S-T INDUSTRIES, INC.

See the Quality

Optical Comparators

OVER 70 YEARS OF MANUFACTURING SCHERR-TUMICO PRECISION INSTRUMENTS

MADE IN U.S.A.
The S-T Industries Story
Since 1942, S-T Industries, Inc. has been producing fine measuring instruments. From micrometers to optical comparators, the SCHERR-TUMICO name continues to be a hallmark of quality around the world. When S-T introduced the Model 1500 vertical beam optical comparator in the 1950s, it allowed companies of all sizes to afford the technology of profile projection. As we look forward, S-T Industries is committed to providing high-quality products for metrology at reasonable prices.

Quality
Every SCHERR-TUMICO optical comparator and video inspection system receives a thorough inspection and certification before it leaves our factory. This assures you there will be no surprises at your factory. These products are hand-built and tested through each step of the process to guarantee that you will receive a reliable and proven instrument.

Performance
SCHERR-TUMICO optical comparators and video inspection systems are designed to give you the best value for your investment. We have a unit for any job or budget. From small, economical machines to large, CNC measuring systems, you’ll find we have just the right product to fit your needs. We’ll even modify an existing system if we don’t have exactly what you want.

Innovation
S-T Industries has incorporated many unique features into its products. Among them are our exclusive Gothic arch ballways, which provide the ultimate in accuracy, strength and durability. Our 30” comparators are portable. They are equipped with large casters so that one person can move the instrument. Our CNC products all have a digital positioning system that allows table movements of 1 micron. We will continue to add new ideas and technology to our products, because at S-T Industries, our design engineer is our customer.

International Operations
SCHERR-TUMICO optical comparators and video inspection systems are available throughout the industrialized world. S-T Industries maintains a service and distribution network with factory qualified sales and service representatives in the following countries. Call or write for your representative.

Australia  Canada  China  Denmark
Germany  Great Britain  Holland  Hong Kong
India  Indonesia  Ireland  Israel
Malaysia  Mexico  Norway  Pakistan
Philippines  Scotland  Singapore  South Africa
South America  South Korea  Sweden  Taiwan
Thailand  Turkey

Service and Warranty
All S-T Industries Optical Comparators and Video Inspection Systems include a two-year warranty on parts and labor, installation and training at your facility, and a certificate to NIST. There are no additional hidden costs for this service.
The “3500” Series 14” benchtop horizontal beam comparator is the perfect general purpose optical comparator. Its high accuracy and compact size make it the choice of even the most demanding user. The unique, granite-like housing offers a rugged appearance to this fine instrument. The stage features hardened and precision ground bearing ways.

- High precision 4” x 10” travel measuring stage with .00005”/.001mm resolution precision glass scales. Quick release with fine adjust on X-axis. 50-lb load capacity.
- Choice of QuadraChek® or Metlogix® digital readouts.
- Quick change mount for factory preset magnification lenses.
- Hardened steel, nickel-plated workstage for long life and corrosion resistance.
- Tungsten/halogen profile illumination for bright, sharp images at all magnifications.
- Duplex fiber optic surface illumination.
- Vernier Screen Protractor reading to 5’.
- Optional digital screen protractor with readings to 1’ or .01°.
- Helix +/− 6° via lamphouse displacement.
- Heavy-duty steel chassis.
- Fully useable 14” diameter screen.

**Specifications**

- **Measuring Stage Resolution:** .00005”/.001 mm
- **Measuring Travel:** 10” (250 mm) horizontal (X), 4” (100 mm) vertical (Y), 2.5” (60 mm) focus with quick release on x-axis
- **Precision Measuring Stage:** 5” x 16” (125 x 400 mm) nickel-plated top plate
- **Allowable Work Load:** 50 lb (22 kg)
- **Digital Screen Protractor on 3550 Series:** angular readings to 1 minute or .01° of arc
- **Duplex Fiber Optic Surface Illumination**
- **14” Frosted Glass Screen:** with 30-, 60- and 90-degree crosslines
- **Helix:** +/− 6° via lamphouse displacement
- **Heavy-Duty Dust Cover**

**Magnification Lenses**

**OPTIONAL MAGNIFICATION LENSES**

- 5x Magnification
- 10x Magnification
- 10x Magnification with long focal distance
- 20x Magnification
- 20x Magnification with long focal distance
- 25x Magnification
- 31½x Magnification
- 50x Magnification
- 62½x Magnification
- 100x Magnification
This is our top-of-the-line 14” benchtop horizontal beam optical comparator. The 3700 is the ultimate system for load capacity and accuracy. It features an erect image and S-T’s exclusive Gothic arch bearing ways which provide the best in accuracy and longevity.

• Erect image.
• High precision 6” x 12” measuring stage travel with .00005”/.001 mm resolution precision glass scales. Quick release with fine adjust on X-axis. Optional 5” x 16” travel. 100-lb load capacity.
• Choice of QuadraChek® or Metlogix® digital readouts.
• Standard 2-lens turret system.
• Hardened steel, nickel-plated workstage for long life and corrosion resistance.
• Helix +/- 6° via lamphouse displacement.
• Heavy-duty all-steel construction.
• Fully useable 14” diameter screen.
• Standard swingaway lamphouse.
• Duplex fiber optic surface illumination.
• Digital screen protractor with readings to 1° or .01°.
• Available motorized joystick control and CNC option.

