

OWNER'S MANUAL

Model 461 *55 Gallon Preservative Applicator*

HARVEST
TEC *Equipment and Products
for Quality Hay.™*

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#010-0461

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TABLE OF CONTENTS

	<u>PAGE</u>
Introduction	3
Tools Needed to Install Applicator	4
Mounting the Frame on the Tractor or Baler	5
-Tractor Installation	5
-Baler Installation	5
Mounting Spray Assembly	6
-Installing Spray Assembly on Round Balers	6
-Installing Spray Assembly on Conventional Square Balers	7
-Installing Spray Assembly on Large Square Balers	8-18
Installation of Controls and Wiring	18-19
-Wiring	19
Operation	19
-Message light	19
Calibration	20-25
-Calibrating the Applicator	20
-Determining Tons per hour	20-22
-Large Square Bale Rate Chart	20
-Conventional Bale Rate Chart	21
-Round Bale Rate Chart	21-22
-Determining the Rate of Chemical	22
-Selecting Tips and Setting Pressure	22
-General Calibration Chart in Pounds per Hour Small Square and Round Balers	23
-General Calibration Chart in Gallons per Hour Small Square and Round Balers	24
-General Calibration Chart for Large Square (pounds and gallons)	25
Routine Maintenance	26
Winter Storage	26
Trouble Shooting Checks	27
Parts Breakdown	28-51
-Model 461	28
-Model 4400A	29
-Model 4400C	30
-Model 4438	31
-Model 4439	32
-Model 4490	33
-Model 4491	34
-Model 4492	35
-Model 4494	36
-Model 4495	37
-Model 4497	38
-Model 4498	39
-Model 4499	40
-Model 4500	41
-Model 4501	42
-Model 4509	43
-Model 4510	44
-Model 4511	45
-Model 4514	46
-Model 4515	47
-Model 4518	48
-Model 4519	49
-Model 4522	50
-Model 4527	51
NOTES	52
Warranty and Liability Agreement	BACK PAGE

Introduction

The Harvest Tec Model 461 applicator is designed to apply straight propionic acid and acid blends, Buffered acids and hay inoculants. The applicator can be installed on most balers with the proper installation kit. Before installing the unit on a baler, make sure you have the proper installation kit.

BALER MAKE	BALER MODEL	INSTALLATION KIT
OTHER	CONVENTIONAL SQUARE BALERS	4400A
OTHER	ROUND BALERS	4400C
CASE IH	8570-8575	4490
CASE IH	8580 AND 8590	4491
CASE IH	8585	4492
CASE IH	LBX WITH STD OR PACKER	4495
CASE IH	LBX WITH ROTO CUTTER	4497
CLAAS	2200	4499
CLAAS	2100	4509
CHALLENGER	LB 44	4491
CHALLENGER	LB 34	4492
CHALLENGER	LB 33	4494
CHALLENGER	LB 33 W/CUTTER	4500
CHALLENGER	LB 34 W/CUTTER	4501
CHALLENGER	LB33B-LB44B	4518
CHALLENGER	LB33B-LB34B WITH ROTO-CUTTER	4519
CHALLENGER	LB33B-LB44B WITH PACKER CUTTER	4527
HESSTON	4750-4755	4490
HESSTON	4900-4910	4491
HESSTON	4790	4492
HESSTON	4760	4494
HESSTON	4760 W/CUTTER	4500
HESSTON	4790 W/CUTTER	4501
HESSTON	7430	4494
HESSTON	7430 W/CUTTER	4500
HESSTON	7433-7444	4518
HESSTON	7433-7434 W/CUTTER	4519
KRONE	VFS 88 MC AND VFS 128 MC	4495
KRONE	VFS 88 AND VFS 128	4498
KRONE	890-12130 XC	4514
KRONE	890-12130	4515
KUHN	LSB 870-890	4510
KUHN	LSB 1270-1290	4511
KUHN	LSB WITH OMNI CUTTER	4525
MASSEY FERGUSON	2050	4494
MASSEY FERGUSON	2050 W/CUTTER	4500

MASSEY FERGUSON	2150-2190	4518
MASSEY FERGUSON	2150-2170 WITH ROTO-CUTTER	4519
MASSEY FERGUSON	2150-2190 WITH PACKER CUTTER	4527
NEW HOLLAND	590 – BB WITH STD OR PACKER CUTTER	4495
NEW HOLLAND	BB WITH ROTO CUTTER	4497
NEW IDEA	7233	4490
NEW IDEA	7244	4491
NEW IDEA	7234	4492
NEW IDEA	7333	4494
NEW IDEA	7333 W/CUTTER	4500
VERMEER	SQ2731	4438
VERMEER	SQ3347	4439
VICON	LB 8200	4510
VICON	LB 12200	4511

TOOLS NEEDED

- Standard wrench set
- Standard socket set
- Standard screw driver or 5/16" nut driver
- Side cutter
- Hose cutter
- Crescent wrench
- Hammer

MOUNTING THE FRAME ON THE TRACTOR OR BALER

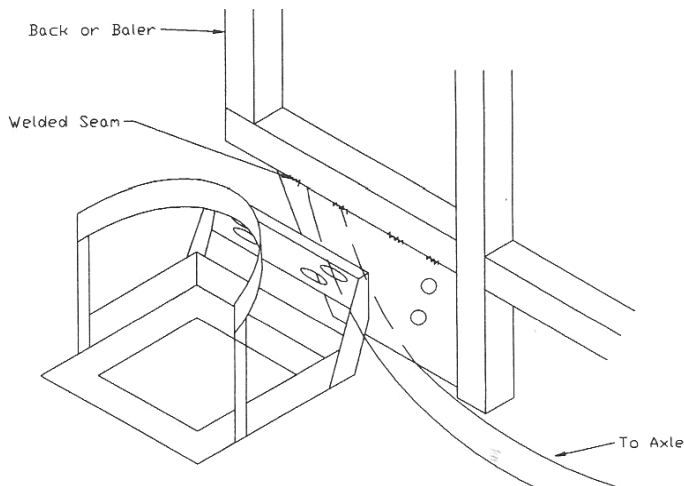
TRACTOR INSTALLATION

Use the mounting holes on the front side of the tractor's frame or weight bracket. Use 4 of the 3/4" bolts supplied.

BALER INSTALLATION

Mounting the Applicator on the Hesston 4750, 4755, and 4900 , 4910, or the Case IH 8570, 8575, 8580, and 8590 Without Bale Ejectors

1. Place the bracket on right side of baler when looking at it from the back.
2. Slide the bracket up to the beam that supports the hydraulic cylinder for the bale compression doors.
3. Slide the top of the bracket down 3" from the welded seam of the large flat plate for the baler.
4. Mark oblong holes of the bracket onto the plate of baler with a marker.
5. Drill one 13/16" hole in each one of the oblong holes you marked, 4 total. (Note that the two slots closest to the rear of the baler have the support beam from the axle running behind them. Drill your holes so that they miss this beam.)
6. Using 3/4" bolts and hardware, secure bracket to baler.



Mounting the Applicator on the Hesston 4755 and Case IH 8575 Balers with Bale Ejectors

1. Release bale ejector arm and swing toward front of baler before starting previous instructions.
2. Do previous steps for installation.
3. As you will note, the adjustment arm for the ejector are on the right side will be restricted. **To eliminate this problem follow these procedures:**
 - a. Remove rubber handle by slightly heating it up. Using a sliding lock pliers, place around pipe before rubber handle. Using a hammer, pound on the pliers to slide rubber handle off.
 - b. Cut between 1"-2" off end of pipe so lever will clear drum and holder.
 - c. Reapply handle and make sure lever has free travel.

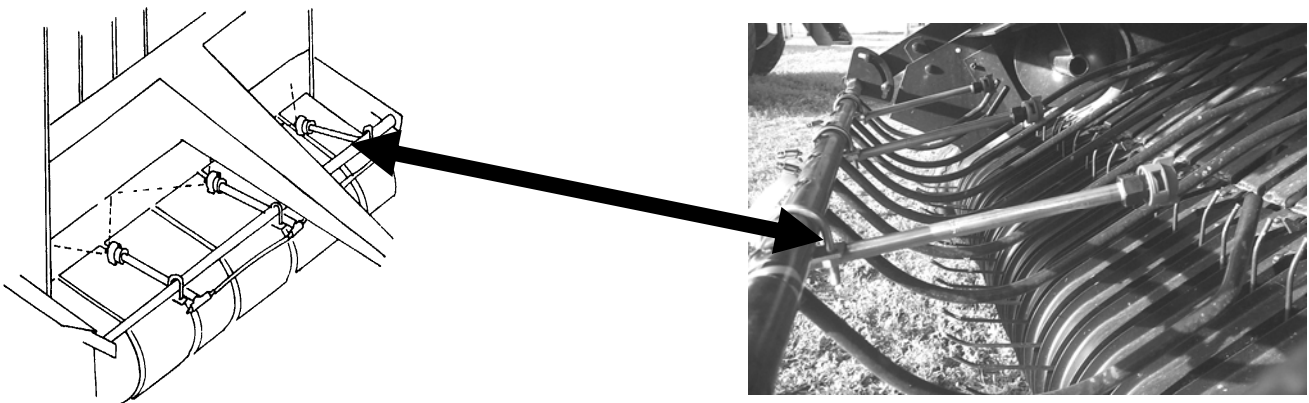
Mounting Spray Assembly

Installing Spray Assembly on Round Balers

On most large round balers the cross bar on the wind guard above the pick-up head provides a mounting point for the nozzle pipes. Space the nozzles by the chart below:

PICK-UP HEAD WIDTH	LEFT SIDE (Use elbow fitting)	CENTER (Use 2-way fitting)	RIGHT SIDE (Use 2-way fitting)
48"	12" from left	Center	12" from right
60"	14" from left	Center	14" from right
72"	15" from left	Center	15" from right

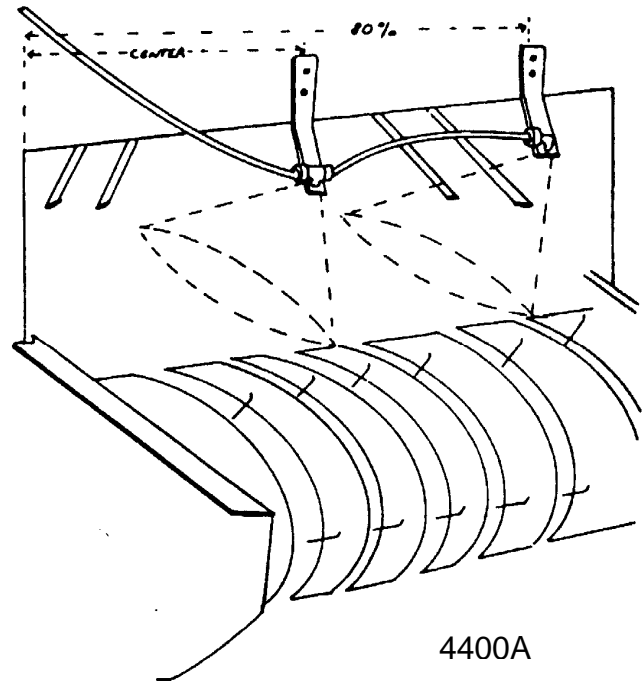
Aim the nozzle pipes up so that the tip sprays in a generally horizontal direction and is pointed toward the intake rolls of the baler at the end of the pick-up head. The tips should be located so they will be somewhere between 14" and 18" from the normal path of hay.



Installing Spray Assembly on Conventional Square Balers

Model 4400A for Conventional Square Balers Without Specific Kits Conventional baler with gathering forks)

1. Mount the left hand nozzle so that it is approximately 80% across the width of the pick-up head. Example: if the head is 60" wide, locate the nozzle 48" from the right side of the head (60"x80".)
2. Mount the right hand nozzle so that it is approximately centered on the pickup head.
3. Bend the nozzle bar in so that the tip is pointed in toward the bottom of the gathering chamber and about 16" above the sheet metal base of the chamber. Twist the nozzle so the tip is tilted 45 degrees from horizontal.

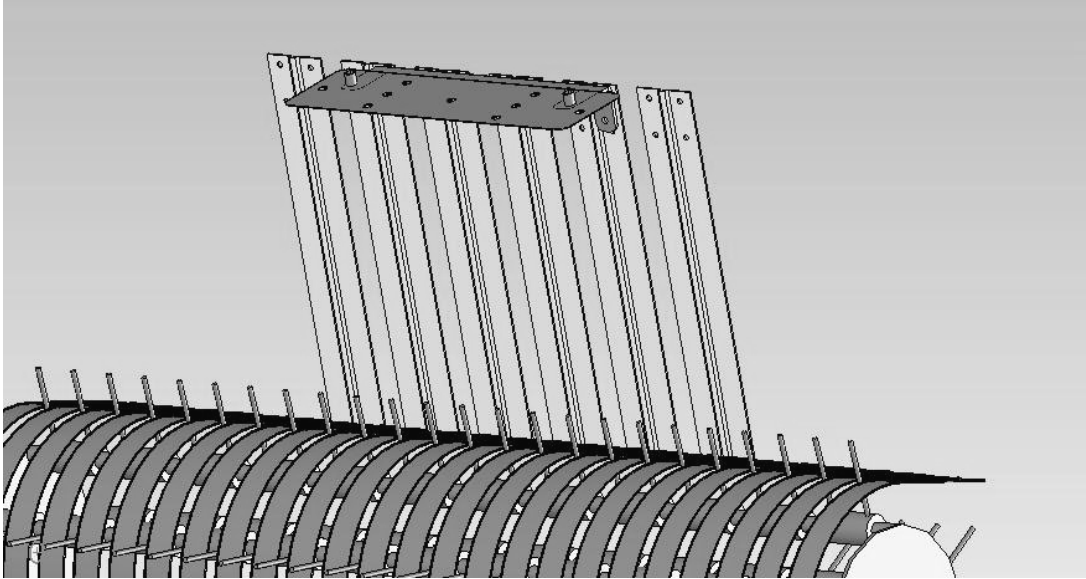


Installing Spray Assembly on Large Square Balers

The spray shield assembly is designed to evenly spray the hay as the baler picks it up.

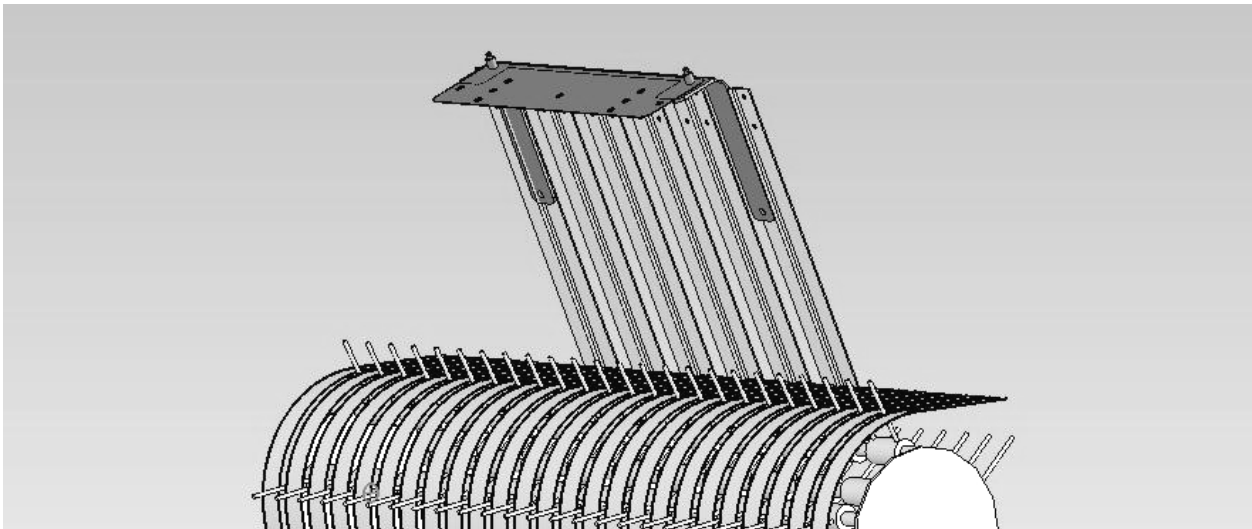
Installation Kit 4438 for Vermeer SQ2731 Baler

The spray shield is installed on the gathering fork guard located in the back of the pick up head. Existing bolts are used to fasten the spray shield bracket to the gathering fork guards. Route hoses so they will not interfere with moving parts. Rotating the flywheel by hand can check this. **Don't fasten hoses to metal hydraulic lines!** A parts breakdown is located in the back of the manual.



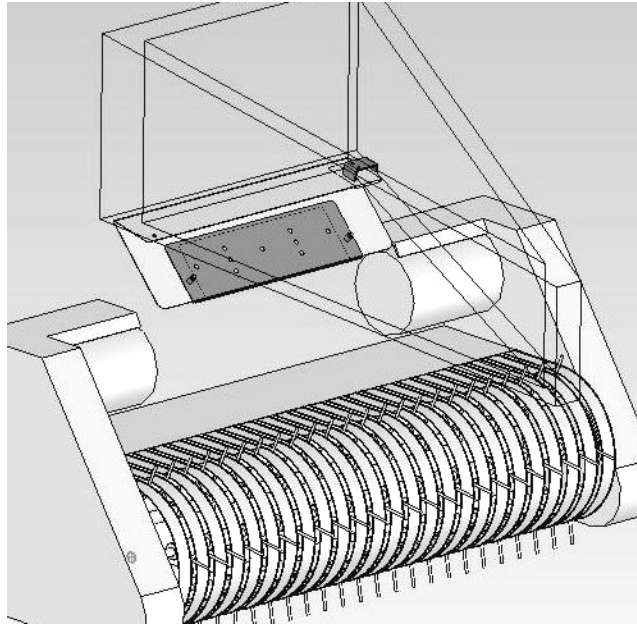
Installation Kit 4439 for Vermeer SQ3347 Baler

The spray shield is installed on the gathering fork guard located in the back of the pick up head. Existing bolts are used to fasten the spray shield bracket to the gathering fork guards. Route hoses so they will not interfere with moving parts. Rotating the flywheel by hand can check this. **Don't fasten hoses to metal hydraulic lines!** A parts breakdown is located in the back of the manual. Use existing hardware when mounting the spray shield bracket. A parts breakdown is located in the back of the manual.



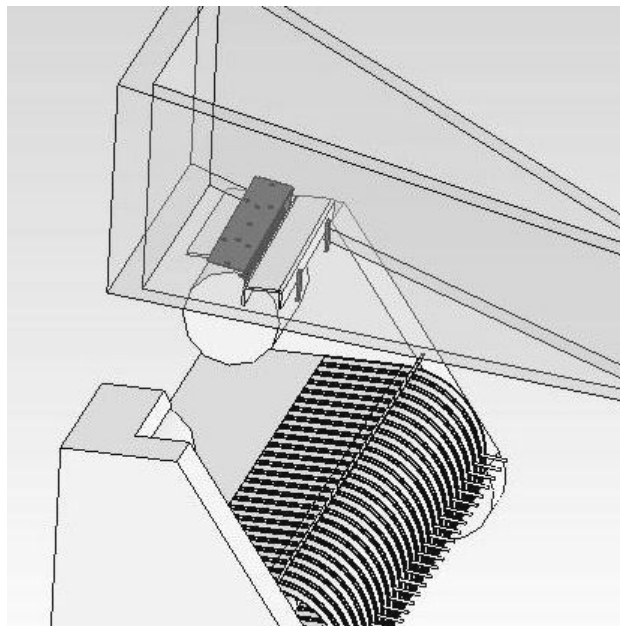
Installation kit 4490 for Case IH 8570 and 8575, Hesston 4750 and 4755, and New Idea 7233 balers

The spray shield holder will be installed underneath the baler's tongue. Bolt the right side up using the existing hole on the bottom lip of the baler. Use the clamp on the left hand side to tighten the shield against the underside of the tongue. Tighten the clamp with the two bolts provided. A parts breakdown is located in the back of the manual.



Installation kit 4491 for Hesston 4900 and 4910, Challenger LB44, Case IH 8580 and 8590, and New Idea 7244 balers

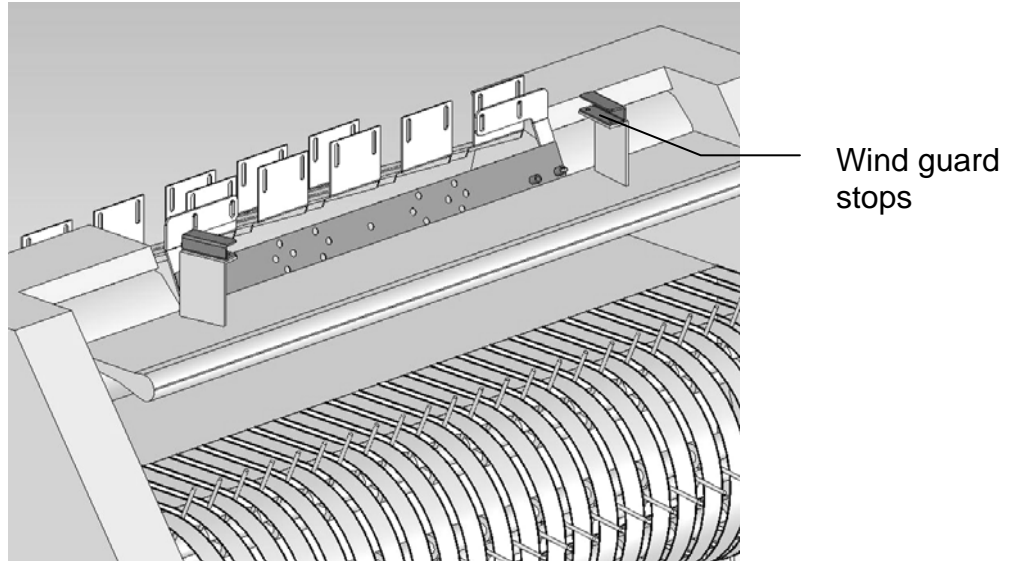
Install the spray shield behind the baler's cross channel, which is located on the bottom side of the tongue behind the flywheel. Note the position of the bevel on the spray shield. Clamp the spray shield around the channel using the backing plates and the ¼" by 7" bolts provided. A parts breakdown is located in the back of the manual.



