

Installation and Operation Manual

Model HT200A2 Precision Moisture System & Optional HT238DM Dye Sprayer



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Introduction

Congratulations on purchasing a Harvest Tec HT200A Moisture System and/or the optional HT238DM Dye Sprayer Marking System. When attached to any AGCO MF2233/2234/2234XD/2244 baler, this kit will allow you to read instantaneous moisture. The optional HT238DM will visibly mark the wet areas on your bales. The HT200A2 includes the star wheels, twine diverters, and ISO module. The HT238DM includes tank, pump, plumbing, mounting hardware and necessary harness. There is a parts breakdown in the back of the manual to reference if replacement parts are needed. All replacement parts and dye will be ordered through your local equipment dealer.

Tools Needed

Standard wrench set	Hammer	Straight edge
Standard socket set	Tape measure	Metal drilling and cutting tools
Center punch	Marker	

Installation of HT200A2

Star Wheel Installation

The star wheels are to be mounted on top of the baler, just behind the knotters and under the walkway on both sides (Figure 1). The notch and holes for the star wheel are precut. If the star wheels are cutting the twine the sensors and notch must be moved out an additional 1/2" (13mm).

Secure the star wheels with 5/16" x 3" BHCS (x2 each side) from the bottom side. Blocks are dropped down on the bolts and secured in place with the star wheel twine guards (001-4645, 001-4644). The twine guard containing the two extra holes will be placed on the right side of the baler. Secure with 5/16" lock washers and nuts.

Star wheel connection found on baler harness shown in Figure 2.

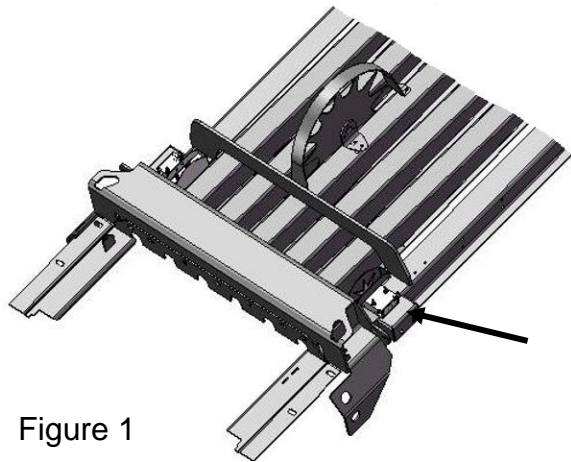


Figure 1



Figure 2

Control Box Installation

You will be installing the ISO moisture module at the front right right side of the baler frame under the side door. Insert the included rivet nuts into baler frame knockouts and tighten down so rivet nut expands into baler frame (Figure 3).

Install ISO module so holes match with rivet nuts. Secure with included hardware. Connect ISO module to baler harness plug located next to baler ECU box (Figure 4)



Figure 3



Figure 4

Installation of Optional HT238DM

Installation of Mounting Bracket & Tank

Locate the tank and mounting bracket assembly.

- Mark the mounting holes and drill out using 3/8" bit. Figures 5 & 6 are recommended mounting locations. Alternatively dye marker tank can be mounted ground level for ease of filling.
- Fasten the mounting bracket to the baler using the 5/16" hardware provided in the kit.