Specifications

Work Table: 5” x 20” (125 mm x 500 mm) w/2 clamping slots
Measuring Travel: 12” (300 mm) (X), 6” (150 mm) (Y),
2.5” (60 mm) Focus
Optional 16” Horiz. Travel
Measuring Stage Resolution: .00005”/.001 mm
Allowable Work Load: 100 lb (45 kg)
Two-Lens Turret
Digital Screen Protractor: 1 min/.01° arc
Duplex Surface Illumination
Helix: +/- 6° via lamphouse displacement
14” Frosted Glass Screen: with 30-, 60- and 90-degree crosslines
Electrical: 115/220 V, 50/60 Hz
Weight: Net 325 lb (147 kg) - Crated 465 lb (211 kg)

Magnification Lenses

OPTIONAL MAGNIFICATION LENSES

• 5x Magnification
• 10x Magnification
• 10x Magnification with long focal distance
• 20x Magnification
• 20x Magnification with long focal distance
• 25x Magnification
• 31½x Magnification
• 50x Magnification
• 62½x Magnification
• 100x Magnification
Specifications

Work Table: 5" x 20" (125 mm x 500 mm)
Measuring Range: 7" x 12" (175 mm x 300 mm)
Optional 7" x 16" (175 mm x 400 mm)
Allowable Work Load: 150 lb (65 kg)
Illumination: Profile - 150 W, Surface - 150 W x 2
Focus Travel: 3" (75 mm)
Screen Size: 16" (400 mm)
Helix: +/- 15°, workstage vernier
Electrical: 100/240 V, 50/60 Hz
Weight: 500 lb (225 kg) - Crated 600 lb (270 kg)

Magnification Lenses

OPTIONAL MAGNIFICATION LENSES

- 5x Magnification
- 10x Magnification
- 20x Magnification
- 25x Magnification
- 31\(\frac{1}{2}\)x Magnification
- 50x Magnification
- 62\(\frac{1}{2}\)x Magnification
- 100x Magnification

The “1600” Series 16” benchtop horizontal beam optical comparator sets a new world standard for 16” comparators, with extra heavy-duty all-steel construction and a large-capacity measuring stage with a superior gothic arch bearing way system.

- High precision 5” x 20” stage with 7” x 12” travel, optional 7” x 16” travel, .00005”/.001 mm resolution glass scales and a 150-lb load capacity.
- Hardened steel, nickel-plated workstage for long life and corrosion resistance.
- Digital screen protractor to 1° or .01°.
- Duplex fiber optic surface illumination.
- +/- 15° helix on stage.
- Erect image.
- Standard swingaway lamphouse.
- Long life tungsten/halogen bulbs.
- Optional 2-lens turret.
- Exclusive Gothic arch bearing ways on stage.
- Choice of QuadraChek® or Metlogix® digital readouts.
- Available motorized joystick controls and full CNC.
The “2450” Series 24” floor model erect image horizontal beam optical comparator features a rugged structure, an 8” x 12” travel measuring stage, a 3-position lens turret, extra heavy-duty all-steel construction and a large capacity measuring stage with an exclusive Gothic arch bearing way system.

- High precision 5” x 24” stage with 8” x 12” travel, .00005”/.001 mm resolution precision glass scales and a 200-lb load capacity, optional 8” x 16” travel.
- Hardened steel, nickel-plated workstage.
- Motorized X and Y axis with joystick controls and X-Y fine adjust jog wheels.
- Digital screen protractor to 1’ or .01°.
- 3-position lens turret.
- Duplex fiber optic surface illumination.
- +/- 15° helix on stage.
- Swingaway lamphouse.
- Three 4” diameter wheels for portability.
- Choice of QuadraChek® or Metlogix® DROs.
- Long life tungsten/halogen bulbs.
- Erect image.
- Exclusive Gothic arch bearing ways on stage.
- Hood with curtains.
- CNC options available.

Specifications

Work Table: 5” x 24” (125 mm x 600 mm)
Measuring Range: 8” x 12” (200 mm x 300 mm)
Optional 8” x 16” (200 mm x 400 mm)
Allowable Work Load: 200 lb (90 kg)
Helix: +/- 15°, workstage vernier
Illumination:
  Profile - 150 W
  Duplex Surface - 150 W x 2
Focus Travel: 3” (75 mm)
Screen Size: 24” (600 mm)
Floor Space: 31” x 64” (785 x 1625 mm)
Electrical: 100/240 V, 50/60 Hz
Weight: 1100 lb (500 kg) - Crated 1300 lb (590 kg)

Magnification Lenses

OPTIONAL MAGNIFICATION LENSES

- 5x Magnification
- 10x Magnification
- 20x Magnification
- 25x Magnification
- 31½x Magnification
- 50x Magnification
- 62½x Magnification
- 100x Magnification
The “2600” Series 30” floor model horizontal beam optical comparator has been a leader in the industry for over 40 years. It offers high accuracy and weight capacity in a portable package, making it an excellent choice for an inspection room or shop floor application. It features S-T’s exclusive Gothic arch bearing ways which provide the best in accuracy and longevity.

- High precision 9” x 12” measuring stage travel with .00005”/.001 mm resolution precision glass scales. Optional 7” x 20” and 7” x 24” travels available.
- Motorized X and Y axis with joystick control.
- Choice of QuadraChek® or Metlogix® digital readouts.
- Optional 6-position power lens changer.
- Hardened steel, chrome-plated workstage for long life and corrosion resistance.
- Tungsten/halogen profile illumination for bright, sharp images at all magnifications.
- Duplex adjustable surface illumination.
- Digital screen protractor with readings to 1° or .01° with rotating steel ring.
- Helix angle +/- 10° by swinging lamphouse.
- Three 7” diameter wheels for portability.
- CNC option available.

