MotoWeigh® Cascade Scale

In-Motion Gravity Drop Checkweigher

Technical Manual

iRev™

RICE LAKE®
WEIGHING SYSTEMS

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PN 187558

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Contents

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1.0 Introduction

This manual is intended for use by service technicians responsible for installing and servicing the MotoWeigh Cascade Scale In-Motion Gravity Drop Checkweigher with Rice Lake Weighing Systems 920i® wall mount indicator.

Configuration and calibration of the system is accomplished using serial commands or the front panel.

Manuals and additional resources are available from the Rice Lake Weighing Systems website at www.ricelake.com

Warranty information can be found on the website at www.ricelake.com/warranties

1.1 Safety

Safety Signal Definitions:

DANGER — ***Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. Includes hazards that are exposed when guards are removed.***

WARNING — ***Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Includes hazards that are exposed when guards are removed.***

CAUTION — ***Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury.***

IMPORTANT — ***Indicates information about procedures that, if not observed, could result in damage to equipment or corruption to and loss of data.***

General Safety

Do not operate or work on this equipment unless this manual has been read and all instructions are understood. Failure to follow the instructions or heed the warnings could result in injury or death. Contact any Rice Lake Weighing Systems dealer for replacement manuals.

WARNING

Failure to heed could result in serious injury or death.

All procedures that require work inside the indicator enclosure are to be performed by qualified service personnel only.

Ensure the power cord is disconnected from the outlet prior to opening the unit.

Do not allow minors (children) or inexperienced persons to operate this unit.

Do not operate without the system completely assembled.

Do not use for purposes other than weight taking.

Do not place fingers into slots or possible pinch points.

Do not use this product if any of the components are cracked.

Do not exceed the rated specification of the unit.

Do not make alterations or modifications to the unit.

Do not remove or obscure warning labels.

Do not submerge.

Keep loose clothing, jewelry and hair away from moving parts.

There is a risk of explosion if battery is replaced by an incorrect type.

Do not exceed an air pressure of 150 PSI for the air regulator.

Do not exceed the recommended PSI for the air cylinders or air solenoids.

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1.2 Overview

The MotoWeigh Cascade Scale offers increased efficiency, as well as part consistency in a compact package. The Cascade Scale can be incorporated with a standard conveyor, to ensure small parts kits contain the correct component counts, eliminating extra and/or missing components.

The system utilizes the following main components:

- 920i wall mount with the Cascade user program
- Air regulator
- Air cylinders (2)
- 1/4" tubing
- 1/8" tubing
- Solenoid valves
- Single part drop detection (part outside of the bag)
- Stack lights
- Output relays and 24 VDC power supply

The scale sample rate must be set to 60 Hz. This is the default setting and should not be changed.

1.2.1 920i Hardware Requirements

The 920i requires the following hardware:

Cards

- Slot 1 - Single A/D card

Serial Ports

- Port 2 - Service port
- Port 3 - Printer reports

This program requires registration to operate.

1.3 FCC Statement

The 920i complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

- This device may not cause harmful interference
- This device must accept any interference received, including interference that may cause undesired operation

Radio certificate number:

- US: R68WIPORTG
- Canada: 3867A-WIPORTG

2.0 Installation

This section provides an overview of the MotoWeigh Cascade Scale installation instructions.

2.1 Dimensions

For reference to the dimensions of the Cascade Scale (Figure 2-1).

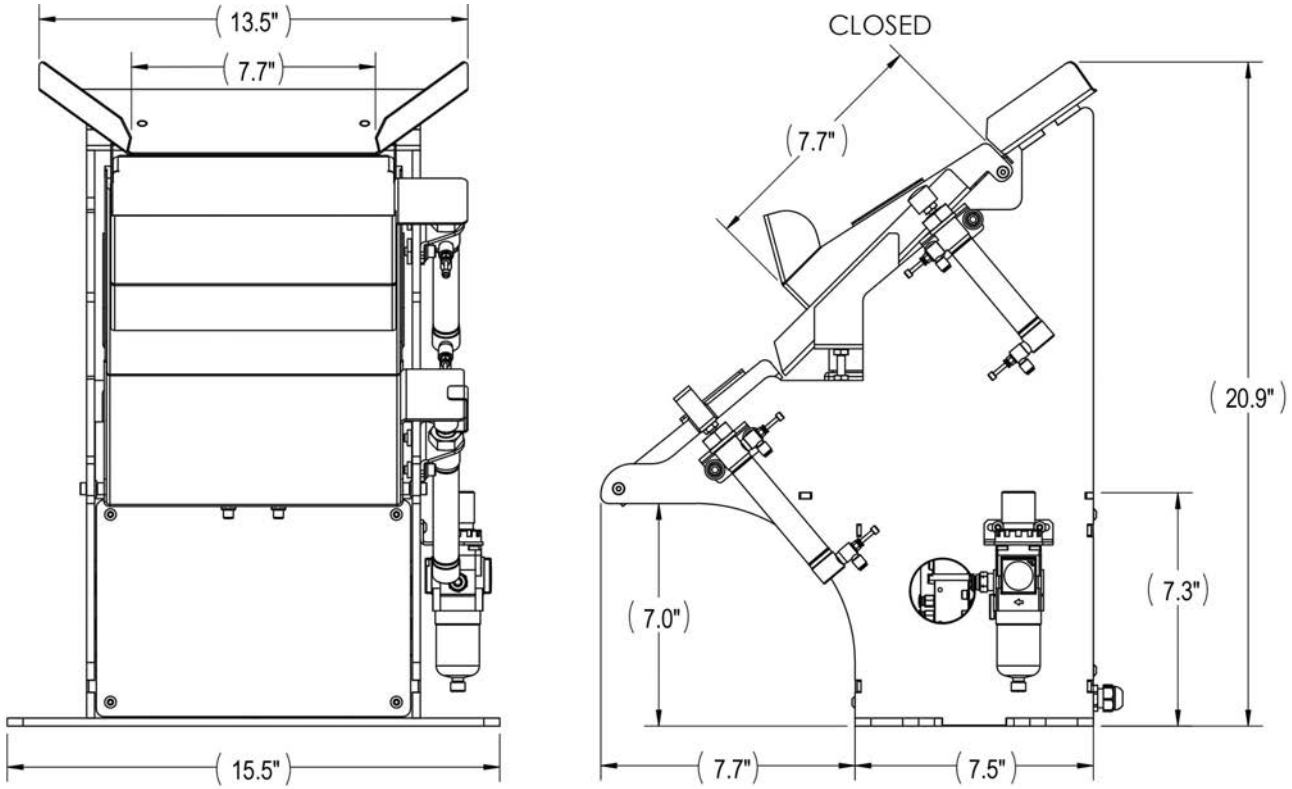

Figure 2-1. Cascade Scale Dimensions (inches)

2.2 Unpacking the Crate

Unpack and visually inspect the contents to ensure all components are included and undamaged. If components were damaged in shipment, notify Rice Lake Weighing Systems and the shipper immediately.

Components in shipping container:

- Cascade Scale Assembly
- Cascade Scale Controls - 920i Wall Mount Enclosure Installation Instructions (PN 69988)

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2.3 Installation

Install the system taking into consideration the environment, the working direction (left/right) and the existing system, if applicable.