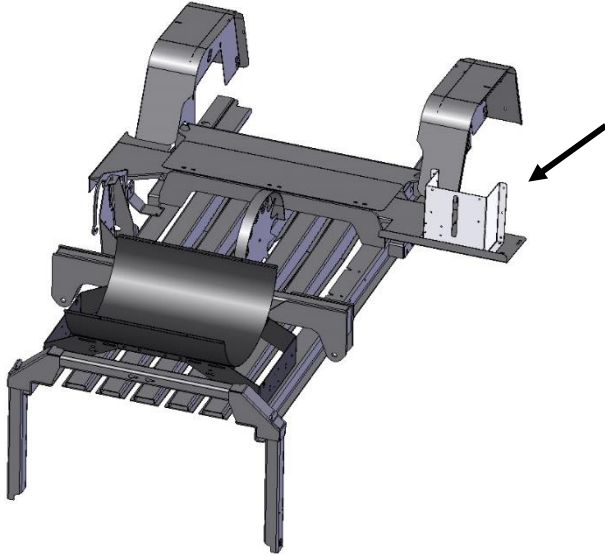


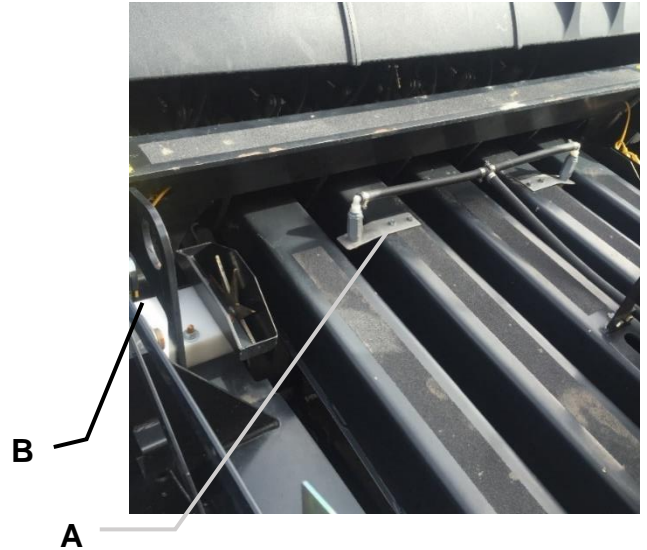
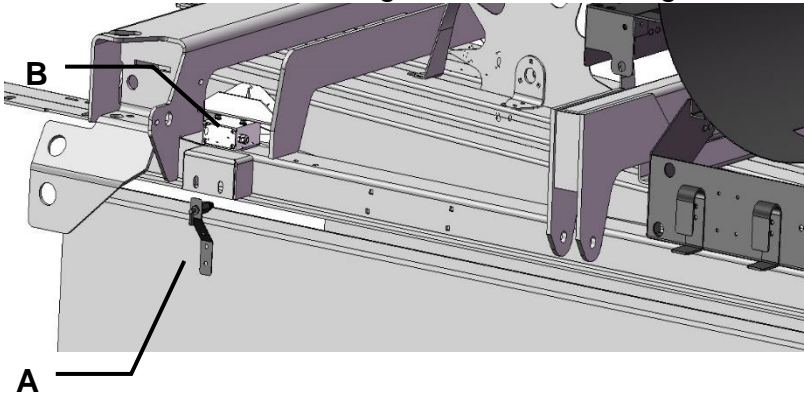
Figure 5



Figure 6

Installation of Plumbing

1. Install the tip and nozzle holder assemblies in the suggested locations pictured, shown below. Use the 1/4" hardware provided to do so.
 - a. Make sure that the tip assemblies (A) are mounted in line with the star wheels (B) so that the system is marking the wet spots of the bale. To get the best spray pattern focused directly on the wet spot of the bale the nozzles will need to be approximately 1" above the bale that is being marked. A small notch may need to be cut to increase surface area of the bale being marked if mounting on side of chamber.



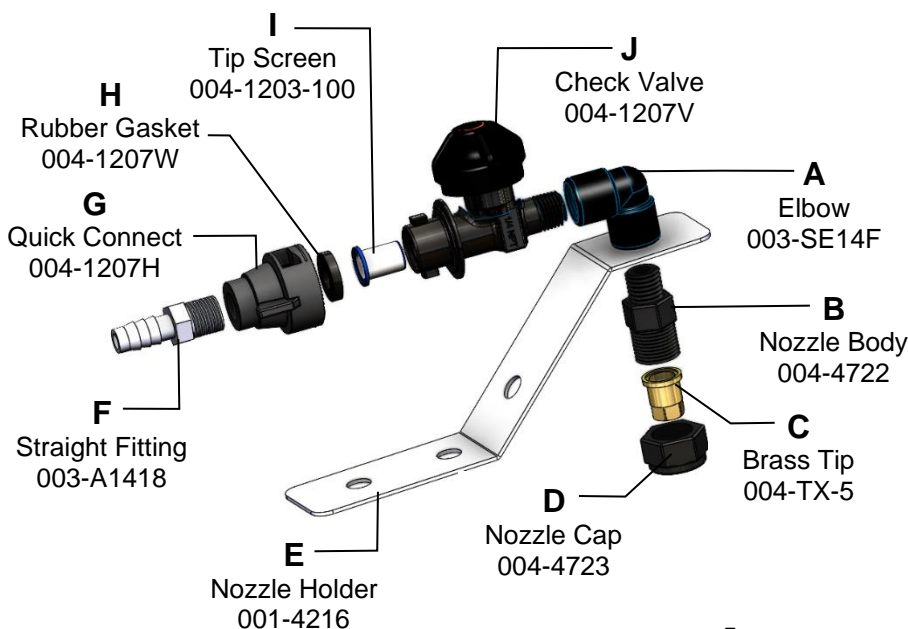
2. Once you have the tank and mounting bracket securely fastened to the baler, locate parts A, B, C, D & E pictured below in Figure 1 or 2. Assemble in the following order: (A) Elbow | (B) nozzle holder | (C) check valve | (D) reducing bushing | (E) tip as pictured below.

