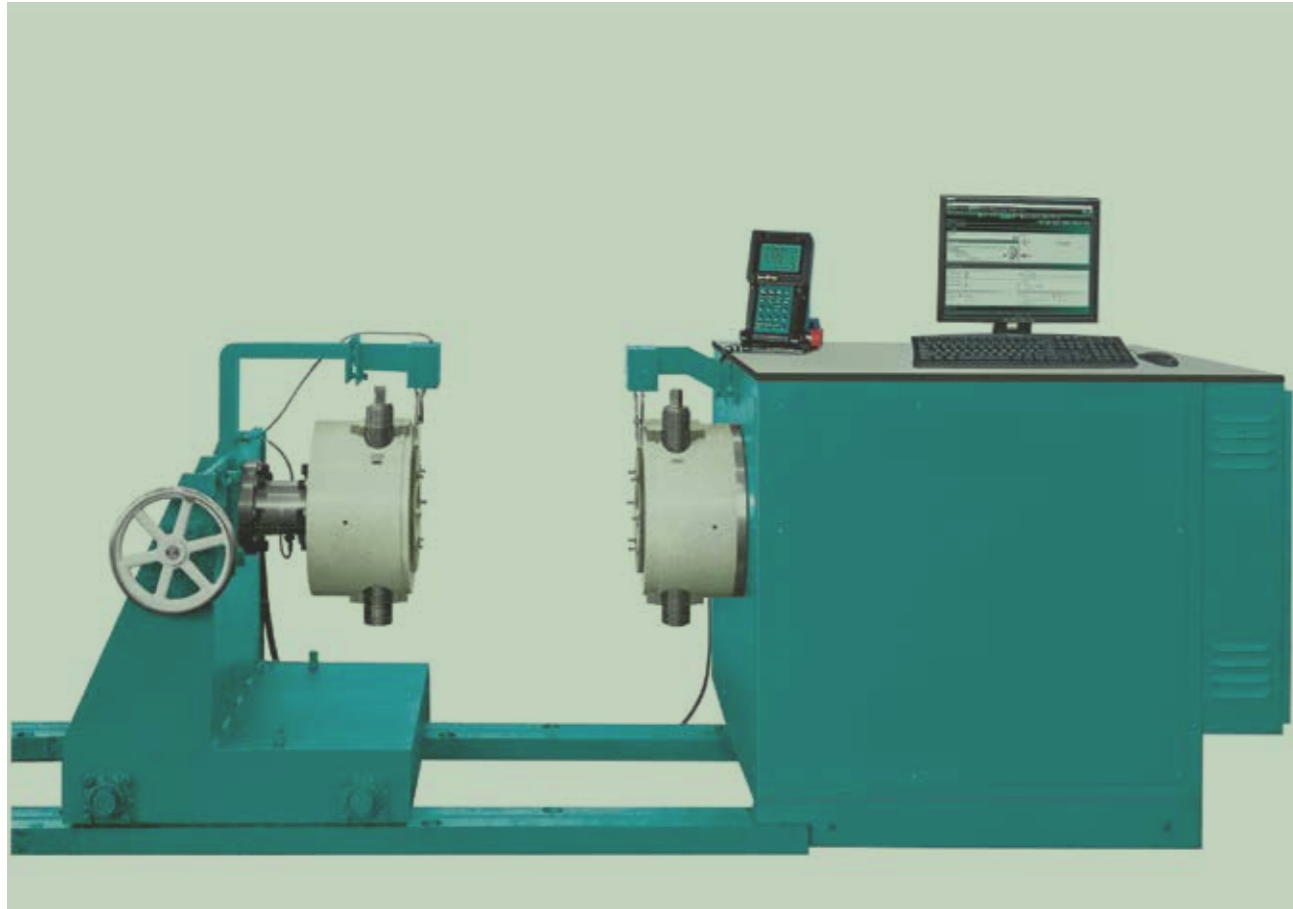


# Torsion Tester



# Torsion Tester



Torsion tester for testing samples up to 7ft/2.1m long and 5in/125mm diameter.

**For maximum versatility and capability, Tinius Olsen offers a full range of torsion testing machines in capacities from 10,000 to 300,000in.lbf or kg.cm (1,000 to 30,000N.m). Higher capacity and other longer length models are available upon request.**

These uniquely superior torsion testers provide loading and weighing capabilities in both directions of rotation. This feature makes it possible to conveniently determine not only the ultimate torque of a specimen, but also how that specimen behaves under conditions of continuous or intermittent torque loading in both directions. Essentially, each torsion tester comprises a variable speed drive loading system, and a digital control and indicating system in a fixed section of the machine. The weighing head with its strain gage torque sensor is mounted on a moveable section that can be positioned on rails to accommodate specimens of varying lengths. Our 10,000in.lbf (1,000N.m) torsion tester is bench mountable and the moveable section slides on a guide rail.