1. Place the scale assembly on a level sturdy surface.
2. Using adequate hardware, secure the scale to the surface.

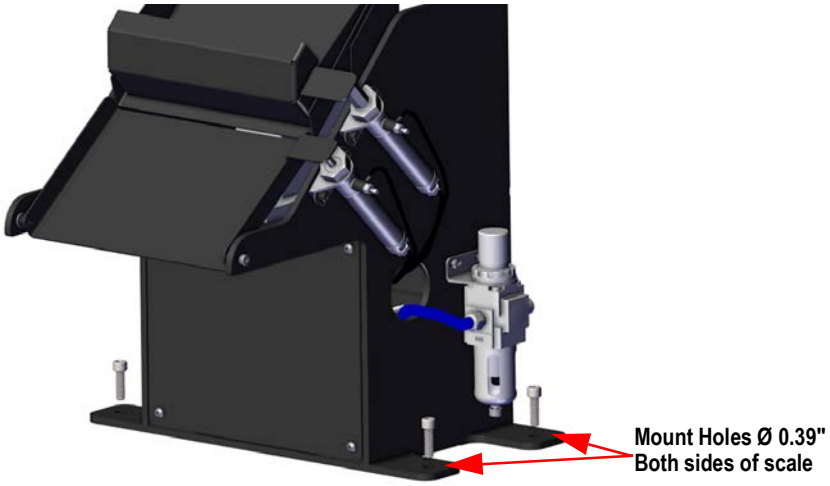

Figure 2-2. Secure Scale

3. Transportation set screw needs to be set (Section 2.9.1 on page 13).

Note ***The set display must be set for shipping.***

4. Loosen the screws to remove the back panel for wiring. Retain for re-installation.

Figure 2-3. Remove Back Panel

5. Install the weigh platter.

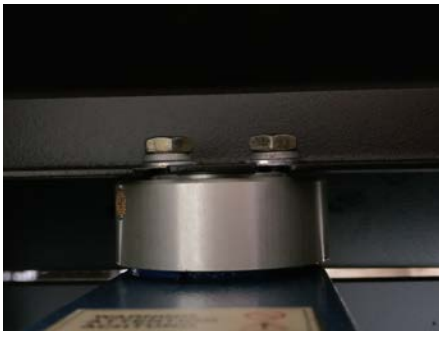

Figure 2-4. Weigh Platter Mount

6. Run the load cell cable through a cord grip in the back panel of the unit.

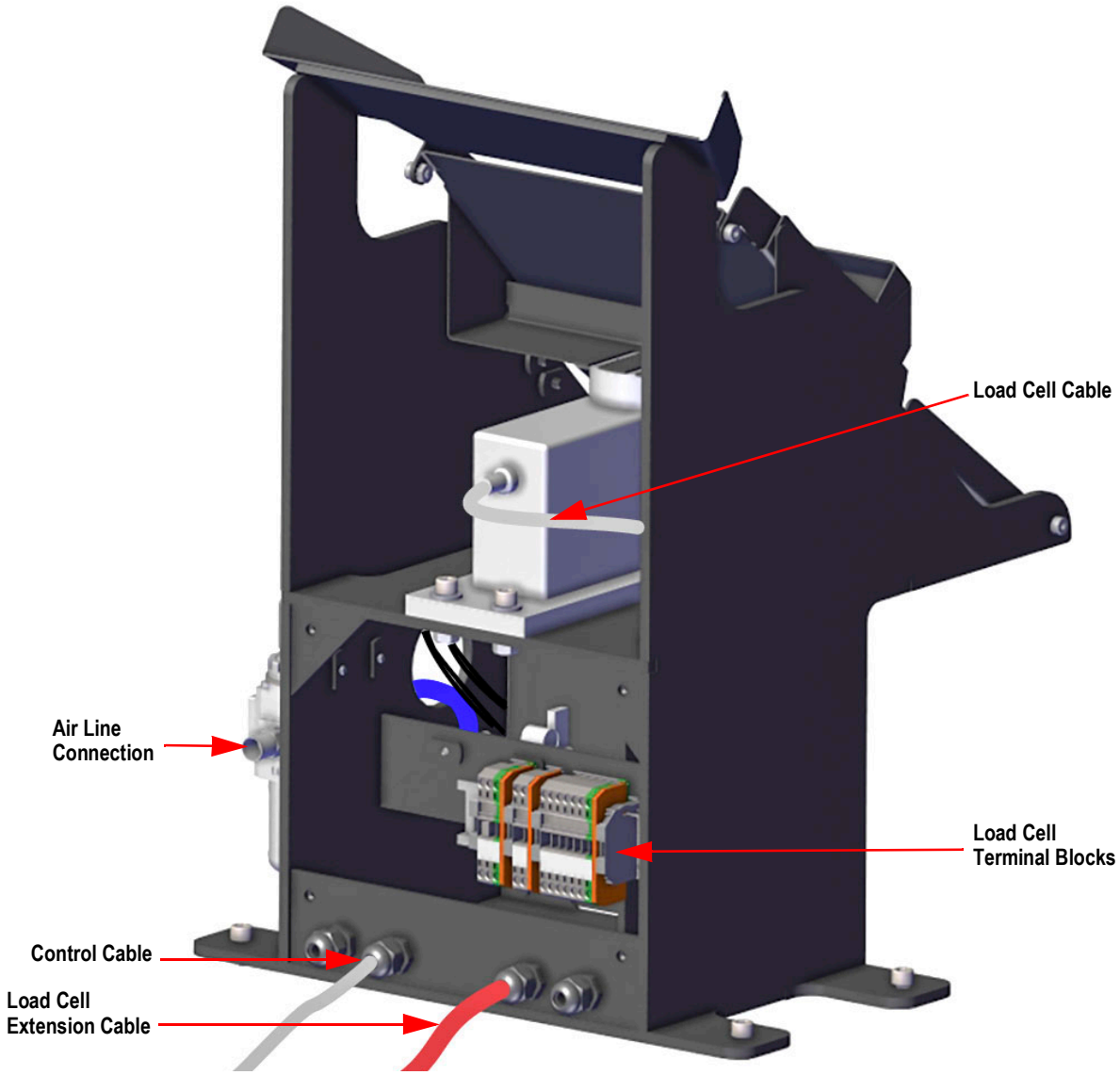

Figure 2-5. Cable Connections

7. Mount the indicator per the 920i Wall Mount Manual (PN 69988).
8. Open the front panel of the indicator to gain access to the CPU board.
9. Run with the load cell and control cable through the cord grip in the bottom of the enclosure.
10. Wire the load cell cable, control cable and terminals to the indicator using the diagrams in Figure 2-7 on page 7.
11. Close the indicator enclosure and secure with clamps and hardware.
12. Connect the air line to the air regulator.
    - 1/4" tubing is provided to connect regulator to the valve
    - 1/8" tubing is provided to connect valves to the cylinders
13. Reinstall the backplate securing with screws.
14. Plug in the indicator to power on the system.
15. Supply the specified voltage according to the included drawings. Only one input voltage is necessary to control the system.

WARNING ***Do not operate the system without all the guards, guides and shields in place and attached where necessary.***

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2.4 Overload Protection

Overload protection is required to be properly set under the weight tray of the Cascade Scale using two overload stops. Properly set the overload stops to prevent weight related load cell issues.

IMPORTANT ***Do not exceed 110% scale capacity as damage may be caused to the load cell.***

1. Loosen the jam nuts on both overload stops.
2. Lower both overload protection bolts a 1/4" clearance between the top of the overload stop and weigh platter frame.
3. Place 110% of the scale capacity over the overload stop.
4. Turn the overload stop counterclockwise until the overload protection bolt contacts the frame.
   - Observe the indicator when the overload contacts the frame
5. Tighten the jam nut on the overload stop.
6. Repeat previous steps for the other overload stop.
7. Configure and calibrate the system with 100% capacity.
8. Verify the scale reading with a calibrated test weight at 100% capacity.