*******Note: All parts should be thread taped*******

3. Once the nozzle holders are fastened to the balers, route the 3/8" hose to the tips. Make sure to fasten the hose securely but avoid pinching the lines. (*Plumbing Diagram pictured on page 10*)

*******Keep from routing the hose in the way of moving parts on the baler*******

4. Attach drain hose top hose barb fitting at bottom of tank. Run hose to a secure point and attach valve assembly.



Setup & Operation:

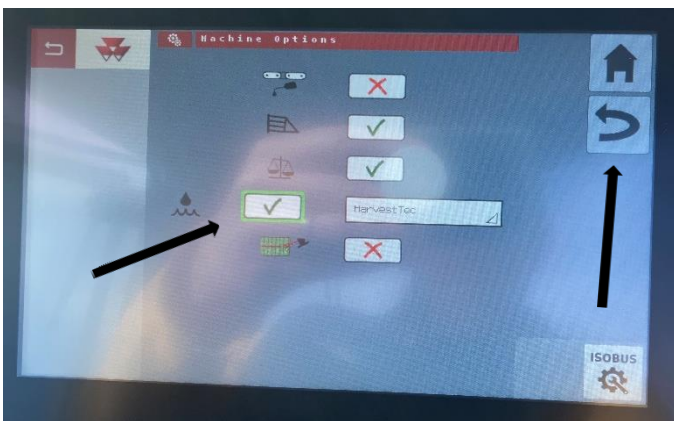
How to select the HT200A2 moisture system on the baler run screen:



Select the button on the baler main run screen that has 4 vertical lines.

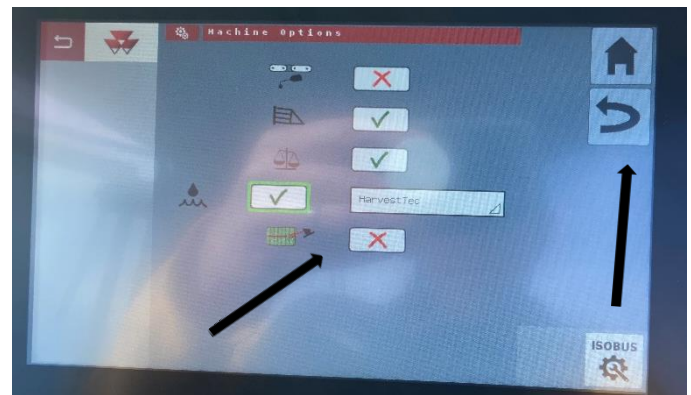


Then select the settings button that has two gears on it.



To turn on the moisture system, choose the check mark next to the moisture symbol and select Harvest Tec. Then return to the baler run screen.

If a HT238DM is installed, select a check mark next to the marked bale icon. Then return to baler run screen.

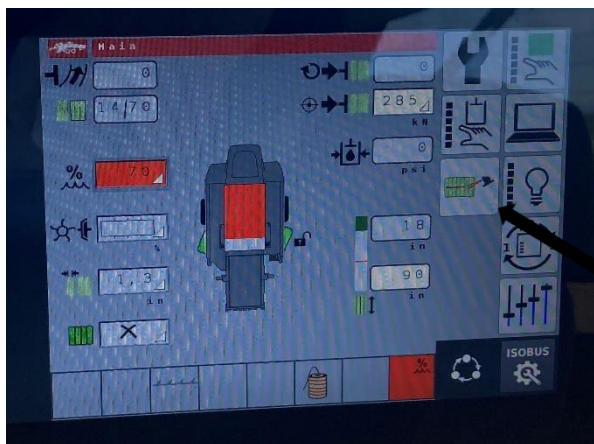


Setup & Operation Continued:



Setting up the moisture alarm:
If equipped with the HT238DM the bale is marked upon a high moisture reading, allowing the operator to easily identify those bales that are above their own pre-determined moisture threshold. A food-grade dye mixes with water and applies up to 60 bales and is only triggered 1 time per high moisture occurrence per bale.

In the baler run screen, the operator can customize any of the 4 containers and set to display moisture.



If equipped with HT238DM and turned ON, the operator can manually trigger the dye marker to mark bale in chamber from baler Run screen using this icon.

