

# OWNER'S MANUAL

## **Model 740DM** *Dye Sprayer Marking System*



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## Introduction

Congratulations on purchasing a Harvest Tec Dye Sprayer Marking System. When attached to a 700 Series Automatic Applicator or 700 Series Moisture Only kit for any large square, small square, or round baler, will allow you to visibly mark the wet areas on your bales. The system includes the tank, pump, plumbing mounting hardware and necessary cables. 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	

### 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.

## Installation of Dye Sprayer Tank & Plumbing

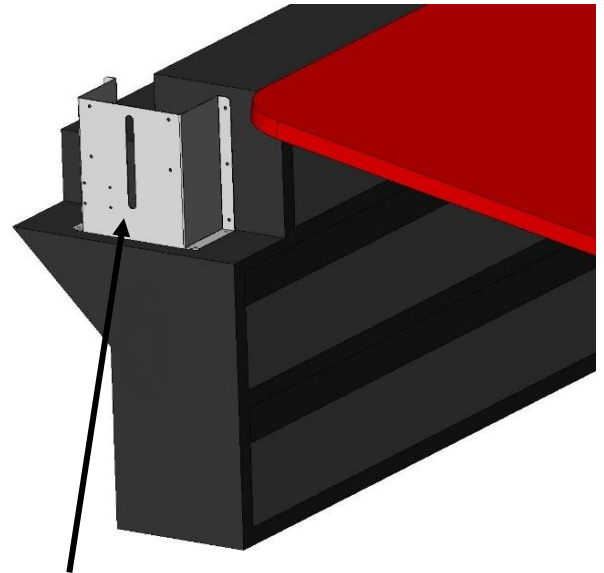
### Installation of Mounting Bracket & Tank – Large Squares

Locate the tank and mounting bracket assembly. Looking at Figures 1, 2 & 3 decide which of these mounting locations will be the most convenient and work the best for the user.

- Once tank location is decided, mark the mounting holes and drill out using 3/8" bit.
- Fasten the mounting bracket to the baler using the 5/16" hardware provided in the kit.



**Figure 1**  
**Common Hesston, Massey Ferguson,**  
**Challenger Balers**



**Figure 2**  
**New Holland 590,595, BB940-960A**  
**Case LBX331-432**



**Figure 3**  
**New Holland BB9060-9080**  
**Case LB & New Holland BB Models**

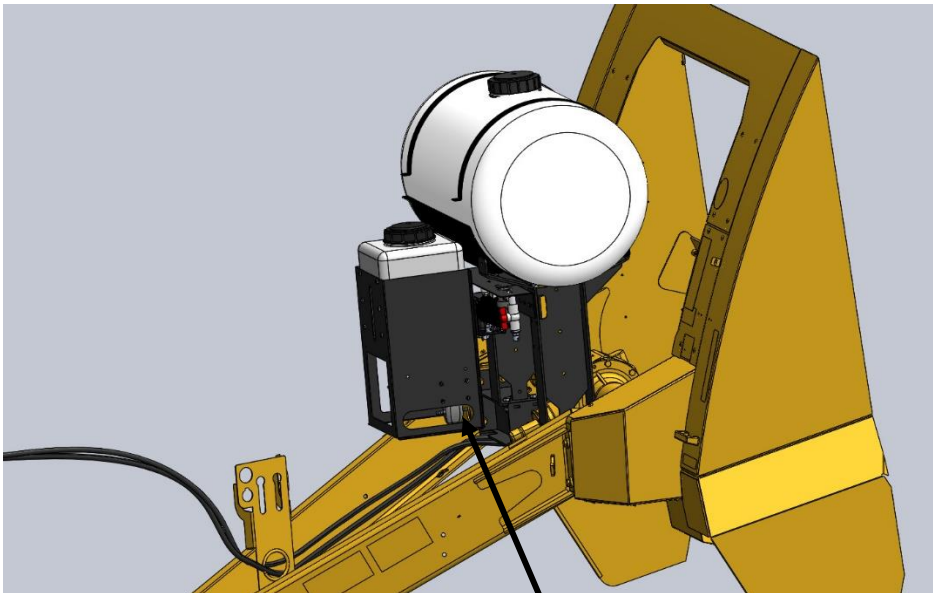
## Installation of Mounting Bracket & Tank – Small Squares and Round Balers

Locate the tank and mounting bracket assembly. Determine a mounting location on the baler (at foot level) that will be the most convenient and work the best for the user.

