



**Sturtevant  
Richmont**



Advanced Torque Systems

Torque Application & Audit Tools

Torque Calibration Systems





## Welcome!

It has been almost seventy years since P.A. Sturtevant introduced the original deflecting beam torque wrench and shortly thereafter Frank Livermont designed, manufactured and sold the first "clicker" type torque wrench. Their two companies were eventually bought and combined into one organization. In 1984, the late John L. Reynertson, aware of the rich history and potential of the company, purchased Sturtevant Richmond and under his guidance directed a very successful revival of innovation and a singular devotion to the manufacture of the highest quality torque products.

As a customer of S/R we believe the above is important for you to know. Over the last twenty years our focus on innovation and quality has resulted in a string of firsts in our industry. These include, fully automated torque testers, microprocessor based torque testers, utilization of software for hands free torque testing, ISO 9001 Registration, ISO/IEC 17025 Accreditation, supplying certificates of calibration with all tools and successful RF transmission of data within manufacturing facilities.

But that is not all that sets S/R apart from its competitors.

We are different in three very important ways. The first is our sole focus on torque. We are the only independent full line torque products manufacturing company in the U.S. Unlike our competitors, torque is not a small part of what we sell, it is all we sell.


The second reason is our demanding industrial customer base. For decades our products have been and continue to be used for critical assemblies on aircraft, cars, trucks and off road equipment. These manufacturers demand durability, reliability, accuracy and innovation at competitive prices and that is why they use S/R.

The third reason is our systems approach to your torque applications, which is unlike all others. Our sales force has the training and complete range of products to help you develop torque management systems to make your products and processes better. We do not "sell tools," we provide solutions.

Recently, while reviewing past sales literature, I could not help but notice a headline from one of our ads written twenty years ago that is as valid now as it was then.

"Your quality is our business."

Sincerely

  
Raymond R. Reynertson  
President & CEO

  
John L. Reynertson Jr.  
Vice President Engineering

  
Donald J. Reynertson  
Vice President of Sales

# Global Reach... Local Support.

## Worldwide Sales Representation

S/R has trained and experienced representatives in 25 countries spanning four continents. This extensive network assures that you will receive the same level of service at virtually any manufacturing location you may develop or acquire.

## 24 x 7 Support via the Web

The S/R website – [www.srtorque.com](http://www.srtorque.com) – provides immediate support and answers to your questions, 24 hours a day, 7 days a week. We are continually upgrading and expanding the information on our products, applications and how to obtain the greatest possible return on your investment from S/R products. From software to parts diagrams, product data to torque strategy options, the answers you seek will most likely be found at [www.srtorque.com](http://www.srtorque.com).

## Our Quality is Your Assurance ISO 9001:2000 and ISO/IEC 17025:1999

All S/R products manufactured in our Franklin Park facility are built within an ISO 9001 Registered Quality System and calibrated in our ISO/IEC 17025 Accredited Laboratories. Our focus on torque measurement ensures that you have the most advanced systems available for all your needs from initial process design, assembly, calibration, maintenance through field service.

## Corporate Headquarters

Located in Franklin Park, Illinois just west of Chicago and minutes from O'Hare Airport we are able to provide our customers with the service so important for today's business climate.

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### Torque Calibration Systems

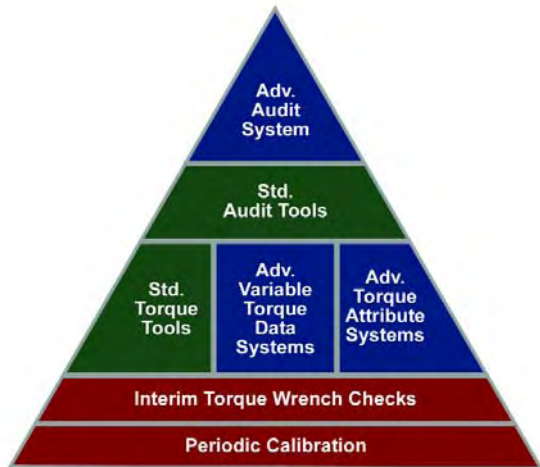
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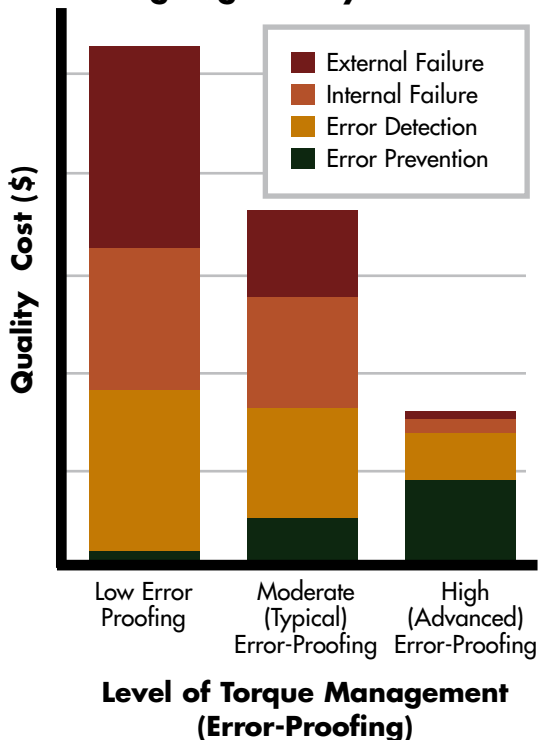
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# Torque Management & Cost Control

## Torque Management Pyramid



## Relationship of Torque Control to Ongoing Quality Costs



## Sound torque management leads directly to measurable profit improvement.

The relationship between sound torque management practices and profitability in assembly operations proves itself repeatedly in thousands of plants every month. Products assembled with threaded fasteners are dependent upon appropriate torque management for product quality. Optimizing the process vastly reduces all categories of nonconformance costs and the savings go directly to your bottom line. Not as readily measurable, but of equal or even greater impact, is the increased level of customer satisfaction that affects your product image, brand name, and sales volume.

Regardless of the term you choose – “Error-Proofing” or “Poka-Yoke” or “Robust Process” – the process objectives remain the same. The fastener tightening process must be as close to immune to error as possible, while retaining high throughput rates.

Torque management systems and equipment have made incredible advancements in this area in the last five years. In fact, the pace of change has been revolutionary. This diversity of new systems and equipment permits optimizing your process for quality, while sustaining or increasing throughput leading to remarkable ROI's for your investment.

The chart on the left is typical of the experience of our customers who have invested in optimizing their torque management. Decreases of 50% - 90% in internal and external nonconformance costs are frequently the result when appropriate torque management systems are designed and implemented.

Our Torque Management Pyramid graphic is provided as a tool to assist you in developing your thoughts about your current process, and how that process might be managed to improve your profitability. Our phone number, 847/455-8677, is provided to get you there.



# Advanced Torque Systems

## For Assembly and Audits

In today's business environment the need for documentation and communication is imperative. S/R has developed a range of products for both assembly and auditing to fill this need.

For assembly operations that include torque applications, manufacturers need to ensure that the torque was properly applied and to then capture the data proving the operation was completed correctly. The PTV and TCV Systems accomplish both objectives by first error proofing the torque application process and then transmitting verification that the proper torque has been applied and completed.

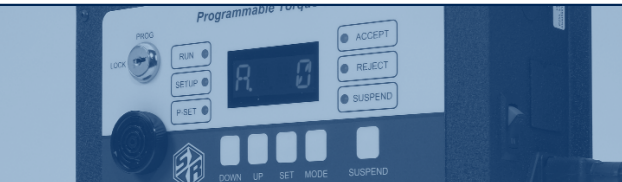
Torque auditing of assemblies is time consuming, laborious and often ineffective in immediately identifying non-compliance in your assembly operations. The Exacta Plus System is a giant step forward in reducing the time needed to actually perform the audits and to then analyze and take action on the information to better control your torque application processes.

If you are not sure of the tools you need after reviewing the following section, please visit our website at [www.srtorque.com](http://www.srtorque.com) and go to the Torque Application Selection Chart or call us at 1-800-877-1347 or 847-455-8677.

## Advanced Torque Systems

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## Programmable Torque Verifier PTV & Switch Wrenches

Real-Time Control and  
Communication for Manual  
Torque Wrenches on the Line!



Whether used to attain line integration of manual torque wrenches, as a backup for multi-spindle nut runners, or as a stand-alone means of improving QA on multi-fastener assemblies, the PTV offers a solid, simple, and reliable means of assuring the proper torque on each and every fastener. This permits 100% assurance that the torque application operation was performed properly for each fastener on 100% of the assemblies! In addition, the PTV and Switch Wrench are superior training tools for new employees, providing instant feedback on their proper or improper use of the wrench. Enforcing proper use of the Switch Wrench assures properly-torqued fasteners from the first assembly to the last!



### Features:

- The PTV uses S/R preset torque Switch Wrenches to assure accurate torque for every fastener.
- Immediately informs operator via lights and a buzzer of proper or improper wrench use.
- Counts and displays every correct click of the Switch Wrench and compares the count to the number of fasteners on the assembly.
- Notifies the operator and the line control PLC when the assembly is complete.
- Ideal for QA systems geared towards attribute data for control.
- Front panel programming efficiently updates all functions.
- Can accept up to 99 fasteners per assembly.
- Modular approach permits direct switch wrench integration into existing PLC or proprietary systems.
- Cables and convertor boxes required for some systems (COSS, PFCS, Device Net and others) can be found on Page 6.

For a detailed explanation of the benefits and advantages of our Advanced Torque Systems, go to our web site: [www.srtorque.com!](http://www.srtorque.com!)

CART Torque Adjustment Tool for the Switch Wrenches is on Page 16. Interchangeable Heads are on Pages 20-23.

### Ordering Information

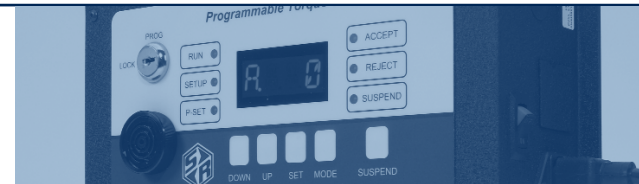
Part No.	Model	Description
10182	PTV, 120 VAC	Programmable Torque Verifier, hardwire, 120 VAC
810854	SLTC 150I	Switch Wrench, hardwire, 150 in.lbs./17 Nm cap, dovetail
810855	SLTC 300I	Switch Wrench, hardwire, 300 in.lbs./34 Nm cap, dovetail
810856	SLTC 750I	Switch Wrench, hardwire, 750 in.lbs./85 Nm cap, dovetail
810857	SLTC 1800I	Switch Wrench, hardwire, 1800 in.lbs./204 Nm, dovetail
810858	SLTC 3600I	Switch Wrench, hardwire, 3600 in.lbs./408 Nm, dovetail
810859	SLTCS 7200I	Switch Wrench, hardwire, 7200 in.lbs./813 Nm, .75" Sq.Dr. fixed
810860	SLTCR 7200I	Switch Wrench, hardwire, 7200 in.lbs./813 Nm, .75" Sq.Dr. ratchet
10440	Cable to PTV	Cable, Switch Wrench to PTV, SLTC 150I only, required
10421	Cable to PTV	Cable, Switch Wrench to PTV, all other SLTC models

## Wireless Real-Time Control and Communication for Manual Torque Wrenches on the Line!

Whether used to attain line integration of manual torque wrenches, as a backup for multi-spindle nut runners, or as a stand-alone means of improving QA on multi-fastener assemblies, the PTV offers a solid, simple, and reliable means of assuring the proper torque on each and every fastener. This permits 100% assurance that the torque application operation was performed properly for each fastener on 100% of the assemblies! In addition, the PTV and Switch Wrench are superior training tools for new employees, providing instant feedback on their proper or improper use of the wrench. Enforcing proper use of the Switch Wrench assures properly-torqued fasteners from the first assembly to the last!

### Features:

- The PTV-FM uses S/R preset torque FM Switch Wrenches to assure accurate torque for every fastener.
- Immediately informs operator via lights and a buzzer on every fastener of proper or improper wrench use.
- Counts and displays every correct click of the Switch Wrench and compares the count to the number of fasteners on the assembly.
- Notifies the operator and the line control PLC when the assembly is complete.
- Ideal for QA systems geared towards attribute data for control.
- Generation II features simplified front panel programming via keyswitches for all functions.
- Up to four FM Switch Wrench or Parameter combinations per PTV-FM.
- Can accept up to 99 fasteners per assembly.
- The secure communication system uses a "rolling code" in the FM signal to prevent cross-talk and false counts.
- 19-pin connector for simple integration into line control system.
- Onboard selectable for 120 VAC or 240 VAC power.



Programmable Torque Verifier-FM

## PTV-FM Gen II & FM Switch Wrenches



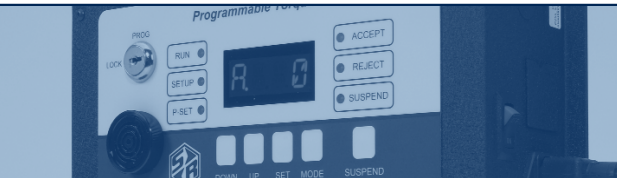
### Ordering Information

Part No.	Model	Description
10235	PTVFM	Programmable Torque Verifier FM
810271	SLTC-FM 150I	FM Switch Wrench, 150 in.lbs./17 Nm cap, dovetail
810272	SLTC-FM 300I	FM Switch Wrench, 300 in.lbs./34 Nm cap, dovetail
810273	SLTC-FM 750I	FM Switch Wrench, 750 in.lbs./85 Nm cap, dovetail
810274	SLTC-FM 1800I	FM Switch Wrench, 1800 in.lbs./204 Nm cap, dovetail
810275	SLTC-FM 3600I	FM Switch Wrench, 3600 in.lbs./408 Nm cap, dovetail
810276	SLTC-FM 4800I	FM Switch Wrench, 4800 in.lbs./542 Nm cap, dovetail



CART Torque Adjustment Tool for the Switch Wrenches is on Page 16.  
Interchangeable Heads are on Pages 20-23.





## FM Torque Control Verifier

# TCV



The TCV was created for those who desire to integrate their manual torque wrenches into their line control automation, without all of the features of the PTV or PTV-FM. The TCV performs the comparison and communication functions required for basic control, but without the stand-alone capabilities of the PTV.

### Features:

- FM receiver with code discrimination, for working with the S/R FM Switch Wrench.
- Maximum and Minimum cycle duration (Pull) measurement and comparison.
- Time Between Cycles programmability.
- Instantaneous operator cycle acceptability feedback.
- Simplified PLC communications.
- 120 VAC or 240 VAC operation in a single unit.
- Circuitry designed to work with a wide range of PLC system voltages.
- Can work with up to four (4) FM Switch Wrenches!
- Programming of wrench cycle and communication specifications via software on one simple screen!
- Superior in backup role for automated multi-spindle nutrunners!

### Ordering Information

Part No.	Model	Description
10336	TCV	Torque Control Verifier

For FM Switch Wrenches, see preceeding page.

So Much Integration for so Little Cost!

## Advanced Torque System Integration Devices

To attain the highest ROI, system components must integrate effectively.  
To assure seamless integration we have a broad selection of components meeting common system standards.

