



PTO DRIVEN SPRAYER

SET-UP & OPERATION

For Warranty, Safety, Maintenance, Part Breakdowns, and Recipes plug in the
USB Flash Drive that was included with your A1 Mist Sprayer

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A1 Mist Sprayers
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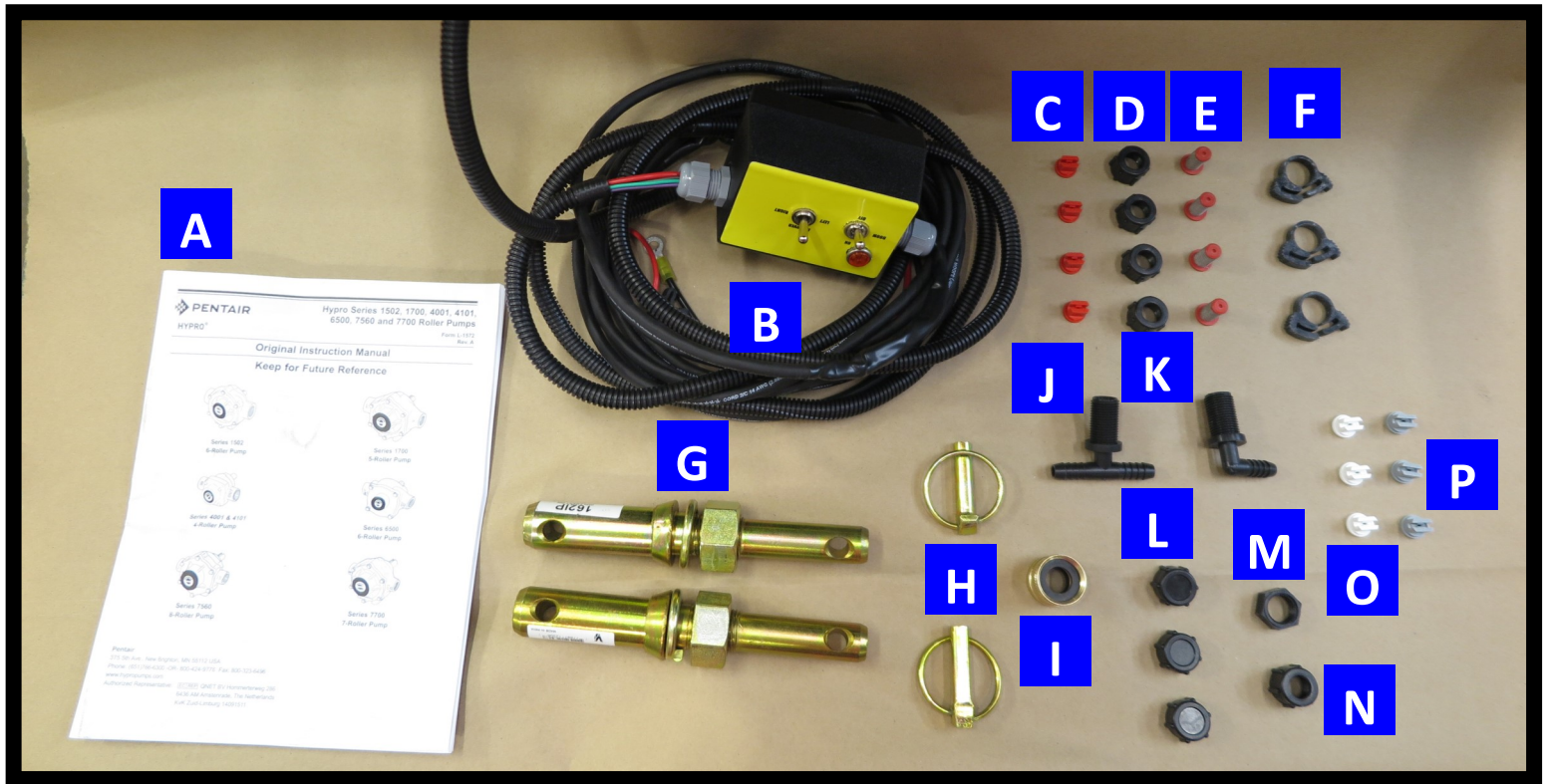
INSPECTION CHECK LIST FOR DISTRIBUTOR, DEALER, and/or OPERATOR

This inspection checklist must be made on all new A1 mist sprayers prior to any operation. Please check each item listed. Some adjustment may be necessary before application.