- a. Once tank location is decided, mark the mounting holes and drill out using 3/8" bit.
- b. Fasten the mounting bracket to the baler using the 5/16" hardware provided in the kit



**Example location of 740DM mounted on Small Square Baler**

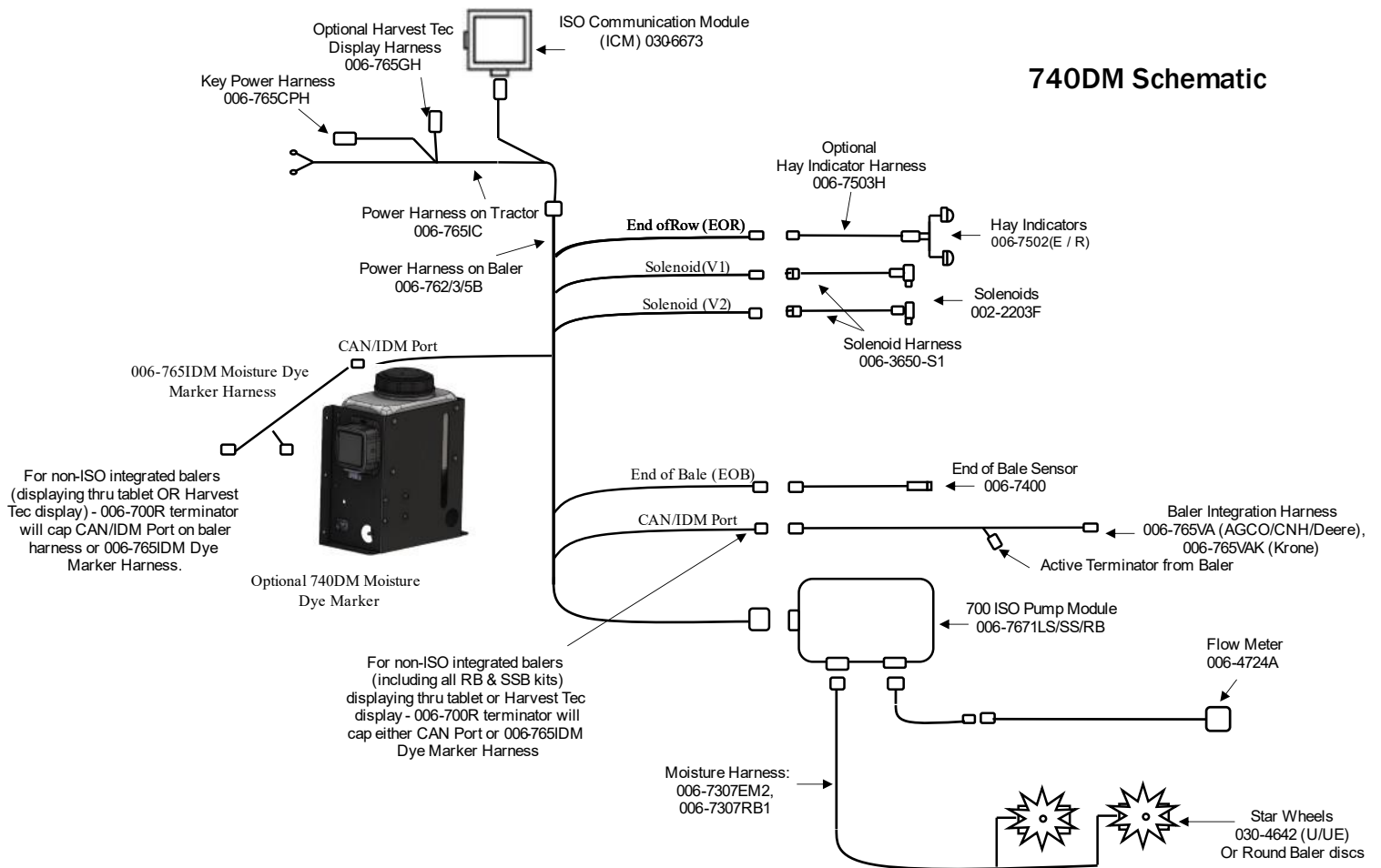


**Example location of 740DM mounted on Round Baler. Alternatively, dye marker can be mounted on side of hitch but operator should determine turning clearance with tractor rear tire**

## System Wiring

1. Locate the wiring harness (006-765IDM) supplied in the 740 dye Sprayer Marking Kit. Attached 12 pin plug into module mounted on the metal frame of the dye marker.
2. Plug uncapped triangle plug into plug on metal frame.