### Ordering Information

Part No.	Model	Description
10395	PFCS IB	PFCS Interface for PTV, PTV-FM, TCV, Switch Wrenches
10390	COSS IB	COSS Interface for PTV, PTV-FM, TCV, Switch Wrenches
10397	DevNet IB	Device Net Interface for PTV, PTV-FM TCV, Switch Wrenches
10417	PTV-COSS	Cable, PTV or PTV-FM to COSS Interface
10415	Cable, PTV-PFCS	Cable, PTV or PTF-FM to PFCS Interface
10419	Cable, PTV-DevNet	Cable, PTV or PTV-FM to Device Net Interface
10418	Cable, TCV-COSS	Cable, TCV to COSS Interface
10416	Cable, TCV-PFCS	Cable, TCV to PFCS Interface
10441	Cable, SW-COSS RA	Cable, Switch Wrench to COSS Interface, 150I
10422	Cable, SW-COSS S	Cable, Switch Wrench to COSS Interface, all exc. 150I
10424	Cable, SW-COSS E	Cable Extension for 10422 & 10441 cables, 20 ft. long
10443	Cable, SW-ANDON RA	Cable, Switch Wrench to ANDON Interface, 150I
10426	Cable, SW-ANDON S	Cable, Switch Wrench to ANDON Interface, all exc. 150I
10442	Cable, SW-Custom RA	Cable, Switch Wrench to bare wire end, 150I
10423	Cable, SW-Custom S	Cable, Switch Wrench to bare wire end, all exc. 150I

Need assistance in designing your integration of the tools or selecting the correct components for your needs?  
It's available 24 x 7 at our website - [www.srtorque.com](http://www.srtorque.com)!



Joint torque auditing is the integral part of a sound torque management system that has never been fully integrated into your system – until now!

Auditing in most plants is a process that has not seen the advantages of computerization and integration. As a result it is inefficient and costly.

The Exacta Plus system includes a specially-designed Exacta Plus digital torque wrench that communicates with and is controlled by proprietary software. The data export capabilities of the Exacta Plus system facilitate integration with your plant's quality software. This eliminates inefficiencies associated with information and data handling, and allows you to focus on joint quality – the whole reason you audit!

## Exacta Plus System

It starts with templates where the parameters for each joint you audit are entered. The information you supply and store becomes a task in the database. This information includes; unit of torque measurement, direction of torque, minimum and maximum torque specifications, the number of fasteners to audit in the joint and the name and location of the joint.

The tasks for each joint can be organized and stored into routes – sequences of joints to be audited. When it comes time for a specific route to be run, the information is downloaded from the database to the torque wrench, a route card that associates the displayed task number on the wrench with the joint to be audited is printed, and the tool is assigned to an auditor. It's that simple!

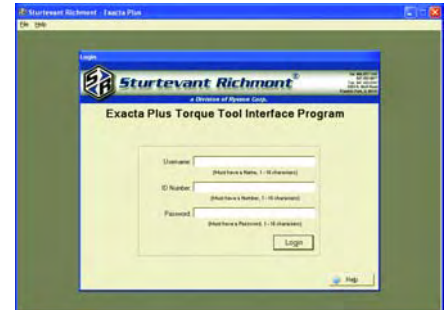
Once the tasks are downloaded, the auditor simply conducts the audit normally – minus the record keeping! The torque data for every fastener on each joint is recorded automatically! During the audit the operator is informed by the visual display of the task (joint) being worked on, the number of fasteners completed within the task, and the torque value as each one is completed. The ability to review results and to change the sequence if necessary is provided through a simple, four-button keypad.

After the route has been run, the data is uploaded for storage in the database as well as printed or exported for further analysis. It's the end of manual record keeping and the inefficiencies associated with it!



## Exacta® Plus

Digital Torque Wrench Series



*Advanced Torque Systems Capability  
comes to Joint Torque Auditing!*



## Exacta® Plus

### Features & Specifications



Yellow Screen  
LCD turns yellow as torque specification is approached. Slow down, you're getting there!



Green Screen  
LCD turns green when the torque specification is met. Stop applying force – you're good!



Red Screen  
LCD turns red if too much torque is applied. Stop! Loosen fastener and retorquer!

#### Features

- Bi-directional accuracy of +/- 1% Indicated Value from 20% to 100% of capacity in Peak Mode.
- Unique "Residual Torque" mode designed specifically for auditing installed fasteners on hard and medium joints.
- Software driven and controlled with RS 232C communications to minimize data handling overhead.
- Software runs on Windows XP Professional and Server 2003 systems, and is included at no additional charge.
- Up to 50 joints with up to 50 fasteners per joint can be loaded onto the tool as a single audit route.
- Uploaded data from the tool is stored and archived automatically, and can readily be exported to other programs for statistical analysis.
- Includes 4 AA rechargeable NiMH batteries and charger.
- Uses the S/R Dovetail Head system with 100+ Interchangeable Heads!\*
- Large high-contrast LCD display permits easy viewing – even at arm's length in shadow!
- Includes custom storage case to protect tool when not in use.

#### Software Specifications

Characteristic	Requirement
Software OS	Windows 2000 SP3, Windows XP, Windows Server 2003
Hardware Requirements	500MHz processor speed, 100 MB free hard drive space, 256 Kb RAM
Wrench Communications	9-pin serial port or USB port (with adapter)
Data Export to other programs	ASCII-delimited files
Databases	Tools, Users, Joints, Routes
Security	Four predefined levels plus individual customization of each
Support	30 days phone support and 1 year e-mail support included
Tool Modes	Peak, Residual (Hard & Medium joints only)



#### Ordering Information

Part Number	Model	Torque Capacity	Units of Measure
10450	Exacta Plus 25	25 ft.lbs., 33.8 Nm, 345 kgf•cm	in.lbs., ft.lbs., Nm, kgf•cm
10451	Exacta Plus 75	75 ft.lbs., 101.5 Nm, 1036 kgf•cm	in.lbs., ft.lbs., Nm, kgf•cm
10452	Exacta Plus 150	150 ft.lbs., 203.3 Nm, 2073 kgf•cm	in.lbs., ft.lbs., Nm, kgf•cm
10453	Exacta Plus 250*	250 ft.lbs., 338.9 Nm, 3456 kgf•cm	in.lbs., ft.lbs., Nm, kgf•cm
10454	Exacta Plus 600*	600 ft.lbs., 813.4 Nm, 8295 kgf•cm	in.lbs., ft.lbs., Nm, kgf•cm
10456	USB to Serial Adapter		

\* 250 ft.lb. Model with 0.5" ratcheting square drive and 600 ft.lb. Model with 0.75" ratcheting square drive



# Torque Application Tools

## For Assembly, Auditing, and Maintenance

The focus on quality for manufactured products over the last 20 years has been nothing short of extraordinary. One of the areas receiving significant attention has been on assemblies that require threaded fasteners.

There are numerous ways a product can be assembled but if the need exists to disassemble the product, the use of threaded fasteners remains the most cost effective and popular method of assembly. To ensure the integrity of an assembly using threaded fasteners, the proper application of torque is the method of choice.

In this section you will find the broadest array of torque application tools available worldwide. The basic categories consist of preset tools for repetitive assembly operations, micrometer adjustable tools for assembly and maintenance and direct reading tools for assembly, maintenance and auditing.

If you are not sure of the tools you need after reviewing the following section, please visit our website at [www.srtorque.com](http://www.srtorque.com) and go to the Torque Application Selection Chart or call us at 1-800-877-1347 or 847/455-8677.



## Torque Application Tools

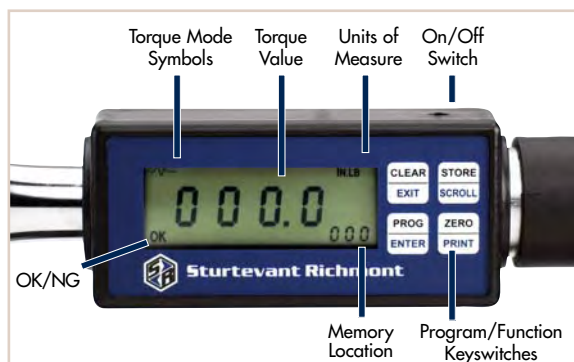
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## Exacta® Digital Series

**Large, high contrast  
LCD and simple  
programming keys  
make *Exacta*®  
easy to use!**



## Exacta® Series Features

- +/- 1% Indicated Value Accuracy from 20% to 100% of capacity.
- Wrench operates in track or peak and measures torque in CW and CCW directions.
- 999 Memory locations for audit and process development uses.
- Large high-contrast LCD display permits easy viewing - even at arm's length in shadow!
- Electronics housing rotates 60 degrees to assist viewing LCD in confined areas.
- Uses the S/R Dovetail Head system with 100+ Interchangeable Heads!\*
- User-programmable torque limits with audible warning system is ideal for assembly operations.
- Serial communications - cable and software are included!
- Standard models use four AA disposable batteries. Long battery life!
- Includes FREE certification from our ISO/IEC 17025 Accredited laboratory!
- Exacta-Production models provide immediate communication and continuous power for production line integration.
- Includes custom plastic storage case.
- Features new Residual Torque Mode for auditing hard and medium joints!



Exacta-Production is designed specifically for line integration!

Part Number	Model	Torque Capacity	Units of Measure	Overall Length
10330	Exacta 25	25 ft. lbs., 33.8 Nm, 345 kgf•cm	in. lbs., ft. lbs., Nm, kgf•cm	14 <sup>5</sup> / <sub>16</sub> in.
10331	Exacta 75	75 ft. lbs., 101.5 Nm, 1036 kgf•cm	in. lbs., ft. lbs., Nm, kgf•cm	15 <sup>57</sup> / <sub>64</sub> in.
10332	Exacta 150	150 ft. lbs., 203.3 Nm, 2073 kgf•cm	in. lbs., ft. lbs., Nm, kgf•cm	19 in.
10333	Exacta 250	250 ft. lbs., 338.9 Nm, 3456 kgf•cm	in. lbs., ft. lbs., Nm, kgf•cm	24 <sup>1</sup> / <sub>2</sub> in.
10334	Exacta 600	600 ft. lbs., 813.4 Nm, 8295 kgf•cm	in. lbs., ft. lbs., Nm, kgf•cm	60 <sup>1</sup> / <sub>2</sub> in.
10345	Exacta-P 25	25 ft. lbs., 33.8 Nm, 345 kgf•cm	in. lbs., ft. lbs., Nm, kgf•cm	12 <sup>1</sup> / <sub>2</sub> in.
10346	Exacta-P 75	75 ft. lbs., 101.5 Nm, 1036 kgf•cm	in. lbs., ft. lbs., Nm, kgf•cm	14 <sup>11</sup> / <sub>16</sub> in.
10347	Exacta-P 150	150 ft. lbs., 203.3 Nm, 2073 kgf•cm	in. lbs., ft. lbs., Nm, kgf•cm	17 <sup>7</sup> / <sub>16</sub> in.
10343	Exacta-P Cable			12 ft.
10344	Exacta-P Power/Comm Box			

All standard models include four (4) Alkaline AA disposable batteries, serial cable, Exawin software, and custom storage case. Software requires tool ownership registration at [www.srtorque.com](http://www.srtorque.com) to download. Follow links to Exacta. Warranty details at S/R website: [www.srtorque.com](http://www.srtorque.com). Interchangeable heads of 1<sup>1</sup>/<sub>16</sub>" Common Centerline length required. See Pages 20-23 of this catalog for selection.

\*Exacta 25 and Exacta 75 come with 0.375" Square Drive Head, Exacta 150 comes with 0.5" Square Drive Head. Exacta 250 comes with 0.5" fixed ratchet, Exacta 600 has 0.75" fixed ratchet.



## MD Series Features

- Oversized single scale dial face is extremely easy to read and helps to eliminate parallax error.
- Heavy duty dial guard protects against breakage.
- Memory indicator is provided on each wrench and remains at the maximum torque achieved for positive verification.
- Each wrench comes in its own custom storage box.
- Wrench can be used in both the left and right hand direction.
- Accuracy of +/- 3% Indicated Value (from 20% to 100% of capacity) meets or exceeds ASME B107.14M and ISO 6789.
- A neoprene rubber grip is provided for comfort and to insure proper hand placement for maximum accuracy; not available on 3/4" and 1" sq. dr. models.
- Dial faces are color coded: silver for inch pounds, gold for foot pounds and white for Newton metres.
- Extension handle included on 600 ft.-lb/800Nm and greater capacity models for ergonomic advantage.
- Includes FREE NIST-traceable tabulated certification!

## Dial MD Series



### Memory Dial Series – English

Part Number	Model	Torque Capacity	Steps of Graduation	Square Drive	Overall Length	Weight (lbs.)
850719	MD 50I	50 in. lbs.	1 in. lb.	¼ in.	10¼ in.	1.2
850701	MD 150I	150 in. lbs.	2 in. lbs.	⅜ in.	10¼ in.	1.2
850702	MD 300I	300 in. lbs.	5 in. lbs.	⅜ in.	10¼ in.	1.2
850703	MD 600I	600 in. lbs.	10 in. lbs.	⅜ in.	12¼ in.	1.4
850704	MD 150	150 ft. lbs.	2 ft. lbs.	½ in.	20⅜ in.	2.8
850705	MD 250	250 ft. lbs.	5 ft. lbs.	½ in.	20⅜ in.	2.8
850706	MD 600*	600 ft. lbs.	10 ft. lbs.	¾ in.	46½ in.	7.5
850722	MD 1000*	1000 ft. lbs.	20 ft. lbs.	1 in.	71½ in.	17.0

### Memory Dial Series – Newton Metre

Part Number	Model	Torque Capacity	Steps of Graduation	Square Drive	Overall Length	Weight (lbs.)
850720	MD 6 Nm	6 Nm	.1 Nm	¼ in.	10¼ in.	1.2
850707	MD 15 Nm	15 Nm	.25 Nm	⅜ in.	10¼ in.	1.2
850708	MD 35 Nm	35 Nm	.5 Nm	⅜ in.	10¼ in.	1.2
850709	MD 70 Nm	70 Nm	1 Nm	⅜ in.	12¼ in.	1.4
850710	MD 200 Nm	200 Nm	2.5 Nm	½ in.	20⅜ in.	2.8
850711	MD 350 Nm	350 Nm	5 Nm	½ in.	20⅜ in.	2.8
850712	MD 800 Nm*	800 Nm	10 Nm	¾ in.	46½ in.	7.5
850723	MD 1300 Nm*	1300 Nm	25 Nm	1 in.	71½ in.	17.0

\*Includes extension handle.



FREE Custom Storage Case Included



## Flat Beam

M Series



## Flat Beams Are Superior

The four most important requirements of a torque wrench, accuracy, reliability, durability, and low ownership cost, are combined into these exceptional tools. Accuracy is literally ground into the wrench. The special alloy steel beam is ground to a rate of deflection with the use of dead weights, rather than a dimensional tolerance. This process is time consuming and very labor intensive, but the result is a tool that remains accurate as long as the beam is intact and the pointer is on zero under no-load condition. The flat shape of the beam insures the wrench remains at a right angle to the fastener, reducing or eliminating side-loading error. This unique taper-grinding distributes stress evenly along the entire length of the beam, extending tool life indefinitely. With a minimum of moving parts, these tools are virtually repair and maintenance free.

## M Series Features

- Incredibly durable design - actual service life frequently measured in decades!
- Very low cost of ownership - exceptional accuracy retention permits extended calibration intervals, and they are virtually maintenance and repair free!
- Ideal for prevailing-torque and destructive testing applications.
- Low mass/low inertia design of pointers helps eliminate reading distortion.
- Memory feature consists of fingers which follow a track in the scale and remain in place to indicate maximum torque achieved.
- Peak torque indicated on scale is accurate, even on destructive testing applications.
- Pivoted handle concentrates load at precise point on lever to assure torque accuracy.
- Meets or exceeds ASME B107.14M and ISO 6789.
- Accuracy of all flat beams is +/- 2% of indicated value from 20% to 100% of capacity, in both directions.
- Includes FREE ISO/IEC 17025 tabulated certification!

