

New Folder Name Information on K&E

Tilt Levels and Jig Transits

T950017

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FAX NO.:	(818) 304-8834	# OF PAGES:	11 (including cover)

Larry,

Attached is information on K&E Tilt Levels and Jig Transits. The information is from K&E's Optical Alignment Equipment catalog. These are the instruments that we are using to align the QT beam tube. We have been using a model 71 1026 K&E PARAGON Jig Transit because it is available. We could have used a model 71 1012 to perform the alignment.

Call me after you have had time to look over the attached information.

Steve Peters

cc: MLT/LIGO File 2.2.2
SWP Chron File



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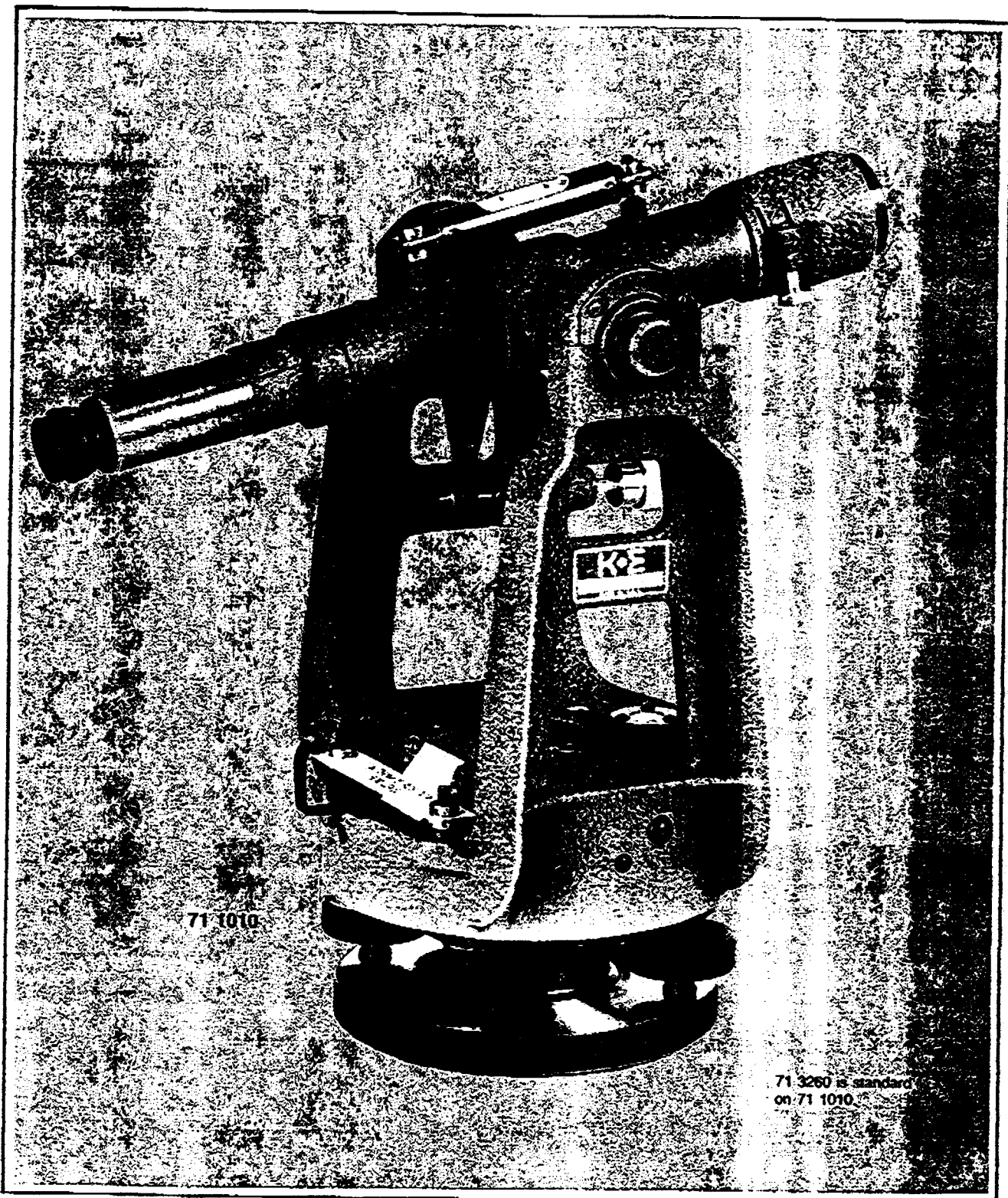


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● PARAGON® Jig Transits



71 1010

71 3260 is standard
on 71 1010.