3. Run Dye Marking harness down to main applicator harness (006-762/3/5B) and attach it to one of the CAN/IDM plugs. *Note – ensure 700R resistor is installed if not integrating into a Large Square Baler ISOBUS.*

## System Wiring Diagram





## Installation of Plumbing

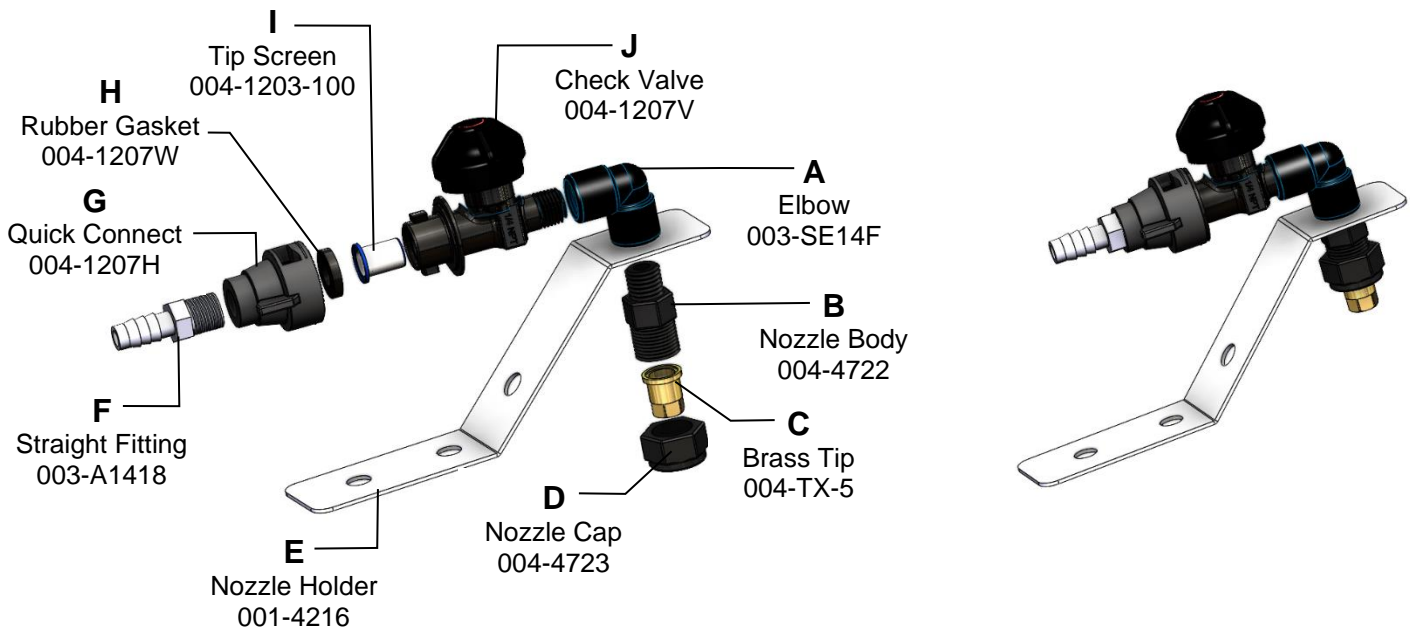
To most effectively mark the wet spots in any bale, Harvest Tec recommends that the nozzles are mounted directly above or below the Star Wheels (for systems utilizing Rear Chute Microwave Moisture Sensors, see section below\* for nozzle placement). To get the best spray pattern focused directly on the 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.