- Check PTO shaft and shield to make sure it turns freely and is in good operating order.
- Check and make sure all guards and shields are in their proper place and secure.
- Check all mist sprayer belts for cracks and alignments.
- Check all hydraulic connections for any loose connections or missing parts.
- Check all nuts and bolts and tighten if necessary.
- Check volute and blower wheel for any loose connections or foreign material.
- Check all sheaves, sprockets, and setscrews for proper tightness and for loose or missing parts.
- Check hydraulic cylinder, hydraulic cylinder hoses, and electric rotary motor (if applicable) for proper alignment or loose connections.
- Check your poly tank for foreign material.
- Check your gasoline engine to make sure it is bolted down and secured in proper working order.
(See gasoline operator's manual)
- Check PTO shaft for right length! If the PTO shaft has to be shortened, make sure to cut both ends the same length.
- Check blower fan for proper timing.

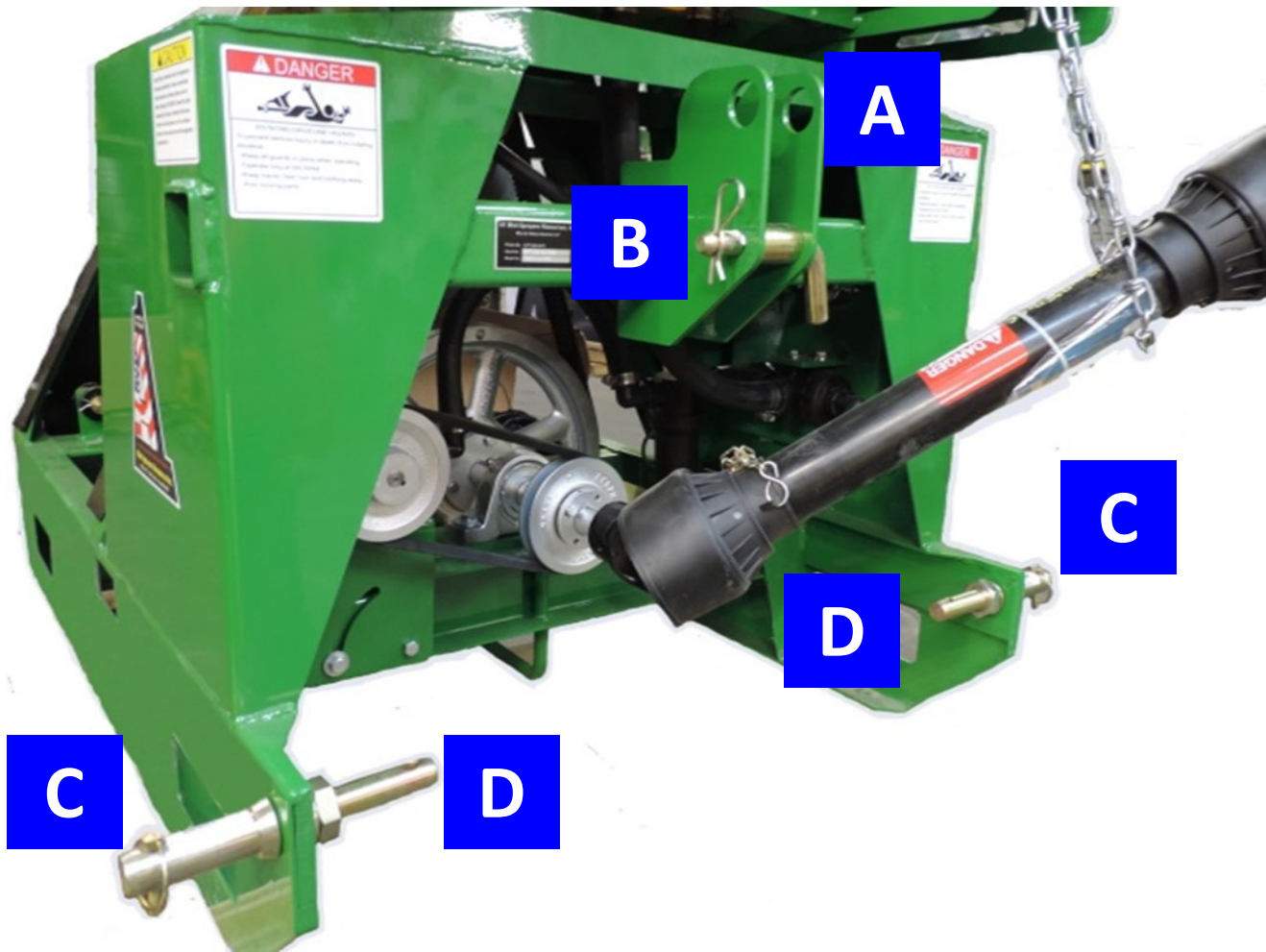
A1 MIST SPRAYERS are engineered and designed for easy serviceability and maintenance. During the break-in period, always check the PTO, nuts, bolts, belts, and all shields for looseness and proper alignment. Some additional adjustments could be necessary during the break-in period. All nozzles, belts and strainer screens should be checked and cleaned daily.