Installation kit 4492 for Hesston 4790, Case IH 8585, Challenger LB34, and New Idea 7234

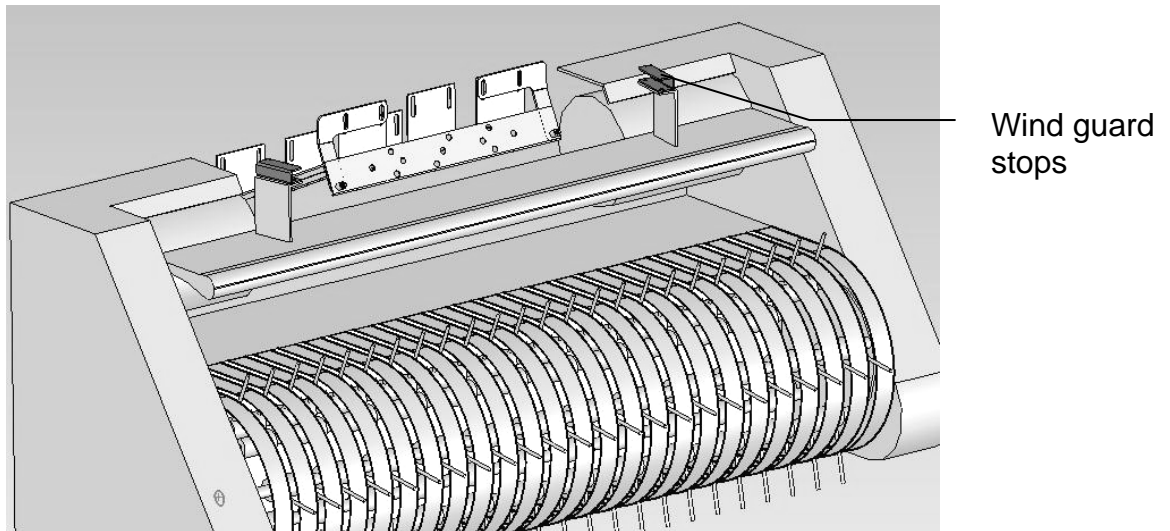
balers

Remove the two 3/8" carriage bolts that connect the wrapper extension to the angle support on each side. Place the brackets 001-4436DL and 001-4436DR between the angle support and the wrapper extension. Replace the bolts with 3/8" x 1 1/4" carriage bolts, nuts, locks, and flat washers. Before tightening pull down on wrapper extensions so when tightened the bolts are in the top of the wrapper extension slot. Install the wind guard stops 001-4436S as shown below. Two holes will need to be drilled per side. Mount using four 1/4 x 1" bolts, locks and nuts. A parts breakdown is located in the back of the manual.



Installation kit 4494 for Challenger LB33, Hesston 4760, and New Idea 7333 balers

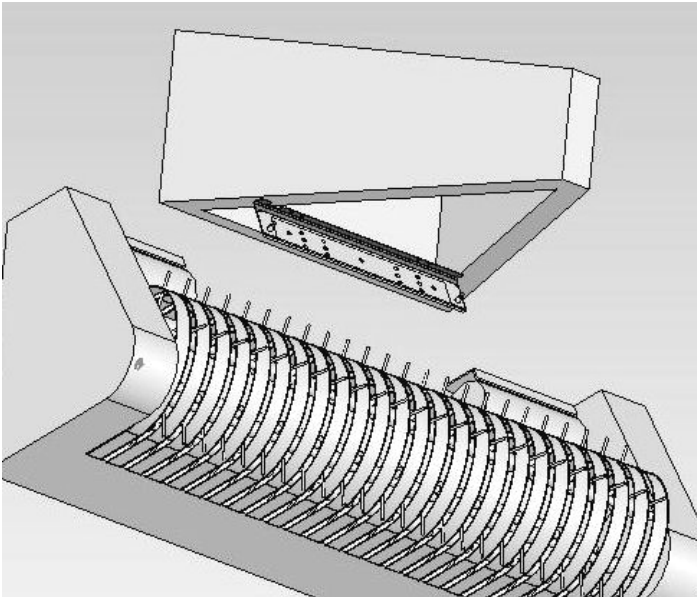
Remove the two 3/8" carriage bolts that connect the wrapper extension to the angle support on each side. Place the brackets 001-4436DL and 001-4436DR between the angle support and the wrapper extension. Replace the bolts with 3/8" x 1 1/4" carriage bolts, nuts, locks, and flat washers. Before tightening pull down on wrapper extensions so when tightened the bolts are in the top of the wrapper extension slot. Install the wind guard stops 001-4436S as shown below. Two holes will need to be drilled per side. Mount using four 1/4 x 1" bolts, locks and nuts. A parts breakdown is located in the back of the manual.



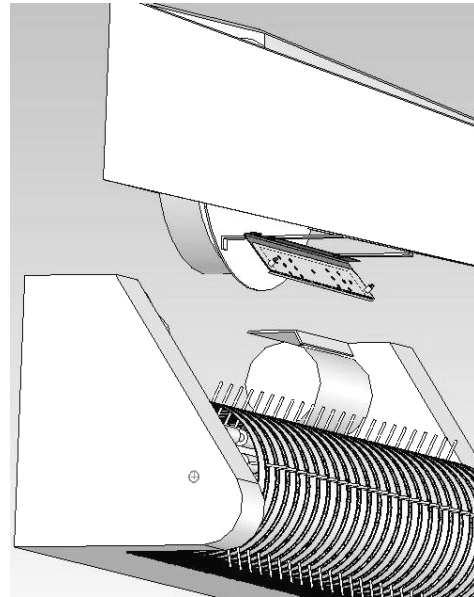
Installation kit 4495 for New Holland 590 through BB960A, LBX331 through LBX432 balers and Krone VFS 88 and 128 with cutter

New Holland and Case: Install the spray shield under the tongue of the baler, behind the flywheel. There are two existing bolt holes 6" to 12" above the gathering fork guards, connect the spray shield using these holes. The tips should be pointing to the throat of the baler chamber. A parts breakdown is located in the back of the manual.

Krone: Install the spray shield under the tongue of the baler in front of the flywheel. You will need to drill two holes directly in front of the flywheel to secure the shield on the baler. The tips should be pointing to the throat of the baler chamber. A parts breakdown is located in the back of the manual.



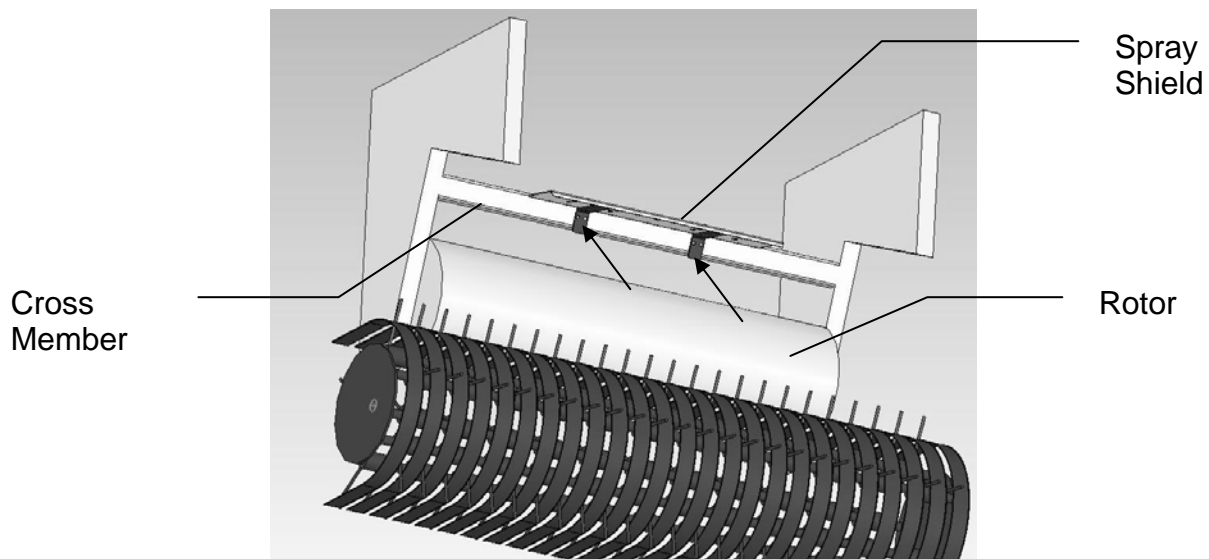
New Holland and Case



Krone

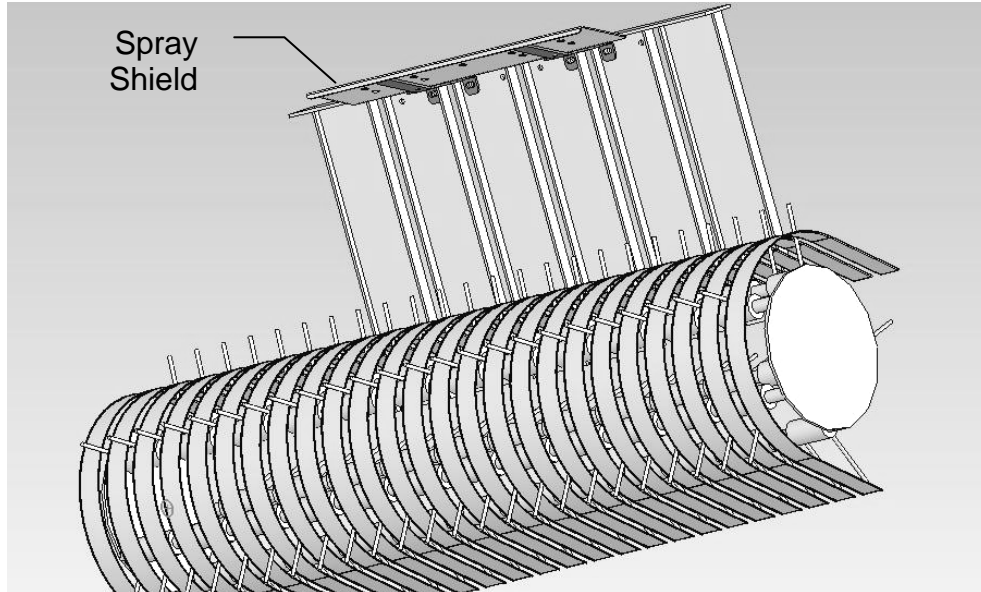
Installation Kit 4497 for Case IH LBX and New Holland BB balers with roto-cut.

Attach shield to cross member as shown in picture above. Center the shield above the rotor. Four holes will need to be marked and drilled. Use supplied 3/8 x 1 1/4 inch bolts, nuts, flat and lock washers to attach the shield holders (001-4435E) to the metal cross member directly above the rotor. Attach the spray shield (001-4435ES) to the holders and secure with lynch pins. **The shield is set up for 3X4 balers. Use the inside holes on the shield for 3X3 balers and the outside holes for 3X4 balers.** A parts breakdown is located in the back of the manual.



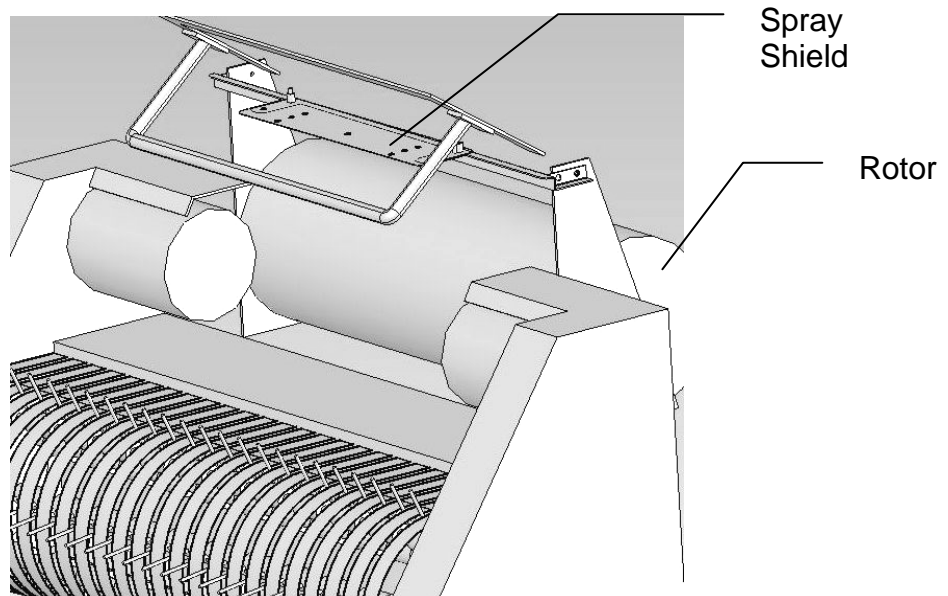
Installation Kit 4498 for Krone VFS 88 and VFS 128 baler

Lower the wind guard of the baler to maximize the installation working space. Locate the guards between the hay intake fingers. Hold the spray shield up so it straddles the top of the guards. Locate the holes on the baler that line up with the spray shield holders. Connect the spray shield to the baler using 3/8 " x 1" bolts. Adjust the spray shield so it can be removed and reinstalled freely once the lynch pins are removed. A parts breakdown is located in the back of the manual.



Installation kit 4499 for Claas 2200 baler

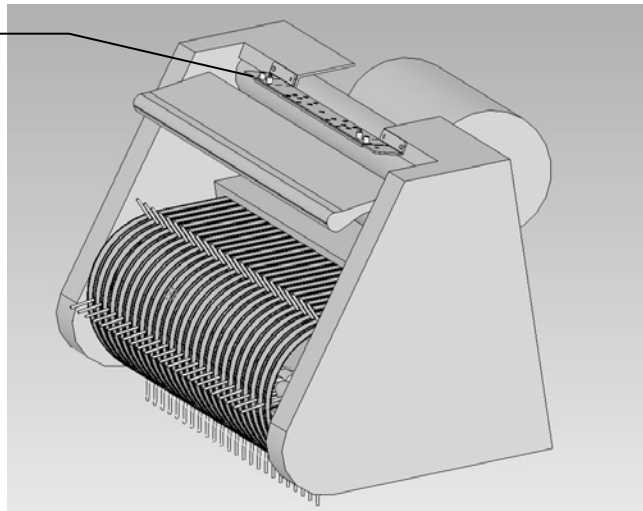
Install the spray shield-mounting bracket between the two flat vertical plates above the rotor as indicated in the picture below. Use the existing bolt holes with the hardware from the applicator kit to mount the spray shield bracket to the baler. Fasten the spray shield onto the spray shield bracket already mounted. Route hoses along the spray shield bracket towards the right side of the baler, and then back to the tank. When routing the hose avoid moving parts. A parts breakdown is located in the back of the manual.



Installation Kit 4500 for Hesston 4760 Baler with Cutter Option

Locate the sheet metal above the top auger. (Figure 1) Locate the two holes through the sheet metal nearest the center of the pickup head. Place two 3/8" x 1 1/4" bolts through the sheet metal with the bolt heads on the bottom side. Place 001-4436CR over the bolts and fasten with 3/8" nuts, locks, and flat washers. Repeat for 001-4436CL on left side of machine. Place spray shield between brackets and tighten hardware. A parts breakdown is located in the back of the manual.

Figure 1



Installation kit 4501 for Hesston 4790 balers with cutter option

4790 cutter balers with top auger. (Figure 2)

Locate the sheet metal above the top auger. Locate the two holes through the sheet metal nearest the center of the pickup head. Place two 3/8" x 1 1/4" bolts through the sheet metal with the bolt heads on the bottom side. Place 001-4436CR over the bolts and fasten with 3/8" nuts, locks, and flat washers. Repeat for 001-4436CL on left side of machine. Place spray shield between brackets and tighten hardware. A parts breakdown is located in the back of the manual.

4790 cutter balers without top auger. (Figure 3)

Connect spray shield to 001-4436CR and 001-4436CL brackets. Place the assembly across the top of the pickup head so the spray shield is horizontal. Center the shield over the throat of the baler directly above and centered over the bottom augers. Mark the holes on both sides and drill two 7/16" holes on each side. Place two 3/8" x 1 1/4" through the sheet metal bolt heads down. Secure the assembly with 3/8" nut, locks, and flat washers. A parts breakdown is located in the back of the manual.

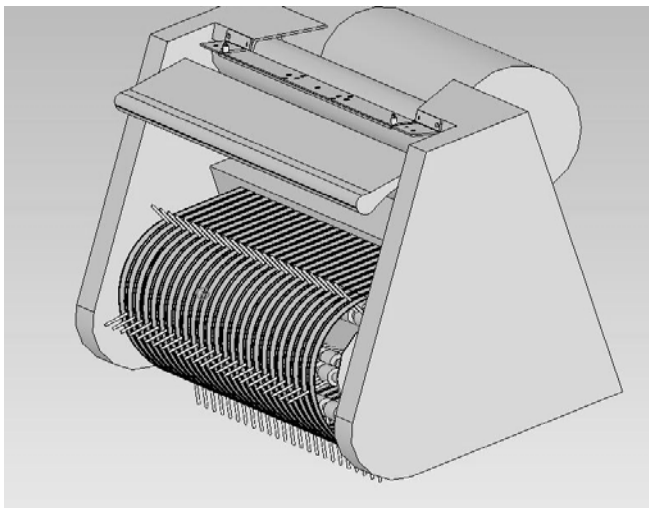


Figure 2

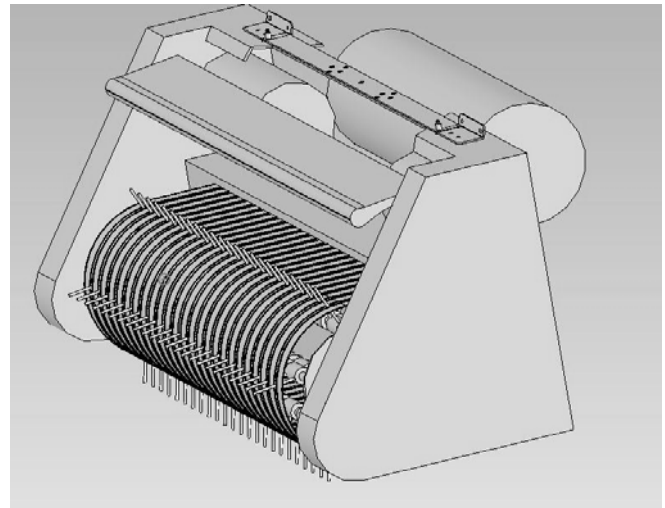
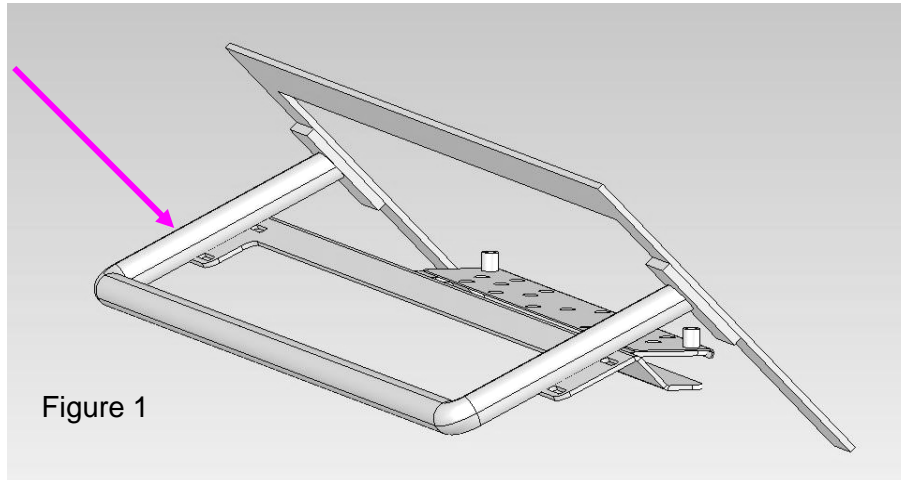


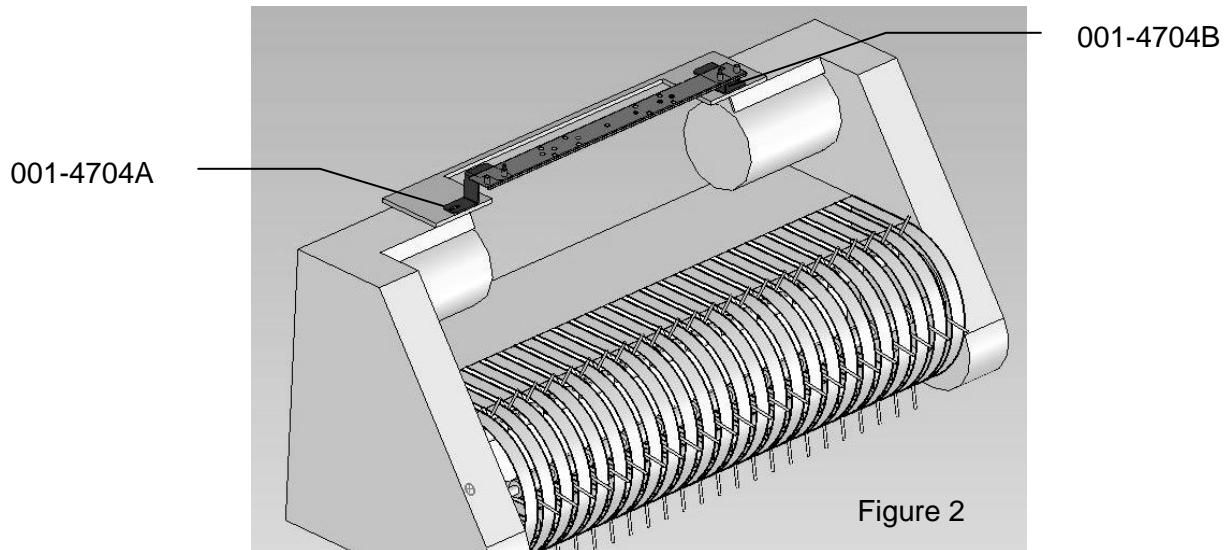
Figure 3

Installation Kit 4509 for Claas 2100 Baler with cutter option



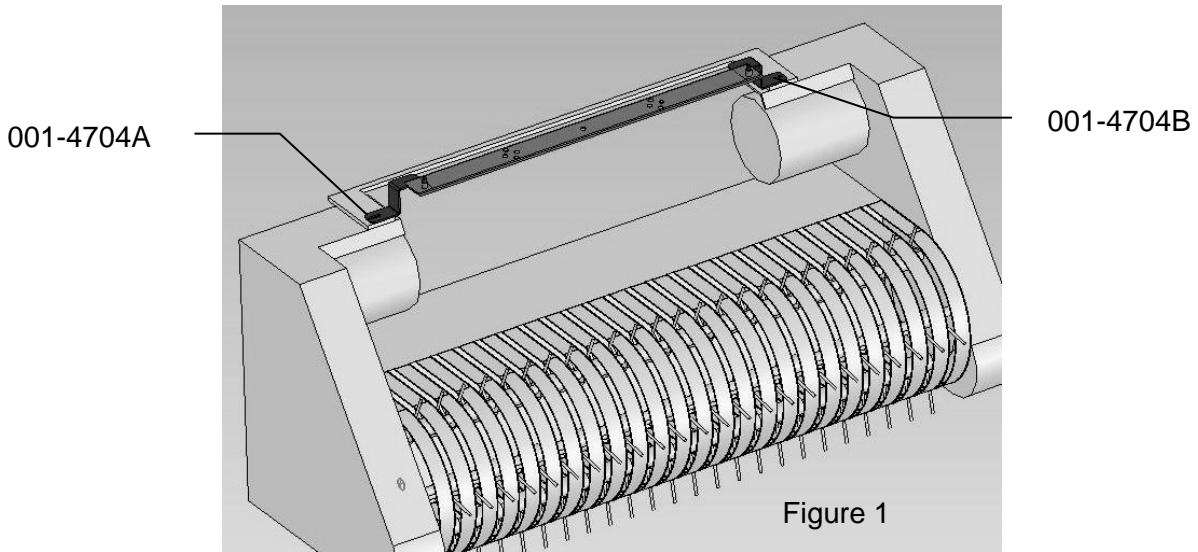
Locate the curved tube (Figure 1) above the auger and rotary cutting system. Attach Shield holder (001-4440A) using the four supplied u-bolts, nuts, flat and lock washers. Slide shield back as far as the baler will allow and tighten down all mounting hardware. Install spray shield (001-4810) and use the two lynch pins (008-4576) to secure. A parts breakdown is located in the back of the manual.