**Specifications**

**Measuring Travel:** 9” x 12” (225 mm x 300 mm)  
Larger travels available

**Work Table:** 8” x 35”, hardened steel, chrome-plated

**Focus Travel:** 3”

**Allowable Work Load:** 500 lb

**Gothic Arch Hardened Steel Bearing Ways**

**Stage Motion:** Motorized 2-axis variable speed joystick

**Measuring Stage Resolution:** .00005”/.001 mm

**Digital Screen Protractor:** 1 min/.01° arc

**Duplex Adjustable Surface Illumination**

**30” Frosted Glass Screen:** with 30-, 60- and 90-degree crosslines

**Helix:** +/- 10° by swinging lamphouse

**Mounted on Three 7” Wheels for Portability**

**Electrical:** 115 V, 60 Hz; other voltages available.

**Weight:** 1700 lbs (770 kg) - Crated 200 lbs (907 kg)

**Magnification Lenses**

**OPTIONAL MAGNIFICATION LENSES**

- 5x Magnification
- 10x Magnification
- 20x Magnification
- 31½x Magnification
- 50x Magnification
- 62½x Magnification
- 100x Magnification
This 30" floor model horizontal beam optical comparator provides the same performance and flexibility as our 2600, except with an erect image. The 5600 provides improved viewing due to its vertical screen. It features S-T’s exclusive Gothic arch bearing ways which provide the best in accuracy and longevity.

- High precision 9” x 12” measuring stage travel with .00005"/.001 mm resolution precision glass scales. Optional 7” x 20” and 7” x 24” travels available.
- Motorized X and Y axis with joystick control.
- Choice of QuadraChek® or Metlogix® digital readouts.
- Optional 6-position power lens changer.
- Hardened steel, chrome-plated workstage for long life and corrosion resistance.
- Tungsten/halogen profile illumination for bright, sharp images at all magnifications.
- Duplex adjustable surface illumination.
- Digital screen protractor with readings to 1’ or .01° with rotating steel ring.
- Helix angle +/- 10° by swinging lamphouse.
- Three 7” diameter wheels for portability.
- Available CNC option.

Specifications

Measuring Travel: 9” x 12” (225 mm x 300 mm)
Larger travels available
Work Table: 8” x 35”, hardened steel, chrome-plated
Focus Travel: 3”
Allowable Work Load: 500 lb
Gothic Arch Hardened Steel Bearing Ways
Stage Motion: Motorized 2-axis variable speed joystick
Measuring Stage Resolution: .00005"/.001 mm
Digital Screen Protractor: 1 min/.01° arc
Duplex Adjustable Surface Illumination
30” Frosted Glass Screen: with 30-, 60- and 90-degree crosslines
Helix: +/- 10° by swinging lamphouse
Mounted on Three 7” Wheels for Portability
Electrical: 115 V, 60 Hz; other voltages available.
Weight: 1700 lbs (770 kg) - Crated 2000 lbs (907 kg)

Magnification Lenses

OPTIONAL MAGNIFICATION LENSES

- 5x Magnification
- 10x Magnification
- 20x Magnification
- 31½x Magnification
- 50x Magnification
- 62½x Magnification
- 100x Magnification
This is our top-of-the-line 14” benchtop vertical beam optical comparator. The 4600 offers a 4” x 8” measuring stage travel plus an available 4” x 12” option. It features a 3-position lens turret and S-T’s exclusive Gothic arch bearing ways which provide the best in accuracy and longevity.

• High precision 4” x 8” or 4” x 12” measuring stage travel with .00005”/.001 mm resolution precision glass scales. Quick release with fine adjust on X-axis.

• Hardened steel, precision ground bearing ways

• Choice of QuadraChek® or Metlogix® digital readouts.

• Quick change mount for factory preset magnification lenses in 3-position lens turret.

• Tungsten/halogen profile illumination for bright, sharp images at all magnifications.

• Duplex fiber optic surface illumination.

• Digital screen protractor with readings to 1’ or 01°.

• Available with motorized, joystick-controlled stages.

• CNC option available.

Specifications

**Work Table:** 10” x 14” (250 mm x 350 mm)  
  or 10” x 18” (250 mm x 450 mm)

**Measuring Range:** 4” x 8” (100 mm x 200 mm)  
  or 4” x 12” (100 mm x 300 mm)  
  with quick release on X-axis

**Measuring Stage Resolution:** .00005”/.001 mm

**Allowable Work Load:** 25 lb

**Illumination:** Profile - 150 W, Surface - 100 W

**Focus Travel:** 4”

**Screen Size:** 14” diameter with 30-, 60- and 90-degree crosslines

**Digital Screen Protractor:** 1 min./.01° arc

**Electrical:** 100/240 V, 50/60 Hz

**Weight:** 280 lb (127 kg) - Crated 410 lb 186 kg

Magnification Lenses

**OPTIONAL MAGNIFICATION LENSES**

• 5x Magnification

• 10x Magnification

• 10x Magnification with long focal distance

• 20x Magnification

• 20x Magnification with long focal distance

• 25x Magnification

• 31½x Magnification

• 50x Magnification

• 62½x Magnification

• 100x Magnification
The “2400” Series 24” floor model vertical beam optical comparator sets a new standard for quality and price. It features a heavy-duty all-steel construction with ultra bright and extremely sharp image with a built-in 3-lens turret with S-T’s exclusive Gothic arch vertical bearings.

- High precision 4” x 8”, 4” x 12”, 6” x 8” or 6” x 12” travel measuring stages with .00005”/.001 mm resolution precision glass scales. Quick release with fine adjust on x-axis.
- Heavy-duty all-steel construction
- Choice of QuadraChek® or Metlogix® digital readouts.
- Hardened steel bearing ways.
- 3-position lens turret.
- Curtain canopy and curtains.
- Digital screen protractor to 1° or .01°.
- Long life tungsten/halogen bulbs.
- Duplex fiber optic surface illumination.
- Available with motorized, joystick-controlled stages.
- Available CNC option.

