

Operation Manual

700 Series Automatic for Round Baler Models

25 & 55 Gallon Preservative Applicators



HarvestTec[®]

EST. 1976

Round Baler Models Operation Table of Contents

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Introduction

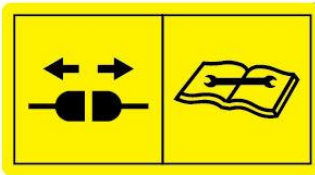
Read this manual carefully to ensure correct steps are done to operate the applicator. This applicator is designed to apply Harvest Tec buffered propionic acid. Use of alternative products may cause complications including but not limited to: inaccurate flow meter readings, damage to system parts and the warranty being void. The applicator can be installed on many round balers with the proper installation kit. Before installing the unit on the baler, make sure you have the proper installation kit designed to fit the specific baler model.

Safety

Carefully read all the safety signs in this manual and on the applicator before use. Keep signs clean and in good working order. Replace missing or damaged safety signs. Replacement signs are available from your local authorized dealer. See your installation manual or under the replacement parts section for the correct part numbers.

Keep your applicator in proper working condition. Unauthorized modifications to the applicator may impair the function and/or safety of the machine. Carefully read and understand all of the baler safety signs before installing or servicing the baler. Always use the supplied safety equipment on the baler to service the applicator.

Safety Decal Definitions



Number 1
Spraying hazard. Disconnect power before servicing the applicator
Part no. DCL-8003



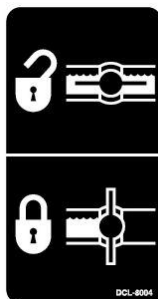
Number 2
Falling hazard. Do not step in this area.
Part no. DCL-8002



Number 3
Use caution when working around chemicals. **Wear all protective equipment according to the label of the product.**
Part no. DCL-8001



Number 4
Read and understand the operator's manual before using or working around the equipment.
Part no. DCL-8000



Number 5
Open (unlocked) and closed (locked) position of the ball valve.
Part no. DCL-8004

Preparing the Applicator for Operation

After the Applicator has been installed on the baler, follow the below steps to prepare for operating the applicator both safely and correctly.

Filling the tank through the Drain / Fill Line

Read the label of the product being filled into the tank to determine what individual protective measures need to be taken. Locate the drain/fill line on the baler. Open the cam-couplers (A) and remove the protective plug (B). Insert the male coupler (found on transfer pump) into the female cam and close the cams (A).

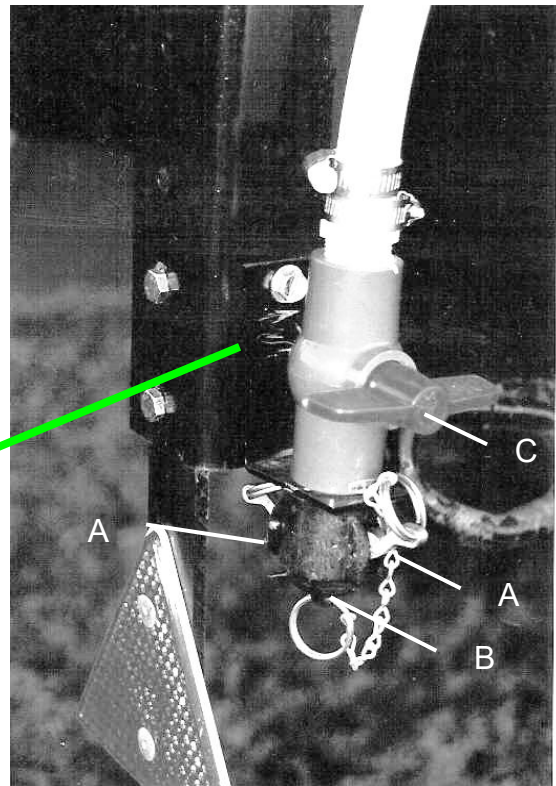
To open the ball valve (C) turn the handle so it is vertical. After the ball valve has been turned on switch the pump to the On position. Monitor the level on the tank visually and shut off the pump before over filling. Once the pump is turned off, close the ball valve and remove the male coupler.

The handle of the ball valve (C) will be horizontal when closed. Reinstall the protective plug and close the cams. The Harvest Tec model 9212 transfer pump is recommended for this process.

Water is recommended for first time and annual start up procedures.



Example drain/Fill line on the baler



Enlarged view of the drain/fill line valve and cam-coupler assembly.

Filling the Tank through the Tank Lid Opening

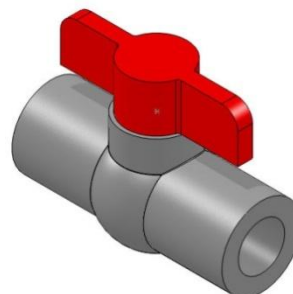
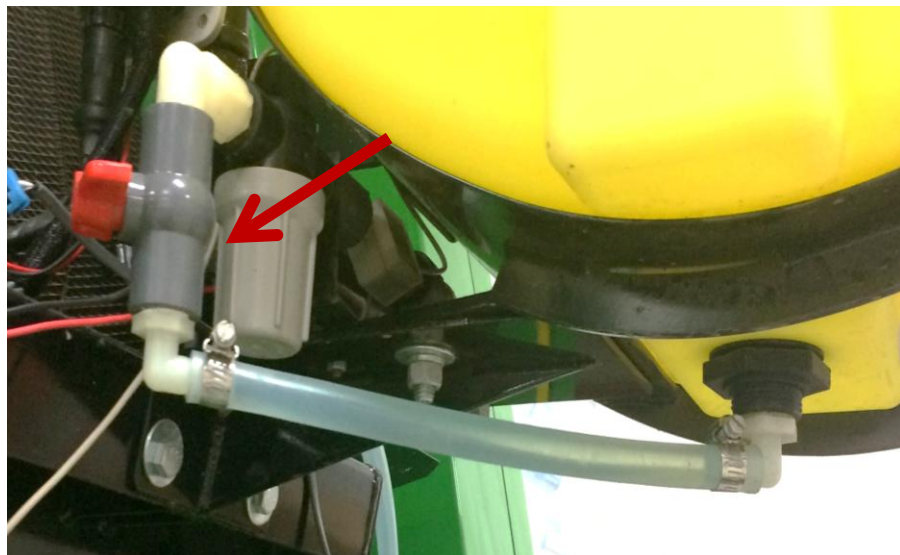
Read the label of the product being filled into the tank to determine what individual protective measures need to be taken. Clean the tank lid area and unscrew the lid. Transfer product from the container into the tank.

Water is recommended for first time and annual start up procedures.

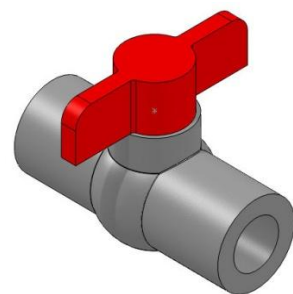
Operation of the Main Ball Valve

The ball valve should be closed at all times when the applicator is not being used. The valve should also be closed when any service work is being done to the baler or applicator.

The valve is located next to the pump and by the applicator tank. The arrow below points at the valve.



Valve
open



Valve
closed

Connecting the Power Harness

The power harness that supplies power from the tractor battery to the applicator pump has a disconnect at the hitch. Connect the two together for operation. Always disconnect before jump starting (or using a booster pack) to start the tractor, when welding on tractor or baler, and before servicing the applicator or baler.

WARNING: Stop tractor engine and shift to park, set brakes and remove key before leaving the tractor.

ISO Communication Module

With the Precision Baling app installed on iPad or Android tablet, operate the applicator by connecting the tablet by cable* to the ISO Communication Module (ICM) USB tablet port.

Blinking or Solid Green Light – Module is connected and ready to operate.

Recommended to use a quality data transfer communication cable with a USB-A plug. Use of plug adapters are not supported

When baling is completed, be sure to properly shut down the Precision Baling App.

ISO Communication Module (ICM)



Pressing the Home Button on the tablet WILL NOT stop application of the Harvest Tec System

*Note: By pressing the home button one time to return to the home screen, the Precision Baling App **does not** shut down. The system will, however, stop applying preservative after 10 seconds.

Shutting Down the Precision Baling App - iPad

1. To shut down the Precision Baling App double click the home button. This will show the open apps that are running on your iPad.



2. Slide the app you want to shut down toward the top of the iPad, until the app is no longer visible.

Shutting Down the Precision Baling App - Android

1. To shut down the Precision Baling App click the recent button. This will show the open apps that are running on your tablet.

