APPLI-PRO® *BASIC*

Application System

Operations and Instruction Manual

PIONEER®
BRAND · PRODUCTS

Revised November 2011

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INTRODUCTION

The **Appli-Pro® Basic Application System** was built for Pioneer Hi-Bred International, Inc. by a leading agricultural manufacturer. The Basic is an integrated system, designed and calibrated specifically for Pioneer® brand products. This unique system was developed to offer you the following advantages:

- Appli-Pro Basic 12G treats up to 200 tons with 12 gallons of water
- Appli-Pro Basic 25G treats up to 200 tons with 25 gallons of water
- Appli-Pro Basic 55G treats up to 440 tons with 55 gallons of water
- Simple design with reliable components
- The system has a strainer in the feed line and all nozzles have stainless steel insert tips
- Well suited for small operations
- Offered in two tank sizes: 25 or 55 gallon

TOOLS NEEDED FOR INSTALLATION AND SERVICE

- 7/16” Wrench and Sockets
- 1/2” Wrench and Sockets
- 9/16” Wrench and Sockets
- Hose Cutter
- Side Cutter
- Flat Screw Driver
- Drill and Bits

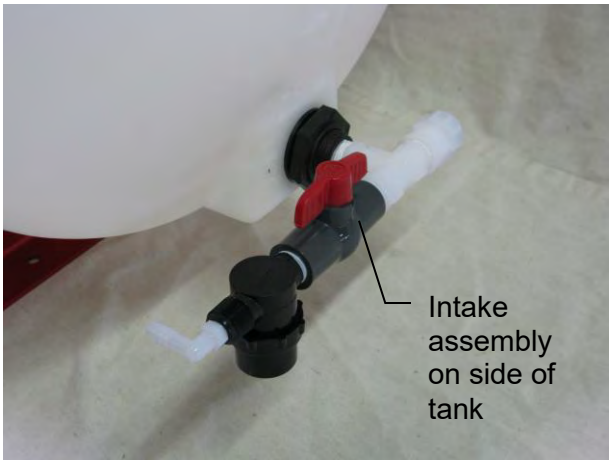
HARDWARE NEEDED FOR INSTALLATION AND NOT INCLUDED

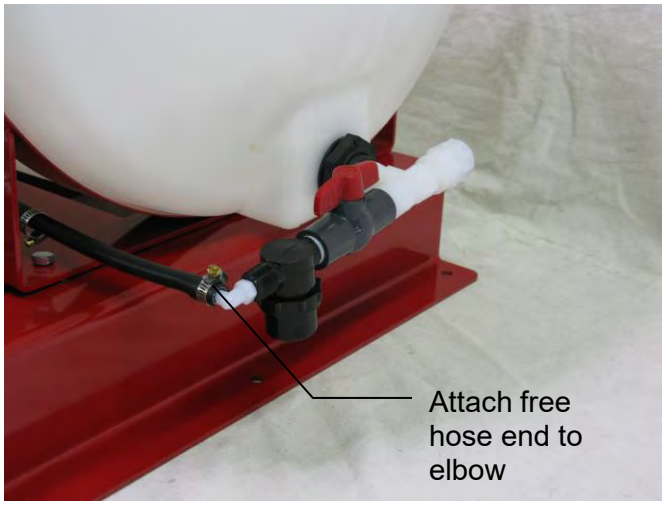
- Some hardware is included, but you may need additional hardware depending on the machine that you are mounting it to

ASSEMBLY OF APPLICATOR

Step 1

Thread the intake assembly into side tank fitting, and make sure filter is pointed towards the front of the tank as well.





Step 2

Locate free end of hose that is installed to the pump's intake. Attach it to the elbow (003-EL1438) next to filter on side of tank. Tighten hose clamps.

Step 3

The gauge will need to be mounted in a location that is easily viewable from the operator's station. Below are two options that the operator can use to mount the gauge that best suits their application system.

Option A – Pump mounted gauge

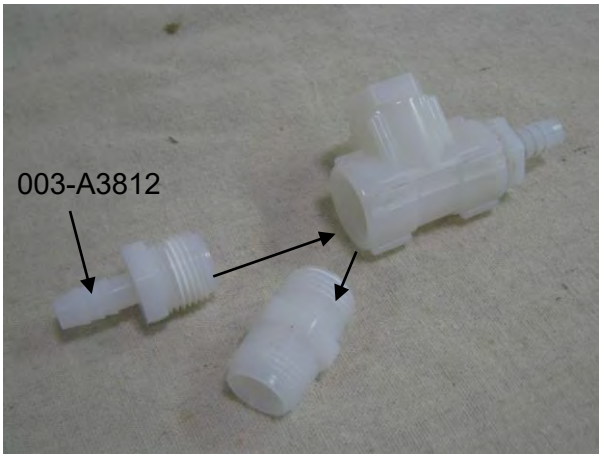
Attach gauge (002-2207P) to fitting (003-TT12) on discharge assembly and tighten. Gauge should be facing directly away from tank.