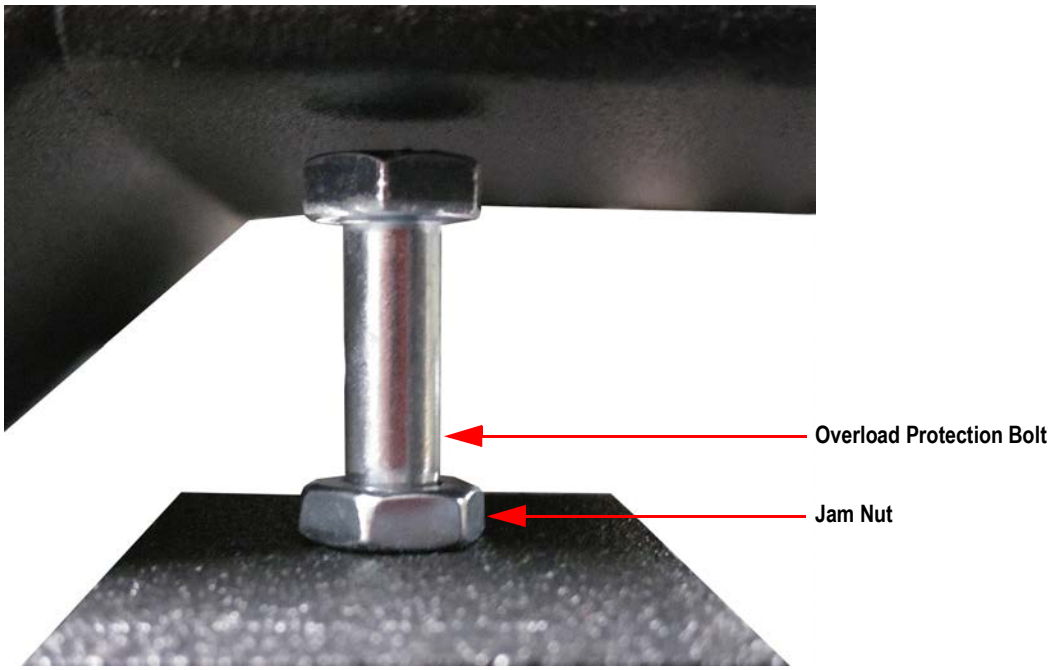

Figure 2-6. Secured Jam Nut

2.5 Load Cell Wiring

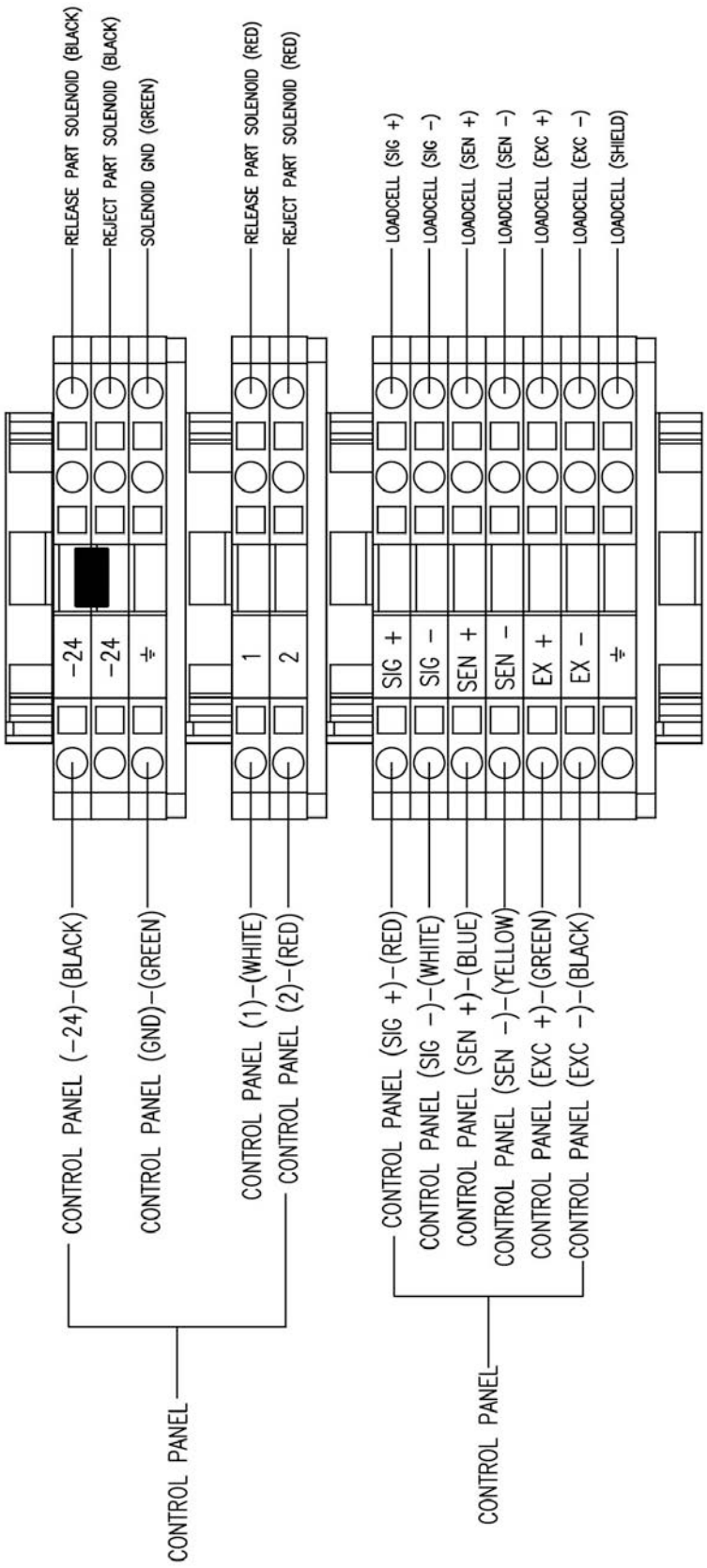

Figure 2-7. Load Cell Wiring

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2.6 Repair Parts

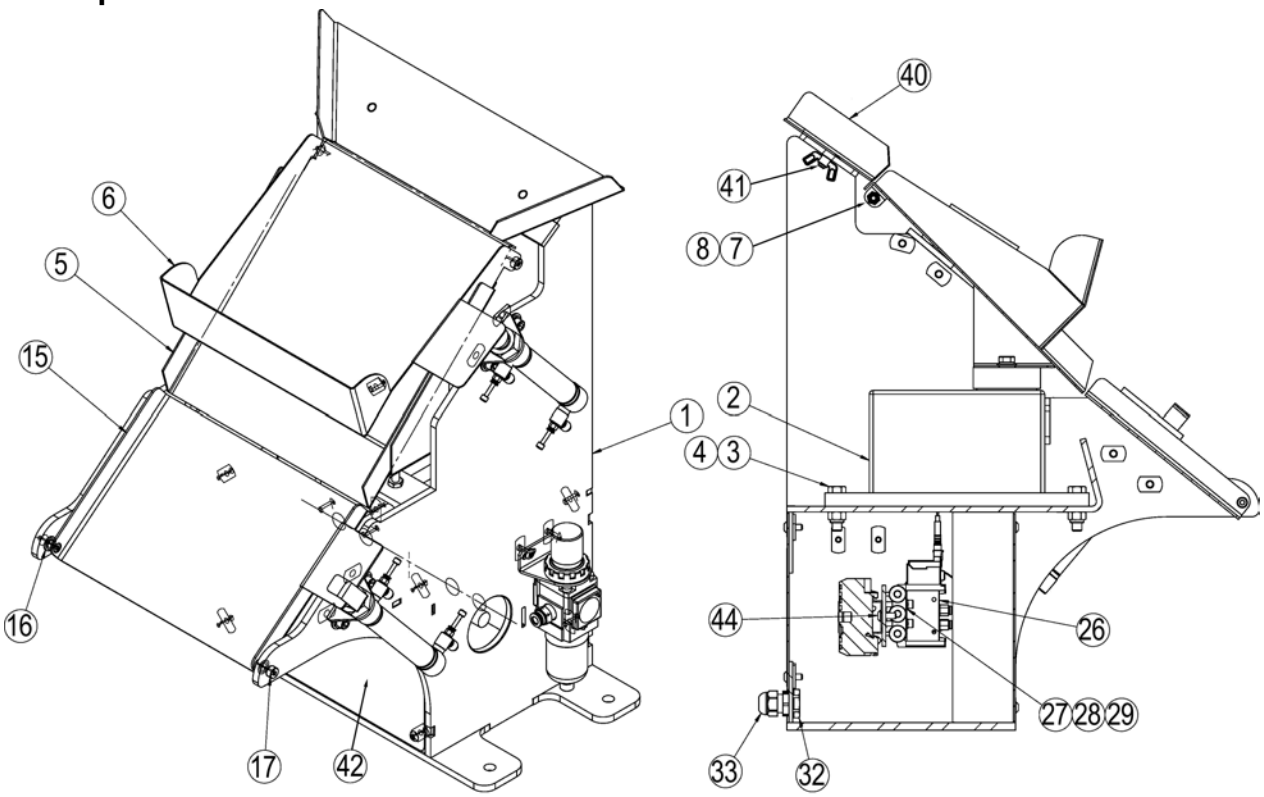

Figure 2-8. Cascade Scale Assembly, Painted Mild Steel

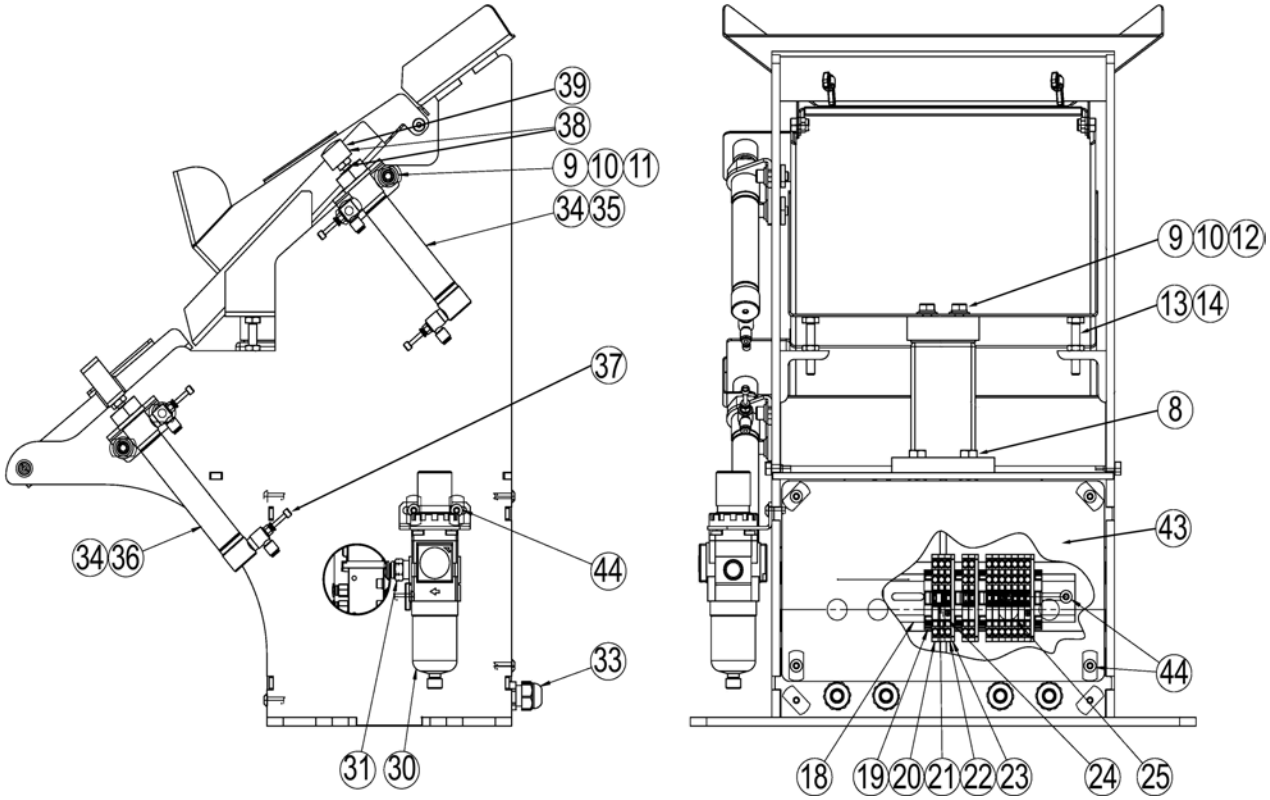

Figure 2-9. Cascade Scale Assembly, Painted Mild Steel, Continued

Item No.	Part No.	Descriptions	Qty.
1	194565	Frame WLDT, Cascade Scale Painted Mild Steel	1
2	17568	Load Cell, SPT 240-5 kg Fluid Dampened Ref	1
3	49789	Screw, Cap 5/16-18NC x 1-1/4 Hex Head Fully Threaded ASTM F593 Alloy Group 1 Cold Worked SST	4
4	35170	Nut, Lock 5/16-18NC Hex SST	4
5	194579	Weigh Tray WLDT	1
6	194580	Stop Gate, Mild Steel Cascade Scale	1
7	184916	Screw, Shoulder 1/4 DIA X 3/32 Long 10-32 Thread SST	2
8	14633	Nut, Lock, 10-32 NF, SST	2
9	15149	Washer Plain 1/4 SST	6
10	15148	Washer, Lock 1/4 Regular Helical Spring SST	6
11	14967	Screw, Cap 1/4-20UNC x 3/4 FT Socket Head Hex Drive SST ASTM F837	4
12	14956	Cap Screw 1/4-20NCx1/2 Hex Head SST	2
13	196522	Screw, Cap 1/4-28NF X 1-1/2 Hex Head Fully Threaded 18-8 SST	2
14	14640	Nut, Jam 1/4-28 NF Hex SST	4
15	194575	Accept / Reject Tray WLDT	1
16	184917	Bearing, Sleeve Nylon Flanged 1/4 DIA Shaft	2
17	184912	Screw, Shoulder 1/4 DIA X 11/32 L. 10-32 Thread SST	2
18	33531	Din Rail, 5.88" Long	1
19	61141	End Stop, Screwless Wago	4