## Crowfoot Adapter

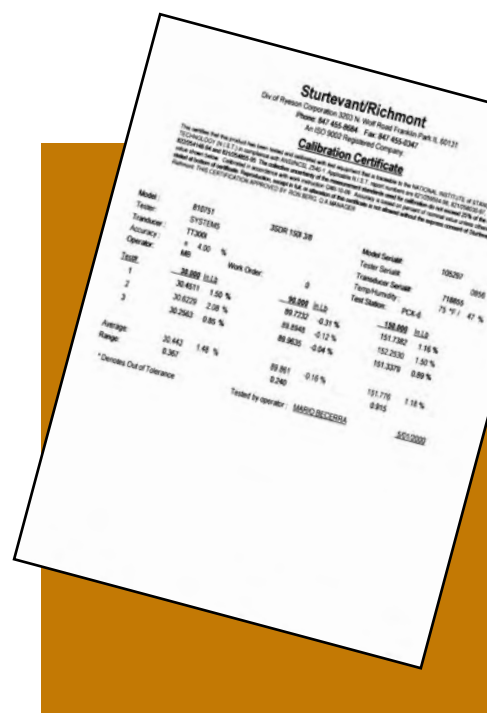
- Gain the significant advantage of our interchangeable head system by attaching the SRA to any fixed square drive wrench.
- Ideal for use when a direct reading torque wrench is required but space is limited.
- Use of an adapter requires calculation of torque output.
- When used with our 1 7/16" Interchangeable Heads the adapter length will be 3".





## Flat Beam Memory Series - English

Part Number	Model	Torque Capacity	Steps of Graduations	Square Drive	Lever Arm Distance	Weight (lbs.)
●850233	M 32 IO	0-32 in. ozs.	2 in. ozs.	¼ in.	6 in.	0.2
●850254	M 80 IO	0-80 in. ozs.	5 in. ozs.	¼ in.	6½ in.	0.25
●850202	M 160 IO	0-160 in. ozs.	10 in. ozs.	¼ in.	6 in.	0.25
●850238	M 5 I	0-5 in. lbs.	¼ in. lb.	¼ in.	6 in.	0.25
●850188	M 10 I	0-10 in. lbs.	½ in. lb.	¼ in.	6 in.	0.25
●850214	M 25 I	0-25 in. lbs.	1 in. lb.	¼ in.	6½ in.	0.4
●850222	M 25 I	0-25 in. lbs.	1 in. lb.	¾ in.	6½ in.	0.4
●850234	M 50 I	0-50 in. lbs.	2 in. lbs.	¼ in.	6 in.	0.4
●850242	M 50 I	0-50 in. lbs.	2 in. lbs.	¾ in.	6 in.	0.4
●850191	M 100 I	0-100 in. lbs.	5 in. lbs.	¾ in.	6½ in.	0.4
●850211	M 200 I	0-200 in. lbs.	10 in. lbs.	¾ in.	9 in.	0.5
■850228	M 300 I	0-300 in. lbs.	10 in. lbs.	¾ in.	13½ in.	2.75
■850246	M 600 I	0-600 in. lbs.	25 in. lbs.	¾ in.	13½ in.	2.75
■850247	M 600 I	0-600 in. lbs.	25 in. lbs.	½ in.	13½ in.	2.75
■850195	M 1200 I	0-1200 in. lbs.	50 in. lbs.	½ in.	15 in.	2.75
■850205	M 1800 I	0-1800 in. lbs.	50 in. lbs.	½ in.	18 in.	3.75
■850220	M 25	0-25 ft. lbs.	1 ft. lb.	¾ in.	13½ in.	2.75
■850240	M 50	0-50 ft. lbs.	2 ft. lbs.	¾ in.	13½ in.	2.75
■850241	M 50	0-50 ft. lbs.	2 ft. lbs.	½ in.	13½ in.	2.75
■850190	M 100	0-100 ft. lbs.	5 ft. lbs.	½ in.	15 in.	2.75
■850198	M 150	0-150 ft. lbs.	5 ft. lbs.	½ in.	18 in.	3.75
■850227	M 300	0-300 ft. lbs.	10 ft. lbs.	¾ in.	30 in.	10.75



## Flat Beam Memory Series - Newton Metre

Part Number	Model	Torque Capacity	Steps of Graduations	Square Drive	Lever Arm Distance	Weight (lbs.)
●855274	M 22 cNm	0-22 cNm	1 cNm	¼ in.	6 in.	0.2
●855275	M 56 cNm	0-56 cNm	2 cNm	¼ in.	6½ in.	0.25
●855276	M 110 cNm	0-110 cNm	5 cNm	¼ in.	6 in.	0.25
●855277	M 28 dNm	0-28 dNm	1 dNm	¾ in.	6½ in.	0.34
●855278	M 56 dNm	0-56 dNm	2 dNm	¾ in.	6 in.	0.34
●855279	M 110 dNm	0-110 dNm	5 dNm	¾ in.	6½ in.	0.38
●855280	M 1 Nm	0-1 Nm	.05 Nm	¼ in.	6 in.	0.25
●855247	M 2.5 Nm	0-2.5 Nm	.1 Nm	¼ in.	6½ in.	0.34
●855281	M 2.5 Nm	0-2.5 Nm	.1 Nm	¾ in.	6½ in.	0.34
●855248	M 5 Nm	0-5 Nm	.2 Nm	¼ in.	6 in.	0.34
●855282	M 5 Nm	0-5 Nm	.2 Nm	¾ in.	6 in.	0.34
●855283	M 12 Nm	0-12 Nm	.5 Nm	¾ in.	6½ in.	0.38
●855284	M 22 Nm	0-22 Nm	1 Nm	¾ in.	9 in.	0.50
■855285	M 34 Nm	0-34 Nm	1 Nm	¾ in.	13½ in.	2.75
■855287	M 70 Nm	0-70 Nm	2 Nm	¾ in.	13½ in.	2.75
■855288	M 70 Nm	0-70 Nm	2 Nm	½ in.	13½ in.	2.75
■855289	M 140 Nm	0-140 Nm	5 Nm	½ in.	15 in.	2.75
■855290	M 210 Nm	0-210 Nm	10 Nm	½ in.	18 in.	3.75
■855291	M 280 Nm	0-280 Nm	10 Nm	¾ in.	24 in.	7.75
■855292	M 410 Nm	0-410 Nm	10 Nm	¾ in.	30 in.	10.75

● Pivoted Ball Handle



■ Pivoted Handle

## Crowfoot Adapter

Part Number	Model	Description
850653	SRA-¾	¾ Female-Male Dovetail
850655	SRA-½	½ Female-Male Dovetail





## Micrometer Adjustable

Fixed Ratchet SDR Series



### SDR Series Features

- Wrench is adjustable to torque value by rotating grip.
- Simple thumbscrew mechanism locks handle to avoid changing torque value while in use.
- Ball bearing rockover assembly assures smooth operation, enhances repeatability and increases the cycle life of the wrench.
- At preset torque value a strong audible and tactile impulse is emitted.
- Neoprene rubber grip for cushioning and oil/chemical resistance.
- Includes custom molded plastic case (250 ft. lbs./300 Nm and below).
- Aluminum increment band is color coded: black for inch lbs.; gold for foot lbs.; blue for Newton metre.
- Ratchet design is very strong and durable.
- Accuracy of +/- 4% Indicated Value (from 20% to 100% of capacity) meets or exceeds ASME B107.14M, ISO 6789, and AS 28431.
- Includes FREE ISO/IEC 17025 tabulated certification!

### SDR Fixed Ratchet Head Series - English

Part Number	Model	Torque Capacity	Steps of Graduations	Square Drive	Weight (lbs.)
810749	2 SDR 50I	10-50 in. lbs.	1 in. lb.	¼ in.	1.0
810750	2 SDR 150I	30-150 in. lbs.	2 in. lbs.	¼ in.	1.0
810751	3 SDR 150I	30-150 in. lbs.	2 in. lbs.	⅜ in.	1.1
810761	3 SDR 200I	40-200 in. lbs.	2 in. lbs.	⅜ in.	1.1
810748	3 SDR 600I	100-600 in. lbs.	5 in. lbs.	⅜ in.	1.5
810752	3 SDR 750I	150-750 in. lbs.	5 in. lbs.	⅜ in.	1.5
810756	3 SDR 75	15-75 ft. lbs.	½ ft. lb.	⅜ in.	1.5
810747	3 SDR 1200I	200-1200 in. lbs.	10 in. lbs.	⅜ in.	1.5
810754	3 SDR 100	20-100 ft. lbs.	1 ft. lb.	⅜ in.	1.5
810755	4 SDR 1800I	300-1800 in. lbs.	10 in. lbs.	½ in.	2.0
810757	4 SDR 150	30-150 ft. lbs.	1 ft. lb.	½ in.	2.0
810758	4 SDR 250	50-250 ft. lbs.	2 ft. lbs.	½ in.	3.5
810760	6 SDR 300	50-300 ft. lbs.	2½ ft. lbs.	⅜ in.	7.75
810597	6 SDR 600*	100-600 ft. lbs.	5 ft. lbs.	⅜ in.	10.5
810525	6 SDR 700**	100-700 ft. lbs.	5 ft. lbs.	⅜ in.	16.5

### SDR Fixed Ratchet Head Series - Newton Metre

Part Number	Model	Torque Capacity	Steps of Graduations	Square Drive	Weight (lbs.)
810774	2 SDR 6 Nm	1-6 Nm	.1 Nm	¼ in.	1.0
810775	2 SDR 20 Nm	4-20 Nm	.2 Nm	¼ in.	1.0
810776	3 SDR 20 Nm	4-20 Nm	.2 Nm	⅜ in.	1.1
810782	3 SDR 50 Nm	10-50 Nm	.5 Nm	⅜ in.	1.5
810777	3 SDR 100 Nm	20-100 Nm	.5 Nm	⅜ in.	1.5
810797	4 SDR 100 Nm	20-100 Nm	.5 Nm	½ in.	1.5
810783	3 SDR 140 Nm	28-140 Nm	1 Nm	⅜ in.	1.5
810778	4 SDR 200 Nm	40-200 Nm	1 Nm	½ in.	2.0
810779	4 SDR 300 Nm	60-300 Nm	2 Nm	½ in.	3.5
810789	6 SDR 300 Nm	60-300 Nm	2 Nm	⅜ in.	3.5
810598	6 SDR 800 Nm*	160-800 Nm	5 Nm	⅜ in.	10.5

\* Optional extension tube, Part # 853363, can be ordered. Use of the extension requires recalibration of wrench.

\*\* Includes extension tube.



## SD Series Features

- Wrench is adjustable to torque value by rotating grip.
- Simple thumbscrew mechanism locks handle to avoid changing torque value while in use.
- Ball bearing rockover assembly assures smooth operation, enhances repeatability and increases the cycle life of the wrench.
- When preset torque value is reached a strong audible and tactile impulse is emitted.
- Neoprene rubber grip for cushioning and oil/chemical resistance.
- Includes custom molded plastic case (250 ft. lbs. and below).
- Aluminum increment band is color coded: black for inch lbs.; gold for foot lbs.; blue for Newton metre.
- Accuracy of +/- 4% Indicated Value (from 20% to 100% of capacity) meets or exceeds ASME B107.14M, ISO 6789, and AS 28431.
- Includes FREE ISO/IEC 17025 tabulated certification!

### SD Fixed Male Square Drive Head Series - English

Part Number	Torque Model	Steps of Capacity	Graduations	Square Drive	Weight (lbs.)
810160	2 SD 50I	10-50 in. lbs	1 in. lb.	¼ in.	1.00
810161	2 SD 150I	30-150 in. lbs	2 in. lb.	¼ in.	1.00
810159	3 SD 200I	40-200 in. lbs	2 in. lb.	⅜ in.	1.00
810163	3 SD 750I	150-750 in. lbs	5 in. lb.	⅜ in.	1.13
810164	3 SD 1200I	200-1200 in. lbs	10 in. lb.	⅜ in.	1.50
810166	4 SD 1800I	300-1800 in. lbs	10 in. lb.	½ in.	2.00
810167	4 SD 150	30-150 ft. lbs	1 ft. lb.	½ in.	2.00
810600	6 SD 600*	100-600 ft. lbs	5 ft. lb.	¾ in.	8.75

### SD Fixed Male Square Drive Head Series - Newton Metre

Part Number	Torque Model	Steps of Capacity	Graduations	Square Drive	Weight (lbs.)
810601	6 SD 800 Nm*	160-800 Nm	5 Nm	¾ in.	8.75

\* Optional extension tube, Part # 853363, can be ordered. Use of the extension requires recalibration of wrench.

### Carry and Storage Cases

Strong, durable cases for carrying and storing your S/R brand micrometer adjustable torque wrenches. Fits SDR, SD, and CCM series tools.

Part Number	Size	Type	Wrench Range
820122	Small	Molded Plastic	50I-200I, 6 Nm-20 Nm
820123	Medium	Molded Plastic	600I-150 ft. lbs., 50 Nm-200 Nm
820124	Large	Molded Plastic	250 ft. lbs., 300 Nm
820127	Extra Large	Metal	600-700 ft. lbs., 800 Nm



Each wrench includes molded plastic case.  
(250 ft. lbs./300 Nm and below)

## Micrometer Adjustable

Fixed Square Drive  
SD Series





## Preset

### Fixed Ratchet LTCR Series

## LTCR Series Features

- Designed specifically for use on production lines where many fasteners are to be tightened to the same torque.
- For handle extension, order Extension Adapter PN 853349 and custom length extension. Details on website.
- Light weight and smooth vinyl handle provide good ergonomics, reducing operator fatigue.
- Accuracy of +/- 4% meets or exceeds ASME B107.14M and ISO 6789, offering consistent assembly quality.
- Wrench can be calibrated using any unit of torque measure.
- Ball bearing rockover assembly assures smooth operation, enhances repeatability, increases cycle life of wrench, and helps control ownership costs.
- Excellent audible and tactile impulse when preset torque is achieved.
- Slide pin ratchet is extremely strong and durable.
- Torque tester must be used to set torque value.

### LTCR Fixed Ratchet Head Series

Part Number	Model	Torque Capacity*	Square Drive	Weight (lbs.)
810400	LTCR 50I	50 in. lbs./6 Nm/ 58 kgf•cm	¼ in.	0.5
810401	LTCR 150I	150 in. lbs./17 Nm/ 173 kgf•cm	¼ in.	0.5
810589	LTCR 150I	150 in. lbs./17 Nm/ 173 kgf•cm	⅜ in.	0.5
810058	LTCR 300I	300 in. lbs./34 Nm/ 346 kgf•cm	⅜ in.	1.0
810055	LTCR 750I	750 in. lbs./85 Nm/ 864 kgf•cm	⅜ in.	1.25
810060	LTCR 750I	750 in. lbs./85 Nm/ 864 kgf•cm	½ in.	1.25
810402	LTCR 1200I	1200 in. lbs./100 ft. lbs./ 136 Nm/14 kgf•m	⅜ in.	1.5
810056	LTCR 1800I	1800 in. lbs./150 ft. lbs./ 204 Nm/21 kgf•m	½ in.	1.75
810059	LTCR 3000I	3000 in. lbs./250 ft. lbs./ 339 Nm/35 kgf•m	½ in.	3.0
810138	LTCR 3600I	3600 in. lbs./300 ft. lbs./ 407 Nm/41 kgf•m	¾ in.	7.75
810151	LTCR 7200I**	7200 in. lbs./600 ft. lbs./ 813 Nm/83 kgf•m	¾ in.	10.0

\* Minimum capacities of preset tools can be calculated at 20% of full capacities.

\*\* Optional extension tube, Part # 853363, can be ordered. Use of the extension requires recalibration of wrench.



*Combination adjusting and release tool (CART 819117) allows operator to easily adjust the torque on all S/R preset wrenches.*

## LTCS Series Features

- Designed specifically for use on production lines where many fasteners are to be tightened to the same torque.
- For handle extension, order Extension Adapter P/N 853349 and custom length extension. Details on website.
- Light weight and smooth vinyl handle provide good ergonomics, reducing operator fatigue.
- Accuracy of +/- 4% meets or exceeds ASME B107.14M and ISO 6789, offering consistent assembly quality.
- Wrench can be calibrated using any unit of torque measure.
- Ball bearing rockover assembly assures smooth operation, enhances repeatability, increases cycle life of wrench, and helps control ownership costs.
- Excellent audible and tactile impulse when preset torque is achieved.
- Can be ordered preset from the factory or torque tester can be used to set torque value.
- Adjustments to torque settings can only be made with a Combination Adjusting and Release Tool (CART) to prevent tampering on the production line.

