

**READ CAREFULLY BEFORE ATTEMPTING
ANY TYPE OF CLEANING**

Care and Maintenance Instructions for SORL Mirrors and Coatings

IMPORTANT NOTE: Cleaning risks scratching the reflecting coating of the mirror. Avoid cleaning whenever possible. Cleaning should only be attempted by qualified personnel.

Space Optic's standard coating for the mirror is Silicon Monoxide over metallic aluminum (AlSiO). This reflective coating is as durable a coating as possible at a reasonable cost. Even careful cleaning, however, can produce scratches.

Other optional coatings, including Al/MgF₂, Enhanced Aluminum, Enhanced Copper, and Protected or Enhanced Silver or Gold, should follow these same cleaning procedures. For other coatings, contact Space Optics Research Labs LLC for specific cleaning recommendations.

Any front surface mirror is extremely susceptible to scratches. The coatings mentioned above vary somewhat in their durability. In general, the Al/SiO coating is the least fragile and the gold coating is the most fragile. **YOU MUST BE 100% CERTAIN OF THE COATING TYPE BEFORE PROCEEDING WITH ANY CLEANING PROCEDURES.**

1. Dust can best be removed from the mirrors by first removing the Access Cover and then blowing them with compressed nitrogen or air from a rubber syringe. **THE NITROGEN GAS MUST BE FREE FROM OIL AND MOISTURE.**
2. A clean camel hair or red sable brush can be used to brush dust off the mirrors. The brush must be absolutely free from oils and dirt. Skin oils from your hands can damage the coating very easily.

IMPORTANT NOTE: It is essential that the brush is not used for any other purpose than cleaning the coated surface of a mirror. The brush should be cleaned when new, and then periodically, in reagent grade methanol or acetone to remove oils and dirt. The brush should be dry for use.

3. Finger prints recently applied are normally removed with methanol wipe followed by an acetone wipe. Other contaminants can normally be removed from the mirrors by careful cleaning. Methanol should be used because it avoids leaving streaks, however, acetone is acceptable. **USE ONLY REAGENT GRADE CHEMICALS.** When transferring solvents to new bottles, care should be taken that skin oils or contaminants are not picked up.

Step 1: Blow the dust off. This ***MUST*** be done first!

Step 2: Thoroughly moisten a tissue with solvent and lightly drag the tissue once across the mirror. Do not let your fingers touch either the mirror or the tissue surface that will touch the mirror. **DO NOT APPLY PRESSURE AND DO NOT MAKE A SECOND WIPE WITH THE SAME TISSUE.** It may take two or more passes, using a new tissue each time, to remove all of the contaminants from the mirror.

The tissue that **SORL** has found to be usable on the front surface mirrors are **Kleenex R** brand facial tissues (white and unscented) as well as **Kaydry Laboratory Wipers**. Both products are from Kimberly-Clark.

If you are removing fingerprints that have been on the mirror for some length of time, it is likely that the mark will not clean off! This is because the acids in the fingerprint etch the mirror's coating, thus leaving a permanent mark.

CAUTIONS:

1. Exhaled moisture can be corrosive to some reflective coatings. Avoid speaking over an optic.
2. Rings, watches, pens, etc., if accidentally rubbed or dropped on the optic, can cause severe damage. Remove all such articles before handling or approaching an optic.
3. While these instructions are considered to be the safest methods by **SORL** personnel, there is no "Risk-Free" way to clean every coating. **Some coatings CANNOT be cleaned.**