

# Installation Manual

## ***Model 445Z*** ***55-Gallon Preservative Applicator***



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## DECLARATION OF INCORPORATION



**MANUFACTURER:**

Harvest Tec Inc.  
2821 Harvey St.  
P.O. Box 63  
Hudson, WI 54016, U.S.A.

**REPRESENTATIVE ESTABLISHED IN COMMUNITY:** Profitable Farming Company  
Middle Barlington, Roborough  
Winkleigh, Devon, EX19 8AG  
ENGLAND

The person above certifies and declares that:

**VIRTUAL MACHINE:** Equipment mounted on a farm press and for the application of inoculants onto forage crops.

**MODEL:** 445Z-21-INST-Imp&Metric

**BRAND:** Harvest Tec

**SERIAL NUMBER:**

This application preservatives for hay Harvest Tec system meets the Directive 2006/42/EC of the European Parliament and the Council of 17 May 2006 and other applicable European Directives including Directive 2004/108/EC on the Electromagnetic compatability.

The application of preservatives for hay Harvest Tec system will be turned on after being installed on a farm press has been declared in conformity with the Machinery Directive.

Person in the community authorized to provide information on the partly completed machinery and making this statement:

**Richard Snell, President, Profitable Farming Company**  
Signed on May 21, 2011: Middle Barlington, Roborough  
Winkleigh, Devon, EX19 8AG  
ENGLAND

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## Introduction

Thank you for purchasing a Harvest Tec Model 445Z Hay Preservative Applicator. Please read this manual carefully to ensure correct steps are followed to attach the applicator to the baler. This applicator is designed to apply Harvest Tec buffered acid. The model 445Z Kit includes the following parts: tank, frame, pump, gauge, hose, electronic control box, and miscellaneous hardware. If you are unsure about your kit, contact your local dealer for specifications. For your convenience parts break downs are included in the back of this manual.

Left and Right sides are determined by facing in the direction of forward travel.

## Tools Needed

SAE wrench set  
Standard screw driver  
Crescent wrench  
Side cutter

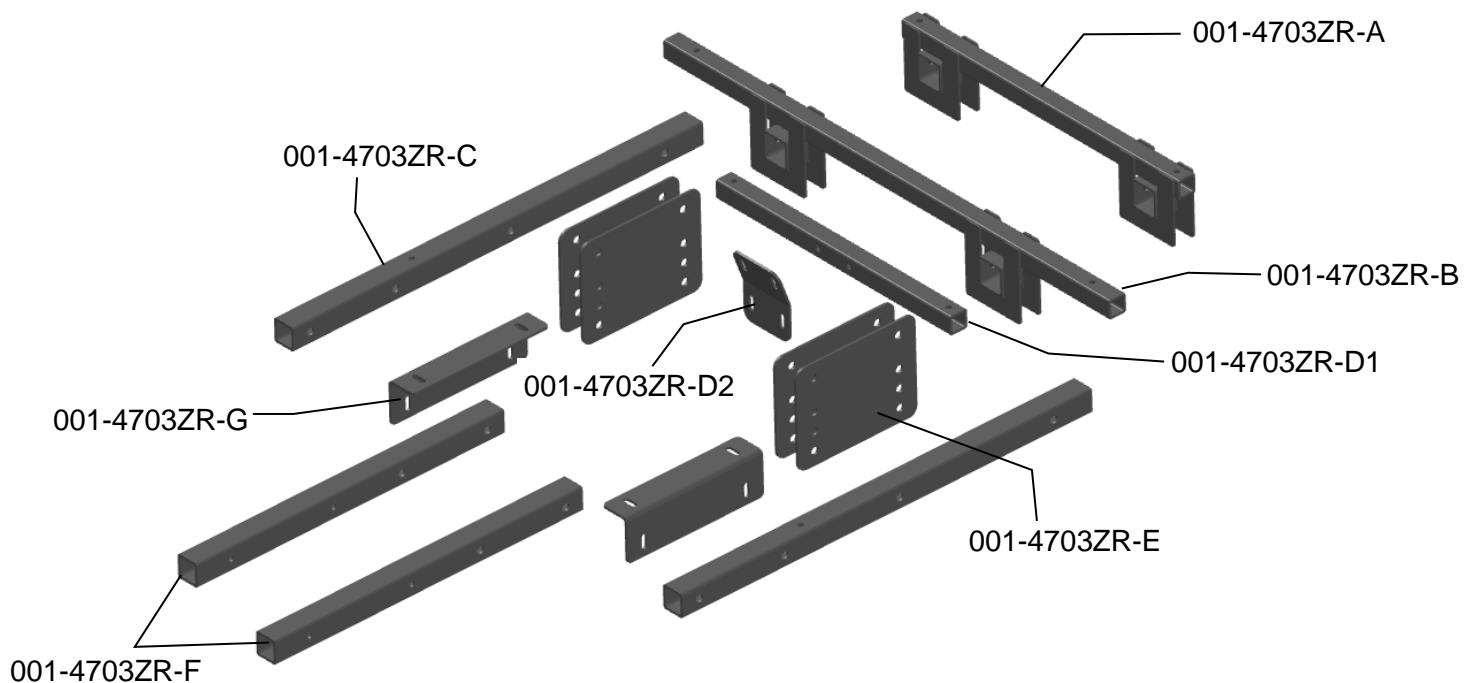
Metric socket set  
Hose cutter  
Hammer  
Measuring tape