Installation Kit 4510 for Vicon LB8200 baler



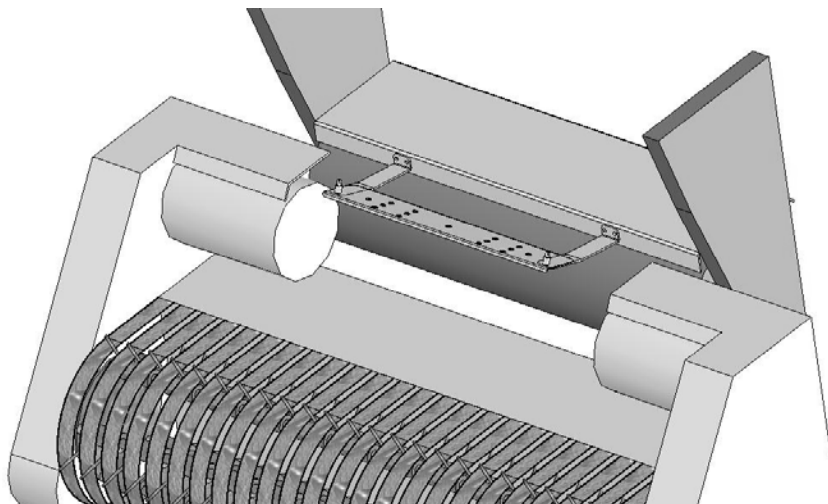
Locate the sheet metal above the pickup head. (Figure 2) Connect spray shield to 001-4704A and 001-4704B brackets. Place the assembly across the top of the pickup head so the spray shield is horizontal. Center the shield over the throat of the baler directly above and centered over the bottom augers. Mark the holes on both sides and drill one 7/16" holes on each side. Place one 3/8" x 1" through the sheet metal bolt heads down. Secure the assembly with 3/8" nut, locks, and flat washers. A parts breakdown is located in the back of the manual.

Installation Kit 4511 for Vicon LB12200 baler



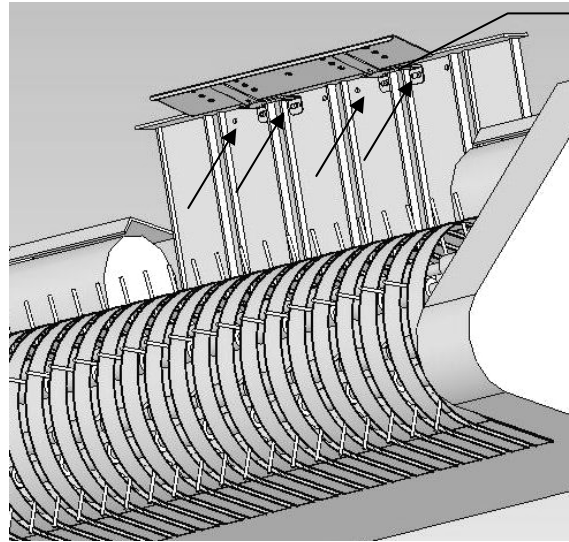
Locate the sheet metal above the pickup head. (Figure 1) Connect spray shield to 001-4704A and 001-4704B brackets. Place the assembly across the top of the pickup head so the spray shield is horizontal. Center the shield over the throat of the baler directly above and centered over the bottom augers. Mark the holes on both sides and drill one 7/16" holes on each side. Place one 3/8" x 1" through the sheet metal bolt heads down. Secure the assembly with 3/8" nut, locks, and flat washers. A parts breakdown is located in the back of the manual.

Installation Kit 4514 for Krone 890 – 12130 XC balers



Attach shield to cross member as shown in picture above. Center the shield above the rotor. Four holes will need to be marked and drilled. Use supplied 3/8 x 1 1/4 inch bolts, nuts, and lock washers to attach the shield holders (001-4431K) to the metal cross member directly above the rotor. Attach the spray shield (001-4431B) to the holders and secure with lynch pins. The shield is set up for 3X4 balers. Use the inside holes on the shield for 3X3 balers and the outside holes for 3X4 balers. A parts breakdown is located in the back of the manual.

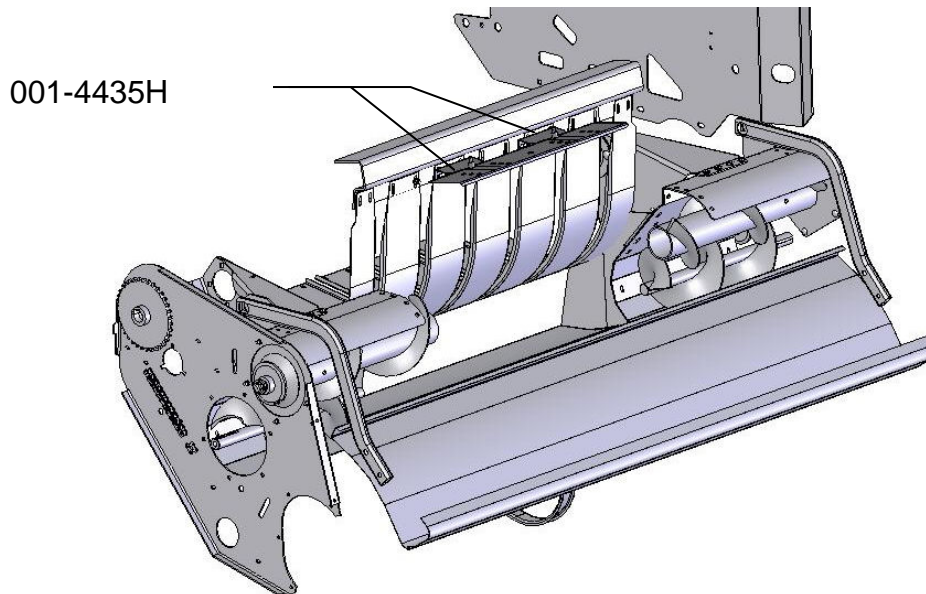
Installation Kit 4515 for Krone 890 – 12130 balers



001-4435K

Locate the four center stuffer guards (on narrower models of baler, there may be only four stuffer guards). Remove the nuts and bolts indicated above that fasten the stuffer guards to the cross member above the baler throat. Replace the hardware that you removed with the hardware included in the parts bag (M10x30 bolts, M10 lock washers, and M10 nuts) and bolt the spray shield holder (001-4435K) in place as shown above. Position the spray shield (001-4435ES) on top of the spray shield holders with the pins from the spray shield holder extending through the pipes welded to the spray shield. Adjust the spacing of the spray shield holder as needed and tighten the hardware. A parts breakdown is located in the back of the manual.

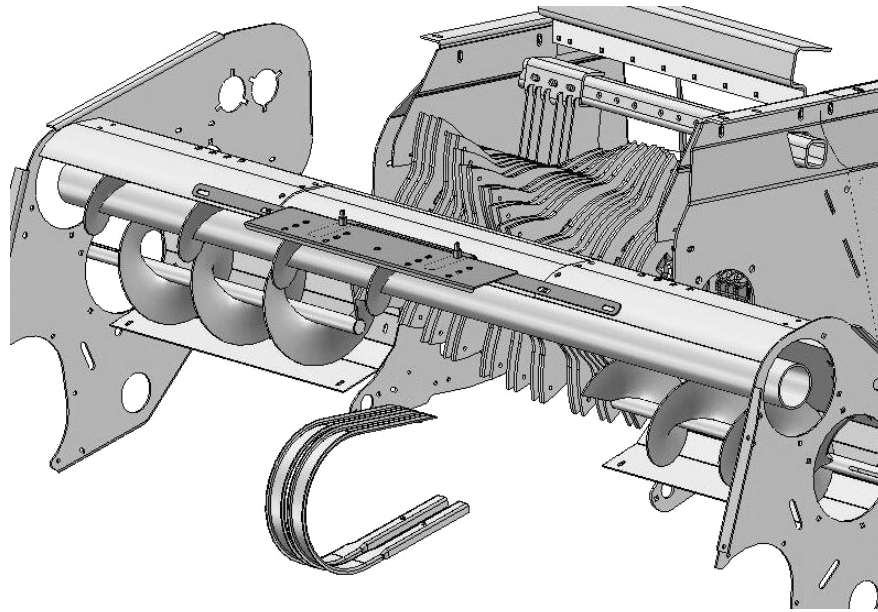
Installation Kit 4518 for Agco large square balers without cutter



001-4435H

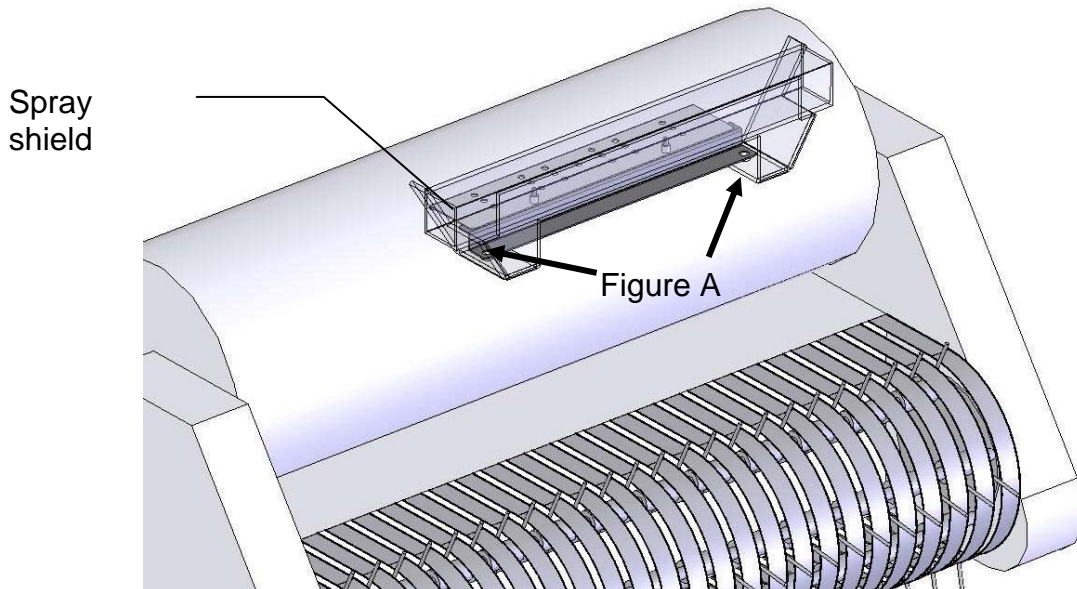
Remove the four bolts attached to the wrapper stripper plates as shown above. Replace with the four supplied 3/8 x 1 1/4 carriage bolts, nuts, locks, and flat washers. Mount the spray shield holders (001-4435H) and loosely tighten down hardware. Install spray shield and secure with the two supplied lynch pins. Tighten all hardware. A parts breakdown is located in the back of the manual.

Installation Kit 4519 for Agco large square balers with cutter



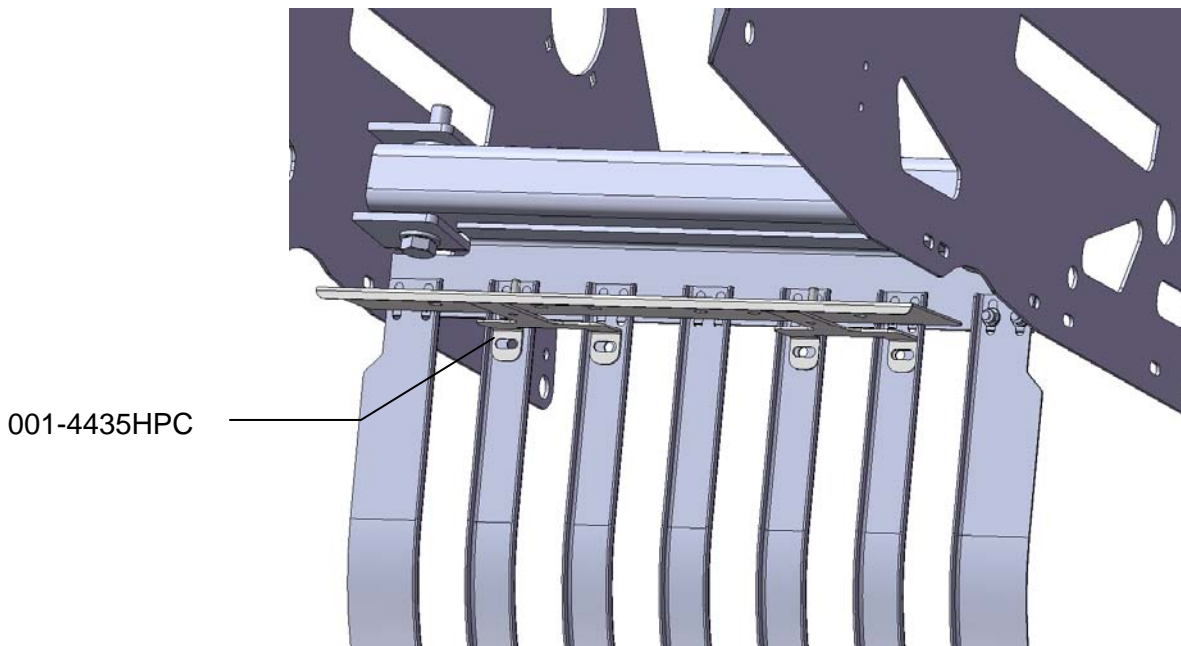
Locate bottom hole on each side of center insert over top auger and bolt spray shield and mounting bracket into place using the 3/8 x 1 1/4 carriage bolts, nuts, locks, and flat washers. Use the inside slots on 3x3 balers and the outside slots on 3x4 and 4x4 balers. A parts breakdown is located in the back of the manual.

Installation Kit 4525B for Kuhn large square balers with Omni-Cut



Locate the two bolts show in figure A. Remove bolts and install spray shield holder (001-4435EK). Install bolts and tighten. Install spray shield assembly (001-4435ES) and secure with two supplied lynch pins. Use the inside slots on 3x3 balers and the outside slots on 3x4 balers.

Installation kit 4527B for Massey Ferguson 2150 – 2190 with packer cut



Mount the two spray shield mounting brackets (001-4435HPC) to the baler as shown above. Attach using four 3/8 x 1-1/4" bolts, flats, locks, and nuts. Mount the spray shield (001-4435ES) on top of the mounting brackets and secure with two lynch pins. Use the inside slots on 3x3 balers and the outside slots on 3x4 and 4x4 balers.

INSTALLATION OF CONTROLS

Apply Rate decal

Apply rate decal that came with your installation kit just to the right of the speed dial of control box.

Location of Control Box

Locate the control where it can be easily reached from the tractor's seat and adjustments for baling speed and windrow conditions can be made as the baler is operated.

WIRING

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.

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 charger.

Operation

The 461 applicator is very simple to operate. After installing the applicator, fill the tank with 15 gallons of water. With control box connected to the applicator and the power cord hooked to the 12-volt battery we can start the test. First flip on the toggle switch. You might hear the buzzing of the motor. Turn the dial on the control box until the gauge starts to climb. By turning the dial clockwise the pressure will go up. By turning the dial counter clockwise the pressure will decrease. With the applicator spraying at about 30 PSI, look for leaks at all the hose connections and fittings. Using water in this step instead of chemical will save you from wasting chemical and making a mess if leaks are found. When you are comfortable with the operation of the controls you can set the applicator to apply the amount of chemical you would like it to put on.

Message Light

The LED under the speed dial will be steady on when the applicator is running under normal situations. If the light blinks on and off use the below information for the message.

Slow steady on and off blink: The system is attached to hay indicators (474A) or a foot switch. This message means that the pump is paused. The light will come on constant once the baler is back in the windrow.

Two quick blinks: The pump motor or pump harness is shorted.

Three quick blinks: Pump motor is over the current limit (10 amps).

Four quick blinks: Power is under current from a bad connection.

The control box must have the on/off switch toggled to clear the message after the fault has been fixed to clear.

Calibration

Calibrating the Applicator

There are three things that you need to know when calibrating your applicator. First you need know how many tons per hour you bale. Second you need to know the rate, or how many pounds of product to apply for a given ton per hour. Finally you need to know what tips to use and at what pressure to set the gauge.

Determining Tons Per Hour

Large square bales:

1. Time 3 bales and average the time it takes to make a bale.
2. Estimate the weight of the bale.
3. Use the Bale Rate Chart below to determine the tons you are harvesting per hour.

Example: You are baling 1000 pound bales, with 2 minutes of time per bale. Looking at the chart below your tons per hour is 20.

LARGE SQUARE BALE RATE CHART (TONS PER HOUR)

AVERAGE TIME TO MAKE A BALE

WEIGHT PER BALE

	600 #	800 #	1000 #	1200 #	1400 #	1600 #	1800 #	2000 #
1.0 MN								
1.5 MN	18	24	30	36	42	48	54	60
2.0 MN	12	16	20	24	28	32	36	40
2.5 MN	9	12	14	18	21	24	27	30
3.0 MN	7	10	12	14	17	19	22	25
3.5 MN	6	8	10	12	14	16	18	20
4.0 MN	5	6	8	9	10	12	14	16
5.0 MN	4	5	6	7	8	9	11	13
6.0MN	3	4	5	6	7	8	9	10
8.0 MN	3	3	4	5	5	6	7	8
10.0 MN	2	3	3	4	4	5	6	7

Determining Tons Per Hour

Conventional Square

1. Bale for three minutes.
2. Count the number of bales made in those three minutes.
3. Weigh several bales to determine the average weight.
4. Use the bale rate chart on the following page to determine the tons you are baling per hour.

Example: You baled 11 bales in three minutes. After weighing some of the bales you found the average bale weight to be 55 lbs. Using the following chart cross reference 11 bales and 55lbs and you will find the rate to be 6.0.

CONVENTIONAL BALE RATE CHART (TONS PER HOUR)

BALES MADE IN 3 MINUTES

	WEIGHT PER BALE									
	40 #	45 #	50 #	55 #	60 #	65 #	70 #	75 #	80 #	
9	3.6	4.0	4.5	5.0	5.4	5.8	6.3	6.7	7.2	
10	4.0	4.0	5.0	5.5	6.0	6.5	7.0	7.5	8.0	
11	4.4	5.0	5.5	6.0	6.6	7.1	7.7	8.2	8.8	
12	4.8	5.4	6.0	6.6	7.2	7.8	8.4	9.0	9.6	
13	5.2	5.8	6.5	7.1	7.8	8.4	9.1	9.7	10.4	
14	5.6	6.3	7.0	7.7	8.4	9.1	9.8	10.5	11.2	
15	6.0	6.7	7.5	8.2	9.0	9.7	10.7	11.2	12.0	
16	6.4	7.2	8.0	8.8	9.6	10.4	11.2	12.0	12.8	
17	6.8	7.6	8.5	9.3	10.2	11.0	11.9	12.7	13.6	
18	7.2	8.1	9.0	9.9	10.8	11.7	12.6	13.5	14.4	
19	7.6	8.5	9.5	10.4	11.4	12.3	13.3	14.2	15.2	
20	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	

Round Balers

1. Time 3 bales and average the time it takes to make a bale.
2. Estimate the weight of the bale.
3. Use the bale rate chart on the following page to determine the tons you are baling per hour.

Example: You made 3 round bales and it took you an average of 2 minutes a piece to bale each of them. Your baler's operator manual tells you that an average bale made by your machine weighs 1000lb. (Remember if the hay is dry it will weigh less and if the hay is wet it will weigh more.) Using the chart on the following page, cross-reference 2 minutes with 1000lb. and you will come up with 14 ton per hour.

ROUND BALE RATE CHART (TONS PER HOUR)

AVERAGE TIME TO MAKE A BALE

WEIGHT PER BALE

	600 #	800 #	1000 #	1200 #	1400 #	1600 #	1800 #	2000 #
1.0 MN								
1.5 MN	18	24	30	36	42	48	54	60
2.0 MN	12	16	20	24	28	32	36	40
2.5 MN	9	12	14	18	21	24	27	30
3.0 MN	7	10	12	14	17	19	22	25
3.5 MN	6	8	10	12	14	16	18	20
4.0 MN	5	6	8	9	10	12	14	16
5.0 MN	4	5	6	7	8	9	11	13
6.0MN	3	4	5	6	7	8	9	10
8.0 MN	3	3	4	5	5	6	7	8
10.0 MN	2	3	3	4	4	5	6	7

Determine the Rate of Chemical

The number of pounds of chemical required to be applied to a given ton of hay, depends on the moisture and the type of chemical used. The moisture of the hay is important in determining how much chemical to use. By knowing the moisture, you can make sure you are treating the hay correctly. Under applying will save money but spoilage most likely occurs. Over applying will waste money however, the hay will be saved. Some chemicals require more or less to treat the same amount of hay. To find the exact number of pounds required, for a given hay moisture, refer to the label on the drum or contact the manufacture. Harvest Tec applicators come with a set of low, medium, and high tips. If your chemical requires rates other than what these tips deliver you will need to purchase them through your dealer.

Selecting Tips and Setting Pressure

Once you have determined your tons per hour and the amount of chemical needed for the moisture you are applying at, you can select your tips and determine your gauge settings.