Option B – Remote mounted gauge

1. Remove gauge tee from pump assembly and remove fitting (003-M1212) from tee.

Step 1

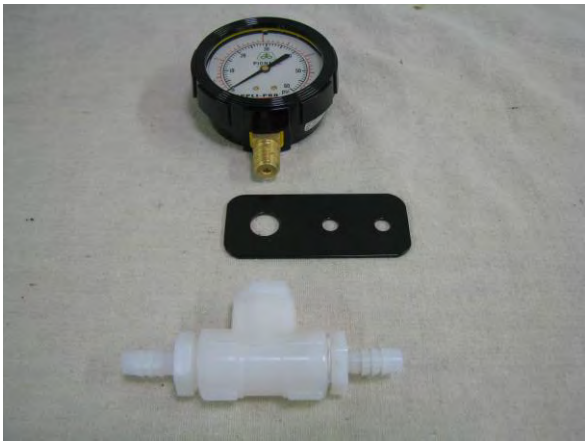
2. Thread straight fitting (003-A3812) into both the removed tee and the one still on the pump assembly.



Step 2

Step 2

3. Attach gauge holder (001-4717B) to the tee assembly by threading gauge into it. Additional ½“ flat washers may be needed as spacers to ensure a tight fit.



Step 3

Step 3

4. Drill holes and mount the gauge holder in a location that can be seen from the operator's station.

5. Cut a length of hose (002-9003AS) that will reach from the pump discharge to the remote mounted gauge. Attach one end to the pump discharge and the other to the intake barb fitting on the gauge assembly. Secure both ends with hose clamps.

Step 5


Step 5

MOUNTING TANK ASSEMBLY TO MACHINE OR TRACTOR

Note: modification or fabrication may be needed for your specific machine.

MOUNTING to the BALER, FORAGE HARVESTER, or other MACHINE

- Locate a large enough flat area in-which the tank can be bolted to the machine. If there is not enough space you will have to fabricate one. Please keep in mind the weight of the full tank.
- Position so you can see the pressure gauge and be able to operate both the mixing valve and shut off valve.

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MOUNTING to the TRACTOR

- This is highly recommended if you have the 55 gal system. You will need to fabricate some brackets to do this.

ASSEMBLY OF NOZZLE BAR

The Appli-Pro Basic system comes with the ability to use one, two, or three nozzles at a time. Set up your nozzle bar as follows-

1. Loosen the screw on ½" Bar Clamp (004-1209). **Do not fully remove screw.**
2. Slide top half of bar clamp off.
3. Hold bottom half of bar clamp to bottom side and center of nozzle bar (001-4707C).
4. Slide two-way nozzle body into square slot of bar clamp.

Step 1-2

Step 3-4

5. Slide square slot of top bar clamp into nozzle body and screw, then tighten screw.
6. Repeat for remaining nozzle bodies one on each side of center. Leave screw loose unit aligned.

Step 5-6

7. Measure the width of the area that you want to spray. Divide it by five. Place the two outside nozzles in from the outside edge by using this measurement.

Example: The width of your round baler pickup head is 60 inches. Divide this by 5 and you will get 12 inches. Place the two outside nozzles 12 inches from the outside edge of the pickup head. Cut hose to length between nozzle bodies and secure them to nozzle bodies with hose clamps.

Note: Hose can be left a little long for additional adjustment at a later date.

INSTALLATION OF NOZZLE BAR – BALER

Recommendation: use 1-2 nozzles, depending on swath width.
Determine a location to mount the nozzle pipe on the front hood and above the pickup head of the baler. Make sure not to interfere with any moving pieces of the baler. **Note:** Additional modification and fabrication maybe needed for your specific machine.

The nozzle pipe can be mounted vertically or horizontally depending on your baler. Make sure the pipe is 18" above the hay as it would be entering into the baler. This will allow for a proper spray pattern.

Connect one end of hose to pump discharge or remote mounted gauge assembly. Connect other end to first tee fitting on nozzle bar. Secure both ends with hose clamps.

INSTALLATION OF NOZZLE BAR – LOADING WAGONS

Recommendation: use 1-3 nozzles, depending on swath/pick up width.
Determine a location to mount the nozzle pipe over the pick up/feed intake. Make sure not to interfere with any moving pieces of the machine. **Note:** Modification or fabrication maybe needed for your specific machine.

The nozzle pipe can be mounted vertically or horizontally depending on your machine. Make sure the pipe is ~50 cm above the crop as it would be entering into the machine. This will allow for a proper spray pattern.
Connect one end of hose to pump discharge or remote mounted gauge assembly. Connect other end to first tee fitting on nozzle bar. Secure both ends with hose clamps.

INSTALLATION OF NOZZLE BAR – CHOPPER

Recommendation: use 1 nozzle.
Determine a location to mount the nozzle pipe directly into the blowing or suction system.

INSTALLATION OF THE CONTROL BOX

LOCATION of CONTROL BOX

Locate the control where it can be easily reached from the tractor's seat.

