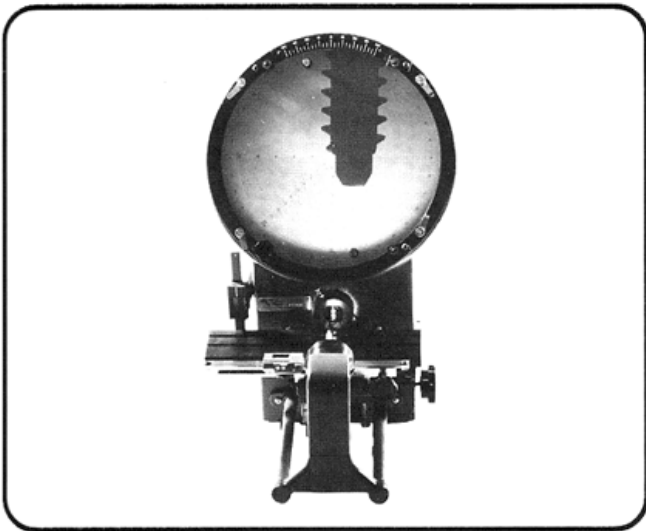


# Optical Comparators

Some critical fastener characteristics must be inspected using optical comparators. These features include under head fillets, thread root radii, flat head and point angles. Additionally, optical comparators are very useful in measuring special features such as groove depths and widths, shoulder lengths, distance of first full thread to the head, and chamfer diameters.

The optical comparator is probably the most versatile instrument available for fastener measuring. There are very few fastener features which an optical comparator cannot measure. No fastener inspection laboratory is really complete without an optical comparator.

Optical comparators use two types of illumination. When using profile illumination, the comparator's light shines past a part and casts its shadow on the comparator's screen, only showing its outline. When using surface illumination, the surface of the part is shown on the comparator's screen as though it were on television. This allows measurement of characteristics such as chamfer diameters and letter sizes.



## Model OC-121E specifications

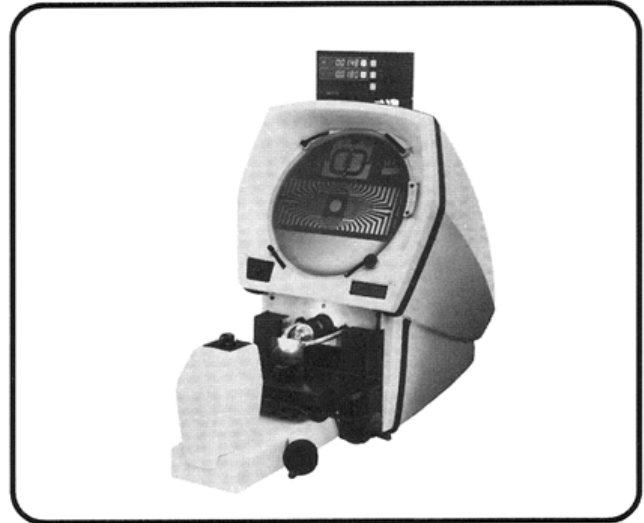
- Screen: 12", one quadrant protractor glass screen
- Magnification: 10X or 20X (specify when ordering)
- Table Travel: 2-1/2" vertical, 6" horizontal
- Illumination: profile and surface
- Readout Type: X and Y axis Digital Scales, .0005" (0.01mm) resolution
- Readout Increments: inches and millimeters
- Electrical: 115 volts/50-60Hz, single phase
- Accessories included: V-block and part holding magnet

## Options

- Screens: toolmaker's, plain, 90 degrees crosslines only
- 50X magnification lens (ref. MIL-S-8879)
- Overlays: Micro-radius, Inch Thread, Metric Thread (specify magnification when ordering)
- Bulbs: profile and surface illumination (one spare of each should be bought with each comparator)

Optical comparators can be used to match a projected part image against an overlay on the comparator screen such as for inspecting angles, or radii, or actual feature measurements can be made with the comparator's digital scales or digital readout. There are two models available: Model OC-121E, with a 12" screen and digital scale readout capable of measuring lengths and heights to .0005" resolution and Model OC-1400, with a 14" screen and computerized digital readout capable of calculating angles, radii, and measuring lengths and heights to .0001" resolution. Both models can measure in either inches or millimeters.

NOTE: MIL-S-8879 requires the inspection of root radius. This can be done using overlays or readouts, but the following minimum magnifications are required: fewer than 14 TPI, 20X; 14-40 TPI, 50X; more than 40 TPI, 100X



## Model OC-1400 specifications

- Screen: 14", 90 degree crosslines, 5 minutes arc scale, glass
- Magnification: 10X or 20X (specify when ordering)
- Table Travel: 3" vertical, 6" horizontal
- Illumination (tungsten-halogen): profile and fiber-optic surface
- Readout Type: QUADRA-CHEK II Geometric Digital
- Readout System -
  - calculates angles, radii, centerlines, point-to-point intersections, and skew
  - measures diameters and lengths
  - inch and millimeter readings
  - .0001" (0.002mm) resolution
  - RS-232 output for connecting to printer or to the Greenslade "FASTENERTEST" Data Collection Package
- Electrical: 115 volts/50-60Hz, single phase

## Options:

- Edge Locator: repeatable within .0002"
- Overlays: Micro-radius, Inch Thread, Metric Thread (specify magnification when ordering)
- Part holding fixture with rotating base
- Magnifications: 10X, 20X, 50X, 100X
- Bulb: profile/surface illumination tungsten-halogen bulb (one spare should be bought with each comparator)



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