20	62964	Block, Terminal Wago 3 Conductor	10
21	55337	Jumper, Adjacent Wago Series 280	1
22	62966	Block, Terminal Wago 3 Conductor	2
23	62968	Plate, End/Intermediate for 3 Conductor Wago Terminal Blocks	3
24	62967	Label, Wago Terminal Block Vertical, Ground Symbol	2
25	83895	Label, Wago Terminal Block Vertical, Blank	10
26	196142	Valve Assembly, Fest 3098-1.0 VUVG	1
27	179971	Plain Washer SST Metric 4x9x0.8	4
28	63574	Washer, Split Lock No. 8 SST	4
29	125960	Screw, Cap 8-32NC x 7/8 SST Socket Head Cap Screw	4
30	161452	Regulator, Filter 1/4NPT AW20-N02BE-CRZ-B	1
31	185700	Fitting, Pneumatic Straight 1/4NPT X 1/4 Tube	1
32	15627	Lock Nut, PG9 Plastic	4
33	15626	Cord Grip, PG9 Plastic	4
34	185768	Cylinder Mount, Pneumatic Bimba Cylinders	2
35	196340	Cylinder, Pneumatic 3/4" Bore 2" Stroke SR-042-DBQ	1
36	196143	Cylinder, Pneumatic 3/4" Bore, 2.5" Stroke SST SR-042.5-DBQ	1
37	185769	Fitting, Pneumatic Flow Control	4
38	194584	Retractor Clip, Accept/Reject Tray Mild Steel Cascade Scale	1
39	194585	Bumper, 3/4 Round X 5/8 Female 1/4-28UNF Urethane	2
40	194581	Infeed Tray, Mild Steel Cascade Scale	1
41	183815	1/4-20 Nylon Insert Wing Nut	2
42	194583	Cover, Front Mild Steel Cascade Scale	1
43	194582	Cover, Back Mild Steel Cascade Scale	1
44	42364	#10-24x1/2" ASTM F879 Hex Drive Grade 18-8 Stainless Steel Button Socket Cap Screw	12

Table 2-1. Cascade Scale Parts List

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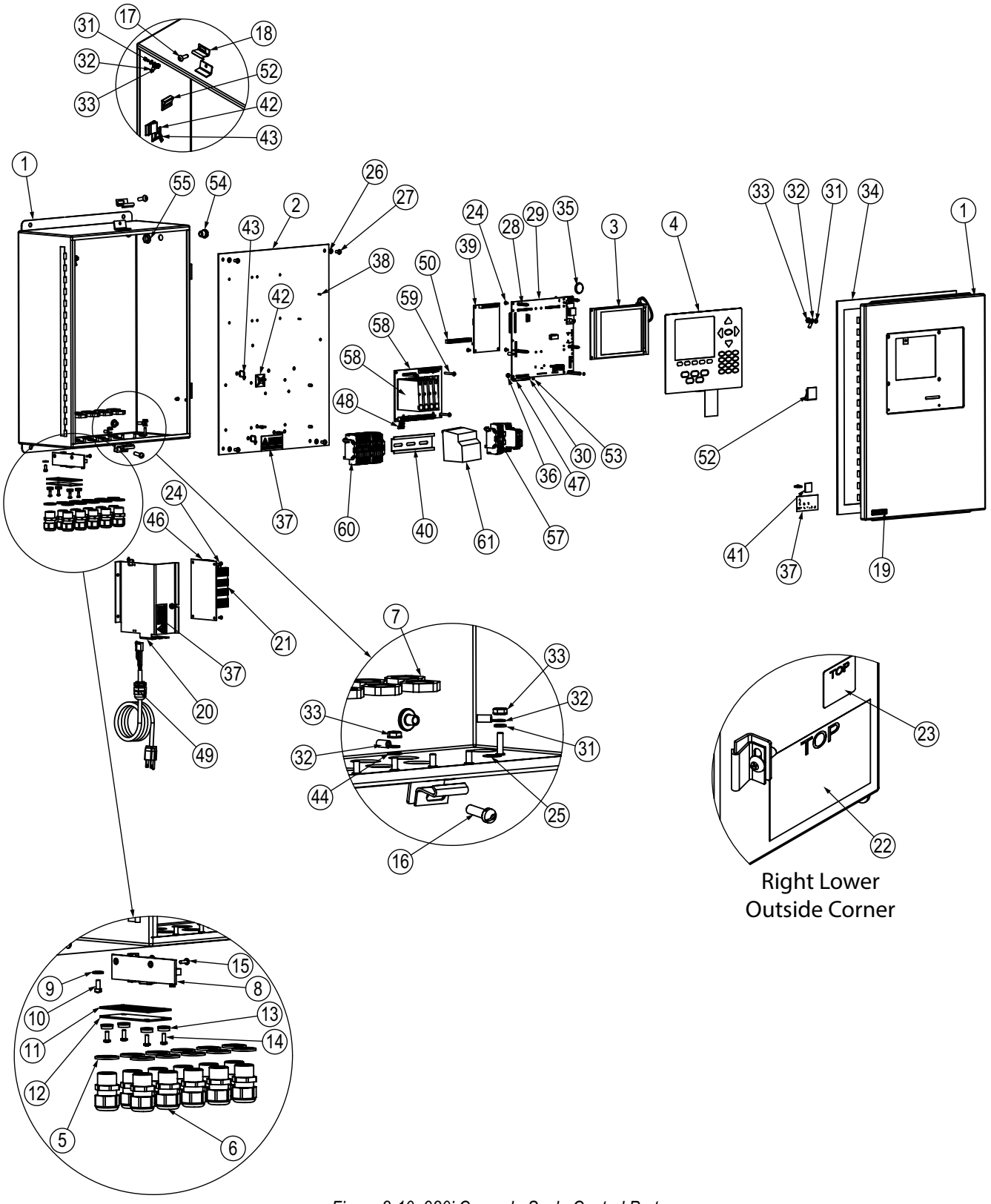