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. CONNECTION OF THE GROUND-LEAD TO A HOT TERMINAL ON THE TRACTOR WILL TRIP THE CIRCUIT BREAKER.** Be sure to use a voltmeter to verify that you do have 12 volts running to the box.

Note: For tractors with 24v starters (most John Deere 3020 and 4020 diesels,) 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.

INSTALLATION OF THE CABLES

Attach one end of wire harness (006-4575AS) to the pump. Connect other end to the control box.

OPERATION

The Appli-Pro Basic applicator is very simple to operate. After installing the applicator, fill the tank with 5 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 inoculant will save you from wasting inoculant and making a mess if leaks are found. When you are comfortable with the operation of the controls you can set the applicator to the amount of inoculant 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 FOR SMALL SQUARE BALERS

There are two steps that you need to know when calibrating your applicator: determining your ton/hour and using the correct tip(s) and PSI.

Step 1

Bale for three minutes and count the number of bales made in those three minutes. Weigh several bales to determine the average weight. Using the conventional bale rate chart below, determine the tons you are baling per hour.

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

Example: You baled 17 bales in three minutes. After weighing some of the bales you found the average bale weight to be 55 lbs. Using the chart above, cross reference 17 bales and 55lbs and you will find the rate to be 9.3 ton/hour.

Step 2

Look in the chart below for your determined ton/hour. The left column will tell you how many and of what size tip to use, and the top row will tell you what PSI to run depending on the tip.

Treatable Tons Per Hour at 64 OZ per Ton (1/2 gal per Ton)

Qty - Tip Size	15 PSI	20 PSI	25 PSI	30 PSI
1 - XR11001VS	7.5	8.4	9.4	10.3
2 - XR11001VS	15.0	16.9	18.8	20.6
3 - XR11001VS	22.5	25.3	28.1	30.9
1 - XR11002VS	15.0	16.9	18.8	20.6
2 - XR11002VS	30.0	33.8	37.5	41.3
3 - XR11002VS	45.0	50.6	56.3	61.9
1 - XR11005VS	29.1	32.8	36.6	40.3

25 Gallons Treat 50 Ton 55 Gallons Treat 110 Ton

Additional rate charts found on page 15

Example: You are baling at 9.3 ton/hour. According to the 64oz per ton rate, you would use one XR11001VS tip at 25 PSI.

CALIBRATION FOR ROUND AND LARGE SQUARE BALERS

There are two steps that you need to know when calibrating your applicator: determining your ton/hour and using the correct tip(s) and PSI.

Step 1

Make three bales and record average time it takes to make a bale. Estimate the weight of the bale and use the chart below to determine your ton/hour.

ROUND BALE RATE CHART (TONS PER HOUR)

AVERAGE TIME TO MAKE A BALE	WEIGHT PER BALE						
	600#	800#	1000#	1200#	1400#	1600#	1800#
1 Min.	18	24	30	36	42	48	54
1.5 Min.	12	16	20	24	28	32	36
2 Min.	9	12	14	18	21	24	27
2.5 Min.	7	10	12	14	17	19	22
3 Min.	6	8	10	12	14	16	18
4 Min.	5	6	8	9	10	12	14
5 Min.	4	5	6	7	8	9	11
6 Min	3	4	5	6	7	8	9
8 Min.	3	3	4	5	5	6	7
10 Min.	2	3	3	4	4	5	6

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 1200lb. (Remember if the hay is dry it will weigh less and if the hay is wet it will weigh more.) Using the chart above, cross-reference 2 minutes with 1200lb. and you will come up with 18 ton per hour.

Step 2

Look in the chart below for your determined ton/hour. The left column will tell you how many and of what size tip to use, and the top row will tell you what PSI to run depending on the tip.

Treatable Tons Per Hour at 32 OZ per Ton (1/4 gal per Ton)

Qty - Tip Size	15 PSI	20 PSI	25 PSI	30 PSI
1 - XR11001VS	15.0	16.9	18.8	20.6
2 - XR11001VS	30.0	33.8	37.5	41.3
3 - XR11001VS	45.0	50.6	56.3	61.9
1 - XR11002VS	30.0	33.8	37.5	41.3
2 - XR11002VS	60.0	67.5	75.0	82.5
3 - XR11002VS	90.0	101.3	112.5	123.8
1 - XR11005VS	58.1	65.6	73.1	80.6

25 Gallons Treat 100 Ton 55 Gallons Treat 220 Ton

Additional rate charts found on page 15

Example: You are baling at 18 ton/hour. According to the 32oz per ton rate, you would use one XR11001VS tip at 25 PSI.

CALIBRATION FOR FORAGE HARVESTERS, BAGGERS, AND SILO BLOWERS

There are two steps that you need to know when calibrating your applicator: determining your ton/hour and using the correct tip(s) and PSI.

Step 1

Time how long it takes to process a load. Determine how many tons are in a load by weighing it and use the chart below to determine the tons you are processing per hour.