1. Multiply the tons per hour by the amount of chemical required for the moisture you are applying at. This sum will give you the application rate.
2. Select the proper set of tips from the application rate chart and install them.
3. For the tips you have selected, you will need to keep the gauge at the recommended PSI to achieve the proper application rate.
4. Set the pressure by adjusting the dial on the control box and by reading the pressure of the gauge to match the desired rates. The numbers on the dial are for reference only. Rate is determined by watching the pressure gauge.

Example: You are baling at 12 tons per hour with your large square baler. The moisture that you are baling at requires you to apply 6 pounds per ton. Multiply the 12 tons x 6lbs. = 72 lbs. per hour. Using the chart on page 24 you will notice the orange set of tips at 20 PSI will give you that output.

GENERAL CALIBRATION CHART IN POUNDS PER HOUR FOR SMALL SQUARE AND ROUND BALERS

Use the following chart for all applications that require pounds measurements.

POUNDS PER HOUR WITH ONE NOZZLES

	<u>YELLOW SET</u> 650033	<u>RED SET</u> 650050	<u>BROWN SET</u> 650067	<u>GREEN SET</u> 6501	<u>BLUE SET</u> 6502	<u>BLACK SET</u> 6503
PSI						
15	11	16	21	32	64	96
20	13	19	25	38	76	114
25	14	21	28	42	84	126
30	15	23	31	46	92	138
35	16	25	33	50	100	150
40	17	27	35	53	106	159
45	18	28	37	56	112	168
50	19	29	39	58	116	174
55	20	31	41	61	122	183
60	21	32	43	64	128	192

POUNDS PER HOUR WITH TWO NOZZLES

	<u>YELLOW SET</u> 650033	<u>RED SET</u> 650050	<u>BROWN SET</u> 650067	<u>GREEN SET</u> 6501	<u>BLUE SET</u> 6502	<u>BLACK SET</u> 6503
PSI						
15	21	32	43	64	128	192
20	25	38	51	76	152	228
25	28	42	56	84	168	252
30	30	46	61	92	184	276
35	33	50	67	100	200	300
40	35	53	71	106	212	318
45	37	56	75	112	224	336
50	38	58	77	116	232	348
55	40	61	81	122	244	366
60	42	64	85	128	256	384

POUNDS PER HOUR WITH THREE NOZZLES

	<u>YELLOW SET</u> 650067	<u>RED SET</u> XR11001	<u>GREEN SET</u> XR110015	<u>BLUE SET</u> XR11002	<u>BLACK SET</u> XR11004
CENTER	650033	650050	6501	6502	6503
OUTSIDE					
PSI					
15	53	64	112	192	320
20	63	76	133	228	380
25	70	84	147	252	420
30	77	92	161	276	460
35	84	100	175	300	N/A
40	89	106	186	318	N/A
45	94	112	196	336	N/A
50	97	116	203	348	N/A
55	102	122	214	366	N/A
60	107	128	224	384	N/A

GENERAL CALIBRATION CHART IN GALLONS PER HOUR FOR SMALL SQUARE AND ROUND BALERS

Use the following chart for all applications that require volume measurements.

GALLONS PER HOUR WITH ONE NOZZLES

	<u>YELLOW SET</u> 650033	<u>RED SET</u> 650050	<u>BROWN SET</u> 650067	<u>GREEN SET</u> 6501	<u>BLUE SET</u> 6502	<u>BLACK SET</u> 6503
PSI						
15	1.2	1.8	2.4	3.6	7.2	10.8
20	1.3	2.1	2.8	4.3	8.6	12.9
25	1.6	2.3	3.2	4.7	9.4	14.1
30	1.7	2.6	3.5	5.2	10.4	15.6
35	1.9	2.8	3.8	5.6	11.2	16.8
40	2.0	3.0	4.0	6.0	12.0	18.0
45	2.1	3.1	4.3	6.4	12.8	19.2
50	2.2	3.3	4.5	6.7	13.4	20.1
55	2.3	3.5	4.7	7.0	14.0	21.0
60	2.4	3.6	4.9	7.4	14.8	22.2

GALLONS PER HOUR WITH TWO NOZZLES

	<u>YELLOW SET</u> 650033	<u>RED SET</u> 650050	<u>BROWN SET</u> 650067	<u>GREEN SET</u> 6501	<u>BLUE SET</u> 6502	<u>BLACK SET</u> 6503
PSI						
15	2.4	3.6	4.8	7.2	14.4	21.6
20	2.6	4.2	5.6	8.6	17.2	25.8
25	3.2	4.6	6.4	9.4	18.8	28.2
30	3.4	5.2	7.0	10.4	20.8	31.2
35	3.8	5.6	7.6	11.2	22.4	33.6
40	4.0	6.0	8.0	12.0	24.0	36.0
45	4.2	6.2	8.6	12.8	25.6	38.4
50	4.4	6.6	9.0	13.4	26.8	40.2
55	4.6	7.0	9.4	14.0	28.0	42.0
60	4.8	7.2	9.8	14.8	29.6	44.4

GALLONS PER HOUR WITH THREE NOZZLES

	<u>YELLOW SET</u> 650067	<u>RED SET</u> XR11001	<u>GREEN SET</u> XR110015	<u>BLUE SET</u> XR11002	<u>BLACK SET</u> XR11004
CENTER					
OUTSIDE	<u>650033</u>	<u>650050</u>	<u>6501</u>	<u>6502</u>	<u>6503</u>
PSI					
15	5.2	7.3	12.9	22.0	31.9
20	5.6	8.4	15.1	24.1	42.2
25	6.3	9.5	16.7	28.3	47.3
30	7.0	10.6	18.6	31.0	52.2
35	7.5	11.3	19.7	33.5	N/A
40	8.0	12.0	21.0	36.0	N/A
45	8.4	12.6	22.3	38.3	N/A
50	8.9	13.2	23.6	40.7	N/A
55	9.3	13.8	24.5	42.5	N/A
60	9.7	14.4	25.6	44.4	N/A

GENERAL CALIBRATION CHART IN POUNDS AND GALLONS PER HOUR FOR ALL LARGE SQUARE BALERS

Use the following charts for all applications that require pounds and volume measurements.

POUNDS PER HOUR WITH TWO NOZZLES

	YELLOW SET	ORANGE SET	GREEN SET	BLUE SET	BROWN SET
OUTSIDE	<u>800067PT</u>	<u>TT11001VP</u>	<u>TT10015VP</u>	<u>TT11003VP</u>	<u>TT11005VP</u>
PSI					
15	42	64	95	196	323
20	49	74	111	222	376
25	53	80	122	249	413
30	60	90	138	275	461
35	65	98	148	296	
40	70	106	159	317	
45	74	111	170	336	
50	78	117	180	354	
55	81	122	188	370	
60	85	127	196	386	

GALLONS PER HOUR WITH TWO NOZZLES

	YELLOW SET	ORANGE SET	GREEN SET	BLUE SET	BROWN SET
	<u>800067PT</u>	<u>TT11001VP</u>	<u>TT10015VP</u>	<u>TT11003VP</u>	<u>TT11005VP</u>
PSI					
15	5.2	7.3	10.7	22.0	31.9
20	5.6	8.4	12.7	24.1	42.2
25	6.3	9.5	14.1	28.3	47.3
30	7.0	10.3	15.5	31.0	52.2
35	7.5	11.3	16.6	33.5	
40	8.0	12.2	17.8	36.0	
45	8.4	12.6	19.2	38.3	
50	8.9	13.2	20.6	40.7	
55	9.3	13.8	21.3	42.5	
60	9.7	14.4	22.0	44.4	

ROUTINE MAINTENANCE

1. **Clean the tip strainers and main strainer** every 10 hours of operation or more frequently if required.
2. 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.
3. Although the pump can run dry, extended operation of a dry pump will increase wear. Watch the preservative level in the tank.
4. Cover the electronic cab control box on open station tractors if left outside.
5. Pump performance may start to decline after 400 hours of use. Rebuilding the pump is a simple procedure if the motor is not damaged. Order pump rebuilding kit #007-4581.
6. If you are using bacterial inoculants, flush out system daily after each use.

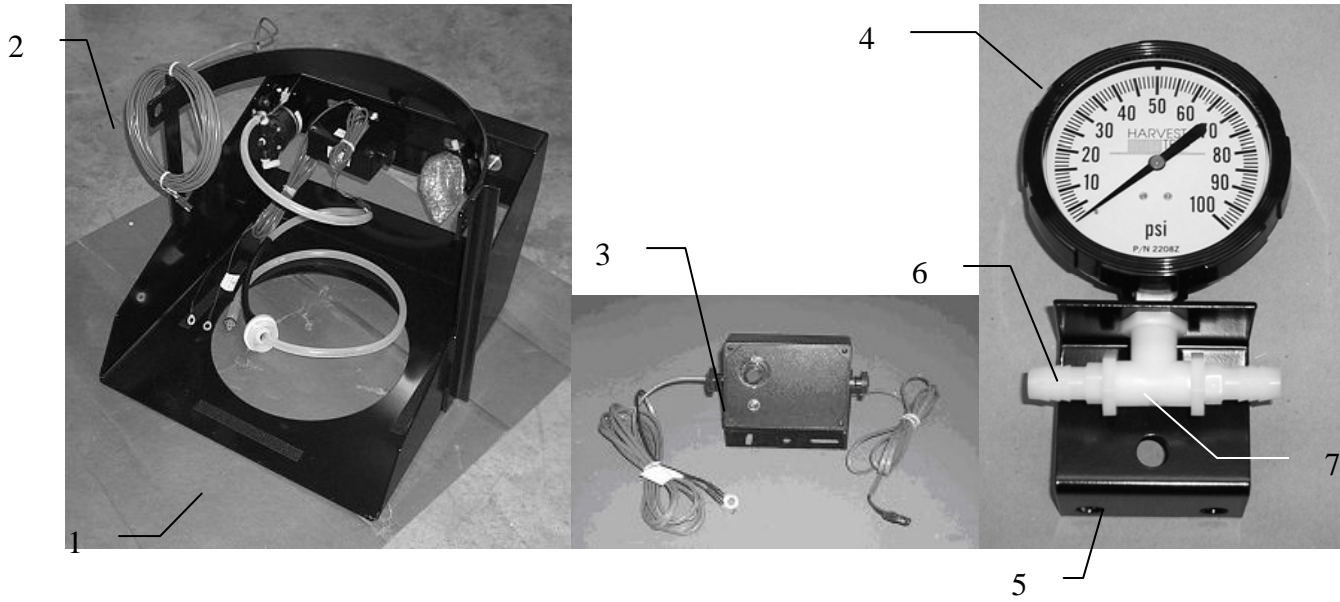
WINTER STORAGE

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. Remove the red plug from the bottom of the pump, drain, and run the pump for 30 seconds or until it is dry.
4. Drain all lines on the outlet side.
5. Never use oils or alcohol based anti-freeze in the system.
6. For spring start-up, or anytime the pump is frozen, turn off the power immediately to avoid burning the motor out. The pump head can be disassembled and freed or rebuilt in most cases.

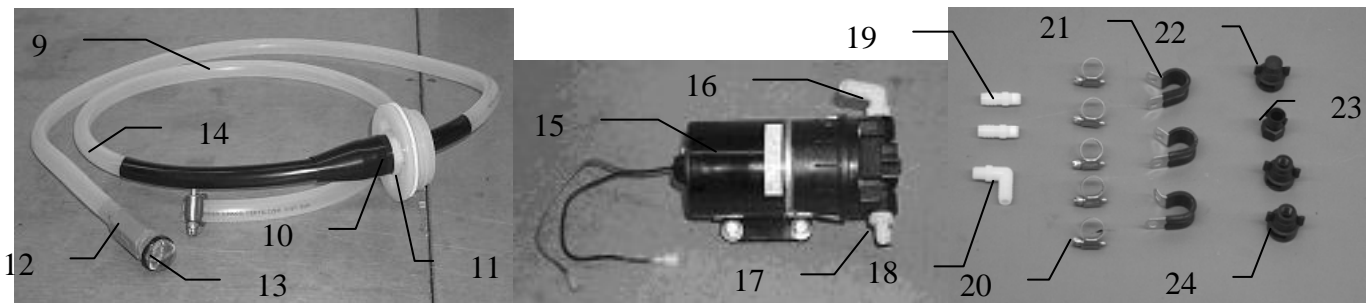
TROUBLE SHOOTING CHECKS

<u>PROBLEM</u>	<u>POSSIBLE CAUSE</u>	<u>SOLUTION</u>
Pump will not run.	1. Circuit breaker tripped on electronic unit.	1. Check for short, low voltage, and reset breaker.
	2. Pump locked up.	2. Clean or rebuild pump if motor is OK.
	3. Damaged wire.	3. Repair damaged wire.
Pump runs but will not prime.	1. Air leak in intake.	1. Tighten fittings on intake side.
	2. Clogged intake.	2. Clean.
	3. Restricted outlet.	3. Check and clean tips.
	4. Check valve on outlet stuck closed.	4. Clean or repair check valve, move to lower part of line
	5. Dirt inside pump.	5. Replace pump check valve.
	6. Vapor locked.	6. Loosen hose by check valve and bleed air.
Pump does not develop enough output.	1. Air leaks or clogs on inlet side.	1. Tighten or clean filter bowl assembly.
	2. Electronic box out of adjustment.	2. Refer to box adjustment page.
	3. Pump worn or dirty.	3. Rebuild pump.
	4. Low supply voltage. (Pump requires 12v minimum)	4. Check voltage at connection with voltmeter.
	5. Bad gauge.	5. Gauge should read less than 10 PSI when not in use. Also tips should lose spray pattern below 10 PSI. Check accuracy.
Pump output varies.	1. Clogged or restricted inlet.	1. Clean
	2. Worn pump parts.	2. Rebuild pump.
Message light blinks two times	1. Pump or wire harness shorted.	1. Check harness running to pump and verify no shorts or problems. 2. Check to see if pump motor is locked up. Repair or replace.
Message light blinks three times	1. Pump is drawing greater than 10 amps.	1. Check to see if motor is running correctly. Repair or replace.
Message light blinks four times	1. Undercurrent coming to control box.	1. Check all battery connections and connections running up to control box.

MODEL 461 BASE KIT – ELECTRONIC CONTROL

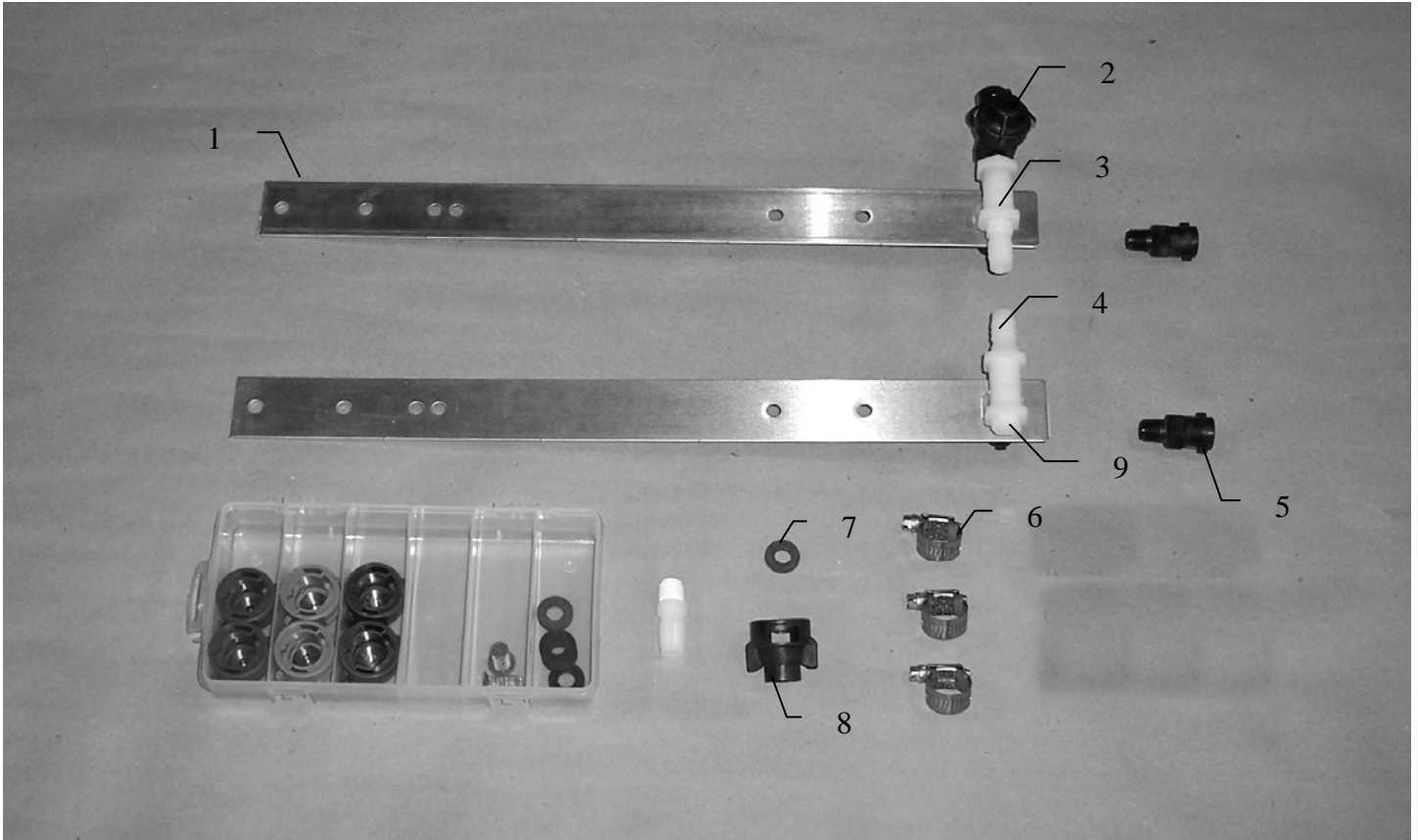


<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>	<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>
1	Drum holder	001-4601	1	5	Gauge bracket	001-4717	1
2	Pump lead	006-4575	1	6	Straight fitting	003-A1412	2
3	Control box	030-0457	1	7	Tee	003-TT14	1
4	Gauge	002-2208Z	1				



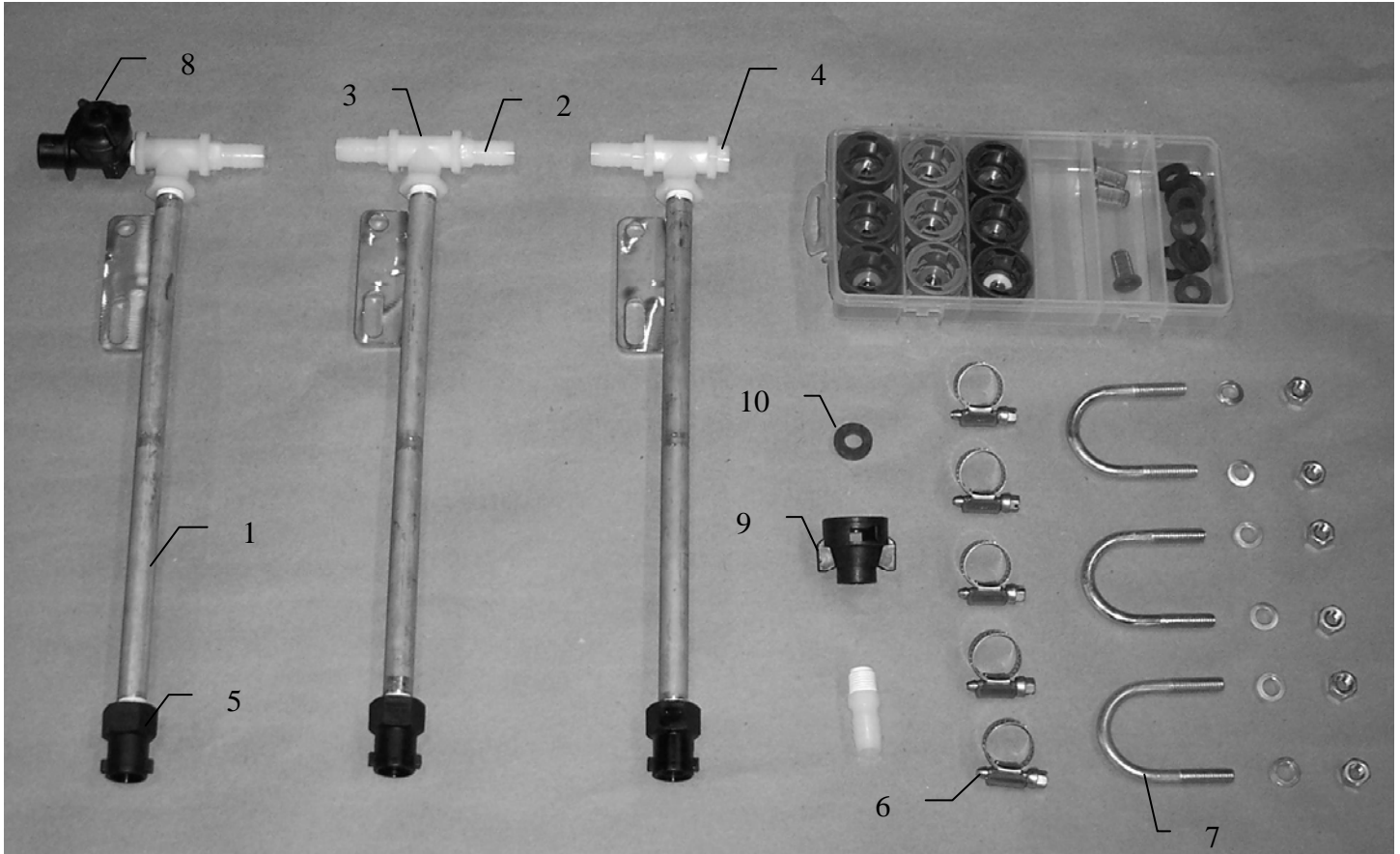
<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>	<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>
9	Intake assembly	030-4500E	1	18	Elbow fitting	003-EL1412	1
10	Nipple fitting	003-M3434	1	19	Straight fitting	003-A1412	2
11	Bung cap	003-4532A	1	20	Hose clamp	003-9003	6
12	Check valve	002-4566	1	21	Jiffy clip	008-9010	3
13	Suction screen	002-4565	1	22	Shut-off cap	004-1207F	1
14	3/8" Hose	002-9003	7	23	Quick connect	004-1207G	1
15	Pump	007-4120S	1	24	Female disconnect	004-1207H	2
16	Elbow fitting	003-EL3812	1	NP	1/2" Hose	002-9001	30ft
17	Straight fitting	003-A3838	1	NP	Not Pictured		

