



Maintenance Manual

Preventative maintenance for retractable roof system

Preventative maintenance should be carried out on a regular maintenance to ensure that the roof system is in good condition to avoid breakdowns. Careful attention must be given to securing the safety of personnel and equipment while maintenance or repair work is in process. A code of safety rules based on a "Permit to work" system is recommended.

It is recommended that a planned maintenance scheme includes a system of logging so that records are kept for inspection, maintenance, and repair of all systems. After every maintenance operation, brief notes should be made on the record sheets of any problems encountered, where they occurred, materials used, and time taken.

⚠ WARNING: *Before commencing work on any item or equipment, authorization must be obtained. This authorization should be in the form of a permit to work ensuring that the equipment in question is isolated from the system and that the power supply and ancillary circuits are isolated and locked off. Danger and caution notices must be displayed and must be firmly attached to the supply and control switch gear.*

⚠ WARNING: *Ensure that all local regulations in regard to working at heights have been reviewed and adhered to.*

It should be remembered that with remote-controlled systems, various items of equipment may become energized without warning. It is therefore imperative that any item of equipment is fully isolated before any maintenance work is carried out.

The following instructions are not to override any statutory safety regulations.

- Please review the maintenance videos available on this web page prior to performing any maintenance: <https://www.cravo.com/en/customer-maintenance>.
- For a video for how to adjust the limit switches for the roof and wall gearmotors: <https://www.youtube.com/watch?v=-pjZuPWLgos&a>
- The recommended periods between maintenance for each item is for guidance only. Experience over the first 6 months will enable you to increase or decrease the frequency to establish the requirements for your installation.

Required Maintenance Tools:

1. Wrench and socket set
2. Allan key
3. Pipe wrench
4. Screwdriver set
5. Cable cutter
6. Cravo wire tightening tool
7. Multimeter (Device measures voltage, current and amps)



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Inspect every 6 months from the ground

1. Tube carriers

Spot check that the leading-edge tubing that moves the roofs are straight. (Leading edges that are crooked indicate that they either become disconnected from the drive cables or a drive cable has malfunctioned)

Specific items to review:

- ☐ All tube carriers seal over front lip of truss when the system is in the closed position.
- ☐ All tube carriers must have angled cable retainer attached, holding the return cable.
- ☐ All tube carriers should be in a straight line.

2. Drive system

Motors

- ☐ Ensure that the gear box is not leaking oil.

Drive Shaft and Pillow Block Bearings

- ☐ All bearings are 90° to drive shaft.
- ☐ Bearing pins with lock washer are installed.

NOTE: The bearings are sealed and do not need to be greased unless the seals are broken, and grease is leaking out, or have been in operation for at least 5 years.

Peak and Gutter Universal Joints

- ☐ Should be centered and horizontal.

NOTE: The universal joints are self-lubricating and do not need to be greased.

Drive cables

- ☐ Check that the drive cables are wrapping and unwrapping properly off drive drums – no gaps or cables overlapping.

Drive drums

- ☐ 3 set screws are installed in each drum.

3. Roof Curtains

- ☐ Fabric does not have any tears or visible damage.

4. Seals and Flashing

- ☐ Verify presence and ensure that all seals and flashing are secure.



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5. Roll up walls

- ☐ Fabric is secure on the roller tube and does not have any tears or damage.
- ☐ Ensure that the gearbox on the motors is not leaking oil.
- ☐ The bolts securing the motor are tight.
- ☐ Cable is traveling through pulleys with no interference.
- ☐ There are no obstacles, and the counterweight can freely travel up and down.

6. Bracing

- ☐ Check to ensure that none of the bracing – Exterior, Gutter, and Gable are loose, broken, frayed or damaged in any way.

7. Doors

- ☐ Area around doors is free from objects preventing full travel.
- ☐ Doors travel smoothly in the upper door track.

For any technical questions feel free to reach out to our Builder Success Coordinator:

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For any required replacement parts reach out to our Parts and Service Coordinator:

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Inspect annually from the air

1. Tube carriers

- Tube carriers should not tip forward after hitting the covered limit.
- Make sure that the jaw of the tube carrier is locked down on the leading edge.

2. Drive system

Drive Shaft and Pillow Block Bearings

- ☐ Make sure nuts are tight.

NOTE: The bearings are sealed and do not need to be greased unless the seals are broken, and grease is leaking out, or have been in operation for at least 5 years.

Peak and Gutter Universal Joints

- ☐ All flanged hardware tightened.
- ☐ Key is still installed.

NOTE: The universal joints are self-lubricating and do not need to be greased.

Return pulleys

- ☐ Make sure that bolts are tightened down to the end member.
- ☐ Drive cable is not rubbing on the sides of the pulley bracket.
- ☐ Pulleys are rotating.
- ☐ Make sure the pulley is not wearing on the upper or lower part of pulley.

Drive cables

- ☐ The spring delay is to be aligned with the drive drum when the curtain is in the closed position.
- ☐ Tube carrier or delay bracket is in line with pulley in the return bay when the roof curtain is in the retracted position
- ☐ Check for damaged or frayed drive cables in the drive and the pulley bays.
- ☐ Drive cables traveling through return pulley with no interference.

Drive drums

- ☐ Each drive drum should have 3 set screws installed.

Delay brackets / spring kits

- ☐ Make sure the spring is stretched to 12" when the roof is fully closed and 8" when the roof is fully retracted.
- ☐ Make sure that both eyes of the delay bracket are closed, so the drive cable does not come out.
- ☐ Ensure that the drive cable slides through the eyes of the delay bracket when system is running in both directions.



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3. Roof Curtains

- ☐ Check for broken or damaged roof wires.
- ☐ Leading edge tubes are straight, secure in the tube carrier and there are no missing clips.
- ☐ Curtain hooks are attached to suspension wire.
- ☐ Remove all debris from gutters and ensure that there are no obstructions in drains.

4. Bracing

- ☐ Roof cable bracing is slack or interfering with the drive system.
- ☐ Check to ensure that none of the bracing cables are frayed or damaged in any way.

Amp Draw

Measure the amp draw for each roof and shade system motor from beginning to end from retracted to closed and vice versa, making note of the following values:

- 10-15 seconds before roof is fully retracted
- 10-15 seconds before roof is fully closed
- When the roof is at approximately 50% retracted

Compare measurements to previous readings to ensure that it has not significantly changed.

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