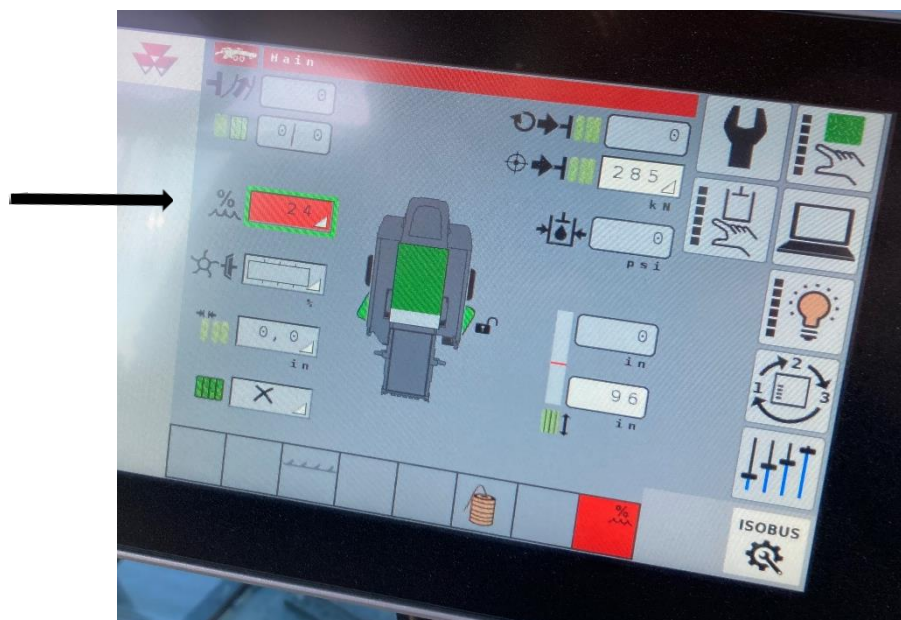
Average Bale
Moisture Selection



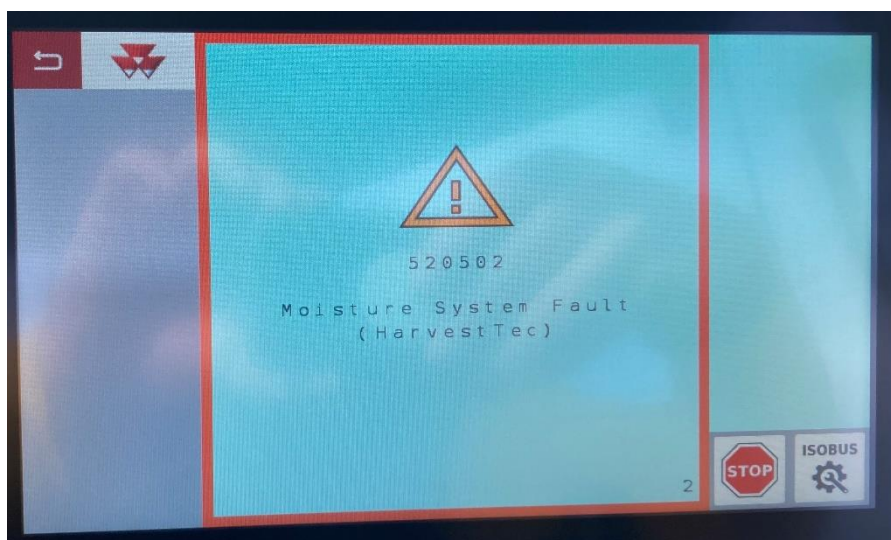
Instantaneous
Moisture Selection

Setup & Operation Continued:

On the baler run screen, the moisture alarm container will turn red, and the alarm will go off when the bale moisture exceeds the operator's pre-set moisture threshold.



The Error message shown below will come up on the baler run screen when moisture option is turned on but there is no ISO module detected.



HT238DM - Filling Tank & First Time and Annual Startup

1. Filling the Tank

- A. Remove the tank lid from the 3 gallon tank. Make sure the tank is clean and completely empty. Mix the Dye (009-0800) with warm water inside the Dye bottle. Make sure that the bottle is shaken vigorously so that the dye completely dissolves. Once the solution is mixed, add it to the 3 gallon tank and fill the tank with water.

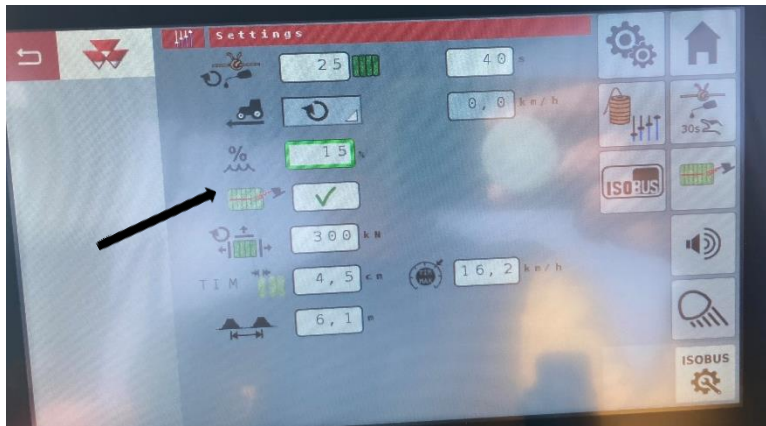
2. First Time and Annual Startup

- A. Once the tank has been filled the plumbing lines will need to be primed. With the system turned on and in a paused mode, hold the priming button until all the air is flushed out of the lines and there is a steady stream of liquid coming from each of the tips.