SAE socket set  
Drill bit set  
Center punch

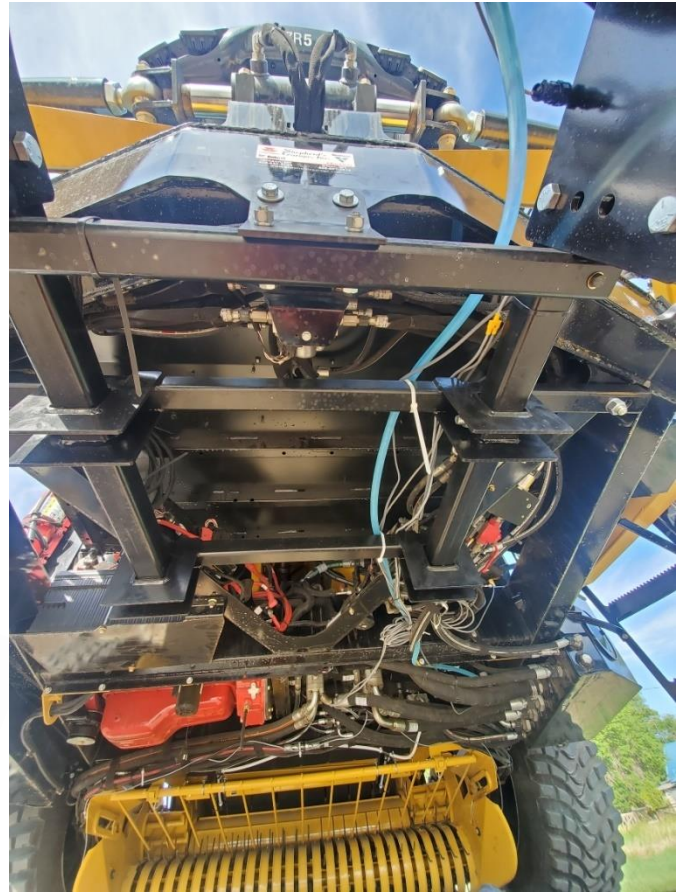
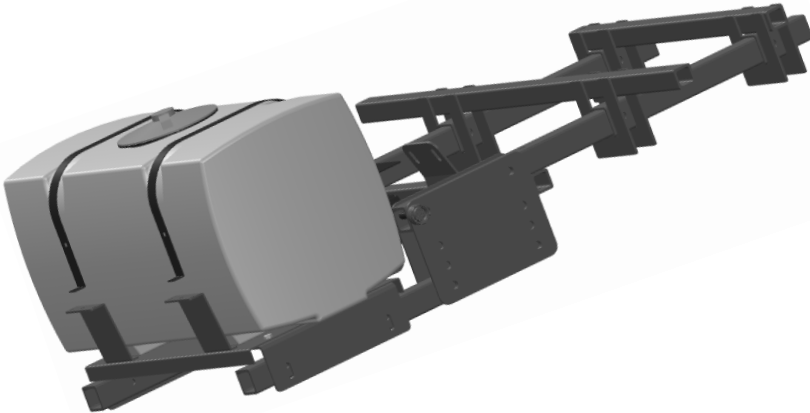
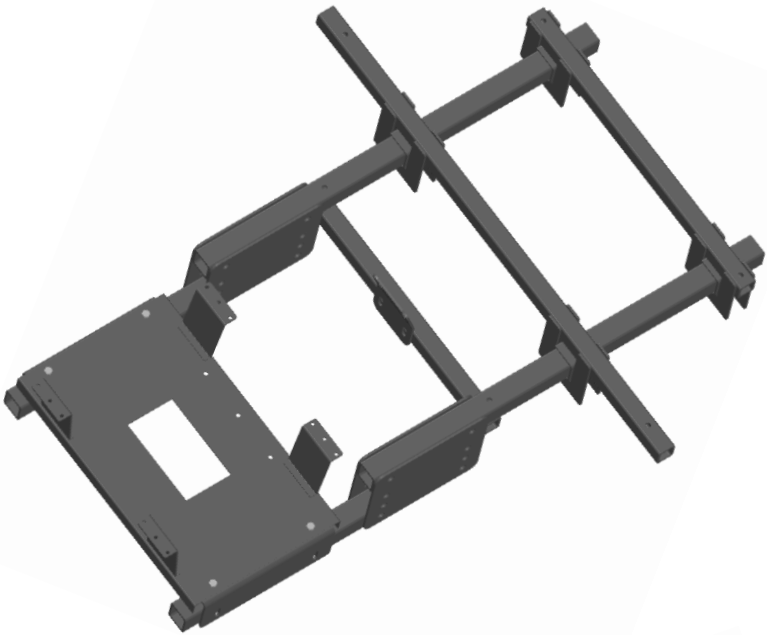
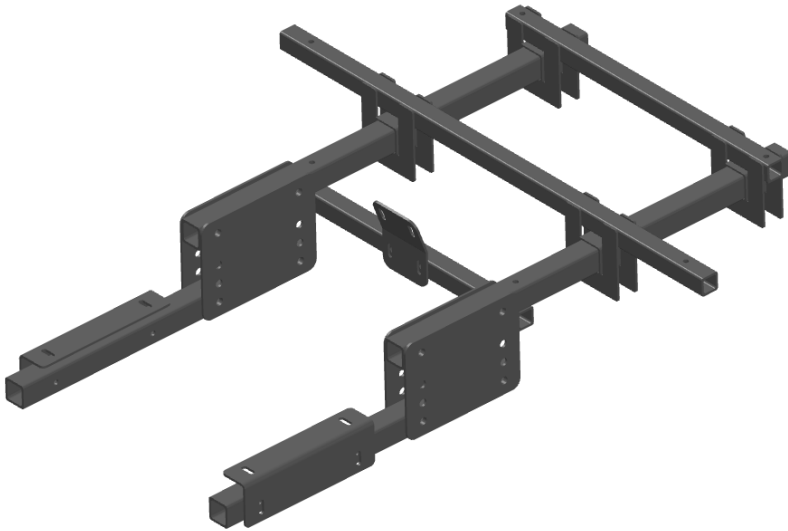
## Installation of Applicator