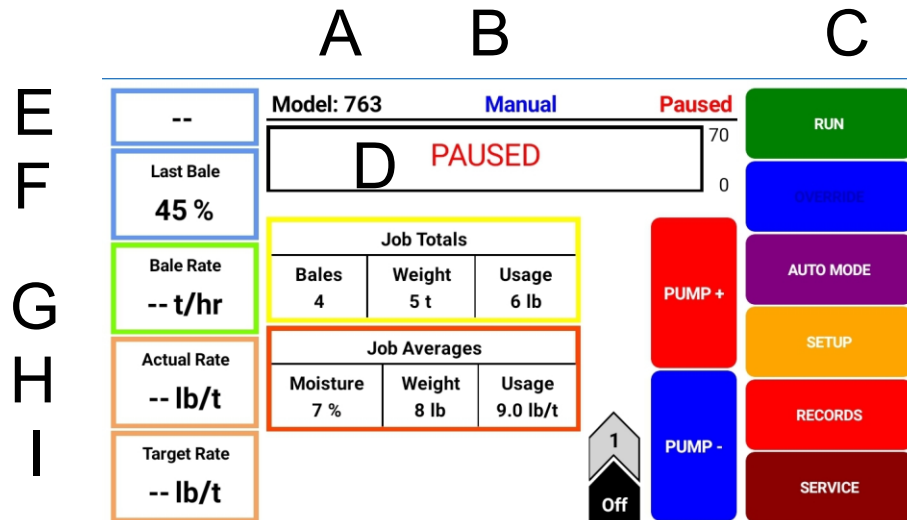


2. Slide the app you want to shut down toward the right of the tablet screen or click on the 'x', until the app is no longer visible.

Operating the Harvest Tec 700 Series Applicator

The 700 series display is broken down into four main categories:

- **Top:** Status Messages
- **Bottom Center:** Current Job Summary Information
- **Left Side:** Real Time Information
- **Right Side:** Operational Keys



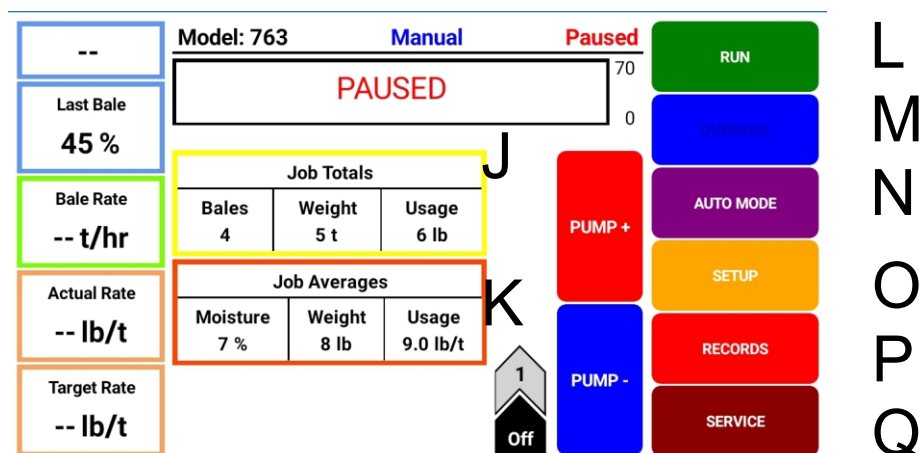
Status Message Descriptions

- A) **Model:** Indicates what model system.
- B) **Mode:** Confirms which mode has been selected.
- C) **Status:** Confirms if system is running or paused. **Note: Upon startup the system is PAUSED.**
- D) **Histogram:** Moisture graph of the last 90 seconds or shows if system is paused.

Real Time Information Boxes

- E) **Current %:** This displays instantaneous moisture reading of hay coming into baler.
- F) **Last Bale %:** This displays average of all moisture readings taken from last bale made
- G) **Bale Rate:** This displays the tons per hour going through baler. Based on weight and time to make a bale.
- H) **Actual Rate:** Actual amount of preservative being applied.
- I) **Target Rate:** Rate of preservative that the system is set to apply.

Operating the Harvest Tec 700 Series Applicator (continued)



Current Job Summary Boxes

J) Job Totals

- **Bales:** Displays the total number of bales made for the current job.
- **Tonnage:** Displays total tonnage baled in job. Based on number of bales made multiplied by weight.
- **Lbs. Used:** Displays the total amount of preservative applied for job.

K) Job Averages

- **Moisture:** Displays average moisture of all bales made in job.
- **Weight:** Displays the average weight of all bales in job.
- **Lbs. Used:** Displays average amount of preservative applied to each bale in job.

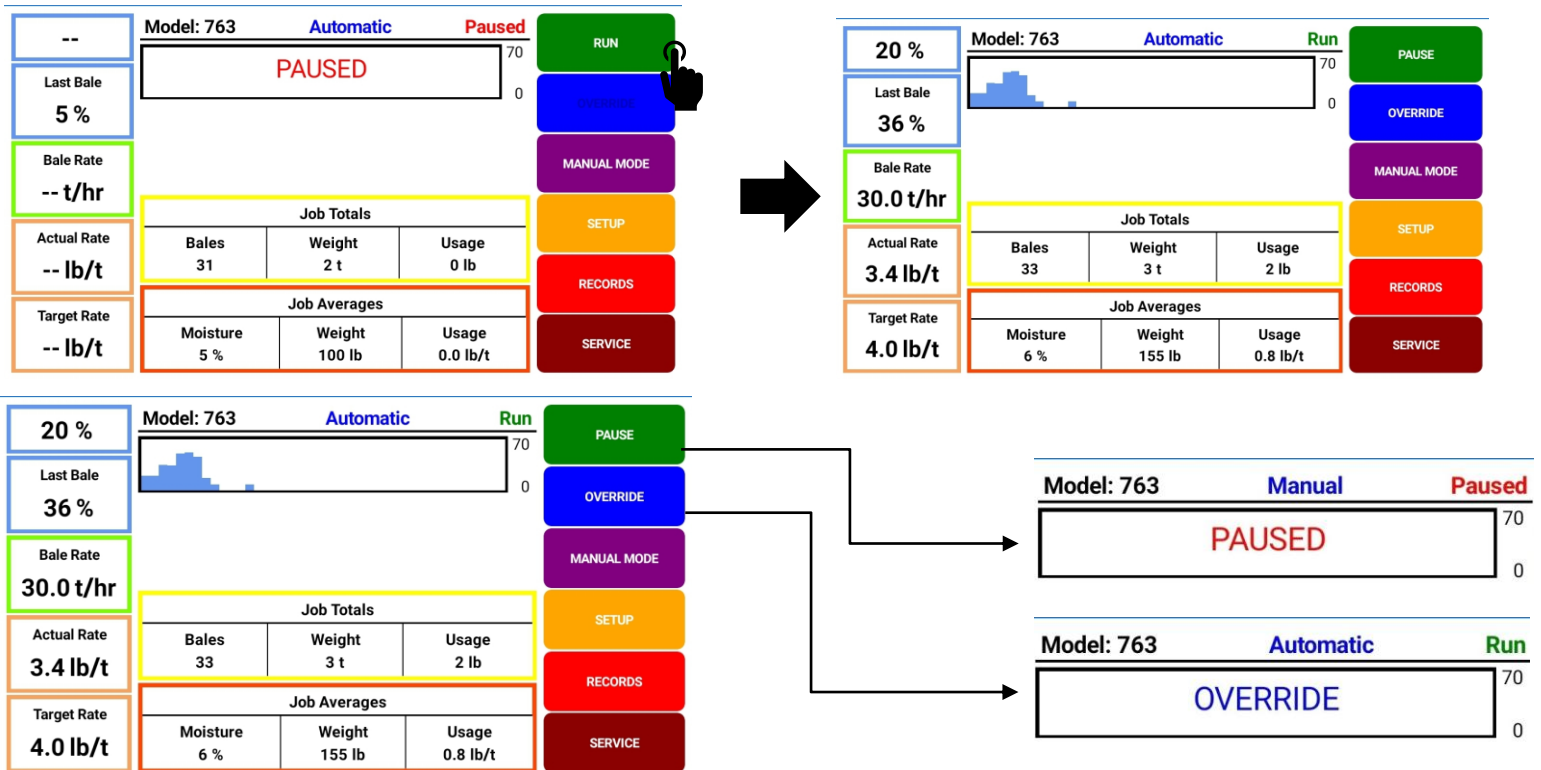
Operational Keys

- L) Run / Pause:** Toggles between run mode to apply and pause mode to stop applying.
- M) Override:** Only displays when in run mode while the applicator is applying preservative. Once in override, the applicator will apply at full rate.
- N) Manual Mode / Auto Mode:** Toggles between auto mode and manual mode preservative application.
 - **Auto Mode:** Self-adjusts preservative based on user input values, moisture, and baling rate.
 - **Manual Mode:** Allows the ability to manually adjust pump rate based on five fixed rates.
- O) Setup:** Allows for user inputs for values regarding moisture, baling rate, application rate, ability to change between Variable chamber and Fixed chamber round balers
- P) Records:** Access to view current job, view job list, view a selected job, create a new job, or reopen and add to existing job.
- Q) Service:** Displays software versions, sensor assignment, annual start-up pump test