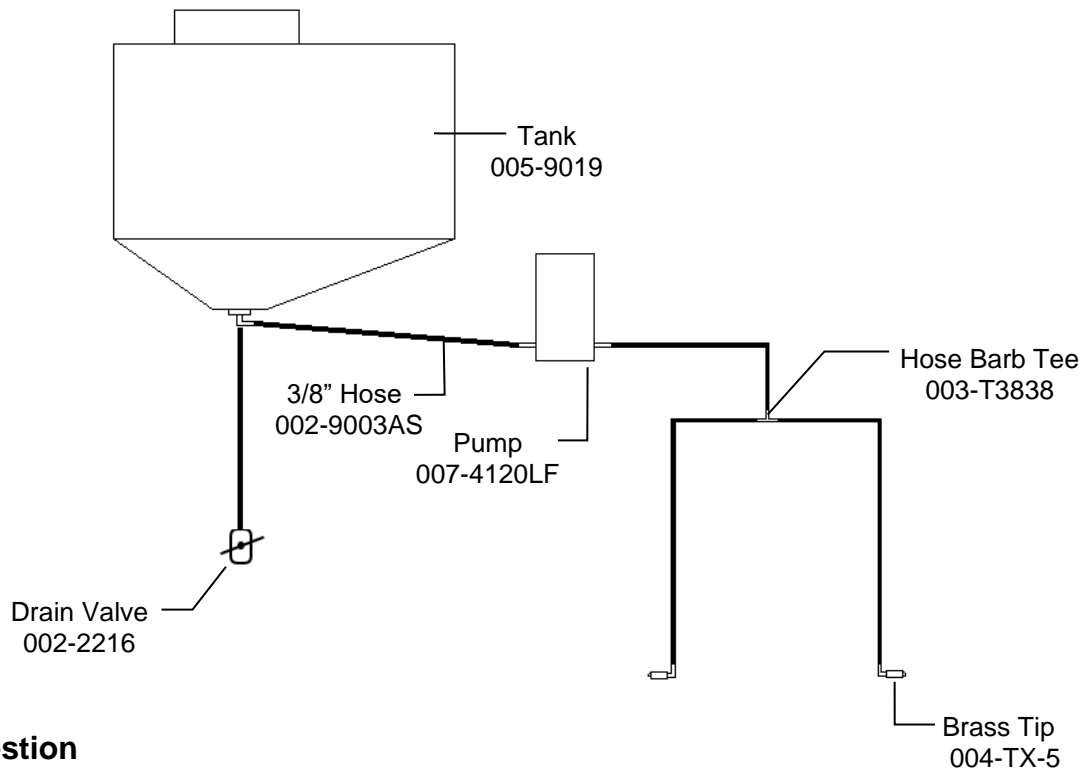
*****NOTE: The system needs to be primed every time the system has run out of dye*****

- B. The spray option can be activated by turning on the feature in the baler settings; once selected there will be a green check mark next to the marked bale icon.
- C. You can adjust the moisture content level at which you would like the system to mark the 'Wet Flakes' in the bale being made by simply adjusting the high moisture threshold you want to identify.

General Settings and Machine Options Page



HT238DM Plumbing Diagram



Common Question

1. Is the marking dye safe for livestock consumption?

The DSM uses red-colored, food-grade dye and is safe for all livestock.

2. How do I bleed the air out of the lines properly?

Remove the tips from the check valves that they're threaded into and press the prime button on the dye marker until the air is pushed out of the lines.

Troubleshooting

<u>Problem</u>	<u>Possible Cause</u>	<u>Solution</u>
The tips are not spraying Dye	<ol style="list-style-type: none"> 1. The system is out of dye. 2. There is air in the lines, preventing a steady mist coming from the tips. 3. Damaged/pinched hose. 4. Tip is plugged. 5. Set point is set too high 	<ol style="list-style-type: none"> 1. Check the tank for solution. If the tank is empty, refill and bleed air from lines. 2. Remove the tips from the check valves and using the priming button bleed the air out of the lines. 3. Inspect all the hose making sure the lines are damaged or pinched. 4. Removed the tip from the bushing and inspect, clean is necessary. 5. Lower the set point level at which the user would like to have the bales marked at.

