Indigo Seed Treating System

General

The Indigo Seed Treating System includes a 30-liter saddle mount tank, with an attached electric pump and output control system.

It is designed to provide a complete package to supply pressurized pesticides to a G3 or A4 applicator.

The pump is a diaphragm type, which can be run dry without damage. **It is designed for use with water based fungicides and inoculants. Solvent base products cannot be used in this system without damaging components.** The pump has an internal bypass, that will limit output pressure to 45 psi, preventing damage to gauges or lines, if the output flow is blocked when the pump is powered.

Clean up system with water only. Don't use gasoline, or other solvents to clean this pump. They will distort the discharge valves and soften seals**.**

Indigo Seed Treating System using an A4 Applicator

Power Requirements

- 12 VDC. - 10 amps. A battery alone will not have enough power to run the pump very long, so make sure a charging unit is attached to the battery.

See pump instruction sheet for more information.

Supply tank

- The supply tank will hold 30 liters of product. It has a vented lid to relieve drawdown vacuum. Replace lid after filling tank, to prevent foreign material getting into the product.

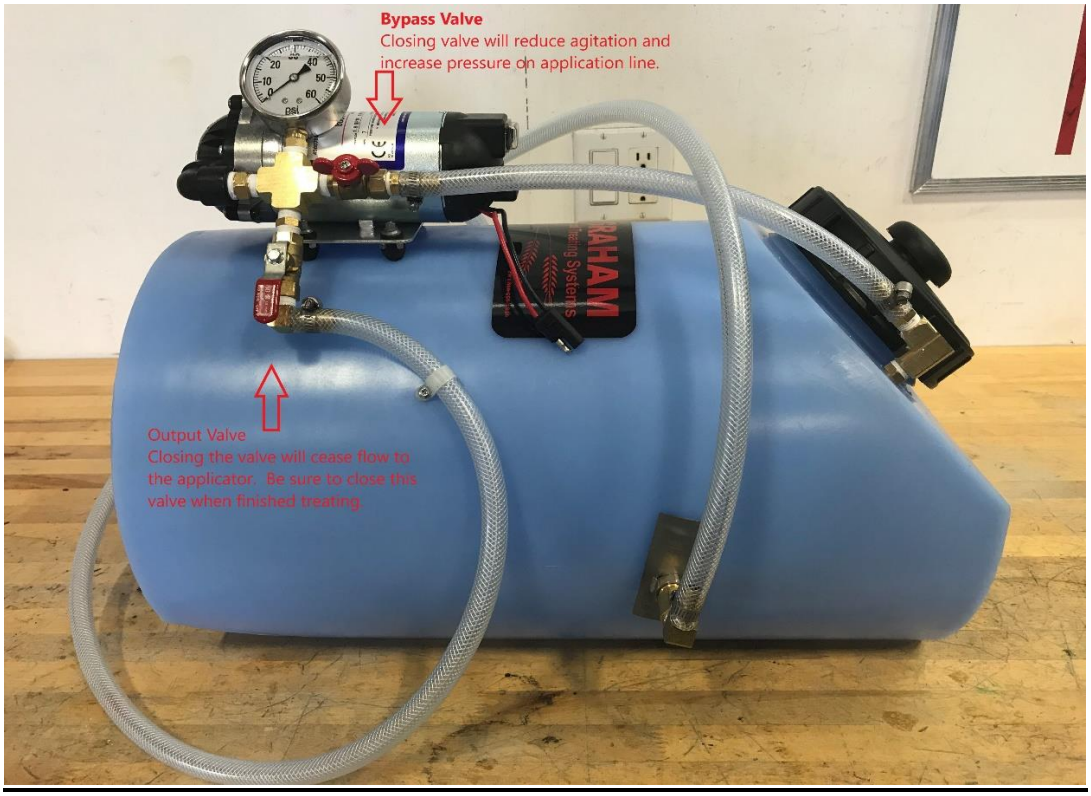
Pump suction line Strainer

- There is a strainer installed in the tank discharge to the pump. Its job is to prevent lumps getting into the system and causing plugging problems.
  If checking or cleaning the strainer, be sure to put back the body seal ring or leakage will occur.

Unit Mounting

- Open the tank lid and remove the 2 mount straps.
- Position the tank on the auger at the best height for pouring jugs of chemical into the tank.
- Attach the tank securely using the two nylon ratchet straps provided.

INDIGO SEED TREATING SYSTEM Components and Controls



System Priming

- Make sure all chemical is mixed/agitated before pouring into tank. Some products will segregate in shipping.

Priming involves filling the lines with treating chemical and getting all the air out of the suction and discharge lines of the system. Your INDIGO SEED TREATING UNIT tested perfectly as a unit before leaving our plant, but sometimes will lose priming liquid during shipping.