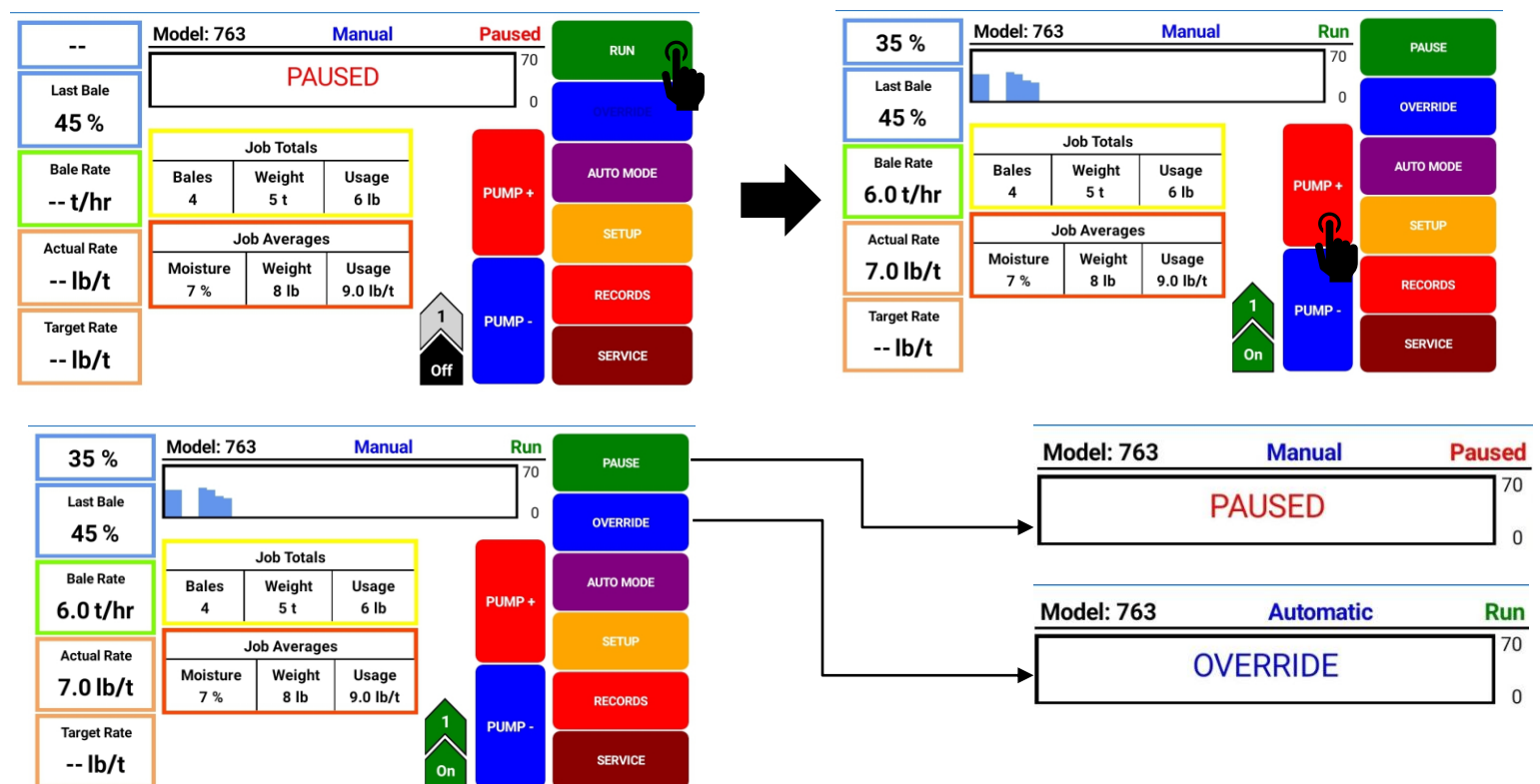
Screen Menus

Use the screen shots below to navigate through the operation screens.

Automatic Mode



Manual Mode



Setup Mode

Adjusting Moisture Levels

--	Model: 763	Manual	Paused	70	0	RUN
Last Bale	PAUSED					PAUSED
45 %						
Bale Rate	Job Totals					
-- t/hr	Bales	Weight	Usage			
	4	5 t	6 lb			
Actual Rate	Job Averages					
-- lb/t	Moisture	Weight	Usage			
	7 %	8 lb	9.0 lb/t			
Target Rate						
-- lb/t						
						1
						Off
						PUMP +
						PUMP -
						SETUP
						RECORDS
						SERVICE

LOW	Model: 763	Manual	Run	MOISTURE SETUP
Last Bale	Moisture Setup			BALING RATE
5 %	Level 1: 16 %	4 lb/t		APPLICATION SETUP
Bale Rate	Level 2: 22 %	8 lb/t		
30.0 t/hr	Level 3: 26 %	16 lb/t		
Actual Rate	Alarm: 30 %			
2.1 lb/t	Moisture Dye Marking: ☐			
Target Rate	Setpoint: 15 %			
-- lb/t	Pump Priming: ☐			
	Fixed Chamber Moisture Mode: ☐ Default MC%: 15 %			
				HOME

Select and change input boxes / sliders as needed

Adjusting Baling Rate

--	Model: 763	Manual	Paused	70	0	RUN
Last Bale	PAUSED					PAUSED
45 %						
Bale Rate	Job Totals					
-- t/hr	Bales	Weight	Usage			
	4	5 t	6 lb			
Actual Rate	Job Averages					
-- lb/t	Moisture	Weight	Usage			
	7 %	8 lb	9.0 lb/t			
Target Rate						
-- lb/t						
						1
						Off
						PUMP +
						PUMP -
						SETUP
						RECORDS
						SERVICE

--	Model: 763	Manual	Paused	MOISTURE SETUP
Last Bale	Baling Rate Setup			BALING RATE
6 %	Rate Sensor: Automatic	Bale Width: 36 in		APPLICATION SETUP
Bale Rate	Avg Bale Weight: 1000 lb	Bale Height: 24 in		
-- t/hr	Avg Bale Time: 60 sec			
Actual Rate	Bale Tie Sensor: HT			
-- lb/t				
Target Rate				
-- lb/t				HOME

Select and change input boxes / sliders as needed

Adjusting Application Rate

--	Model: 763	Manual	Paused	70	0	RUN
Last Bale	PAUSED					PAUSED
45 %						
Bale Rate	Job Totals					
-- t/hr	Bales	Weight	Usage			
	4	5 t	6 lb			
Actual Rate	Job Averages					
-- lb/t	Moisture	Weight	Usage			
	7 %	8 lb	9.0 lb/t			
Target Rate						
-- lb/t						
						1
						Off
						PUMP +
						PUMP -
						SETUP
						RECORDS
						SERVICE

--	Model: 763	Manual	Paused	MOISTURE SETUP
Last Bale	Application Rate Setup			BALING RATE
6 %	Level 1: 4 lb/t @ 16 %			APPLICATION SETUP
Bale Rate	Level 2: 8 lb/t @ 22 %			
-- t/hr	Level 3: 16 lb/t @ 26 %			
Actual Rate	Spray Nozzles: LOW	GPS Yield Mapping: ☐		
-- lb/t	Hay Indicators: OFF			
Target Rate	Units: US			
-- lb/t				HOME

Select and change input boxes / sliders as needed

Job Records

View Job List

--

Model: 763

Manual

Paused

70

0

PAUSED

45 %

Bale Rate

-- t/hr

Actual Rate

-- lb/t

Target Rate

-- lb/t

Job Totals

Bales

4

Weight

5 t

Usage

6 lb

Job Averages

Moisture

7 %

Weight

8 lb

Usage

9.0 lb/t

1

Off

PUMP +

PUMP -

RECORDS

SERVICE

RUN

STOP

AUTO MODE

SETUP

View Job List						
Job #	Farm	Field	Crop	Started	Ended	Bales
4	Brown	SW corner	Alfalfa RU 1	10-Mar-20	10-Mar-20	187
26	Brown	Nw corner	Alfalfa NS 2	10-Mar-20	10-Mar-20	174
6	J.Smith	ravene	straw	10-Mar-20	11-Mar-20	87
9	Dairy Farms	grn pasture	alfalfa 2nd	11-Mar-20	12-Mar-20	320
10	Dooleys	14	Alfalfa NS 2	14-Mar-20	14-Mar-20	92
16	Billy Joe	coop	straw	15-Mar-20	15-Mar-20	114
17	Gustavus	the ridge	alfalfa 3rd	15-Mar-20	15-Mar-20	72
21	Test Site 2	Plot 45	56798-3	16-Mar-20	16-Mar-20	369
3	Smith	A34	alfalfa X1	16-Mar-20	16-Mar-20	221

Viewing Filters:

Farm: All

Field: All

Crop: All

EXPORT ALL JOBS

DELETE ALL JOBS

ADD TO THIS JOB

JOB LIST

VIEW CURRENT JOB

VIEW SELECTED JOB

CREATE NEW JOB

HOME

View Current Job List

--

Model: 763

Manual

Paused

70

0

PAUSED

45 %

Bale Rate

-- t/hr

Actual Rate

-- lb/t

Target Rate

-- lb/t

Job Totals

Bales

4

Weight

5 t

Usage

6 lb

Job Averages

Moisture

7 %

Weight

8 lb

Usage

9.0 lb/t

1

Off

PUMP +

PUMP -

RECORDS

SERVICE

RUN

STOP

AUTO MODE

SETUP

View Current Job						
Farm: Brown		Field: SW corner		Crop: Alfalfa RU 1		Created: 10-Mar-20
Bales		Moisture		Application		
Count	Tons	Average	High	Product	Avg RFV	TDN Calif. 90%
187	758	16%	24%	2919 lb	175	58.6
ID#	Avg MC	High MC	Prod Used	Bale Weight	RFV	TDN
1001	15%	17%	4.2 lb	1485 lb	176	57.2
1002	14%	19%	3.5 lb	1482 lb	179	58.1
1003	18%	25%	4.9 lb	1444 lb	182	58.3
1004	22%	24%	10.2 lb	1432 lb	190	59.9
1005	19%	23%	9.2 lb	1423 lb	180	59.4
1006	13%	15%	3.2 lb	1501 lb	174	56.1
1007	12%	15%	4.3 lb	1404 lb	176	57.2
1008	17%	19%	7.1 lb	1471 lb	179	58.1

JOB LIST

VIEW CURRENT JOB

VIEW SELECTED JOB

CREATE NEW JOB

HOME

View Selected Job List

--

Model: 763

Manual

Paused

70

0

PAUSED

45 %

Bale Rate

-- t/hr

Actual Rate

-- lb/t

Target Rate

-- lb/t

Job Totals

Bales

4

Weight

5 t

Usage

6 lb

Job Averages

Moisture

7 %

Weight

8 lb

Usage

9.0 lb/t

1

Off

PUMP +

PUMP -

RECORDS

SERVICE

RUN

STOP

AUTO MODE

SETUP

View Selected Job						
Farm: Brown		Field: SW corner		Crop: Alfalfa RU 1		Created: 10-Mar-20
Bales		Moisture		Application		
Count	Tons	Average	High	Product	Avg RFV	TDN Calif. 90%
187	758	16%	24%	2919 lb	175	58.6
ID#	Avg MC	High MC	Prod Used	Bale Weight	RFV	TDN
1001	15%	17%	4.2 lb	1485 lb	176	57.2
1002	14%	19%	3.5 lb	1482 lb	179	58.1
1003	18%	25%	4.9 lb	1444 lb	182	58.3
1004	22%	24%	10.2 lb	1432 lb	190	59.9
1005	19%	23%	9.2 lb	1423 lb	180	59.4
1006	13%	15%	3.2 lb	1501 lb	174	56.1
1007	12%	15%	4.3 lb	1404 lb	176	57.2
1008	17%	19%	7.1 lb	1471 lb	179	58.1

JOB LIST

VIEW CURRENT JOB

VIEW SELECTED JOB

CREATE NEW JOB

HOME

Create a New Job

Model: 763 Manual Paused

70
0

PAUSED

Job Totals		
Bales 4	Weight 5 t	Usage 6 lb

Job Averages		
Moisture 7 %	Weight 8 lb	Usage 9.0 lb/t

Actual Rate
-- lb/t

Target Rate
-- lb/t

1
Off

RUN

STOP

AUTO MODE

SETUP

RECORD

SERVICE

PUMP +

PUMP -

Select Job Details to view job records

View Job List						
Job #	Farm	Field	Crop	Started	Ended	Bales
4	Brown	SW corner	Alfalfa RU 1	10-Mar-20	10-Mar-20	187
26	Brown	NW corner	Alfalfa NS 2	10-Mar-20	10-Mar-20	174
6	J.Smith	ravene	straw	10-Mar-20	11-Mar-20	87
9	Dairy Farms	grn pasture	alfalfa 2nd	11-Mar-20	12-Mar-20	320
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16	Billy Joe	coop	straw	15-Mar-20	15-Mar-20	114
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21	Test Site 2	Plot 45	56798-3	16-Mar-20	16-Mar-20	369
3	Smith	A34	alfalfa X1	16-Mar-20	16-Mar-20	221

Viewing Filters:

Farm:
Field:
Crop:

EXPORT ALL JOBS

DELETE ALL JOBS

ADD TO THIS JOB

JOB LIST

VIEW CURRENT JOB

VIEW SELECTED JOB

CREATE NEW JOB

HOME

Press Create Job

Create New Job

Farm: NEW

Field: NEW

Crop: NEW



CREATE NOW

CLEAR

JOB LIST

VIEW CURRENT JOB

VIEW SELECTED JOB

CREATE NEW JOB

HOME

Select and fill out blank input boxes as needed

Select and fill out blank input boxes as needed

Create New Job		
Farm:	NEW	Test 1
Field:	NEW	10
Crop:	NEW	Alfalfa

CREATE NOW

CLEAR

JOB LIST

VIEW CURRENT JOB

VIEW SELECTED JOB

CREATE NEW JOB

HOME

Software Versions

Model: 763 Manual Paused

70

PAUSED

0

Job Totals

Bales 4	Weight 5 t	Usage 6 lb
------------	---------------	---------------

Job Averages

Moisture 7 %	Weight 8 lb	Usage 9.0 lb/t
-----------------	----------------	-------------------

--

Last Bale

45 %

Bale Rate

-- t/hr

Actual Rate

-- lb/t

Target Rate

-- lb/t

RUN

PUMP +

AUTO MODE

SETUP

RECORDS

SERVICE

1

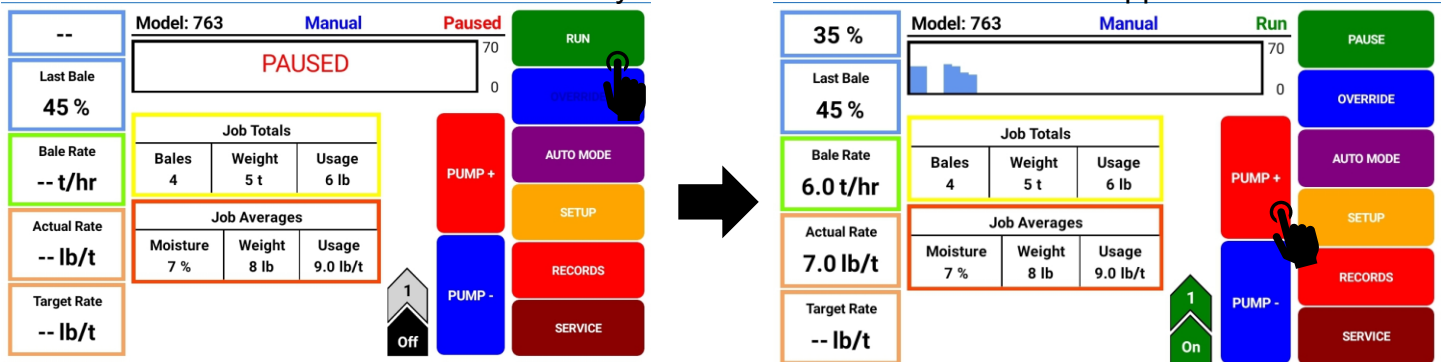
Off

Services - Versions			VERSIONS
Module	Current	Available	SENSORS
ICM	907	N/A	FILE
IPM	403	N/A	PUMP TEST
ISM	200	N/A	
IDM	401	N/A	
APP	1.0.14	N/A	
* This is an example; Software Versions will change *			HOME
UPDATE			

First Time and Annual Startup Instructions

Check and Prime the Pumps - THE UNIT MUST BE CHECKED OUT BEFORE FIELD OPERATION!

- Put 10 gal (5L) of water or preservative in tank and turn main ball valve on.
- Inspect for any leaks or drips currently. If any are found tighten or replace area or fitting.
- Turn system on.
- Press the SETUP key, then press BALING RATE SETUP key. Make the following adjustments:
 - Change Rate Sensor to **Manual**
 - Change Avg Bale Weight to match with either HIGH (1500lbs/680kg) nozzles or LOW (1000lbs/450kg) nozzles found in charts below – confirm nozzles installed in spray shield.
 - NOTE – HIGH Output requires addition of 700RBHTK kit (2nd solenoid package) and adjusting “Spray Nozzles” from **Low** to **High** within Application Setup page. Reference **Adjusting Spray Nozzles** section in this manual
 - Change Avg Bale Time to 60 sec (both nozzle sizes)
 - Press the HOME key to return to run screen once changes have all been made.
- Press MANUAL MODE and the RUN key and the screen shown below will appear.