71 1010 PARAGON Jig Transit—Establishes precise vertical planes and plumb lines. When equipped with a right-angle eyepiece, zenith sights or upward plumb lines can be established. Two-speed tangent screws on both the azimuth and elevation axes ease leveling and auto-collimation. The instrument comes equipped with a standard Level Vial 71 3260 attached to the telescope and a circular vial on the plate. The eyepiece is easily converted in the field for auto-collimation.

An all-purpose glass reticle with cross-pattern of single lines top and right, paired lines bottom and left, is employed.

The 71 1010 Jig Transit complete with the most required accessories now can be ordered as a complete unit under one Product Number.

71 1012 PARAGON Jig Transit 71 1010 complete with 71 1111 Optical Micrometer

71 1013 PARAGON Jig Transit 71 1010 complete with 71 1111 Optical Micrometer and 71 3250 Coincidence Level mounted on telescope.

71 1014 PARAGON Jig Transit 71 1010 complete with 71 1111 Optical Micrometer and 71 3250 Coincidence Level mounted on telescope and with 71 1130 Circular Auto-Reflection Mirror.

SPECIFICATIONS

TELESCOPE: 11¼ in. long, with fully erecting achromatic K&E optical system.

Magnification: Varies automatically from 20x at 8 in. to 30x at infinity.

Focusing Range: 8 in. to infinity.

Resolving Power: 4 seconds of arc (according to the Bureau of Standards test procedure).

Field of View: 55 minutes at infinity, 6.4 mm at near distance.

Effective Aperture: 30 mm.

Optics: Fully coated optics used throughout.

Eyepieces: Erecting, achromatic. Removable blank provided for auto-collimation conversion unit. Right-angle eyepiece and complete projection accessories available.

Reticle: All-purpose, double glass, dustproof; cross-pattern with single lines top and right, paired lines bottom and left.

TELESCOPE AXLE: Bronze, with steel journals sweated on. Provided with threaded ends and stop shoulders to accommodate auto-reflection mirrors.

STANDARDS: Reinforced, ribbed, U-type bronze one-piece casting. Bearings V-type, bronze, adjustable for centering line of sight on the azimuth axis in the horizontal and vertical planes.

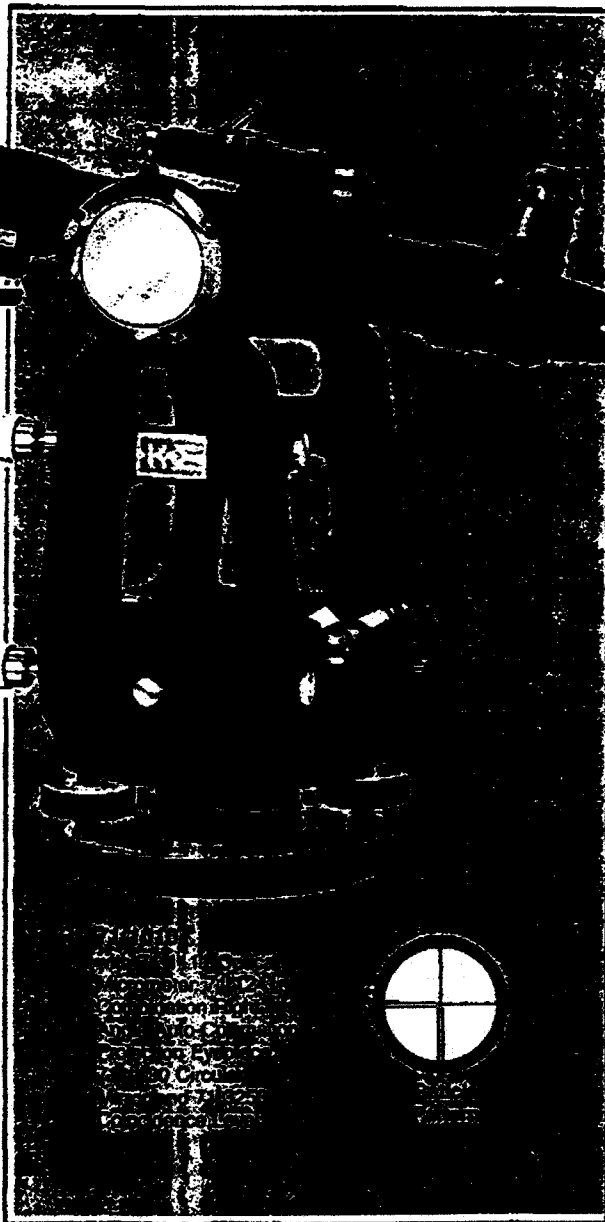
HEIGHT: 10¼ in. from bottom of base to center of telescope axis.