Figure 2-10. 920i Cascade Scale Control Parts

Item No.	Part No.	Descriptions	Qty.
1	68902	Enclosure, 920i Wall Mount	1
2	68903	Back Panel, Component 920i	1
3	67614	Display, LCD Module 920i	1
4	66502	Overlay, Membrane Switch	1
5	30376	Seal Ring, Nylon 1/2 NPT	11
6	15628	Cord Grip, 1/2 NPT Black	11
7	15630	Locknut, 1/2 NPT Black	11
8	67869	Board, Interface 920i	1
9	59250	Washer, 0.255 ID x 0.44 OD	1
10	42640	Screw, Mach 1/4-28 NF x 0.25"	1
11	67535	Gasket, Interface Board	1
12	67530	Plate, Interface Board	1
13	45042	Washer, Bonded Sealing #6	4
14	14845	Screw, Mach 6-32NC x 0.38"	4
15	55708	Screw, Mach 4-40NC x 0.38"	2
16	71455	Screw, Mach 1/4-28NF x 0.75"	1
17	71447	Screw, Mach 1/4-28NF x 0.75"	3
18	71739	Clip, Clinching Enclosure	4
19	68216	Nameplate, Rice Lake	1
20	69538	Bracket, Power Supply 65 W	1
21	71333	Power Supply, 6 V 65 W	1
22	53307	Label, 4.000 x 2.875	1
23	53308	Label,1.25 x 1.25 8000T	1
24	14822	Screw, Mach 4-40 NC x 0.25"	11
25	16892	Label, Ground Protective	1
26	15140	Washer, Lock No. 10 Type A	4
27	14875	Screw, Mach 10-32NF x 0.38"	4
28	67886	Standoff, Male-FEM 4-40 NC	1
29	109549	Board Assembly, CPU 920i Plus	1
30	68661	Standoff, Male-Fem 4-40 NC	2
31	15134	Washer, Lock No. 8 Type A	3
32	15694	Conn, Eye Crimp No. 8	4
33	14626	Nut, Kep 8-32 NC Hex	4
34	68724	Gasket, Cover 920i Wall	1
35	69290	Battery, 3 V Coin Lithium	1
36	14618	Nut, Kep 4-40 NC Hex	2
37	16861	Label, Warning High	3
39	67610	Card, A/D Single Channel	1
40	43636	Rail, DIN 4.75"	1

Item No.	Part No.	Descriptions	Qty.
41	15650	Mount, Cable Tie 3/4"	6
42	15658	Mount, Cable Tie 1"	2
43	15631	Cable Tie, 3" Nylon	8
44	15133	Washer, Lock No. 8 Type A	1
46	67967	Connector, 6 Pin MTA 0.156 18 AWG Orange	1
47	77180	Connector, 8 Position 14-28 AWG	1
48	46189	Strap, Jumper 10 Position	1
49	85202	Power Cord Assembly, 120 VAC	1
	108073	Conn, Housing SL-156	1
	108075	Conn, Contact SL-156	1
53	69898	Washer, Nylon #4 ID = 0.112	2
54	88733	Vent, Breather Sealed	1
55	88734	Nut, Breather Vent	1
57	--	Terminal Assembly	1
	62975	Block, Terminal Wago 4 Gray	2
	62974	Block, Terminal Wago 4 Green/Yellow	1
	62973	Plate, End/Intermediate 4	1
	88793	24 VDC Power Supply	1
	153200	Fuse	1
	62969	Fuse Holder	1
	66190	Fuse Holder End Plate	1
	61141	End Stop, Screwless Wago	4
58	121345	Relay, Module Solid State	5
58	155253	Board Assembly, DWM 8CH Relay	1
59	120762	Screw, Mach 6-32NC x 1 1/4"	4
60	--	Terminal Assembly	1
	62964	Block, Terminal Wago 3 Gray	14
	62966	Block, Terminal Wago 3 Green/Yellow	1
	62968	Plate, End/Intermediate 3	2
	55337	Jumper, Adjacent Wago	2
	61141	End Stop, Screwless Wago	5
61	67799	Connector, 4 Pin MTA 0.156 18AWG Orange	1
	68662	Cable, Ribbon Interface to CPU 12.5"	2
	117901	Foam, Mixture High Density	
	15601	Wire Assembly, Ground 6"	1
	71426	Parts Kit, 920i Single	1
	71431	Wire Harness, 65 W Power	1
	71436	Cable Assembly, Ribbon 28"	1

Figure 2-11. 920i Cascade Scale Control Parts List

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2.7 Cascade Scale Controller Dimensions

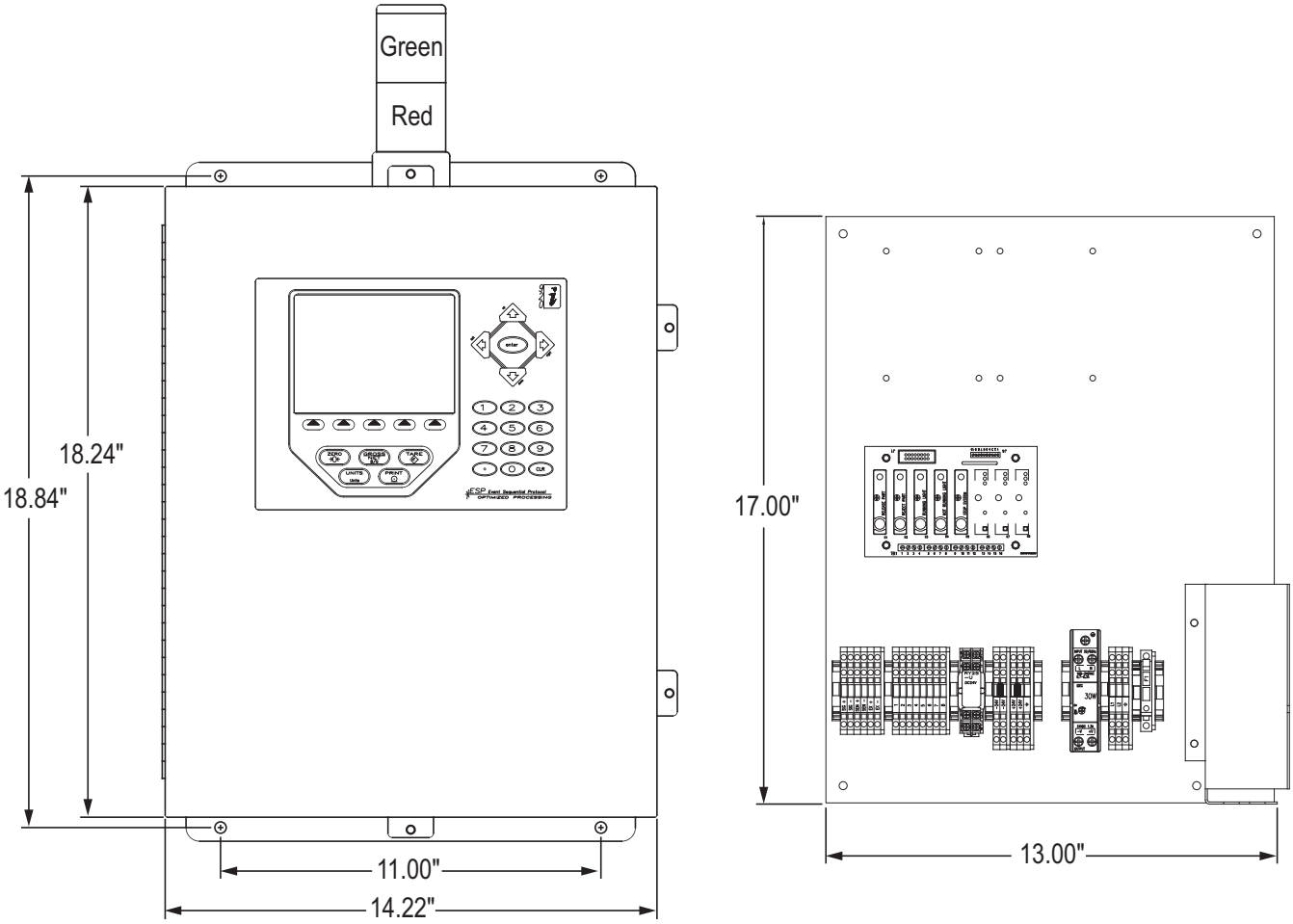

Figure 2-12. Cascade Scale Enclosure Dimensions

2.8 Hardware Setup

Slot	Type
1	Single Channel A/D Card
2	Currently Not Used

Table 2-2. Option Card Locations

Slot	Bit	Type	Function
0	1	Output	Release Part
0	2	Output	Reject Part
0	3	Output	Running Light
0	4	Output	Not Running
0	5	Output	Bag Filler Stop