All other models are floor based and are furnished with heavy duty slotted steel bed rails that are normally embedded in, or secured to, a concrete foundation to assure maximum rigidity and accessibility. The moveable section on these higher capacity machines is mounted on four rollers that glide along these slotted rails and allow rapid positioning. Additionally, these rollers allow the moveable unit to compensate for any changes in specimen length during loading. The standard maximum distance between chucks is 7ft (approximately 2.1m); however, other lengths can be provided.

All torsion testers feature our patented bidirectional grips, which ensure slip-free specimen clamping regardless of the twist direction. With these precision machined universal grips, loads can be applied in both directions without changing grips.

The rugged, electromechanical loading system employs a gear reduction system coupled directly to a variable speed drive motor. This reversible loading system provides positive, infinitely variable testing speeds from 5-180° per minute in either direction (the 10,000in.lbf model has a testing speed range from 5-360° per minute in either direction). As the load increases, more power is delivered to the twisting head to apply increasing torque to the specimen to maintain the preselected twisting rate.

No system would be complete without controlling software and data analysis of the resultant data. The addition of a torsion test module to our Horizon software allows complete machine control along with capture and analysis of the resultant torsional test data, showing the material behaviour throughout the test.

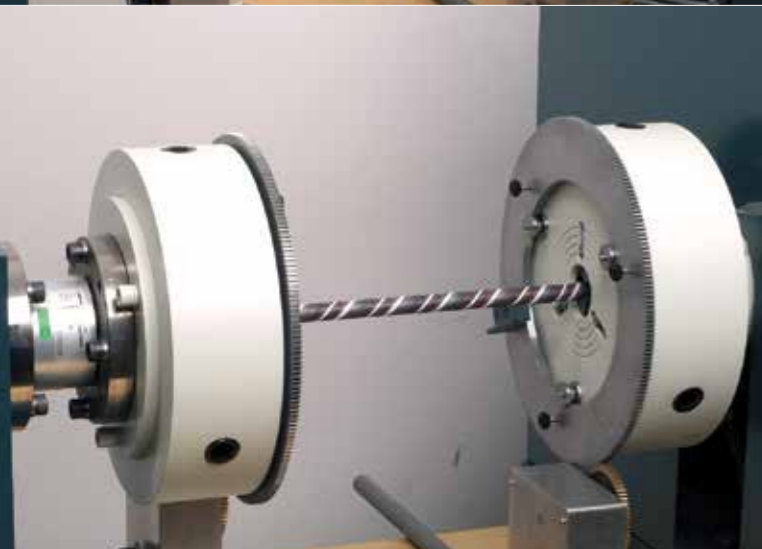
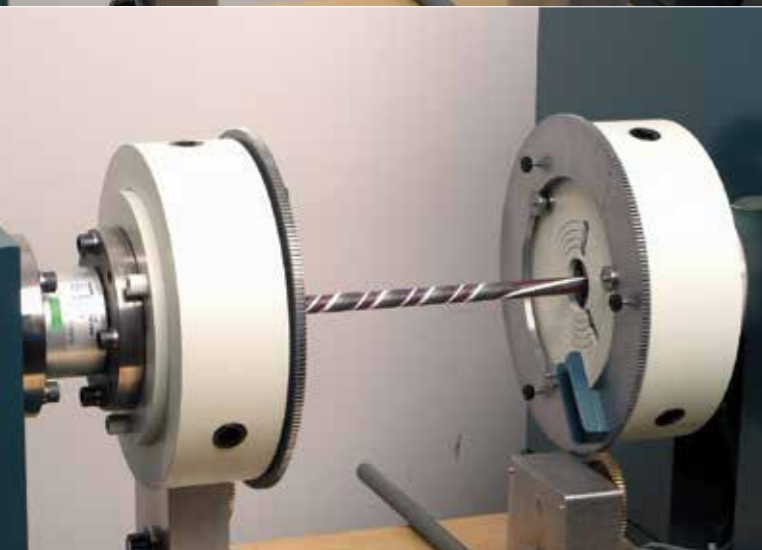
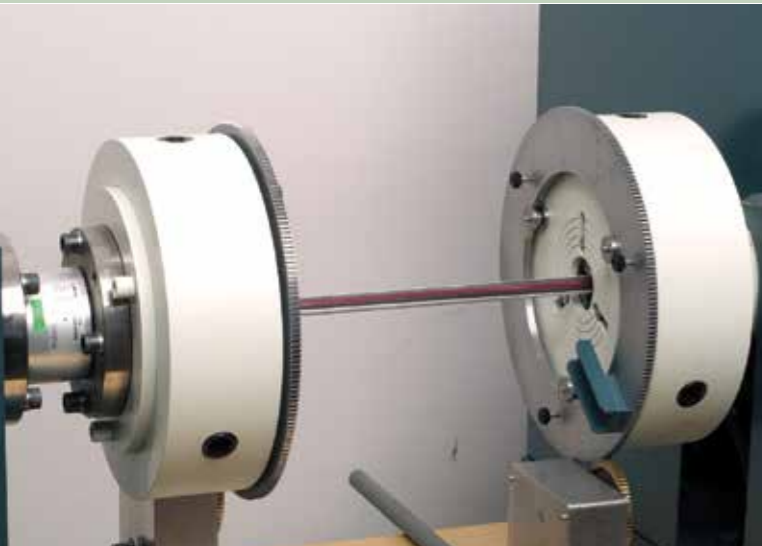
## Optional Features