1. 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\*\*\*\*\***

2. 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 in Figure 7*)  
**\*\*\*\*\*Keep from routing the hose in the way of moving parts on the baler\*\*\*\*\***

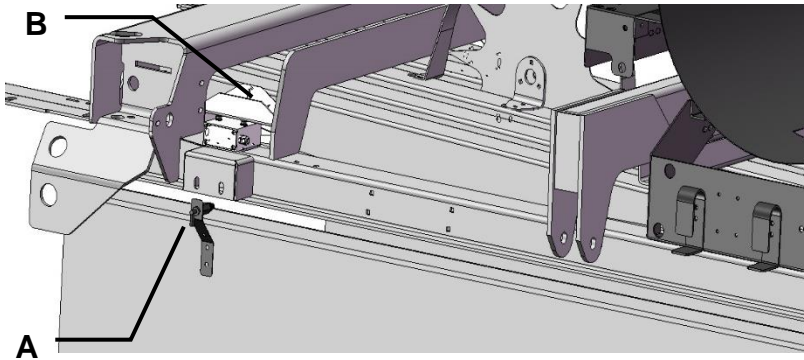
3. Attach drain hose top hose barb fitting at bottom of tank. Run hose to a secure point and attach valve assembly.



\*For systems with rear chute mounted microwave sensors- mount the spray nozzle assemblies off the top rear edge of the bale chamber to mark the top side of the exiting bale. Mounting of the spray nozzles on the same side as the MWM sensors may interfere with the accuracy of MWM readings.

## Installation of Plumbing (continued)

4. Install the tip and nozzle holder assemblies in the suggested locations pictured shown below.  
Use the 1/4" hardware provided to do so.
  - a. Large Square and Small Square Balers - 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.
  - b. Round Balers – mount the tip assemblies (**C**)



**Example 1**  
(large square)



**Example 2**  
(large square)



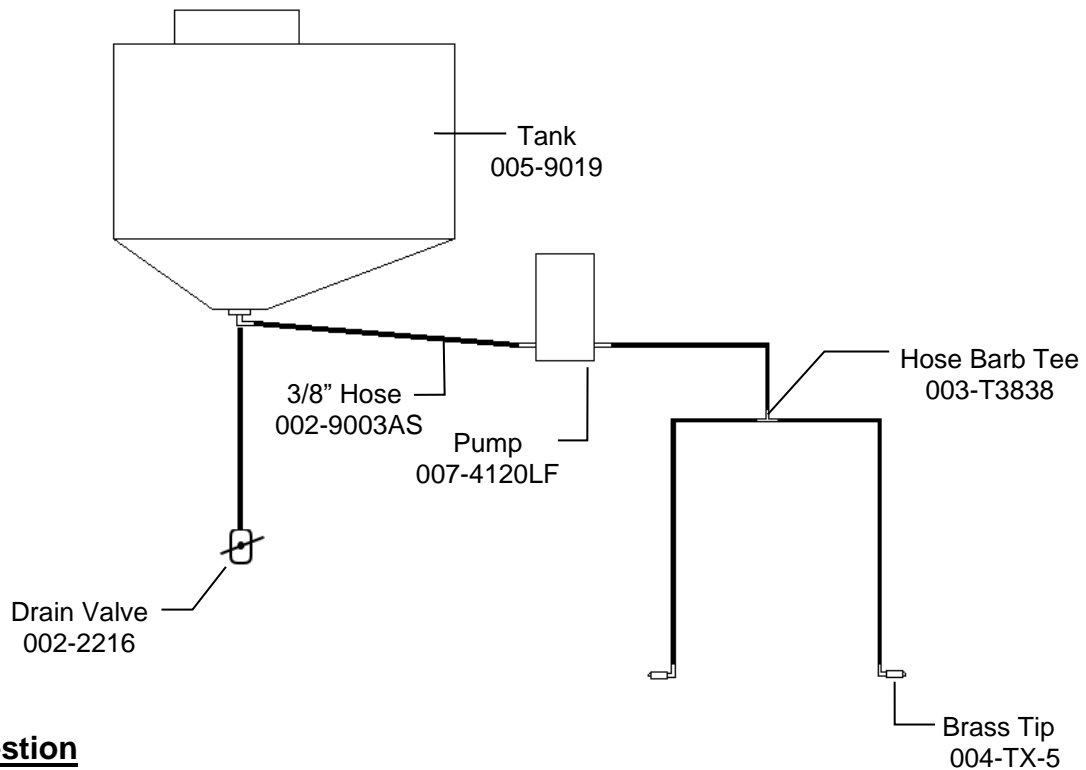
**A** – Nozzles mounted on top of bale chamber  
**B** – Star wheels mounted beneath bale chamber (not shown)

