

## ASH-DOME MAINTENANCE-OPERATING

With regular maintenance your new **Ash-Dome** should provide many years of service. The following general information also attempts to provide you with basic dome operations.

### **Never allow unqualified personal to operate this equipment.**

- 1) When your **Ash-Dome** is not being used it is suggested you keep the shutters turned into the prevailing winds. This practice minimizes the possibility of blowing dust, fine snow or driving rain from entering the dome.
- 2) Should your observatory be located over or near a heated area it is recommended the observing area be vented to keep the temperature ambient with the outside air. This will greatly reduce condensation from forming inside the dome or on the telescope.
- 3) The **Ash-Dome** is a positive rack and gear drive system in the shutter and azimuth drives. These require attention and it suggested a regular maintenance schedule be followed.
- 4) Apply a good grade of all weather grease to the shutter drive gear teeth and the worm gear. (This can be done BI annually)
- 5) The edges of the shutter drive track should also be greased to minimize wear over years. (This can be done BI annually)
- 6) The Neoprene Weather Seals along each side of the dome aperture, around the azimuth rollers and across the front and back of the shutter should be sprayed with a dry silicone to extend the life of the material. (This can be done BI annually)
- 7) The oil levels in the azimuth drive and upper shutter drive gear boxes are filled with: Klubersynth UH16-460. If you do not see any oil leaking it is not necessary to change this oil.
- 8) The azimuth drive on Model 'R' **Ash-Domes** may require adjustment over time. The azimuth drive gear may need to be pressed down further into the drive track. This is done using the wing nut in the motor mounting bracket. The azimuth drive system should be adjusted so the gear engages the azimuth drive track just pressing against the track. The azimuth drive motor mount is spring-loaded and the drive gears more or less floats along in the drive track. Over tightening of the tension spring and drive gear will promote excessive wear of the drive gear and track. The drive track itself requires no lubrication.
- 9) During the fabrication roll forming, drilling, cutting, grinding and welding is done. Upon completion of the fabrication and testing, the dome is marked, disassembled, cleaned and made ready for shipment. The welds and any raw edges are sprayed with a rust inhibitor. After the assembly on the observatory site it may be necessary to re-spray these areas. (These areas should be checked BI annually.)
- 10) If it is felt necessary to paint your **Ash-Dome** after years of service, any high quality exterior paint used on metal buildings should be adequate. Follow paint suppliers instructions.
- 11) The shutters have horizontal seams sealed with silicone tube caulking. In the event the silicone sealant separates from the metal any exterior high quality silicone tube caulking can be used to re-seal these areas. (See Sketch)
- 12) The areas along the sides of the dome aperture are sealed with a high quality caulking. Over time this material may shrink and need to be sealed over. After removing any lose material it is suggested a tube silicone be used right over the area.

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- 13) Your **Ash-Dome** is fitted with contactor bars; remote control and other options please see the additional cut sheets.
- 14) The **Ash-Dome** fitted with the Type 'B' dropout shutter style; the lower drop out door section should be fully closed before closing the upper door section completely. If not, sever damage to the shutters could result. Do not attempt to open the lower drop out door section with the upper door section closed. (See additional cut sheets.)

**NEVER** walk away from your **Ash-Dome** while the dome is in motion.

**NEVER** operate the **Ash-Dome** with any of the guards removed.

**NEVER** allow un-trained personnel to operate the observatory dome. This is a major cause of equipment failure.

**DO NOT AT ANY TIME ATTEMPT TO OPEN OR CLOSE THE UPPER SHUTTER USING THE MANUAL OVERRIDE WITHOUT INSURING THE ELECTRIC POWER IS TUNED OFF. SERIOUS INJURY MAY RESULT, POSSIBLE DEATH.**

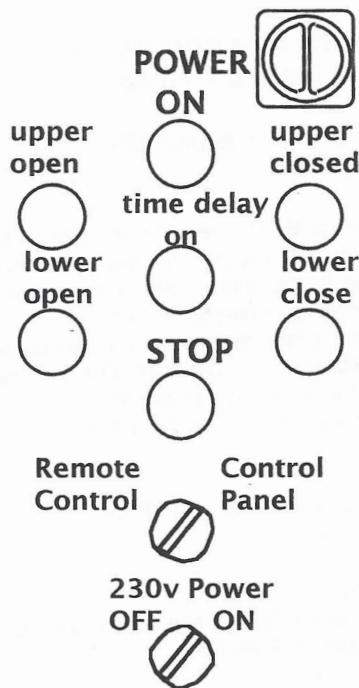
### **Owner's Responsibility:**

- 1) As the owner, you are responsible for the maintenance of your **Ash-Dome**.
- 2) Should any unusual conditions be noticed which appear to be beyond the capabilities of local mechanics to correct, please call this office.

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**Ash-Dome Model REB Electric Winch**  
**Shutter Operating Instructions, Control Panel**

Jan 2014



**Do not allow unauthorized personnel to operate this equipment. BEFORE OPERATING:** The observatory dome must be clear of any obstructions, inside and outside the dome.

**Do not allow unauthorized personnel to operate this equipment.** Turn the Power ON. Turn the panel Key Switch ON. A **GREEN** light will turn ON.

When a Button is Pressed and a Signal is Sent, the Yellow Light on the panel will turn ON. A 5 second Time Delay is installed into the command system prior to any shutter **Motions**. The dome motors will not accept any command they cannot complete. Any command can be ended immediately by pushing the **STOP** button. To reverse any dome motion you must push the **STOP BUTTON** first

**SHUTTER PANEL OPERATIONS:**

Select Control Panel

Before Sending any Command wait 15 seconds for the time delay to clear system and reset.  
The panel Green Light will be ON.