Specifications

Work Table: 10” x 14” (250 mm x 350 mm), 10” x 18” (250 mm x 450 mm), 12” x 14” (300 mm x 350 mm) or 12” x 18” (300 mm x 450 mm)
Measuring Range: 4” x 8” (100 mm x 200 mm), 4” x 12” (100 mm x 300 mm), 6” x 8” (150 mm x 200 mm) or 6” x 12” (150 mm x 300 mm)
Allowable Work Load: 25 lb (11 kg)
Illumination: Profile - 150 W, Surface - 150 W x 2
Digital Screen Protractor: 1 min/.01° arc
Focus Travel: 4” (100 mm)
Screen Size: 24” (600 mm) with 30-, 60- and 90-degree crosslines
Floor Space: 31” x 47” (785 mm x 1190 mm)
Electrical: 100/240 V, 50/60 Hz
Weight: 450 lb (200 kg) - Crated 830 lb (376 kg)

Magnification Lenses

OPTIONAL MAGNIFICATION LENSES

- 5x Magnification
- 10x Magnification
- 20x Magnification
- 25x Magnification
- 31½x Magnification
- 50x Magnification
- 62½x Magnification
- 100x Magnification
Let us “REMANUFACTURE” your SCHERR-TUMICO 30” Comparator for a fraction of the cost of a new one.

Above: Actual photo of customer’s 26-year-old 2600 Series 30” Comparator when received at S-T Industries to be remanufactured.

Above: Actual photo of the same 2600 Series 30” Comparator after being remanufactured at S-T Industries, ready to ship back to the customer.

When S-T Industries remanufactures your 2600 Series 30” Comparator, it is returned to you in “As New Condition” with a certificate to NIST. The remanufactured price includes installation and training at your facility and a new 2-year warranty.
Remanufactured 30" Comparators

A complete 2500/2600 remanufacture consists of the following:

The customer must send the unit to S-T freight prepaid. We completely strip down the unit, repair any damage to the body, enlarge the side door to current specs, and totally repaint the body to current paint specs. We rebuild the entire stage assembly, reground or replace the table top and bearing ways, install new bearings, new .00005"/.001 mm Acu-Rite glass scales, new bellows, new surface illuminator assembly, new long-life tungsten halogen bulb assemblies for profile and surface illumination, new protractor ring with digital readout Q axis in DRO, new glass screen, new curtains, replace all required lenses in the lamphouse and replace all electrical components as required. Repair of the magnification lenses is not included in the rebuild.

The remanufactured 2500/2600 unit is as new—it cannot be distinguished from a new unit. The unit is returned to the customer freight collect. Price includes installation and training at the customer’s facility and includes a new 2-year warranty.

<table>
<thead>
<tr>
<th>CATALOG NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-2600-01</td>
<td>REMANUFACTURED 2500/2600 WITH QC-121 DRO</td>
</tr>
<tr>
<td>21-2600-02</td>
<td>REMANUFACTURED 2500/2600 WITH QC 221</td>
</tr>
<tr>
<td>21-2600-22</td>
<td>REMANUFACTURED 2500/2600 WITH M2</td>
</tr>
<tr>
<td>21-2600-03</td>
<td>REMANUFACTURED 2500/2600 WITH QC 221E W/EDGE DETECTION</td>
</tr>
<tr>
<td>21-2600-23</td>
<td>REMANUFACTURED 2500/2600 WITH M2 W/EDGE DETECTION</td>
</tr>
<tr>
<td>21-2600-04</td>
<td>REMANUFACTURED 2500/2600 WITH QC 321E W/EDGE DETECTION</td>
</tr>
<tr>
<td>21-2600-05</td>
<td>REMANUFACTURED 2500/2600 WITH QC 5215 W/EDGE DETECTION</td>
</tr>
<tr>
<td>21-2800-01</td>
<td>REMANUFACTURED 2500/2600 WITH QC 5215 CNC W/EDGE DETECTION</td>
</tr>
</tbody>
</table>

If the unit is to be upgraded from an original tippet and toggle system to the new style joystick system which includes all new electronics, motor control power boards, new lamphouse and joystick with keypad, or if the unit is upgraded with a 6-position power lens changer, see below and price list.

<table>
<thead>
<tr>
<th>CATALOG NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-1700-00</td>
<td>JOYSTICK CONTROL UPGRADE</td>
</tr>
<tr>
<td>21-2140-00</td>
<td>6-POSITION POWER LENS CHANGER UPGRADE</td>
</tr>
</tbody>
</table>

NOTE: On most occasions we have remanufactured units available for sale.

NOTE: There is an extra charge to use one of our bodies.

NOTE: If you have an old S-T SCHERR-TUMICO 2500/2600 Series 30" Comparator that you are not using and do not intend to use that you are interested in selling, regardless of its condition, call us at 1-800-326-2039.
Horizontal Beam Comparator FIXTURES

20-1005-24 Large Rotary Vise
- Rotates 360° with readings to 1"
- Vise opens to 3.0" x 5/8" deep
- High precision
- For use on 16", 24" and 30" comparators

20-3633-00 Matched V-Blocks with Centers
- V-Blocks will hold parts up to 1.0" in diameter
- Centers will hold parts up to 3 7/16" in diameter

20-3631-00 Rotary Vise
- Rotates 360° with readings to 1"
- Vise opens to 1 1/2" x 1.0" deep

20-3632-00 Stage Centers
- Matched pair
- Holds parts up to 5.0" in diameter

20-3630-00 Rotary V-Block
- Rotates 360° with readings to 1"
- V-Block holds parts up to 1 1/8" in diameter, including clamp

20-2533-00 Heavy Duty Stage Centers
- Matched pair
- Holds parts up to 8.0" in diameter
- One stage center is spring-loaded for production inspection
- For use on 24" & 30" Comparators

22-3706-03 V-Block w/clamp only
Horizontal Beam Comparator Fixtures

20-3623-00  Concentricity Fixture with High Precision Roller
• Rotates round parts up to 1.0” in diameter to check concentricity, accuracy to .0001”
• Includes adjustable end stop
• Can be locked to stage to check parts from side or end

20-3624-00  Large Concentricity Fixture
• Same as above except holds parts 7/8” to 2.0” in diameter