**Example 3**  
(small square)



**Example 4**  
(round baler)

## 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"> <li>1. The system is out of dye.</li> <li>2. There is air in the lines, preventing a steady mist coming from the tips.</li> <li>3. Damaged/pinched hose.</li> <li>4. Tip is plugged.</li> <li>5. Set point is set too high</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the tank for solution. If the tank is empty, refill and bleed air from lines.</li> <li>2. Loosen check valve &amp;/or remove the tips from the valve body and using the priming button bleed the air out of the lines.</li> <li>3. Inspect all the hose making sure the lines are damaged or pinched.</li> <li>4. Removed the tip from the bushing and inspect, clean is necessary.</li> <li>5. Lower the set point level at which the user would like to have the bales marked at.</li> </ol>

### Maintenance

For **winter** storage, drain all of the liquid out of the lines, tank, and pump.  
Use of antifreeze of any kind is not recommended in any Harvest Tec system.



## Filling Tank & First Time and Annual Startup

### 1. Filling the Tank

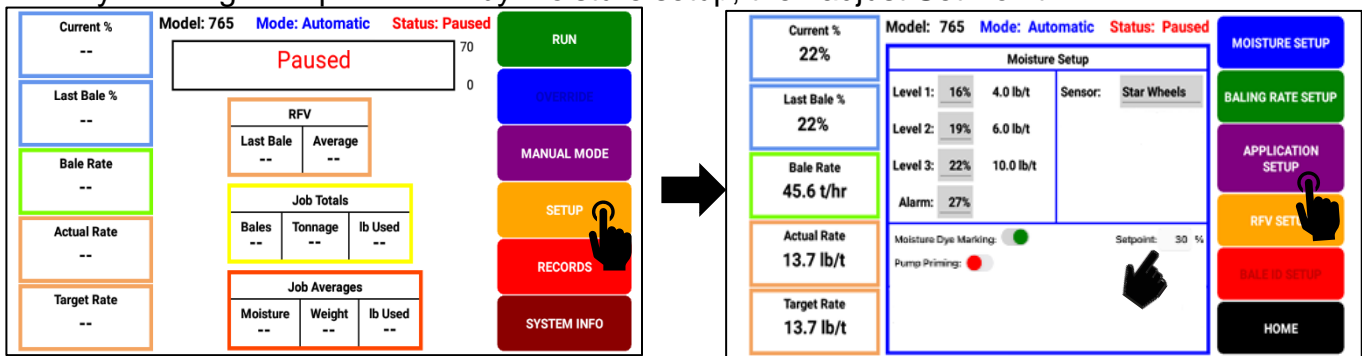
- A. Remove the tank lid from the 3 gallon tank. Make sure the tank is clean and completely empty. Mix the Dye (009-0800) with warm water inside the Dye bottle. Make sure that the bottle is shaken vigorously so that the dye completely dissolves. Once the solution is mixed, add it to the 3 gallon tank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