### Installation of Mounting Brackets and Tank

1. Locate parts 001-4703ZR-A, 001-4703ZR-B, two 001-4703ZR-C and four  $\frac{3}{4}$ " x 4  $\frac{1}{2}$ " bolts, lock washers and nut.
2. Line up 001-4703ZR-A and 001-4703ZR-B about 18 inches apart on the ground. Slide part 001-4703ZR-C into square mounts and secure with  $\frac{3}{4}$ " x 4  $\frac{1}{2}$ " bolts, locks, and nuts to holed in place. Note there are two sets of  $\frac{3}{4}$ " holes on the 001-4703ZR-C. Use the set that is about 18 inches apart.
3. Locate part 001-4703ZR-D1 and two  $\frac{1}{2}$ " x 5  $\frac{1}{2}$ " bolts, locks, washers, and nuts. Bolt part 001-4703ZR-D1 to the top of the two 001-4703ZR-C with this hardware.
4. Locate part 001-4703ZR-D2. Bolt to the front of 001-4703ZR-D1 with  $\frac{1}{2}$ " x 3  $\frac{1}{2}$ " bolts, washers, locks, and nuts. Do not fully tighten down.
5. Using a lift, bring the assembly up under the cab of the baler. Part 001-4703ZR-D2 should line up with holes in the front part of the baler. Mark the half inch holes at the ends of the 001-4703ZR-A and 001-4703ZR-B that line up with the structural parts under the cab. Lower assembly out of the way and drill these four holes with a  $\frac{9}{16}$ " drill bit. (Note. Do not drill into hydraulic lines or electrical wires.)
6. Once holes have been drilled. Lift assembly back up under cab and attach to baler with four  $\frac{1}{2}$ " x 3  $\frac{1}{2}$ " bolts, washers on both sides, locks, and nuts.  $\frac{3}{4}$ " hardware is provided if you would want to use this. However, part 001-4703ZR-A and 001-4703ZR-B will need to be drilled out for the  $\frac{3}{4}$ " bolts. The 001-4703ZR-D2 will attach to the front mount with  $\frac{1}{2}$ " x 2" bolts, washers on both sides, locks, and nut.
7. Attach two 001-4703ZR-E to each 001-4703ZR-C (one on each side) sticking out the front of the baler. Use  $\frac{3}{4}$ " x 4  $\frac{1}{2}$ " bolts, locks, nuts. Do not fully tighten down yet.
8. Attach 001-4703ZR-G to the 001-4703ZR-E at the height you desire to keep the tank about the windrow. Note the lower the take the closer it is to the windrow coming into the baler. The higher it will obstruct your view. Use  $\frac{3}{4}$ " x 4  $\frac{1}{2}$ " bolts, locks, and nuts to secure.
9. Attach 001-4703ZR-G to 001-4703ZR-F with  $\frac{1}{2}$ " x 4" Bolts, washers, locks, and nut. Do not fully tighten down. (Note: angles will be pointing toward each other.
10. Place saddle assembly on 001-4703ZR-G and secure with  $\frac{1}{2}$ " washer, locks, and nuts.
11. Tighten all hardware down.



