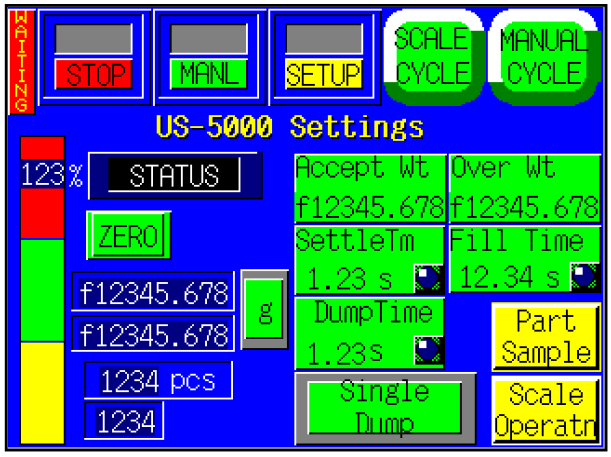


Figure A- 2

Accept Weight: The Accept Weight is the minimum weight needed to cycle the scale, the desired weight of a batch of product. To set this value, press the **Accept Wt** button, enter a value into the numeric keypad and press **ENT**.

To display the correct quantity of parts, the Average Piece Weight must first be determined. Press the **Sample** button to perform a sampling method that will calculate the Average Piece Weight.

Over Weight: The Over Weight is the maximum amount over the Accepted Weight that a batch of product could be and still fall within the range of acceptance. To increase the range of acceptance, enter a value greater than the Accept Weight for the Over Weight. To set this value, press the **Over Wt** button, enter a value into the numeric keypad and press **ENT**. See Figure A-3.

NOTE: Before the scale can function properly, the average piece weight must be established. This procedure is performed on the Piece Sample screen.

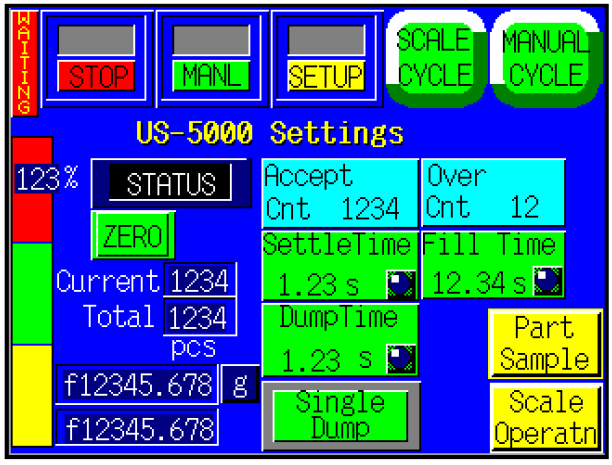


Figure A- 3

Dump Time: The length of time, in seconds, the tray dispenses parts into the bag. This time should be sufficient to consistently allow all parts to fully exit the scale tray. A typical setting for dump time is 0.5 seconds.
NOTE: A time setting too low will cause all parts not to fully exit the tray, causing an undercount or underweight in the bag. A time setting too high will cause decreased production.

Settle Time: The length of time, in seconds, the scale must be in the Accept Weight mode before the scale can start the cycle operation. A typical setting for Settle Time is 1.23 seconds.

NOTE: A time setting value too low will cause inaccurate weights/counts. Additionally, a time value too high will cause decreased production.

Single Dump / Multi Dump: Press this button to toggle between Single Dump and Multi Dump. When set to Single Dump, the scale drops product from the tray to the auxiliary equipment *once* to equal a full batch. When set to Multi Dump, the scale drops product from the tray to the auxiliary equipment *twice* to equal a full batch, and the auxiliary equipment waits to cycle until it receives the second drop. For example, if the desired weight of the batch is 1000g, 700g could be dumped and then another 300g could be dumped. Select Multi Dump if the desired amount of product is too large to fit in the tray at once.

*NOTE: The scale must be set to Manual mode if Multi Dump is selected. Press the **Manual Cycle** button to dump product.*

Press the **Part Sample** button to display the Piece Count Setup screen.