Load size	Minutes to Process a Load																	
In Tons	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
4	80	60	48	40	34	32	26	24	22	20	18	17	16	15	14	13	13	12
6	120	90	72	60	51	48	39	36	33	30	27	26	24	23	21	20	19	18
8	160	120	96	80	68	64	52	48	44	40	36	34	32	30	28	26	25	24
10	200	150	120	100	85	80	65	60	55	50	45	43	40	38	35	33	32	30
12	240	180	144	120	102	96	78	72	66	60	54	51	48	45	42	40	38	36
14	280	210	168	140	119	112	91	84	77	70	63	60	56	53	49	46	44	42
16	320	240	192	160	136	128	104	96	88	80	72	68	64	60	56	53	50	48
18	360	270	216	180	153	144	117	108	99	90	81	77	72	68	63	59	57	54
20	400	300	240	200	170	160	130	120	110	100	90	85	80	75	70	66	63	60

Chart based on continuous feeding of machine

Example: It takes you 10 minutes to fill a wagon. You weigh the wagon and determine you are making a 10 ton load. Looking at the rate chart above, you see that you are chopping at 60 ton/hour.

Step 2

Look in the chart below for your determined ton/hour. The left column will tell you how many and of what size tip to use, and the top row will tell you what PSI to run depending on the tip.

Treatable Tons Per Hour at 16 OZ per Ton (1/8 gal per Ton)

Qty - Tip Size	15 PSI	20 PSI	25 PSI	30 PSI
1 - XR11001VS	30.0	33.8	37.5	41.3
2 - XR11001VS	60.0	67.5	75.0	82.5
3 - XR11001VS	90.0	101.3	112.5	123.8
1 - XR11002VS	60.0	67.5	75.0	82.5
2 - XR11002VS	120.0	135.0	150.0	165.0
3 - XR11002VS	180.0	202.5	225.0	247.5
1 - XR11005VS	116.3	131.3	146.3	161.3

25 Gallons Treat 200 Ton 55 Gallons Treat 440 Ton

Additional rate charts found on page 15

Example: You are chopping at 60 ton/hour. According to the 16oz per ton rate, you would use two XR11001VS tips at 15 PSI.

ADDITIONAL RATE CHARTS

Treatable Tons Per Hour at 16 OZ per Ton. (1/8 gal per Ton)

Qty - Tip Size	15 PSI	20 PSI	25 PSI	30 PSI
1 - XR11001VS	30.0	33.8	37.5	41.3
2 - XR11001VS	60.0	67.5	75.0	82.5
3 - XR11001VS	90.0	101.3	112.5	123.8
1 - XR11002VS	60.0	67.5	75.0	82.5
2 - XR11002VS	120.0	135.0	150.0	165.0
3 - XR11002VS	180.0	202.5	225.0	247.5
1 - XR11005VS	116.3	131.3	146.3	161.3

25 Gallons Treat 200 Ton 55 Gallons Treat 440 Ton

Treatable Tons Per Hour at 32 OZ per Ton. (1/4 gal per Ton)

Qty - Tip Size	15 PSI	20 PSI	25 PSI	30 PSI
1 - XR11001VS	15.0	16.9	18.8	20.6
2 - XR11001VS	30.0	33.8	37.5	41.3
3 - XR11001VS	45.0	50.6	56.3	61.9
1 - XR11002VS	30.0	33.8	37.5	41.3
2 - XR11002VS	60.0	67.5	75.0	82.5
3 - XR11002VS	90.0	101.3	112.5	123.8
1 - XR11005VS	58.1	65.6	73.1	80.6

25 Gallons Treat 100 Ton 55 Gallons Treat 220 Ton

Treatable Tons Per Hour at 64 OZ per Ton. (1/2 gal per Ton)

Qty - Tip Size	15 PSI	20 PSI	25 PSI	30 PSI
1 - XR11001VS	7.5	8.4	9.4	10.3
2 - XR11001VS	15.0	16.9	18.8	20.6
3 - XR11001VS	22.5	25.3	28.1	30.9
1 - XR11002VS	15.0	16.9	18.8	20.6
2 - XR11002VS	30.0	33.8	37.5	41.3
3 - XR11002VS	45.0	50.6	56.3	61.9
1 - XR11005VS	29.1	32.8	36.6	40.3

25 Gallons Treat 50 Ton 55 Gallons Treat 110 Ton

CALIBRATION REMINDERS

*Watch the pressure gauge, as the setting will vary with tractor's electrical output, temperature and other factors.

*Check your application rate by measuring product used against actual tons processed.

REMEMBER, ONLY YOU CAN CONTROL HOW MUCH PRODUCT IS APPLIED AND THAT WILL DETERMINE IF YOUR CROP WILL KEEP!!!

ROUTINE SERVICE AND MAINTENANCE

1. **Clean the tip check and main strainer** every 10 hours of operation or more frequently if required.
2. Although the pump can run dry, extended operation of a dry pump will increase wear. Watch the inoculant level in the tank.
3. Cover the electronic cab control box on open station tractors if left outside.
4. Clean tank cap breather every 20 hrs or more frequently if required.