Table 2-3. Digital I/O

Port	Type	Description	Setup
1	CMD	Currently Not Used	9600,8,N,2
2	CMD	Service Port	115200,8,N,2
3	CMD	Real Time Data	9600,8,N,2
4	CMD	Currently Not Used	9600,8,N,2

Table 2-4. Serial Port

2.9 Installation Checklist

Use the following checklist when setting up the Cascade Scale:

2.9.1 Installation

___ Ensure the Cascade Scale is level
___ Ensure the Cascade Scale is securely anchored with adequate hardware (mount holes = Ø 0.39")
___ Ensure the air hose is connected securely
___ Set transportation set screw from the load cap (top of load cell)
___ Install weigh platform set

2.9.2 System Setup

___ Ensure the load cell has been upright for a minimum of three hours prior to installation; failure causes blockage of the breather holes, resulting in malfunction of the load cell
___ After the specified time period, remove warning label and shroud then use a 3 mm A/F hex key to loosen and fully remove the transportation set screw from the load cap
___ Wipe away all damping fluid present on the end of screw
___ Replace transportation set screw into load cap and screw down until the head is 1 mm below the surface
___ The load cell is now ready for installation, but must remain in an upright position after this preparation
___ Where additional wash down protection is required then the enclosed shroud should be fitted into the location groove in the load cap
___ Prior to transportation of the load cell, reseal by tightening the transportation set screw, using a 3 mm A/F hex key

2.9.3 Setting Overload Stops

___ Loosen the jam nuts on both overload stops
___ Lower both overload protection bolts a 1/4" clearance between the top of the overload stop and weigh platter frame
___ Place 110% of the scale capacity over the overload stop
___ Turn the overload stop counterclockwise until the overload protection bolt contacts the frame
___ Tighten the jam nut on the overload stop
___ Repeat previous steps for the other overload stop
___ Configure and calibrate the system with 100% capacity
___ Verify the scale reading with a calibrated test weight at 100% capacity

2.9.4 Scale Setup

___ Calibrate scale to zero weight and max capacity
___ Observe the static weight display
___ Adjust the filter settings to stabilize weight fluctuations, if needed
___ Ensure the air pressure is within the recommended PSI

2.9.5 System Test

___ Select **Start** on the main menu to start operation
___ Send a part through the Cascade Scale and observe the diagnostic data being sent to the indicator
___ Observe the time required to reach the divertor and adjust the divertor values, if needed

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3.0 Operation

This section provides an overview of the MotoWeigh Cascade Scale operation instructions.

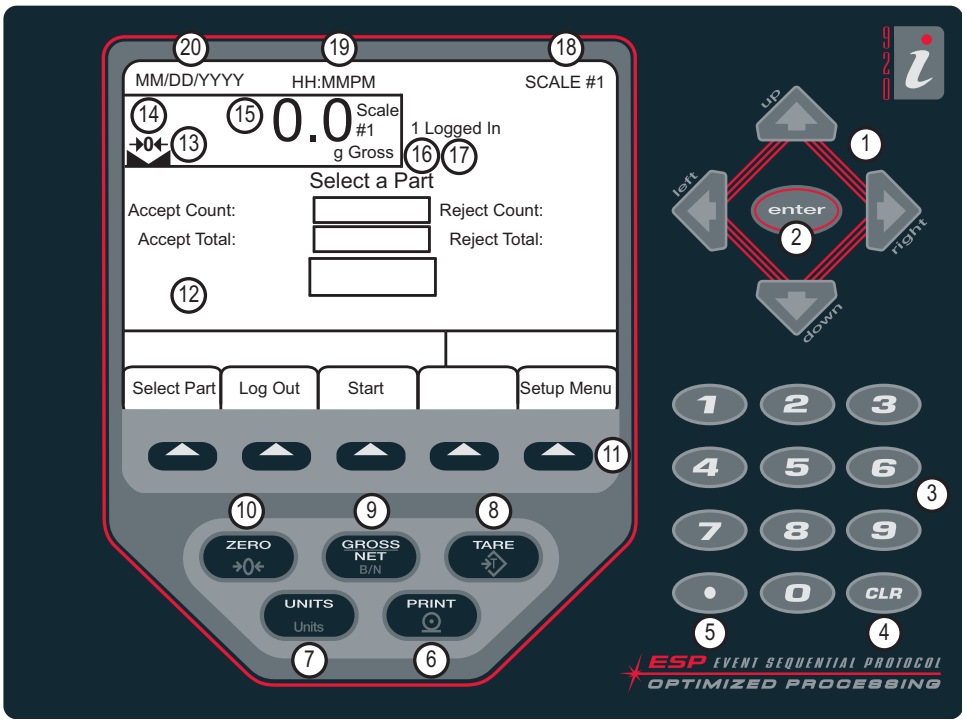

Figure 3-1. 920i Front Panel

Item No.	Descriptions
1	Arrow Keys – Moves cursor to needed area and updates values
2	Enter Key – Saves entered data
3	Numerical Keypad – Allows input of numbers
4	Clear Key – Clears data
5	Decimal Key – Insert a decimal at the cursor location
6	Print Key – Prints a summary report, if reports are enabled and a printer is connected
7	Units Key – Toggles between available units
8	Tare Key – Sets/removes a tare value
9	Gross/Net Key – Toggle between gross value and net value
10	Zero Key – Sets the scale at zero
11	Softkeys – Dependent on the keys setup
12	Information Display – Display current information for part being weighed
13	Standstill Icon – Indicates the load force has settled within the motion window
14	Center of Zero Icon – Indicates the scale is zeroed
15	Weight Display – Displays the weight of the current part on the scale
16	Unit of Measure Icon – Indicates the current unit of measure
17	Gross/Net – Indicates if the weight is in gross or net weigh mode
18	Current Scale – Scale currently being weighed
19	Time – Current time is displayed
20	Date – Current date is displayed

Table 3-1. Front Panel

3.1 Power the Indicator

To power the indicator, plug the AC adapter into a nearby outlet.

CAUTION ***The supplied cord serves as the power connect/disconnect for the 920i. The power outlet supplying the indicator must be near the unit and be easily accessible.***

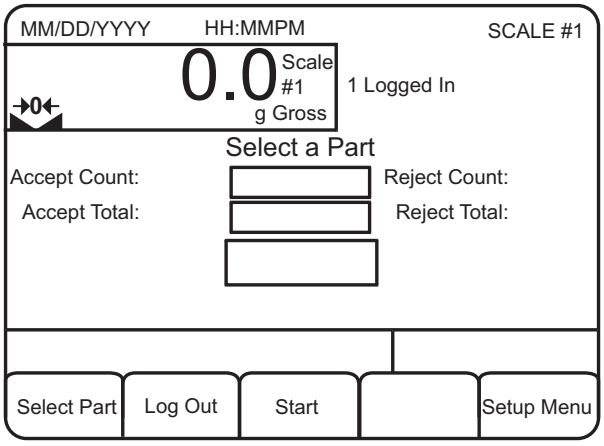

Figure 3-2. Initial Display

Note ***After powering on the device or exiting a screen, a login is required to continue operation of the unit.***

3.2 Select a Part

To select a part for weighing:

1. Press **Select Part**. The list of parts saved in the database displays.

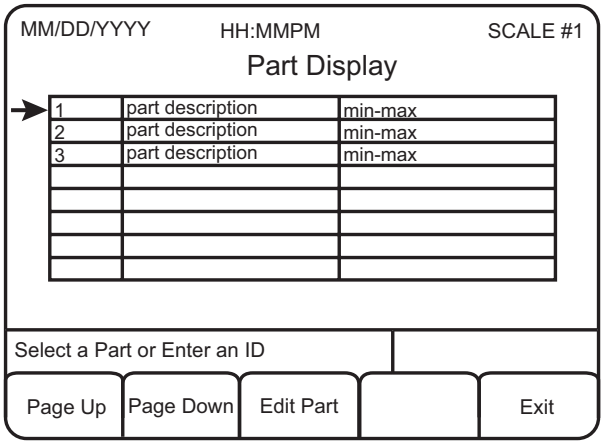

Figure 3-3. Part Display

Note ***At Part Display, the operator can add, edit and delete parts.***

2. Select a part from the list by:
   - Use the **Arrow** keys to scroll through the list
   - Use **Page UP** and **Page Down** to view other pages
   - Enter an ID number using the keypad
3. Press enter.

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3.3 Processing a Batch

When processing a batch, the operator verifies the proper part number (and carton number if option 2 is used) is displayed or performs the ***Selecting a Part*** procedure.