HARVEST TEC MODEL 4400A INSTALLATION KIT



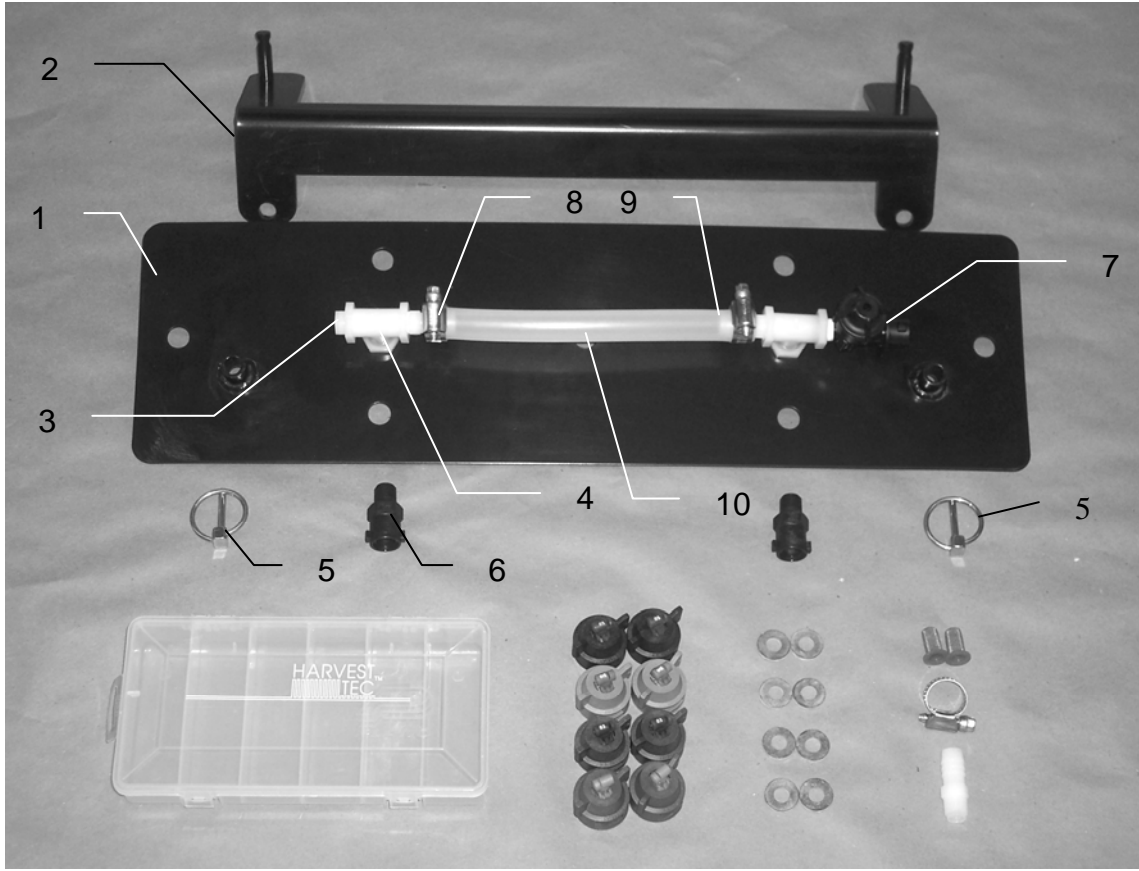
<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>	<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>
1	Nozzle strap	001-4215	2		Tip Kit (Complete)	030-9001	1
2	Check valve	004-1207V	1		Tip Kit Includes:		
3	Tee	003-TT14	2		Plastic Box	008-9000	1
4	Straight fitting	003-A1412	3		Red Cap	004-1207B	2
5	Nozzle body	004-4710	2		Tip (Red Set)	004-650050-SS	2
6	Hose clamp	003-9003	3		Green Cap	004-1207A	2
7	Washer	004-1207W	1		Tip (Green Set)	004-6501-SS	2
8	Female disconnect	004-1207H	1		Blue Cap	004-1207C	2
9	Plug	003-F14	1		Tip (Blue Set)	004-6502-SS	2
					Washer	004-1207W	6
					Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4400C INSTALLATION KIT



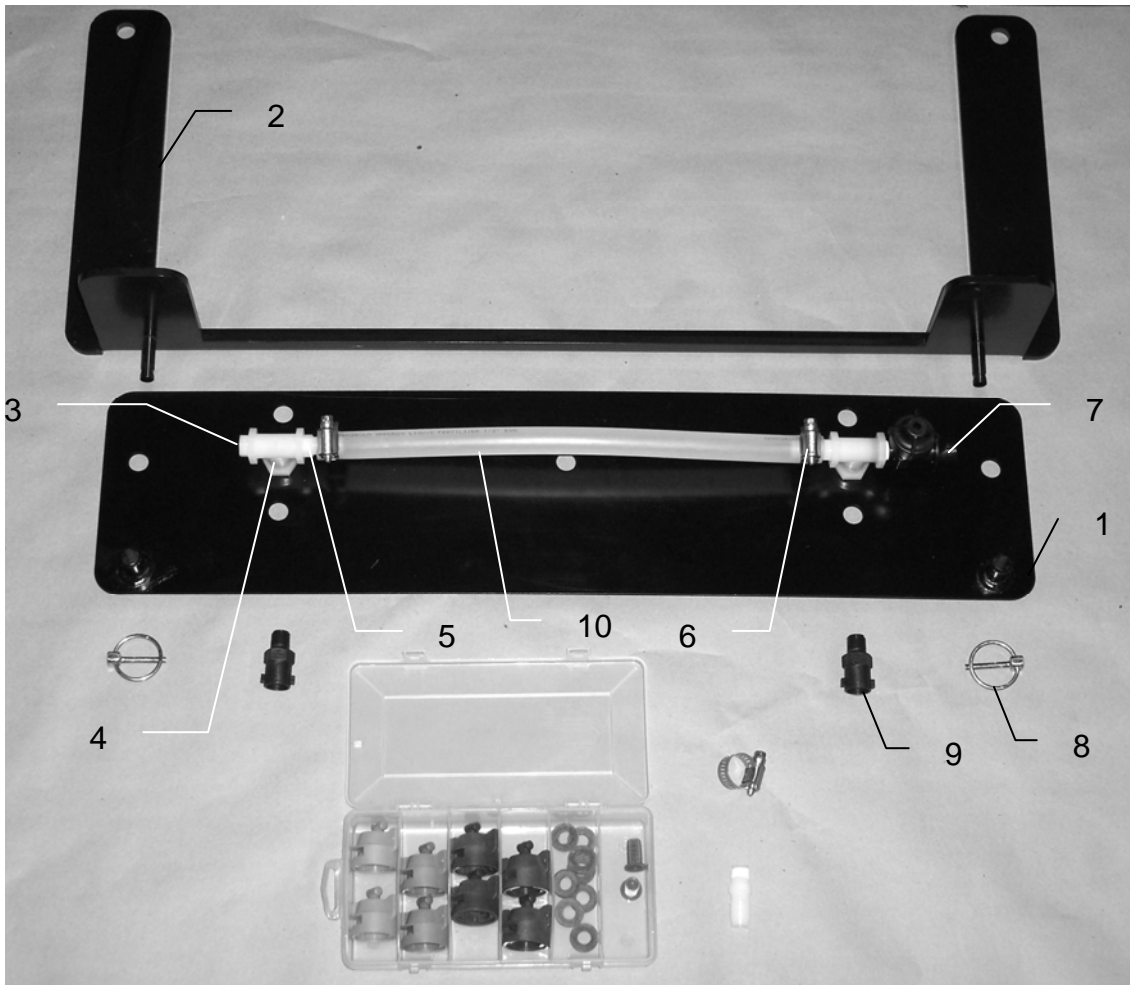
<u>Ref</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>	<u>Description</u>	<u>Part#</u>	<u>Qty</u>
1	Nozzle tube	001-4714	3	Tip Kit (Complete)	030-9002	1
2	Straight fitting	003-A1412	5	Tip Kit Includes:		
3	Tee	003-TT14	3	Plastic Box	008-9000	1
4	Plug	003-F14	1	Red Cap	004-1207B	3
5	Nozzle Body	004-1207G	3	Outside Tip (Red Set)	004-650050-SS	2
6	Hose clamp	003-9003	5	Inside Tip (Red Set)	004-XR11001VS	1
7	U-Bolt	001-4714UBS	3	Green Cap	004-1207A	3
8	Check valve	004-1207V	1	Outside Tip (Green Set)	004-6501-SS	2
9	Female disconnect	004-1207H	1	Inside Tip (Green Set)	004-XR110015VS	1
10	Washer	004-1207W	1	Blue Cap	004-1207C	3
				Outside Tip (Blue Set)	004-6502-SS	2
				Inside Tip (Blue Set)	004-XR11002VS	1
				Washer	004-1207W	9
				Tip Strainer	004-1203-100	3

HARVEST TEC MODEL 4438 INSTALLATION KIT



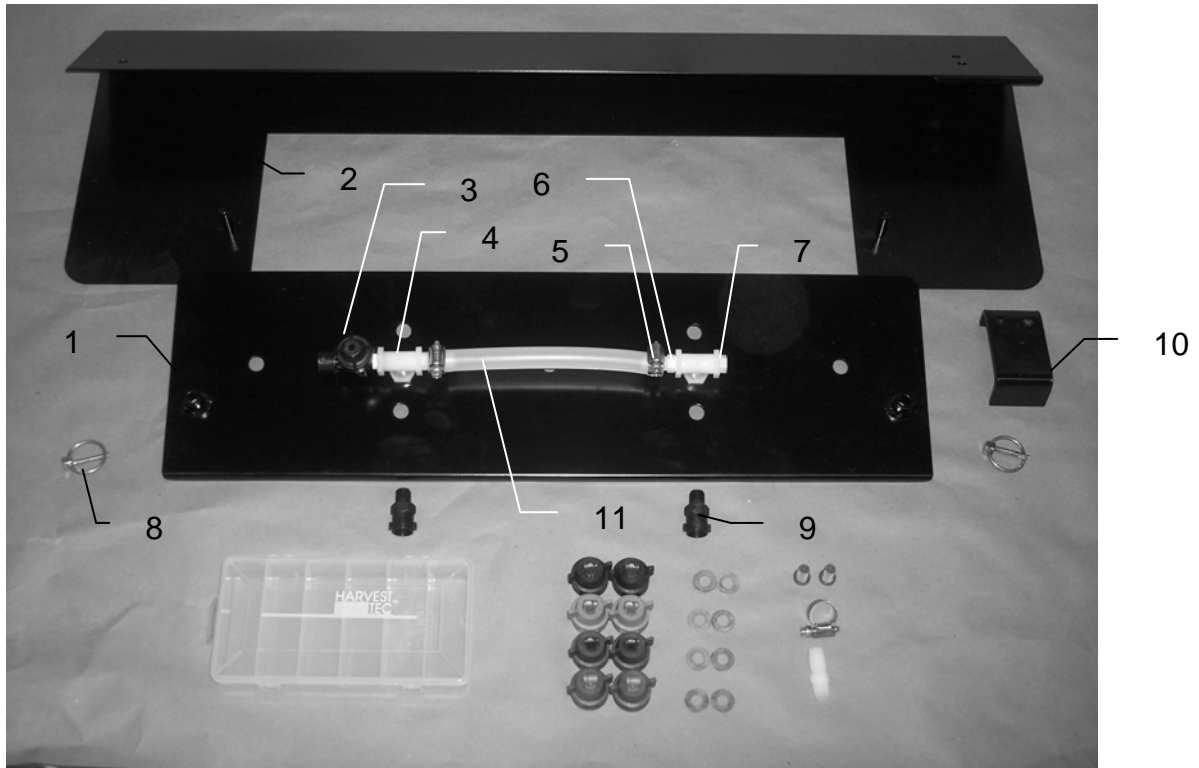
<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4438A	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4438B	1	Tip Kit Includes:		
3	Plug	003-F14	1	Plastic Box	008-9000	1
4	Tee	003-TT14	2	Orange cap (Orange Set)	004-1207J	2
5	Lynch pin	008-4576	2	Tip (Orange Set)	004-TT11001VP	2
6	Nozzle body	004-4710	2	Green cap (Green Set)	004-1207A	2
7	Check valve	004-1207V	1	Tip (Green Set)	004-TT110015VP	2
8	Hose clamp	003-9003	3	Blue cap (Blue Set)	004-1207C	2
9	Straight Fitting	003-A1412	3	Tip (Blue Set)	004-TT11003VP	2
10	Hose	002-9001	1	Brown Cap (Brown Set)	004-1207K	2
				Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4439 INSTALLATION KIT



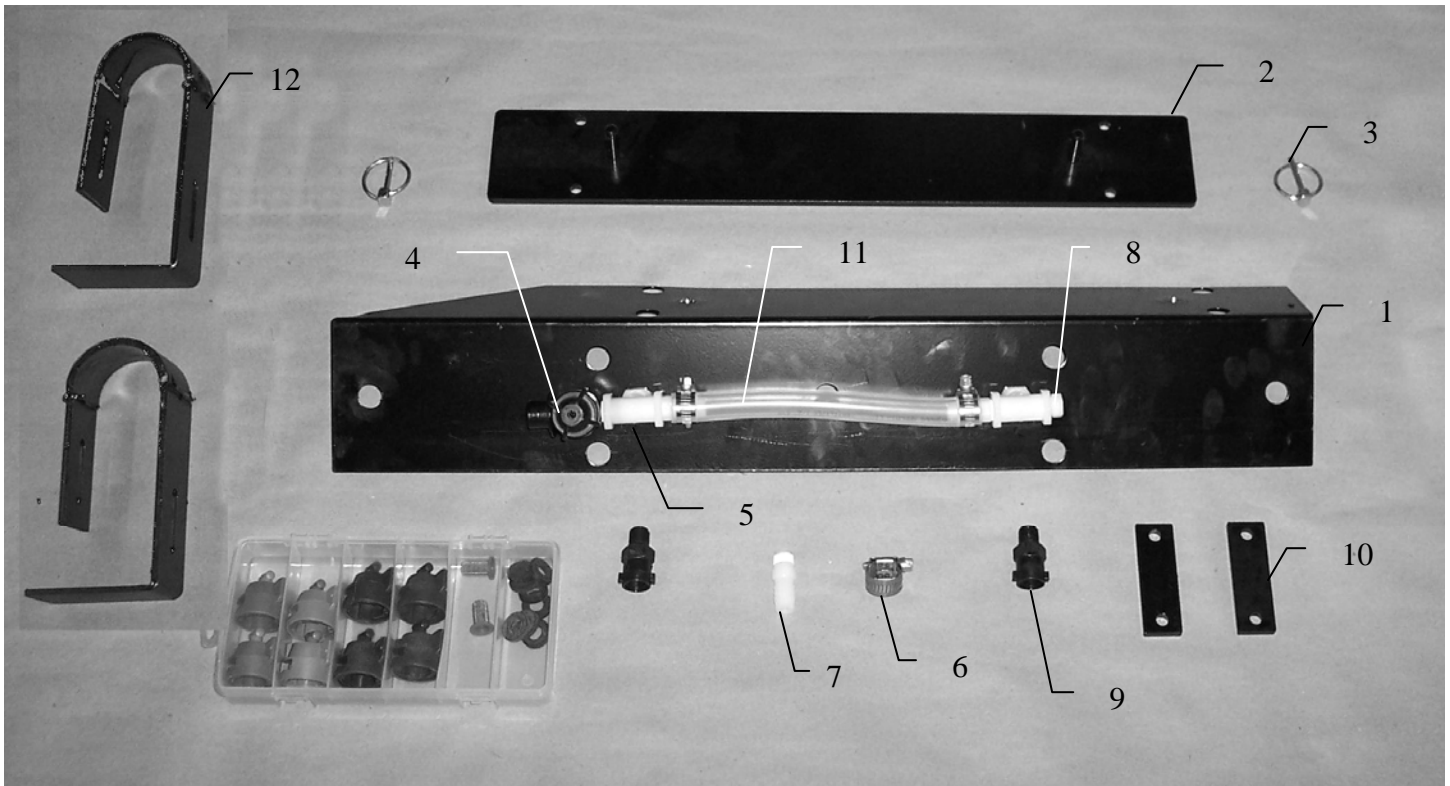
<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4439A	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4439B	1	Tip Kit Includes:		
3	Plug	003-F14	1	Plastic Box	008-9000	1
4	Tee	003-TT14	2	Orange cap (Orange Set)	004-1207J	2
5	Straight Fitting	003-A1412	3	Tip (Orange Set)	004-TT11001VP	2
6	Hose clamp	003-9003	3	Green cap (Green Set)	004-1207A	2
7	Check valve	004-1207V	1	Tip (Green Set)	004-TT110015VP	2
8	Lynch pin	008-4576	2	Blue cap (Blue Set)	004-1207C	2
9	Nozzle body	004-4710	2	Tip (Blue Set)	004-TT11003VP	2
10	Hose	002-9001	2	Brown Cap (Brown Set)	004-1207K	2
				Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4490 INSTALLATION KIT



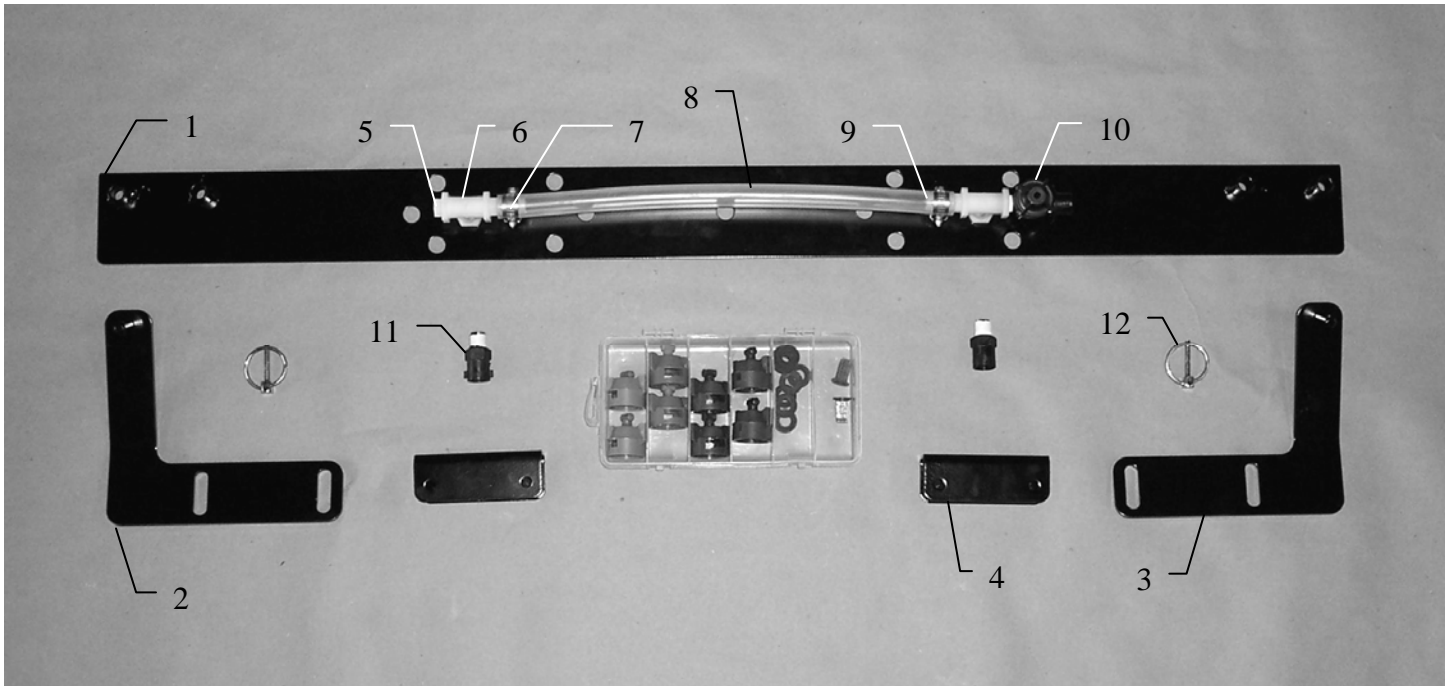
<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4421	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4421B	1	Tip Kit Includes:		
3	Check valve	004-1207V	1	Plastic Box	008-9000	1
4	Tee	003-TT14	2	Orange cap (Orange Set)	004-1207J	2
5	Hose clamp	003-9003	3	Tip (Orange Set)	004-TT11001VP	2
6	Straight Fitting	003-A1412	3	Green cap (Green Set)	004-1207A	2
7	Plug	003-F14	1	Tip (Green Set)	004-TT110015VP	2
8	Lynch pin	008-4576	2	Blue cap (Blue Set)	004-1207C	2
9	Nozzle body	004-4710	2	Tip (Blue Set)	004-TT11003VP	2
10	Backing plate	001-4421A	1	Brown Cap (Brown Set)	004-1207K	2
11	Hose	002-9001	1	Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4491 INSTALLATION KIT