20-2540-00  Vertical Holding Fixture
• Has Plexiglass holding area with spring clips
• Holds parts up to 4 1/2” x 8 1/4” in diameter
• Ideal for thin, flat or flexible parts

20-2541-00  Large Vertical Holding Fixture
• Has Plexiglass holding area with spring clips
• Holds parts up to 12” x 10” in diameter

20-0390-00  Right Angle Backing Plate
• For use on all Comparators

20-3523-00  Universal Tracer
• Attachment for use on all sizes of Horizontal Beam Comparators
• One stylus traces the contour of the part and the other stylus is magnified and projected onto the comparator screen and compared to a chart overlay drawing of the part
• Tracer has 2” x 2” of travel with two 0.62” diameter ball stylus contacts

* Top photo is the tracer attachment only
* Lower photo is the tracer attachment mounted on a “3500” Series 14” Comparator

22-2535-00  Tracer Attachment for Use on “2600” and “5600” Series 30” Comparators Only
• Tracer mounts to the front of the 30” Comparator
• Tracer has 3” x 3” movement with .125” diameter ball stylus contacts
Vertical Beam Comparator Fixtures

**20-3633-01 Matched V-Blocks with Centers**
- V-Blocks will hold parts up to 1.0” in diameter
- Centers will hold parts up to 3/16” in diameter
- For use on all vertical beam comparators

**20-0222-00 Rotary Top Plate**
- Graduated 360°
- Reading to 2’ of arc
- For use on all stages

**Combination Right Angle Backing Plate/Datum Bar**
- Shown above used as a right angle backing plate.
- Shown above with the right angle bracket removed. The right angle bracket may also be slid to one side to use as a datum bar only.

**20-8614-08** For use on 4” x 8” travel stages
**20-8614-12** For use on 4” x 12”

**20-0222-01 Rotary Top Plate with No Graduations**
- Rotates 360°
- For use on all stages
Screens and Charts

**SEALED IMAGE**

**Comparator Charts and Screens**

ALL CHARTS AND SCREENS FEATURE THE SEALING IMAGE PROCESS

The Sealed Image process was developed to give maximum life to our precision charts and screens. A thin sheet of vinyl plastic is laminated over the artwork, thereby protecting the image from wearing off due to use or cleaning.

The lines on charts are made accurate to their center unless otherwise stated on the chart. Our basic line width is .004 to .005 (.1 mm to .12 mm).

Glass screens are used for new or replacement screens for optical comparators. The image is centered to the OD of the glass to .005". Glass screens are available only for 14", 16", 24" and 30" S-T Industries, Inc./SCHERR-TUMICO optical comparators. Glass screens are recommended when the artwork pattern will be used for all applications.

Plastic overlay charts are available in any diameter up to 30" (760 mm). The plastic material is dimensionally stable, non-flammable and resistant to oil. To avoid distortion, plastic overlay charts should not be stored above 140˚F (60˚C).

Cleaning - Clean Sealed Image charts and screens with glass cleaner, soap and water or isopropanol using a soft cotton cloth. Avoid harsh rubbing. Do not use paper towels or coarse cloths and do not use acetone, benzene, lacquer thinner or other strong chemicals as they will damage the surface.

To order glass and plastic charts, use this part number format:

**NOTE:** Other angular line combinations are available on request.

**CENTERLINE SCREENS**

STANDARD GLASS CENTERLINE SCREENS ARE BASIC FOR ANY OPTICAL COMPARATOR.

**IMPORT**

- When ordering glass replacement screens, please include the model number and serial number of your optical comparator.

**SPECIAL ARTWORK**

- Custom artwork is available on request. We can combine standard patterns or produce custom artwork scaled from your drawings.

**NIST CERTIFICATIONS**

- Accuracy certifications can be provided at an additional charge. Please request this at the time your order is placed.

**NOTE:** Glass screens are only available for optical comparators manufactured by S-T Industries/SCHERR-TUMICO.
COMBINATION MAGNIFICATION-RADIUS CHARTS

Other combinations available on request.

COMBINATION RADIUS-GRID CHARTS

Other magnifications and increments available on request.

RADIUS CHARTS

Other magnifications and increments available on request.

GRID CHARTS

Other magnifications and increments available on request.
Screens and Charts

**180° Radius Charts**

*with 30° and 45° Angles*

Other angle lines, increments and combination magnifications available on request.

**Thread Charts**

All thread charts are for checking the thread angle, root and crest forms and depth.

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Thread Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>74-0488</td>
<td>American National, 4 to 80 pitch threads</td>
</tr>
<tr>
<td>74-0489</td>
<td>Unified Basic, 4 to 80 pitch threads</td>
</tr>
<tr>
<td>74-0490</td>
<td>ISO Metric, .25 to 6.0 mm pitch threads</td>
</tr>
<tr>
<td>74-0491</td>
<td>UNJ Basic, MIL Spec 8879A 4 to 80 pitch threads</td>
</tr>
<tr>
<td>74-0493</td>
<td>American National Taper pipe threads</td>
</tr>
</tbody>
</table>

Note: You must specify magnification lens being used on your comparator.

**Glass Protractor Screens**

Available in other increments and available in combination of radius, grid, combination radius-grid or thread charts on request.

**Special Charts**

Our engineering staff is available to assist you in developing special charts tailored to your specifications. They can be printed in any size or configuration.
Comparator Calibration Kits

74-0413-00
- Master magnification ball checker
- In wood case and certificate to NIST
- For use on all sizes and types of comparators

74-0321-10
- 10” glass magnification scale
- With knobs, wood case and certificate to NIST
- For 12” through 16” comparators

74-0330-20
- 20” glass magnification scale
- With knobs, wood case and certificate to NIST
- For 24” and larger comparators

74-0500-00
- Stage calibration master for checking X & Y linear accuracy and squareness of stage
- Includes wood case and certificate to NIST
- For all sizes and types of comparators
- Measuring range, 4” x 6”, English and metric

74-0501-00
- 12” long, English and metric
- Stage calibration master for checking linear stage accuracy
- Includes wood case and certificate to NIST
- For use on all comparators
**Console Bases & Lens Focal Clearing Chart**

**Standard Console Base**
For 3500, 3700 and 4600 Series Optical Comparators

All-steel construction with laminated top and four adjustable leveling pads.

