

**Weather Notice:**

Open your curtains during snow conditions. A closed curtain (in the covered position) can prevent the heat in a greenhouse from melting the snow off the roof. This can contribute to dangerous loads created by snow buildup. Curtains that are operated automatically should have override sensors to automatically open in snow conditions.

**External curtain systems** must be opened (uncovered) in wind, storm, hail, or snow conditions to prevent collapse.

**Internal curtain systems in highly vented houses** with roll-A-roof, roll up walls, dropwalls, or vents: Curtains can be damaged if roof, vents, or walls are left open during windy conditions.

**Warning - Fire Notice:**

**Keep all curtain fabrics away from open flame. Do not install curtain over heaters, electrical devices, or other sources of spark, heat, or flame.**

**Do not weld in greenhouse. Welding is a major cause of greenhouse fires.**

**Use fire retardant fabrics.**

**Operation:**

**Make sure gearmotor limit switches are set before operating system automatically.**

- 1) Gearmotor:
  - a. Make frequent visual checks of fully covered and uncovered positions to make sure the limits are properly set.
  - b. After initial operation, open limit switch cover and check that both set-screws are still in place and fully tightened.
  - c. Do not allow the curtain to operate constantly as sometimes can happen using a computer system. Too frequent operation will prematurely wear out the system.
- 2) Open the curtain. Check at each truss to make sure curtain does not over-travel in the uncover position as this will overly compress the fabric and put undo stress on the system. If all the leading edges are traveling too far, adjust the limit switches on the gearmotor. If only some of the leading edges are traveling too far, loosen the table clips to adjust the position of the leading edge-push pull connection.
- 3) Repeat #2 above in the covered position.
- 4) Visually check that the leading edges are straight. If all leading edges are bent in the same spot, check push pull connection to rack. If one leading edge is bent, check its attachment to the push pull tube at the table clamp connection.
- 5) Listen to the system run. A noisy spot may indicate a problem. Pinpoint noisy spot & check items 6 & 7.
- 6) Check the push-pull tube as it travels for alignment and rubbing in the roller guides.
- 7) Check that the leading edge moves smoothly as the curtain opens and closes. If it jumps and catches, make sure the screws in the push pull swage connection are not catching on the roller guides.
- 8) Check that the "S" hooks are in the right locations, and not causing tension on the fabric.

**Trouble Shooting and Periodic Maintenance:**

- 1) Check condition of monofilament lines. Retighten or replace if necessary.
- 2) Check for noisy spots to pinpoint problems. See 4-9 below. Make adjustments as necessary.
- 3) Check fabric for unusual worn spots, tears, or sagging areas, which may be a symptom of a problem. Make adjustments necessary to fix.

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- 4) Check leading edge clips (table & saddle clips) to make sure they are not worn and are still properly aligned.
- 5) Open the curtain. Check at each truss to make sure curtain does not over-travel in the uncover position as this will overly compress the fabric and put undo stress on the system. If all the leading edges are traveling too far, adjust the limit switches on the gearmotor. If only some of the leading edges are traveling too far, loosen the table clips to adjust the position of the leading edge-push pull connection.
- 6) Repeat #5 above in the covered position.
- 7) Check that the leading edge moves smoothly. If it jumps and catches, make sure the screws in the push pull swage connection are not catching on the roller guides.
- 8) Gearmotor:
  - a. Open limit switch cover and check that both set-screws are still in place and fully tightened.
  - b. Check condition of chain couplers, etc.
- 9) Drive System: Check universal joints, and shaft hangers for wear and alignment.
- 10) Visually check that the leading edges are straight. If all leading edges are bent in the same spot, check push pull connection to rack. If one leading edge is bent, check its attachment to the push pull tube at the table clamp connection.

**Hi-Vent Curtain Systems.** In addition to above:

- 1) Check the stainless steel wires to make sure they undamaged and are taut. Tighten at the cable tensioner installed at one end of the system to 50 pounds of tension. Replace wires that are damaged in any way.

**DANGER: Use all normal precautions for wire handling. Be sure to use eye protection. Unroll the wire from a spool, do not pull it off. Do not allow the cable to kink. Discard kinked wire as it may break under tension and cause a dangerous situation.**
- 1) Check Abri Hooks to make sure they are properly positioned and not damaging the fabric. Reposition if necessary.

**Change Fabric:**

We recommend that you contact Agra Tech for specifications before ordering replacement fabric. It is recommended that you replace all plastic fabric clips when changing fabric. Use only stainless steel staples when attaching fabric and/or seals to monofilament wires.

Fabric recommendation:

Internal curtains----- LS XLS Revolux or Firebreak

Hi-Vent curtains----- ILS60 Revolux, ILS60F Revolux, LS COLS or CPLS (Non Abri)\*

External curtains----- LS OLS (Non Abri)

\* NOTE: At this time, the stronger fabric required for the Hi-Vent curtain is not yet available in Firebreak or Revolux except for the ILS60 and ILS60F, which is 60% shade. If COLS or CPLS is used, there is no fire protection. LS is increasing their line of fire retardant or fire break fabric so check before ordering.

**NOTICE:**

The above information is given in good faith, but without any warranty.