- Turn the pump on (Level 1). To turn the pump on, press the red PUMP+ key. This will add a chevron indicating level 1, turning the pump on.
- Verify the pump output is set on level 1.
- Move the pump output settings to 2, 3, 4, and 5. With the Bale Rate set as shown in chart t/hr (T/hr), the application rate actual reading should be:

763 Round Baler LOW Nozzles (2x 11006 OR T8006)					
Bale Weight		1000 lbs (450 kg)			
Bale Time (sec)		60			
Bale Rate		30 t/hr (27 T/hr)			
Preservative #/ton (L/T)			Water #/ton (L/T)		
LEVEL	MIN	MAX	LEVEL	MIN	MAX
1	1.7 (0.8)	2.5 (1.2)	1	2.5 (1.3)	3.8 (1.9)
2	2.9 (1.4)	4.3 (2.1)	2	3.8 (1.9)	5.8 (2.9)
3	5.1 (2.4)	8.0 (3.8)	3	6.7 (3.4)	10 (5)
4	8.0 (3.8)	10 (4.8)	4	8.3 (4.2)	12.5 (6.3)
5	9.3 (4.4)	13.8 (6.6)	5	10.7 (5.4)	15 (7.6)

763 Round Baler HIGH Nozzles (2x 11004 OR T800R, 2x 11008 OR TT8008)					
Bale Weight		1500 lbs (680 kg)			
Bale Time (sec)		60			
Bale Rate		45 t/hr (40.8 T/hr)			
Preservative #/ton (L/T)			Water #/ton (L/T)		
LEVEL	MIN	MAX	LEVEL	MIN	MAX
1	1.4 (0.7)	2.0 (1.0)	1	1.9 (0.9)	2.8 (1.4)
2	2.9 (1.4)	4.3 (2.0)	2	3.9 (1.9)	5.8 (2.9)
3	5.4 (2.6)	8.4 (4.0)	3	6.3 (3.2)	9.1 (4.6)
4	7.2 (3.4)	11.2 (5.3)	4	9.6 (4.8)	13.8 (6.9)
5	11.7 (5.5)	16.1 (7.6)	5	12.4 (6.2)	16.7 (8.3)

- This process will also be used to prime the pump whenever needed.
- While running pump check for a good spray pattern out of the respective tips and verify that no parts of the system are leaking.
- While doing these tests the Volume (Lbs. Used) in Job Totals/Averages on the screen will be increasing, this verifies that the flow meter is functioning.
- When test is completed, change settings back to original.

Setting Up System for Initial Use

When setting up your system for initial use, you will need to setup three main categories: These consist of Moisture Setup, Baling Rate Setup, and Application Setup. The setup screens can be adjusted during operation of the system and will accept new values after any key is pressed. Be sure to reference the barrel or tote of preservative during setup to know what is needed for different moisture levels. Also, the average weight of bale should be known.

Moisture Setup

This screen allows for the adjustment of three moisture set points. As well as gives additional features such as Moisture Dye Marking (optional) and utilizing the Fixed Chamber round baler feature..



Adjusting Moisture Set Points

- Push the SETUP key on the main run screen, as shown in top left picture.
- On the Setup Mode screen press the MOISTURE SETUP key. Once selected the MOISTURE SETUP screen will be shown. (Top Right Picture)
- Press any of the grey number values to the right of level 1, 2, and 3 to adjust their figures. Remember level 1 must be lower than level 2, and level 2 must be lower than level 3. Press OK when value has been selected. Harvest Tec products recommend set points of 16, 22, and 26 % MC levels. These are preset from the factory. Press Home to return.
- To set the alarm, press the grey number value and set the level at which you want the alarm to activate. To turn the alarm off, set level above 70.

Moisture Dye Marking (Optional Equipment)

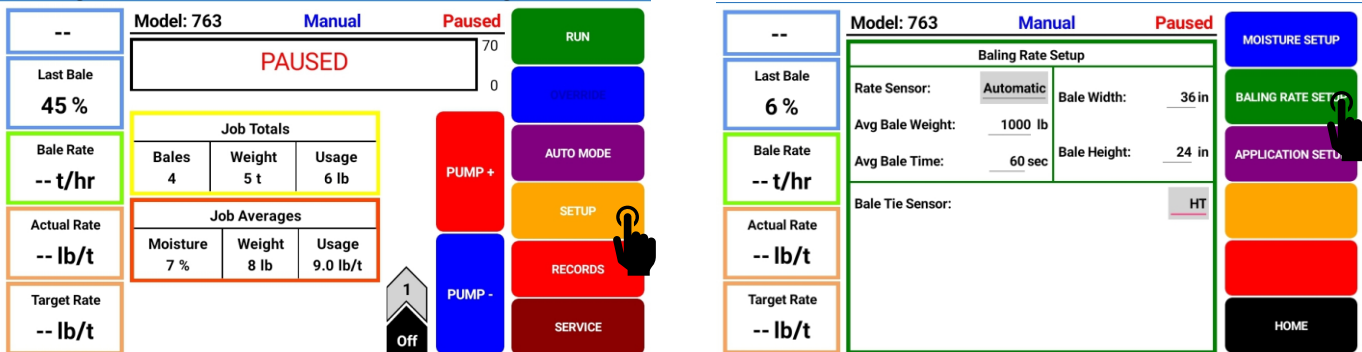
- Turn on and off the moisture dye marker. Reference 740DM manual for more details.
- Set the moisture level for moisture dye marker to spray at.

Fixed Chamber Moisture Mode

- Turn ON when installed on Fixed Chamber baler. Fixed chamber balers tend to have a softer inner core which does not allow for accurate moisture readings until at least $\frac{1}{2}$ the round bale is making contact with moisture discs. The Default MC% (Moisture Content %) is predetermined by the operator and is an estimate of moisture during baling. Accurate moisture is displayed approximately when $\frac{1}{2}$ the bale is formed inside bale chamber.
 - Note – operator is responsible for manually adjusting Default MC % throughout baling each job
 - Note – keep OFF when running system on Variable Chamber Round Balers

Baling Rate Setup

This screen allows for adjustment in the following: Type of baling rate sensor being used, average bale weight, average bale time, bale width, bale height, & bale tie sensor.



- Push the SETUP key on the main run screen, as shown in top left picture.
- On the setup mode screen press the BALING RATE SETUP key.

Rate Sensor

Option to select between Manual, Automatic, ISOBUS.

- **Manual** uses average bale weight and time to determine tons/hour. Note – manual selection can be used if end of bale sensor fails and will give a fixed baling rate.
- **Automatic** uses average bale weight and 3 bale rolling average end of bale signals to determine tons/hour. Note – if end of bale sensor is damaged, system will maintain the last baling rate calculated
- **ISOBUS** – this feature is currently not used with 763 round baler software (2023)

Average Bale Weight

- Set the weight of bale. Bale weight influences Baling Rate.

Average Bale Time

- This is the time hay is coming into the baler. Or it is the total time from bale eject to bale eject Minus the time to tie a bale and time turning on headlands

Bale Tie Sensor

- this feature is currently not used with 763 round baler software (2023). Set to HT (Harvest Tec) which utilizes the Harvest Tec end of bale sensor which sends signal every time bale door is opened.

Application Rate Setup

This screen allows for adjustment of preservative usage: Spray nozzles being used, hay indicator (optional), swath width (optional) needed to use GPS, units (English or Metric), GPS yield mapping (optional), and GPS receiver model (optional).



Adjusting Application Set Points

- Push the SETUP key on the main run screen, as shown in top left picture.
- On the Setup Mode screen press the APPLICATION SETUP key. Once selected the APPLICATION SETUP screen will be shown as seen in top right picture.
- To change rate of chemical application, press any of the grey number values to the right of level 1, 2, or 3. Remember level 1 must be lower than level 2, and level 2 must be lower than level 3. Press OK when value has been selected. Harvest Tec products recommend rates of 4, 8, and 16 lbs./ton (2, 3, 8 L/MT). These rates are preset from the factory. Press HOME to return to main screen.

IT IS THE OPERATOR'S RESPONSIBILITY TO FOLLOW THE RECOMMENDATIONS OF THE PRESERVATIVE. ONLY THE OPERATOR CAN APPLY THE PROPER RATE.

Adjusting Spray Nozzles

Tip Selection - System is set from factory with 11006 OR T8006 tips. Be sure to change tip output in application setup as needed.

Tip Color	Tip Part Number	Qty	Baling Rate (t/hr)	Tip Output (lb/hr)
Grey/Green	11006 OR T8006	2	1.0 - 28.75	16 - 460
Manual Mode Output Ranges (For Approx. Reference Only)		L1 48 lb/hr	L2 100 lb/hr	L3 180 lb/hr
		L4 260 lb/hr	L5 360 lb/hr	
Tip Color	Tip Part Number	Qty	Baling Rate (t/hr)	Tip Output (lb/hr)
Red/Green	11004 OR T8004	2	1.5 - 43.75	24 - 700*
White/Blue	11008 OR T8008	2		
Manual Mode Output Ranges (For Approx. Reference Only)		L1 80 lb/hr	L2 180 lb/hr	L3 320 lb/hr
		L4 460 lb/hr	L5 620 lb/hr	

Note: lower baling rates with high output tips may result in poor spray pattern

*Optional High Output Tip Kit 700RBHTK Required

Turn ON/OFF Hay Indicators

- Turn sliders on for Hay Indicators if system is equipped, otherwise leave off. Mount at baler pickup and automatically pause applicator upon crop flow discontinuing. Crop Eye Kit 474C.

Adjusting Swath Width

- Input average swath width in the field.

Change Units

- Adjust the unit between metric and standard units.

(Application Rate Setup, cont.)

Turn ON/OFF GPS

- Turn on or off GPS if equipped with Harvest Tec GPS module. Optional Kit number: 030-780GPS.