**Heavy-Duty Console Base**
For 3500, 3700, 1600 and 4600 Series Optical Comparators

Heavy-duty all-steel console with front door and four adjustable leveling pads.

---

**All 14” Comparators**

<table>
<thead>
<tr>
<th>MAG.</th>
<th>WD</th>
<th>EF</th>
<th>DIA 1/2 F</th>
<th>DIA FF</th>
</tr>
</thead>
<tbody>
<tr>
<td>5X</td>
<td>1.80” (45.7 mm)</td>
<td>2.80” (71.1 mm)</td>
<td>3.60” (91.4 mm)</td>
<td>3.60” (91.4 mm)</td>
</tr>
<tr>
<td>10X</td>
<td>2.00” (50.8 mm)</td>
<td>1.40” (35.6 mm)</td>
<td>8.30” (210.8 mm)</td>
<td>6.00” (152.4 mm)</td>
</tr>
<tr>
<td>10X</td>
<td>1.25” (31.8 mm)</td>
<td>0.70” (17.8 mm)</td>
<td>3.20” (81.3 mm)</td>
<td>2.60” (66.0 mm)</td>
</tr>
<tr>
<td>20X</td>
<td>3.13” (79.5 mm)</td>
<td>0.70” (17.8 mm)</td>
<td>6.79” (172.5 mm)</td>
<td>4.84” (122.9 mm)</td>
</tr>
<tr>
<td>25X</td>
<td>2.75” (69.9 mm)</td>
<td>0.56” (14.2 mm)</td>
<td>5.14” (130.6 mm)</td>
<td>4.07” (103.4 mm)</td>
</tr>
<tr>
<td>311/4X</td>
<td>2.00” (50.8 mm)</td>
<td>0.87” (22.1 mm)</td>
<td>2.90” (73.7 mm)</td>
<td>2.23” (56.6 mm)</td>
</tr>
<tr>
<td>50X</td>
<td>2.50” (63.5 mm)</td>
<td>0.28” (7.1 mm)</td>
<td>9.20” (233.7 mm)</td>
<td>6.49” (163.4 mm)</td>
</tr>
<tr>
<td>621/2X</td>
<td>2.90” (73.7 mm)</td>
<td>0.22” (5.6 mm)</td>
<td>9.20” (233.7 mm)</td>
<td>9.20” (233.7 mm)</td>
</tr>
<tr>
<td>100X</td>
<td>1.00” (25.4 mm)</td>
<td>0.14” (3.6 mm)</td>
<td>3.20” (81.3 mm)</td>
<td>2.80” (71.1 mm)</td>
</tr>
</tbody>
</table>

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**All 16” Comparators**

<table>
<thead>
<tr>
<th>MAG.</th>
<th>WD</th>
<th>EF</th>
<th>DIA 1/2 F</th>
<th>DIA FF</th>
</tr>
</thead>
<tbody>
<tr>
<td>5X</td>
<td>1.55” (39.4 mm)</td>
<td>1.6” (41 mm)</td>
<td>9.7” (246 mm)</td>
<td>7.0” (178 mm)</td>
</tr>
<tr>
<td>10X</td>
<td>3.23” (82 mm)</td>
<td>0.8” (20 mm)</td>
<td>14.0” (356 mm)</td>
<td>9.9” (251 mm)</td>
</tr>
<tr>
<td>25X</td>
<td>2.76” (70 mm)</td>
<td>0.64” (16 mm)</td>
<td>10.4” (264 mm)</td>
<td>7.9” (201 mm)</td>
</tr>
<tr>
<td>311/4X</td>
<td>2.09” (53 mm)</td>
<td>0.62” (16 mm)</td>
<td>7.9” (201 mm)</td>
<td>6.5” (165 mm)</td>
</tr>
<tr>
<td>50X</td>
<td>4.8” (122 mm)</td>
<td>0.16” (4 mm)</td>
<td>5.4” (137 mm)</td>
<td>4.9” (124 mm)</td>
</tr>
<tr>
<td>621/2X</td>
<td>8.4” (213 mm)</td>
<td>1.2” (30 mm)</td>
<td>15.4” (391 mm)</td>
<td>13.5” (343 mm)</td>
</tr>
<tr>
<td>100X</td>
<td>1.69” (43 mm)</td>
<td>0.16” (4 mm)</td>
<td>5.4” (137 mm)</td>
<td>4.9” (124 mm)</td>
</tr>
</tbody>
</table>

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**All 24” Comparators**

<table>
<thead>
<tr>
<th>MAG.</th>
<th>WD</th>
<th>EF</th>
<th>DIA 1/2 F</th>
<th>DIA FF</th>
</tr>
</thead>
<tbody>
<tr>
<td>5X</td>
<td>5.4” (137 mm)</td>
<td>2.4” (61 mm)</td>
<td>18.3” (465 mm)</td>
<td>13.8” (351 mm)</td>
</tr>
<tr>
<td>20X</td>
<td>5.4” (137 mm)</td>
<td>1.2” (30 mm)</td>
<td>17.9” (455 mm)</td>
<td>17.9” (455 mm)</td>
</tr>
<tr>
<td>25X</td>
<td>4.7” (119 mm)</td>
<td>1.0” (25 mm)</td>
<td>18.3” (465 mm)</td>
<td>15.0” (381 mm)</td>
</tr>
<tr>
<td>311/4X</td>
<td>3.9” (99 mm)</td>
<td>0.5” (13 mm)</td>
<td>16.6” (422 mm)</td>
<td>14.9” (378 mm)</td>
</tr>
<tr>
<td>50X</td>
<td>4.7” (119 mm)</td>
<td>1.0” (25 mm)</td>
<td>18.3” (465 mm)</td>
<td>15.0” (381 mm)</td>
</tr>
<tr>
<td>621/2X</td>
<td>1.9” (48 mm)</td>
<td>0.24” (6 mm)</td>
<td>5.6” (142 mm)</td>
<td>5.0” (127 mm)</td>
</tr>
</tbody>
</table>