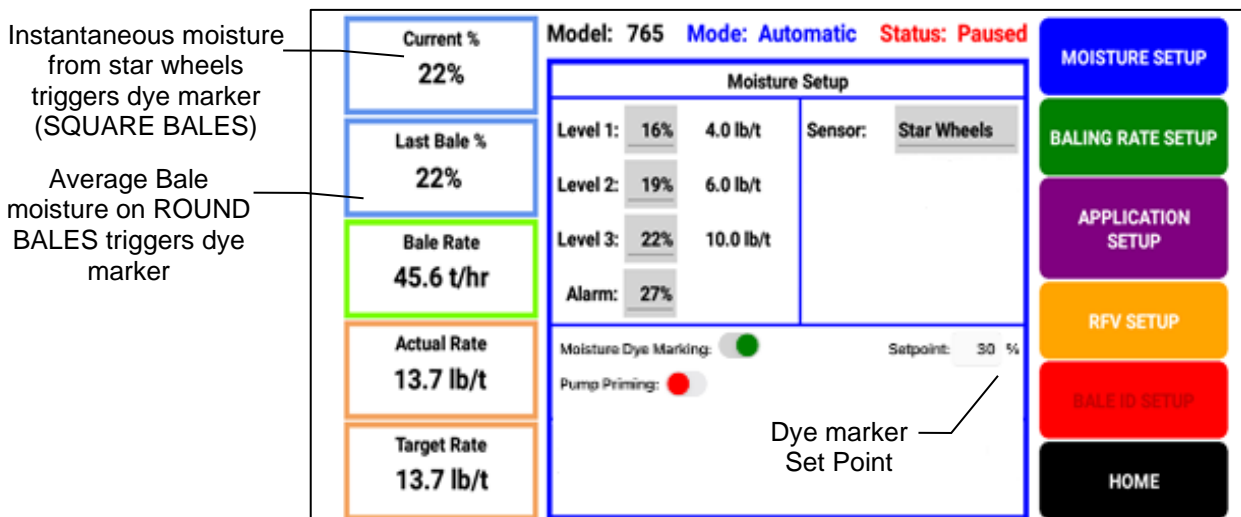
- B. You can adjust the moisture content level at which you would like the system to mark the 'Wet Flakes' in the bale being made, as well as marking the sides of round bales. This can be done by entering 'Setup' followed by moisture setup, then adjust Set Point.



## Operating Instructions Automatic Mode or Manual Mode

**Large and Small Square systems** - Auto & Manual mode will automatically mark bales with dye if the Moisture Dye Marking system is turned on and moisture content sensed by the star wheels is above the moisture 'Set Point' level that was set by the operator.

**Round Baler Systems** - Auto & Manual mode will automatically mark bale for 3 seconds when being ejected with dye if the Moisture Dye Marking system is turned on and AVG BALE moisture content sensed by the dual disc pads is above the moisture 'Set Point' level that was set by the operator.

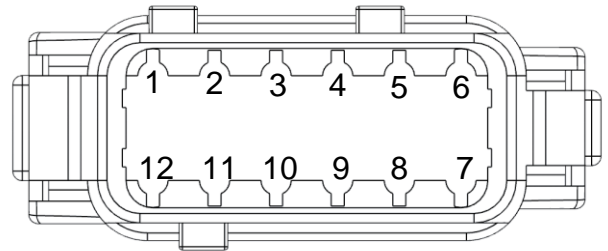


## Pin Outs

### Integrated Dye Marker Module (IDM) on harness 006-765IDM

(Deutsch Plug Number: DTM06-12SA)