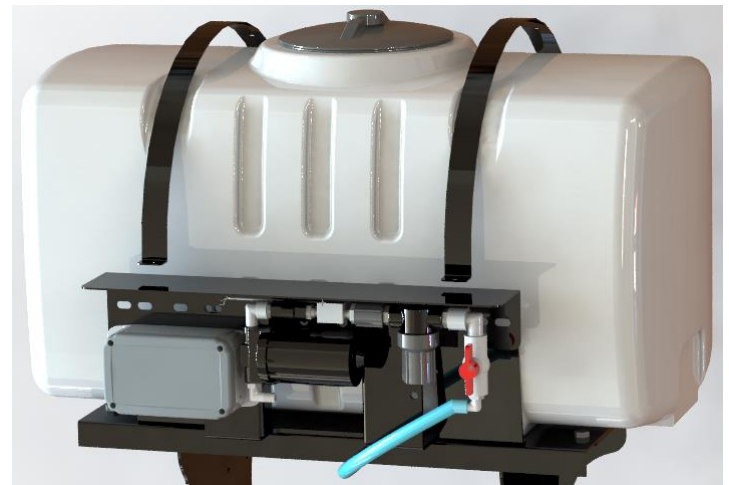
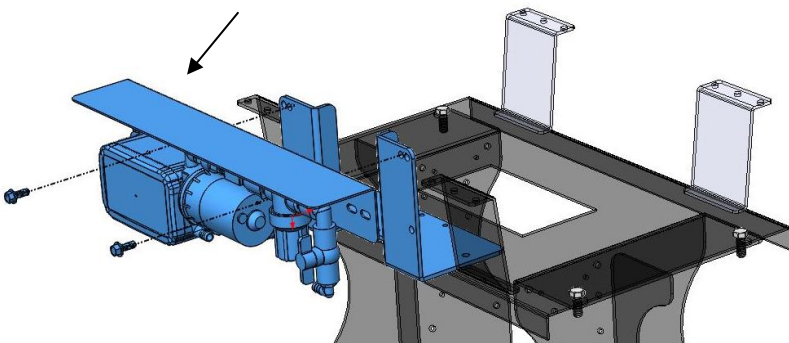
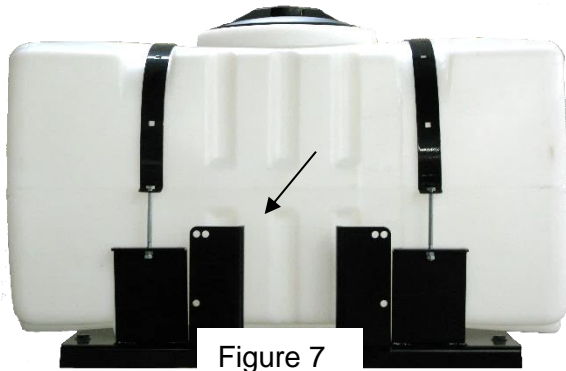
## Installation of Mounting Brackets and Tank (continued)



## Mount Pump Plate Assembly

Locate parts bag 8. Using two 3/8" x 1/4" bolts, locks, washers, and nuts. Mount the U-shaped pump plate mount 001-4647 (right) onto the tank saddle in the mounting holes located between the strap brackets on back of saddle (figure 7).

Connect the pump plate mounting bracket (001-4648X), shown in figure 8, using two 3/8" x 1 1/4" bolts, nuts, locks, and flat washers to the mounting bracket. Install the pump plate as shown completed in figure 9.



## Installation of Gauge and Hose Manifold

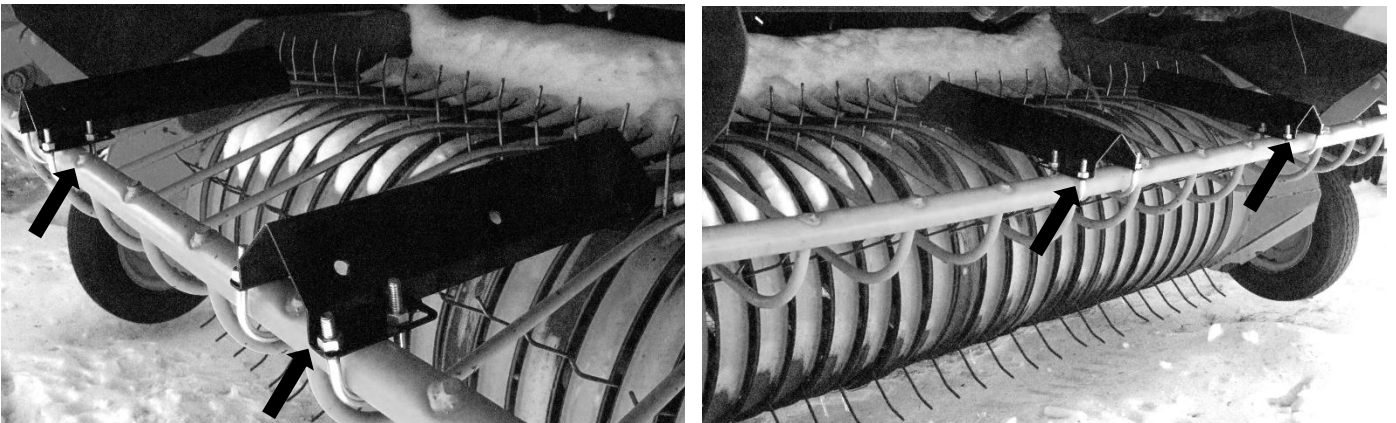
- A. Drill two 3/8" holes and mount pressure gauge to sheet metal. Bend the gauge bracket to adjust the angle.
- B. Secure with two 5/16" x 1" flange bolts and flange nuts.