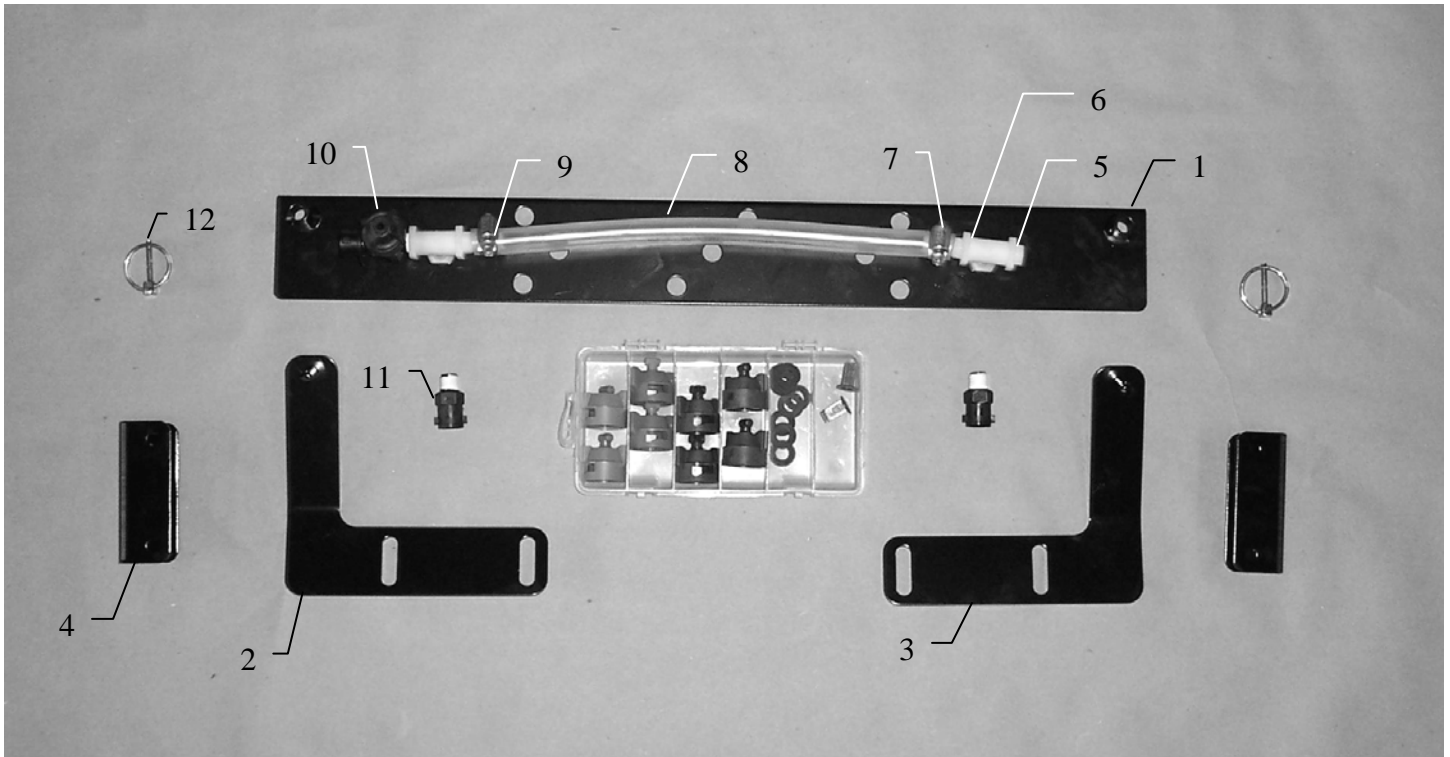
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1	Spray shield	001-4422	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4422B	1	Tip Kit Includes:		
3	Lynch pin	008-4576	2	Plastic Box	008-9000	1
4	Check valve	004-1207V	1	Orange cap (Orange Set)	004-1207J	2
5	Tee	003-TT14	2	Tip (Orange Set)	004-TT11001VP	2
6	Hose clamp	003-9003	3	Green cap (Green Set)	004-1207A	2
7	Straight Fitting	003-A1412	3	Tip (Green Set)	004-TT110015VP	2
8	Plug	003-F14	1	Blue cap (Blue Set)	004-1207C	2
9	Nozzle body	004-4710	2	Tip (Blue Set)	004-TT11003VP	2
10	Backing plate	001-4422A	2	Brown Cap (Brown Set)	004-1207K	2
11	Hose	002-9001	1ft	Tip (Brown Set)	004-TT11005VP	2
12	Ladder bracket	001-6707H	2	Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4492 INSTALLATION KIT



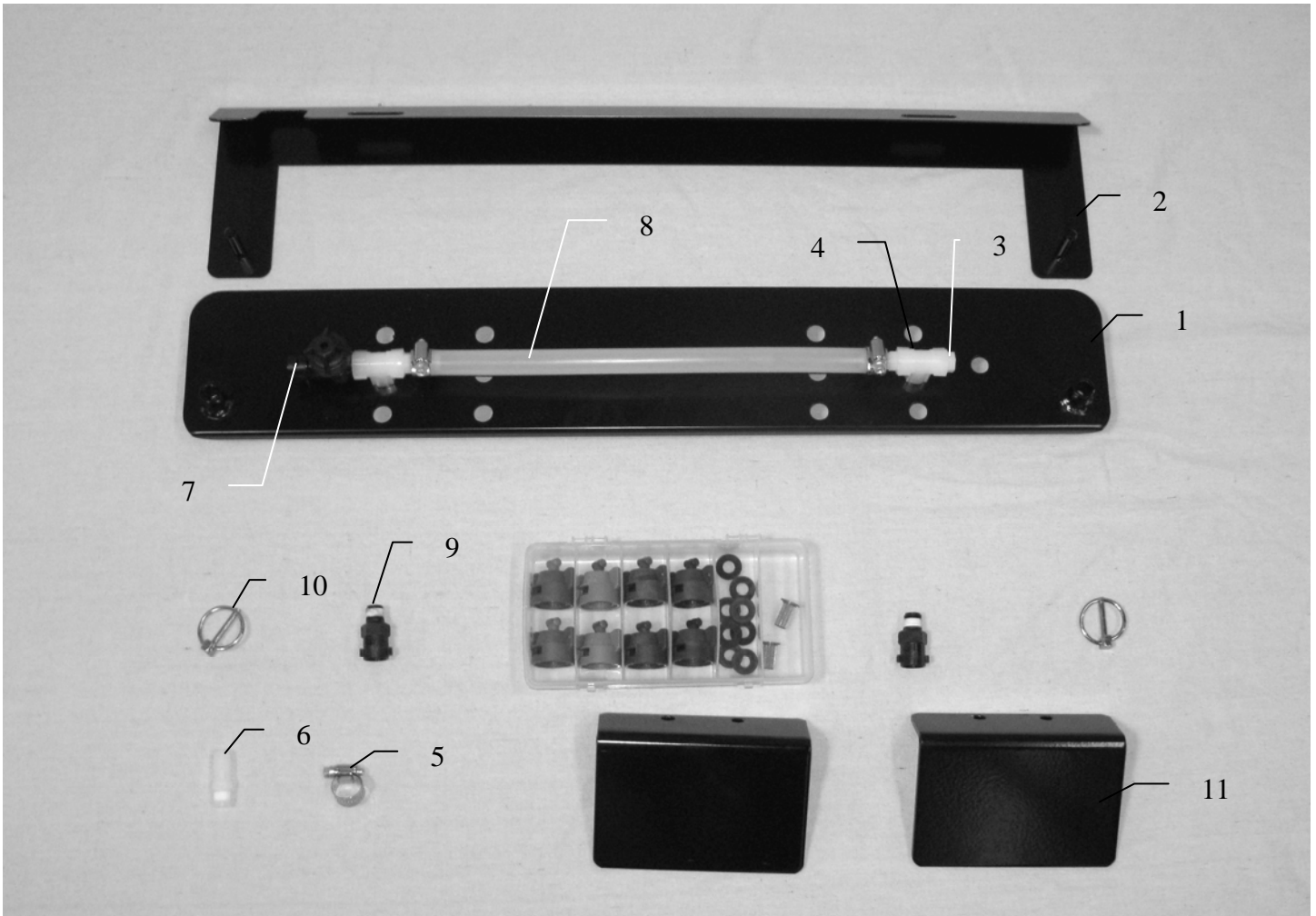
<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4811A	1	Tip Kit (Complete)	030-9007	1
2	Left shield hanger	001-4436DL	1	Tip Kit Includes:		
3	Right shield hanger	001-4436DR	1	Plastic Box	008-9000	1
4	Spacer	001-4436S	2	Orange cap (Orange Set)	004-1207J	2
5	Plug	003-F14	1	Tip (Orange Set)	004-TT11001VP	2
6	Tee	003-TT14	2	Green cap (Green Set)	004-1207A	2
7	Hose clamp	003-9003	3	Tip (Green Set)	004-TT110015VP	2
8	Hose	002-9001	1	Blue cap (Blue Set)	004-1207C	2
9	Straight fitting	003-A1412	3	Tip (Blue Set)	004-TT11003VP	2
10	Check valve	004-1207V	1	Brown Cap (Brown Set)	004-1207K	2
11	Nozzle body	004-4710	2	Tip (Brown Set)	004-TT11005VP	2
12	Lynch pin	008-4576	2	Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4494 INSTALLATION KIT



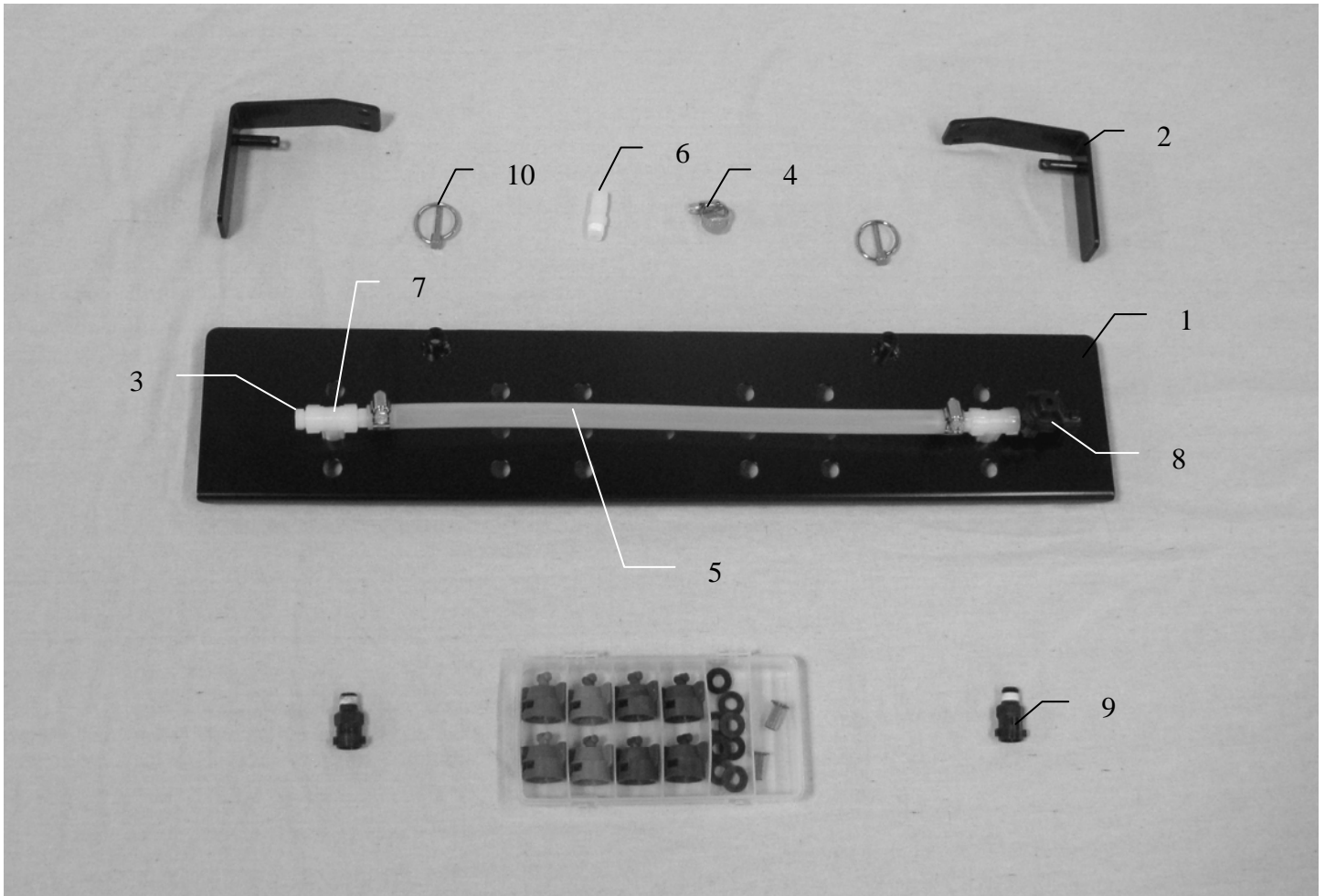
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1	Spray shield	001-4810	1	Tip Kit (Complete)	030-9007	1
2	Left shield hanger	001-4436DL	1	Tip Kit Includes:		
3	Right shield hanger	001-4436DR	1	Plastic Box	008-9000	1
4	Spacer	001-4436S	2	Orange cap (Orange Set)	004-1207J	2
5	Plug	003-F14	1	Tip (Orange Set)	004-TT11001VP	2
6	Tee	003-TT14	2	Green cap (Green Set)	004-1207A	2
7	Hose clamp	003-9003	3	Tip (Green Set)	004-TT110015VP	2
8	Hose	002-9001	1	Blue cap (Blue Set)	004-1207C	2
9	Straight fitting	003-A1412	3	Tip (Blue Set)	004-TT11003VP	2
10	Check valve	004-1207V	1	Brown Cap (Brown Set)	004-1207K	2
11	Nozzle body	004-4710	2	Tip (Brown Set)	004-TT11005VP	2
12	Lynch pin	008-4576	2	Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4495 INSTALLATION KIT



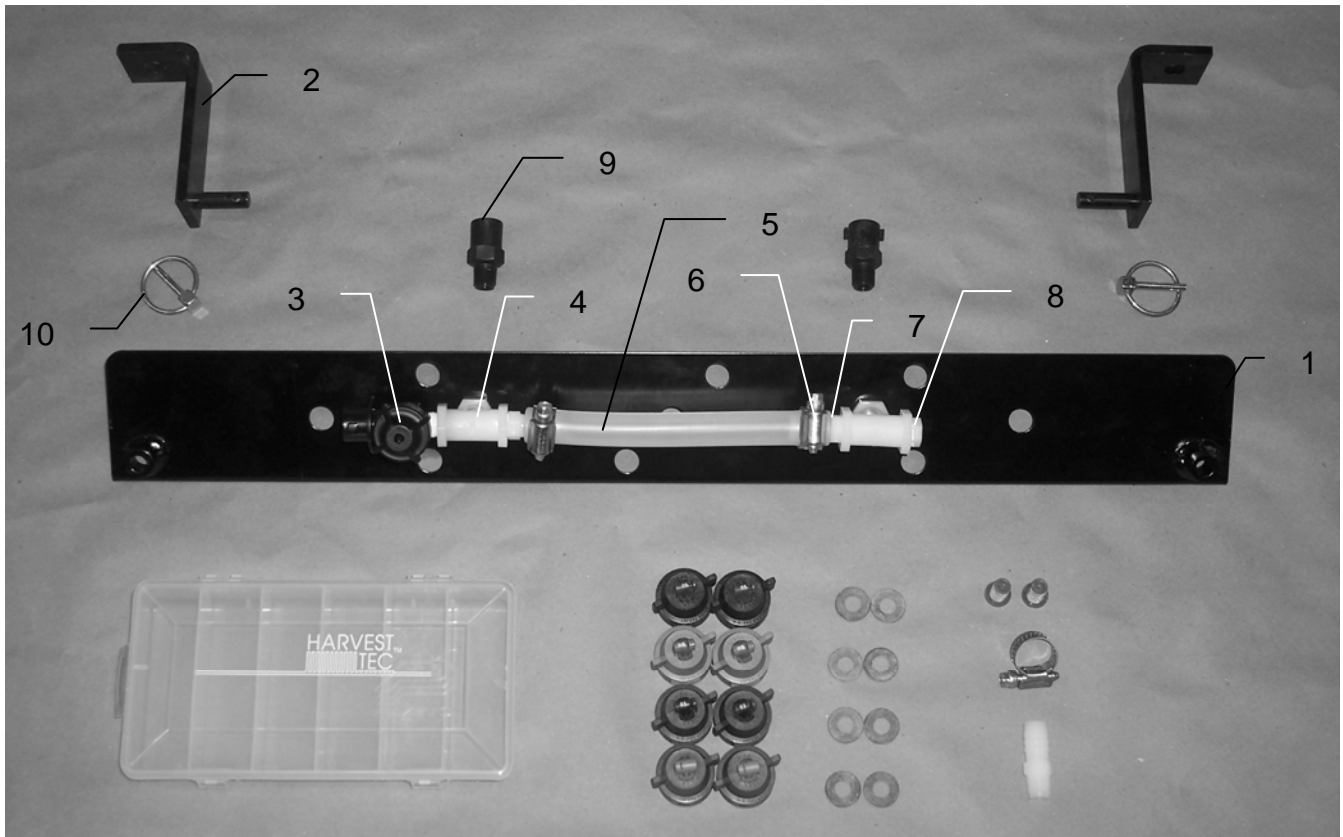
<u>Ref #</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4431	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4431B	1	Tip Kit Includes:		
3	Plug	003-F14	1	Plastic Box	008-9000	1
4	Tee	003-TT14	2	Orange cap (Orange Set)	004-1207J	2
5	Hose clamp	003-9003	3	Tip (Orange Set)	004-TT11001VP	2
6	Straight Fitting	003-A1412	3	Green cap (Green Set)	004-1207A	2
7	Check valve	004-1207V	1	Tip (Green Set)	004-TT110015VP	2
8	Hose	002-9001	1	Blue cap (Blue Set)	004-1207C	2
9	Nozzle body	004-4710	2	Tip (Blue Set)	004-TT11003VP	2
10	Lynch pin	008-4576	2	Brown Cap (Brown Set)	004-1207K	2
11	Wind guard stop	001-4431D	2	Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4497



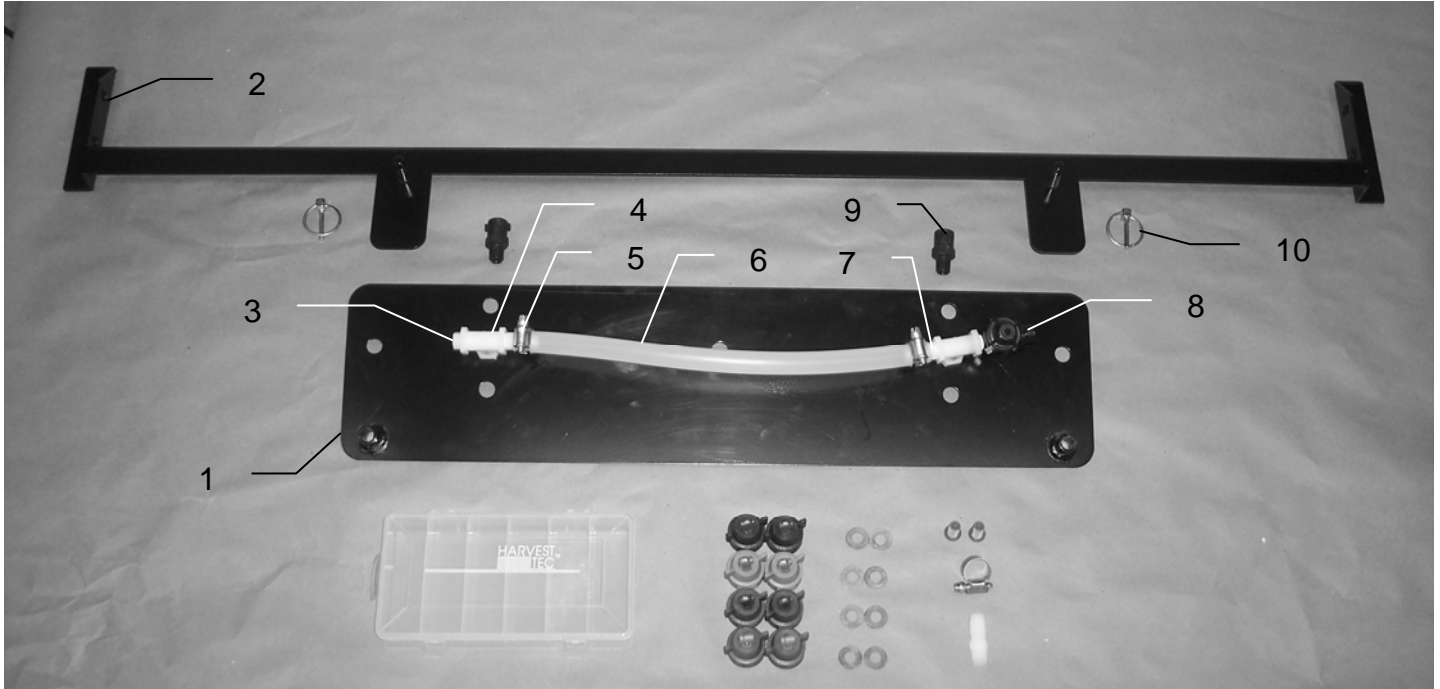
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1	Spray shield	001-4435ES	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4435E	2	Tip Kit Includes:		
3	Plug	003-F14	1	Plastic Box	008-9000	1
4	Hose clamp	003-9003	3	Orange cap (Orange Set)	004-1207J	2
5	Hose	002-9001	2	Tip (Orange Set)	004-TT11001VP	2
6	Straight Fitting	003-A1412	3	Green cap (Green Set)	004-1207A	2
7	Tee	003-TT14	2	Tip (Green Set)	004-TT110015VP	2
8	Check valve	004-1207V	1	Blue cap (Blue Set)	004-1207C	2
9	Nozzle body	004-4710	2	Tip (Blue Set)	004-TT11003VP	2
10	Lynch pin	008-4576	2	Brown Cap (Brown Set)	004-1207K	2
				Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4498 INSTALLATION KIT



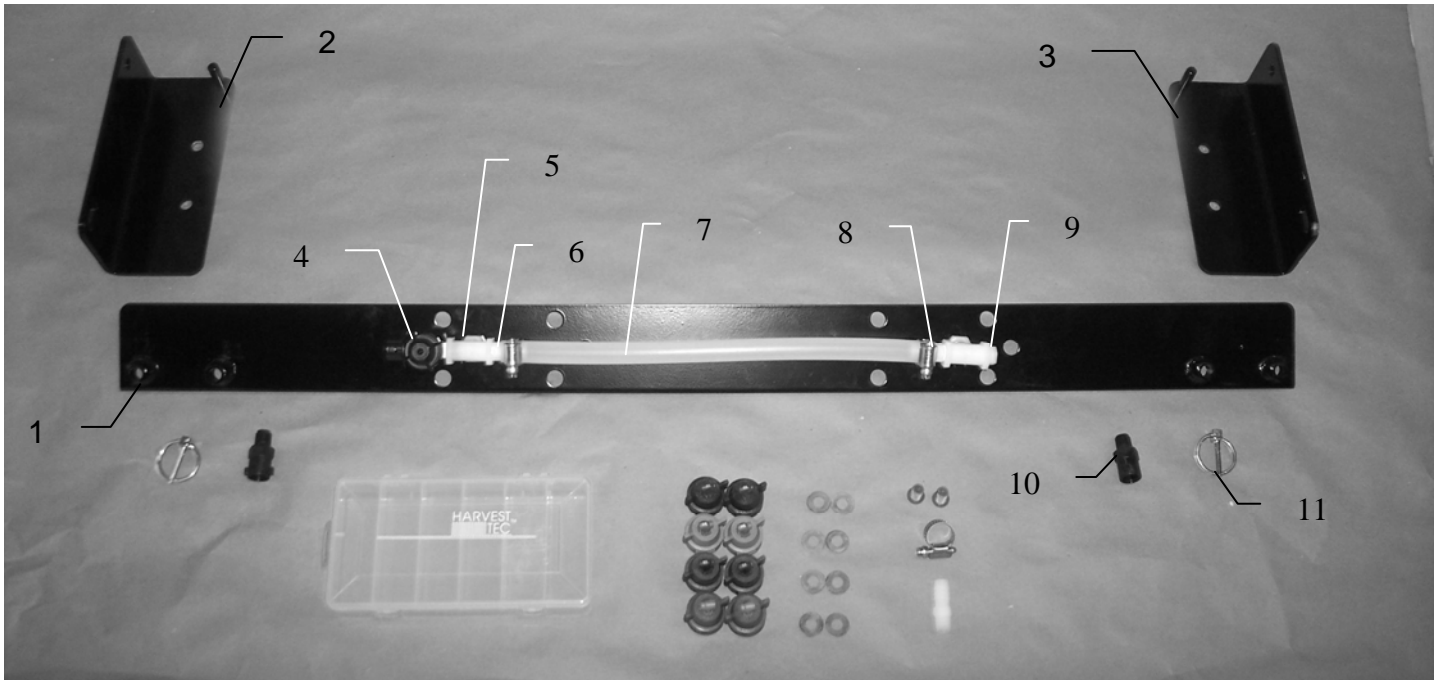
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1	Spray shield	001-4810	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4810A	2	Tip Kit Includes:		
3	Check valve	004-1207V	1	Plastic Box	008-9000	1
4	Tee	003-TT14	2	Orange cap (Orange Set)	004-1207J	2
5	Hose	002-9001	1	Tip (Orange Set)	004-TT11001VP	2
6	Hose clamp	003-9003	3	Green cap (Green Set)	004-1207A	2
7	Straight Fitting	003-A1412	3	Tip (Green Set)	004-TT110015VP	2
8	Plug	003-F14	1	Blue cap (Blue Set)	004-1207C	2
9	Nozzle body	004-4710	2	Tip (Blue Set)	004-TT11003VP	2
10	Lynch pin	008-4576	2	Brown Cap (Brown Set)	004-1207K	2
				Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4499 INSTALLATION KIT