### LTCS Fixed Male Square Drive Head Series

Part Number	Model	Torque Capacity*	Square Drive	Weight (lbs.)
810168	LTCS 50I	50 in. lbs./6 Nm/ 58 kgf•cm	¼ in.	0.5
810170	LTCS 150I	150 in. lbs./17 Nm/ 173 kgf•cm	⅜ in.	0.5
810171	LTCS 300I	300 in. lbs./34 Nm/ 346 kgf•cm	⅜ in.	1
810172	LTCS 750I	750 in. lbs./85 Nm/ 864 kgf•cm	⅜ in.	1.25
810174	LTCS 1800I	1800 in. lbs./150 ft. lbs. 204 Nm/21 kgf•m	½ in.	1.5
810485	LTCS 3600I	3600 in. lbs./300 ft. lbs./ 407 Nm/41 kgf•m	¾ in.	5.5
810153	LTCS 7200I**	7200 in. lbs./600 ft. lbs./ 813 Nm/83 kgf•m	¾ in.	8.25

\* Minimum capacities of preset tools can be calculated at 20% of full capacities.

\*\* Optional extension tube, Part # 853363, can be ordered. Use of the extension requires recalibration of wrench.



Improved!  
Combination adjusting and release tool  
(CART 819117) allows operator to easily  
adjust torque on all SLTC, SLTC-FM,  
LTC, LTCR and LTCS wrenches.



## Preset Fixed Square Drive LTCS Series







## Interchangeable Head Micrometer Adjustable CCM Series

### CCM Series Features

- Incredible Versatility! Accepts over 140 interchangeable heads, as well as custom heads and extensions, and offers micrometer torque adjustment!
- The +/- 4% Indicated Value Accuracy meets or exceeds ASME B107.14M, AS 28431 and ISO 6789.
- Comes with FREE ISO/IEC 17025 calibration certificate!
- Neoprene rubber grip offers oil and chemical resistance, as well as cushioning and firm grip for excellent ergonomics!
- Excellent audible and tactile impulse when set torque achieved.
- Unique dovetail design transmits the load at right angle from the wrench to the head; exceptional strength and rigidity of connection.
- The pin lock assures positive head connection, yet permits head changeover in seconds!
- Bi-directional versatility obtained by simply removing head, turning wrench over, and replacing head.
- Aluminum increment band is color-coded: black for inch-pounds, gold for foot-pounds, and blue for Nm.

### CCM Dovetail Head Series — English

Part Number	Model	Torque Capacity	Steps of Graduations	Weight (lbs.)
810769	CCM 50I	10-50 in. lbs.	1 in. lb.	0.5
810765	CCM 150I	30-150 in. lbs.	2 in. lbs.	0.5
810763	CCM 600I	100-600 in. lbs.	5 in. lbs.	1.0
810766	CCM 750I	150-750 in. lbs.	5 in. lbs.	1.0
810770	CCM 75	15-75 ft. lbs.	½ ft. lb.	1.0
810764	CCM 1200I	200-1200 in. lbs.	10 in. lbs.	1.25
810762	CCM 1800I	300-1800 in. lbs.	10 in. lbs.	1.25
810771	CCM 150	30-150 ft. lbs.	1 ft. lb.	1.25
810335	CCM 300†	50-300 ft. lbs.	2½ ft. lbs.	6.5
810772	CCM 400†	50-400 ft. lbs.	5 ft. lbs.	8.25

### CCM Dovetail Head Series — Newton Metre

Part Number	Model	Torque Capacity	Steps of Graduations	Weight (lbs.)
810784	CCM 6 Nm	1-6 Nm	.1 Nm	0.5
810785	CCM 20 Nm	4-2 Nm	.2 Nm	0.5
810786	CCM 100 Nm	20-100 Nm	.5 Nm	1.0
810787	CCM 200 Nm	40-200 Nm	1 Nm	1.25
810788	CCM 400 Nm†	75-400 Nm	2.5 Nm	6.5
810794	CCM 600 Nm†	100-600 Nm	5 Nm	8.25

† Wrenches calibrated for use with heads having 3/8" common centerline.  
On request wrenches can be calibrated for 1/8" centerline.

Includes FREE  
certification from our ISO/IEC  
17025 Accredited calibration  
laboratory!

<b>Sturtevant/Richmont</b>			
Div of Rayson Corporation 3033 N. Hollywood Blvd. Suite 10, 91601			
Phone: 818 455-8684 Fax: 818 455-0242			
An ISO 9002 Registered Company			
<b>Calibration Certificate</b>			
This certifies that the product has been tested and calibrated with the equipment that is traceable to the NATIONAL INSTITUTE OF STANDARDS and TECHNOLOGY (NIST) in accordance with NIST 410.1 (Appendix 1) and NIST 410.2 (Appendix 2) and is traceable to the NIST 410.1 and NIST 410.2.			
NIST 410.1 and NIST 410.2 are the standards of the National Institute of Standards and Technology (NIST) in accordance with NIST 410.1 (Appendix 1) and NIST 410.2 (Appendix 2) and is traceable to the NIST 410.1 and NIST 410.2.			
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## LTC Series Features

- The LTC-Series is superb for use on the assembly line AND in field maintenance kits!
- The +/- 4% Accuracy meets or exceeds ASME B107.14M and ISO 6789, and provides the quality your customers demand!
- The pin lock assures positive head connection, yet permits head changeover in seconds!
- Bi-directional versatility obtained by simply removing head, turning wrench over, and replacing head.
- Extremely versatile system permits use of fewer wrenches by connecting to over 100 standard interchangeable heads, plus extensions, adapters, and your own custom heads!
- Excellent audible and tactile impulse when set torque achieved.
- Unique dovetail design transmits the load at right angle from the wrench to the head; exceptional strength and rigidity of connection.
- Smooth vinyl grip plus light weight combine for good ergonomics.
- For handle extension, order Extension Adapter P/N 853349 and custom length extension. Details on website.



Over 100  
interchangeable heads to  
choose from without changing torque values.  
Simply slide the heads on and "lock on quality".

### LTC Dovetail Head Series

Part Number	Model	Torque Capacity*	Weight (lbs.)
810100	LTC 50I	50 in. lbs./6 Nm/58 kgf•cm	0.5
810011	LTC 150I	150 in. lbs./17 Nm/173 kgf•cm	0.5
810574	LTC OHT**	300 in. lbs./34 Nm/346 kgf•cm	0.5
810016	LTC 300I	300 in. lbs./34 Nm/346 kgf•cm	0.75
810013	LTC 750I	750 in. lbs./85 Nm/864 kgf•cm	1.0
810014	LTC 1800I	1800 in. lbs./150 ft. lbs./204 Nm/21 kgf•m	1.25
810334	LTC 3600I	3600 in. lbs./300 ft. lbs./407 Nm/41 kgf•m	5.5
810137	LTC 4800I	4800 in. lbs./400 ft. lbs./542 Nm/55 kgf•m	8.25

\* Minimum capacities of preset tools can be calculated at 20% of full capacities.

\*\* For this tool only, minimum capacity is 50% of maximum capacity.

## Interchangeable Head Preset LTC Series







## Interchangeable Heads

### Why Our Interchangeable Head System is the World's Best

Virtually all interchangeable heads on these pages are made as a single piece from alloy steel. This construction method provides strength and durability rarely attained by the more common cut and weld method. In addition, to achieve constant torque values when changing heads, exact lever length must be maintained. S/R heads share a precise distance from end of wrench to center of fastener. This is referred to as a Common Centerline and is very difficult to maintain when using the welded construction method.

The unique dovetail design used to join head and wrench provides exceptionally strong connection and allows complete interchange-ability. Competing manufacturers find it necessary to increase the size of the mating connection at higher torque values, creating duplication of wrenches and heads while losing interchangeability.



SQUARE DRIVE (SD)

### SQUARE DRIVE (SD)

1 1/8" Common Centerline

#### SQUARE DRIVE

Part Number	Model	Drive Size	Max.Torque (in. lbs.)
819057	SD-1/4	1/4"	250
819058	SD-3/8	3/8"	1250
819059	SD-1/2	1/2"	2500
819119	SD-3/4*	3/4"	4800

\* 3/8" Common Centerline

### SQUARE DRIVE RATCHET(SDRT)

1 1/8" Common Centerline

#### RATCHET SQ. DR.

Part Number	Model	Drive Size	Max.Torque (in. lbs.)
809504	SDRT-1/4	1/4"	250
809505	SDRT-3/8	3/8"	1250
809506	SDRT-1/2	1/2"	2500
809507	SDRT-3/4*	3/4"	4800

\* 3/8" Common Centerline



SQUARE DRIVE RATCHET (SDRT)

### RATCHET RENEWAL KITS for ratcheting wrenches and SDRT Heads

1/4" Ratchet Renewal Kit P/N 816998

3/8" Ratchet Renewal Kit P/N 816958

1/2" Ratchet Renewal Kit P/N 816956

3/4" Ratchet Renewal Kit P/N 816999

### OPEN END (OE)

1 1/8" Common Centerline

#### OPEN END - ENGLISH

Part Number	Model	Hex Size	Max.Torque (in. lbs.)
819000	OE-1/4	1/4"	100
819001	OE-3/16	3/16"	150
819002	OE-3/8	3/8"	200
819003	OE-7/16	7/16"	300
819004	OE-1/2	1/2"	350
819005	OE-9/16	9/16"	400
819006	OE-5/8	5/8"	600
819007	OE-11/16	11/16"	800
819008	OE-3/4	3/4"	1000
819009	OE-13/16	13/16"	1250
819010	OE-7/8	7/8"	1500
819011	OE-15/16	15/16"	1750
819012	OE-1	1"	2000
819013	OE-1 1/16	1 1/16"	2250
819014	OE-1 1/8	1 1/8"	2500
819015	OE-1 3/8	1 3/8"	2750
819016	OE-1 1/4	1 1/4"	3000

#### OPEN END - METRIC

Part Number	Model	Hex Size	Max.Torque (Nm)
809291	OE-7mm	7mm	11
809292	OE-8mm	8mm	16
809293	OE-9mm	9mm	22
819943	OE-10mm	10mm	22
819944	OE-11mm	11mm	34
809226	OE-12mm	12mm	39
819945	OE-13mm	13mm	39
819946	OE-14mm	14mm	45
809227	OE-15mm	15mm	67
819947	OE-16mm	16mm	67
819948	OE-17mm	17mm	90
809228	OE-18mm	18mm	90
819949	OE-19mm	19mm	113
819950	OE-21mm	21mm	141
819951	OE-22mm	22mm	169
819952	OE-24mm	24mm	197
809229	OE-27mm	27mm	254
819956	OE-30mm	30mm	310
853043	OE-31mm	31mm	328
819958	OE-32mm	32mm	338



OPEN END (OE)

## FLARE NUT (FN)

1 1/8" Common Centerline

FLARE NUT - ENGLISH			
Part Number	Model	Hex Size	Max.Torque (in. lbs.)
819025	FN-1/4	1/4"	100
819026	FN-3/16	3/16"	150
819027	FN-3/8	3/8"	200
819028	FN-7/16	7/16"	250
819029	FN-1/2	1/2"	300
819030	FN-9/16	9/16"	350
819031	FN-5/8	5/8"	400
819032	FN-11/16	11/16"	475
819033	FN-3/4	3/4"	600
819034	FN-13/16	13/16"	700
819035	FN-7/8	7/8"	800
819036	FN-15/16	15/16"	900
819037	FN-1	1"	1000
819038	FN-1 1/16	1 1/16"	1050
819039	FN-1 1/8	1 1/8"	1100
819040	FN-1 3/8	1 3/8"	1150
819041	FN-1 1/4	1 1/4"	1200

FLARE NUT - METRIC			
Part Number	Model	Hex Size	Max.Torque (Nm)
809243	FN-8mm	8mm	16
809217	FN-9mm	9mm	19
809218	FN-10mm	10mm	22
809221	FN-11mm	11mm	28
809241	FN-12mm	12mm	30
809000	FN-12mm*	12mm	30
809219	FN-13mm	13mm	33
809220	FN-14mm	14mm	40
809001	FN-14mm*	14mm	40
809222	FN-15mm	15mm	45
809238	FN-16mm	16mm	50
809223	FN-17mm	17mm	54
809239	FN-18mm	18mm	61
809224	FN-19mm	19mm	68
809240	FN-21mm	21mm	80
809242	FN-22mm	22mm	90
809225	FN-24mm	24mm	105
809244	FN-27mm	27mm	118

\* 6 pt hex



FLARE NUT

## BOX HEAD (BH)

1 1/8" Common Centerline

BOX HEAD - ENGLISH			
Part Number	Model	Hex Size	Max.Torque (in. lbs.)
819060	BH-1/4	1/4"	250
819061	BH-3/16	3/16"	350
819062	BH-3/8	3/8"	450
819063	BH-7/16	7/16"	650
819064	BH-1/2	1/2"	850
819065	BH-9/16	9/16"	1050
819066	BH-5/8	5/8"	1250
819067	BH-11/16	11/16"	1450
819068	BH-3/4	3/4"	1800
819069	BH-13/16	13/16"	2100
819070	BH-7/8	7/8"	2400
819071	BH-15/16	15/16"	2700
819072	BH-1	1"	3000
819073	BH-1 1/16	1 1/16"	3150
819074	BH-1 1/8	1 1/8"	3300
819085	BH-1 3/8	1 3/8"	3450
819075	BH-1 1/4	1 1/4"	3600

BOX HEAD - METRIC			
Part Number	Model	Hex Size	Max.Torque (Nm)
809301	BH-7mm	7mm	28
809302	BH-8mm	8mm	39
809303	BH-9mm	9mm	50
809230	BH-10mm	10mm	50
809231	BH-11mm	11mm	73
809304	BH-12mm	12mm	96
809232	BH-13mm	13mm	96
809233	BH-14mm	14mm	119
809234	BH-15mm	15mm	141
809305	BH-16mm	16mm	141
809235	BH-17mm	17mm	163
809306	BH-18mm	18mm	163
809236	BH-19mm	19mm	203
809307	BH-21mm	21mm	237
809308	BH-22mm	22mm	271
809237	BH-24mm	24mm	305
809352	BH-27mm	27mm	355



BOX HEAD (BH)

## HEX DRIVE (HD)

1 1/8" Common Centerline

HEX DRIVE - ENGLISH			
Part Number	Model	Hex Size	Max.Torque (in. lbs.)
853030	HD-5/64	5/64"	20
819687	HD-3/32	3/32"	30
853031	HD-7/64	7/64"	40
819689	HD-1/8	1/8"	70
853032	HD-9/64	9/64"	70
819691	HD-5/32	5/32"	135
819692	HD-3/16	3/16"	235
819693	HD-7/32	7/32"	340
819694	HD-1/4	1/4"	450
819695	HD-5/16	5/16"	850
819696	HD-3/8	3/8"	850
819697	HD-7/16	7/16"	1450
819699	HD-9/16	9/16"	1450
819700	HD-5/8	5/8"	2100
819701	HD-3/4	3/4"	2400
819702	HD-7/8	7/8"	2700

HEX DRIVE - METRIC			
Part Number	Model	Hex Size	Max.Torque (Nm)
809315	HD-4mm	4mm	15
809316	HD-5mm	5mm	27
809317	HD-6mm	6mm	38
809328	HD-8mm	8mm	96
809330	HD-10mm	10mm	141
809332	HD-12mm	12mm	164
809334	HD-14mm	14mm	164
809337	HD-17mm	17mm	250
809339	HD-19mm	19mm	270



HEX DRIVE (HD)



## Interchangeable Heads



RATCHETING OPEN END (ROE)



RATCHETING FLARE NUT (RFN)



RATCHETING TUBE WRENCH (RTW)

### RATCHETING OPEN END (ROE)

1 $\frac{1}{16}$ " Common Centerline

Slight disengagement from the fastener allows operator to rapidly rotate wrench.