## Placement of Spray Nozzle Assembly

The cross bar on the wind guard above the pick-up head provides a mounting point for the nozzle holders (001-4714J). Mount the nozzle holders on the wind guard, using the supplied U bolts (001-4714UBS). Measuring from the center of the baler, the nozzle holders will need to be 6" (15cm) apart on a 4' (1.2M) and 9" (23cm) apart on a 5' (1.5M). Do not fully tighten.

Position the nozzle holders so that the tips spray in a horizontal direction over the top of the baler's pickup. The tips should be located so that they will be between 14" and 18" (35 - 45 cm) from the normal path of hay. Make sure the nozzle holders do not interfere with the tying system. \*It is recommended to test the system with water prior to field operation. This will ensure the fan pattern from the tips reaches the outside edges of the pickup while having a slight overlap in the center.





## Installation of Plumbing

### A. Tank to Pump

1. Thread elbow (003-EL3412) into the bottom of the tank.
2. Route 1/2" hose from bottom of tank through gap in sheet metal surrounding the baler gauge down to valve on pump intake.
3. Secure with hose clamps.

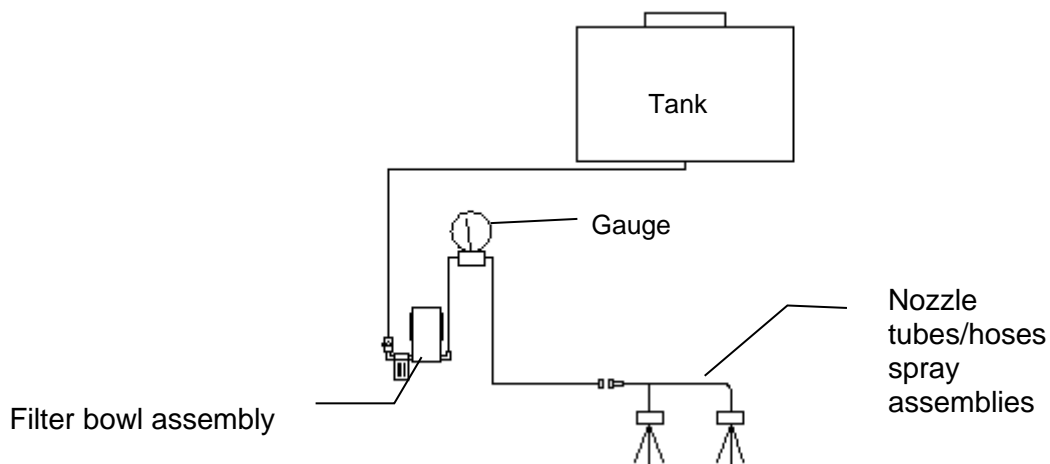
### B. Pump to Gauge

1. Attach 1/2" hose to pump discharge and route up to gauge. Secure with hose clamps.

### C. Gauge to Nozzles

1. Attach 1/2" hose to open port of gauge and route hose down to check valve of spray nozzle assembly.
2. Attach quick disconnect (003-A1412 and 004-1207H).
3. Secure with hose clamps.