3. Piece Count Setup Screen

The average piece weight must be established for the scale to count accurately. The scale should be in **STOP**, **MANL**, **SETUP** mode prior to performing this step. Press the **Sample** button from the US-5000 Settings screen to access the Piece Sample Screen. See Figure A-4.

NOTE: Before performing this test, the scale tray should be empty and clean and the scale should be at zero before proceeding.

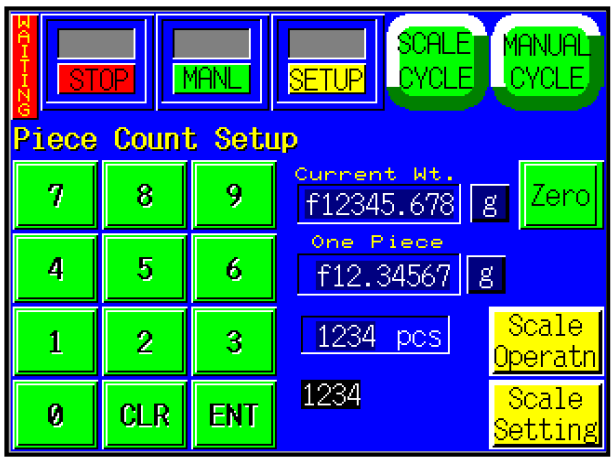


Figure A- 4

To run the test, first press the **Manual Cycle** button to clear the scale. Clean the scale tray, then press the **Zero** button. Manually count a quantity sufficient to accurately determine the average piece weight. For smaller or lighter products, we recommend a higher quantity for the sample count. Drop product into the tray and then enter the quantity of product using the numeric keypad. Press **ENT**. Notice the One Piece weight value on the screen. Then press the **ENT** button again. If the One Piece value did not change, the One Piece weight or "Average Piece Weight" has been established. As a final test, remove and add one piece at a time, ensuring the quantity changes accordingly.

NOTE: A higher batch count will establish a more accurate Average (One) Piece weight.
Due to "lot" weight variance, this count setup procedure should be conducted on a regular basis. We recommend performing the sampling procedure during the setup of every new part. If the piece quantity does not accurately display the number of pieces in the tray when one piece is removed, it may be due to varying piece weight. For very light pieces, the Quantity display may be constantly changing. If this occurs, the range may need to be increased to allow for the scale accuracy increments.

Additionally, some parts may weigh less than the scale minimal increment. For example, you may need to remove five parts for the scale to decrement by a quantity of five. In this case, removing one part from a batch of 100 will still show 100 pieces in the scale until give have been removed. Then the scale will display 95 pieces.

When satisfied with your testing, press the **Operation** button.

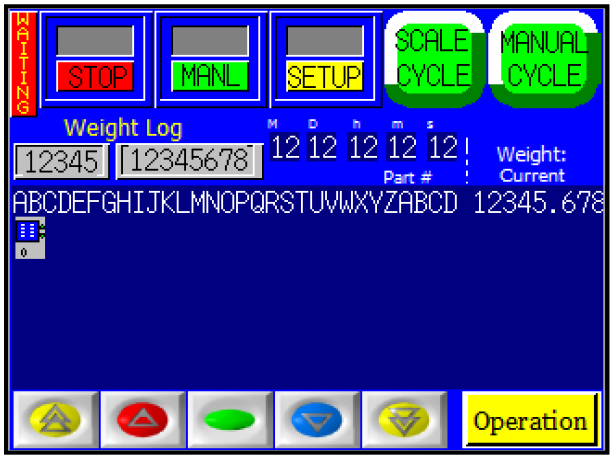


Figure A- 5

4. Cycle Log

The US-5000 Cycle Log displays the weight history from each cycle of the machine. See Figure A-5. The operator can use this screen to view past cycle weights, accept values and over values. Press the green button to reset all values on the screen to zero. The Cycle Log is automatically reset every night at midnight.