#### RATCHETING OPEN END - ENGLISH

Part Number	Model	Hex Size	Max. Torque (in. lbs.)
819200	ROE- $\frac{1}{4}$ "	$\frac{1}{4}$ "	60
819202	ROE- $\frac{3}{8}$ "	$\frac{3}{8}$ "	120
819203	ROE- $\frac{7}{16}$ "	$\frac{7}{16}$ "	180
819204	ROE- $\frac{1}{2}$ "	$\frac{1}{2}$ "	210
819205	ROE- $\frac{9}{16}$ "	$\frac{9}{16}$ "	240
819206	ROE- $\frac{5}{8}$ "	$\frac{5}{8}$ "	360
819207	ROE- $1\frac{1}{16}$ "	$1\frac{1}{16}$ "	480
819208	ROE- $\frac{3}{4}$ "	$\frac{3}{4}$ "	600
819209	ROE- $1\frac{3}{16}$ "	$1\frac{3}{16}$ "	750
819210	ROE- $\frac{7}{8}$ "	$\frac{7}{8}$ "	900
819211	ROE- $1\frac{1}{8}$ "	$1\frac{1}{8}$ "	1050
819212	ROE-1"	1"	1200
819213	ROE- $1\frac{1}{16}$ "	$1\frac{1}{16}$ "	1350
819214	ROE- $1\frac{1}{8}$ "	$1\frac{1}{8}$ "	1500
819215	ROE- $1\frac{3}{8}$ "	$1\frac{3}{8}$ "	1650
819216	ROE- $1\frac{1}{4}$ "	$1\frac{1}{4}$ "	1800

#### RATCHETING OPEN END - METRIC

Part Number	Model	Hex Size	Max. Torque (Nm)
819217	ROE-7mm	7 mm	7
819218	ROE-8mm	8 mm	10
819219	ROE-9mm	9 mm	13
819220	ROE-10mm	10 mm	13
819221	ROE-11mm	11 mm	20
819222	ROE-12mm	12 mm	23
819223	ROE-13mm	13 mm	23
819224	ROE-14mm	14 mm	27
819225	ROE-15mm	15 mm	40
819226	ROE-16mm	16 mm	40
819227	ROE-17mm	17 mm	54
819228	ROE-18mm	18 mm	54
819229	ROE-19mm	19 mm	68
819231	ROE-22mm	22 mm	101
819232	ROE-24mm	24 mm	118
819233	ROE-27mm	27 mm	152
819238	ROE-32mm	32 mm	203

### RATCHETING FLARE NUT (RFN)

1 $\frac{1}{16}$ " Common Centerline

Single-direction ratchet for use with hydraulic or pneumatic fittings.

Part Number	Model	Hex Size	Max. Torque (Nm)
819086	RFN-10mm	10 mm	25
819087	RFN-11mm	11 mm	25

### RATCHETING TUBE WRENCH (RTW)

RTW snaps open to fit around hydraulic, AC lines, etc. When jaws close, wrench ratchets.

#### RATCHETING TUBE WRENCH - ENGLISH

Part Number	Model	Hex Size	Max. Torque (in. lbs.)
853151	RTW- $\frac{3}{8}$ "	$\frac{3}{8}$ "	225
853152	RTW- $\frac{7}{16}$ "	$\frac{7}{16}$ "	250
853153	RTW- $\frac{1}{2}$ "	$\frac{1}{2}$ "	300
853154	RTW- $\frac{9}{16}$ "	$\frac{9}{16}$ "	400
853156	RTW- $1\frac{1}{16}$ "	$1\frac{1}{16}$ "	750
853157	RTW- $\frac{3}{4}$ "	$\frac{3}{4}$ "	850
853158	RTW- $1\frac{1}{8}$ "	$1\frac{1}{8}$ "	1000
853159	RTW- $\frac{7}{8}$ "	$\frac{7}{8}$ "	1250
853160	RTW- $1\frac{1}{16}$ "	$1\frac{1}{16}$ "	1400
853161	RTW-1"	1"	1500
853180	RTW- $1\frac{1}{16}$ "	$1\frac{1}{16}$ "	2210
853181	RTW- $1\frac{1}{8}$ "	$1\frac{1}{8}$ "	2470
853183	RTW- $1\frac{1}{4}$ "	$1\frac{1}{4}$ "	2860
853186	RTW-1 $\frac{3}{8}$ "	$1\frac{3}{8}$ "	3200
853187	RTW-1 $\frac{7}{8}$ "	$1\frac{7}{8}$ "	3400
853194	RTW-2"	2"	3600

#### RATCHETING TUBE WRENCH - METRIC

Part Number	Model	Hex Size	Max. Torque (Nm)
853162	RTW-10mm	10mm	25
853169	RTW-11mm	11mm	28
853163	RTW-12mm	12mm	34
853164	RTW-13mm	13mm	34
853165	RTW-14mm	14mm	68
853170	RTW-16mm	16mm	68
853171	RTW-19mm	19mm	96

#### CAUTION WHEN USING RTW HEADS!

Because of the configuration of the ratcheting tube wrenches, it is not possible to maintain our common centerline for these heads. We, therefore, recommend these heads for the LTC preset wrenches and when setting the torque value of the wrench, to use the appropriate head to insure accuracy.





## STANDARD TOOLING ADAPTERS\*

When fabricating special heads to be used with CCM torque handles other than Model CCM 300 and CCM 400, the 1 7/8 in. dimension must be maintained between the inside of the attachment block and the centerline of the wrench head. Model CCM 300 and CCM 400 are calibrated to 3/8 in. common centerline.

Part Number	Model	Max. Torque (in. lbs.)
819901	STA-1	1600
819902	STA-2	2500
809917	STA-3	4800

\* Made of heat treated 4140 alloy steel.

STANDARD  
TOOLING  
ADAPTER



## STRAIGHT EXTENSION

Part Number	Model	Angle (degrees)	Max. Torque (in. lbs.)
819424	LTCE-4	0	300
819467	LTCE-6	0	800
819021	LTCE-14	0	4800
819768	LTCE-20	0	4800

## 15° ANGLE EXTENSION

Part Number	Model	Angle (degrees)	Max. Torque (in. lbs.)
819487	LTCE-4-15°	15	300
819504	LTCE-6-15°	15	800



STRAIGHT AND 15°  
ANGLE EXTENSIONS

## ADAPTERS FOR DIN STYLE HEADS

- Can be used to convert most DIN style heads to a female dovetail for use on all S/R LTC series wrenches. Torque values should be set with the adapter and head attached to the wrench.
- Because of the variation in the length of the DIN plug type heads it is not recommended that this adapter be used with CCM micrometer adjustable wrenches.

Part Number	Model
819136	Adapter, 9mm x 12mm
819137	Adapter, 14mm x 18mm



ADAPTER FOR  
DIN STYLE HEADS

## ADAPTERS FOR ROUND STYLE HEADS

- Can be used to convert most round style heads to a female dovetail for use on all S/R LTC series wrenches. Torque values should be set with the adapter and head attached to the wrench.
- Because of the variation in the length of the round plug type heads it is not recommended that this adapter be used with CCM micrometer adjustable wrenches.

Part Number	Model	Description
853021	BAJ	"J" size female-female dovetail
853022	BAY	"Y" size female-female dovetail



ADAPTER FOR ROUND  
STYLE HEADS



## ExacTorq® Adjustable Series



## ExacTorq® Series Features

### Exact Torque Adjustment Using DigiLock Control Mechanism

Gone are the days of estimating torque. A simple twist of ExacTorq's end-mounted DigiLock mechanism sets your torque levels in exact, single digit increments. The positive locking detent secures your selection.

### Enhance Comfort and Accuracy with Advanced Ergonomics

Enhanced comfort translates into enhanced accuracy. The ExacTorq® features a tri-lobular handle design. This gives users enhanced leverage, plus rounded surfaces for comfort and superior grip control. With each turn, this unique design involves only major muscle groups to reduce strain and potential repetitive-motion injury. Additionally, the ExacTorq® is comfortable in even the smallest of hands, performing flawlessly when used by women and men on the assembly line.

## Features

- DigiLock Control Mechanism revolutionizes manual torque adjustment.
- Positive locking detent secures selected torque value.
- Can be used in both right and left hand directions.
- Designed to meet or exceed ASME B107.14M and ISO 6789 specifications, each ExacTorq ships with a calibration certificate from our ISO/IEC 17025 Accredited laboratory.
- Operator cannot over torque. Clutch releases automatically when desired torque has been achieved.
- Uses standard bits, sockets and adapters.
- Anti-backlash design enhances repeatability.
- Accuracy of +/- 6% Indicated Value.



Specifications	ExacTorq 100	ExacTorq 74
Part Number	810045	810046
Capacity	20-100 in. oz.	15-74 cNm
Graduation	1 in. oz.	1cNm
Length (less bit)	6¾ in.	6¾ in.
Weight	0.4 lbs	0.4 lbs
Drive Size	¼ in. Female Hex	¼ in. Female Hex

Includes FREE certification from our ISO /IEC17025 Accredited calibration laboratory.

## CAL 36/4 Screwdriver & Kits

- Accuracy of +/- 6% Indicated Value (from 20% to 100% of capacity) meets or exceeds ASME B107.14M and ISO 6789.
- Incredibly durable! Many users have experienced a service life of 10+ years!
- Operators cannot overtorque - clutch releases at set torque.
- Anti-backlash design for repeatability.
- To operate, simply dial in torque and insert bit.
- Bi-directional CW/CCW versatility.
- Polished aluminum exterior.
- Scales clearly engraved on shaft and magnified for ease of reading.
- Comes with FREE calibration certificate from our ISO/IEC 17025 Accredited laboratory! Can be ordered with certification for English or Metric units of measure. (Use P/N 810017 for Nm certification on Cal 36/4.)
- Uses standard bits, adapters, and sockets.

## CAL 36/4 Adjustable Screwdriver & Kits

Specifications	CAL 36/4 Part No. 810587	CAL 40 Part No. 810477
Capacity	2-36 in. lbs./ .2-4 Nm	3-40 kgf•cm.
Graduation	2 in. lbs./ .2 Nm	2 kgf•cm
Length (less bit)	7¾ in.	7¾ in.
Grip Diameter	1¾ in.	1¾ in.
Weight	0.5 lbs.	0.5 lbs.
Drive Size	¼" Female Hex	¼" Female Hex



**CAL 36/4K  
Screwdriver Kit**  
29 Piece Kit

### Part No. 810568

Contains 1 each of the listed bits and a CAL 36/4 screwdriver

Hex ¼"	Slotted 8-10	Torx T20
Hex ⅜"	Slotted 12-14	Torx T25
Hex ½"	Socket Adapter ¼"	Torx T30
Hex ⅝"	Bit Holder ¼"	Torx T40
Hex ¾"	Phillips #0	Sq. Recess 0
Posidriv #1	Phillips #1	Sq. Recess 1
Posidriv #2	Phillips #2	Sq. Recess 2
Slotted 0-1	Phillips #3	Sq. Recess 3
Slotted 3-4	Torx T10	
Slotted 5-6	Torx T15	

**Includes Custom Case**



### Part No. 810588

Part Number	Description
810587	CAL 36/4 Screwdriver
819953	¼" Hex to ¼" Sq. Drive
809449	No. 1 Phillips Power Bit
809467	No. 2 Phillips Power Bit
809434	No. 2 Slotted Power Bit
809448	No. 4 Slotted Power Bit

**Includes Custom Case**

### EMTSK 36/4 Screwdriver Kit

6 Piece Kit



Includes FREE certification from our ISO/IEC 17025 Accredited calibration laboratory.





## TIC Kit

Torque Inserts Correctly Kit



## Making Chips? You need the TIC Kit!

The "TIC Kit" will eliminate the problems associated with overtightened or loose tool insert screws!

The TIC Kit comes with a torque limiting screwdriver marked with the correct torque for each size of Torx screw used in toolholders, Torx bits for each of the screw sizes (T6, T7, T8, T9, T10), all contained in a custom molded plastic case. To use the TIC Kit, simply adjust the screwdriver to the size Torx screw to be tightened, insert the Torx bit from the kit, and tighten the screw. When the correct torque is reached, the clutch will index and no greater torque will be applied to the screw, even if the operator keeps turning the screwdriver!

The TIC Kit will eliminate the expense and problems of buying and keeping track of multiple keys and T-handles, as well as the problems associated with their inability to assure the correct torque.

The screwdriver in the TIC Kit is accurate to  $\pm 6\%$  of the indicated T value, and is calibrated in our ISO/IEC 17025 Accredited Calibration Laboratory. It even comes with a FREE NIST-traceable calibration certificate!

It's time to stop drilling out toolholder screws and breaking expensive insert bits! The TIC Kit will increase your uptime and profits!

Part No.	Description
810581	TIC Kit w/TIC screwdriver, 1 each bits T6 – T10, case
810582	TIC screwdriver only
816771	T6 bits, pack of 5
816772	T7 bits, pack of 5
816773	T8 bits, pack of 5
816774	T9 bits, pack of 5
816775	T10 bits, pack of 5
816776	Bits, pack, 1 ea. T6 – T10



Increase your  
cutting tool and tool  
holder life!

## PM Series Features

- Perfect for assembly of electronic components and precision mechanical products!
- Ideal for use in field maintenance kits - factory assembled quality in field reassembly!
- Clutch releases automatically when preset torque attained - no overtorquing.
- Anti-backlash design for repeatability.
- Long shaft allows operator to reach limited-access applications.
- Accuracy of +/- 6% (from 20% to 100% of capacity) meets or exceeds ASME B107.14M and ISO 6789 requirements.
- Bi-directional versatility - CW and CCW operation.
- Uses standard bits, adapters, and sockets.
- Torque value can be set using any unit of torque measure.
- Polished aluminum exterior.
- Minimum capacity of PM-series torque screwdrivers is 20% of maximum capacity.

Specifications	PM-5 Part No. 810007	PM-15 Part No. 810064	PM-36 Part No. 810563
Capacity	100 in. ozs. 70 cNm 7.2 kgf•cm	15 in. lbs. 1.47 Nm 17.2 kgf•cm	36 in. lbs. 4 Nm 40 kgf•cm
Length (less bit)	5-1/2 in.	6-1/4 in.	7-3/4 in.
Grip Diameter	25/32 in.	1 in.	1-3/8 in.
Weight	0.25 lbs.	0.3 lbs.	0.5 lbs.
Drive Size	1/4" Female Hex	1/4" Female Hex	1/4" Female Hex



PM-36

## COLOR CODE ALL YOUR SCREWDRIVERS.

When you place your order, just mention your want colors and we will send a package of 5 colors in easy to apply heat shrink sleeves.

Part No.	Package Contents
816734	Multi-color (1 each)
816735	Blue (5)
816736	Yellow (5)
816737	Red (5)
816738	White (5)
816739	Green (5)



PM-5



## Preset Screwdriver

### PM Series



PM-15



## Torque Multipliers

Torque multipliers with S/R Flat Beam torque wrenches are perfect for the high torque/limited access applications frequently found in the construction, heavy equipment, and power generation industries! The Flat Beam torque wrench provides accurate torque measurement, which is then multiplied by the gears in the multiplier for torque achieved. This combination is extremely portable, thus well-suited to job site use.

Two styles are available, high- and low-ratio, offering the versatility of either design approach. For those with limited height applications, the low-ratio style offers a lower, longer profile. For those with restricted diameter applications, the taller, high-ratio style is offered.

