

Sextant Errors & Corrections

1 Perpendicularity Error

Index mirror is not perpendicular to the plane of the instrument.

Correct **Perpendicularity Error** by holding the sextant horizontal, with index arm set half way. Look at the sextant arc reflected in the index mirror. Adjust the index mirror screws until the real and reflected arc is continuous and flat.

2 Side Error

Horizon mirror is not perpendicular to the plane of the instrument.

Correct **Side Error** by holding the sextant vertical, with index arm set at 0° and look at the horizon. Adjust index arm until horizon is continuous. Tilt the sextant to 45° and if horizon develops a "step", adjust screws on the horizon mirror until it is horizontal again. Return sextant to vertical and readjust horizon screws again if required. Repeat until side error is minimum possible.

3 Index Error

Horizon and Index mirror are not parallel when sextant is set at 0°

Account for **Index Error** by holding the sextant vertical, with index arm set at 0° and look at the horizon. If the horizon is not continuous, adjust the micrometer until it becomes continuous. The reading on the micrometer is the Index Error.

Off The Arc: Micrometer reading is negative

On The Arc: Micrometer reading is positive

Non-Correctable Errors

Consult the sextant's calibration card to account for non-correctable errors.

Centering Error: Index arm does not pivot at the center of the sextant arc.

Prismatic Error: Faces of the mirrors are not parallel to each other.

Shade Error: Shades are not parallel to each other.

Graduation Error: Graduations along the sextant arc or micrometer are not precise.

Worm & Rack Error: Gearing of the arm and micrometer are not precise.

Collimation Error: Telescope is not parallel to the plane of the sextant.