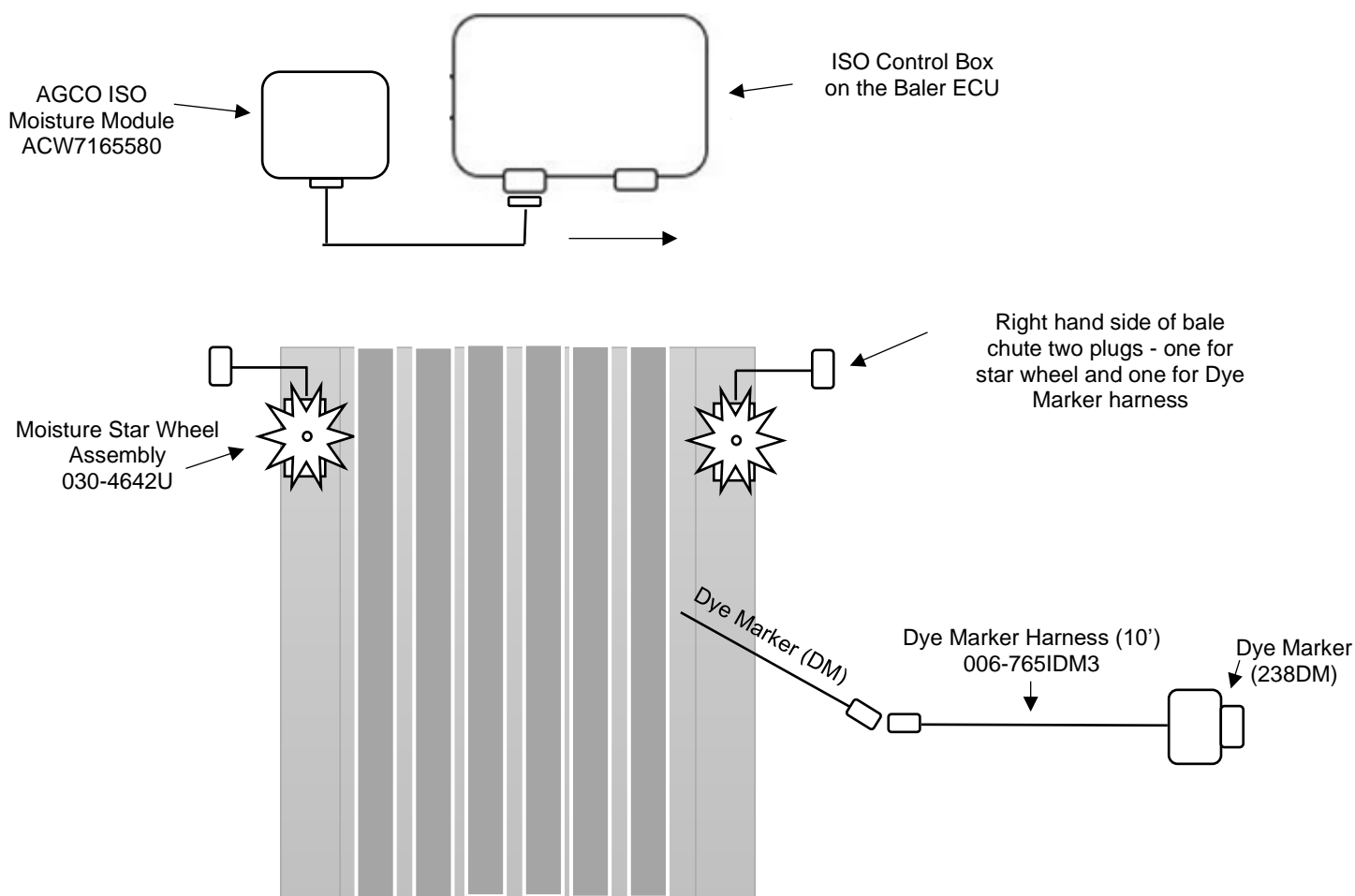
Maintenance

1. For **winter** storage, drain all the liquid out of the lines and tank and pump.

Wiring Diagram

1. Connect the ISO moisture module (ACW7165580) to the baler harness on the front right side of the baler, under the side door next to the ECU box.
2. Connect the right star wheel block at the plug on the right-hand side of the bale chute.
3. When using the optional Dye Marker (HT238DM) connect the dye marker harness (006-765IDM4) to the Dye Marker (DM) plug on the right-hand of the bale chute next to the star wheel connection plug.