- Capacities to 4000 ft.-lbs. or metric equivalent.
- Multipliers can be used with either English or Metric Flat Beam wrenches.
- Reaction bar or reaction foot keeps gear box from turning.
- Gear train within multiplier has natural frictional loss. For normal requirements, a loss factor of 10% to 20% may be used.



Part Number	Model	Style	Max. Torque ft. lbs.	Input Drive Size	Output Drive Size	Gear Ratio	Overall Length	Weight
850369	TM 1000	Low-ratio	1000	1/2"	3/4"	4-1	26 in.	12 lbs.
850367	TM 2000	Low-ratio	2000	3/4"	1"	4-1	26 in.	14 lbs.
850368	TM 4000	Low-ratio	4000	1"	1 1/2"	4.33:1	30 1/2 in.	35 lbs.
806300	XVK 15	Low-ratio*	1250	3/4"	1"	4.5:1	17 1/2 in.	7 lbs.
806301	XVR 25	High-ratio*	1690	3/4"	1"	12-1	12 1/4 in.	11 lbs.

\*Made in Germany



## Spring Testing Fixture

- Simple-to-use spring tester can be used to inspect coil springs up to 7" in length and 2 1/2" in diameter, minimum I.D. 5/8".
- Provides the accurate tension readings necessary to match sets of springs.
- Height of test platform is adjusted by rotating platform on threaded column. A flat is milled on the column and stamped with 1/16" increments. One full revolution of the platform adjusts the height by 1/8".
- During compression testing an audible tone is emitted when arm is parallel to the test base indicating predetermined compression length is achieved.
- Maximum capacity of torque wrench that can be used is 150 ft. lbs. or equivalent.
- Wrench not included.

Model SPT  
Part No. 850285



# Torque Calibration Systems

## Torque Tools and Power Tools

Ensuring that the tools used to apply torque and those used for auditing have been properly calibrated and remain in calibration is the foundation of every torque program. "Best practice" for today's programs includes a two-step system of certifying and regularly checking each tool.

The first step in a "Best Practice" system is certifying tools, which would typically require test equipment of the highest accuracy and the use of mechanical loaders. Often the capability of testing a wide range of tools is necessary. The use of multiple sensors with a single test device, such as the PTM or System 5 with a mechanical loader, is generally the most cost-effective alternative for certifying tools.

The second step is the regular checking of tools, usually performed by the user of the tool. The tester used for this purpose would require simplicity of operation, ease of use and be readily accessible. Not surprisingly cost and durability are significant factors when purchasing testers for this application. Torq-Tronics and VeriTorg have been designed to meet the needs of this user and the purchasing department.

If you are not sure of the calibration system you need after reviewing the following section, please visit our website at [www.srtorque.com](http://www.srtorque.com) and go to the Torque Tester Selection Chart or call us at 1-800-877-1347 or 847/455-8677.



Advanced Torque Systems  
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## Torque Calibration Systems

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## VeriTorg® Digital Tester Series

VeriTorg® brings accurate torque wrench testing to the "That can save me money!" level - for companies large and small!

VeriTorg® is a  $\pm 1\%$  I.V. digital torque wrench tester suitable for calibrating all clicker and camover-type torque wrenches, and torque screwdrivers as well. It can also test beam, dial, and digital torque wrenches!

If you have 10 or more torque wrenches that you send out for calibration - whether to the manufacturer or an independent laboratory - you can now bring those calibrations in-house and turn expense to profit! VeriTorg® is so simple to use and so affordable that it can even be put at the assembly line for use at the start of each shift.

How simple? Perhaps 15 minutes to install. Maybe another 15 minutes to learn to use. You could have your first two torque wrenches calibrated within an hour of opening the box!

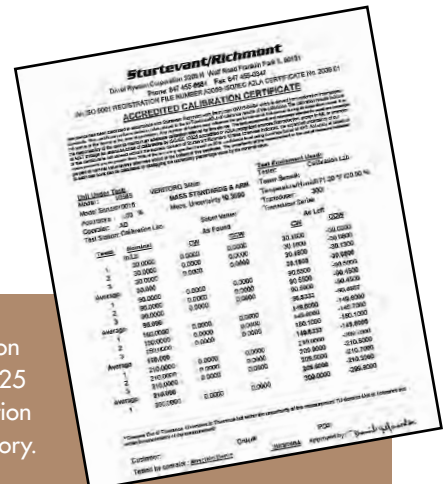
And talk about return on investment! If you have as few as 10 torque wrenches that you calibrate twice a year, and you spend \$50 per tool per calibration (including shipping both ways), your VeriTorg® may pay for itself in less than 18 months.

It's time to increase your profits and reduce your overhead!



Accurate torque wrench testing at  
a very affordable price!

Includes FREE certification  
from our ISO/IEC 17025  
Accredited calibration  
laboratory.



## Features

- Three modes of operation: Track, Peak, and Clicker (Initial Peak).
- Clockwise and counter-clockwise test capability.
- +/- 1% Indicated Value Accuracy from 10% to 100% of capacity.
- Units of measure include English, Standard International, and metric.
- Integral "L" bracket for horizontal or vertical mounting.
- Electronics Module rotates in two planes.
- Large LCD displays settings and values.
- Can store up to 999 torque readings.
- Serial port for immediate or batch data transfer.
- Four button control panel.
- Meets or exceeds ASME B 107.24M and ISO 6789.
- FREE ISO/IEC 17025 long-form certification!
- Made in USA by ISO 9001 manufacturer!
- Custom plastic Carrying/Storage Case and Power Supply included.

## Benefits

- Allows daily checking of tools and instant resolution in event of a question.
- Savings in calibration fees can pay for tester in less than a year.
- Reduces downtime and saves money by eliminating unneeded calibrations.
- Perfect for testing clicker and camover torque wrenches and torque screwdrivers.
- Serial output for use with terminal program or serial printer.
- Large LCD and rotating Electronics Module make it easy to read regardless of wrench length or technician height.
- Multiple Units of Measure to accommodate a wide range of tools.
- Very easily programmed via the four buttons on the Electronics Module.

## VeriTorg® Digital Torque Tester



Part No.	Model	Drive Size
10362	VeriTorg® 1 Nm/10 in.lbs.- 120 VAC	.25" Male Hex
10363	VeriTorg® 6 Nm/50 in.lbs.- 120 VAC	.25" Male Hex
10364	VeriTorg® 12 Nm/100 in.lbs.- 120 VAC	.375" Male Hex
10365	VeriTorg® 34 Nm/300 in.lbs.- 120 VAC	.375" Male Hex
10366	VeriTorg® 109 Nm/80 ft.lbs.- 120 VAC	.5" Female Square*
10367	VeriTorg® 201 Nm/150 ft.lbs.- 120 VAC	.5" Female Square*
10368	VeriTorg® 339 Nm/250 ft.lbs.- 120 VAC	.5" Female Square*
10369	VeriTorg® 814 Nm/600 ft.lbs.- 120 VAC	.75" Female Square**
10371	VeriTorg® 1 Nm/10 in.lbs.- 240 VAC	.25" Male Hex
10372	VeriTorg® 6 Nm/50 in.lbs.- 240 VAC	.25" Male Hex
10373	VeriTorg® 12 Nm/100 in.lbs.- 240 VAC	.375" Male Hex
10374	VeriTorg® 34 Nm/300 in.lbs.- 240 VAC	.375" Male Hex
10375	VeriTorg® 109 Nm/80 ft.lbs.- 240 VAC	.5" Female Square*
10376	VeriTorg® 201 Nm/150 ft.lbs.- 240 VAC	.5" Female Square*
10377	VeriTorg® 339 Nm/250 ft.lbs.- 240 VAC	.5" Female Square*
10378	VeriTorg® 814 Nm/600 ft.lbs.- 240 VAC	.75" Female Square**

\* Includes .5" M Square to .375" F Square Adapter.

\*\* Includes .75" M Square to .5" F Square and .5" M Square to .375" F Square adapters.

### All VeriTorg® Digital Torque Testers Include:

- 120 VAC or 240 VAC to 6 VDC Converter
- Custom Plastic Carrying/Shipping Case
- Serial Cable
- Quick Start Instructions
- 1-Year Warranty on Electronics
- Includes FREE certification from our ISO/IEC 17025 Accredited calibration laboratory.





## Torq-Tronics®

### Digital Tester Series

#### Torq-Tronics® Features

- +/- 1% Indicated Value Accuracy from 10% to 100% of Rated Capacity.
- 3/8" High, 16-Character, Backlit LCD screen on testers of 80 ft.lbs. capacity or above. New 3/4" High, 16-character Backlit LCD screen on smaller testers!
- Capacities range from 10 inch-pounds to 600 foot-pounds, or equivalent Metric and S. I. units of measure.
- Voltage convertors available for 120 VAC and 240 VAC power.
- Now has dedicated Power Tool testing mode!

Torq-Tronics® changes the economic landscape of calibration! At about 1/3 the cost of most torque testers, manufacturers with as few as ten torque wrenches, screwdrivers, or non-impacting power tools can now perform calibration in-house - profitably! Return on investment can be as short as 18 months for a manufacturer with only a dozen torque tools to calibrate!

You will experience less downtime for each torque tool, plus avoid all the packing, shipping, and paperwork costs associated with calibration. When used with S/R's Torque Tool Manager [TTM] Software, NIST-traceable certifications to meet your ISO and QS requirements can be printed out immediately, and the records stored on disk, providing storage efficiency and instant access.

Torq-Tronics® six touchpads access all functions, making use both quick and easy! Switching from torque wrench calibration to power tool calibration requires only adding a joint simulator and pushing the touchpads—a two-minute changeover! Stall, clutch, pulse, and electric tools can all be calibrated rapidly and reliably.

Torq-Tronics® rugged design is equally at home in the lab, tool crib, or on the shop floor! Its' simplicity and efficiency enable deployment as a "line checker" at the start of each shift, or it can be used as the primary torque tool tester in the lab.

The Torq-Tronics® testers of less than 80 ft.lbs. capacity received a redesign in 2004 to optimize them for horizontal mounting on a workbench or cart. This redesign includes a new, larger display for easier viewing, and reduces gravitational effect during use!



## System Specifications

Feature	Specification
Accuracy	+/- 1% of Indicated Value
Accuracy Range	10% - 100% of Rated Capacity
Accuracy Direction	Bi-directional, CW + CCW
Modes	Track, Peak, Initial Peak, Power Tool
Rundown Fixture	Option for units 250 foot-pound capacity and below
Display	16-Character Backlit LCD, 3/8" High on 80 ft.lbs. testers and above, 3/4" High in smaller testers
Controls	6 Touchpads: Zero, Clear/Print, Auto, Units, Peak Select, Filter
Filter	Five user-selectable cutoff frequencies in Power Tool mode
Communications	RS-232C Serial Port, 9-pin, Baud Rate 4800, Stop Bits 1, Parity None
Voltage	120 VAC or 240 VAC, standard
Voltage Convertor	Standard
Batteries	4 each AA NiCd, 1000mA, 1.2VDC
Charge Life	5 hours
Full Charge Time	20 hours



See Page 39 for Rundown fixtures for power tool testing.

## Part Number, Model Number, Range, Drive

Part No.	Model	Range	Drive Size
10391	Torq-Tronics 1Nm	1-10 in.lbs. / 1.13-11.3 dNm / 11.5 kgf•cm	.25" M Hex
10392	Torq-Tronics 6Nm	5-50 in.lbs. / 5.65-56.5 dNm / 57.6 kgf•cm	.25" M Hex
10393	Torq-Tronics 12Nm	10-100 in.lbs. / 1.13-11.3 Nm / 115.2 kgf•cm	.375" M Hex
10394	Torq-Tronics 34Nm	30-300 in.lbs. / 3.39-33.9 Nm / 345.6 kgf•cm	.375" M Hex
10195	Torq-Tronics 80	8-80 ft.lbs. / 10.8-108 Nm / 1106 kgf•cm	.5" F Sq*
10196	Torq-Tronics 150	15-150 ft.lbs. / 20.3-203 Nm / 2074 kgf•cm	.5" F Sq*
10197	Torq-Tronics 250	25-250 ft.lbs. / 33.9-338.9 Nm / 3456 kgf•cm	.75" F Sq**
10198	Torq-Tronics 600	60-600 ft.lbs. / 81.3-813 Nm / 8295 kgf•cm	.75" F Sq**

\* .375" adapter included \*\* .5" adapter included

## Units and Increments of Measure

Part No.	in.oz.	in.lb.	ft.lb.	cNm	dNm	Nm	kgf•cm
10391	0.1	0.01	-----	0.1	0.01	0.001	0.01
10392	0.6	0.04	-----	-----	0.04	0.004	0.04
10393	-----	0.07	0.006	-----	0.1	0.01	0.1
10394	-----	0.22	0.02	-----	-----	0.03	0.3
10195	-----	0.7	0.06	-----	-----	0.08	1
10196	-----	1	0.11	-----	-----	0.2	2
10197	-----	2	0.18	-----	-----	0.3	3
10198	-----	5	0.4	-----	-----	0.6	6

## Options / Accessories

Part No.	Model	Description
870776	Adapter .25" F	Adapter, .25" F square to .375" M square
870777	Adapter .375" F	Adapter, .375" F square to .5" M square
870778	Adapter .5" F	Adapter, .5" F square to .75" M square
816780	Batt AA	Batteries (4 pack), NiCd, "AA" size, 1.2VDC, 1000mA
10309	TTM	Torque Tool Manager software. See Page 11.
10230	Bracket, Single	Single Stand, holds one Torq-Tronics upright for use.
10231	Bracket, Dual	Dual Stand, holds two Torq-Tronics upright for use.
10180	Convertor, 120 VAC	Voltage Convertor, 120 VAC to 6 VDC
10187	Convertor, 240 VAC	Voltage Convertor, 240 VAC to 6 VDC



## System 4/5

Accurate, Versatile, Durable,  
Easy to Use



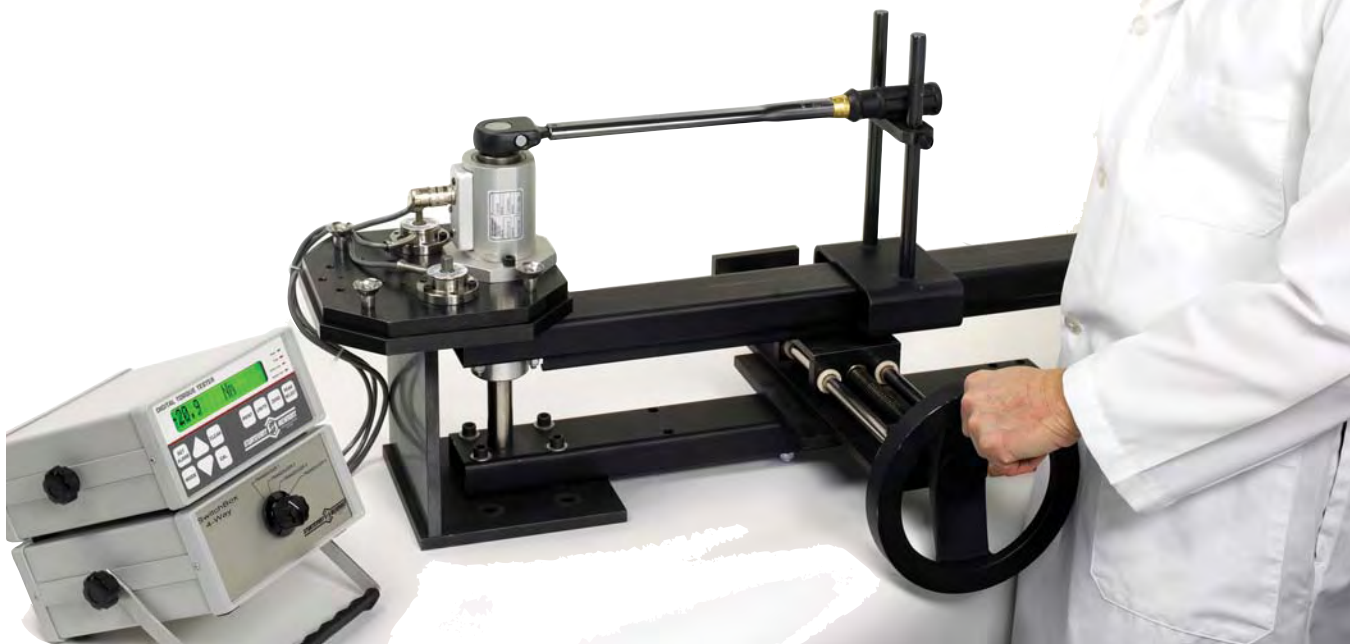
The System 4/5 is the heart of the torque calibration systems at many Fortune 500 companies - for some very good reasons!