WHAT YOU GET WITH YOUR 3PT PTO DRIVEN SPRAYER



- A.1-HYPRO PUMP INSTRUCTION MANUAL**
- B.WIRING HARNESS (ALREADY INSTALLED)**
- C.4-RED 8004 TIPS (ALREADY INSTALLED)**
- D.4-NOZZLE RETAINERS (ALREADY INSTALLED)**
- E.4-RED NOZZLE FILTERS (ALREADY INSTALLED)**
- F.3-HOSE CLAMPS**
- G.2-HITCH PINS**
- H.2-LYNCH PINS**
- I. 1-BACK FLUSH GARDEN HOSE CONNECTOR**
- J.1-T NOZZLE BODY**
- K.1-ELBOW NOZZLE BODY**
- L.3-PLUG CAPS**
- M.NOZZLE BODY RETAINER**
- N.EXTRA NOZZLE RETAINER**
- O.3-WHITE 8008 TIPS**
- P.3-GREY 8006 TIPS**

SET-UP INSTRUCTIONS

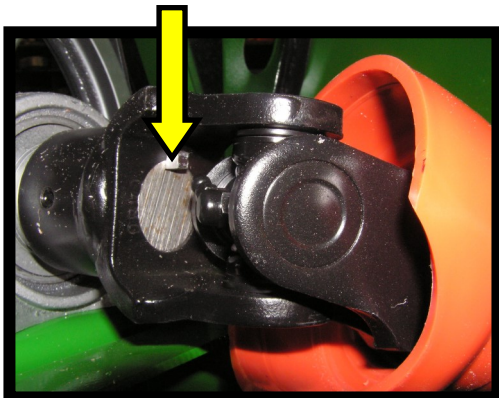


1. Install Hitch Pins (Above)

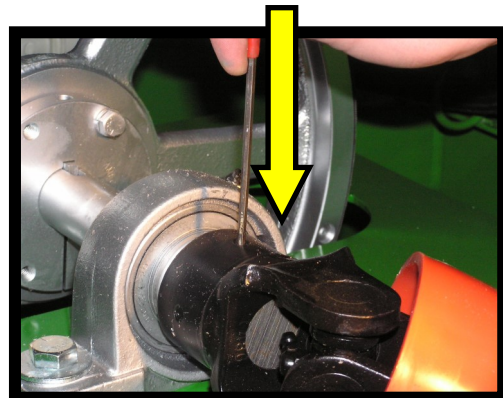
- a. Category I Quick Hitch—Attach to inside of frame—**B + D**
- b. Category II Quick Hitch—Attach to outside of frame—**B + C**
- c. Category III Narrow Quick Hitch—Attach to the outside of frame and moving the center link pin to the top holes—**A + C**