- + Torsional pickups can be fitted directly to the sample for exact measurement of the angle of twist.



# Specifications

|                           |                  |                  |                   |                    |                    |
|---------------------------|------------------|------------------|-------------------|--------------------|--------------------|
| Capacity                  | In.lbf or kgf.cm | 10,000           | 60,000            | 120,000            | 300,000            |
|                           | N.m              | 1,000            | 6,000             | 12,000             | 30,000             |
| Mounting                  |                  | Bench            | Floor             | Floor              | Floor              |
| Maximum specimen diameter | in               | 1.5              | 3                 | 3                  | 5                  |
|                           | mm               | 38               | 76                | 76                 | 127                |
| Maximum specimen length   | in               | 18               | 72                | 60                 | 90                 |
|                           | mm               | 457              | 1,829             | 1,524              | 2,286              |
| Test speed                | degrees per min  | 5-360            | 5-180             | 5-180              | 5-180              |
| Weight (Net)              | lbs              | 1,100            | 6,200             | 7,625              | 13,500             |
|                           | kgs              | 500              | 2,800             | 3,500              | 6,130              |
| Dimensions (LxDxH)        | in               | 62 x 25 x 29     | 148 x 36 x 78     | 176 x 45 x 78      | 220 x 64 x 84      |
|                           | mm               | 1570 x 630 x 730 | 3760 x 900 x 1980 | 4470 x 1140 x 1980 | 5590 x 1620 x 2130 |



## More spec details

|                               |  |           |
|-------------------------------|--|-----------|
| Torque measurement accuracy   | ±0.5% of indicated torque from 0.2% to 100% capacity   |           |
| Position measurement accuracy | ± 0.1% of reading or 0.05°, whichever is greater   |           |
| Speed accuracy                | ± 0.1% of set speed  |           |
| Operating temperature range   | °F   | 32 to 100 |
|                               | °C   | 0 to 38   |
| Storage temperature range     | °F   | 14 to 115 |
|                               | °C   | -10 to 45 |
| Humidity range                | 10% to 90% non-condensing, wet bulb method   |           |
| Power                         | Standard optional voltages 220/240VAC, 50-60Hz; power must be free of spikes and surges exceeding 10% of the nominal voltage |           |



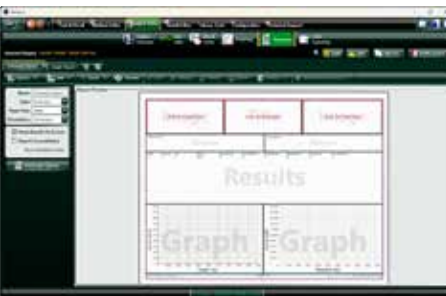
## Horizon makes testing **simple, precise and efficient.**



Tinius Olsen has built upon its long history of providing solutions to an enormous variety of testing problems to develop Horizon, a comprehensive software program that makes testing simple, precise and efficient. Whether the test sample is metal, paper, composite, polymer, rubber, textile, or a micro-component, Tinius Olsen's Horizon software goes far beyond data collection and presentation. It automates system operation and data analysis from R&D to QC testing.



Horizon software sets new standards of data analysis by adding a host of report writing and data manipulation capabilities that will make easy work of your materials testing programs. As with most features of Horizon, flexibility is key; reports can be customized by operators, as can all user screens, allowing operators to focus on features that are most important to them.



In addition to powerful reports, Horizon Materials Testing software is networkable and scalable so operators and managers can operate equipment and review test results from multiple sources and locations. Horizon provides a library of standard, specific and application-focused test routines that have been developed in close co-operation with customers and international standards. Among the many valuable features offered by Horizon are: a test routine library; simultaneous multiple machine control; test, output, method and result editors; and multilayered security. This software is designed for data acquisition, data analysis, and closed loop control of nearly all Tinius Olsen testing systems.

Horizon is rich with capabilities that improve productivity and enable the operator to build, access and use a modern, powerful materials testing database. It employs the latest Windows environments, running on touchscreen-enabled monitors, to create an intuitive user experience. Built-in tutorials, online help, and help desk access provide additional user support.



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