The System 4/5 provides the choice of two accuracy levels to meet your requirements; the System 4 has a  $\pm 0.5\%$  Indicated Value accuracy, and the System 5 provides an even tighter  $\pm 0.25\%$  I. V. accuracy to meet even the most stringent requirements.

Thirty torque transducers in three different designs are available, providing calibration capability ranging from a low of 2.5 in.ozs. through 2,000 ft.lbs.! This extensive range is coupled with a modular system structure to give you the ability to create a system tailored to your current needs, then incrementally expand to fill future requirements.

The use of MIL-spec connectors, shock-resistant bezel, and recessed/oil resistant/RF-shielded membrane switch panel in an aluminum housing provides exceptional durability. This makes the System 4/5 as suitable for shop floor, aircraft hanger, and tool crib use as it is in the laboratory.

System 4/5's four modes of operation enable it to calibrate all types of torque wrenches and non-impacting power tools. The broad range of accessories for the System 4/5 extends its' capabilities while increasing its' already significant efficiency! Torque Tool Manager software, mechanical loaders in three capacities, the Switch Box, joint simulators; all combine to make the System 4/5 the tester of choice for assemblers and laboratories seeking to optimize their torque tool calibration system.





## System Specifications

Measurement	System 4	System 5
Accuracy @ 72° F (22° C)	0.5% I.V.	0.25% I.V.
Accuracy Range	10% - 100% Cap.	10% - 100% Cap.
System Resolution	3.5 Digit	4.5 Digit
Resolution (A/D Converter)	1/65,536	1/65,536
Conversion Rate	100Khz	100Khz
Signal to Noise Ratio	82 dB	78 dB

Physical	Each System
Weight, Battery Model	6.9 lbs. (3.1 Kg)
Weight, AC Model	4.3 lbs. (2.0 Kg)
Dimensions	3.375" (96mm) H x 7.56" (192mm) W x 8.64" (220mm) D
Display	1 x 16, 0.5" (12.7mm) high characters, backlit LCD
Keyboard	Membrane switch panel
Enclosure	Aluminum, plastic bezel. Meets MIL-T-28800E, Type 5, Class E specifications.
Transducer Interface	MS3102A 18-01S Amphenol Serial Interface RS 232C, 4800/n/1, ASC II handshake

Characteristic	Specification
Operating Temperature Range	32° F to 125° F (0° C to 51.6° C)
Storage Temperature Range	-80° F to 160° F (-26.7° C to 71.1° C)
Storage Humidity Maximum	95% non-condensing
Power Requirements	Each System
Line Voltage/Frequency	120 or 240 VAC/50 or 60 Hz
Serial Interface	Each System
Type	RS232C
Baud Rate	Selectable: 300/1200/2400/ <u>4800</u> /9600/19200
Stop Bits	1
Parity	Selectable: even/odd/ <u>no</u> /stick/mark
Connector	DB9 female
Handshake	None, ASCII text

Note: Interface defaults underlined.

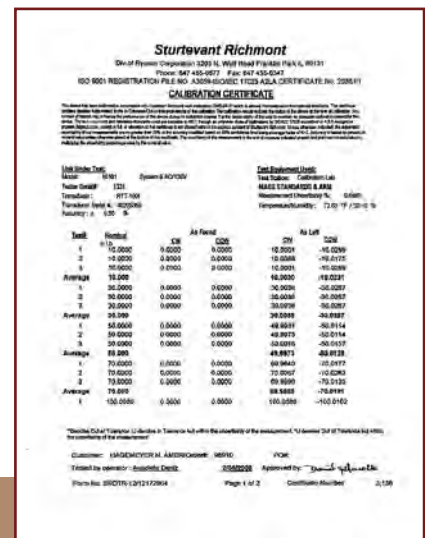


## Ordering Information

Part No.	Model	Description
10000	System 4-BATT	System 4 w/battery & charger
10050	System 4-AC 120	System 4 w/120 VAC line operation
10051	System 5-BATT	System 5 w/battery & charger
10052	System 5-AC 120	System 5 w/120 VAC line operation
10053	System 4-AC/240VAC	System 4 w/240 VAC line operation*
10054	System 4-BATT/240VAC	System 4 w/battery & charger, 240VAC*
10055	System 5-240VAC	System 5 w/240VAC line operation*
10056	System 5-BATT/240VAC	System 5 w/battery & charger, 240VAC*

\*Requires special power cable, for cable descriptions and part numbers, visit the website or contact Customer Service.

See next page for transducer data.



Each tester includes a FREE NIST-traceable Certificate of Calibration from our ISO/IEC 17025 Accredited laboratory!



S/R is proud to announce the development of new designs for the System 4/5 and PTM-D transducers - designs offering increased flexibility as well as our legendary quality!

## Static Transducers

For System 4/5  
& PTM-D



Most System 4/5 transducers now come in four designs; two flanged designs for those with existing systems that are expanding their line or using an S/R Mechanical Loader 250, a Quick Connect design for use with our 1000 and 2000 pound capacity Mechanical Loaders, and a new "L" design that incorporates its' own mounting bracket for rapid horizontal or vertical mounting.

### TT-Series Transducers

- Traditional S/R Round Flange Style
- Can be mounted to ML 250 Mechanical Loader.
- Can be Mounted to Quad Plate for multiple mounting on ML 250.
- Smaller sizes (up to 400 in. oz. capacity) can be mounted to SSMB, STMB, or UMB brackets.
- Larger sizes (500 ft. lbs. and above) can be mounted on UMB L-bracket.
- Fixed cable.

Part. No.	Model	in.ozs.	Torque Range		kgf•cm	Hex
			in.lbs.	cNm		
10009	TT-25IO	2.5 - 25	0.16 - 1.6	1.77 - 17.7	0.18 - 1.8	.25" M
10011	TT-100IO	10 - 100	0.625 - 6.25	7.0 - 70.6	0.72 - 7.2	.25" M
10012	TT-250IO	25 - 250	1.6 - 15.6	17.7 - 177	1.8 - 18	.25" M
10013	TT-400IO	40 - 400	2.5 - 25	28 - 280	2.9 - 29	.25" M

Part. No.	Model	in.lbs.	Torque Range		kgf•m	Square
			ft.lbs.	Nm		
10026	TT-1000	1200 - 12000	100 - 1000	135 - 1355	13.5 - 130	1.00" F
10027	TT-2000		200 - 2000	270 - 2710	27 - 270	1.00" F



### STT-P Series Transducers

- Hex Flange Style
- All can be mounted to ML 250 Mechanical Loader.
- All up through 250 ft. lbs. capacity can be mounted to Quad Plate for multiple mounting on ML 250.
- Smaller sizes (up to 300 in. lb. capacity) fit SSMB, STMB, or UMB brackets.
- Larger sizes can be mounted on UMB L-bracket.
- Requires detachable cable P/N 10293 for use with System 4/5.

Part. No.	Model	in.lbs.	Torque Range		kgf•cm	Hex
			ft.lbs.	Nm		
10286	STT-P50I	5 - 50		.56 - 5.6	6 - 60	.25" M
10287	STT-P100I	10 - 100		1.2 - 12	11.5 - 115	.375" M
10288	STT-P300I	30 - 300	2.5 - 25	3.4 - 34	34.5 - 345	.375" M



Part. No.	Model	in.lbs.	Torque Range		kgf•cm	Square
			ft.lbs.	Nm		
10290	STT-P150	180 - 1800	15 - 150	20 - 200	210 - 2100	.75" F
10291	STT-P250	300 - 3000	25 - 250	34 - 340	350 - 3500	.75" F

## STT-QC Series Transducers

- Quick Connect System
- Can be mounted to ML 1000 and ML 2000 Mechanical Loaders.
- Can be Mounted to PTM Programmable Torque Measurement machine.
- Removal of adapter plate permits use with ML 250 (250 ft. lbs. capacity and below).
- Requires detachable cable P/N 10293 for use with System 4/5.
- TT-MLQC Series can also be used with ML 1000 and ML 2000. See below.

Part. No.	Model	in.lbs.	Torque Range ft.lbs.	Nm	kgf•cm	Hex
10301	STT-QC50I	5 - 50		.56 - 5.6	6 - 60	.25" M
10302	STT-QC100I	10 - 100		1.2 - 12	11.5 - 115	.375" M
10303	STT-QC300I	30 - 300	.5 - 25	3.4 - 34	34.5 - 345	.375" M

Part. No.	Model	in.lbs.	Torque Range ft.lbs.	Nm	kgf•cm	Square
10305	STT-QC150	180 - 1800	15 - 150	20 - 200	210 - 2100	.75" F
10306	STT-QC250	300 - 3000	25 - 250	34 - 340	350 - 3500	.75" F
10434	STT-QC500	600 - 6000	50 - 500	67.5 - 675	700 - 7000	.75" F

## TT-MLQC Series Transducers

- Quick Connect System
- Designed for use with System 4/5, PTM-D, and ML 1000 or ML 2000.
- Permanently attached cable.

Part. No.	Model	Torque Range ft.lbs.	Nm	kgf•m	Square
10209	TT-1000MLQC	100 - 1000	135 - 1355	13.5 - 130	1" F
10210	TT-2000MLQC	200 - 2000	270 - 2710	27 - 270	1" F

## STT-L Series Transducers

- Built-in L-bracket for mounting vertically or horizontally.
- Requires detachable cable P/N 10293 for use with System 4/5.
- Mounting holes drilled for 5/16" bolts, 3.25" on center.

Part. No.	Model	in.lbs.	Torque Range ft.lbs.	Nm	kgf•cm	Hex
10258	STT-L50I	5 - 50		.56 - 5.6	6 - 60	.25" M
10259	STT-L100I	10 - 100		1.2 - 12	11.5 - 115	.375" M
10260	STT-L300I	30 - 300	2.5 - 25	3.4 - 34	34.5 - 345	.375" M

Part. No.	Model	in.lbs.	Torque Range ft.lbs.	Nm	kgf•cm	Square
10262	STT-L150	180 - 1800	15 - 150	20 - 200	210 - 2100	.75" F
10263	STT-L250	300 - 3000	25 - 250	34 - 340	350 - 3500	.75" F
10433	STT-L500	600 - 6000	50 - 500	67.5 - 675	700 - 7000	.75" F



To see larger photos and obtain additional information,  
go to [www.srtorque.com](http://www.srtorque.com)!





## Tester Accessories

### Mechanical Loaders



A mechanical loader is the perfect accessory to increase the repeatability and productivity of the System 4/5! The drive system for each loader assures 90 degree load application, reducing operator-induced test error. In addition, the loaders' mechanical advantage reduces the operator effort required to attain and sustain torque during the calibration process. The -QC Series transducers include adapter plates for use with the ML 1000 and ML 2000 loaders, and make changeover a matter of seconds. The -P Series transducers (up to 250 foot-pound capacity) can be used with the ML 250.



The Quad Plate permits mounting up to four transducers to the ML 250 to facilitate changeover. When coupled with the Switch Box both mechanical and electrical changeover can be accomplished in seconds!

Part No.	Model	Description
10168	ML 2000	Mechanical Loader, 2000 ft.lb./2710 Nm capacity
10167	ML 1000	Mechanical Loader, 1000 ft.lb./1355 Nm capacity
10160	ML 250	Mechanical Loader, 250 ft.lb./338 Nm capacity
10208	Lg. Cart	Roller Cart for ML 1000, 64"W x 30"D x 30"H
10161	Std. Cart	Roller Cart for ML 250, 46"W x 24"D x 46"H
10308	Quad Plate	Rotating plate attaches four -P Transducers to ML 250.
10185	Switch Box	Electrically connects four transducers to System 4/5.

### Transducer Mounting Brackets



Transducer mounting brackets are an excellent means of providing the stability the System 4/5 transducers need to deliver optimum performance. Each L-shaped bracket has the table and transducer mounting surfaces precision ground to eliminate deflection during tool and transducer calibration processes. These brackets are designed for use with TT-Series and STT-P Series transducers.

Part No.	Model	Description
10153	SSMB	Small Single Mounting Bracket, maximum 300 in.lb. capacity
10154	STMB	Small Triple Mounting Bracket, 3 transducers, max. 300 in.lb. capacity
20435	UMB	Universal Mounting Bracket, maximum 2000 ft.lb. capacity

### Transducer Calibration



A variety of transducer calibration equipment is available for those who wish to calibrate their own transducers. S/R has calibration fixtures, calibration arms (from 2.5" through 48" in length), weight platforms and weights available for all transducer sizes sold.

We can help you select the optimum equipment needed to calibrate the transducers you already have or will be acquiring. Simply contact Customer Service by phone, fax, or e-mail!

## Torque Tool Manager Software

Torque Tool Manager (TTM) is calibration and certification software specifically engineered to work with your System 4/5, System 6, PTM-D, or Torq-Tronics Digital Torque Testers!

TTM software will fulfill your ISO and QS 9000 calibration and certification requirements far more cost-effectively than manual record keeping systems!

- Choose from standard calibration routines or customize your own to assure proper test procedures and accuracy - every time! TTM is flexible; it accommodates the full range of manual and power torque tools.
- TTM error-proofs calibration procedures and virtually eliminates retesting due to operator error! TTM downloads the proper test protocol to your S/R tester and sets the tester up for the tool. It will only accept results that are in line with the test protocol, so errors resulting from failure to follow the programmed procedure are automatically rejected.
- TTM keeps records for each tool, including calibration date, serial number, tester and transducer serial numbers, operator, "As Found" and "As Left" test results, NIST traceability numbers, and all other data required for ISO and QS compliance!

For more information on TTM, contact Customer Service via phone, fax, or e-mail!



**Part No. 10309, TTM Software**

## Rundown Fixtures

Rundown fixtures are designed to assist in testing the output of pulse, stall and clutch power tools. This is accomplished by allowing the tool to achieve rotational speed prior to torque measurement. The rundown fixtures all come with the components to emulate either a hard or medium joint, thus assuring greater test accuracy.

Rundown fixtures may be used with either the System 4/5 or the Torq-Tronics series testers.

Part No.	Model	Description
10349	RDF 1 Nm	Rundown Fixture, 1 Nm/10 in.lb. capacity, .25" F Hex
10350	RDF 3 Nm	Rundown Fixture, 3 Nm/25 in.lb. capacity, .25" F Hex
10351	RDF 6 Nm	Rundown Fixture, 6 Nm/50 in.lb. capacity, .25" F Hex
10352	RDF 17 Nm	Rundown Fixture, 17 Nm/150 in.lb. capacity, .375" F Hex
10353	RDF 34 Nm	Rundown Fixture, 34 Nm/300 in.lb. capacity, .375" F Hex
10354	RDF 34 Nm	Rundown Fixture, 34 Nm/300 in.lb. capacity, .5" M Square
10355	RDF 68 Nm	Rundown Fixture, 68 Nm/600 in.lb. capacity, .5" M Square
10356	RDF 109 Nm	Rundown Fixture, 109 Nm/960 in.lb. capacity, .5" M Square
10357	RDF 204 Nm	Rundown Fixture, 204 Nm/1800 in.lb. capacity, .5" M Square
10358	RDF 339 Nm	Rundown Fixture, 339 Nm/3000 in.lb. capacity, .75" M Square
10295	RDF 250	Rundown Fixture, 250 ft.lb. capacity, .75" M Square
10225	JS 250	Rundown Fixture, 250 ft.lb. capacity, .75" M Square
10135	JSK 50I*	Rundown Fixture Kit, 50 in.lb. capacity, .25" F Hex
10136	JSK 300I*	Rundown Fixture Kit, 300 in.lb. capacity, .375" F Hex

\* Kits are for use with System 4/5 only.