2. Tighten Set Screws (Below)

a. Make Sure Flush



b. Tighten Top



SET-UP INSTRUCTIONS

(CONTINUED)

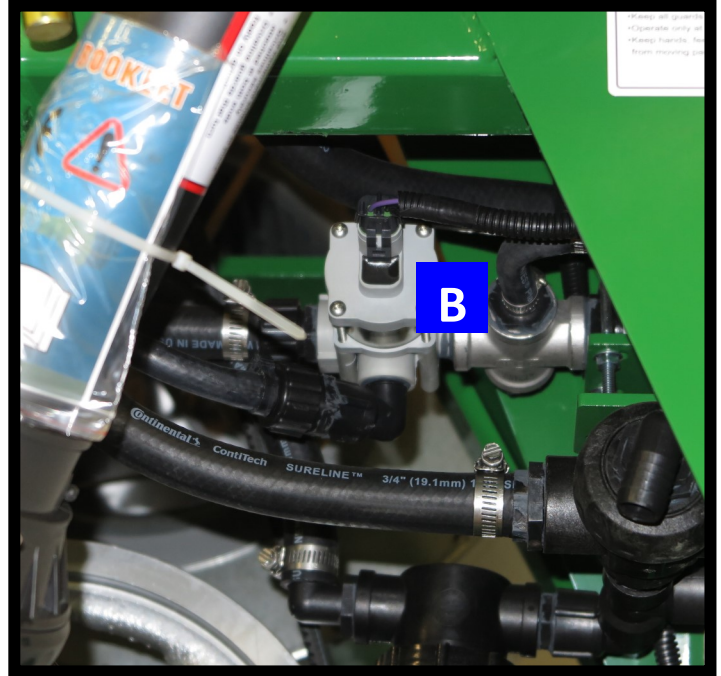
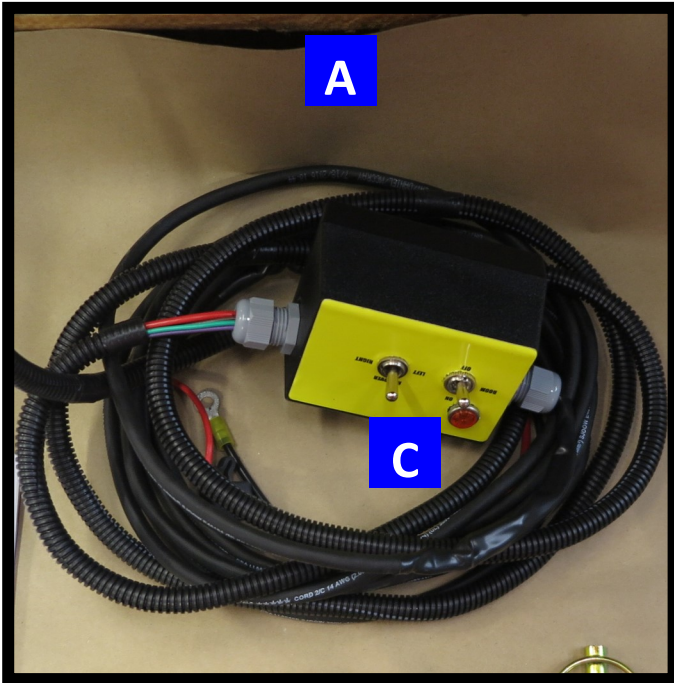


3. Hook PTO to Tractor (Above)

- a. Install life pins that are supplied. (These are a double pin Cat I faces to the inside and Cat II face out.) Place lock washer and nut on the thread and tighten.
- b. Cat I, II, III Narrow (**you will need spacers for Category III Narrow quick hitch**) will hook up to the sprayer at this point.
- c. Remove center pin and spacers.
- d. If connecting to tractor arms, slide arms over the right lift pin (Cat I tractor will use the inside Cat I lift pin; Cat II tractor will use the outside Cat II pin). Use ring pins to secure in place.
- e. Pick the right size sleeve for your center arm and attach center arm to sprayer with center pin.
- e. Connect PTO to the tractor sling PTO on to tractor (**note: DO NOT ATTACH TO 1000 RPM PTO TRACTOR**) or 540 PTO until lock engages.
- f. Lift Sprayer with 3 point on tractor (ideal to run sprayer with PTO as level as possible).