We highly recommend priming the system early, so it's operational when needed.

To prime the system; make sure:

- **The INDIGO SEED TREATING Unit is properly hooked up to both electricity and treatment.**
- **The tank discharge valve is open.**
- **The bypass valve is fully open.**
- **The pump output shutoff valve is fully closed.**

- **Start pumping** by turning on the pump electrical switch. Treatment should be seen coming up the suction line to the pump and returning to the tank through the bypass line.

If the pump will not lift treatment within 20 seconds, shut off the power and:

1. Make sure the bypass valve is fully open and the output shutoff valve is fully closed.

2. Check the tube fitting at the strainer for tightness. If air can enter the suction line, the pump won't lift liquid. Try pump again.

3. If pump still won't lift, close the **Tank** discharge valve and disconnect the tube fitting at the strainer.

Fill the tube with water and run pump. Reconnect tube fitting snugly and power up pump again. It may take several primes initially to start but will hold prime once the pump has pushed all the air out.

After initial priming, the pump is ready for instant response.

Treating Procedure

If all components are operational and you want to treat, make sure:

- ✓ **Power is properly connected.**
- ✓ **All hoses are properly connected and tightened.**
- ✓ **You know what treatment pressure you need:** (from the grain flow and treatment rate chart supplied with the applicator unit.)
- ✓ **The bypass valve is fully open.**
- ✓ **The pump output shut off valve is fully closed.**
- ✓ **The grain flow control unit is calibrated and ready**.

Treating Sequence

1. Start the pump.
2. Start the grain flow and open the output shutoff valve.
3. **Begin to close the bypass valve to get the required chemical supply pressure on the gauge. Closing the bypass valve will increase pressure to the treater head.**
4. Once the treatment pressure is stable, check the grain to make sure it's all running properly.

    - *When you're finished treating, shut off the treatment first by switching off the pump; then stop the seed flow.* ***This makes sure all treatment is out of the treater and on the grain, when you shut down. Otherwise some treatment will drool into your hopper and make a mess.***

    - ***Always close the output shutoff valve to prevent treatment from siphoning into the seed hopper.***

- **The bypass valve can be left as is**. This will automatically set the same discharge pressure at next use, without further adjustment.

End of season maintenance

- **Flush the pump and lines with water**. This will prevent treatment precipitates from clogging the pump. Flush with **RV Antifreeze** for outdoor storage.
- Loosen the strainer canister fitting at the feed source and remove the screen. Clean the screen and re-install, making sure the body seal ring is not forgotten or missed. Tighten connection firmly.
- **Don't use hydrocarbon products like gas, or Varsol as flush agents**. They destroy the pump elastomers and will result in costly repairs.
    - ***If the pump is not used for a few days during use, make sure no air can get into the system that might cause a clogged nozzle. Leaving the unit sealed and attached to the tank, with output shutoff valve closed, is the best way to do this.***

Troubleshooting

Concern. - Pump won't lift chemical from the storage container.

Possibilities

1. Air in suction line. - The pump can't lift if it has liquid on discharge side, and air on supply side. Tighten fitting at line strainer, to assure no air source in suction.

2. Pump has lost prime. – Re-prime pump – see initial system priming above.
If priming doesn't solve problem, pump discharge valve assembly may have foreign object stuck in it. Flush pump with water to try and flush out problem.
If this doesn't solve problem, pump must be dissembled, and discharge valve examined. Replace discharge valve assembly if necessary. (See pump manual for discharge valve replacement)

3. Discharge valve has been warped by cleaning fluid / chemical. (See pump manual for discharge valve replacement)

***4. Suction line filter is plugged*. –** check screen in line strainer. See maintenance.

5. High viscosity or lumpy treating product. Some products will segregate in shipping, resulting in high solids material on the bottom of the container. This can slow flow or plug filters. – Agitate jug to mix product uniformly.

Concern. - Gauge reading freezes.

Possibilities

1. Loose Particles are plugging the gauge. - "Bump" out by opening, then closing the output shutoff valve while running.

2. Gauge port plugged by congealed chemical - remove gauge and inspect the pulsation dampener in the liquid connection port. If plugged, clean it with a nail or orifice cleaner. The pulsation dampener may be screwed out with a fine screwdriver for cleaning. If necessary, the gauge can be operated without the dampener.

Concern. - Pump discharge pressure is unstable.

Possibilities

1. ***Solid particles are stuck in pump discharge valve***. - Flush pump or replace discharge valve assembly.
2. ***Solids are masking filter, causing pump starvation***. - Inspect filter screen and clean if necessary.
3. **Air is leaking into suction fitting through loose connection.** – Check and tighten fittings if air bubbles evident.