LOWER PART: Hollow azimuth axle with 1¾ inches diameter optical clearance.

CENTER: Cylindrical, with high precision thrust ball bearing. Mounted in retaining ring between two precision optically flat steel plates. Enclosed with protective dust cover ring.

LEVELS - Telescope - Sensitivity of 20 seconds of arc per 2 mm movement. Two 7/32 in. diam. holes, spaced 3½ in. on centers, are provided for mounting. Provisions for alternately mounting Level 71 3250 on the telescope.

Plate - Circular, sensitivity 5 minutes per 2 mm movement. Provisions for mounting Levels 71 3250 or 71 3260 parallel to telescope axle.



SCREWS: Leveling - Four, with precision-generated threads, fully enclosed to exclude dust and retain lubricant.

Tangent - Two-speed, fine motion, for both azimuth and elevation motions.

WEIGHT OF INSTRUMENT: 26½ lbs. approx.

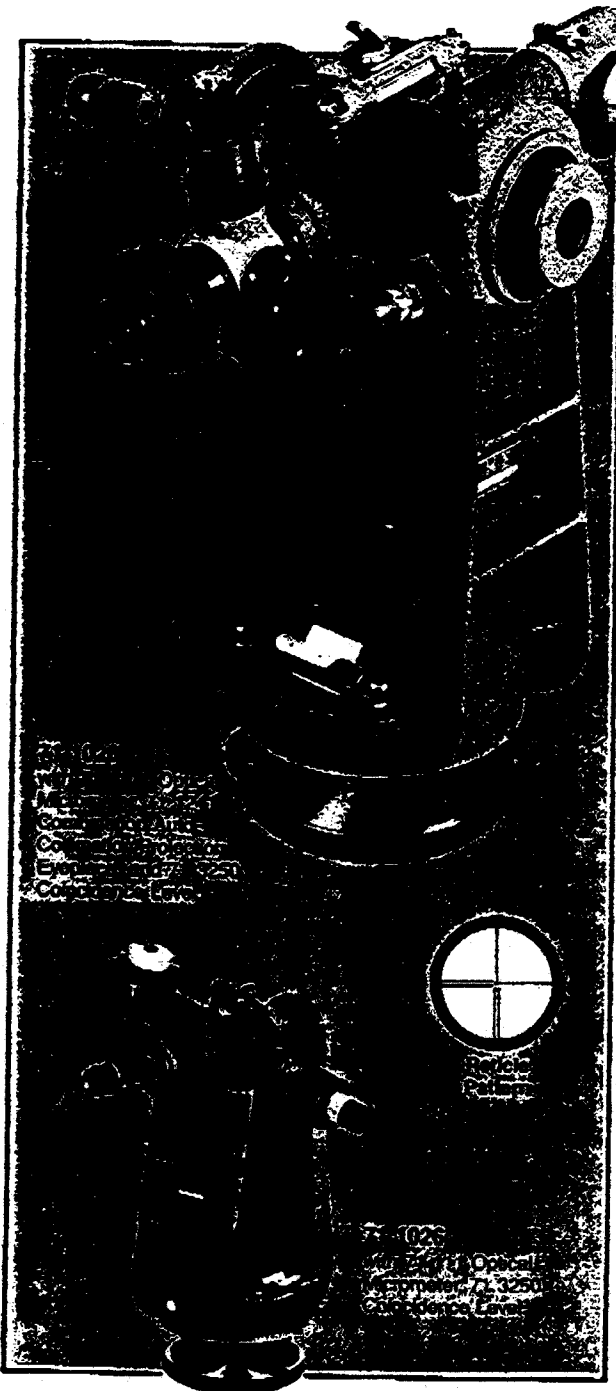
TRIPOD PLATE: Threaded, 3½ x 8, U.S. Standard.