5. US-5000 Factory Settings

The US-5000 can be operated in either the Weight or Count mode. The Weight mode is typically used for food items or other similar products. The Count mode is typically used for hardware, molded parts electronic parts, craft items, or other similar items. See Figure A- 6.

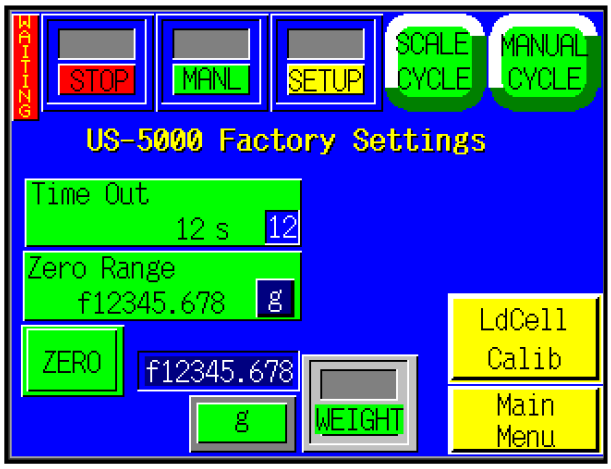


Figure A- 6

Weight / Count Button: The US-5000 only operates in Weight mode. In Weight mode, a batch of product is measured by its weight.

Time Out and Zero Range Settings: The US-5000 is programmed with an auto zero function that allows the scale to automatically zero the scale if the two conditions are met:

1) Current weight is within the range setting.

2) Weight has been within the range setting for a preset time (Time Out).

For instance, if the Zero Range is set to .003 lbs and the Time Out value is 3 seconds, the scale will automatically zero if the scale is not in cycle operation and the current weight displayed is stable at .002 lbs. This function allows for more infrequent cleaning of the tray and for environmental conditions that may affect the load cell. However, this function may not eliminate the need to periodically manually zero the scale.

Press the **Units** button to toggle between different units of measurement, including grams, pounds and ounces.

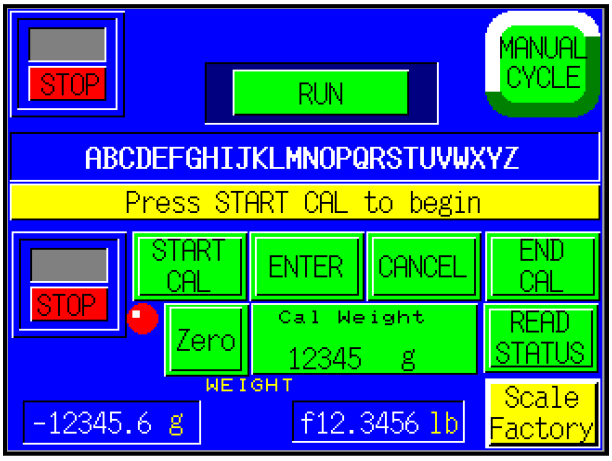


Figure A- 7

6. Load Cell Calibration

To calibrate the scale, a Calibration Screen is provided. See Figure A-7.

The scale should only be calibrated when a known weight weighs incorrectly on the scale. If running in the kit operation mode, the accuracy of the weight is not critical since a sampling method is used to determine the average piece weight.

The following step by step procedure must be followed closely to properly calibrate the scale. A known metric calibration weight (in grams) must be used to properly calibrate the scale. The actual weight may vary, but it should be at least 1000 grams. This weight may vary depending on the magnitude of load cell. Contact APPI Tech Support to discuss the calibration weight used during this procedure. This weight may also be purchased from APPI.