SET-UP INSTRUCTIONS

(CONTINUED)



5. Check Wiring Harness (A)

- Run battery cable side of harness to battery. White to red, and black to black.
- Check plug end of harness (A) is connected to the solenoid (B) on sprayer. If not connect by pushing plug into receiver on solenoid until it clicks in place.
- Run toggle switch (C) up to cab of tractor and attach to an easily accessible area.
- Wrap excess harness and secure in location so it does not get caught up or ripped off.
- Check to see if solenoid clicks without turning on the sprayer or the tractor.

6. Attach 8" stroke cylinder and hoses to the stationary mounting bracket.

Operate the cylinder slowly to make sure chain linkage is in time. Timing may be changed by loosening bolt on chain bracket, raising chain off sprocket, and turning blower fan to the correct position. The blower fan should rotate 210 degrees on full stroke of 8" cylinder without coming in contact with the frame or damage may result.

7. Check Inside of the Tank for ANY Loose Material

8. Remove Red 8004 Tips, Red Nozzle Filters, and Nozzle Retainers (Below)



8004 Tip



Nozzle Filter



Nozzle Retainer

SET-UP INSTRUCTIONS

(CONTINUED)

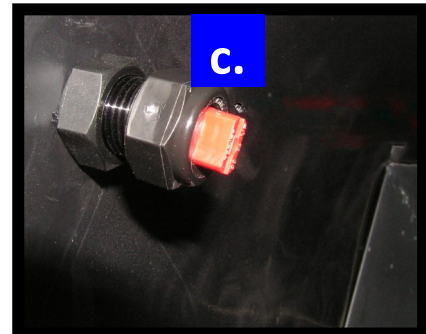
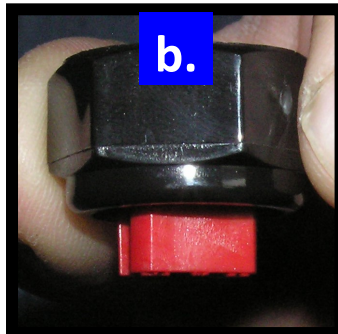
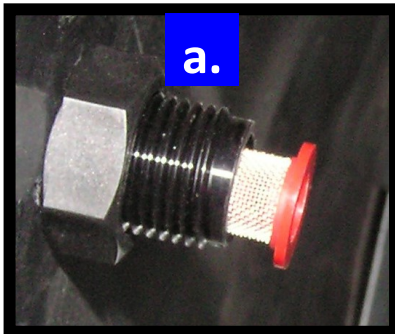
9. Flush Water Through the Lines

This ensures that there is no debris within the system.

- a. Fill tank approximately 1/2 full of water.
- b. Start tractor at low speed.
- c. Engage PTO, at an idle.
- d. Activate the solenoid.
- e. Allow water to flush through the system for at least 5 minutes.
- f. Shut down the entire system in reverse order.
 - i. Turn off solenoid.
 - ii. Shut off PTO, at an idle.
 - iii. Shut tractor down.

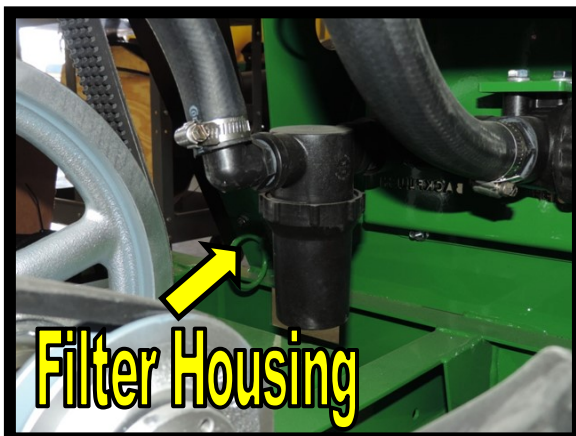
10. Reinstall the Spraying Tips. (Below)

- a. Insert nozzle screen.
- b. Insert tip into nozzle retainer.
- c. Place nozzle retainer with tip over the nozzle filter and screw on moderately tight.
- d. Repeat steps a-c for remaining tips.