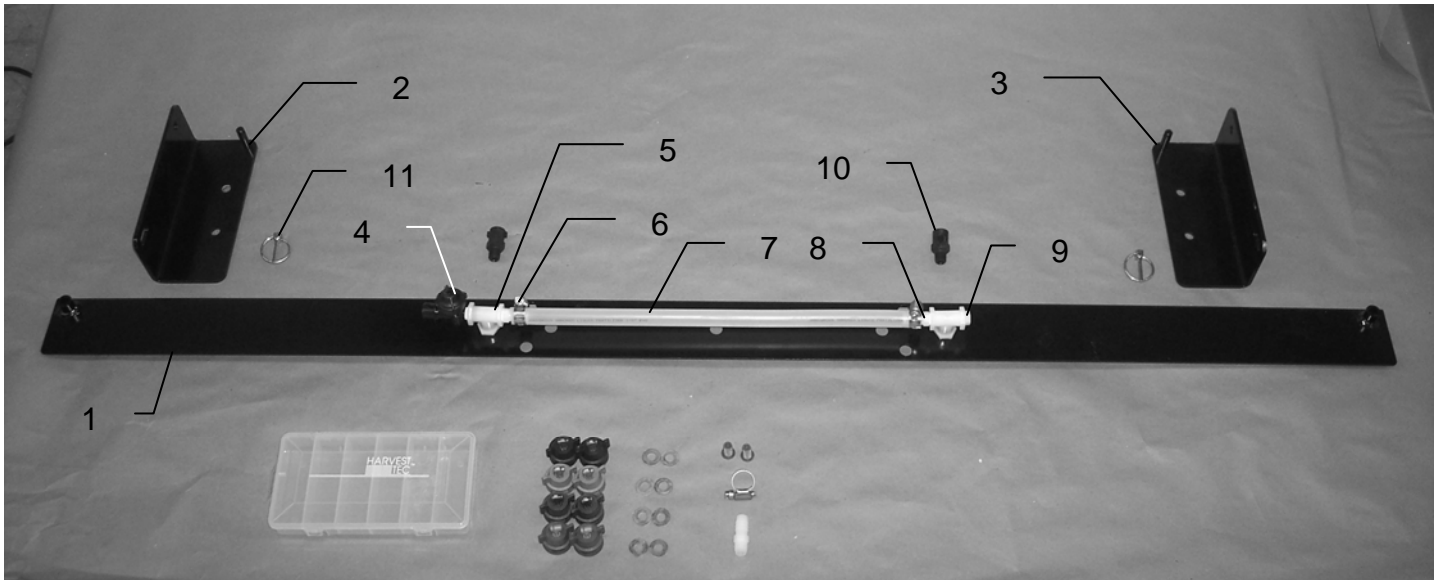
<u>Ref #</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4439A	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4440	1	Tip Kit Includes:		
3	Plug	003-F14	1	Plastic Box	008-9000	1
4	Tee	003-TT14	2	Orange cap (Orange Set)	004-1207J	2
5	Hose clamp	003-9003	3	Tip (Orange Set)	004-TT11001VP	2
6	Hose	002-9001	1	Green cap (Green Set)	004-1207A	2
7	Straight Fitting	003-A1412	3	Tip (Green Set)	004-TT110015VP	2
8	Check valve	004-1207V	1	Blue cap (Blue Set)	004-1207C	2
9	Nozzle body	004-4710	2	Tip (Blue Set)	004-TT11003VP	2
10	Lynch pin	008-4576	2	Brown Cap (Brown Set)	004-1207K	2
				Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4500 INSTALLATION KIT



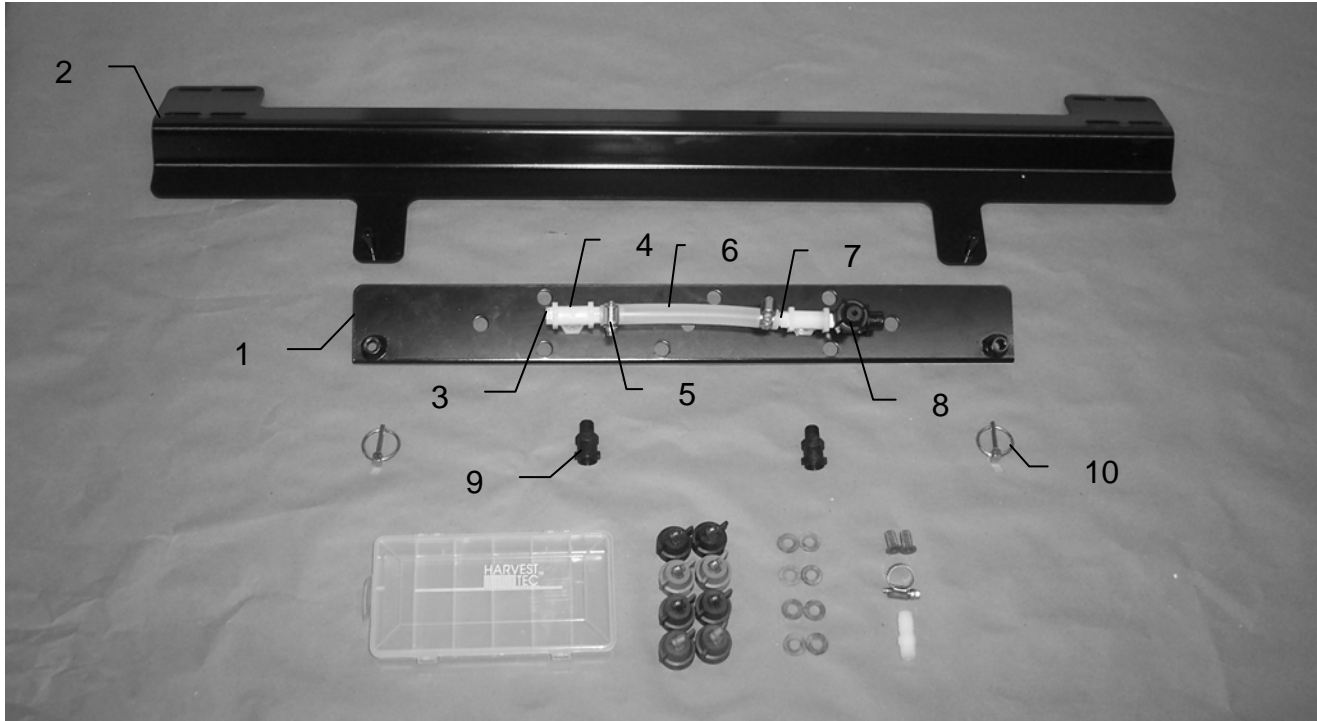
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1	Spray shield	001-4811A	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4436CL	1	Tip Kit Includes:		
3	Shield holder	001-4436CR	1	Plastic Box	008-9000	1
4	Check valve	004-1207V	1	Orange cap (Orange Set)	004-1207J	2
5	Tee	003-TT14	2	Tip (Orange Set)	004-TT11001VP	2
6	Straight Fitting	003-A1412	3	Green cap (Green Set)	004-1207A	2
7	Hose	002-9001	2	Tip (Green Set)	004-TT110015VP	2
8	Hose clamp	003-9003	3	Blue cap (Blue Set)	004-1207C	2
9	Plug	003-F14	1	Tip (Blue Set)	004-TT11003VP	2
10	Nozzle body	004-4710	2	Brown Cap (Brown Set)	004-1207K	2
11	Lynch pin	008-4576	2	Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4501 INSTALLATION KIT



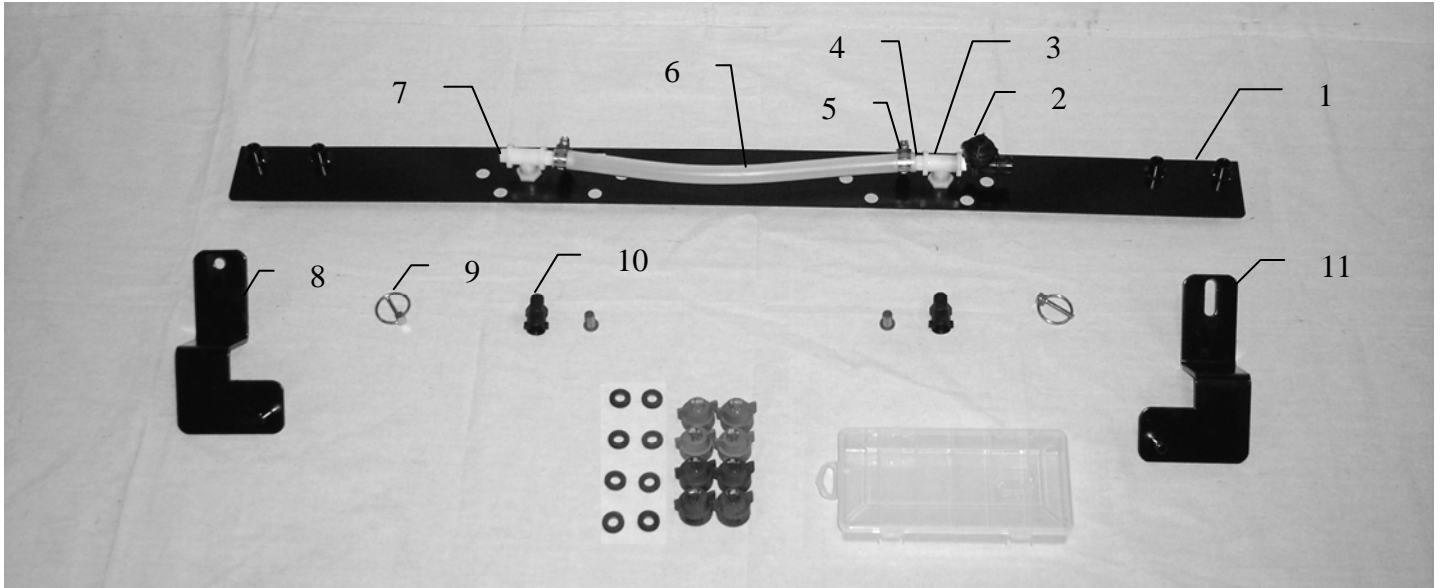
<u>Ref #</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4436CS	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4436CL	1	Tip Kit Includes:		
3	Shield holder	001-4436CR	1	Plastic Box	008-9000	1
4	Check valve	004-1207V	1	Orange cap (Orange Set)	004-1207J	2
5	Tee	003-TT14	2	Tip (Orange Set)	004-TT11001VP	2
6	Hose clamp	003-9003	3	Green cap (Green Set)	004-1207A	2
7	Hose	002-9001	2	Tip (Green Set)	004-TT110015VP	2
8	Straight Fitting	003-A1412	3	Blue cap (Blue Set)	004-1207C	2
9	Plug	003-F14	1	Tip (Blue Set)	004-TT11003VP	2
10	Nozzle body	004-4710	2	Brown Cap (Brown Set)	004-1207K	2
11	Lynch pin	008-4576	2	Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4509 INSTALLATION KIT



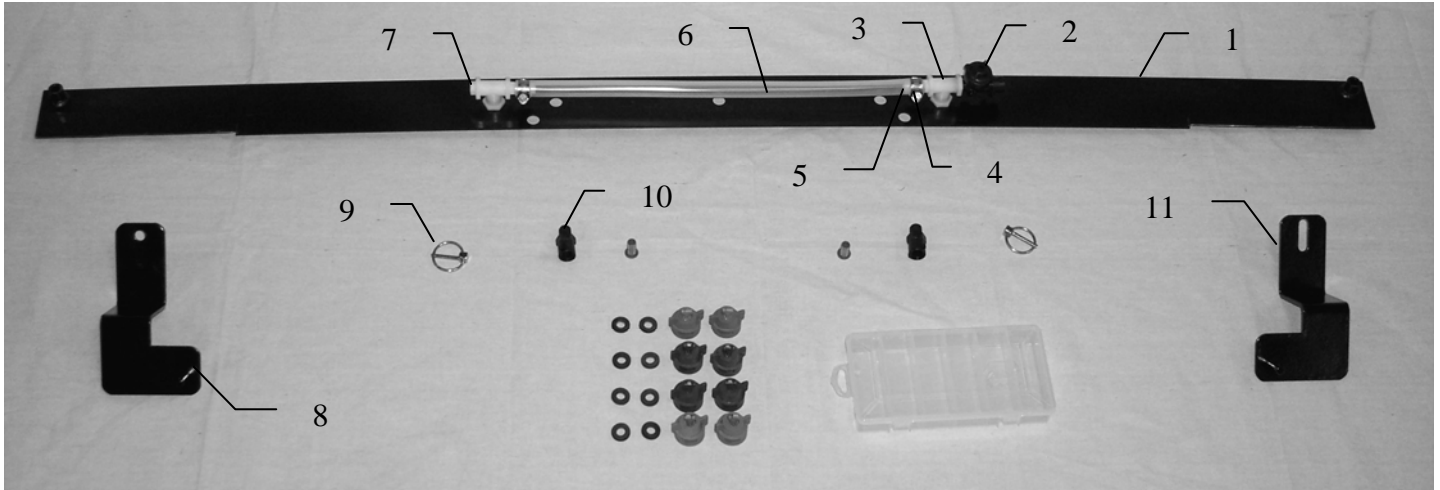
<u>Ref #</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4810	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4440A	1	Tip Kit Includes:		
3	Plug	003-F14	1	Plastic Box	008-9000	1
4	Tee	003-TT14	2	Orange cap (Orange Set)	004-1207J	2
5	Hose clamp	003-9003	3	Tip (Orange Set)	004-TT11001VP	2
6	Hose	002-9001	1	Green cap (Green Set)	004-1207A	2
7	Straight Fitting	003-A1412	3	Tip (Green Set)	004-TT110015VP	2
8	Check valve	004-1207V	1	Blue cap (Blue Set)	004-1207C	2
9	Nozzle body	004-4710	2	Tip (Blue Set)	004-TT11003VP	2
10	Lynch pin	008-4576	2	Brown Cap (Brown Set)	004-1207K	2
NP	U bolts	001-4714UBS	4	Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4510 INSTALLATION KIT



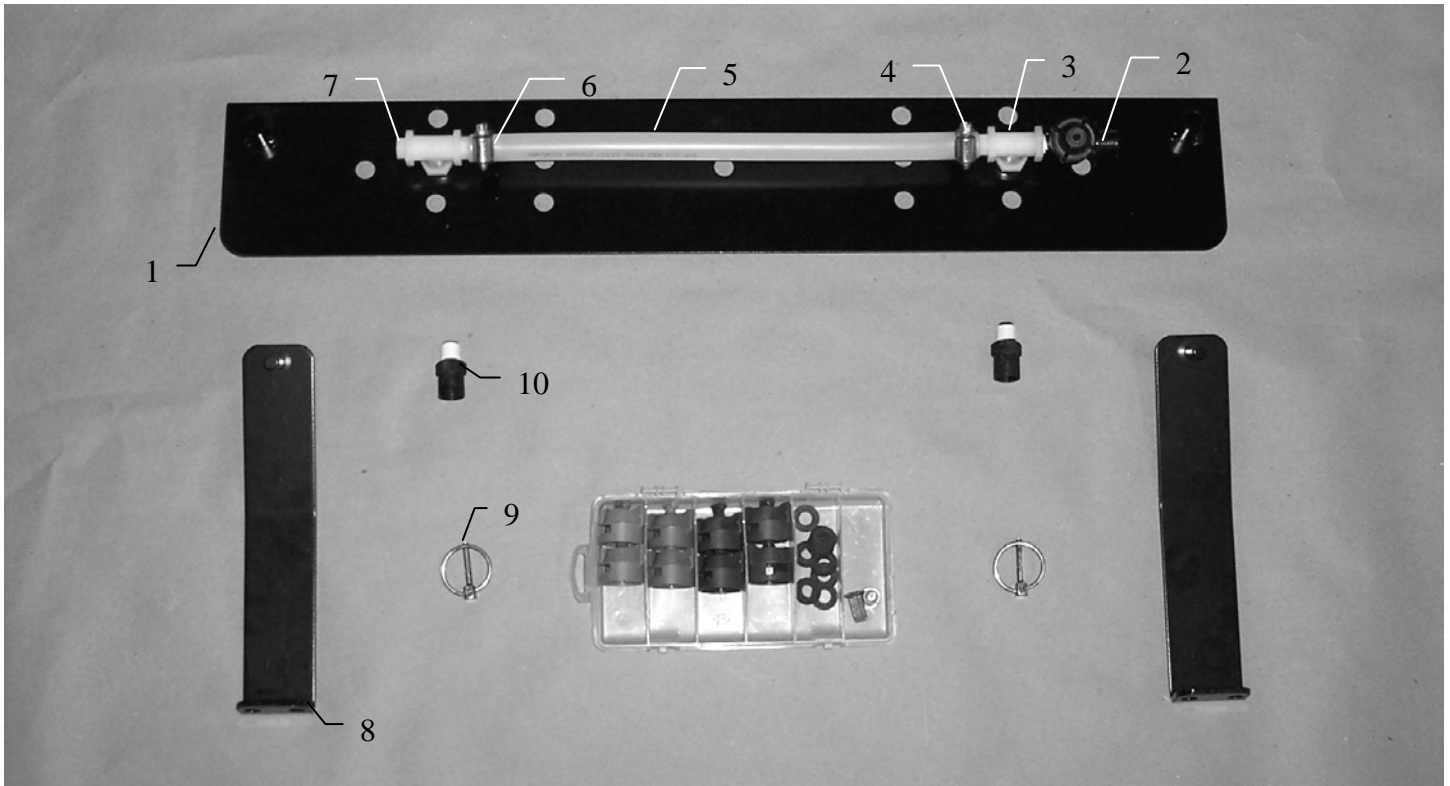
<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4811A	1	Tip Kit (Complete)	030-9007	1
2	Check valve	004-1207V	1	Tip Kit Includes:		
3	Tee	003-TT14	2	Plastic Box	008-9000	1
4	Straight fitting	003-A1412	3	Orange cap (Orange Set)	004-1207J	2
5	Hose clamp	003-9003	3	Tip (Orange Set)	004-TT11001VP	2
6	Hose	002-9001	2	Green cap (Green Set)	004-1207A	2
7	Plug	003-F14	1	Tip (Green Set)	004-TT110015VP	2
8	Shield holder	001-4704A	1	Blue cap (Blue Set)	004-1207C	2
9	Lynch pin	008-4576	2	Tip (Blue Set)	004-TT11003VP	2
10	Nozzle body	004-4710	2	Brown Cap (Brown Set)	004-1207K	2
11	Shield holder	001-4704B	1	Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4511 INSTALLATION KIT