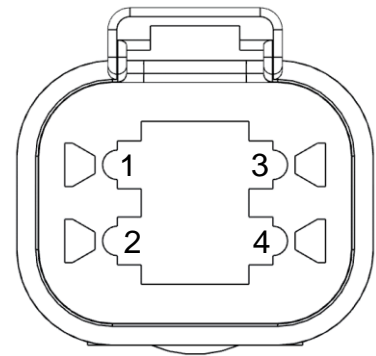
Pin 1	Red	+12V from ECU
Pin 2	Red/Black	+12V, EOB
Pin 3	Black/White	Ground, EOB
Pin 4	-	-
Pin 5	-	-
Pin 6	Purple	Signal, EOB
Pin 7	Yellow	ISO CAN Hi
Pin 8	Green	ISO CAN Lo
Pin 9	Red/White	+12V DSM
Pin 10	Black/White	Ground DSM
Pin 11	Blue	Prime, DSM
Pin 12	Black	Ground from ECU



### ISOBUS Plug on harness 006-765IDM

(Deutsch Plug Number: DT04-4P)

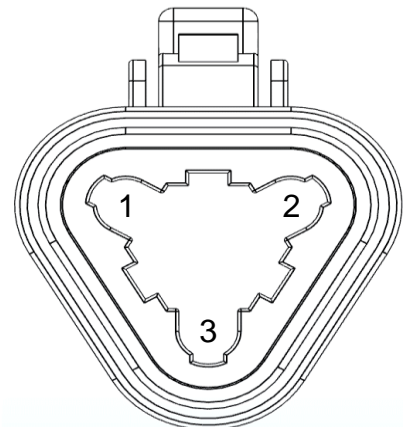
Pin 1	Red	+12V from ECU
Pin 2	Yellow	ISO CAN Hi
Pin 3	Green	ISO CAN Lo
Pin 4	Black	Ground from ECU



### End of Bale Sensor Plug on Harness 006-765IDM

(Deutsch Plug Number: DT06-3S)\_

Pin 1	Red/Black	+12V to End of Bale Sensors
Pin 2	Black/White	Ground to End of Bale Sensors
Pin 3	Purple	Signal