1. Select a part (Section 3.2 on page 15).
2. Select **Start**.
3. Enter WO/PO number. Press enter.

Note ***If there is no WO/PO then press*** enter ***to continue.***

4. Enter number of parts for order. Press enter.

Note ***If there is no batch quantity then press*** enter ***to continue.***

5. System begins check-weighing.
6. ***Waiting on Part*** displays.
7. ***Running Output*** (green light) turns on.
8. If a part is not detected for the ***Part Detect Time***, the ***Not Running Output*** (red light) turns on.

Select **Stop** to end the batch, once all parts have been weighed. If a stable weight is not captured before the motion time interval expires, ***Error: Motion Time Exceeded*** displays and returns to Step 1. Wait on part displays until the minimum drop weight is exceeded ***Minimum Part Weight x 50%***.

3.3.1 Stable Weights

Dropped Part

Stable weight is greater than the ***Minimum Drop Weight*** and less than the ***Minimum Part Weight x 50%***.

- The system marks a part greater than ***Minimum Part Weight x 50%*** as a dropped part
- Once weight exceeds ***Minimum Part Weight x 50%***:
  - Displays the reject output for the reject part time interval
  - Displays the release output for the release part time interval
  - Displays the reject widget
  - Displays the captured weight
  - Increments the reject count in the part database and display
  - Increments the reject weight in the part database and display

Accepted Part

Stable weight is greater than ***Minimum Part Weight*** and less than ***Maximum Part Weight***.

- Accepted Part (between Part Minimum Weight and Part Maximum Weight)
  - Turns on the release output for the release part time interval
  - Displays the accept widget
  - Displays the captured weight
  - Increments the accept count in the part database and display
  - Increments the accept weight in the part database and display

Rejected Part (Due to Underweight)

Stable weight is greater than ***Minimum Part Weight x 50%*** and less than ***Minimum Part Weight***.

- Turns on the reject output for the reject part time interval
- Turns on the release output for the release part time interval
- Displays the reject widget
- Displays the captured weight
- Increments the reject count in the part database and display
- Increments the reject weight in the part database and display

Rejected Part (Due to Overweight)

Stable weight is greater than ***Maximum Part Weight***.

- Turns on the reject output for the reject part time interval
- Turns on the release output for the release part time interval
- Displays the reject widget and turns on reject output light
- Displays the captured weight
- Increments the reject count in the part database and display
- Increments the reject weight in the part database and display
- System sends out the real time data string out Port 3
- If the system detects more than the user defined number of consecutive rejects and calculate the Weigh Trend Analysis, the scale will send a dry contact closure signal to the ***Stop Bag Machine Output*** to stop the counter (abort process)

3.4 Clear All and Print Report

Use this process to clear totals and print reports, if a printer is available.

1. Select **Setup Menu** to enter menu.
2. Select **Display Totals**. ***Select a Part*** displays.
3. Use the keypad to enter the part number (Section 3.2 on page 15).
4. Select **Clear All**. ***Are you sure?*** displays.
5. Select **Yes** to clear totals and return to the previous menu.
   - Select **No** to return to the previous menu without clearing the totals; ***Totals NOT Cleared*** displays
6. Select **Print Report**, to print if there is a printer connected. This step is optional.
7. Select **Exit** to return to the main menu.

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4.0 Configuration

This section provides an overview of the MotoWeigh Cascade Scale configuration instructions.

To enter setup mode, remove the large fillister head screw from the indicator enclosure. Insert a non-conductive tool into the access hole and press the setup switch once. The indicator displays scale configuration menus.

The softkeys and menus used to configure the Cascade Scale are discussed in this section.

4.1 Navigation

4.1.1 Front Panel Keys

The front panel keys are used to set parameters and enter numerical data.

- Press left to go back to the previous field
- Press CLR clear the current field or to delete a previous character

4.1.2 Entering Alphabetical Characters

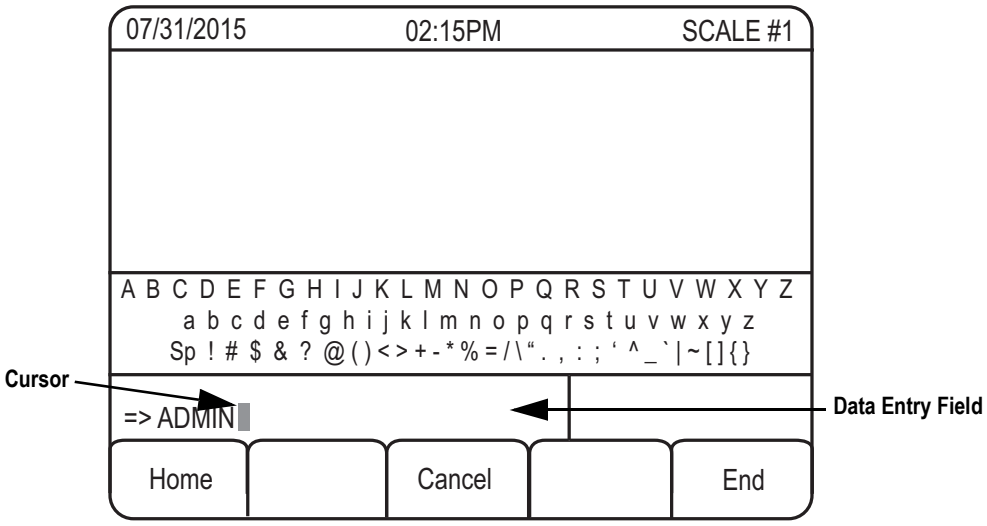

Figure 4-1. Alphabetical Character Map

To enter alphabetical characters:

1. Press up. The character map displays.
2. Using the **Arrow** keys, highlight the desired character. Press enter.
3. Repeat until the desired string is displayed.
4. When the desired characters are displayed, press down until the cursor is in the data entry field.
5. Press enter to return to the menu.

4.2 Menus

The menus are used to configure the parameters of the indicator. Select **Setup Menu** to enter.

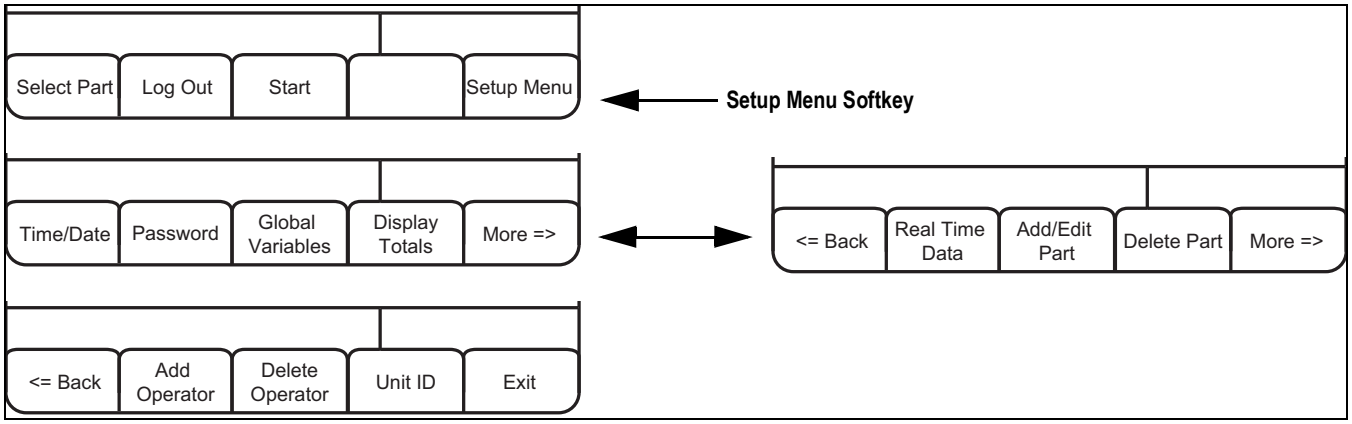

Figure 4-2. Main Menu Softkeys

Softkey	Descriptions
Time/Date	Used to set the time and date for the 920i
Password	Entering a password requires it to be entered when Setup Menu is selected
Global Variables	Minimum Drop Weight – Minimum drop weight for single clip/part
	Motion Time (100 ms = 1 sec) – Maximum length of time to check for stability
	Part Detect Time – Time, in ms, from START to first part before signaling operator not running
	Consecutive Reject – Allows the operator to define a number of consecutive rejects, and stop the counting and bagging machines when/if that number is achieved; Making the number "0" will disable this feature
	Weight Trend Analysis – Allows the operator to enter a user definable number, greater than "50"; The system will track the specified number of weights, calculate an average, compare that average to the target value entered for the part, and determine the consistency of the parts being weighed; If the average accuracy is below 90%, compared to the target value, the system will stop the counting machines; Making this number "0" will disable this feature
Display Totals	Used to clear totals and print reports if printer is connected (printer supplied by customer)
More=>	Access next parameter display
<=Back	Returns to previous parameter display
Add/Edit Part	Add a new part or edit an existing part in the database
Delete Part	Deletes selected part
Unit ID	Create a unique identifier for the unit
Exit	Returns to the main menu
Motion time	Maximum length of time to check for stability
Real Time Data	Configure real time data string on Port 3
Clear Totals	Allows operator to clear ALL or individual part totals
Print Report	Allows operator to Print a Total Report
Add Operators	Allows operator to Add Operators to the database
Delete Operators	Allows operator to Delete Operators from the database

Table 4-1. Main Menu Softkey Descriptions

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4.3 Time and Date

Time (min:sec am/pm) and Date (mm/dd/yyyy) can be set using the following steps. **Cancel** can be pressed to return to the main menu without changes to time and date.