Selecting GPS Receiver

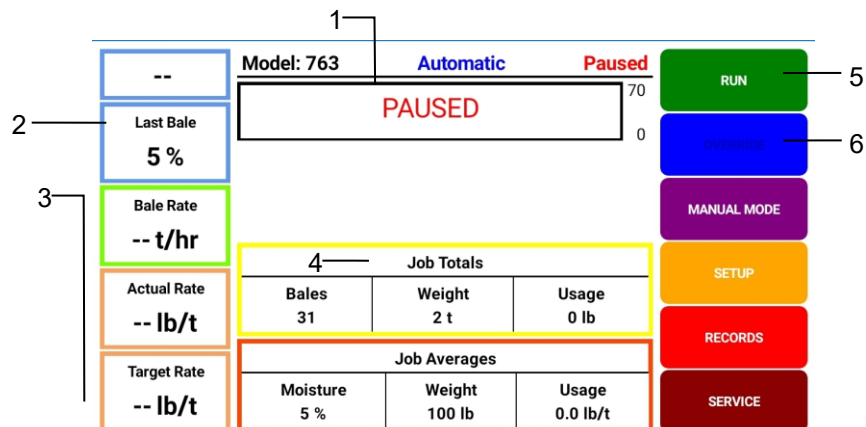
- Select style of GPS device equipped on baler. Reference 030-780GPS Manual for additional details

Operation Instructions

Automatic mode will automatically apply product based on hay moisture content sensed by the moisture sensors and the operator's presets. See SETTING UP SYSTEM FOR INITIAL USE to change any settings.

Automatic Mode

After pushing the AUTOMATIC MODE key in the Main Menu screen, the following screen will appear:

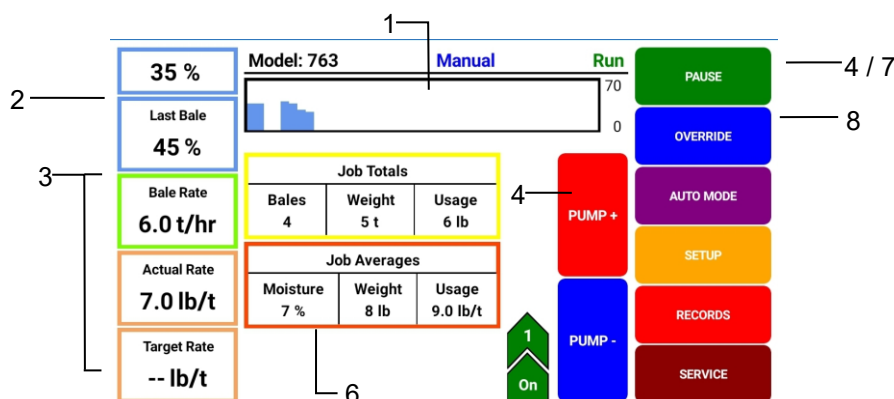


1. The graph shows the moisture trend from the past 90 seconds in 3 second intervals.
2. The moisture content is shown in the upper left corner.
3. Baling Rate and Application Rate are shown on the middle left of the screen. The operator sets the target application rate and baling rate in the setup mode; it is common the actual rate will fluctuate above and below the target rate.
4. Job Totals and Job Averages will show at the bottom center of the screen. These numbers will only reset once a new job record is created. **NOTE: Initial start-up requires pressing the CREATE NEW JOB key in the RECORDS screen for volume used accumulation to be recorded. This only needs to be done once on initial start-up of system and not every time.** (See JOB RECORDS screen)
5. To pause the unit while in operation select the PAUSE key, select RUN key to resume operation.
6. Push the OVERRIDE key to turn the pump for full output of the system. Use this mode when going through a short area of wet crop. Select NORMAL key to resume operation.

Manual Mode

After pushing the MANUAL MODE key on the main run screen, the following screen will appear:

When pump is ON, manual mode will apply preservative to the hay at a fixed rate regardless of the moisture or tonnage.



1. This graph shows the moisture trend from the last 90 seconds in 3 second intervals.
2. The moisture content is shown in the upper left-hand corner.
3. Baling rate and Application rate are shown in the bottom left of the screen.
4. To turn the pump on, press the RUN key. Every time PUMP+ is pressed this adds a chevron.
In Manual Mode (regardless of moisture, baling rate or bale weight) the outputs are fixed rates.
5. Press PUMP+ key from level 1 → 5 to increase the amount of preservative being applied.
6. Job Totals and Job Averages will show at the bottom center of screen. These numbers will reset once a new job record is created **NOTE: Initial start-up requires pressing the CREATE NEW JOB key in the RECORDS screen for volume used accumulation to be recorded. This only needs to be done once on initial start-up of system and not every time.** (See JOB RECORDS instructions)
7. To pause the unit during operation, select the PAUSE key, select RUN key to resume operation.
8. Push the OVERRIDE key to turn on the pump for full output of the system. Use this mode when going through a short area of wet crop. Select NORMAL key to resume operation.

Manual Mode Level Output Rates					
Low Tip Set (For Approx. Reference Only)	L1 48 lb/hr	L2 100 lb/hr	L3 180 lb/hr	L4 260 lb/hr	L5 360 lb/hr
High Tip Set* (For Approx. Reference Only)	L1 80 lb/hr	L2 180 lb/hr	L3 320 lb/hr	L4 460 lb/hr	L5 620 lb/hr
*High Output Tip Kit Required					

Job Records

This screen allows for adding, editing, and continuation of all job records. After pushing the RECORDS key on the main run screen, the following screen on left will appear:

The diagram illustrates the Job Records interface with three main screens and a side menu. Numbered callouts 1-5 point to specific buttons:

- 1:** VIEW CURRENT JOB (blue button in side menu)
- 2:** VIEW SELECTED JOB (purple button in side menu)
- 3:** CREATE NEW JOB (orange button in side menu)
- 4:** EXPORT ALL JOBS (light blue button in View Job List screen)
- 5:** DELETE ALL JOBS (light blue button in View Job List screen)

View Job List Screen:

Job #	Farm	Field	Crop	Started	Ended	Bales
4	Brown	SW corner	Alfalfa RU 1	10-Mar-20	10-Mar-20	187
26	Brown	Nw corner	Alfalfa NS 2	10-Mar-20	10-Mar-20	174
6	J.Smith	ravene	straw	10-Mar-20	11-Mar-20	87
9	Dairy Farms	grn pasture	alfalfa 2nd	11-Mar-20	12-Mar-20	320
10	Dooleys	14	Alfalfa NS 2	14-Mar-20	14-Mar-20	92
16	Billy Joe	coop	straw	15-Mar-20	15-Mar-20	114
17	Gustavus	the ridge	alfalfa 3rd	15-Mar-20	15-Mar-20	72
21	Test Site 2	Plot 45	56798-3	16-Mar-20	16-Mar-20	369
3	Smith	A34	alfalfa X1	16-Mar-20	16-Mar-20	221

Viewing Filters:

Farm: All Field: All Crop: All

Buttons: EXPORT ALL JOBS, DELETE ALL JOBS, ADD TO THIS JOB

Side Menu: JOB LIST, VIEW CURRENT JOB, VIEW SELECTED JOB, CREATE NEW JOB, HOME

Create New Job Screen:

Farm: NEW Test 1
Field: NEW 10
Crop: NEW Alfalfa

Buttons: CREATE NOW, CLEAR

View Current Job (1)

- This will display current real time job information.

View Selected Job (2)

- Allows the user to select any job in JOB LIST and view, edit, or continue to add to the selection.

Create New Job (3)

- Select the CREATE NEW JOB key to generate a new job record.
- Enter desired farm, field, and crop name and press CREATE NOW. System is able to store up to 19 Farm Names, and unlimited number of Filed and Crops under each Farm Name. Farm Names cannot be edited or deleted once created.
- The job details screen will appear with name of the job shown under the Job List. Information shown on this screen will include Job Number, Field Name, Crop, Date, and Total Bales.
- Every time the CREATE NEW JOB key is pressed the accumulated pounds on auto and manual modes will be reset to zero.
- To return the operating screen, press the HOME key. *NOTE:* Initial start-up requires pressing the CREATE NEW JOB key in the Records. This only needs to be done once on initial start-up of system and not every time the system is started for operation.

Export Job (4)

- Insert USB drive to ICM Port located in tractor cab. Select the job(s) wished to export, once selected, press EXPORT key.

Delete Job (5)

- Select the job(s) wished to delete, once selected, press the DELETE key.

The diagram shows the View Job List screen with the DELETE 1 JOB button highlighted in red.

Job #	Farm	Field	Crop	Started	Ended	Bales
4	Brown	SW corner	Alfalfa RU 1	10-Mar-20	10-Mar-20	187

Buttons: EXPORT 1 JOB, DELETE 1 JOB, ADD TO THIS JOB

Service

After pushing the Service key on the main run screen, the following will appear:

Services - Versions			VERSIONS SENSORS FILE PUMP TEST HOME
Module	Current	Available	
ICM	907	N/A	
IPM	403	N/A	
ISM	200	N/A	
IDM	401	N/A	
APP	1.0.14	N/A	
* This is an example; Software Versions will change *			
UPDATE			

This will show the current version of software being used on the 700 series applicator system.