FINISH: Two-tone green.

INSTRUMENT CARRYING CASE: High impact plastic with foam rubber inserts and four large rubber supports, adjusting tools.

STANDARD EQUIPMENT: Basic Jig Transit with circular plate level, 71 3260 Telescope Level Vial and instrument carrying case.

PARAGON® Jig Transit Telescope Square



71 1026 PARAGON Jig Transit Telescope Square (with Horizontal Axis Telescope) - Used to establish precise vertical planes and plumb lines. With a right-angle eyepiece, zenith sights or upward plumb lines can be established. The instrument is equipped with Level Vial 71 3260 attached to the telescope.

The hollow horizontal axle is supplied with an infinity-focus telescope at one end and an objective lens at the other end. This permits convenient and economical one-man operation, eliminating the need for a second man behind the line of sight telescope. The cross-axis telescope may be equipped with a 71 1211 Auto-Collimation Unit. When equipped with this accessory, the optical reference line can be maintained by a mirror in place of the line of sight telescope. Alternately, the cross-axis telescope may be equipped with the 71 1231 Right-Angle Eyepiece or the 71 1241 Combination Auto-Collimation, Projection Eyepiece.

SPECIFICATIONS

MAIN TELESCOPE:

Same specifications as for 71 1010.

CROSS-AXIS TELESCOPE:

Length: 13 in. long with fully achromatic K&E optical system.

Magnification: 28x at infinity.

Focus: Fixed at infinity.

Resolving Power: 4 seconds of arc (according to the Bureau of Standards Test Procedure).

Field of View: 50.5 minutes at infinity.

Effective Aperture: 21 mm.

Eyepiece: Achromatic. Removable blank provided for auto-collimation conversion unit.

Reticle: All-purpose, double-glass, dustproof; cross-pattern with single lines in two quadrants — paired lines in the remaining two quadrants. The reticle is aligned so that it is in a horizontal/vertical position when the main telescope is level.

TELESCOPE AXLE: Hollow and equipped with cross-axis telescope. Bronze, with steel journals sweated on.

STANDARDS: Reinforced, ribbed, U-type bronze one-piece casting.

Hardened ball bearings, bronze adjustable for centering line of sight on the azimuth axis in the horizontal and vertical planes.

HEIGHT: 13½ inches from bottom of base to center of telescope axis.

LOWER PART: Hollow azimuth axle with 1¼ inches diameter optical clearance.

CENTER: Cylindrical, with high precision thrust ball bearing. Mounted in retaining ring between two precision optically flat steel plates. Enclosed with protective dust cover ring.

LEVELS: Telescope — Sensitivity of 20 seconds of arc per 2 mm movement. Two 7/16 in. diam. holes, spaced 3½ in. on centers, are provided for mounting. Provisions for alternately mounting level 71 3250 on the telescope.

Plate — Circular, sensitivity 5 minutes per 2 mm movement. Provisions for mounting Levels 71 3250 or 71 3260 parallel to telescope axle.

SCREWS: Leveling — Four, with precision-generated threads, fully enclosed to exclude dust and retain lubricant.

Tangent — Two-speed, fine motion, for both azimuth and elevation motions.

TRIPOD PLATE: Threaded, 3½ x 8, U.S. Standard.

FINISH: Two-tone green.

WEIGHT: Approximately 37 lbs.

INSTRUMENT CARRYING CASE: High impact plastic with foam rubber inserts and four large rubber supports.

STANDARD EQUIPMENT: Basic Jig Transit with circular plate level, 71 3260 Telescope Level Vial and instrument carrying case.