### D. Secure loose hoses to baler with supplied Jiffy clips. Use existing hardware to attach to baler.





## **Installation of Controls and Routing the Wire Harnesses**

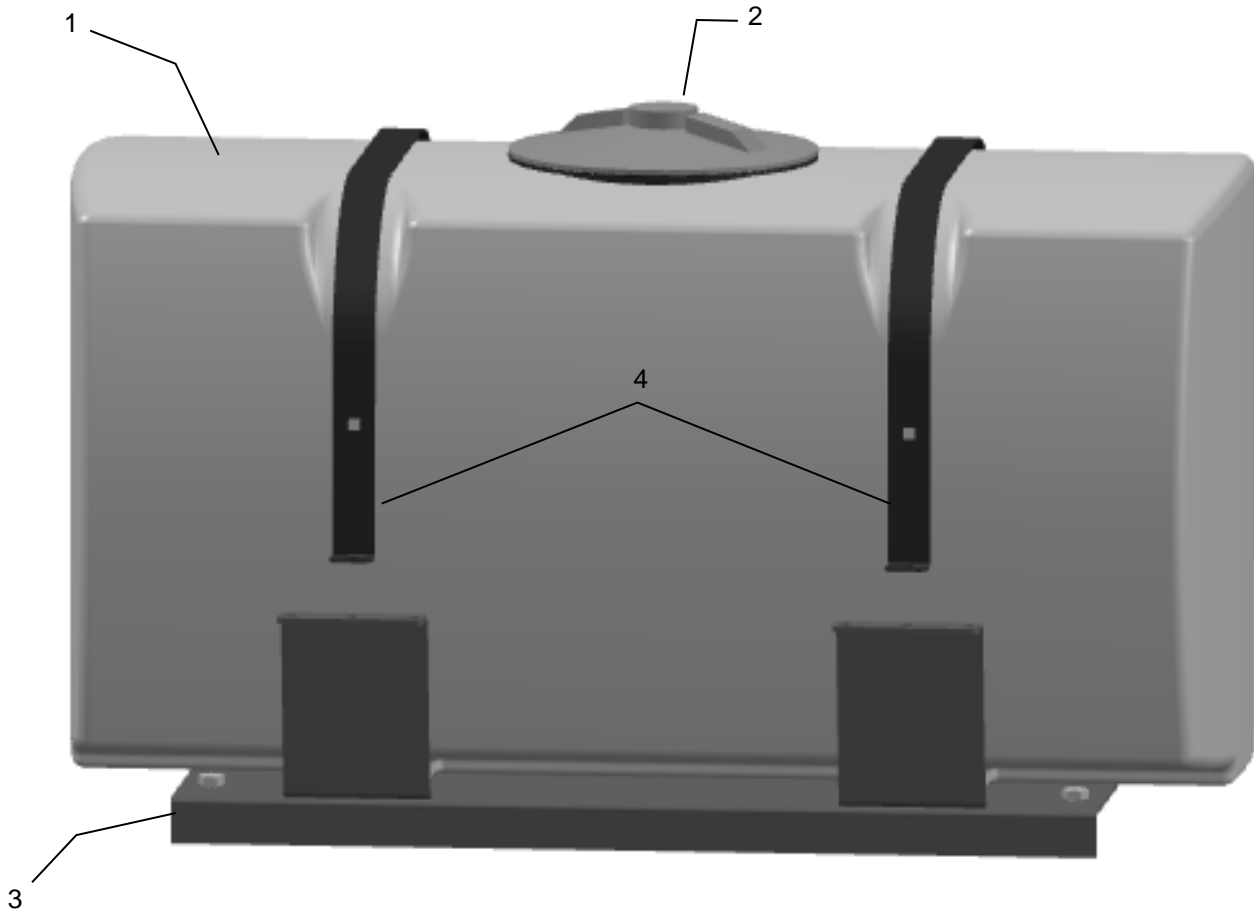
- A. Locate the control in an area that allows operation for adjusting or turning the controls while operating the baler.
- B. Route the wire to the starter solenoid on all 12V tractors. Connect the green lead marked + to the hot terminal on the starter. Connect the black lead to a good ground. **Do not reverse the leads.** Be sure to use a voltmeter to verify that you do have 12 volts running to the box.

**Note:** For tractors with 24v starters, connect the power leads to the tractor's right-hand battery. Do not connect the leads to the starter. Connect the lead marked + to the positive battery terminal and the lead marked- to the negative on the battery. Wiring connections to the battery normally results in corrosion; terminal coating is recommended.

- C. Attach the wire from the pump to the battery
- D. Run wire with molded black plug to back of tractor
- E. Run wire from pump up drawbar and connect it to the mating plug from the control box. Secure wire to baler with supplied cable ties.