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. Drain all lines on the outlet side.
4. Never use oils or alcohol based anti-freeze in the system.

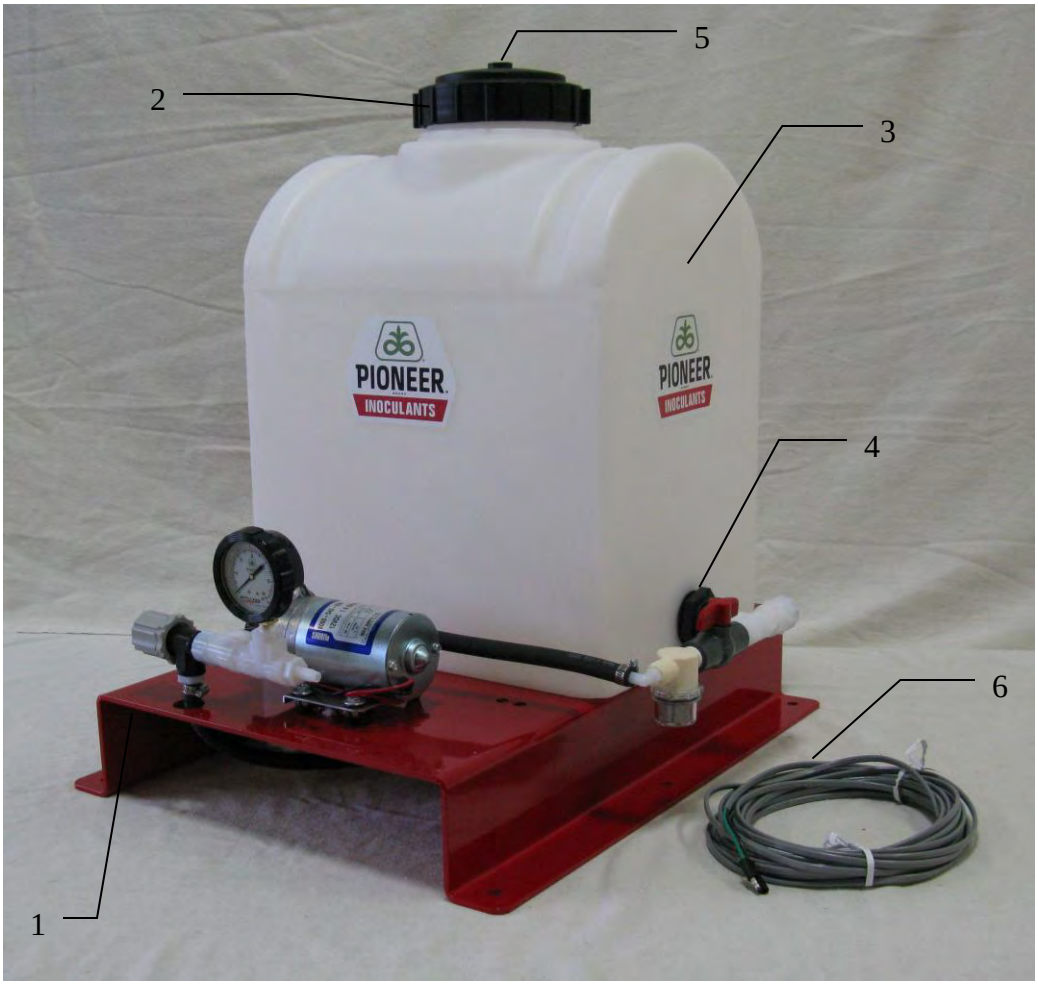
For spring start-up, or anytime the pump is frozen, turn off the power immediately to avoid burning the motor out.

TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Pump will not run.	1. Circuit breaker tripped on electronic unit. 2. Pump locked up. 3. Damaged wire.	1. Check for short, low voltage, and reset breaker. 2. Clean or rebuild pump if motor is OK. 3. Repair damaged wire.
Pump runs but will not prime.	1. Air leak in intake. 2. Clogged intake. 3. Restricted outlet. 4. Check valve on outlet stuck closed.	1. Tighten fittings on intake side. 2. Clean. 3. Check and clean tips. 4. Clean or repair check valve.
Pump does not develop enough output.	1. Air leaks or clogs on inlet side. 2. Electronic box out of adjustment. 3. Pump worn or dirty. 4. Low supply voltage. (Pump requires 12v minimum) 5. Bad gauge. 6. Mixing valve open	1. Tighten or clean filter bowl assembly. 2. Refer to box adjustment page. 3. Rebuild pump. 4. Check voltage at connection with voltmeter. 5. Gauge should read less than 10 PSI when not in use. Also tips should lose spray pattern below 10 PSI. Check accuracy. 6. Tighten down knob
Pump output varies.	1. Clogged or restricted inlet. 2. Worn pump parts.	1. Clean 2. Rebuild pump.

