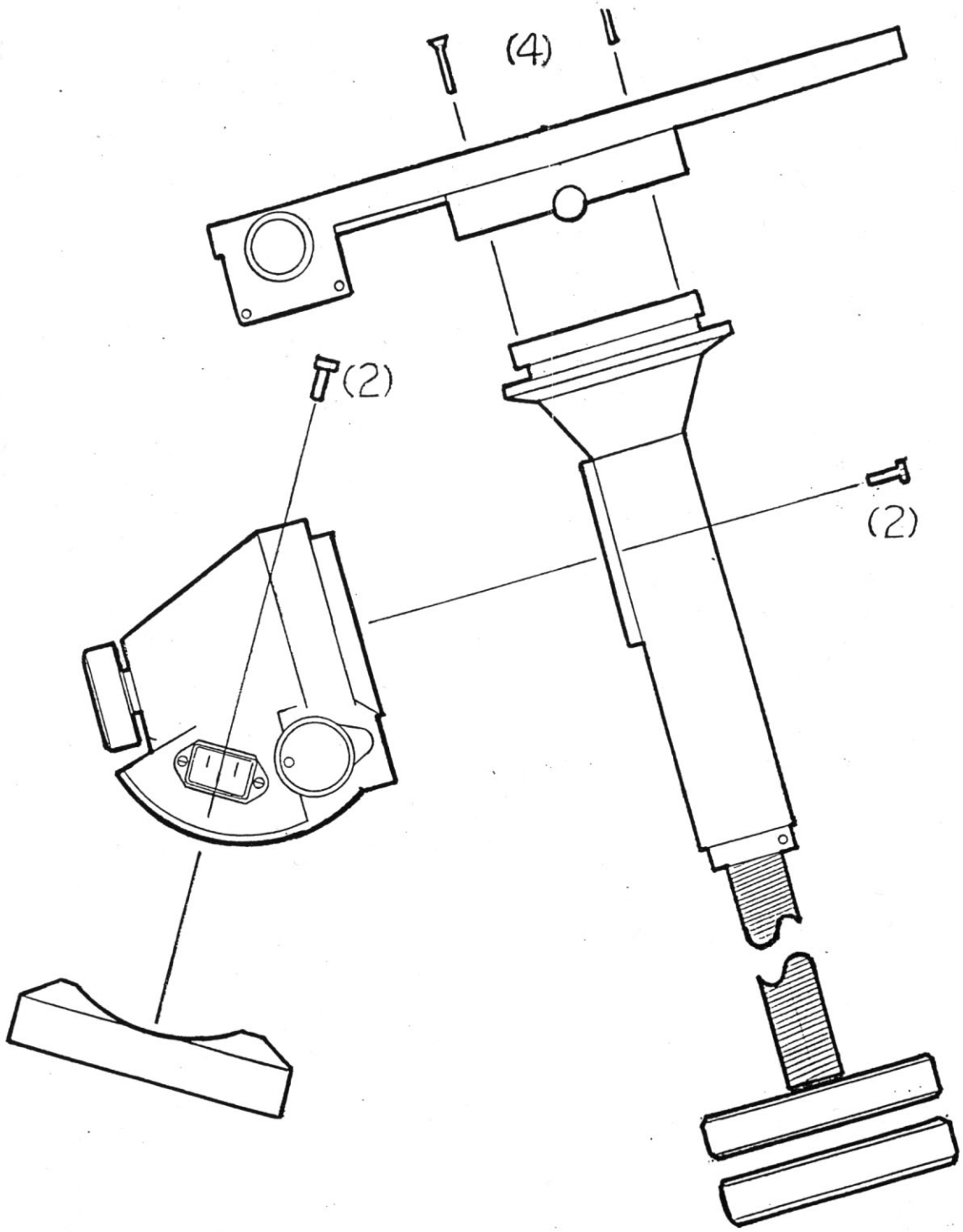
CARE, CLEANING AND OPERATION OF YOUR TRIPLET REFRACTOR

The ASTRO-PHYSICS Triplet refractors require little or no maintainance under normal use. All that is required is occasional cleaning of the lens surfaces. Under heavy dewing conditions, or in areas of airborne dust or pollutants, the front surface of the lens will acquire a layer of dirt. This can be cleaned with mild dish soap followed by alcohol and acetone rinse. Improper cleaning procedure will cause scratches in the mag-fluoride coating and in extreme cases in the glass itself. Before wiping the surface with cleaning agents, blow loose dirt away with a can of compressed air. Stubborn particles can be removed with a soft camel's hair brush. Next, soak a single facial tissue in a mild soap and water solution. The entire tissue is then gently pulled over the surface of the lens. A dry tissue is then used to remove excess water. This is followed by one gentle swipe with an alcohol wetted tissue and a final swipe with acetone. Sometimes a faint stain or film will stay behind where the tissue has been lifted off the glass. This will cause no harm to the glass nor will it degrade the image in any way. It is best left alone. Excessive cleaning is to be avoided.