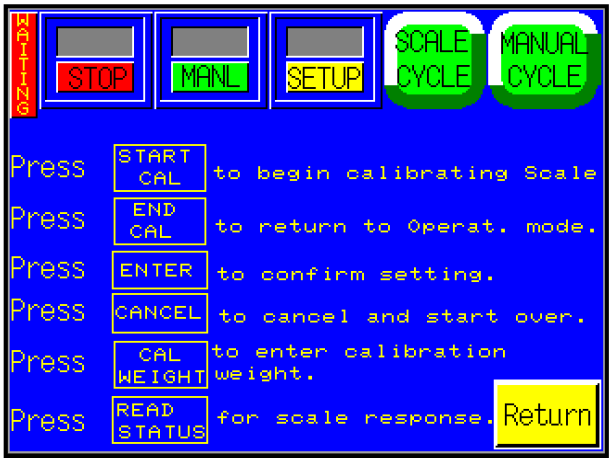


Figure A- 8

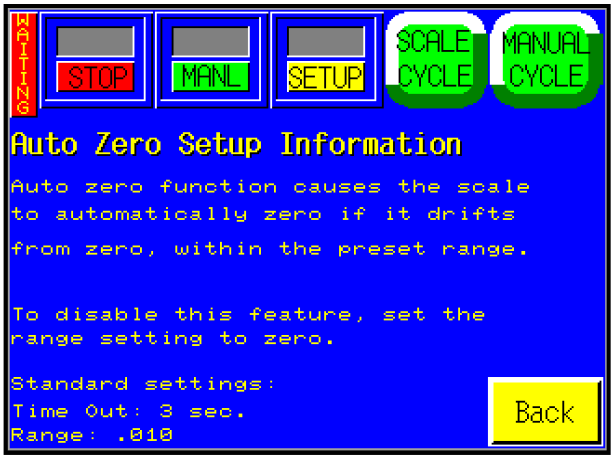


Figure A- 9

Calibration Procedure: (See Figure A-8 and A-9)

1. Press the **RUN / STOP** button, located at the top left corner of the touch screen, to place the unit in Stop mode.
2. Clean the scale tray and remove any debris with a cleaning solution. Press the **Zero** button.
3. Press the **Cal Weight** button and enter the weight stamped on your Weight (1000 grams, for instance) followed by the **ENT** button.
4. Press the **START CAL** button. Read and follow the instructions displayed in the status bar.
5. When prompted, place the Cal Weight on the tray.

6. When complete, press the **END CAL** button.
7. Test the results by placing the Weight on the scale to ensure it measure the proper weight.
8. When satisfied the known weight reads accurately, toggle the **RUN / STOP** button to RUN and the **START / STOP** button to START.

7. Recipe Management / Search

This screen displays a listing of all created recipes. See Figure A-10. To access the Recipe Management screen, press the **Recipe Management** button from the Main Menu.

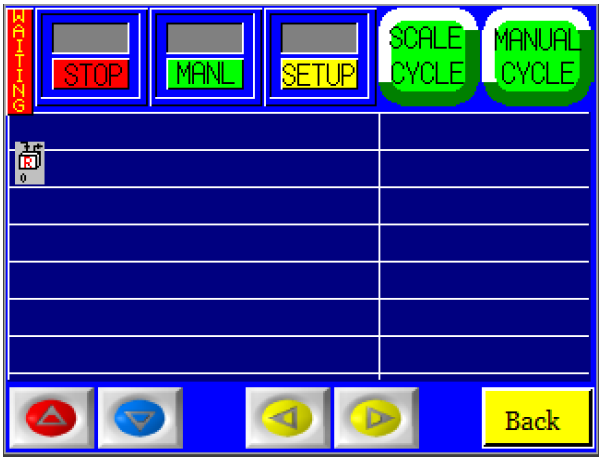


Figure A- 10

To select a recipe, simply press the recipe number you wish to load. The Job Recall screen will be displayed. Press the **Load** button to load the displayed settings. See Figure A-11. To scroll through the recipe listing, press the red up arrow or the blue down arrow. To view the settings for each recipe, press the yellow left and right arrows.

To search for and load a specific recipe, press the **Recipe Search** button on the Main Menu. This will display the Recipe Search screen. See Figure A-12.

To search for a recipe, enter the recipe's part number in the blue Part No. box and press the **Search** button.

On the following screen, press the desired part number. See Figure A-13. This will display the Job Recall screen. To load the displayed settings, press the **Load** button.