APPLI-PRO BASIC PARTS BREAKDOWN

12 Gallon Base Unit



Ref	Description	Part #	Quantity
1	Base	001-4707B	1
2	Tank Lid 6” with Breather	005-9022C	1
3	Tank 12 Gallon	005-9211	1
4	Tank Fitting ¾”	005-9100	2
5	Tank Breather	005-9022B3	1
6	Wire Harness	006-4575AS	1

APPLI-PRO BASIC PARTS BREAKDOWN

25 Gallon Base Unit

Ref	Description	Part #	Quantity
1	Base	001-4707B	1
2	Saddle Strap	001-4707A	2
3	Tank Strap 1 ½ x 34”	001-4402	2
4	Tank Lid 6” with Breather	005-9022C	1
5	Tank 23” x 25 Gallon	005-9022	1
6	Tank Fitting ¾”	005-9100	2
7	Tank Breather	005-9022B3	1
8	Wire Harness	006-4575AS	1

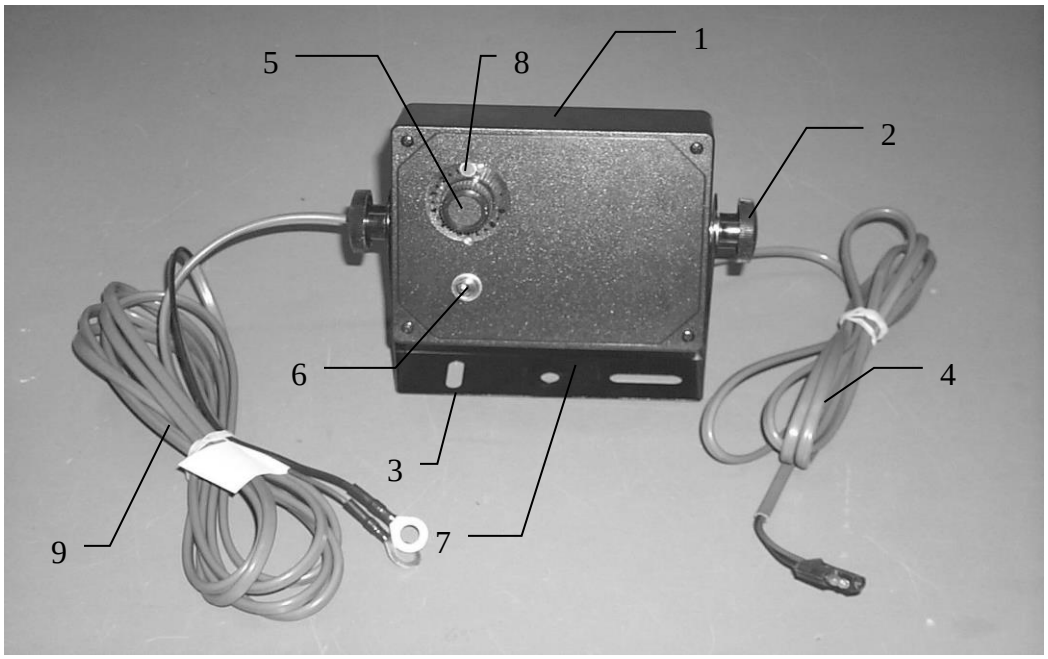
APPLI-PRO BASIC PARTS BREAKDOWN

55 Gallon Base Unit

Ref	Description	Part #	Quantity
1	Base	001-4707B	1
2	Saddle Strap	001-4707A	2
3	Tank Strap 1 ½ x 34”	001-4402	2
4	Tank Lid 6” with Breather	005-9022C	1
5	Tank 23” x 55 Gallon	005-9203	1
6	Tank Fitting ¾”	005-9100	2
7	Tank Breather	005-9022B3	1
8	Wire Harness	006-4575AS	1