11. Check and Clean the Filter (Below)

- a. Unscrew housing.
- b. Remove filter screen.
- c. Thoroughly clean the filter.
- d. Place filter back into the housing unit.
- e. Fasten housing back onto sprayer.



SET-UP INSTRUCTIONS

(CONTINUED)

12. Test Your Sprayer

After checking that everything is operational (Steps 1-11) we recommend testing your sprayer (with water only) to fully understand the spray patterns and distance of spray in different wind conditions. Try to pick a good sunny day so that you can adequately see the mist.

Spraying with a Mist Sprayer is an art, not a science!

- Fill tank full of water.
- Turn ball valve **(C)** handle to Pump position.
- Start tractor at a low speed.
- Engage the PTO at an idle.
- Bring sprayer up to operation RPM's to set pressure (540 RPM)
- Turn the solenoid on.
- Use pressure regulator valve **(B)** to adjust liquid pressure. You can see pressure on the pressure gauge **(A)**. Between 40-50psi is desired. (More screwed in the valve the higher the pressure).
- Once the desired pressure is reached, use the lock (knurl) nut on the pressure regulator to secure the T-handle (no moving).

(Label **(D)** is the Backflush system for hooking up to a garden hose.)



13. You Are Now Ready to Test your Sprayer!!! (SEE OPERATION SECTION)

14. Drain the Tank After Test Spray



OPERATION

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OPERATION INSTRUCTIONS

1. You Are Now Ready to Start the Application Process

- a. Add your active product to the tank
- b. Add additional water to fill the tank
- c. START SPRAYING!!

2. Give the Sprayer a Check-UP

After a few hours of spraying, we recommend checking all nuts, bolts, and set screws. This ensures that everything is working properly and that no future issues will arise. We also recommend a check-up after each application. It is also important to make sure everything is properly greased. The bearings and PTO could also use a check-up/extra shot of grease after each use.

3. Drain the Tank

If you are having any difficulties refer back to the Set-Up Section

OR

For any questions on spraying techniques, advice, or additional information or questions please do not hesitate to call A1 Mist Sprayers at our Main Office. We have people on hand specializing in every aspect of the spraying business that would love you help you with your new sprayer.

PROPER HOOK-UP & INSTALLATION

Proper PTO and Hitch installation is KEY

Ensure that PTO and sleeve are all properly connected and spinning smoothly before operation to prevent danger or sprayer damage.

Check to make sure that 3PT arms are also secured or sprayer will not work properly and bodily harm could occur.

NOTICE!!

An incorrectly located trailer hitch (drawbar) point may cause damage to the trailer tongue and/or power take-off shaft which may lead to personal injury.

When attaching an 8" stroke cylinder to a 3 point unit, make sure the air is out of the hoses.

OPERATION

FILLING THE SPRAYER

Determine the chemical concentration required according to chemical label directions. Generally these directions give a range of low to high concentrations for a specific use. **A1 Mist Sprayers** perform well using the light to medium concentrations.

Wettable powders should be strained with water to eliminate lumps. This premixed solution should be strained through no larger than a 40 mesh screen when adding to the tank.

When filling the spray tank, be sure to have the tank half full of water then add the required chemical and finish filling the tank to the desired capacity. Use only clean water and fresh chemicals for best results.

Most chemicals deteriorate rapidly after mixing; therefore mix only the amount you intend to use immediately. Never leave unused chemicals in the tank or lines of the sprayer. Drain and flush after each use.

FLY WHEELS AND BELT PULLEYS

Check and tighten all bolts on Fly Wheel and Belt Pulleys 2-4 times a year. They can work loose during regular use.