**Upper Shutter Operation:**

The upper shutter will open anytime but **will not close** until the lower dropout shutter is completely closed. To reverse any shutter motion you must push the **STOP BUTTON** first

**Press Upper Shutter OPEN:**

A Yellow Light will turn on, after a 5 second time delay, the Yellow Light will go out and then **Motion**. The shutter will start to travel to the complete open position and stop. **Note:** The shutter can be stopped or started anywhere between full open & full close.

**Press Upper Shutter CLOSE:**

A Yellow Light will turn on, after a 5 second time delay, the Yellow Light will go out and then **Motion**. The shutter will activate and start to travel to the complete closed position and **STOP**. The shutter can be stopped anywhere in between full open or close. **NOTE:** The upper shutter **WILL NOT CLOSE** until the lower drop out shutter is completely closed.

**Lower Drop Out Shutter Operation:**

The lower shutter will not activate open or close **until the upper shutter section is raised past the safety limit switch or approx 16"**. The winch will not activate until the upper shutter is opened approx 16". To reverse any dome motion you must push the **STOP BUTTON** first.

**Press Lower Drop Out Shutter OPEN:**

A Yellow Light will turn on, after a 5 second time delay, the Yellow Light will go out and then **Motion**. The lower shutter will hinge forward and travel to the open position. The shutter will **STOP** when it reaches the completely open position.

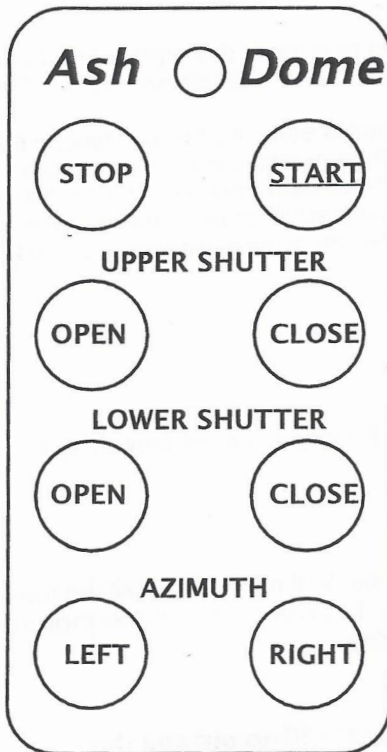
**Press Lower Drop Out Shutter CLOSE:**

A Yellow Light will turn on, after a 5 second time delay, the Yellow Light will go out and then **Motion**. The lower shutter will hinge forward bringing the door into the closed position. The shutter drive will **STOP** when it reaches the completely closed position.

**Ash-Dome Model REB Electric-Winch**  
**Shutter Operating Instructions, Remote Control Paddle**

Jan 2014

**DO NOT ALLOW UNAUTHORIZED PERSONNEL TO OPERATE THIS EQUIPMENT.**  
**BEFORE OPERATING:** The dome must be cleared of any obstructions, inside and outside.



Turn the Power ON. Turn Control Panel Key Switch ON  
**GREEN LIGHT WILL COME ON**

When a Button is Pressed and a Signal is Sent, the Yellow Light on the panel will turn ON. A 5 second Time Delay is installed into the command system prior to any shutter Motions. The dome motors will not accept any command they cannot complete. Any command can be ended immediately by pushing the STOP button. When the upper or lower shutter are at the extreme OPEN or CLOSE position the STOP BUTTON must be pushed after any command is completed to clear the system for the next command. To reverse any dome motion you must push the STOP BUTTON first.

When finished operating in Remote Control, push the STOP button on paddle to shutdown the remote control system.

Turn Selector Switch to Remote Control  
Before Sending any Command wait 15 seconds for the time delay to clear system and reset, Panel Green Light will be ON.

**Upper Shutter OPEN:**

1) Press and hold START, the paddle green light will blink, release START, the system is activated.

2) Press Upper Shutter Open:

Yellow Light on panel will turn on, after a 5 second time delay, the Yellow Light will go out and then Motion. The shutter motor will stop when the shutter reaches the completely open position. The shutter can be stopped anywhere between full open and close.

**Upper Shutter CLOSE:**

1) Press and hold START, the paddle green light will blink, release START button, the system is activated.

2) Press Upper Shutter Close:

Yellow Light on panel will turn on, after a 5 second time delay, the Yellow Light will go out and then Motion. The upper shutter will not close until the lower drop out shutter is completely closed. The shutter drive motor will STOP when the shutter reaches the completely closed position.

**Lower Drop Out Shutter OPEN:**

The lower shutter will not activate open or close until the upper shutter section is raised past the safety limit switch or approx 16".

1) Press and hold START, the paddle green light will blink, release START button, the system is activated.

2) Press Lower Shutter Open:

Yellow Light on panel will turn on, after a 5 second time delay, the Yellow Light will go out and then Motion. When the shutter reaches the completely open position the shutter will STOP.

**Lower Drop Out Shutter CLOSE:**

1) Press and hold START, the paddle green light will blink, release START button, the system is activated.

2) Press Lower Shutter Close:

Yellow Light on panel will turn on, after a 5 second time delay, the Yellow Light will go out and then Motion. When the shutter reaches the completely closed position the shutter will STOP.