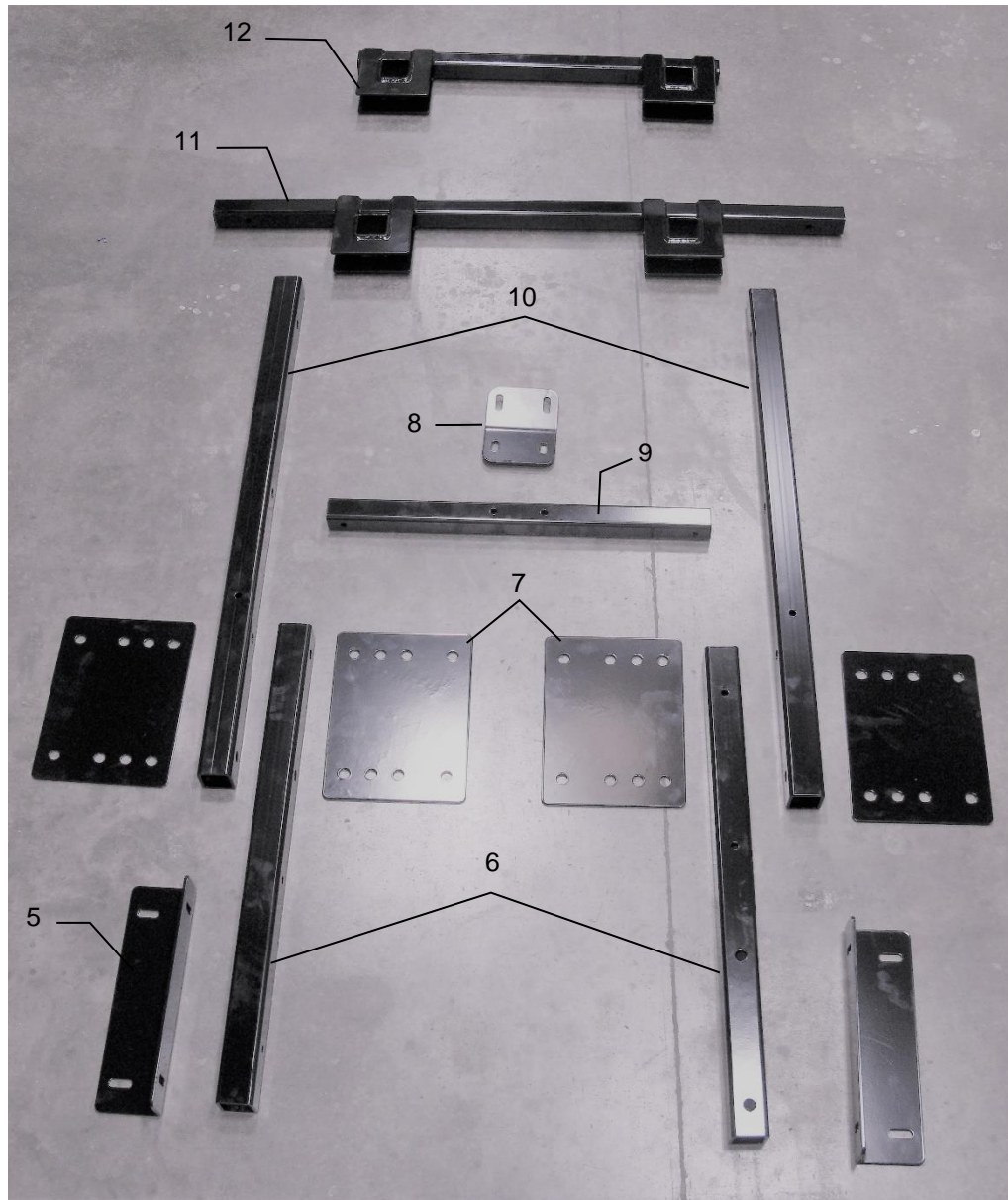
**Caution:** Do not run a pump or use an electronic control box directly off a battery charger. For stationary use, the applicator can be connected to a new battery and the battery connected to a charge

## Model 445Z Base Kit



<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	50 Gallon Tank	005-9203SQ	1	7	Side Rail Plate	001-4703ZR-E	4
2	Tank Cap, Gasket, & Breather	P05-9022HBG	1	8	Front Mount Support	001-4703ZR-D2	1
3	Tank Saddle	001-4703X	1	9	Front Mount Crossmember	001-4703ZR-D1	1
4	Tank Strap	001-4402	2	10	Long Side Rail	001-4703ZR-C	2
5	Tank Saddle Support	001-4703ZE-G	2	11	Mid Mount	001-4703ZR-B	1
6	Short Side Rail	001-4703ZR-F	2	12	Rear Mount	001-4703ZR-A	1
				NP	Hex Plug	003-F34	1
					Complete Kit	030-0445Z-TK	

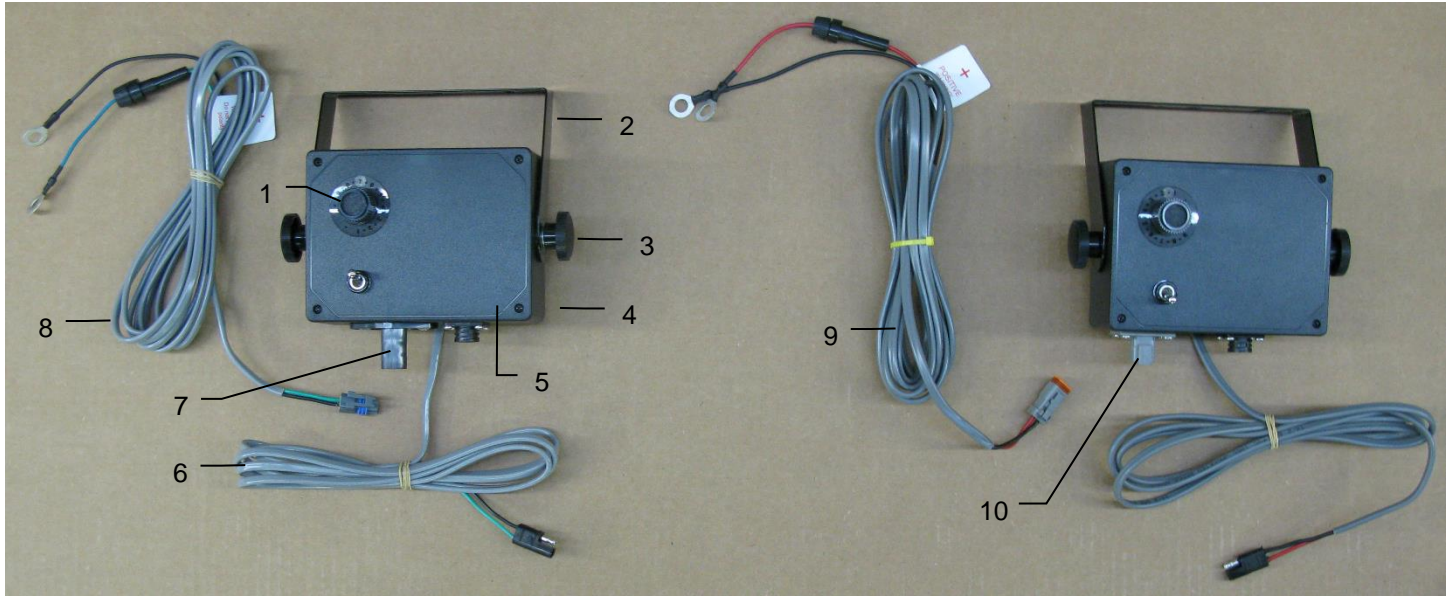
## Model 445Z Base Kit (continued)