Dew can not be avoided under certain circumstances, no matter how long the dewshield extends beyond the lens. As long as the air temperature is falling, the lens surface lags slightly behind and dew will not form. When the air temperature stabilizes, the lens eventually reaches the dewpoint and will dew over, even if it is covered. Under those circumstances it is advisable to add a weak heating element to the dewshield. It is not advised to blast dew off with a hot hair dryer, or to wipe it off with cloth. Hot blasts of air causes optical glass to rapidly expand and will ruin the lens's figure for the better part of the evening. In extreme cases, permanent damage to the glass can result. If dew must be removed by blowing air at the lens, use cool or very slightly warmed air (blow the air at the back of the hand to judge its temperature). Keep the dryer well away from the lens surface. In below zero degree conditions it is not advisable to blow any warm air at the lens surface. Here a heated dewshield may be the only solution.

All optical glass except for zero expansion material has a finite coefficient of expansion. When lenses are subject to large temperature fluctuations (such as being being brought out into the cold night from a warm room) the lens figure will change drastically and the initial view through the instrument may be disappointing. Until the optics are settled down, the figure will not be at optimum correction. The smaller 4 and 5 inch lenses generally settle down in 30 minutes. The 6 inch and 7 inch lenses may take up to an hour to fully settle down. If the temperature drops below freezing, it may take somewhat longer.

When using the telescope at high power, it is important that the "seeing" be taken into account. Seeing refers to the steadiness of the air, not to the transparency of the night. When the seeing is good, out of focus star images will be round and steady at high powers. When seeing is not good, out of focus stellar discs will bend, distort and dance around, or show shearing lines characteristic of rapidly moving atmospheric air. Under those conditions high power observations may be impaired.



OPERATING INSTRUCTIONS FOR THE MODEL 504 AND 706 MOUNTING

The diagram at left shows how the mount is initially assembled For proper operation of the drive system, the telescope should be properly counterbalanced so that clutches do not need excessive pressure to keep the axes stationary. Excessive tightening of the polar axis clutch can cause the drive system to stall and can lead to eventual damage to the motor. Ideally, the clutch pressure should be just tight enough so that the telescope will move easily with slight hand pressure at the back of the tube. When the mounting is not in use, loosen the clutch pressure on the dec. and polar axes so they turn freely.

When adding heavy accessories such as large cameras, guidescopes or Richfield scopes, it may be necessary to add additional counterweights to achieve balance. The counterweight shaft can accomodate several more counterweights. These are available in 51b. and 81b. sizes as required.

A kit is now available to retrofit setting circles to the 706 mount. With these attached, the optional declination motor assembly must face forward to prevent interference with the polar axis housing.

The R.A. drive motor requires 110v 60Hz. power to operate (foreign systems may be different). In the field, power may be derived from an inverter or drive corrector operating from a 12v battery. The optional declination motor requires 9 to 12 volts to operate. This power is available from most dual axis drive correctors.

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INSTALLATION PROCEDURE FOR ELECTRIC DECLINATION DRIVE

The declination drive kit comes with a motor assembly, a clutch knob, drive belt and power cord. Installation of the clutch knob requires removal of the existing knob on the equatorial cradle plate and substitution of the new knob.

1. Loosen the set screw on the declination knob.
2. Unscrew the knob from the shaft.
3. Screw the new clutch knob onto the shaft until it is just finger tight. The set screw is now tightened against the shaft. Overtightening the knob against the bearing can result in damage to the bearing.
4. Attach the timing belt over the clutch knob and the motor pulley.
5. Attach the motor assembly to the cradle plate with the screws provided.
6. The pulley tension may be adjusted by loosening the motor screws and repositioning the motor.
7. The clutch tension may be adjusted by loosening the outer set screw on the knob and scewing the knob in or out as required.

The declination motor can be powered from any 9 or 12 volt source. Power consumption is approximately 65 ma.

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INSTALLATION INSTRUCTIONS FOR MODEL 706 SETTING CIRCLES

R.A. circle:

The R.A. circle is a slip ring type driven by the worm gear. The ring and pointer disc are installed between the Dec. and R.A. axes. Remove the two bolts holding the Dec. axis to the R.A. disc. Place the circle and its pointer disc onto the worm gear, lining up the holes in the pointer disc and R.A. disc. Using the longer bolts provided, re-attach the Dec. axis.

DEC. circle:

The pointer disc is first attached to the bottom of the declination casting by means of two set screws. The setting circle is then slipped over the end of the declination shaft and fastened by means of its set screw. Alignment of the pointer to 90 degrees is done with the telescope mounted. Align the cradle plate approximately parallel to the polar axis. With a low power eyepiece in the telescope, note the movement of stars in the field as the mount is rotated about the polar axis. When the declination axis is exactly at 90 degrees to the polar axis, the stars will rotate around the center of the eyepiece. It takes only a few moments to find this alignment of the axis. When the axis is properly aligned, pointer can be positioned next to the 90 degree mark.