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**All 30” Comparators**

<table>
<thead>
<tr>
<th>MAG.</th>
<th>WD</th>
<th>EF</th>
<th>DIA 1/2 F</th>
<th>DIA FF</th>
</tr>
</thead>
<tbody>
<tr>
<td>5X</td>
<td>4.8” (122 mm)</td>
<td>6.0” (152 mm)</td>
<td>10.1” (256 mm)</td>
<td>9.9” (251 mm)</td>
</tr>
<tr>
<td>10X</td>
<td>6.5” (165 mm)</td>
<td>3.0” (76 mm)</td>
<td>20.2” (516 mm)</td>
<td>15.5” (394 mm)</td>
</tr>
<tr>
<td>20X</td>
<td>4.4” (112 mm)</td>
<td>1.5” (38 mm)</td>
<td>15.4” (391 mm)</td>
<td>13.5” (343 mm)</td>
</tr>
<tr>
<td>311/4X</td>
<td>3.2” (81 mm)</td>
<td>1.0” (25 mm)</td>
<td>10.0” (254 mm)</td>
<td>7.9” (201 mm)</td>
</tr>
<tr>
<td>50X</td>
<td>2.4” (61 mm)</td>
<td>0.6” (15 mm)</td>
<td>8.0” (203 mm)</td>
<td>6.3” (160 mm)</td>
</tr>
<tr>
<td>621/2X</td>
<td>2.1” (53 mm)</td>
<td>0.5” (13 mm)</td>
<td>6.4” (163 mm)</td>
<td>5.3” (135 mm)</td>
</tr>
<tr>
<td>100X</td>
<td>1.8” (46 mm)</td>
<td>0.3” (8 mm)</td>
<td>6.4” (163 mm)</td>
<td>5.4” (137 mm)</td>
</tr>
</tbody>
</table>
New M2 Touch Screen Controls

M2 Touch Pad Dimensional Measurement Digital Readout For Optical Comparators with the Windows® 7 Operating System.

The easiest and fastest to use Digital Readout System for optical comparators on the market today.

Features of the M2 Measuring Solution

• **Designed for Multi-Touch software control**: In addition to conventional mouse interface, the expanded Multi-Touch logic allows for versatile pan and zoom of the active part view with a pinch, swipe, or press.

• **Advanced crosshair probe toolbox**: For Optical Edge enabled systems, both “simple” and “auto edge” crosshair probes are available. The “auto edge” probe captures points on edges automatically. The M2’s industry first **EdgeLogic™** system (Optical Edge enabled systems only) enables gesture driven control of start and end measurement commands. Start and finish measurements quickly, without the need for direct software interaction.

• **Graphics-based “Part View” constructions**: Generate popular construction types, like Distances and Tangent Lines, from within the graphical part view itself.

• **Industry-leading support for additional tolerance conventions**: Tolerances can be applied in the standard feature to feature fashion, or by using a more traditional “place tolerancing” system. Engineering drawings may indicate that all features reported to 2 significant digits will get one tolerance value, where all features reported to 3 digits will get another. The M2 software allows for the entry and application of universal tolerance values according to these feature resolution groupings.

• **Feature Detail Graphics**: Individual feature views provide informative drawings displaying point cloud distributions, as well as nominal deviations, and tolerance results. Scroll through your measured features list from this view for a feature by feature display of Actual, Nominal, Tolerance, Deviation and Data Fit Type information.

• **Report Generation**: Flexible reporting capability supports a range of application requirements, from simple to complex. Custom report headers, footers, and printout graphics can all be included as part of easily generated program playback routines, or simply printed, or exported as data files, on the fly.

• **Support for all current industry standard software methodologies for Stage and Optics calibration**: Simple machine/optic calibration can be achieved using popular machine and optic correction methods. (LEC, SLEC, NLEC, Distance Calibration).

• **Industry leading Operating System platform**: The Windows® 7 operating system represents the current enterprise solution for personal computer based software operating systems. You gain the performance and reliability of a globally recognized software solution as part of your measuring machine package.
Quadra Chek® Digital Readouts

STANDARD DIGITAL READOUT
QUADRA-CHEK® 120 (100)
The Standard digital readout features absolute/incremental, IN/MM conversion, random zeroing, RS232C output and linear error compensation.

Quadra-Chek® 220
This powerful digital readout provides fast geometric computations in a simple, easy-to-use format. Functions include point, line, circle, distance, angle, skew alignment and Measure Magic. Other features include Inch/MM, Cartesian/Polar, nearest/farthest distance, complementary angles, serial and parallel ports and 200-feature memory. Large, high-contrast LCD screen graphically displays measurement features and construction. Housing tilts backward or forward for best angle of operation.

Quadra-Chek® 320
The QC 320 features a touch screen, high-resolution color display. Its functions include all the same standard geometric features as QC-220 Series; part programming and reporting.