Note: Any software updates that are available will be shown at: www.harvesttec.com/product-updates/

Sensors

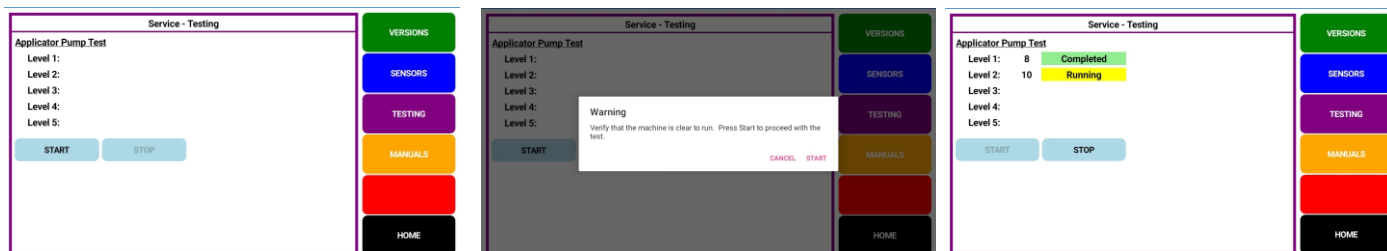
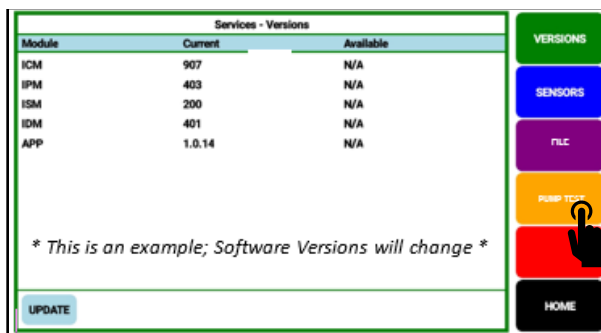
Within the Service menu, select SENSORS key to select sensor setup. NOTE – all sensors should be set to IPM for operation of 763 software (2023)

Services - Versions			VERSIONS SENSORS FILE PUMP TEST HOME
Module	Current	Available	
ICM	907	N/A	
IPM	403	N/A	
ISM	200	N/A	
IDM	401	N/A	
APP	1.0.14	N/A	
* This is an example; Software Versions will change *			
UPDATE			

Services - Sensors			VERSIONS SENSORS FILE PUMP TEST HOME
Moisture:	IPM	Module Present	
End-Of-Row:	IPM	Module Present	
End-Of-Bale:	IPM	Module Present	
Bale Rate:	IPM	Module Present	
GPS is:	Off		

Pump Test

Within the Service menu, select PUMP TEST key. Once in Pump Test screen, select TESTING:



Make sure baler is in an area where spray from the applicator will not cause any unwanted mess. The test will run for one minute and 40 seconds, spraying up to two gallons of fluid. Readings will update every 3 seconds and the last reading will be the completed value. Each level will run for 20 seconds.

Use range tables below to compare Pump Test values:

763 Round Baler LOW Nozzles (2x 11006 OR T8006)					
Preservative			Water		
LEVEL	MIN	MAX	LEVEL	MIN	MAX
1	52.00	76.00	1	60.00	90.00
2	85.00	128.00	2	95.00	140.00
3	175.00	260.00	3	190.00	280.00
4	240.00	360.00	4	245.00	365.00
5	345.00	510.00	5	310.00	460.00
763 Round Baler HIGH* Nozzles (2x 11004 OR T8004, PLUS 2x 11008 OR T8008)					
Preservative			Water		
LEVEL	MIN	MAX	LEVEL	MIN	MAX
1	60.00	90.00	1	90.00	135.00
2	128.00	190.00	2	180.00	270.00
3	240.00	355.00	3	280.00	420.00
4	335.00	500.00	4	420.00	620.00
5	510.00	750.00	5	550.00	750.00
	*Installation of Optional High Output Tip Kit 700RBHTK Required				

Maintenance

If you are unsure how to perform any of the maintenance steps have your local authorized dealer perform the tasks.

Maintenance Schedule

	Daily	10 hrs	400 hrs	Weekly	Monthly	Season
Diagnostics	X					X
Filter bowl cleaning		X				X
Tips & tip screen cleaning		X				X
Tank lid cleaning		X				X
Dielectric grease connections					X	X
Rebuild pump			X			
Battery connections				X		X
Check valves			X			
Visually inspect hoses				X		X

Filter Bowl Cleaning: The filter bowl is located in front of the applicators tank and is connected to the ball valve. Before cleaning the filter bowl all personal protective equipment must be worn (Face shield or goggles, chemically resistant apron, boots, and gloves).

Verify that the ball valve located next to the pump is turned off. Locate the filter bowl on the side of the pump manifold (A). Unscrew the bottom section of the filter bowl and remove the strainer (B). Clean off any debris and soak in warm water with a mild soap if necessary. Once the screen is clean reinstall by following the directions in reverse.



A



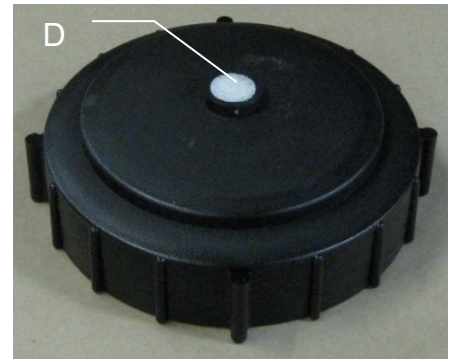
B

Tips & Tip Screen Cleaning: Before cleaning the tips and screens all personal protective equipment must be worn (Face shield or goggles, chemically resistant apron, boots, and gloves).

Verify that the ball valve located next to the pump is turned off. Disconnect spray shield from hangers if possible or remove tips in place. Remove the tip, and screen if equipped. Some models may require a wrench to remove. Clean off any debris and soak tip and screen in warm water with a mild soap if necessary. Once the tips and screens are cleaned reinstall by following the directions in reverse.

Tank Lid Cleaning: Before cleaning the tank lid all personal protective equipment must be worn (Face shield or goggles, chemically resistant apron, boots, and gloves).

The tank lid is located on the top of the tank. Unscrew the tank lid and bring down ground level. Use compressed air clean out the tank screen (D). Once the screen is cleaned reinstall the cover.



Dielectric Grease Connections: Disconnect all harnesses on the applicator, clean the connections, and repack with dielectric grease.

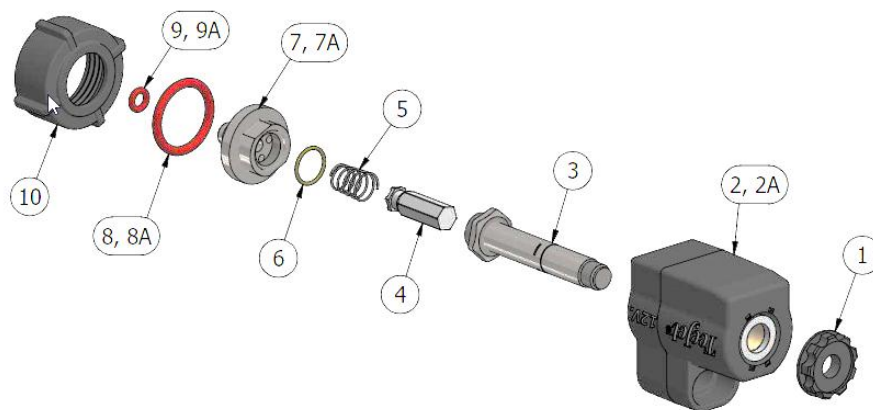
Pump: If Manual mode shows that the pump is running lower than normal, a pump replacement may be necessary. The pump must be removed from the pump manifold and replaced with part number 007-4120DE.

Verify that the ball valve is turned off. Before working around the pumps all personal protective equipment must be worn (Face shield or goggles, chemically resistant apron, boots, and gloves). Remove pump from the pump plate and install the new pump in the same orientation as the old pump.

Battery Connections: Follow the batteries safety warnings and clean the battery connections. If the connections cannot be cleaned, replace harness.

Solenoid Valves: Before servicing the solenoid(s), all personal protective equipment must be worn (Face shield or goggles, chemically resistant apron, boots, and gloves), inlet side of solenoid could be under pressure. Clean the solenoid valve body (004-1207VF).

Verify the ball valve is turned off before service the solenoid. Replace the solenoid if needed (002-2203F). Replacement Pulsing Solenoid EPDM O-Ring kit available (002-2203FG).



To clean solenoid valves:

The Center Section can be removed from Housing #2 by loosening #1 from #3. Once removed, use wrenches on components #3 and #7 and gently turn to loosen and separate. Soak parts #3-10 in warm soapy water, clean with a soft bristle brush, rinse with clean water to remove buildup before reassembly.