1. Select **Setup Menu** to enter main menu.
2. Select **Time/Date**. The currently set time and date displays.
3. Use the keypad to enter minutes, press right to move to seconds.
4. Use keypad to enter the seconds, press right to move to am/pm.
5. Press down to select am or pm.
6. Press right and use the keypad to set the month, day and year of the date.
7. When both time and date has been set, press enter to return to the main menu.

4.4 Password

A password can be set to protect settings.

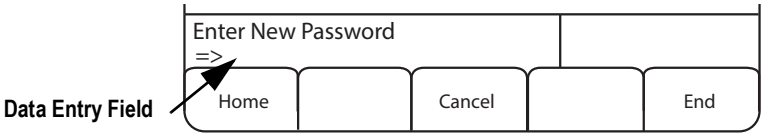

Figure 4-3. Password Softkeys

4.4.1 Softkey Actions

- Home – returns the cursor to the beginning of the string in the data field
- Cancel – press to cancel the procedure and return to the main menu
- End – places the cursor at the end of the string in the data field

4.4.2 Set Password

1. Select **Setup Menu** to enter menu.
2. Select **Password**. ***Enter New Password*** displays in the data input box.
3. Using the keypad, enter the desired password. Only numbers are allowed for passwords. Press enter.
4. ***Re-enter Password to Verify*** displays. Enter the password again and press enter.
5. ***Password Changed*** displays. If the entered passwords are not identical, ***Passwords did not Match*** displays.

4.5 Global Variables

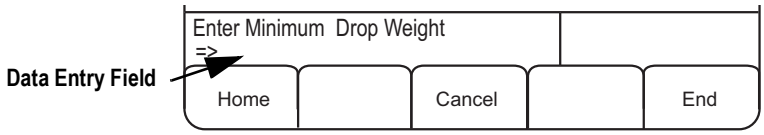

Figure 4-4. Global Variables Entry

4.5.1 Softkey Actions

See Section 4.4.1 on page 20 for softkey actions.

4.5.2 Set Global Variables

1. Select **Setup Menu** to enter menu.
2. Select **Global Variables**.
3. ***Enter Minimum Drop Weight*** displays. Press enter.
4. ***Enter Motion Time*** displays. Press enter.
5. ***Enter Part Detect Time*** displays. Press enter.

Note ***Once a part is on the scale stand still needs to be met before the motion time expires. If not, the system displays a message and stop. Including the signal to stop the filler machine.***

6. Enter ***Consecutive Reject***. Press enter. Select 0 to disable this feature.
7. Enter ***Weight Trend Amount***. Press enter. Select 0 to disable this feature.

4.6 Display Totals

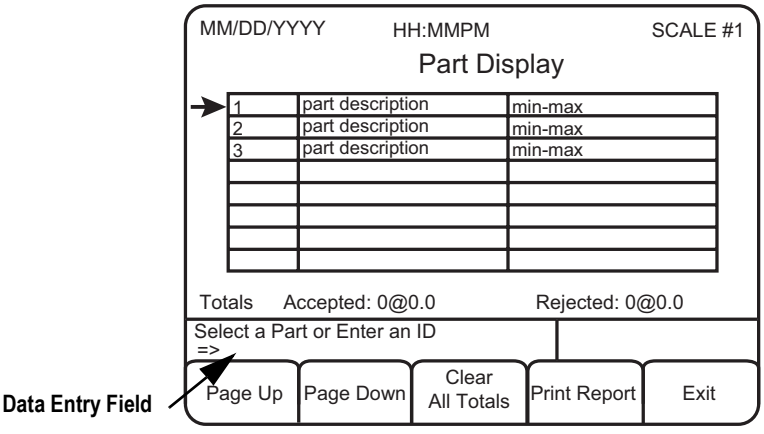

Figure 4-5. Display Totals

4.6.1 Softkey Actions

Press the softkey to perform the following actions:

- Page Up – displays the fields on the pages above
- Page Down – displays the fields on the pages below
- Clear All Totals – clears all totals, accepted and rejected, for the part selected
- Print Report – prints a report on a connected printer (supplied by user)
- Exit – returns to the main menu

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4.7 Real Time Data String

A menu option will allow the user to configure the real-time data string out Port 3. This string can be customized using tokens, delimiters or static text.

4.8 Add/Edit Parts

Use the following section to add, edit, delete and search parts:

Field	Type	Descriptions
ID	String	Part identifier
Name	String	Part name
MinWt	Real	Minimum weight reading
MaxWt	Real	Maximum weight reading
RlsTm	Integer	Length of time to keep the release output on
RjtTm	Integer	Length of time to keep the reject output on
AcptCnt	Integer	Total accepted count
AcptWt	Real	Total accepted weight
RejCnt	Integer	Total rejected count
RejWt	Real	Total rejected weight

Table 4-2. Part Database Table – 500 Records

4.8.1 Add Part

Add a part using the 920i display softkeys.

1. Select **Setup Menu**.
2. Select **More=>** to go to the second page of menu items.
3. Select **Add/Edit Part**. **Enter Part ID** displays.
4. Enter an ID number for the new part using the keypad. Press enter.
5. ***Enter Part Name*** displays. Enter the part description using the keypad or the character display (Section 4.1.2 on page 18).
6. ***Enter Minimum Weight*** displays. Enter the minimum weight acceptable for this part using the keypad. Press enter.
7. ***Enter Maximum Weight*** displays. Enter the maximum weight acceptable for this part using the keypad. Press enter.
8. ***Enter Release Time*** in ms displays. Enter the release time using the keypad. Press enter.
9. ***Enter Reject Time*** in ms displays. Enter the reject time using the keypad. Press enter.
10. ***Part Added*** displays. Select **Exit** to return to weigh mode.

4.8.2 Edit Part

Use the steps in Section 4.8.1 to enter an existing part ID. Use the Arrow keys to make the edits required and the enter to accept edits.

4.8.3 Delete Part

To delete a part:

1. Select **Setup Menu**.
2. Select **More=>** to go to the second page of menu items (Figure 4-2 on page 19). Select **Delete Part**.
3. **Enter Part ID** displays. Enter the part ID number using the keypad. Press enter.
4. ***Part Deleted*** displays. Select **Exit** to return to weigh mode.

4.8.4 Add Operator

1. Select **Setup Menu**.
2. Select **More=>** to go to the second page of menu items (Figure 4-2 on page 19). Select **Add Operator**.

4.8.5 Delete Operator

1. Select **Setup Menu**.
2. Select **More=>** to go to the second page of menu items (Figure 4-2 on page 19). Select **Delete Operator**.

4.8.6 Unit ID

1. Select **Setup Menu**.
2. Select **More=>** to go to the second page of menu items (Figure 4-2 on page 19). Select **Unit ID**.

4.8.7 Consecutive Rejects

1. Select **Setup Menu**.
2. Select **More=>** to go to the second page of menu items (Figure 4-2 on page 19). Select **Consecutive Rejects**.

4.8.8 Trend

1. Select **Setup Menu**.
2. Select **More=>** to go to the second page of menu items (Figure 4-2 on page 19). Select **Trend**.

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5.0 Maintenance and Troubleshooting

This section provides an overview of the MotoWeigh Cascade Scale maintenance and troubleshooting instructions.

5.1 Preventive Maintenance

Use the following steps to extend the life and maximize the performance of the Cascade Scale:

5.1.1 Daily

- Ensure the Cascade Scale is kept clean and free of debris
- Check the calibration of the scale, while in idle mode, using test weights
- Check the air pressure regulator to ensure the air is at the desired pressure
- Check all gates move freely without binding

5.1.2 Weekly

- Air regulator – Ensure there is no water above the water line; Drain water by loosening the petcock valve on the bottom of the regulator

5.1.3 Monthly

- Check all gate hinge bushings for wear and replace if needed
- Ensure all fasteners are tight and there is not excessive movement
- Check the filter in the air pressure regulator, if the filter is dirty, install a new one
- Backup configuration and database information using iRevolution (frequency of backup depends on frequency of changes to configuration files and the addition of new files)

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230 W. Coleman St. • Rice Lake, WI 54868 • USA
U.S. 800-472-6703 • Canada/Mexico 800-321-6703 • International 715-234-9171 • Europe +31 (0)26 472 1319