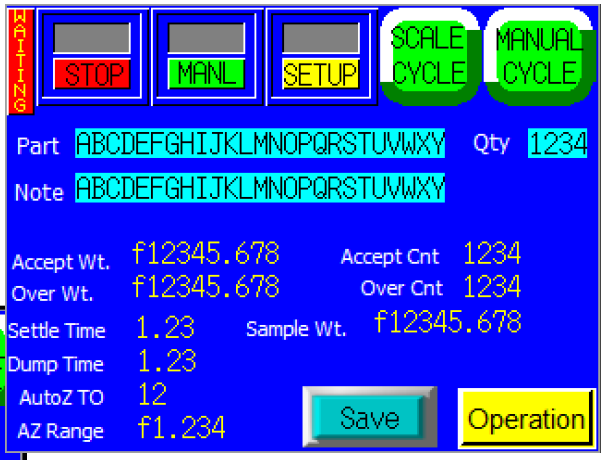


Figure A- 12

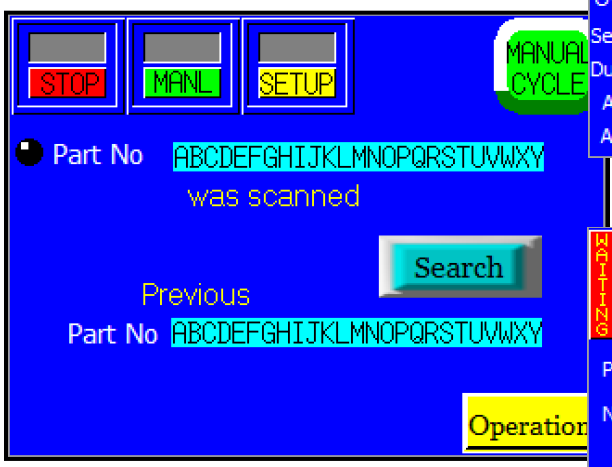


Figure A- 11

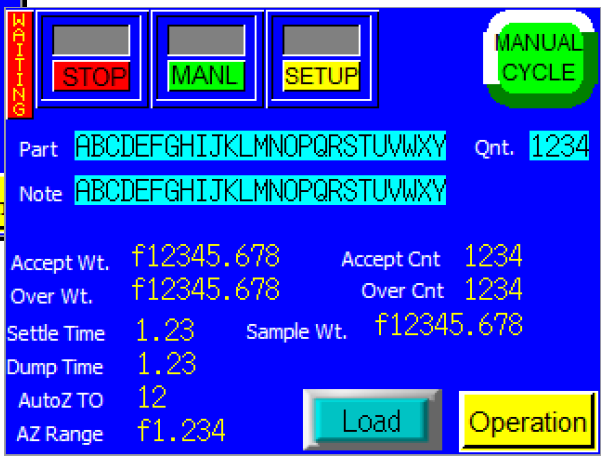


Figure A- 13

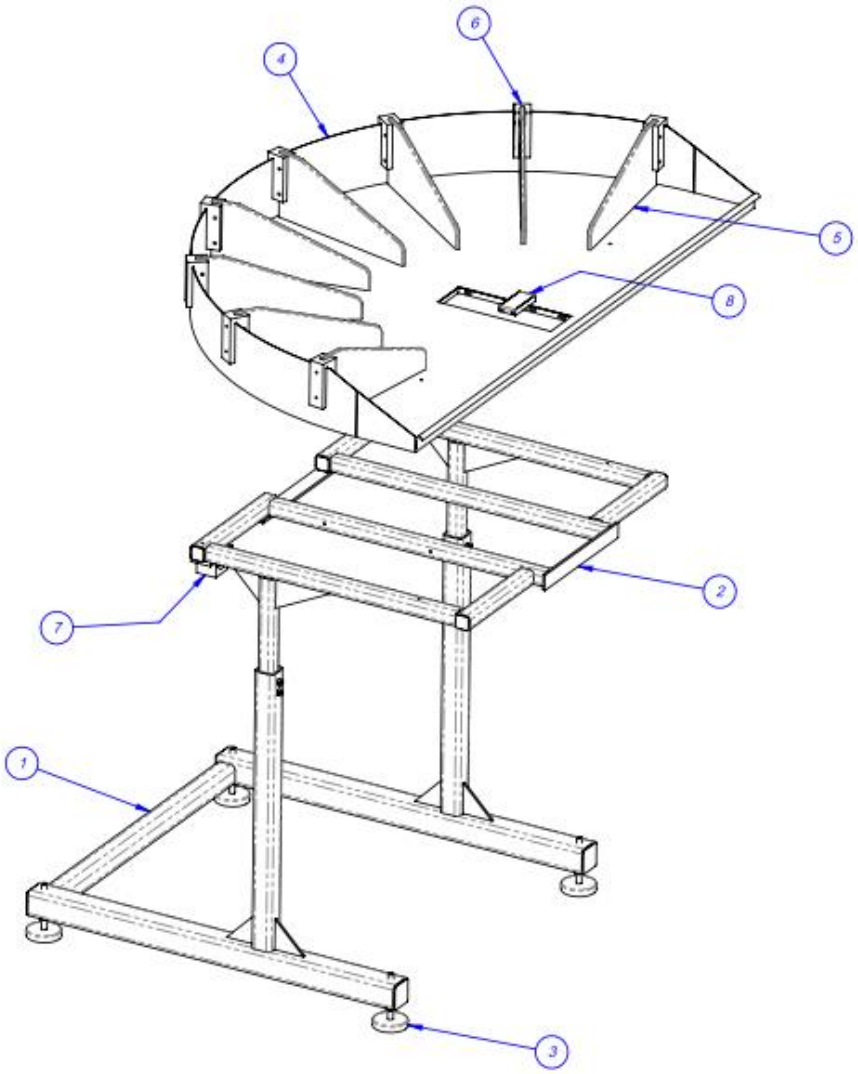
Parts and Drawings

1. Stand Assembly-Scale and Sort

TA-T4-2000

Item #	QTY.	Part #	Description
1	1	TP-T4MA5401	Lower Stand Weldment
2	1	TP-T4MA5402	Upper Stand
3	4	TP-110764	Adjustable Pad
4	1	TP-T4MA5403	Sort Table Top
5	8	D9-107633-1502	Partition
6	8	TP-T1MPT3006	Partition Clamp
7	1	TP-T4MA5123	Clamp Block
8	1	TP-T4MA5409-1	Partition Tray - Open Scale & Sort