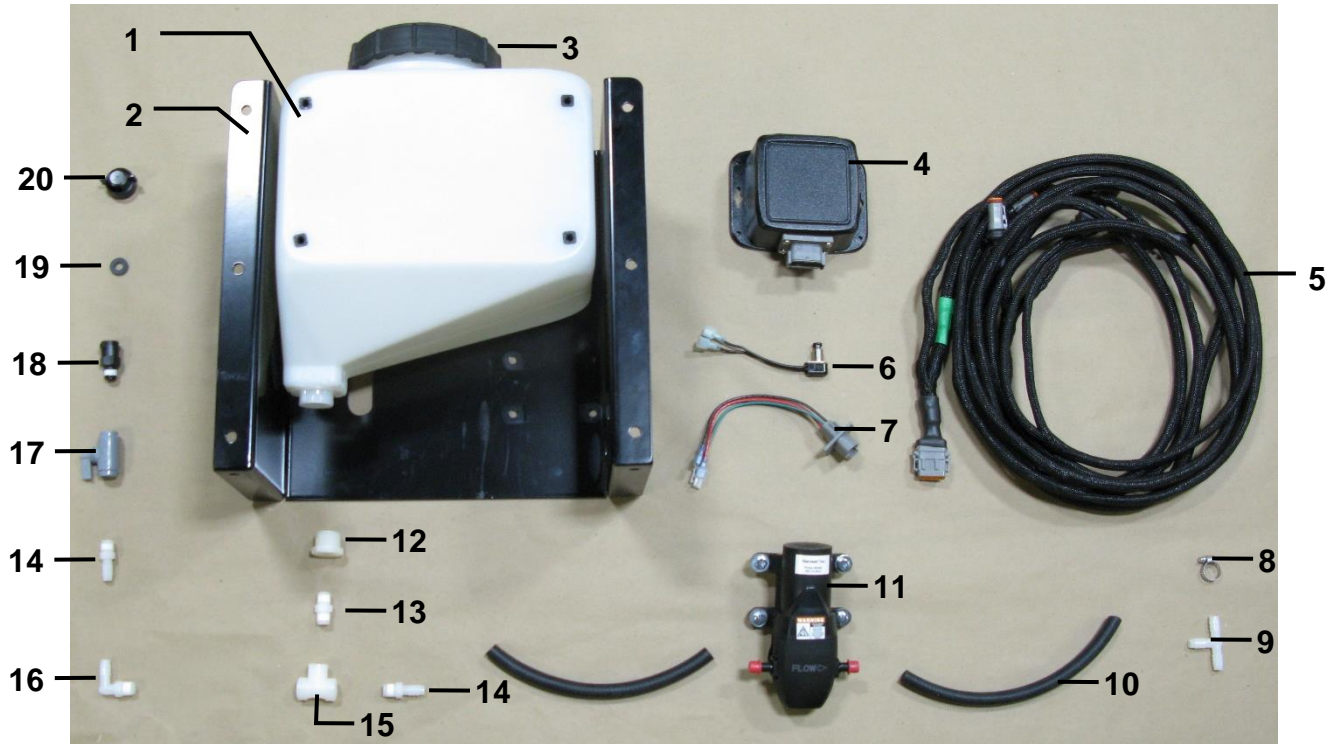


### Prime Switch Plug on Harness 006-765IDM

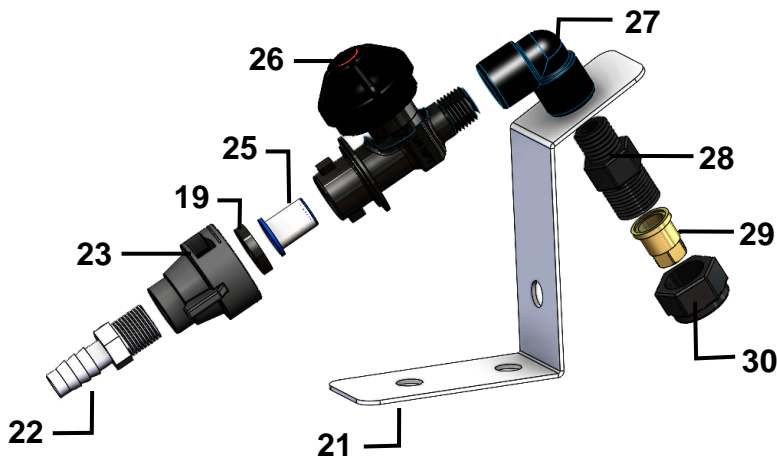
(Deutsch Plug Number: DT06-3S)\_

Pin 1	Orange/White	+12V to Pump
Pin 2	Black/White	Ground to Pump
Pin 3	Blue	Prime

## Parts Breakdown



<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>	<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>
1	Tank	005-9019	1	12	3/4x1/4" Reducer	003-RB3414	1
2	DSM Mounting Bracket	001-2500	1	13	1/4x1/4" Nipple	003-M1414	1
3	Tank Cap	005-9022C	1	14	1/4x3/8" Fitting	003-A1438	2
4	Dye Marker Control	006-2472DM	1	15	1/4" FPT Tee	003-TT14	1
5	DSM Wire Harness	006-765IDM	1	16	1/4x3/8" Elbow	003-EL1438	1
6	Remote Push Switch	006-2850	1	17	SLV Bottle Valve	002-2216	1
7	DM Pump Switch	006-765IDM2	1	18	Male Quick Connect	004-4710	1
8	Hose Clamp	002-9002	10	19	Rubber Gasket	004-1207W	2
9	3/8" Barbed Tee	003-T3838	1	20	Shut-Off Cap	004-1207F	1
10	3/8" EDPM Hose	002-9003AS	26'				
11	DSM Pump	007-4120LF	1	NP	Tank Cap Gasket	005-9022CG	1



<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>
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

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