Quadra-Chek® 5000
PC computer-based geometric readout system is mouse-driven with on-screen graphic representation of part or part segment as it is measured. Simple CAD interface simplifies constructions and part programming. Unlimited part and feature memory. Includes computer with Microsoft® Windows®, fiber optic edge sensor and all functions found in the Quadra-Chek 200.
## S-T Optical Comparator Specification Guide

### Standard Series No.
- 3500
- 3700
- 1600
- 4600
- 2400
- 2450
- 2600
- 5600

### CNC Series No.
- N/A
- 3788
- 1680
- 4800
- 2480
- 2488
- 2800
- 5800

### Screen Diameter
- 14" Horizontal
- 14" Inverted
- 16" Horizontal
- 16" Vertical
- 14" Vertical
- 24" Horizontal
- 24" Inverted
- 30" Horizontal
- 30" Inverted

### Profile Illumination
- Horizontal
- Vertical

### Workstages
- Workstage Size
  - Standard Series: 5" x 16" 5" x 20" 5" x 20" 10" x 14" 10" x 14" 5" x 24" 8" x 35" 8" x 35"
  - CNC Series: N/A 3788 1680 4800 2480 2488 2800 5800

### Workstage Travel
- X-Axis
  - Standard Series: 10" (250 mm) 12" (300 mm) 12" (300 mm) 8" (200 mm) 8" (200 mm) 12" (300 mm) 12" (300 mm) 12" (300 mm)
  - CNC Series: N/A 1680 4800 2480 2488 2800 5800

- Y-Axis
  - Standard Series: 4" (100 mm) 6" (150 mm) 7" (175 mm) 4" (100 mm) 6" (200 mm) 8" (225 mm) 9" (225 mm) 9" (300 mm)
  - CNC Series: N/A 1680 4800 2480 2488 2800 5800

### Stage Workload Capacity
- Standard Series: 50 lb 100 lb 150 lb 25 lb 25 lb 200 lb 500 lb 500 lb
- CNC Series: N/A 100 lb 150 lb 15 lb 15 lb 150 lb 500 lb 500 lb

### Helix Adjustment
- Standard Series: +/- 6˚ +/- 6˚ +/- 15˚ N/A N/A +/- 15˚ +/- 10˚ +/- 10˚
- CNC Series: N/A

### Optional Stages
- Workstage Size
  - Standard Series: N/A 5" x 20" 5" x 24" 10" x 18" 10" x 18" 5" x 24" 8" x 35" 8" x 35"
  - CNC Series: N/A 3788 1680 4800 2480 2488 2800 5800

### Workstage Travel
- X-Axis
  - Standard Series: N/A 16" 16" 12" 12" 16" 20" or 24" 20" or 24"
  - CNC Series: N/A 1680 4800 2480 2488 2800 5800

- Y-Axis
  - Standard Series: N/A 5" 7" 4" 6" 8" 7" 7"
  - CNC Series: N/A 1680 4800 2480 2488 2800 5800

### Stage Workload Capacity
- Standard Series: N/A 100 lb 150 lb 15 lb 15 lb 150 lb 500 lb 500 lb
- CNC Series: N/A 100 lb 150 lb 15 lb 15 lb 150 lb 500 lb 500 lb

### Readouts
- QC 120
  - Standard Series: S S S S S S S S
  - CNC Series: N/A

- M2 and M2E
  - Standard Series: 0 0 0 0 0 0 0 0
  - CNC Series: N/A

- QC 220/221
  - Standard Series: 0 0 0 0 0 0 0 0
  - CNC Series: N/A

- QC 220E/221E w/edge sensor
  - Standard Series: 0 0 0 0 0 0 0 0
  - CNC Series: N/A

- QC 321E w/edge sensor
  - Standard Series: 0 0 0 0 0 0 0 0
  - CNC Series: N/A

- QC 5215 w/edge sensor
  - Standard Series: 0 0 0 0 0 0 0 0
  - CNC Series: N/A

### Options
- Surface Illumination
  - Standard Series: S S S S S S S S
  - CNC Series: N/A

- Digital Screen Protractor
  - Standard Series: 0 0 0 0 0 0 0 0
  - CNC Series: N/A

- Power X-Y Axis/Joystick
  - Standard Series: N/A
  - CNC Series: N/A

- Turret Lens Changer
  - Standard Series: N/A 0 0 S S S 0 0
  - CNC Series: N/A

- Iris Diaphragm
  - Standard Series: 0 0 0 0 0 0 0 S
  - CNC Series: N/A

- Green Filter
  - Standard Series: 0 0 0 0 0 0 0 S
  - CNC Series: N/A

### Magnification Lenses
- Full Range of Mag. Lenses
  - Standard Series: 10X, 20X, 25X, 311/4X, 50X 621/2X, 100X 5X Magnification Lens
  - Standard Series: 0 0 0 0 0 0 0 0
  - CNC Series: N/A

### Accessories
- Stage Centers
  - Standard Series: 0 0 0 0 0 0 0 0
  - CNC Series: N/A

- Rotary Vise
  - Standard Series: 0 0 0 N/A N/A 0 0 0
  - CNC Series: N/A

- V-Blocks w/ Centers
  - Standard Series: 0 0 0 0 0 0 0 0
  - CNC Series: N/A

- Rotary V-Blocks
  - Standard Series: 0 0 0 N/A N/A 0 0 0
  - CNC Series: N/A

- Rotary Top Plate
  - Standard Series: N/A N/A N/A 0 0 N/A N/A N/A
  - CNC Series: N/A

- Glass Plate Workholder
  - Standard Series: 0 0 0 N/A N/A 0 0 0
  - CNC Series: N/A

- Tracer Attachment
  - Standard Series: 0 0 0 N/A N/A 0 0 0
  - CNC Series: N/A
S-T Industries, Inc.

SCHERR-TUMICO

VIDEO INSPECTION SYSTEMS

See the Quality

OVER 70 YEARS OF MANUFACTURING SCHERR-TUMICO PRECISION INSTRUMENTS

All S-T Industries Optical Comparators include a two-year warranty on parts and labor, installation and training at your facility and a certificate to NIST. There are no additional hidden costs for this service.