Make your power tool testing easier and more repeatable – use a Rundown Fixture!



## System 6

Digital Tester

### On-Line Power Tool Testing at Its Finest!

The System 6 Power Tool Tester is designed for one purpose - to provide the finest in on-line power tool testing! It uses non-contact rotary sensors that completely eliminate the problems associated with slip-ring/brush-type sensors, to provide the high accuracy and the long operational life that comprises value!

The System 6 uses the same sturdy and reliable physical envelope and protection systems found on the System 4/5 tester, and like them it works well in a wide variety of demanding physical environments. The convenient plastic carryall case will take it there!

The  $\pm 0.5\%$  Indicated Value Accuracy of the System 6 is perfect for all types of non-impacting power tools; stall, clutch, and impulse, pneumatic or electric. This versatility makes it the rotary system of choice for many companies.



Physical, Environmental, Power, and Computer Interface specifications are the same as those of the System 4/5. See Page 35 for details.



## Ordering Information

Part No.	Model	Description
10095	System 6-BATT 120	System 6 w/battery & charger
10101	System 6-AC 120	System 6 w/120 VAC line operation
10102	System 6-AC 240	System 6 w/240 VAC line operation*
10103	System 6-BATT 240	System 6 w/battery & charger/240 VAC*
10096	6 Ft. RTT Cable	RTT Transducer Cable to System 6
10104	30 Ft. RTT Cable	RTT Transducer Cable to System 6
10105	50 Ft. RTT Cable	RTT Transducer Cable to System 6

\*Requires special power cable, for cable descriptions and part numbers visit our web site or contact Customer Service.



## Torque Specifications and Ordering Information

Part No.	Model	in.ozs.	Torque Range		kgf•cm
			in.lbs.	cNm	
10110	RTT-10I	16 - 160	1 - 10	11.3 - 113	1.2 - 11.5
10111	RTT-50I	80 - 800	5 - 50	56 - 560	6 - 60

Part No.	Model	in.lbs.	ft.lbs.	Nm	kgf•cm
10112	RTT-100I	10 - 100		1.2 - 12	15 - 115
10113	RTT-300I	30 - 300	2.5 - 25	3.5 - 35	35 - 350
10114	RTT-50	60 - 600	5 - 50	6.8 - 68	69.1 - 691
10115	RTT-100	120 - 1200	10 - 100	13.6 - 136	138 - 1382
10116	RTT-200	240 - 2400	20 - 200	27.1 - 271	277 - 2765
10117	RTT-350	420 - 4200	35 - 350	47.5 - 475	484 - 4839
10118	RTT-700	840 - 8400	70 - 700	95 - 950	968 - 9678



## Other Specifications

Specification	Value
Output	0 to +/-3 VDC
Excitation	+12 VDC
Current Draw	250mA
Operating Temperature	14° F to 160° F (-10° C to 70° C)
Compensated Temp.	40° F to 110° F (5° C to 4° C)
Temperature Effect	.001% F.S./°C
Max Shaft Speed	5000 RPM
Overload (max.)	100%
Country of Origin	Germany

Each tester includes a FREE NIST-traceable Certificate of Calibration from our ISO/IEC 17025 Accredited laboratory!

Sturtevant Richmond					
Div. of Ryerson Corporation 3203 N. Wolf Road Franklin Park IL 60131					
Phone: 847 455-8977 Fax: 847 455-0347					
ISO 9001 REGISTRATION FILE NO. A3059-ISO/IEC 17025 A2LA CERTIFICATE No. 2086.01					
CALIBRATION CERTIFICATE					
This device has been calibrated in accordance with Sturtevant Richmond work instruction DWG 04-11 which is derived from national or international standards. This certificate contains data which is related to the performance of the device during the calibration interval. It is the responsibility of the user to maintain an adequate calibration interval for the device. The test equipment and reference standards used are traceable to NIST through an unbroken chain of calibrations by (ISO/IEC 17025 accredited or A2LA recognized) sources. Reported data, except as noted, is for the deviation from the nominal value and does not include the uncertainty of the measurement. The accuracy of the measurement is based on the nominal value unless otherwise indicated at the bottom of this certificate. The accuracy of the measurement in the unit of measure indicated at each test point can be calculated by multiplying the accuracy percentage value by the nominal value.					
Unit Under Test:			Test Equipment Used:		
Model: 10101			Test Station: Calibration Lab		
Tester Serial#: 1331			MASS STANDARDS & ARM		
Transducer: RTT-100I			Measurement Uncertainty %: 0.0000		
Transducer Serial #: 40205369			Temperature/Humidity: 72.00 °F / 30.10 °C		
Accuracy: ± 0.50 %					
Test#	Nominal	As Found	As Left	As Found	As Left
	in. Lb.	ozw	ccw	ozw	ccw
1	10.0000	0.0000	0.0000	10.0001	-10.0259
2	10.0000	0.0000	0.0000	10.0000	-10.0175
3	10.0000	0.0000	0.0000	10.0001	-10.0259
Average	10.0000			10.0000	-10.0231
1	30.0000	0.0000	0.0000	30.0038	-30.0287
2	30.0000	0.0000	0.0000	30.0038	-30.0287
3	30.0000	0.0000	0.0000	30.0038	-30.0287
Average	30.0000			30.0038	-30.0287
1	50.0000	0.0000	0.0000	49.9931	-50.0114
2	50.0000	0.0000	0.0000	49.9973	-50.0114
3	50.0000	0.0000	0.0000	50.0018	-50.0157
Average	50.0000			49.9973	-50.0128
1	70.0000	0.0000	0.0000	69.9840	-70.0177
2	70.0000	0.0000	0.0000	70.0087	-70.0282



## PTM-D

PTM-D Mechanized  
Programmable Powered Tester

Your quality is our  
business!

## The S/R Programmable Torque Measurement Machine—Ver. D

The PTM-D defines “state of the art” in torque wrench testing! The PTM-D is designed for the laboratory needing absolute control of the calibration process. It features a torque wrench loading process that uses software to control a DC drive stepper motor for absolute load rate precision.

In addition, the ergonomics couldn't be better; just push the button and let the PTM-D do the work!

Operator-induced variation and repetitive motion injury risk are history!

### Features

- Four testing modes cover testing of every type of torque wrench and data collection desired. Modes range from fully programmed testing with certification through manual control.
- The ergonomics of the PTM-D free the owner and the technician from the risk of repetitive motion injury associated with mechanical loaders and with hand-pulling of wrenches for testing! To load the wrench, the operator pushes a button!
- The PTM-D uses a direct-drive DC stepper motor and precision gear train to load the tools, permitting the technician to load the wrench to a given point and hold that point with the push of a button! Load variation is vastly reduced, with no induction of operator fatigue!
- Quick-Connect (QC-Series) Transducers and the S/R Switch Box make transducer changeover simple and efficient! The transducers have a spline drive that allows rapid removal and replacement when different ranges are needed, and the Switch Box connects up to four transducers to the PTM-D. With the flip of a switch the new transducer is the active one!
- Test data can be downloaded immediately in ASCII format to a PC for analysis, plotting, or storage by your software. Integration into new or existing systems is simple!



*There are too many features on the PTM-D to list them all here. To learn more about the machine that defines calibration control, go to [www.srtorque.com](http://www.srtorque.com)!*

# General Information

## Certification

All S/R torque testers, torque wrenches (except dial wrenches and preset tools) and torque screwdrivers are certified in our ISO/IEC 17025:1999 A2LA accredited laboratories. Below is a flow chart depicting S/R traceability to the National Institute of Standards and Testing (N.I.S.T.) which has reciprocity with all major standards bodies.

## Specifications and Dimensions

All specifications and dimensions contained in this catalog are subject to change without notice. Please contact the factory for the latest information.

## Safety

The following precautions should always be taken when using any hand tool to avoid possible injury:

- Safety glasses or goggles should be worn at all times when using any hand tool.
- Be sure wrench or socket is properly seated on the nut prior to applying torque.
- A "cheater bar" should never be used on a torque wrench to apply excess leverage.
- Firm footing and proper position are both extremely important when applying torque.

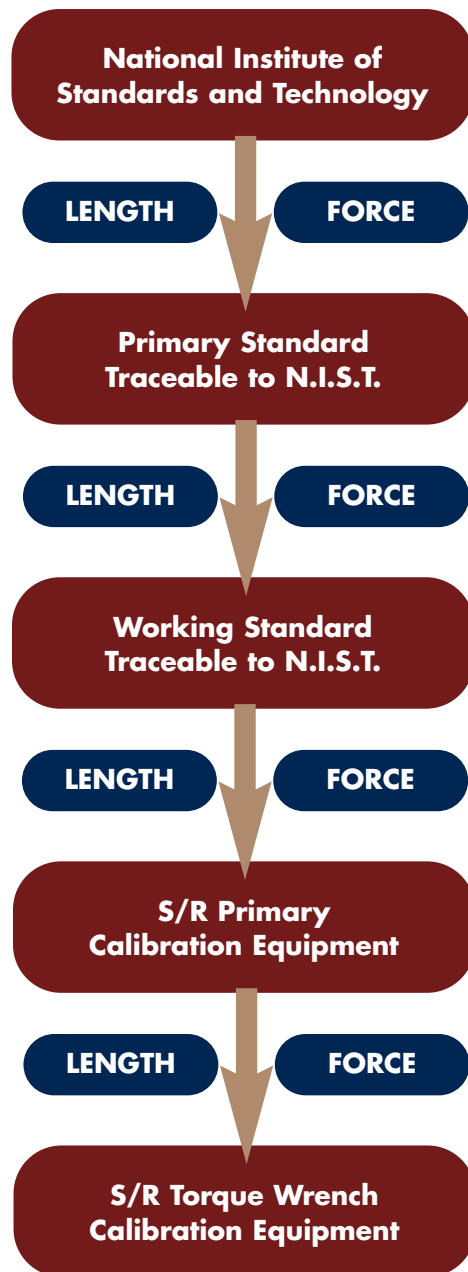
For extensive information on the safe use of hand tools and for safety programs visit [www.hti.org](http://www.hti.org).

## Organizations

S/R is a member of ISA the Industrial Supply Association and HTI the Hand Tool Institute.



## Sturtevant Richmond Traceability System





# SR Product Warranties

## Warranty

Sturtevant Richmond Division of Ryeson Corporation warrants all products in this catalog against defective material and workmanship for the periods given in the table below. Upon inspection, Sturtevant Richmond shall have the option to repair or replace the defective product and such repair or replacement, free of charge, shall be the Customer's sole and exclusive remedy. Sturtevant Richmond Division of Ryeson Corporation furnishes this limited warranty in lieu of all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose. Any and all warranties shall be void as to products damaged or rendered unserviceable while in the custody of the customer or third parties. This includes but is not limited to negligence, misuse, modification, repair or alteration of the product.

Product Family	Warranty Duration
Torque Transducers	1 year from date of purchase
Torque Testers	1 year from date of purchase
Mechanical Loading Systems	5 years from date of purchase
Calibration Arms	5 years from date of purchase
Load Platforms, Weights	5 years from date of purchase
Software	90 days from date of purchase
All other products	1 year from date of purchase

## Liability

Sturtevant Richmond Division of Ryeson Corporation shall not be liable for any damages, incidental, consequential, or otherwise, or commercial loss from any causes, nor for personal injury or property damage. Sturtevant Richmond Division of Ryeson Corporation's liability is limited to the repair or replacement of defective material or workmanship of the product.

## Factory Repair & Calibration

Torque wrenches, torque screwdrivers, torque testers – all are precision measurement instruments. You rely on each to assure the quality of your products, which means that tool and tester uptime and calibration are critical to your business.

We offer our customers factory-quality repair using original S/R parts, and calibration in our ISO/IEC 17025 Accredited Laboratory. There is no better level of repair available anywhere, and you can rely on our calibration process to assure you are working with accurate tools and testers.

Contact us by phone, fax, or e-mail to discuss your repair and calibration needs for all S/R products.

## Torque Conversion Formulas

Known	Multiplier	Result
inch grams	.249085	milli Newton metres
	.0249085	centi Newton metres
	.00249085	deci Newton metres
inch ounces	28.349527	inch grams
	72.007	gram centimeter
	.706156	centi Newton metres
	.0706156	deci Newton metres
inch pounds	453.59243	inch grams
	16	inch ounces
	1.1521193	kilogram centimeters
	.011521193	kilogram meters
	11.2985	centi Newton metres
	1.12985	deci Newton metres
foot pounds	.112985	Newton metres
	12	inch pounds
	.1382541	kilogram meter
kilogram meters	1.355818	Newton metres
	9.80665	Newton metres
Newton metres	7.233058	foot pounds
	.101971	kilogram meters
	8.850744	inch pounds
deci Newton metres	.737562	foot pounds
	14.161184	inch ounces
centi Newton metres	.885074	inch pounds
	1.4161184	inch ounces
	.0885074	inch pounds
kilogram centimeters	.86796	inch pounds
	.0980665	Newton metres

## Torque Application Tool Selection Chart

The chart below will assist you in selecting the torque tools that will fit the requirements of your torque needs.

	Assembly	Maintenance	Audits	Destruct Testing
Exacta® Digital Wrenches				
M Series Flat Beam Wrenches				
MD Series Dial Wrenches				
SDR, SD, CCM Micrometer Adjustable Wrenches				
LTC, LTCR, LTCS Series Preset Wrenches				
Cal, Exactorq Series Adjustable Screwdrivers				
PM Series Preset Screwdrivers				
PTV, TCV Series Advanced Torque Systems				
Exacta® Plus				

## Torque Tester Selection Chart

The chart below is provided to assist you in selecting the torque tester that fits your individual needs. In the leftmost column, find the torque tools that you have or wish to calibrate, then read across to find the testers that will fit your needs.

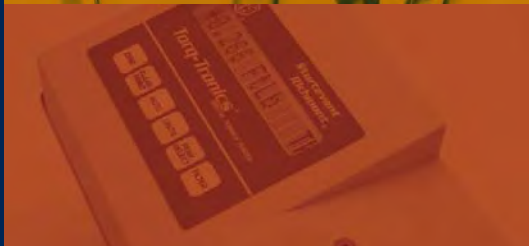
	VeriTorg®	Torg-Tronics®	Syst.4	Syst.5	Syst.6	PTM-D
Digital Torque Wrenches						
Beam Torque Wrenches						
Dial Torque Wrenches						
Clicker Torque Wrenches						
Camover Torque Wrenches						
Torque Screwdrivers						
Electric Screwdrivers						
Clutch & Stall Power Tools						
Pulse Tools						

For all tools, the test equipment selected should be at least four times as accurate as the tools tested on it.

## Torque Tester Accessories Chart

Selecting the best accessories for your torque tester improves your quality, efficiency, and bottom line!

	Torg-Tronics®	System 4	System 5	System 6	PTM-D
Torque Tool Manager					
Mechanical Loader 250					
Mechanical Loader 1000					
Mechanical Loader 2000					
Rundown Fixtures					
4-Transducer Quad Plate					
Quick-Connect Transducers					
L-Series Transducers					
P-Series Transducers					
Rotary Transducers					
Transducer Mounting Brackets					
Switch Box					
Tester Stands					



***[www.srtorque.com](http://www.srtorque.com)***



***Sturtevant  
Richmont***

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LIT-107 Form No. C050515