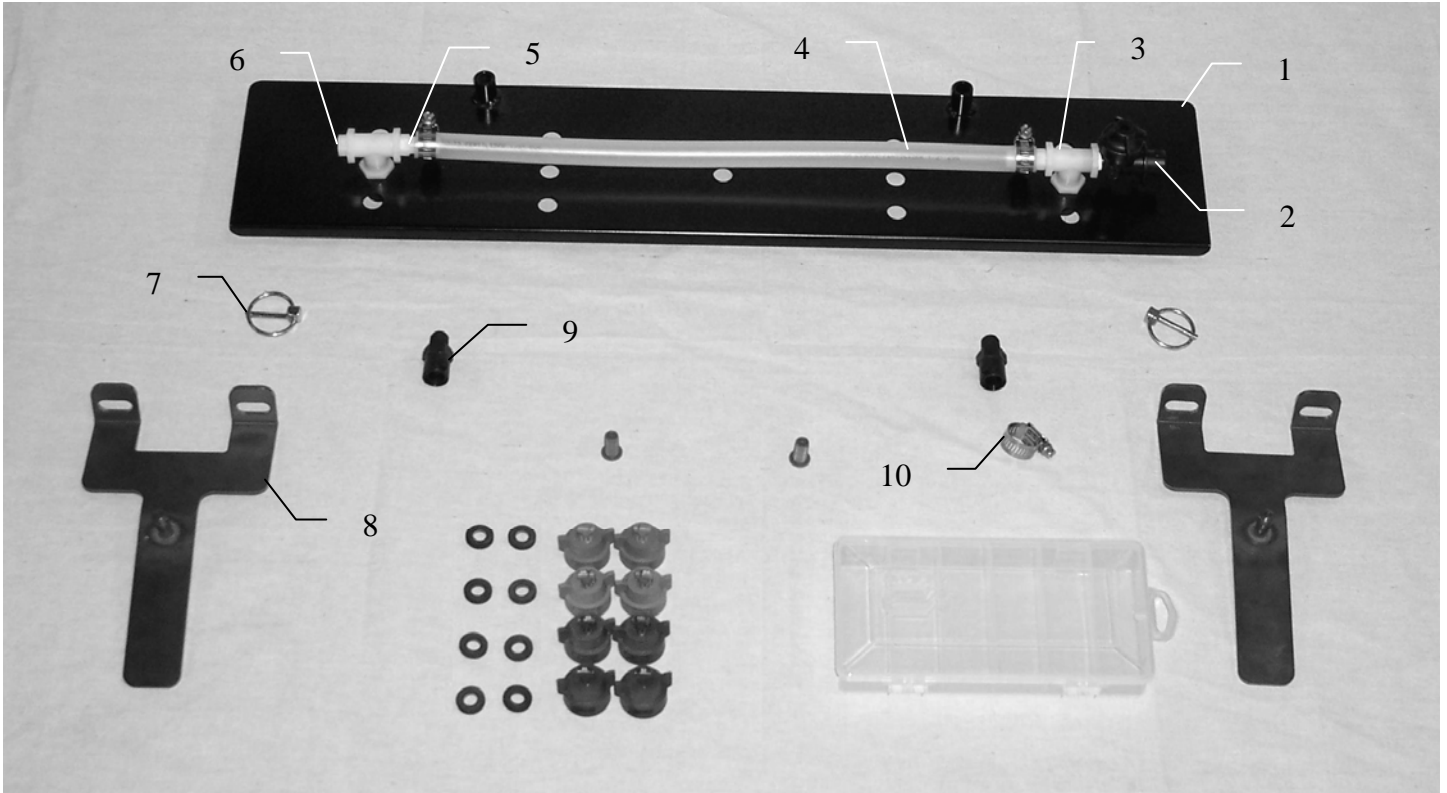
<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4704C	1	Tip Kit (Complete)	030-9007	1
2	Check valve	004-1207V	1	Tip Kit Includes:		
3	Tee	003-TT14	2	Plastic Box	008-9000	1
4	Hose clamp	003-9003	3	Orange cap (Orange Set)	004-1207J	2
5	Straight fitting	003-A1412	3	Tip (Orange Set)	004-TT11001VP	2
6	Hose	002-9001	2	Green cap (Green Set)	004-1207A	2
7	Plug	003-F14	1	Tip (Green Set)	004-TT110015VP	2
8	Shield holder	001-4704A	1	Blue cap (Blue Set)	004-1207C	2
9	Lynch pin	008-4576	2	Tip (Blue Set)	004-TT11003VP	2
10	Nozzle body	004-4710	2	Brown Cap (Brown Set)	004-1207K	2
11	Shield holder	001-4704B	1	Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4514 INSTALLATION KIT



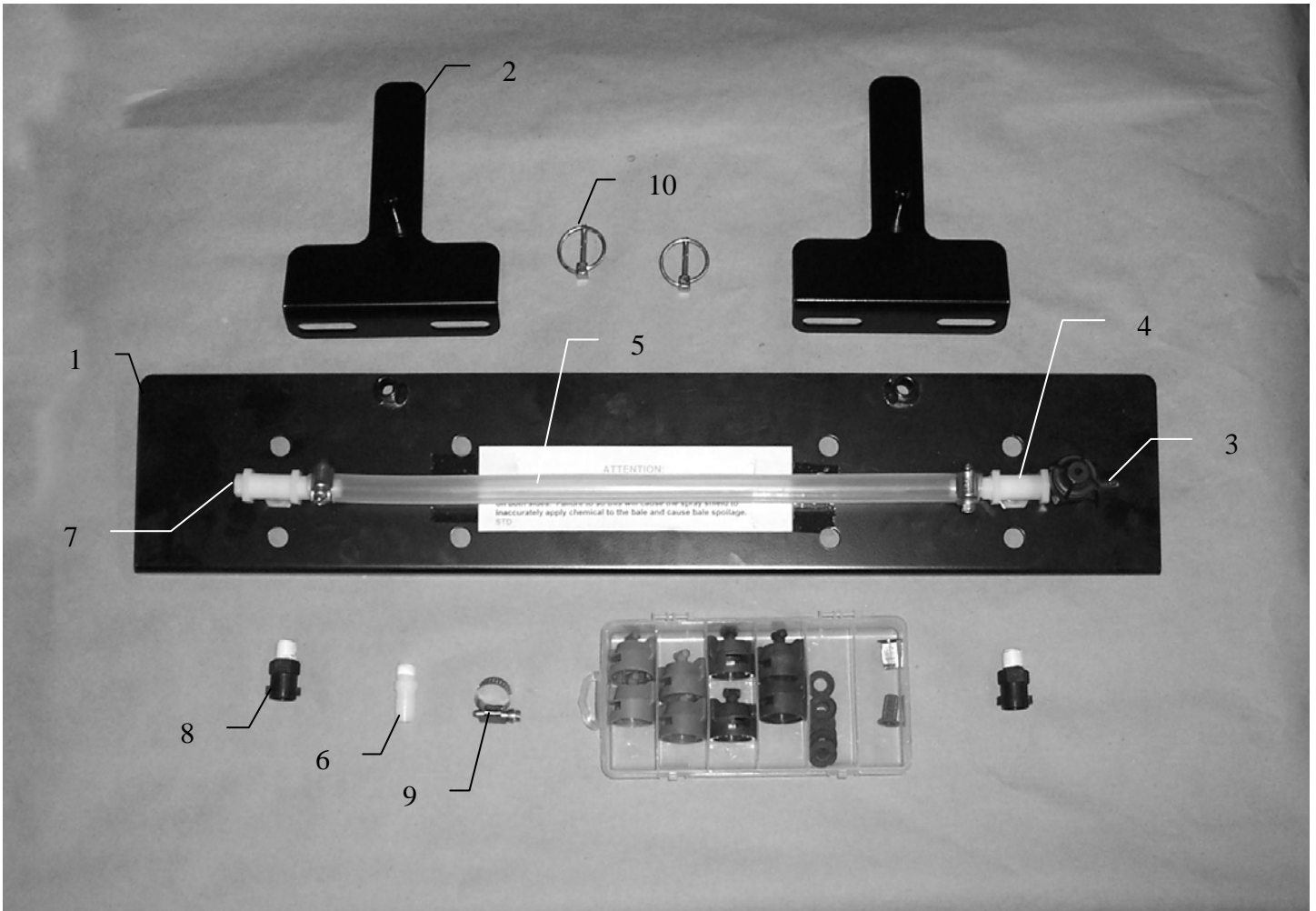
<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4431B	1	Tip Kit (Complete)	030-9007	1
2	Check valve	004-1207V	1	Tip Kit Includes:		
3	Tee	003-TT14	2	Plastic Box	008-9000	1
4	Hose clamp	003-9003	3	Orange cap (Orange Set)	004-1207J	2
5	Hose	002-9001	2	Tip (Orange Set)	004-TT11001VP	2
6	Straight fitting	003-A1412	3	Green cap (Green Set)	004-1207A	2
7	Plug	003-F14	1	Tip (Green Set)	004-TT110015VP	2
8	Shield holder	001-4431K	2	Blue cap (Blue Set)	004-1207C	2
9	Lynch pin	008-4576	2	Tip (Blue Set)	004-TT11003VP	2
10	Nozzle body	004-4710	2	Brown Cap (Brown Set)	004-1207K	2
				Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4515 INSTALLATION KIT



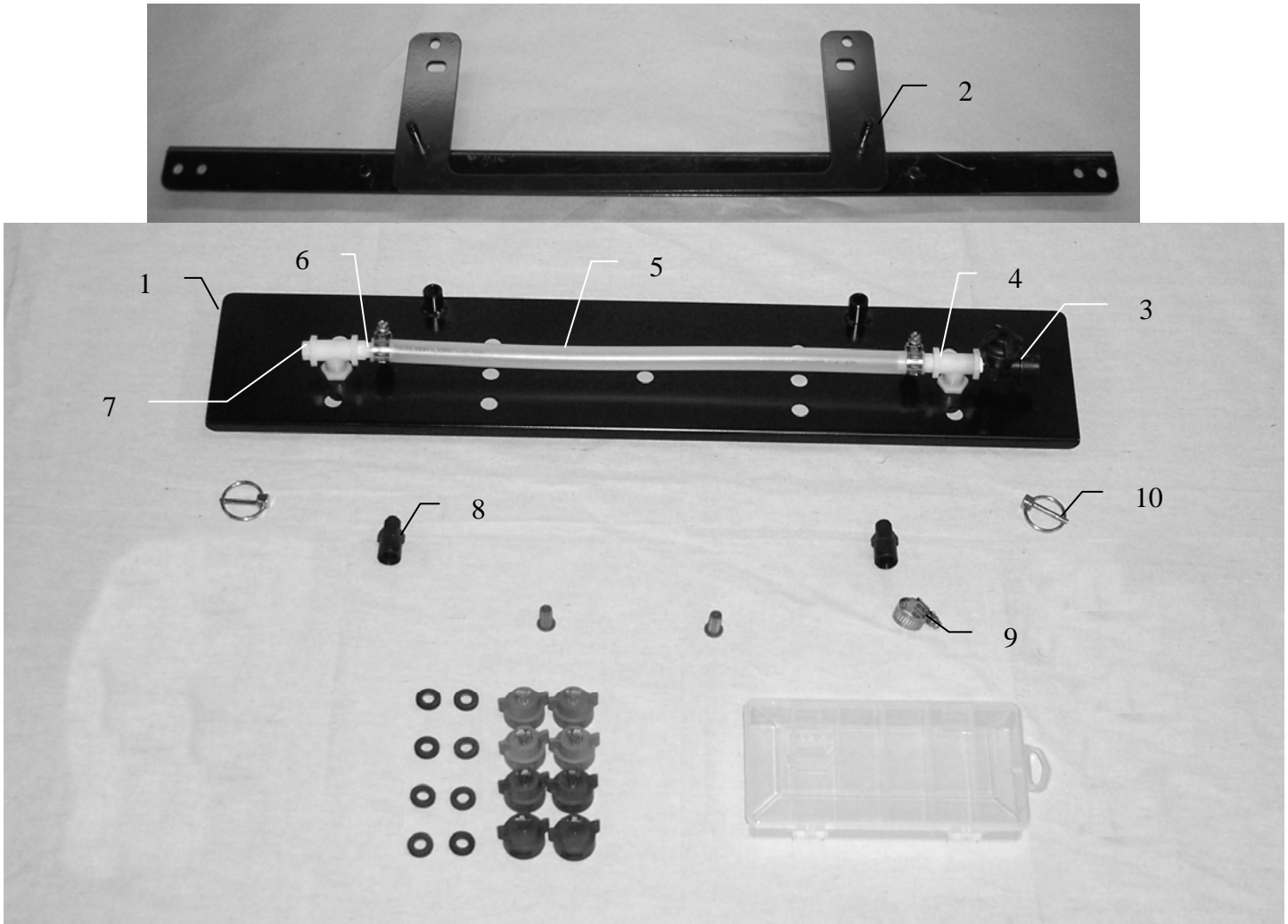
<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4435ES	1	Tip Kit (Complete)	030-9007	1
2	Check valve	004-1207V	1	Tip Kit Includes:		
3	Tee	003-TT14	2	Plastic Box	008-9000	1
4	Hose	002-9001	2	Orange cap (Orange Set)	004-1207J	2
5	Straight fitting	003-A1412	3	Tip (Orange Set)	004-TT11001VP	2
6	Plug	003-F14	1	Green cap (Green Set)	004-1207A	2
7	Lynch pin	008-4576	2	Tip (Green Set)	004-TT110015VP	2
8	Shield holder	001-4435K	2	Blue cap (Blue Set)	004-1207C	2
9	Nozzle body	004-4710	2	Tip (Blue Set)	004-TT11003VP	2
10	Hose clamp	003-9003	3	Brown Cap (Brown Set)	004-1207K	2
				Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

MODEL 4518 INSTALLATION KIT



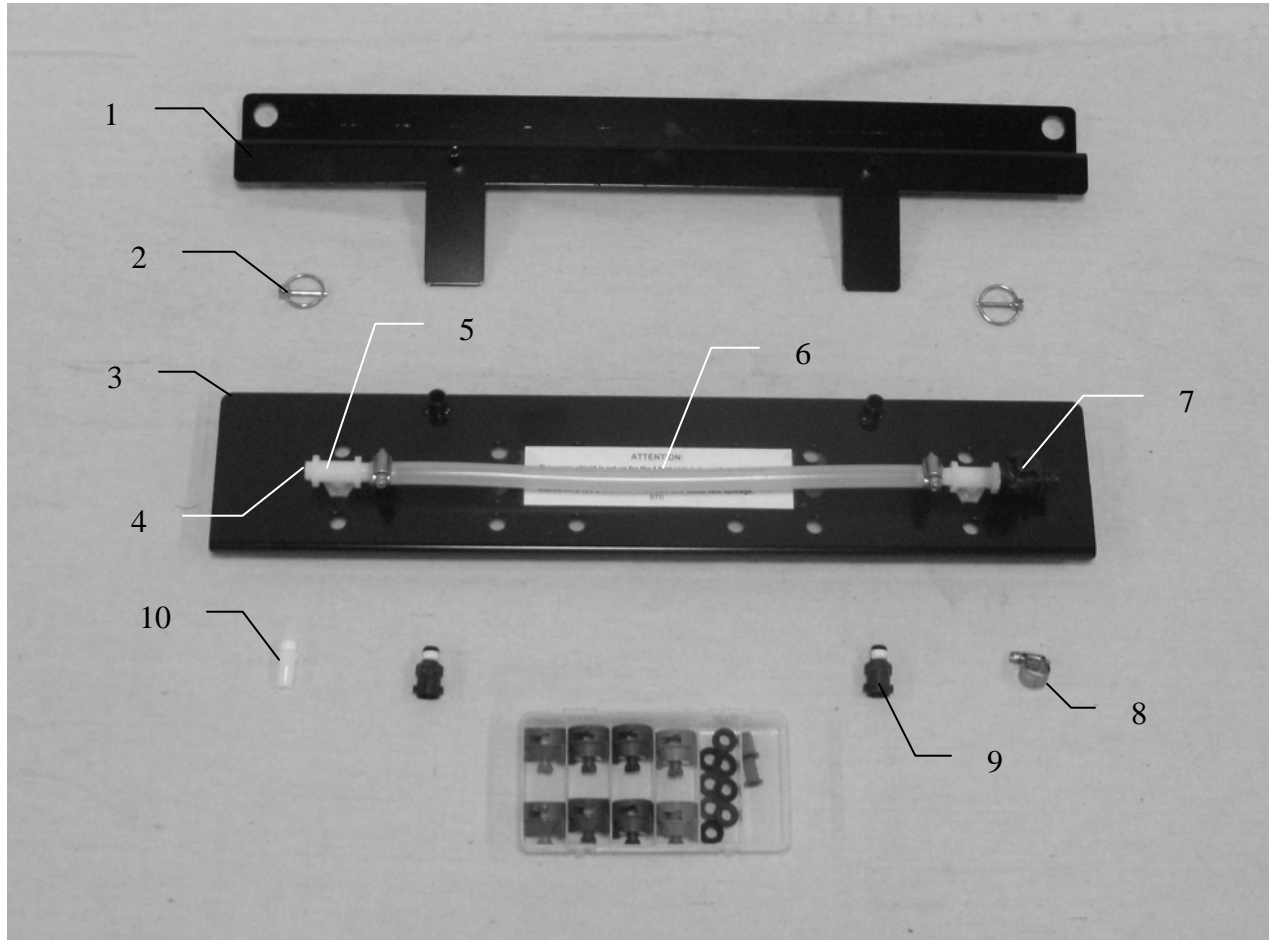
<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4435ES	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4435H	2	Tip Kit Includes:		
3	Check valve	004-1207V	1	Plastic Box	008-9000	1
4	Tee	003-TT14	2	Orange cap (Orange Set)	004-1207J	2
5	Hose	002-9001	2	Tip (Orange Set)	004-TT11001VP	2
6	Straight fitting	003-A1412	2	Green cap (Green Set)	004-1207A	2
7	Plug	003-F14	1	Tip (Green Set)	004-TT110015VP	2
8	Nozzle body	004-4710	2	Blue cap (Blue Set)	004-1207C	2
9	Hose clamp	003-9003	3	Tip (Blue Set)	004-TT11003VP	2
10	Lynch pin	008-4576	2	Brown Cap (Brown Set)	004-1207K	2
				Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

MODEL 4519 INSTALLATION KIT



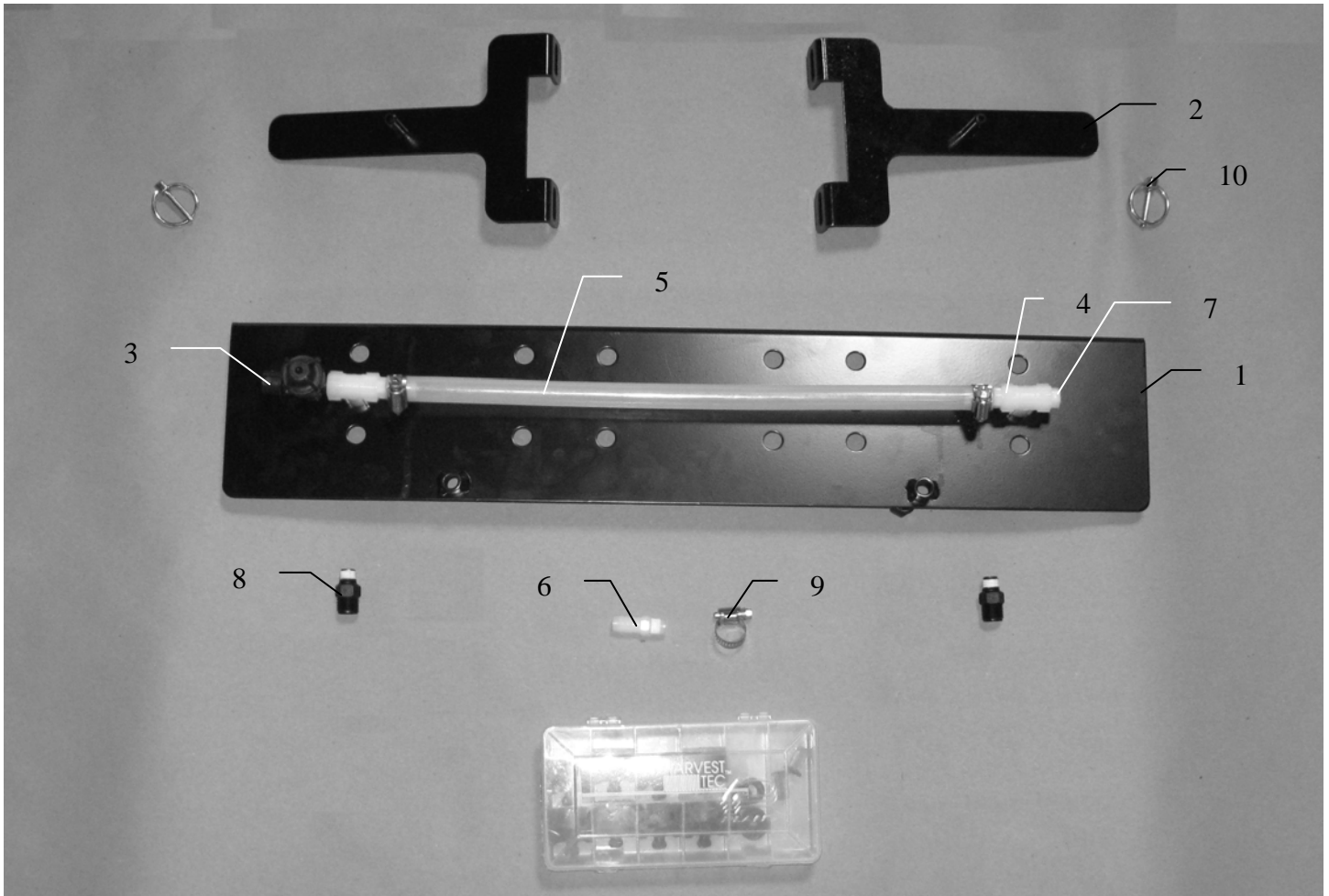
<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4435AS	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4435J	1	Tip Kit Includes:		
3	Check valve	004-1207V	1	Plastic Box	008-9000	1
4	Tee	003-TT14	2	Orange cap (Orange Set)	004-1207J	2
5	Hose	002-9001	2	Tip (Orange Set)	004-TT11001VP	2
6	Straight fitting	003-A1412	2	Green cap (Green Set)	004-1207A	2
7	Plug	003-F14	1	Tip (Green Set)	004-TT110015VP	2
8	Nozzle body	004-4710	2	Blue cap (Blue Set)	004-1207C	2
9	Hose clamp	003-9003	3	Tip (Blue Set)	004-TT11003VP	2
10	Lynch pin	008-4576	2	Brown Cap (Brown Set)	004-1207K	2
				Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4525



<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Shield holder	001-4435EK	1	Tip Kit (Complete)	030-9007	1
2	Lynch pin	008-4576	2	Tip Kit Includes:		
3	Spray shield	001-4435ES	1	Plastic Box	008-9000	1
4	Plug	003-F14	1	Orange cap (Orange Set)	004-1207J	2
5	Tee	003-TT14	2	Tip (Orange Set)	004-TT11001VP	2
6	Hose	002-9001	2	Green cap (Green Set)	004-1207A	2
7	Check valve	004-1207V	1	Tip (Green Set)	004-TT110015VP	2
8	Hose clamp	003-9003	3	Blue cap (Blue Set)	004-1207C	2
9	Nozzle body	004-4710	2	Tip (Blue Set)	004-TT11003VP	2
10	Straight fitting	003-A1412	2	Brown Cap (Brown Set)	004-1207K	2
				Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

HARVEST TEC MODEL 4527



<u>Ref</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>	<u>Description</u>	<u>Part #</u>	<u>Qty</u>
1	Spray shield	001-4435ES	1	Tip Kit (Complete)	030-9007	1
2	Shield holder	001-4435HPC	2	Tip Kit Includes:		
3	Check valve	004-1207V	1	Plastic Box	008-9000	1
4	Tee	003-TT14	2	Orange cap (Orange Set)	004-1207J	2
5	Hose	002-9001	2	Tip (Orange Set)	004-TT11001VP	2
6	Straight fitting	003-A1412	2	Green cap (Green Set)	004-1207A	2
7	Plug	003-F14	1	Tip (Green Set)	004-TT110015VP	2
8	Nozzle body	004-4710	2	Blue cap (Blue Set)	004-1207C	2
9	Hose clamp	003-9003	3	Tip (Blue Set)	004-TT11003VP	2
10	Lynch pin	008-4576	2	Brown Cap (Brown Set)	004-1207K	2
				Tip (Brown Set)	004-TT11005VP	2
				Washer	004-1207W	8
				Tip Strainer	004-1203-100	2

NOTES:

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. 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.

Revised 01/03/06

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