System wiring diagram

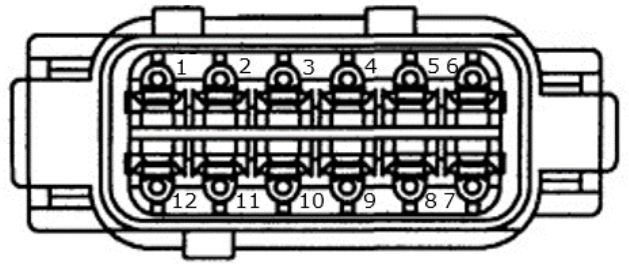


***Reference Baler Harness Wiring Schematic for Detailed Breakdown**

Pin Outs

ISO Moisture Module

Pin 1	Red	Module Power
Pin 2	Red/Black	EOB +
Pin 3	Black	EOB -
Pin 4	Grey	Left Moisture Sensor
Pin 5	Brown	Right Moisture Sensor
Pin 6	Purple	EOB Signal
Pin 7	Yellow	CAN +
Pin 8	Green	CAN -
Pin 9	Red/White	Dye Marker 12V +
Pin 10	Black/White	Dye Marker 12V -
Pin 11	Blue	Dye Marker Prime
Pin 12	Black	Ground

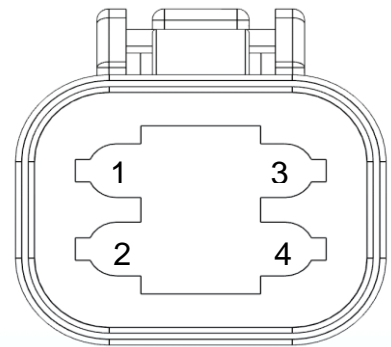


Star Wheel Plug

Pin 1	Red	Signal
Pin 2	Black	Signal

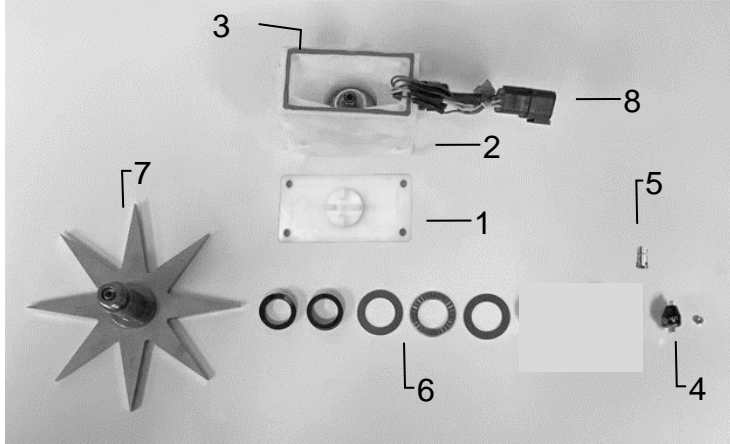
Dye Marker Module

Pin 1	Red	+12V to Solenoid 2
Pin 2	Yellow	ISO CAN Hi
Pin 3	Green	ISO CAN Lo
Pin 4	Black	Ground to Solenoid 2



Parts Breakdowns

Star Wheel Assembly 030-4642U



<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>
1	Block Cover	006-4642UC	1
2	Star Wheel Block	006-4642UB	1
3	Star Wheel Gasket	006-4642UG	1
4	Electric Swivel	006-4642A	1
5	Swivel Insert	006-4642B	1
6	Washers	006-4642K	1
7	Star Wheel	006-4642US	1
8	Moisture Harness (2 pin)	006-7307M	1
1-8	Star wheel assembly	030-4642U	1
NP	Twine diverter - left	001-4645	
NP	Twine diverter - right	001-4644	