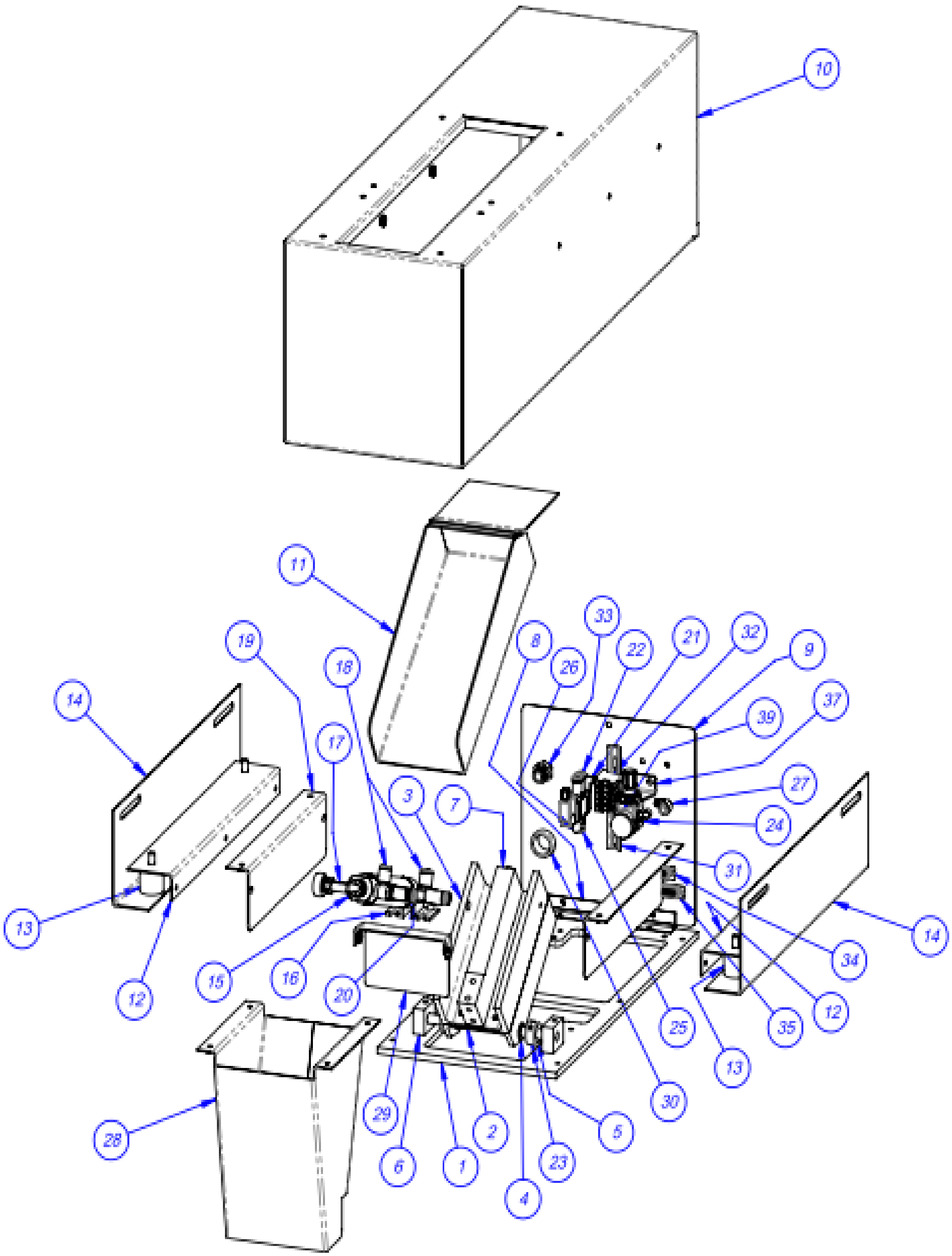
NOTE: Partitions (D9-107633-1502) are an option for the US-5500 that can be ordered in the amount specified by the customer.