OPERATING HINTS:

- Engage 540 RPM PTO shaft only at a SLOWER RPM. Then increase the RPM to an operating speed of 540 RPM
- Keep the **A1 Mist Sprayer** as level as possible.
- Make sure PTO drive shaft is connected and that shields are in place.
- Make sure fan rotation is correct. Be sure volute does not hit frame.
- Keep nozzles, strainers, filters and hoses CLEAN!
- Always flush sprayer after each use. This will add to the life of the pump and is in accordance with Local, State and Federal regulations.
- Never let concentrate and water freeze in the **A1 Mist Sprayer** during cold weather.
- Never let any pump run dry.
- Keep children and all personnel away from fan discharge area!
- Not recommended for use with STRONG WINDS.

FLAT NOZZLES

A1 Mist Sprayers with nozzles have 4 nozzle orifices with 8004 tips and nozzle strainers installed at the factory. Additional orifices, cores, nozzles and strainers can be provided to obtain various calibration rates.

Orifices, cores, nozzles and strainers should be removed and thoroughly cleaned at regular intervals to insure accuracy and prevent blockages. Once daily is recommended.

Other Available Tips

Tip Color	Tip No.	Microns
Orange	8001E	100+
Green	80015E	150+
Yellow	8002E	200+
Blue	8003E	300+
Red	8004E	400+
Brown	8005E	500+
Gray	8006E	600+
White	8008E	800+

CALIBRATING SPRAY TIPS

To effectively determine the application rate, use the following procedure:

- 1) Select the GPA (gallons per acre) of spray mixture required by referring to chemical mfg. Label directions and recommendations.

Example: **1.5 GPA**

- 2) Select suitable sprayer speed. For tractors, decide which gear will be used: then determine the exact speed for that gear when traveling at an engine speed that turns the PTO 540 RPM. It may be necessary to drive the tractor in a straight line for one minute at 540 PTO speed and measure the feet traveled. The number of feet traveled in one minute divided by 88 equals MPH (miles per hour).

Example $\frac{440 \text{ ft.}}{88} = 5 \text{ MPH}$

For truck mounted or trailered gas-engine powered sprayers, decide on a gear and read the speedometer or check (refer to above) if in doubt of the accuracy of the speedometer.

- 3) Select the swath width to be used.

Example: **60 ft.**

- 4) Calculate the total flow rate on GPM required using the following formula.

$$\text{GPA} \times \text{MPH} \times \frac{\text{SWATH WIDTH}}{495} = \text{total flow rate in GPM}$$

Example: $\frac{1.5 \text{ GPA} \times 5 \text{ MPH} \times 60 \text{ Ft}}{495} = .91 \text{ GPM}$

- 5) Calculate flow rate of each nozzle using the following formula:

$$\frac{\text{Total flow rate in GPM}}{\text{Number of nozzles}} = \text{Flow rate of each nozzle}$$

Example: $\frac{.91 \text{ GPM}}{3 \text{ nozzles}} = .30 \text{ GPM per nozzle}$

DIAMETER IN MICRONS	DROPLETS PER SQUARE INCH
20	143,000
50	9,224
100	1,164
200	142
300	43
500	9

Normal PTO operating speed is 540 RPM: However, with fragile crops (vineyards, blueberries, ect.) susceptible to wind damage, the sprayer should be calibrated at a lower PTO speed.

The nozzle size, number of nozzles, chemical concentration and pressure determine the amount of chemical to be delivered.

COMMON ITEMS & THEIR RESPECTIVE PARTICLE SIZES	
Postage Stamp	25,400 Microns
Beach Sand	100-2000 Microns
Eye of a Needle	1,230 Microns
Fertilizer	10-1000 Microns
Pollens	10-1000 Microns
Human Hair	40-300 Microns
Coal Dust	1-100 Microns
Mold Spores	10-30 Microns
Atmospheric Dust	0.001-30 Microns
Oil Smoke	0.03-1 Microns
Tobacco Smoke	0.01-1 Microns

We Are Here For You!

Please feel free to contact us Monday thru Friday 8am-5pm.

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Thank You & Congratulations

on your purchase of an America's #1 low volume mist sprayer from A1 Mist Sprayers.

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