<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	50 Gallon Tank	005-9203SQ	1	7	Side Rail Plate	001-4703ZR-E	4
2	Tank Cap, Gasket, & Breather	P05-9022HBG	1	8	Front Mount Support	001-4703ZR-D2	1
3	Tank Saddle	001-4703X	1	9	Front Mount Crossmember	001-4703ZR-D1	1
4	Tank Strap	001-4402	2	10	Long Side Rail	001-4703ZR-C	2
5	Tank Saddle Support	001-4703ZE-G	2	11	Mid Mount	001-4703ZR-B	1
6	Short Side Rail	001-4703ZR-F	2	12	Rear Mount	001-4703ZR-A	1
				NP	Hex Plug	003-F34	1
					Complete Kit	030-0445Z-TK	

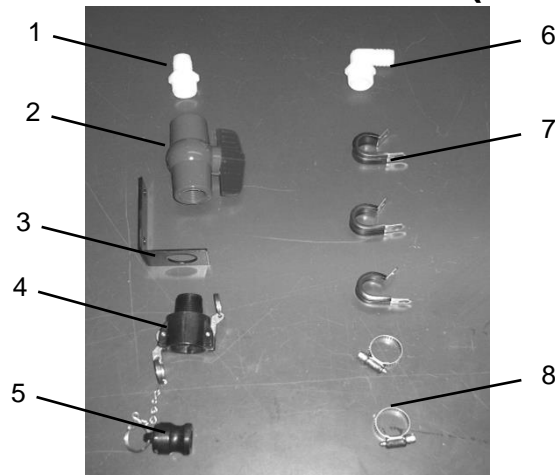
# Parts Breakdown for Control Box and Drain Fill Kit

## Model 457 Control Box



<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	Speed dial	006-2022A	1	8	Power lead	006-4580C	1
2	U-bracket	001-2012E	1		Pre-Serial # 4549		
3	Control box knob	008-0923	2	9	Power lead	006-4580M	1
4	Control box enclosure	006-2015A	1		After Serial # 4550		
5	Control box cover	006-2015B	1	10	Box Plug	006-4581M	1
6	Pump lead	006-4583	1		After Serial # 4550		
7	Box Plug	006-4581					
	Pre-Serial # 4549						

## Parts Breakdown for Drain Fill (Model 442P)



<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	Straight fitting	003-A3434	1	5	Male coupler	002-2205G	1
2	Ball valve	002-2200	1	6	Elbow	003-EL3434	1
3	Valve holder	001-6702H	1	7	Jiffy clip	008-9010	3
4	Female coupler	002-2204A	1	8	Hose clamp	003-9004	2
				NP	3/4" Hose	002-9002	10ft

## 445Z Spray Shield



<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	U bolt	001-4714UBS	4	10	Tip Strainer	004-1203-100	2
2	Hose clamp	003-9002	2	11	Tip – White	004-XR11008VS	2
3	1/4" x 1/4" Fitting	003-A1414	5	12	Tip – Red	004-XR11004VS	2
4	1/4" Sq Tee	003-TT14SQ	1	13	Nozzle Body	004-4722	2
5	1/4" St Elbow	003-SE14F	1	14	Nozzle Cap	004-4723	2
6	Oetiker Clamp	003-9008	4	NP	477 Jiffy Clip	008-9014	2
7	Nozzle Holder	001-4714J	2		Shield Only (Ref 1-14)	030-4714J-SO	
8	Hose	002-9016	3ft				
9	1/4" x 1/4" Fitting	003-A1414F	2				

\* Tip color subject to change

## Harvest Tec Inc. Warranty and Liability Agreement

Harvest Tec, Inc. 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, Inc. 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, Inc.

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, Inc. 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, Inc. 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, Inc. 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, Inc. will not affect our ability to obtain materials or manufacture necessary replacement parts.

Harvest Tec, Inc. 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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