2. Scale Head Assembly

TA-T4-5000

Item #	QTY.	Part #	Description
1	1	TP-T4MA5114	Base Plate
2	1	TP-T4MA5106-1	Load Cell Mount Lower
3	1	TP-T4MA5106	Load Cell Mount Upper
4	2	TP- 107131-1	Brass Flange Bearing
5	1	TP-T4MA5105	Load Cell Pivot Shaft
6	2	TP-T4MA5102-1	Scale Head Frame
7	1	TP- 750052	Load Cell 10 kg
8	2	TP-T4MA5129	Back Panel Hinge
9	1	TP-T4MA5115	Back Panel
10	1	TP-T4MA5118	Scale Head Enclosure
11	1	TP-T4MA5112	Scale Head Tray (Standard)
12	2	TP-T4MA5405	Lower Bracket
13	4	TP-110761-1	Vibration Mount
14	2	TP-T4MA5404	Upper Scale Mount
15	1	TP-403008	Air Cylinder
16	2	TP-403282	Cylinder Bracket
17	1	TP-504102	Sealmaster, CTFD Series Rodend
18	2	TP-402187	Flow Control, 1/4 NPT
19	2	TP-T4MA5122	Scale Head Product Stop
20	2	TP-402184	Flow Control
21	1	TP-402173	Bracket
22	1	TP-402255	Valve
23	2	TP-111107	Clamp on Collar
24	1	TP-406258	Mini Regulator
25	1	TP-401265	1/4" Fitting
26	2	TP-404263	Muffler
27	2	TP-401277	Elbow, 1/4" Tube x #10-32
28	1	TP-T4MA5410	Scale Head Enclosure Chute (Optional)
29	1	TP-T4MA5411	Product Stop
30	1	TP-112240	Strain Relief, #1 Hole
31	1	TP-218021	Din Rail (Small)
32	5	TP- 208142	Large Terminal
33	1	TP-401256	Bulk-Head Fitting
34	1	TP-212247	Connector, Multipole Rectangular (US-5000)
35	1	TP-212249	Connector, Multipole Rectangular(US-5500)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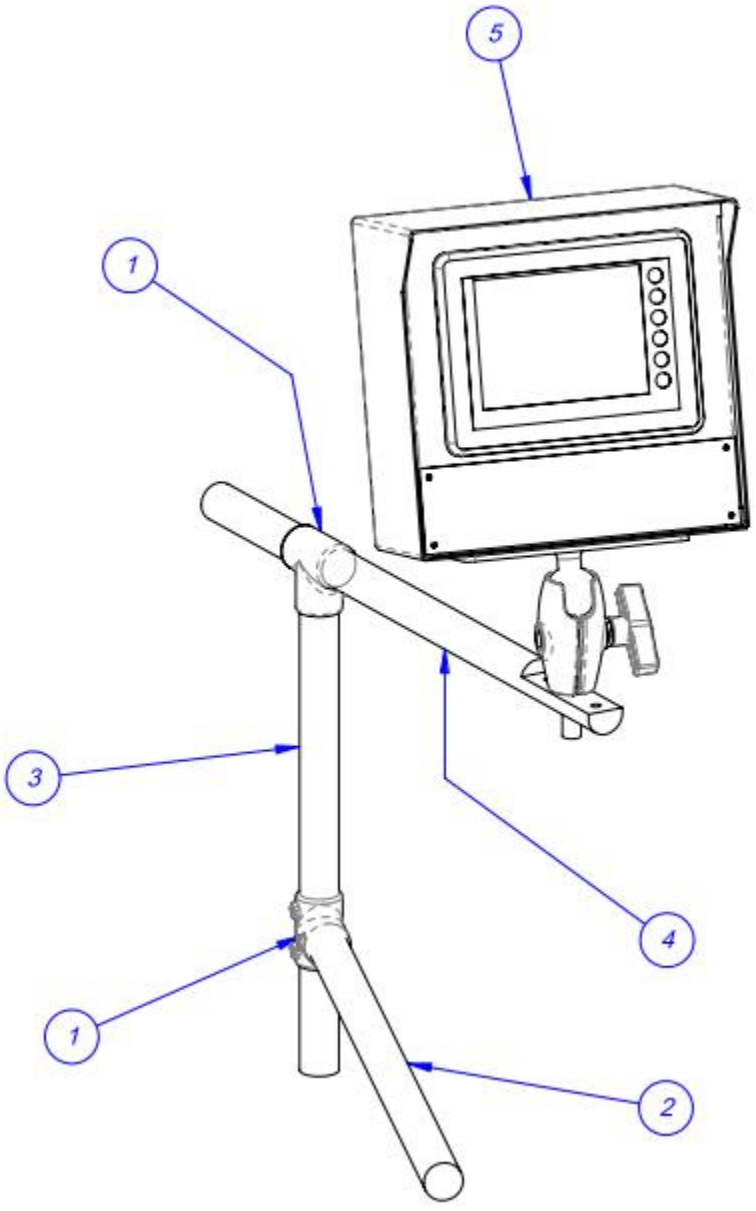
3. IOP Assembly

TA-T4-6000

Item #	QTY.	Part #	Description
1	2	TP-111215	Joining Tee
2	1	TP-T1MD00109	Mounting Bar
3	1	TP-T1MD00094	Base Telescope
4	1	TP-T1MD00109-1	Mounting Bar
5	1	TA-T10240	IOP Assembly



4. Spare Parts Kit

US-5000 Level 1

QTY.	Part #	Description
1	TP-7500052	Load Cell, 10kg
1	TP-402255	Valve
1	TP-403008	Cylinder
2	TP-750102	PCB, Scale Controller

5. Notes

Date	Note