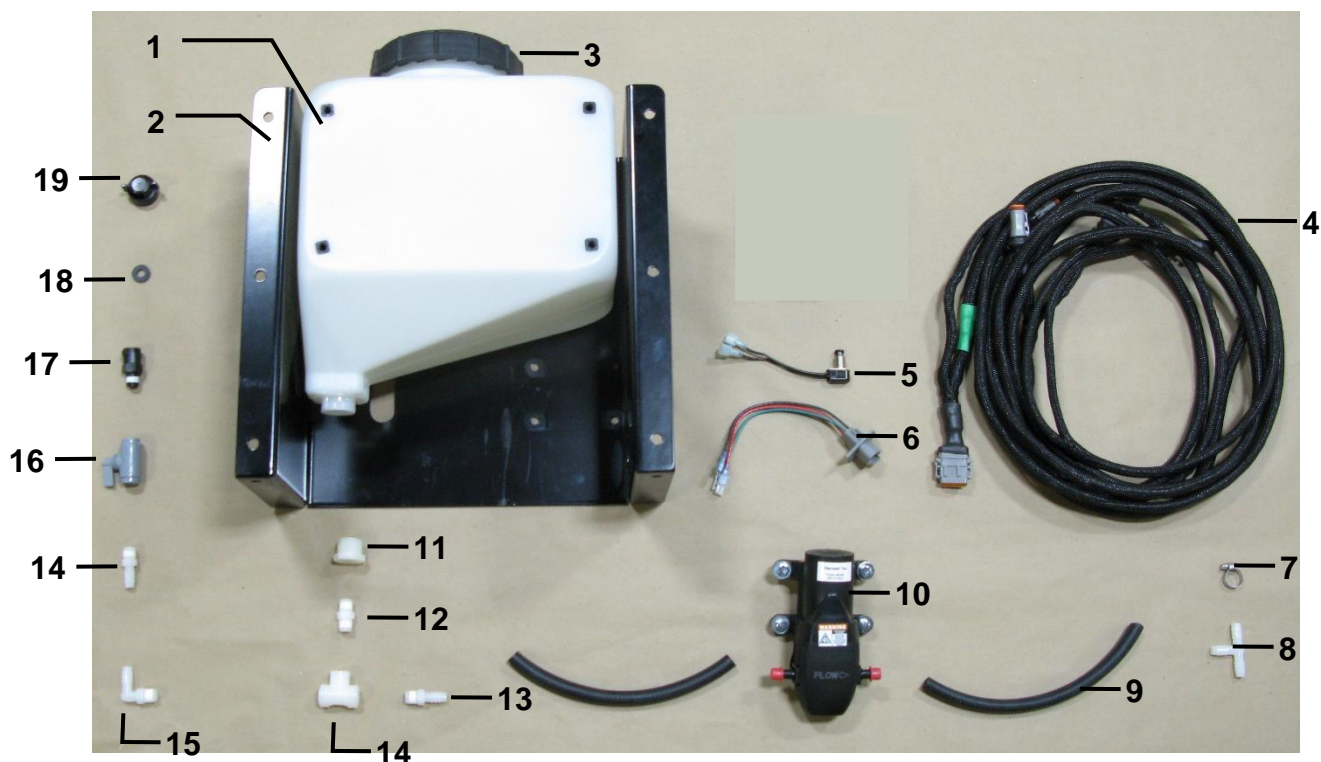
Control Box



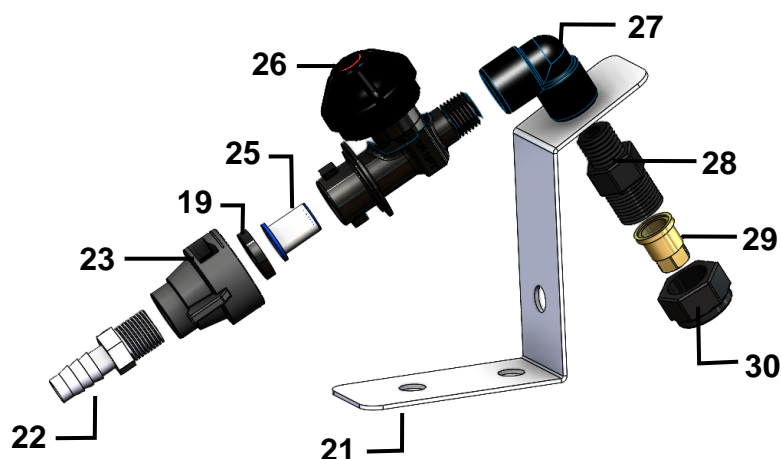
— 1

<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	ISO Moisture Module	ACW7165580	1
NP	Rivet Nuts	HDR-KLIK-RIV-1/4	2

HT238DM Dye Marker



Ref	Description	Part#	Qty	Ref	Description	Part#	Qty
1	Tank	005-9019	1	12	1/4x1/4" Nipple	003-M1414	1
2	DSM Mounting Bracket	001-2500	1	13	1/4x3/8" Fitting	003-A1438	2
3	Tank Cap	005-9022C	1	14	1/4" FPT Tee	003-TT14	1
4	DSM Pump Harness	006-765IDM4	1	15	1/4x3/8" Elbow	003-EL1438	1
5	Remote Push Switch	006-2850	1	16	SLV Bottle Valve	002-2216	1
6	DM Pump harness	006-765IDM2	1	17	Male Quick Connect	004-4710	1
7	Hose Clamp	002-9002	10	18	Rubber Gasket	004-1207W	2
8	3/8" Barbed Tee	003-T3838	1	19	Shut-Off Cap	004-1207F	1
9	3/8" EDPM Hose	002-9003AS	26'				
10	DSM Pump	007-4120LF	1				
11	3/4x1/4" Reducer	003-RB3414	1	NP	Tank Cap Gasket	005-9022CG	1



Ref	Description	Part#	Qty
21	Nozzle Holder	001-4216	2
22	Straight Fitting	003-A1438	2
23	Quick Connect	004-1207H	2
19	Rubber Gasket	004-1207W	2
25	Tip Screen	004-1203-100	2
26	Check Valve	004-1207V	2
27	Street Elbow	003-SE14F	2
28	Nozzle Body	004-4722	2
29	Brass Tip	004-TX-5	2
30	Nozzle Cap	004-4723	2

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.

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