APPLI-PRO BASIC PARTS BREAKDOWN

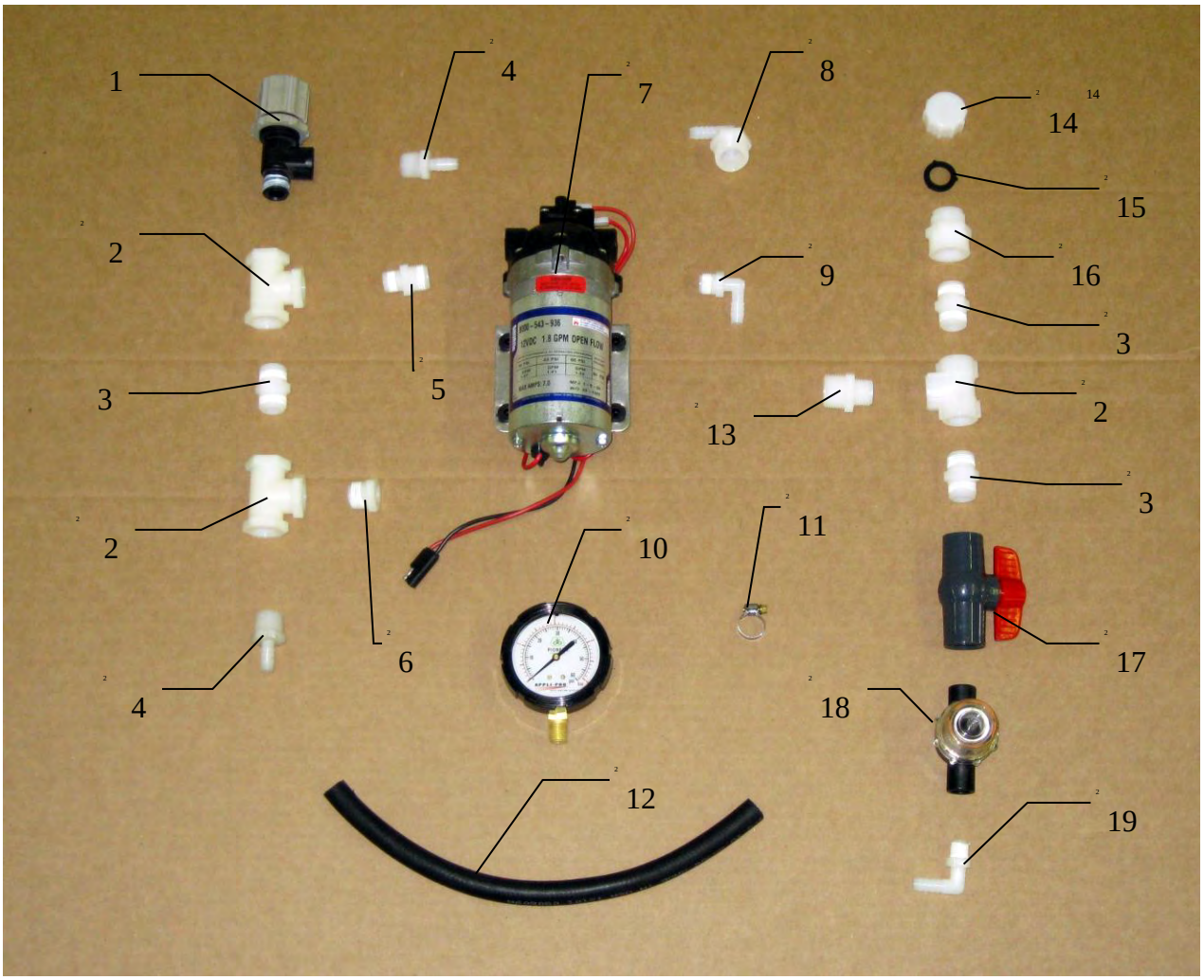
Control Box



Ref	Description	Part #	Quantity
1	Control Box complete	030-0457	1
2	Control Box knob	008-0923	2
3	U-Bracket	001-2012E	1
4	Pump lead	006-4583	1
5	Speed Control knob	006-2022A	1
6	Switch	006-2196	1
7	Crop Eye plug	006-7500Z	1
8	Speed Control (inside)	006-2022	1
9	Power Lead	006-4580C	1
NP	Suction Cup Mount	001-2012SCM	1