Miscellaneous Maintenance:

1. Depending on the product being used, the system may need to be flushed with water at a regular interval (consult with manufacturer of the chemical.) If Harvest Tec product is being used, flushing is not necessary.
2. Although the pump can run dry, extended operation of a dry pump will increase wear. Watch the preservative level in the tank.
3. If you are using bacterial inoculants, flush your system daily after every use.
4. **DO NOT PRESSURE WASH CONTROL BOXES, PLUG CONNECTIONS OR MOISTURE SENSORS.**

Winter Storage: If system is used with the Harvest Tec buffered propionic acid, the system does not need to be drained as long as the tank, tank cap, and system components are in good condition and free of cracks or leaks. Turning off the tank supply line, removing the filter bowl and running the pump for a short duration is sufficient to purge the preservative from the intake lines. Disconnect hose from solenoid, remove spray tips and drain all lines on the outlet side. Store any collected preservative in a sealed container or return to tank. Reinstall filter bowl, solenoid hose and spray tips after draining.

If other products are used, then follow this procedure:

1. Thoroughly flush the system with water.
2. Remove the filter bowl and run dry until the water has cleared out of the intake side.
3. Drain all lines on the outlet side.
4. Never use oils or alcohol based anti-freeze in the system.
5. For spring start-up, if the pump is frozen, turn off the power immediately to avoid burning the motor or damaging the circuit board. The pump head can be disassembled and freed or rebuilt in most cases.
6. Disconnect power from the IPM module.
7. Remove display from tractor and store in a warm, dry place

Common Questions

1. How do I turn the system on/off?

To turn the system ON, turn tractor key on to power up.

To turn the system OFF, turn off tractor key.

If operating via Tablet, see SHUTTING DOWN THE PRECISION BALING APP for more details.

2. How to get in the LBS/TON, MC%, and TONS/HR screens?

Press the SETUP key. Select MOISTURE SETUP to change moisture level settings, select APPLICATION SETUP to change your application settings, select BALING RATE SETUP to change tons/hour settings. . See SETTING UP SYSTEM FOR INITIAL USE for a detailed explanation of this process.

3. The unit is stuck in the Application Setup screen.

In the Application Rate screen, level 1 must be less than level 2, and level 2 must be less than level 3. For example, if level 1 is set at 16, level 2 must be set at 17 or higher, and level 3 must be set higher than level 2.

4. How does OVERRIDE work?

Override turns on the pump and opens the solenoid for full output. The pump and solenoid will remain at full output until the operator turns the pump off by pressing the NORMAL key again.

5. The flow meter reading is more or less than the programmed level set in the box.

Some variation in flow meter readings compared to the programmed set point is normal due to factory tolerances on the pump motor as well as varying tractor voltages inputted to the control box. The flow meter reading is an accurate measure of how much product is being applied. The set points then will need to be adjusted if you want to attain a different flow meter reading.

6. The moisture content displays “LO” or “HI” all the time.

When the moisture content display does not change frequently while baling, there is likely a faulty moisture disc connection. Check all moisture harness wires and connectors to see if there is a continuity or grounding problem.

7. Should the battery connections be removed before jump starting or charging a battery?

Yes, anytime the tractor will have voltage going up rapidly the connections should be removed.

Troubleshooting

Problem	Possible cause(s)	Solution(s)
Pump will not run	1. No voltage to IPM.	1. Check for short, low voltage, and replace fuse if necessary.
	2. Pump locked up.	2. Clean or rebuild pump if motor ok
	3. Damaged wire.	3. Repair damaged wire.
	4. Damaged solenoid	4. Replace / Clean
Pump runs but will not prime	1. Air leak in intake.	1. Tighten fittings on intake side. Replace filter bowl O-ring.
	2. Clogged intake.	2. Clean.
	3. Restricted outlet.	3. Check and clean tips.
	4. Check valve stuck closed.	4. Clean or repair check valve.
	5. Dirt inside pump.	5. Replace pump check valve.
Pump does not develop enough output.	1. Air leaks or clogs on inlet.	1. Tighten or clean filter bowl
	2. Pump worn or dirty.	2. Rebuild pump.
Moisture reading errors (reading high or low)	1. Wire disconnected or bad connection between moisture disc and IPM.	1. Reconnect wire. Touch both moisture discs with 2 hands. Human body should have a moisture reading between 20-28% moisture on the screen
	2. Low power supply to IPM	2. Check voltage at IPM box for min of 12V
	3. Build up of hay material inside of bale chamber contacting moisture disc and side wall of chamber	3. Remove build up contacting moisture disc
	4. Short in moisture disc harness.	4. Replace harness
Moisture reading erratic	1. Check all wiring connections for corrosion or poor contact.	1. Apply dielectric grease to all connections.
	2. Check power supply at tractor. Voltage should be 12V-14V	2. Replace battery harness. Install voltage surge protection on tractors alternator.
Product is less than actual product used.	1. Voltage supplied to flow meter is less than 11 volts.	1. Check for a min of 11 volts supplied at IPM module.
	2. Wiring short in signal to IPM.	2. Inspect wire and replace if necessary.
	3. Using product other than Harvest Tec	3. Catch and weigh product for output.
Product shown is 10% different than actual product used.	1. High voltage supplied to the meter.	1. Check voltage at IPM. Max of 18V.
	2. Air leak in intake.	2. Look for air bubbles in line. Replace line or other defective area that is allowing air into the system.
	3. Using product other than Harvest Tec	3. Catch and weigh product for output.
System leaks product out of tips after shutting down.	1. Dirty or defective solenoid	1. Clean or Replace.
System does not pause at the end of a row.	1. Short in harness 2. Damaged sensor 3. Sensor misalignment	1. Replace harness 2. Replace sensor 3. Align sensors – see 474C manual
Solenoid will not pulse	1. Dirty or plugged solenoid 2. Damaged wire from control 3. Wire disconnected	1. Clean or Replace 2. Repair 3. Reattach
ISO Communication Module light will not illuminate	1. ICM Module receiver not connected 2. Harness disconnected 3. Low power	1. Check connections and voltage. Minimum of 12.5 volts required.
	<i>Green Light</i> – When the ISO Communication Module is properly connected, a blinking green light will indicate connection.	

Tablet Troubleshooting

<u>Tablet Symptom</u>	<u>Troubleshooting</u>
Tablet will not turn on	- Turn tablet off and on. Press and hold the Sleep/Wake button for a few seconds until powered completely off. Press and hold the Sleep/Wake button to turn on again.
	- Battery may be drained. Plug tablet into computer or AC adapter and see if anything happens. The tablet will recognize it has been connected to a power source and charge its battery. If it will no longer charge, the battery must be swapped with a replacement battery.
Tablet touchscreen is slow or does not respond	- Screen may be dirty. Clean screen. Unplug everything, turn off tablet and with soft, lint-free, slightly damp cloth gently wipe screen. DO NOT use window cleaner and paper towels. - If screen protector sheet installed, try removing it.
Tablet is not charging or is slow to charge	- To charge tablet, you can try either connecting to a power outlet or connecting to a USB 2.0 port on a computer.
How can I unlock my tablet if I forgot the passcode	- If cannot remember passcode, will need to restore device using the computer with which was last synced. This allows for ability to reset your passcode and resync the data from the device (or restore from a backup).
How do I send in my tablet for service?	- Refer to tablet owner's manual. DO NOT SEND TABLET TO HARVEST TEC
For other issues refer to tablet's Owner's Manual or contact Apple Directly	

Harvest Tec Does Not Service Tablets

**SEE THE APPLICATOR KIT INSTALLATION MANUAL FOR
PARTS BREAKDOWN SECTIONS**

Harvest Tec LLC. Warranty and Liability Agreement

Harvest Tec, LLC. will repair or replace components that are found to be defective within 12 months from the date of manufacture. Under no circumstances does this warranty cover any components which in the opinion of Harvest Tec, LLC. have been subjected to negligent use, misuse, alteration, accident, or if repairs have been made with parts other than those manufactured and obtainable from Harvest Tec, LLC.

Our obligation under this warranty is limited to repairing or replacing free of charge to the original purchaser any part that in our judgment shows evidence of defective or improper workmanship, provided the part is returned to Harvest Tec, LLC. within 30 days of the failure. If it is determined that a non-Harvest Tec branded hay preservative has been used inside the Harvest Tec applicator system where the failure occurred, then Harvest Tec reserves the right to deny the warranty request at their discretion. Parts must be returned through the selling dealer and distributor, transportation charges prepaid.

This warranty shall not be interpreted to render Harvest Tec, LLC. liable for injury or damages of any kind, direct, consequential, or contingent, to persons or property. Furthermore, this warranty does not extend to loss of crop, losses caused by delays or any expense prospective profits or for any other reason. Harvest Tec, LLC. shall not be liable for any recovery greater in amount than the cost or repair of defects in workmanship.

There are no warranties, either expressed or implied, of merchantability or fitness for particular purpose intended or fitness for any other reason.

This warranty cannot guarantee that existing conditions beyond the control of Harvest Tec, LLC. will not affect our ability to obtain materials or manufacture necessary replacement parts.

Harvest Tec, LLC. reserves the right to make design changes, improve design, or change specifications, at any time without any contingent obligation to purchasers of machines and parts previously sold.

Revised 5/22

**HARVEST TEC, LLC.
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