APPLI-PRO BASIC PARTS BREAKDOWN

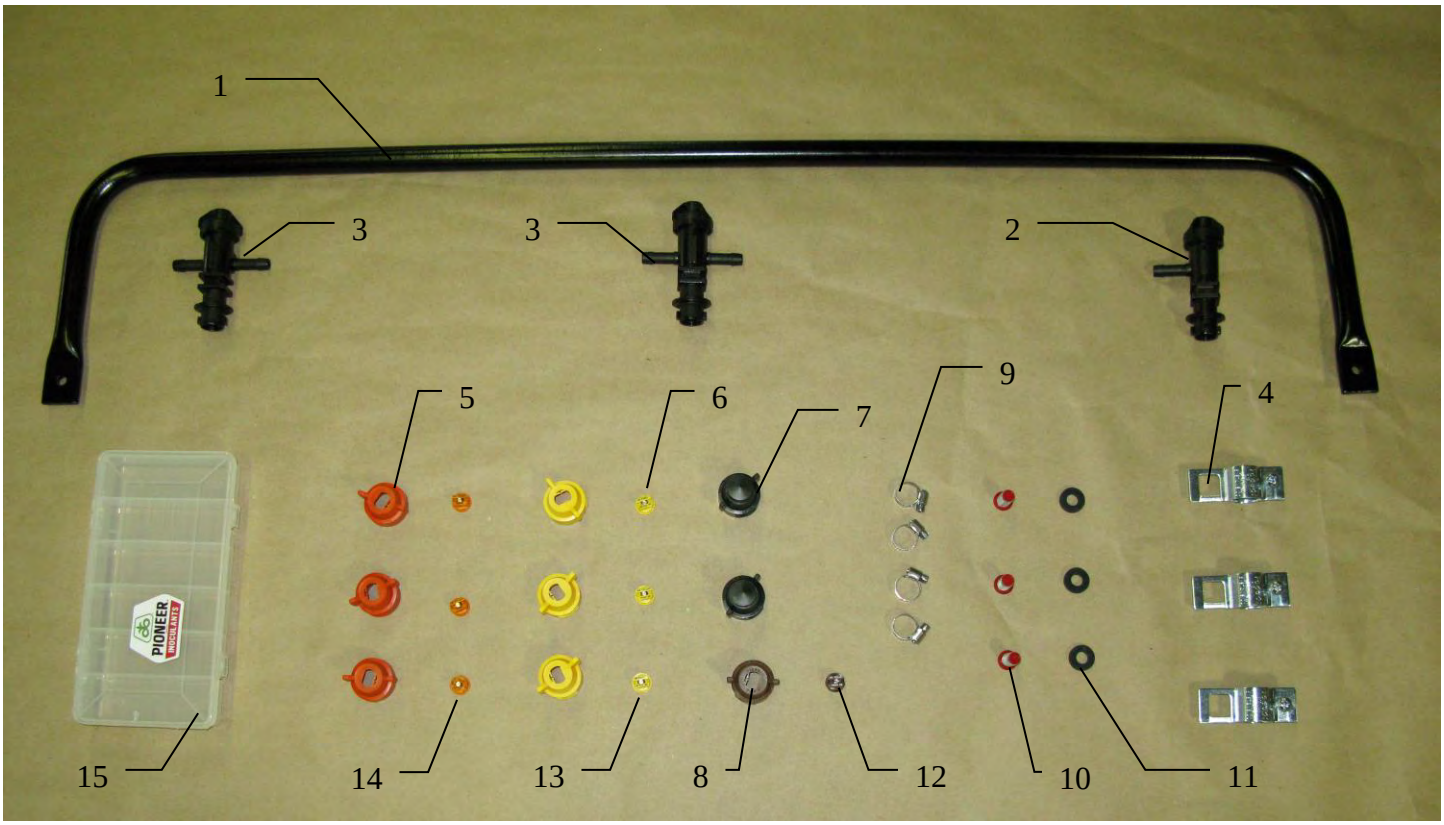
Parts



Ref	Description	Part#	Qty	Ref	Description	Part#	Qty
1	Mixing Valve	002-4715	1	11	Hose Clamp- Mini	003-9002	7
2	FPT Tee -½	003-TT12	3	12	Rubber Hose- 3/8”	002-9003AS	30ft
3	Nipple -½	003-M1212	3	13	Nipple- ¾-½ reducing	003-M3412	1
4	Fitting	003-A1238	4	14	Drain Cap	003-DC12	1
5	Nipple- 3/8-1/2 reducing	003-M1238	1	15	Drain Cap Washer	003-DCW12	1
6	Reducing bushing-1/2-1/4	003-RB1214	1	16	Drain Apt.	003-DCA12	1
7	Pump	007-4120AS	1	17	Ball Valve- ½”	002-2212	1
8	Elbow- ¾ MPT x 3/8 HB	003-EL3438	1	18	Bowl Filter	002-4313	1
9	Fitting- 3/8 MPT x 3/8 HB	003-EL3838	1	19	Elbow- ¼ MPTx3/8 HB	003-EL1438	1
10	Gauge- 2 ¼”	002-2207P	1	NP	Gauge Holder	001-4717B	1

APPLI-PRO BASIC PARTS BREAKDOWN

Nozzle Bar Parts



Ref	Description	Part#	Qty	Ref	Description	Part#	Qty
1	Nozzle Pipe	001-4707C	1	9	Hose Clamp- Mini	003-9002	5
2	3/8” Elbow Nozzle Body	004-1209VA	1	10	Tip Check-Valve Only	004-1207-50	3
3	3/8” 2-way Nozzle Body	004-1209VB	2	11	Quik Jet Washer	004-1207W	7
4	Bar Clamp ½”	004-1209	3	12	Tip	004-XR11005VS	1
5	Cap/Gasket Orange	004-1207J	3	13	Tip	004-XR11002VS	3
6	Cap/Gasket Yellow	004-1207E	3	14	Tip	004-XR11001VS	3
7	Shut-Off Cap	004-1207F	2	15	Box	008-9000	1
8	Cap/Gasket Brown	004-1207K	1				

APPLI-PRO BASIC PARTS BREAKDOWN

Hardware

Quantity	Item	Where used
4	¼ x 1 ¼” Bolt	Pump mount
4	¼” Washer	Pump mount
4	¼” Hex nut	Pump mount
4	5/16 x 4” Bolt	Tank straps
2	5/16 x 1 ½” Bolt	Spray bar mount
4	5/16” Washer	Spray bar mount
2	5/16” Lock washer	Spray bar mount
10	5/16” Hex nut	Tank straps, spray bar
4	3/8 x 1” Bolt	Tank saddle holder
6	3/8 x 1 ¼” Bolt	Mounting hardware
6	3/8” Fender washer	Mounting hardware
10	3/8” Lock washer	Tank saddle, mounting hardware
10	3/8” Hex nut	Tank saddle, mounting hardware
10	12” Cable tie	Hose and wires

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